New Satara College of BCA, Pandharpur

(P.A.H. Solapur University, Solapur)

NOTICE

Date:-19/8/2017

All Students of BCA-I/II& III year informed that has organize "**Class Seminar**" Academic Year 2017-18. is held on 21 Aug. 2017 to 23 Aug. 2017. All student are Compulsory for Seminar .

Subject:-English
Venue:-seminar Hall
Time:-1:30 to 4:30

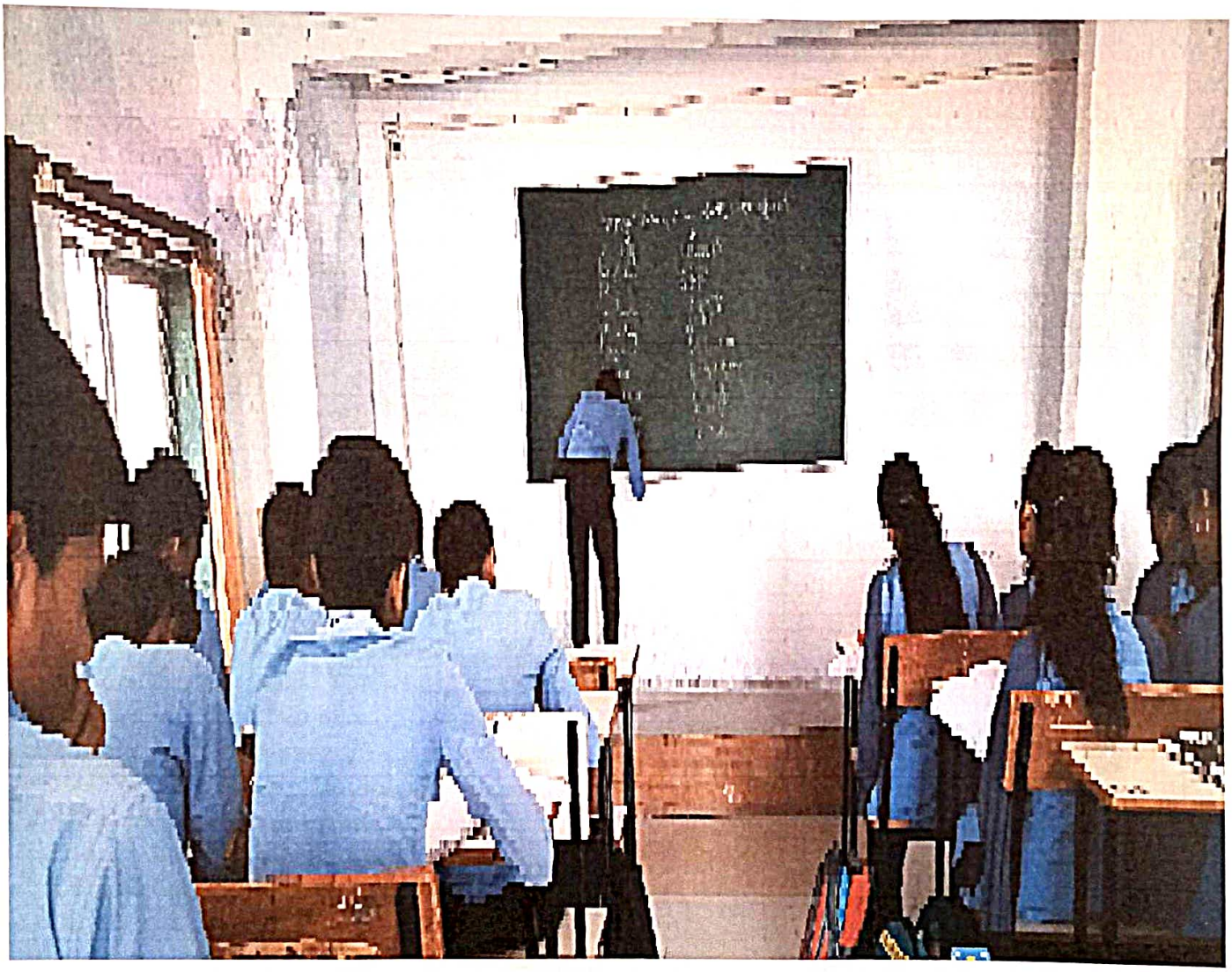
NEW SATARA COLLEGE OF B.C.A. PANDHARPUR

Principal
New Satara College of B.C.A
Pandharpur.

New Satara College of BCA, Pandharpur

(P.A.H. Solapur University, Solapur)

Subject:- English



NEW SATARA COLLEGE OF B.C.A. PANDHARPUR

Principal
New Satara College of B.C.A
Pandharpur.

Name of Student	Sign.
Sole vedant Dipak	V.D.Sole
Jadhav Vishal Namdev	
Gaikwad Vishwajit Bharat	(VB) Vitkwad
Inamdar chaitanya Prasad	C.P. Inamdar
Thite Akash Sadashiv	A.S. Thite
Gaikwad Rasik Prakash	
Bokade Sumit Shantilal	Bokade
Yadav Rohan Rajaram	R.Yadav
Maske Aniket Gulab	
Mogal Inzmam Akhtar	Mogal.
Bagal shravan Hanmant	S.H.B.
Mogal Azim Ilias	A.I. Mogal
Kardile Ganesh Dattatray	
Sahil madhukar Aiwale	S.M. Aiwale
Shinde Rohan APPa	
Rajgude vishal Gorakh	Rajgude.V.G.
SAYYED LAZINA ASIF	LAZINA
Devkate kiran Madhukar	K.M.Devkate
Devkate Muktai Vitthal	M.V. Devkate
Thombare Riya Hanumant	
Nangle Rutuja Santosh	
Shelake Vaishnvi Bhimrao	Vishnvi
Bagal Mukta Bhagawat	M.B.Bagal.
Karade Shraddha Rajkumar	Karade
shelake Gauri Tukaram	Shelake.
Hingmire Shilpa Siddheshwar	Shilpa
Shevale Vaishali Balasaheb	
Devkate Gitanjali vitthal	G.V.Devkate.
Shendge Dhanashri Dattatray	Shendge.
Waghmare Prajakta Shankar	
Jadhav chitralekha Shamad	Chitra
Bhosale Prachi Maruti	Bhosale.
Pethuraj Vaibhav Aiwale	
Pravin Kandlik Deshmukh	
koli sarthak mukesh	S.M.Koli
Someshwar Audumbar Poldar	S.A. Poldar.
Bagal Rohan Sanjay	
Nangle Ganesh Nagnathrao	
Khandekar Sangram shivaji	Somesh
Dagade vaibhav Machindra	Dagade
Sahil madhukar Aiwale	S.M. Aiwale
Sagade Rohit Dadaso	
Thite prathamesh parmeshwar	Thite.PP
Narale prashant Dhanaji	
Gulame Harshad Balu	
Pawar Ganesh Ramesh	

NEW SATARA COLLEGE OF B.C.A. PANDHARPUR

Principal
New Satara College of B.C.A
Pandharpur.

New Satara College of BCA, Pandharpur

(P.A.H. Solapur University, Solapur)

NOTICE

Date:-10/2/2018

All Students of BCA-I/II & III year informed that has organize "**Class Seminar**" Academic Year 2017-18. is held on 12 Feb. 2018 to 13 Feb. 2018. All student are Compulsory for Seminar .

Subject:-English
Venue:-seminar Hall
Time:-2 to 4

NEW SATARA COLLEGE OF B.C.A. PANDHARPUR

Principal
New Satara College of B.C.A
Pandharpur.

New Satara College of BCA, Pandharpur

(P.A.H. Solapur University, Solapur)

Subject:- English

NEW SATARA COLLEGE OF B.C.A. PANDHARPUR

Principal
New Satara College of B.C.A
Pandharpur.

Sarode Rohit Dadaso	Sarode RD
Thite prathamesh parmeshwar	Thite P.P
Someshwar Audumbar Poldoor	S.A.Poldoor
Sarthak Mukesh Koli	S.M.Koli
Reetiraj Vaibhav Aiwale	
Pawan Kamlik Deshmukh	
Rohan Sanjay Baigel	
Nagale Ganesh Aggatrav	
Khandekar Sangram shivaji	Sangramshi
Dagade vaibhav Machindra	Vdagade
Thite Akash Sadashiv	A.S.Thite
Inamdar Chaitanya Prasad	C.P.Inamdar
Gaikwad Vishwajit Bharat	Gaikwad
Jadhav Vishal Nanader	
Sole Vedant Dipak	V.D Sole
Sayyed Lazima Asif	Lazima
Devkate kiran Madhukar	K.M.Devkate
Thombare Riya Hanumant	
Devkate Muktai Vitthal	M.V.Devkate
Rajgude vishal Gorakh	Rajgude V.G.
Shinde Rohan Appa	
Maske Aniket Gulab	
Yadav Rohan Rajaram	R.Yadav
Pokarle Sumit Shantilal	
Gaikwad Rasik Prakash	
Bagal shravan kanmant	S.K.B
Mogal Azim Iliyas	A.I.Mogal
Mogal Inzaman Akhtar	Imogal
Kanchare Ganesh Dattatray	
Sahil madhukar Aiwale	S.M.Aiwale
Narale Prashant Bhapuji	
Gulame Harshad Bala	
Pawar Ganesh Ramesh	GRPawar
Akash Dharmraj Waghmare	Akash
Narale Ganesh Dhanaji	
Bhosale Prachi Maruti	Bhosale.
Jadhav chitralekha Ahmad	Jchitra
Waghmare Prajakta Shankar	Pwaghmare
Shendge Dhanashri Dattatray	Shendge.
Shelake Gauri Tukaram	Shelake.
Devkate Gitanjali vitthal	G.V.Devkate
Hingmire Shilpa Siddheshwar.	Shilpa
Shevale Vaishali Balasaheb	
Bagal Mukta Bhagawat	M.B.Bagal
Karade Shraddha Rajkumar	Karade
Narale Rutuja Santosh	Rnarale
Shelake Vaishnvi Bhimarao	Vaishnvi

Principal
New Satara College of B.C.A
Pandharpur.

New Satara College of BCA, Pandharpur

(P.A.H. Solapur University, Solapur)

NOTICE

Date:-2/3/2019

All Students of BCA-I/II & III year informed that has organize "**Class Seminar**" Academic Year 2018-19. is held on 5 March. 2019 to 6 March. 2019. All student are Compulsory for Seminar .

Subject:-English
Venue:-seminar Hall
Time:-1:30 to 4:30

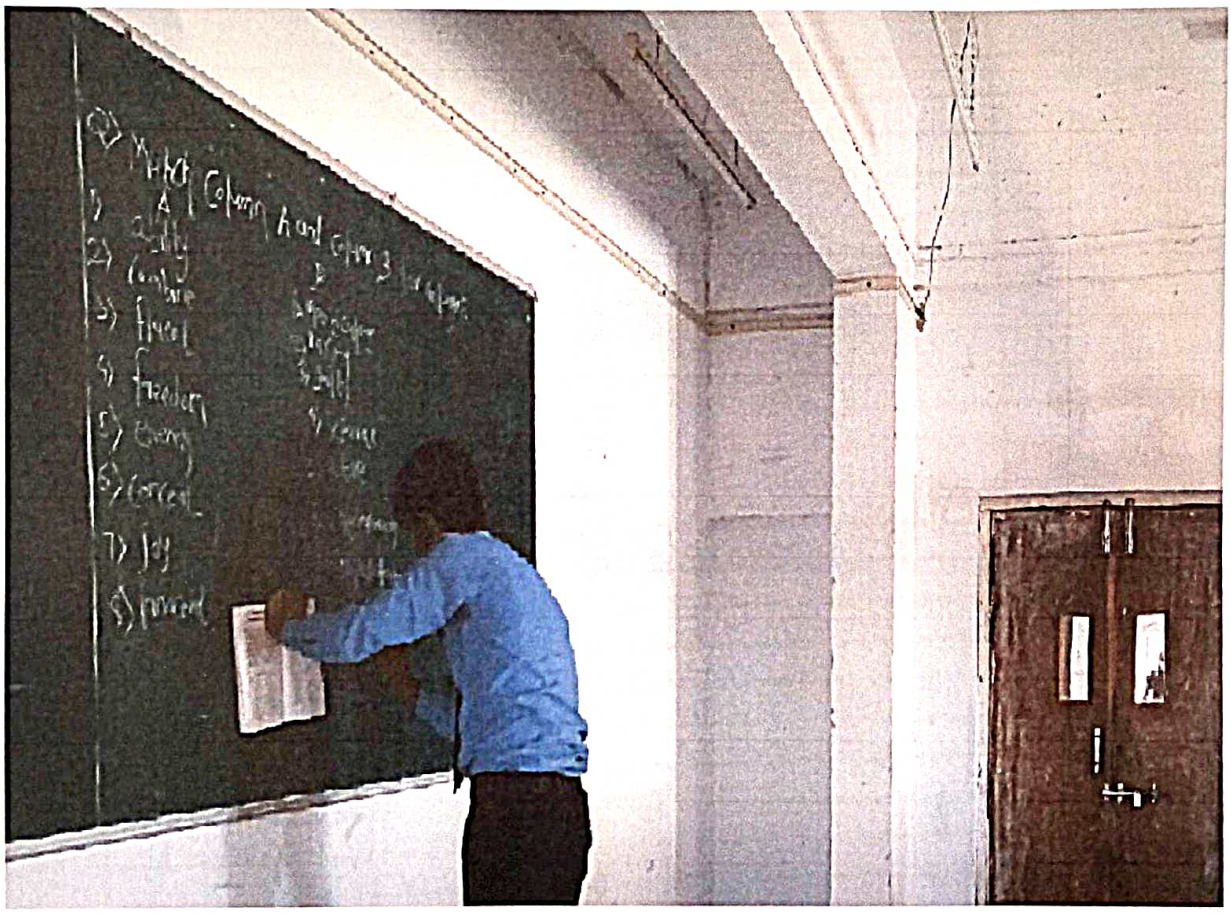
NEW SATARA COLLEGE OF B.C.A. PANDHARPUR

Principal
New Satara College of B.C.A
Pandharpur.

New Satara College of BCA, Pandharpur

(P.A.H. Solapur University, Solapur)

Subject:- English



NEW SATARA COLLEGE OF B.C.A. PANDHARPUR

Principal
New Satara College of B.C.A
Pandharpur.

Attendance Sheet

Name of Student	Sign.
Lazina Asif Sayyed	Lazina.
kiran Madhukar Devkate	K.M.Devkate
Muktai Vitthal Devkate	M.V. Devkate
Riya Hanumant Thombare	
Sahil Madhukar Aiwale	S.M.Aiwale
Ganesh Pattatray Kamble	
Azim Iliyas Mogal	A.I.Mogal
Bagal shreyan Hanmant	S.H.B.
Mogal Inzmam Akhtar	Imogal.
Gaikwad Rasik Prakash	
Pokade. Sumit Shantilal	Pkade
Yadav Rohan Rajaram	R.Yadav
Maske Aniket Gulab	
Rajgude Vishal Gorakh	Rajgude V.G.
Thite Akash Sadashiv	A.S Thite
Inamdar Chaitanya Prasad	C.P. Inamdar
Gaikwad Vishwajit Bharat	VB Gaikwad
Jadhav Vishal Namdev	
Sole Vedant Dipak	V.D.Sole
Bagal Rohan Sanjay	
Nagale Ganesh Aggatrav	
Khandekar Sangram Shivaji	Sangramsk
Dagade Vaibhav Machindra	Pagade.
Karade Shraddha Rajkumar	Karade
Bagal Mukta Bhagawat	M.B. Bagal
Shelake Vaishnvi Bhimarav	Vishnvi
Narale Rutuja Santosh	
Shelake Gauri Tukaram	Shelake.
Devkate Gitanjali Vitthal	G.V.Devkate.
Shevale Vaishali Balasaheb	
Hingmire Shilpa Siddheshwar	Shilpa
Bhosale Prachi Maruti	Bhosale.
Jadhav chitralekha Sharad	Jchitra
Waghmare Prajakta shankar	Pwaghmare
Shendge Dhanashri Dattatray	Dhinde.
Akash Dharmraj Waghmare	Zkash.
Narale Ganesh Dhanaji	Narale
Pawar Ganesh Ramesh	GRpawar
Gulame Harshad Balu	Gulame
Narale Prashant Dhanaji	Prashu
Thite Prathamesh Parmeshwar	Thite.P.P
Sarode Rohit Dadasb	
Someshwar Audumbar Potdar	SA.Potdar
Sarthak Mukesh Koli	S.M.Koli
Ruturaj Vaibhav Aiwale	
Nagarkar Hindlik Deshmukh	

NEW SATARA COLLEGE OF B.C.S. PANDHARPUR

Principal
New Satara College of
Pandharpur.

New Satara College of BCA, Pandharpur

(P.A.H. Solapur University, Solapur)

NOTICE

Date:-16/8/2018

All Students of BCA-I/II & III year informed that has organize "**Class Seminar**" Academic Year 2018-19. is held on 18 Aug. 2018 to 19 Aug. 2018. All student are Compulsory for Seminar .

Subject:-English
Venue:-seminar Hall
Time:-1:30 to 4:30

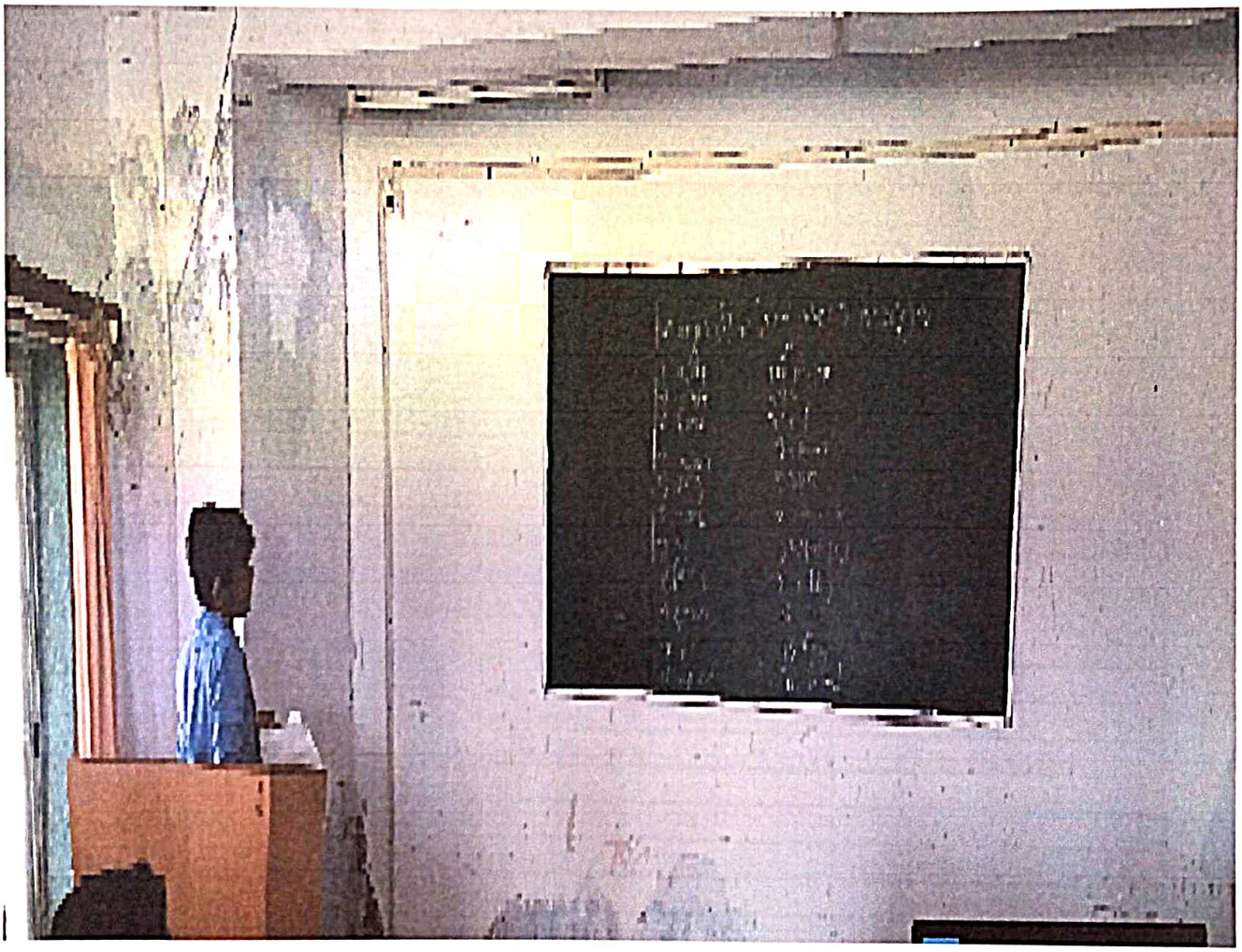
NEW SATARA COLLEGE OF B.C.A. PANDHARPUR

Principal
New Satara College of B.C.A
Pandharpur.

New Satara College of BCA, Pandharpur

(P.A.H. Solapur University, Solapur)

Subject:- English



NEW SATARA COLLEGE OF B.C.A. PANDHARPUR

Principal
New Satara College of B.C.A
Pandharpur.

Attendance Sheet

Name of Student	Sign.
Akash Dharmraj Waghmare	Akash
Narale Ganesh Dhanaji	Narale
Pawar Ganesh Ramesh	Pawar
Gulame Harshad Bala	Gulame
Narale Prashant Dhanaji	Narale
Serade Rohit Dadaso	Serade RD
Thite prathamesh parmeshwar	Thite P.P
Someshwar Audumbar Potdar	S.A. Potdar
Sarthak mukesh koli	S.M. Koli
Ruturaj Vaibhav Aiwale	Aiwale
Pravin Kundlik Deshmukh	
Nagale Ganesh Nagnath	
Bagal Rohan Sanjay	
Khandekar Sangram Shivaji	
Dagade vaibhav machindra	Dagade
Thite Akash Sudarshan	A.S. Thite
Inamdar chaitanya prasad	C.P. Inamdar
Gaikwad Vishwajit Bharat	VB Gaikwad
Jadhav Vishal Namdev	
Sole vedant Dipak	V.D Sole
Rajgude vishal Gorakh	Rajgude V.G.
Mahske Aniket Gulab	
Shinde Rohan Appa	
Yadav Rohan Rajaram	R.Yadav
Rokade Sumit Chandilal	
Gaikwad Rasik Prakash	
Mogal Imran Akhtar	
Bagal shravan Hanmant	S.H.B.
Mogal Azim Iliyas	A.I. Mogal.
Kamble Ganesh Nittatray	
Sahil Madhukar Aiwale	S.M. Aiwale
Shevale Vaishali Balasaheb	
Devkate Kiran Madhukar	K.M. Devkate
Sayyed Lazim Arif	Lazim
Devkate Muktai Vitthal	M.V. Devkate
Thombare Riya Hanumant	
Karade Shraddha Rajkumar	Karade
Bagal Mukta Bhagawat	M.B. Bagal
Nagale Rutuja santosh	
Shelake vaishnvi Bhimrav	
Shelake Gauri Tukaram	Shelake
Devkate Gitanjali vitthal	G.V. Devkate
Hingmire Shilpa Siddheshwar	Shilpa
Shendge Dhanashri Dattatray	Shendge
Waghmare Prajakta Shankar	Waghmare
Bhosale Prachi Maruti	Bhosale
Jadhav chitralekha Sharad	Jadhav

Principal
New Satara College of B.C.A
Pandharpur.

New Satara College of BCA, Pandharpur

(P.A.H. Solapur University, Solapur)

NOTICE

Date:-10/2/2020

All Students of BCA-I/II & III year informed that has organize "**Class Seminar**" Academic Year 2019-20. is held on 12 July. 2020 to 13 July. 2020. All student are Compulsory for Seminar .

Subject:-English
Venue:-seminar Hall
Time:-1:30 to 4:30

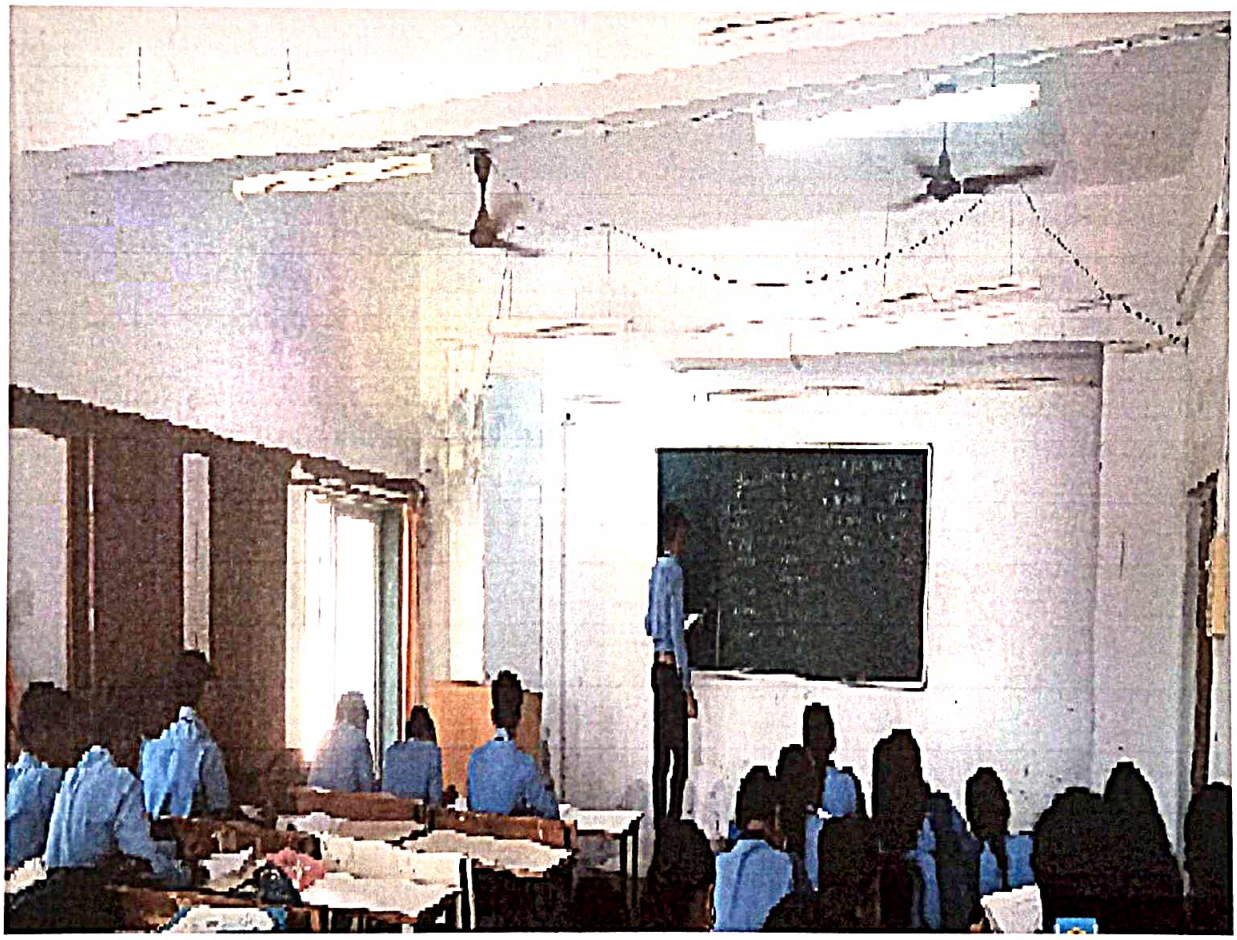
NEW SATARA COLLEGE OF B.C.A. PANDHARPUR

Principal
New Satara College of B.C.A
Pandharpur.

New Satara College of BCA, Pandharpur

(P.A.H. Solapur University, Solapur)

Subject:- English



Principal
New Satara College of B.C.A
Pandharpur.

Attendance Sheet

Name of Student	Sign.
Rohan Sanjay Bagal	
Ganesh Aniruddha Gaikwad Narale	
Sangram Shivaji Khandekar	
Vaibhav Machindra Dagade	
Sonade Rohit Dadaso	
Thite Prathamesh parmeshwar	Thite P.P
Someshwar Audumbar Poldar	S.A.Poldar
Sarthak Mukesh koli	S.M.Koli
Reepuraj Vaibhav Alwale	
Pravin Kundlik Deshmukh	
Gaikwad Vishwajit Bharat	Gaikwad
Jadhav Vishal Namdev	
Sole Vedant Dipak	V.D.Sole
Inamdar Chaitanya Prasad	C.P. Inamdar
Thite Akash Sadashiv	A.S.Thite
Bhadale Sumit Shantilal	
Gaikwad Rasik Prakash	
Yadav Rohan Rajaram	R.Yadav
Maske Aniket Gulab	
Shinde Rohan Appa	
Rajgude vishal Gorakh	Rajgude.V.G.
Mogal Azim Iliyas	A.I.Mogal
Mogal Inzman Akhtar	Amogal.
Bagde Shravan Hanmant	S.H.B.
Kundale Ganesh Dattatray	
Sahil madhukar Alwale	S.M.Alwale
Devkate Muktai Vitthal	M.V. Devkate
Thombare Riya Hanumant	
Shevale Vaishali Balasaheb	
Hingmire Shilpa Siddheshwar	Shilpa
Sayyed Lazing Asif	
Bagal Mukta Bhagwat	M.B.Bagal
Devkate Kiran Madhukar	K.M Devkate
Karade Shraddha Rajkumar	
Narale Rutuja Santosh	
Shelake Vaishnavi Bhimrao	
Shelake Gauri Tukaram	
Devkate Gitanjali vitthal	G.V.Devkate
Jadhav chitralekha Shamal	
Bhosale Prachi Maruti	
Narale pranali Dhanaji	
Gaikwad Harshad Bala	
Pawar Ganesh Ramesh	
Narale Ganesh Dhanaji	
Akash Dharmraj Waghmare	
Waghmare Prajakta Shankar	
Shelke Dhanashri Dattatray	

Principal
Sheradhan College of B.C.A.
Pandharpur.

New Satara College of BCA, Pandharpur

(P.A.H. Solapur University, Solapur)

NOTICE

Date:-13/7/2019

All Students of BCA-I/II & III year informed that has organize "**Class Seminar**" Academic Year 2019-20. is held on 15 July. 2019 to 16 July. 2019. All student are Compulsory for Seminar .

Subject:-English
Venue:-Seminar Hall
Time:-1:30 to 4:30

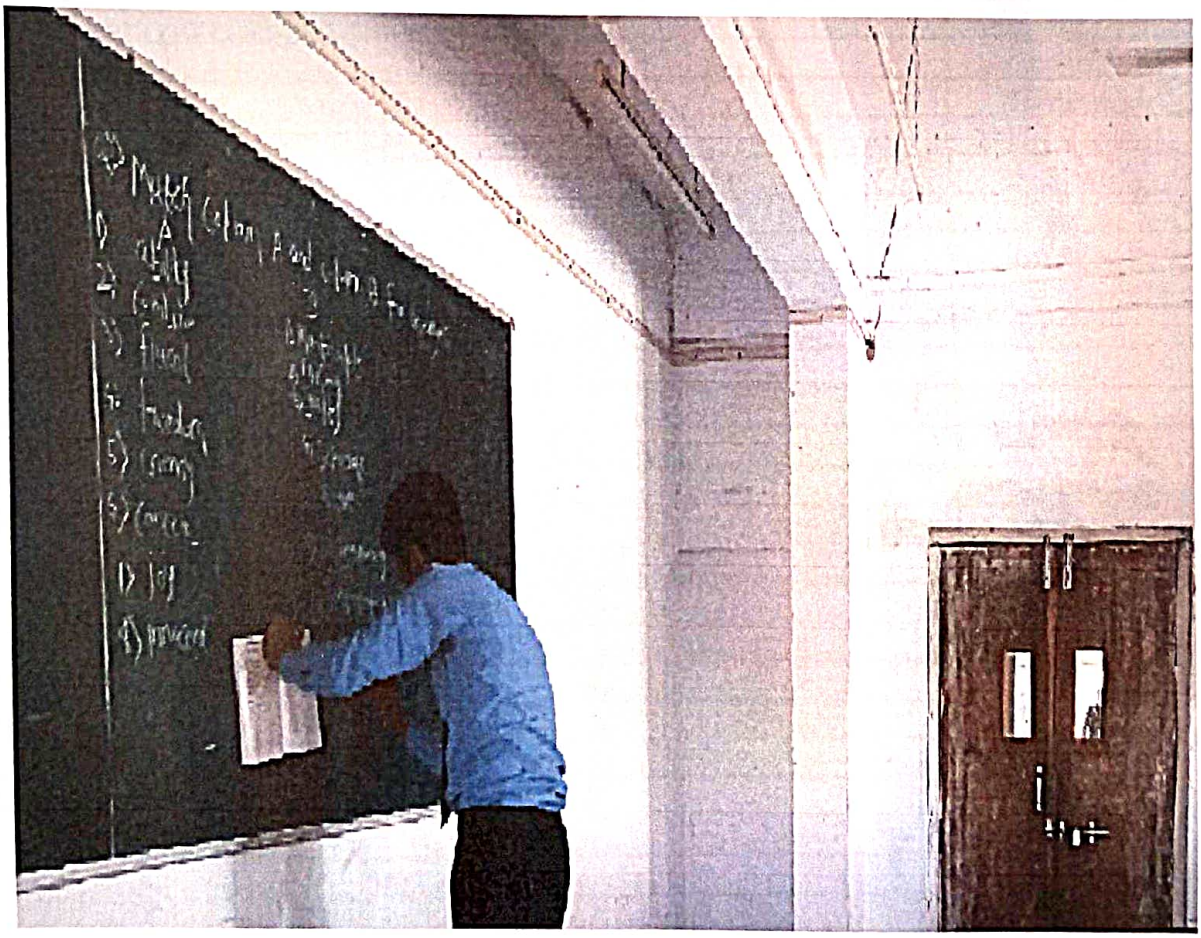
NEW SATARA COLLEGE OF B.C.A. PANDHARPUR

Principal
New Satara College of B.C.A
Pandharpur.

New Satara College of BCA, Pandharpur

(P.A.H. Solapur University, Solapur)

Subject:- English



NEW SATARA COLLEGE OF B.C.A. PANDHARPUR

Principal
New Satara College of B.C.A
Pandharpur.

Name of Student	Sign.
Lazina Asif Sayyed	Lazina.
kiran Madhukar Devkate	K.M.Devkate
Muktai Vitthal Devkate	M.V.Devkate
Riya Hanumant Thombare	
Sahil Madhukar Alvale	S.M.Alvale.
Ganesh Rattatray Kamble	
Azim Iliyas Mogal	A.I.Mogal
Bagal shreyan Hanmant	S.H.B.
Mogal Inzmam Akhtar	Imogal.
Gaikwad Rasik Prakash	
Pokale. Sumit Shantilal	Pokale
Yadav Rohan Rajaram	R.Yadav
Naske Aniket Gullab	
Rajgude Vishal Gorakh	Rajgude V.G.
Thite Akash Sadashiv	A.S Thite
Inamdar Chaitanya Prasad	C.P. Inamdar
Gaikwad Vishwajit Bharat	VB Gaikwad
Jadhav Vishal Nanadev	
Sole Vedant Dipak	V.D.Sole
Bagal Rohan Sanjay	
Nagale Ganesh Adgatrav	
Khandekar sangram shivaji	
Dagade Vaibhav machindra	Dagade
Narade Shraddha Rajkumar	
Bagal Mukta Bhagawat	M.B. Bagal
Shelake vaishnvi Bhimarav	Vishnavi
Narale Rukuja Santosh	Rale
shelake Gauri Tukaram	Shelake.
Devkate Gitanjali Vitthal	G.V.Devkate.
Shevale Vaishali Balasaheb	Shilpa
Hingmire Shilpa Siddheshwar	
Bhosale Prachi Maruti	Bhosale.
Jadhav chitralekha Shamd	Chitra
Waghmare Prajakta Shankar	Pwaghmare
Shendge Dhanashri Dattatray	Dhinekar.
Akash Dharmraj Waghmare	Akash.
Narale Ganesh Dhanaji	Narale
Pawar Ganesh Ramesh	Pawar
Gulame Harshad Balu	Gulame
Narale Prashant Dhanaji	Prashant
Thite Prathamesh Parmeshwar	Thite.P.P
Sarode Rohit Dadasa	
Someshwar Audumbar Potdar	S.A.Potdar
Sarthak Mukesh kali	S.M.Kali
Kategaj Vaibhav Aiwale	
Pawar Kundlik Deshmukh	

NEW SATARA COLLEGE OF B... PANDHARPUR

Principal
New Satara College o...
Pandharpur.

New Satara College of BCA, Pandharpur

(P.A.H. Solapur University, Solapur)

NOTICE

Date:-8/9/2021

All Students of BCA-I/II & III year informed that has organize "**Class Seminar**" Academic Year 2021-22. is held on 10 Sep. 2021 to 11 Sep. 2021. All student are Compulsory for Seminar .

Subject:-English
Venue:-seminar Hall
Time:-1:30 to 4:30

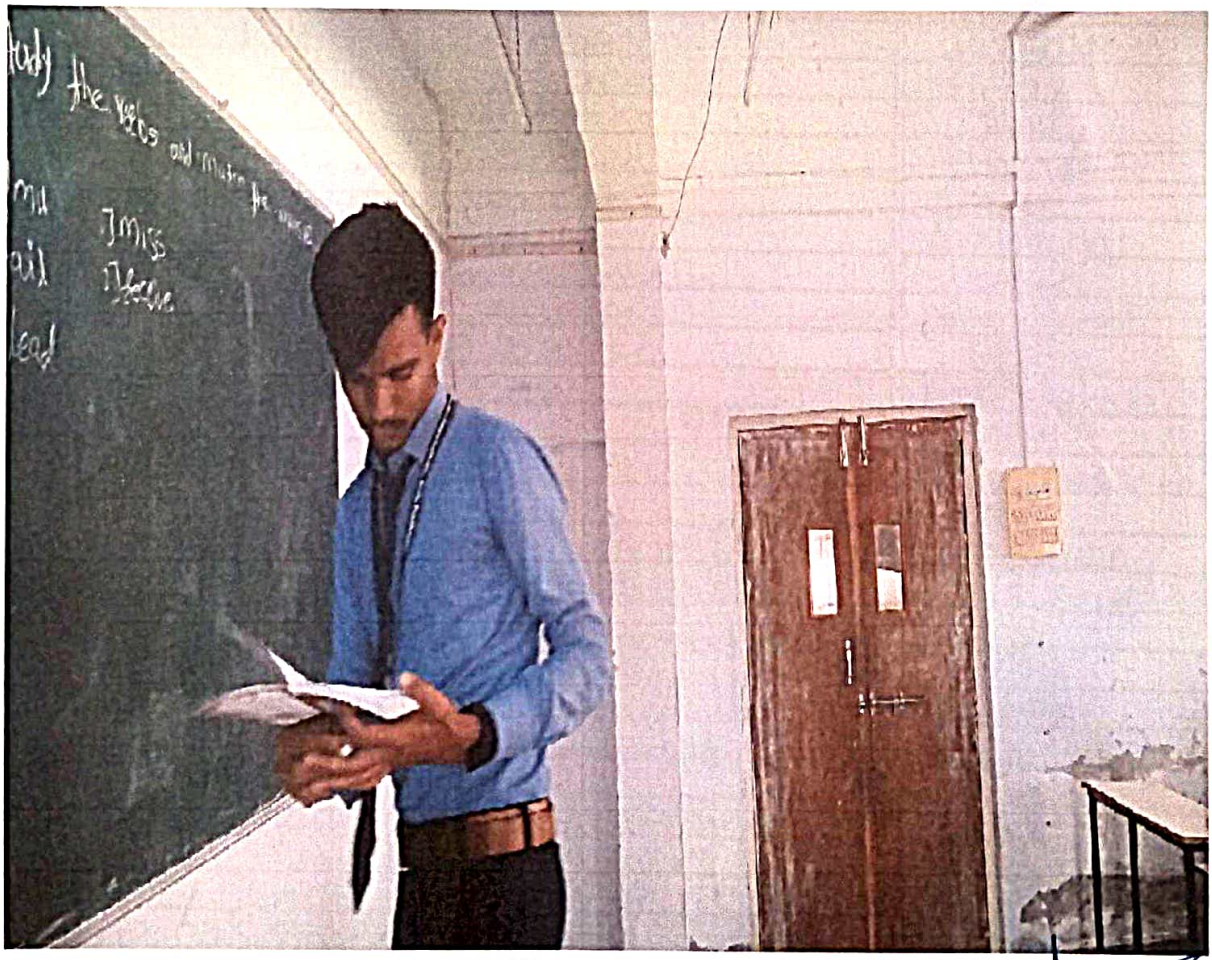
NEW SATARA COLLEGE OF B.C.A. PANDHARPUR

Principal
New Satara College of B.C.A
Pandharpur.

New Satara College of BCA, Pandharpur

(P.A.H. Solapur University, Solapur)

Subject:- English



NEW SATARA COLLEGE OF B.C.A. PANDHARPUR

Principal
New Satara College of B.C.A
Pandharpur.

Name of Student	Sign.
Akash Dharmraj Waghmare	Akash
Narale Ganesh Dhanaji	Narale
Pawar Ganesh Ramesh	G.R.Pawar
Gulame Harshad Balu	Gulame
Narale Prashant Dhanaji	Narale
Sarade Rohit Dadaso	Sarade R.D
Thite prathamesh parmeshwar	Thite P.P
Someshwar Audumbar Potdar	S.A. Potdar
Sarthak mukesh koli	S.M. koli
Ruturaj Vaibhav Aiwale	
Pravin Kundlik Deshmukh	
Nagalp Ganesh Aagatrav	
Bagal Rohan Sanjay	
Khandekar Sangram Shivaji	Sangramsinh.
Dagade vaibhav machindra	Dagade
Thite Akash Sudarshan	A.S. Thite
Inamdar chaitanya prasad	C.P Inamdar
Gaikwad Vishwajit Bharat	VB Gaikwad
Jadhav Vishal Namdev	
Sole vedant Dipak	V.D sole
Rajgude vishal Gorakh	Rajgude V.G.
Maske Aniket Gulab	
Shinde Rohan Appa	
Yadav Rohan Rajaram	R.Yadav
Bhagde Sumit Shantilal	
Gaikwad Rasik Prakash	
Mogal Imran Akhtar	I.A.Mogal
Bagal shravan Hanmant	S.H.B.
Mogal Azim Iliyas	A.I. Mogal.
Kumbhar Ganesh Dattatray	
Sahil Madhukar Aiwale	S.M. Aiwale.
Shevale Vaishali Balasaheb	
Devkate Kiran Madhukar	K.M. Devkate
Sayyed Lazim Arif	Lazim
Devkate Muktai Vitthal	M.V. Devkate
Thombare Riya Hanumant	
Karade Shraddha Rajkumar	Karade
Bagal Mukta Bhagawat	M.B. Bagal.
Narale Rutuja santosh	
Shelake vaishnvi Bhimrav	
Shelake Gauri Tukaram	Shelake.
Devkate Gitanjali vitthal	G.V. Devkate
Hingmire Shilpa Siddheshwar	Shilpa
Shendge Dhanashri Dattatray	
Waghmare Prajakta Shankar	Waghmare
Bhosale Prachi Maruti	Bhosale.
Jadhav chitralekha Sharad	

NEW SATARA COLLEGE OF B.C.A. PANDHARPUR

Principal
New Satara College of B.C.A
Pandharpur.

New Satara College of BCA, Pandharpur

(P.A.H. Solapur University, Solapur)

NOTICE

Date:-15/3/2022

All Students of BCA-I/II & III year informed that has organize "**Class Seminar**" Academic Year 2021-22. is held on 17 March. 2022 to 18 March. 2022. All student are Compulsory for Seminar .

Subject:-English
Venue:-seminar Hall
Time:-1:30 to 4:30

Principal
New Satara College of B.C.A
Pandharpur.

NEW SATARA COLLEGE OF B.C.A. PANDHARPUR

New Satara College of BCA, Pandharpur

(P.A.H. Solapur University, Solapur)

Subject:- English

NEW SATARA COLLEGE OF B.C.A. PANDHARPUR

Principal
New Satara College of B.C.A
Pandharpur.

Devkate Gitanjali vitthal	G.v.Devkate
Shevale Vaishali Balasaheb	Shevale
Hingmire Shilpa Siddheshwar	Shilpa
Shelake Gauri Tukaram	Shelake.
Someshwar Audumbar Potdar	S.A.Potdar
Sonthak Mukesh Koki	S.M.Koki
Ruturaj Vaibhav Alwale	Alwale
Pawar Kunlik Deshmukh	Pawar
Bugal Rohan Sanjay	RSB
Nagalp Ganesh Aaghav	
Khandekar Sangram Shivaji	Sangramik.
Dagade vaibhav machindra	Dagade.
Thite Akash Sadashiv	A.S.Thite
Inamdar chaitanya Prasad	C.P.Inamdar
Gaikwad Vishwajit Bharat	Gaikwad
Jadhav Vishal Nandev	Vishal
Sole vedant Dipak	V.D.Sole
Shinde Rohan Appa	Rohan
Rajgude Vishal Gorakh	Rajgude.V.G.
Maske Aniket Gulab	Maske
Yadav Rohan Rajaram	R.Yadav
Pokale Sumit Shantilal	Pokale
Gaikwad Rasik Prakash	Rasik
Mogal Inzmam Akhtar	Imogal.
Bagal shravan Hanmant	S.H.B.
Mogal Azim Mo.Iliyas	A.I.Mogal
Kandare Ganesh Duttatray	Ganesh
Sahil madhukar Aiwale	S.M.Aiwale
Thembare Riya Hanumant.	
Sayyed Lazina Arif	Lazina
Devkate kiran Madhukar	K.M Devkate
Devkate Muktai Vitthal	M.V. Devkate
Karade Shraddha Rajkumar	Karade
Bagal Mukta Bhagawat	M.B. Bagal.
Nardle Rutuja Santosh	Nardle
Shelake Vaishnavi Bhimrao	Vishnavi
Pawar Ganesh Ramesh	Ganesh
Gulame Harshad Balu	Gulame
Narale Prashant Dhanaji	Prashant
Narale Ganesh Dhanaji	Ganesh
Akash Dharmraj Waghmare	Akash.
Sarode Rohit Dadasa	Sarode
Thite Prathamesh Parmeshwar	Thite P.P
Bhosale Prachi Maruti	Bhosale.
Jadhav chitralekha Sharad	Jchitra.
Waghmare prajukta Shankar	Waghmare

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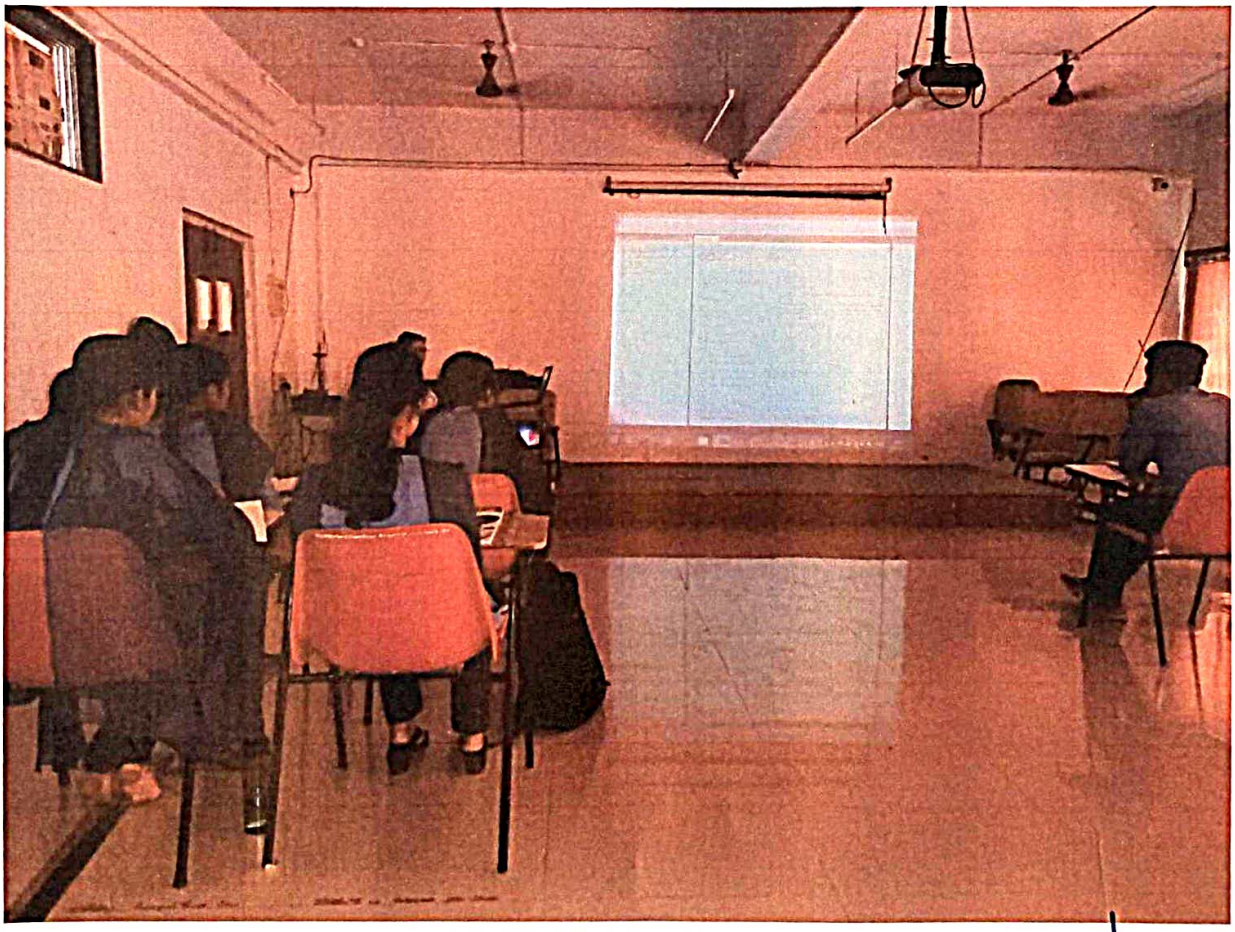
ASP.NET LECTURE



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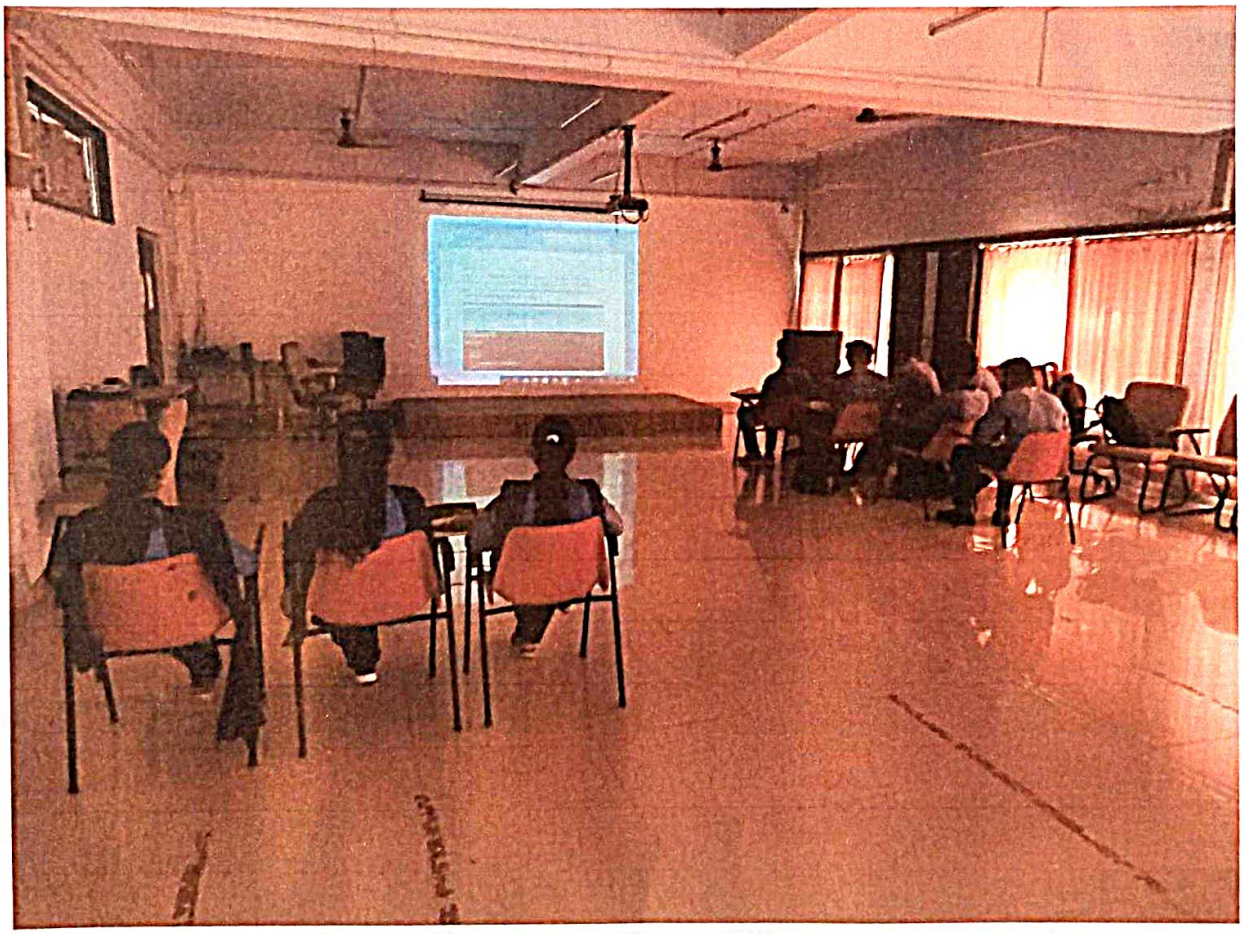
VISUAL PROGRAMMING



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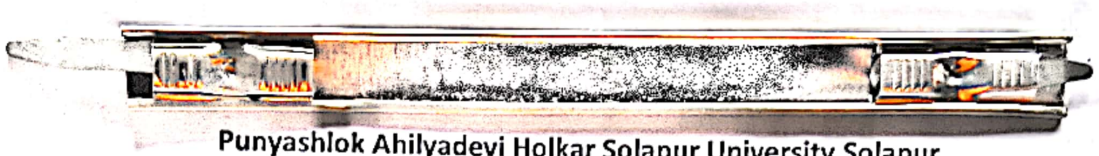

Punyashlok Ahilyadevi Holkar Solapur University,Solapur

College Code :-NSCBP

Name of Student:-

Academic Year :-2022-23

Class :-BCA-I Sem-II

Sr. No	Subject	Total Assignment	Assignment / Printouts / Project	Staff Sign	Remark
1	English Paper I Part-B (Communication Skill)	3+2	3		
2	Introduction to Python Programming	3+2	2		Completed
3	Operating System	3+2	3+2		Completed
4	Programming and Problem Solving using 'C' – II	3+2			
5	Web Programming-II	3+2	2		Completed.
6	Graph Theory	3+2	3+2		Completed
7	Probability Thoery	3+2	2+2		completed
8	Digital Fundamentals of Computer	3+2			
9	Introduction of Microprocessor and Interfacing	3+2			

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Name :- Devkate Kiran Madhukar

Class :- B.C.A. - I st year

Roll No. :- 115

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English

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Name :- Devkate kiran Madhukar

subject :- English

Roll.No :- 113

Assignment.No :- 1

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Q. 1>

A] Fill in the blanks with the past forms of the verbs given with the brackets.

i) we ---- (go) to Bhutan last year

⇒ we went to Bhutan last year.

ii) we ---- (see) a Movie yesterday

⇒ we saw a movie yesterday.

iii) Ankit ---- (study) ~~known~~ Korean languages for five years

⇒ Ankit studied Korean language for five years

iv) Mitul ---- (be) a very shy child

⇒ Mitul was a very shy child

v) Mechanic (repair) the car

⇒ The Mechanic repaired the car

B> Fill in the blanks with the past tense forms of the verbs given with the brackets.

1> Mitul ... of th...

⇒ Mitul ... of th...

2> They ... attend...

⇒ They ... attend...

3> We ...

⇒ We ar...

4> Ravi ...

⇒ Ravi sm...

5> I (know ... days.

⇒ I know ... days.

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B) Fill in the blanks with the present tense form of the verb given in brackets

1) Mitul ___ (understand) the importance of the issue

⇒ Mitul understands the importance of the issue

2) They ___ (come) here everyday to attend the classes

⇒ They come here everyday to attend the classes.

3) we ___ (be) in the team

⇒ we are in the team.

4) Ravi ___ (smoke) regularly

⇒ Ravi smokes regularly

5) I (know) kavita since my college days

⇒ I know kavita since my college days.

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Name :- Devkate kiran Madhukar

Subject :- English

Roll No :- 113

Assignment No :- 2

Q 1) Answer the following questions in one sentence each.

1) What kind of men made the a... live in?

⇒ The men who did not have any education have made the age... live in.

2) What benefit could be derive... struggle of youth?

⇒ The struggle during youth g... them the proper opportunity ... establish him/her properly ... profitably in life.

3) What are the common factor... among men of eminence?

⇒ They came from ordinary fam... and they had to struggle ha... achieve success.

4) ... opinion does the auth... of his teacher?

⇒ Bertrand Russell feels that ... teachers kill originality and ... on the students what is w... in books and expect that th... students must feel and thi... they do

5) What ... exam...

⇒ The ... us a... and ... is t... knou...

2) Answe... one ...

1) What ... of th...

⇒ prais... have ... the ... that ...

1) What ... under...

⇒ The ... that h... in t...

3) What ... flatter...

⇒ The peop... into h...

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5) What is the significance of the example of the hippopotamus?

⇒ The example of hippopotamus makes us aware that going to nature and not reading thins in books is the right and proper way to get knowledge.

2) Answer the following questions in one sentence each.

1) What has affected the psychology of the people? and how?

⇒ praise, pretense and deceit have affected the psychology of the people by making them believe that they are the rulers.

2) What was the kings made to understand ~~that he was the freest person in the world~~ in the world?

⇒ The king was made to understand that he was the freest person in the world.

3) What are the people in the west flattered into believing?

⇒ The people in the west are flattered into believing that they are the rulers.

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4) Regarding the essence of fr
what is the mob-mide allo

⇒ They are made to believe th
sire the rulers, while they
lost that power long back a
their actions have been re
controlled out of greed of p
and money.

5) what are the outcomes of
psychology that deals with
terror?

⇒ The psychology of terror ta
to a new form of bondage,
our right to develop freely

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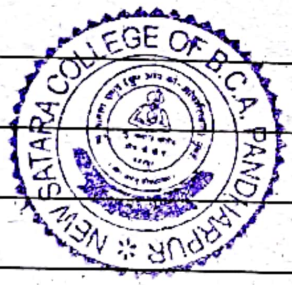
Name :- Devkate Kiran Madhukar

subject :- English

Roll No :- 113

Assignment No :- 3



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Q 1) write any job application letter for software developer.

Kiran Devkate
software developer
00350846211
kiranDevkate@238gmail.com
linkedin.com/in/Devkate kiran

Avira Ray
Hiring Manager
creestal
37. latif House, iron Market, ch
Bunder
Mumbai

Dear Mr. Ray,

I was thrilled to learn about
Job opening for the position
senior software developer
creestal As a software de
Appify This. I achieved a
creases in critical err
rough designing and runnin
testing processes, as well
created new Javascript co
for time on page for the ave
user by 14 minutes I am eag
utilize My programming skills
helps creestal with reach
new prospective buyers by
improving the fetures and
speed of the

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The job posting mentions that creestal is looking for a senior developer who has expertise in designing ecommerce applications Agile project management and training and also percentage of last year

- school /clg 83.50% are gives to in 12th std and 91.20% marks are gives to 10th std

- E commerce apps My experience includes designing e-commerce solutions for partner companies, including an app for a retailer that helped to boest the number of active users by 27%.

- Training over the years I lead programming courses for Junior developer to improve their knowledge of python and javascript

If you're wondering why I'm interested in Joining creestal It's simple creestal is a leading online shopping

platform for raw materials attrac-ting buyers from all over the world I'm truly impressed with the resiliency creestal has shown during the Pandemic

when similar online mar
failed to satisfy their
expections working in su
dynamic environment would
amazing
opportunity to grow prof

Q. 2) Make a 5 Minute presenta
introduce in an interview y
include the following point

1) Who are you ?

⇒ I am kiran Madhukar Devkate
student of BCA and have ex
in all my studies due to
position and dedication
a hardwaring individual
thriues from gaining new
and information my intere
outside of my professiona
include travelling linge
include reading I am a st
team player a good lea
I am extermely
myself an exceptional m
kindness

2) Where do you come from ?

⇒ I am came from a small
city i.e Baramati I am
middle class family my
comprises of my mother

brother They
I have been
casting eth
along

3) What is your

⇒ I have complet
Bori highschool
91.20% in m
to my higher
on from N
junior colleg
science bra
83.50% in M
currently pa
satara colleg
pandharpur

1) Who are you

⇒ I am a stron
good leader
teams for te
activities du
days I have
carres, which
adapt me in
which is si
my training

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brother They have learn always I have been bigger vision and casting ethice & values all along.

3) What is your educational qualification

⇒ I have completed my schooling from Bori highschool Bori. I have scored 91.20% in my 10th boards completed to my higher my secondary education from Nandikeshwar vidyalaya junior college junction with science branch and scoring 83.50% in My 12th boards I am currently passing BCA from new satara college of BCA korti pandharpur

4) Who are you as a proffetional?

⇒ I am a strong team player a good leader I have been leading teams for technical and cultural activities during my colledge days I have a sharp learning carres, which with help to adapt me in new environment which is significantly lessn's my training cost

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5) Why do you think you are ... this Job.

⇒ I believe that I am best ... te for this for Jobs bec... of my dedication to my ... from me any my correx ... most Im thing in my ... this has been provid ... time again and determin ... by hiring me this is exa ... what you will be getting ... is not simply a job to ... is a way of life.

Thank

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DATE:

Name :- kiran Madhukar Devkate

Sub :- python

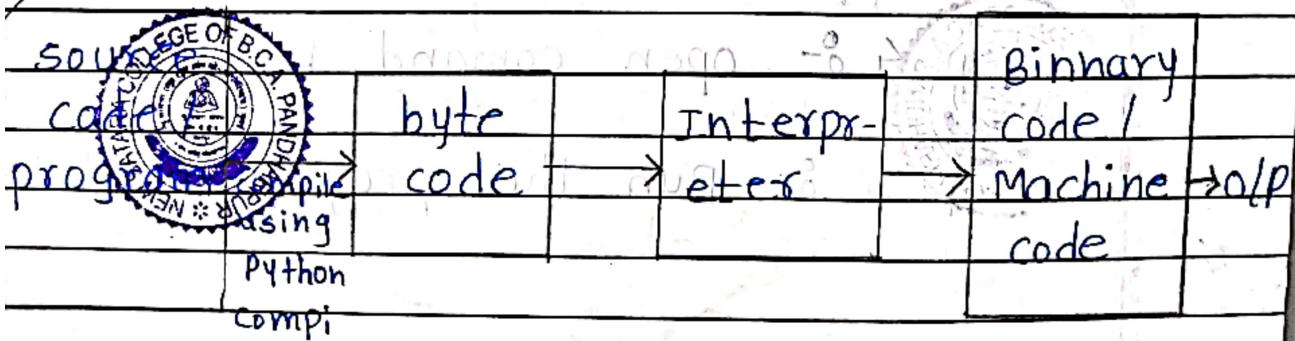
Roll.No :- 113

Assignment No :- 1

Explain python virtual Machine (pvm).

python virtual Machine (pvM) is a program which provides programming enviroment The role of pvM is to convert the byte code instruction into Machine code so the computer can execute those Machine code instruction & display the output.

Interpreter converts the byte code into Machine code and sends that Machine code to the computer processor for execution.



2> Features of python ?

⟹ i> Easy to learn
ii> platform independent
iii> code readable
iv> portable
v> Memory Management
vi> Exception Handling support
vii> Function Handling support
viii> Dynamic type programming languag
ix> Automatic Memory Management
x> processor oriantate

3> steps for Execution of python progr

⟹ step 1 :- open the notepad

step 2 :- write a program

step 3 :- save the program with extention.

4 :- open comand form

5 :- Run the program (ctr

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operator's in python

1) python Arithmatic operator

Arithmatic operator are used to perform Mathematical operations like addition, substraction, Multiplication etc.

for. ex. sub = 10-5.

2) python Assignment operator

Assignment operator are used to assign values to variables.

for. ex. # assign 5 to x

var x = 5

Here (=) is an assignment operator that assign 5 to x.

3) python logical operator

logical operator are used to check whether an expression is True or False They are used in decision Making

for ex a=5

b=6

print ((a>2) and (b>=6))

Here and is the logical operator AND since both a>2 and b>=6 are True the result is True.

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4) Python Bitwise

Bitwise operator act
operands as if they were
of binary digits They ope
bit by bit. hence the nam

5) python special operators

python language offers
special types of operators li
identity operator and the
operator.

They are described belo
example.

Identity operators

Ex. $x_1 = 5$

$y_2 = 5$

$x_2 = 'Hello'$

$y_2 = 'Hello'$

$x_3 = [1,2,3]$

$y_3 = [1,2,3]$

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PAGE NO.
DATE:

Explain variable, identifier and literals in python.

1) variable :-

A python variable is a symbolic name that is a reference as pointer to an object.

Once an object is assigned to a variable you can refer to the object by that name.

e.g n = 300

where n is the name given to variable.

python variables type :-

a) Numbers
b) string
c) list
d) Tupple

2) Identifier :-

All the variables, class, object, functions, lists, dictionaries etc. in python are together formed as python identifiers.

Rules for using python identifier.

1) An identifier should not to be keyword.

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2) identifier name can begin wit
or undercase only
3) can contains both numbers
along with undercases (A-2
4) It is case sensitive i.e
SUM are two different Iden

3) Literals :-
Literals can be de
a data that is given in a va
or constant.

python support the Following

1) Numeric Literals :-
Numeric Liter
immutable They are of 4 types
1. int (signed integers)
2. long (long integers)
3. float (floating point)
4. complex (complex)

ng literals :-
can be form
luding a text in the quot
both single and double quo

Types of string literals :-
1) single line
2) Multi line

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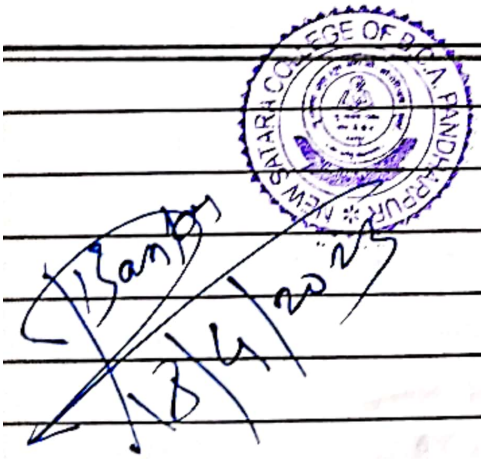
3) Literal collections :-
collection such as typples, lists and dictionary are used in python.

4) special literals :-
collection contains one special literals i.e. Non which is used to specify that no field is created

5) Bualean literals :-
Bualean literals can those any two value's TRUE or false



Name :- kiran Madhukar Devkate
sub :- python programming -I
Roll No :- 113
Assignment No :- 2

Answer Any Five of the following

WAP to print the table of any number ?

```
num = int (input the number : "))
print (" multiplication Table of ", num)
    for i in range (1, 11):
    print (num, "x", i, "=", num * i)
```

WAP to check for leap year

```
Form array import *
year = int (input (" enter the year to
                    check"))
    if (year % 4 == 0)
    print (" Its leap year")
        else :
    print (" Its not leap year")
```

WAP to print swap number to take number from user ?

```
a = int (input (" Enter the First number : "))
b = int (input (" Enter the second number :"))
        a = a * b
        b = a+b
        a = a+b
print (" swapped number of number 1 is
 %d & number 2 is %d" % (a, b))
```

Explain array in python with

1) one dimensional array :-
one dimensional means single row and mul columns.

2) Multiple dimensional array
multiple dimens array means multiple row an columns.

Array :- Array is a collection similar data atoms which common name.

Basically array is an obje python Array object are dy in nature.

syntax :-

```
arrayname = array('typecode'[e
```

e.g. array('i',[1,2,3,4])

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1) Insert ( ) :-

The insert ( ) method inserts the specified value at the specified position.

```
e.g  a = array ['i'[10, 20, 30, 40, 50])
     a.insert (1, 100)
     print (a)
```

2) append ( ) :-

```
e.g  a = array ('i'[10, 20, 30, 40, 50])
     a.append (100)
     print (a)
```

3) Extend ( ) :-

The extend ( ) method adds the specified list element to the end of the current list.

```
e.g  a = array ('i'[10, 20, 30, 40, 50])
     a2 = array ('i'[101, 102, 103, 104])
     a.extend (a2)
     print (a)
```

4) remove ( ) :-

You can use the pop ( ) method to remove a element from the array.

```
e.g  cars = ["Ford", "Volva", "Bmw"]
     cars.pop (2)
     prints (cars)
```

5) Index ( ) :-

The index ( ) method returns the position at the First occurance of the specified value.

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e.g. Fruits = ["apple", "banana",
x = Fruits.index["cherry"]
print (x)

Explain the commond line arg
in python.

python commond line argument
input parameter passed to the
when executing them.
- Almost all programming language
support for command line arg
- Then we also have command
option to set same specifi
options for the program.
The three most common o
1) python sys.argv
2) python getopt module
3) python arg.parse

python sys module stores
command line argument into a li
can access it using sys.argv

Write short note on :-
e suite :-
In python it is
to use 'else' statement alon
for loop or while loop in the
shown in table

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For with else	while with else

for (var in sequence)
statement
else :
statement
	while (condition):
	statements
	else:
	statement

The else suite will be always executed irrespective of the statement in the loop are executed or not.

2) literals :-

Literals can be defined as a data that is given in a variable or constant.

python support the following literals

1) Numeric literals
2) string literals
3) literal collections
4) special literals
5) Boolen literals

3) identifier :-

All the variables, class, object, function, lists, dictionaries in python are together formal as python identifiers

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1) An identifier should not to be keyword
2) identifier name can begin with a

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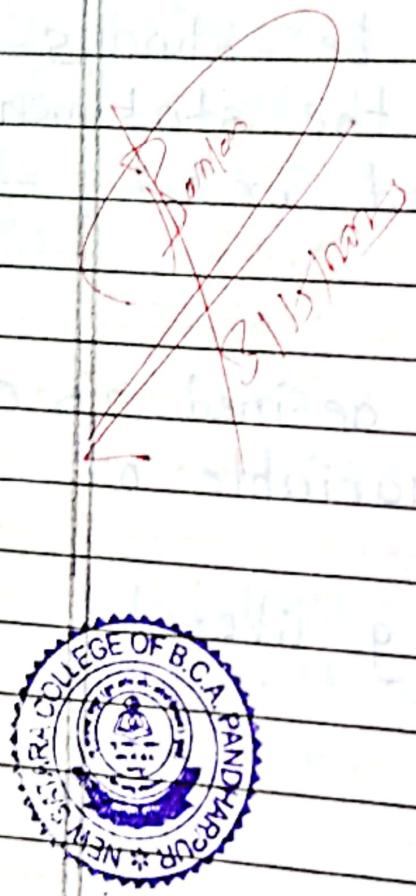
leeters or undercase only
3) can contains both numbers
letter along with undercase
(A-Z, 0-9, and)
4) It are two different Identi



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Operating System

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Affiliated to Solapur University, Solapur.
Semister/Annual 2022 / 2023
Name Kiran Madhukar Devkate Roll No. 113
Course BCA-I
Subject Operating system
Year I/II/III
22/5/2023

20/20

It may happend that process in ready Queue can be devided into different class. each equeue have its own scheduling need.

The process is permently assigned to one queue. generally basic sum-property such that memory size, process priority and process type.

each process has its own scheduling Algorithm

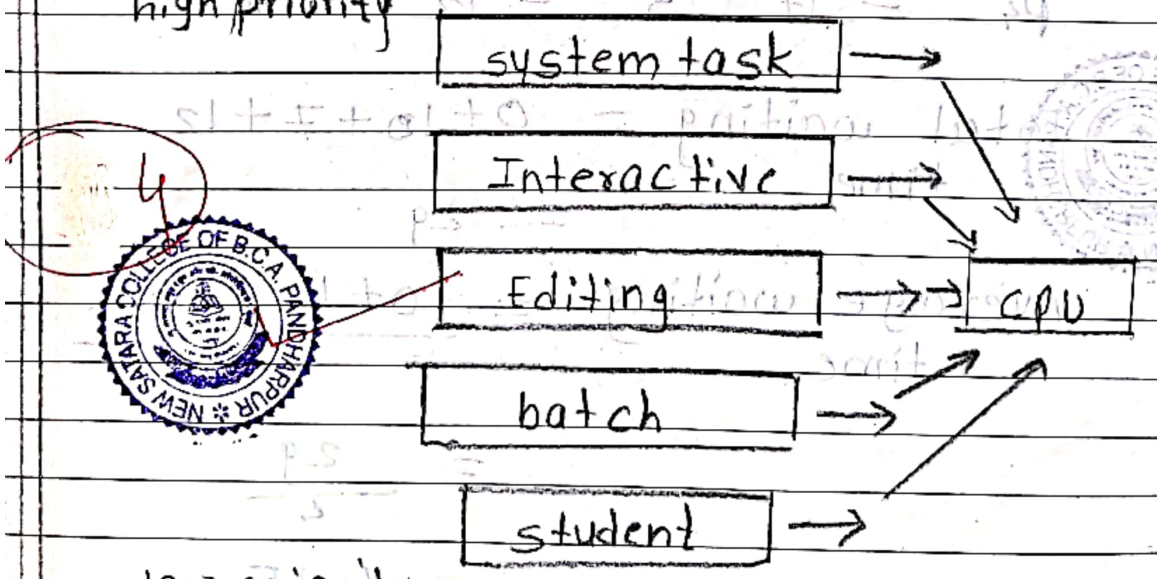

fig Multilevel skhedduling Queqy.

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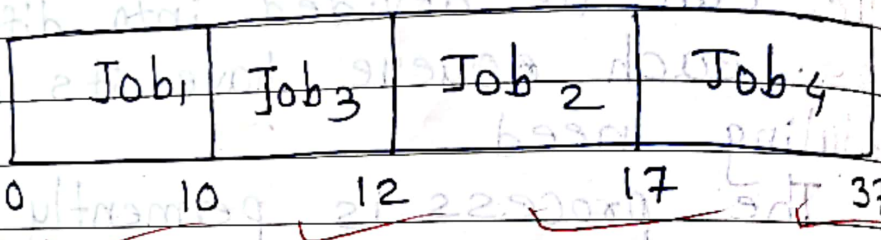
(Q2)

Job	Arrival time	Burst time
1	0	10
2	2	5
3	3	2
4	5	20

non preemptive mode.

Gnatt chart :-

(2)



(1)

waiting time = Initial time - arrival time

$P_1 = 0 - 0 = 0$

$P_2 = 12 - 2 = 10$

$P_3 = 10 - 3 = 7$

$P_4 = 17 - 5 = 12$

Total waiting time = $0 + 10 + 7 + 12$

$= 29$

Average waiting time = $\frac{0 + 10 + 7}{4}$

$= \frac{29}{4}$

$= 7.25$

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1) Turn around time = completion time − arrival time

P1 = 10 − 0 = 10
P2 = 17 − 2 = 12
P3 = 12 − 3 = 9
P4 = 37 − 5 = 32

Total Turn around time = 10 + 12 + 9 + 32

= 63

Average Turn around time = $\frac{10 + 12 + 9 + 32}{4}$

= $\frac{63}{4}$

= 15.7

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Q3.)

1) 1) cpu utilization :- when cpu very expensive we want kee as Busy as possible

2) Throughput :- one measure number of Job complete per ti is Throughput

3) Turn around time :- The Inte type of submission to the t complition.

4) waiting time :- waiting time is time Job spends in the re Queue

5) Response time :- time spent between Request of submissi and getting First response is called Response time.

2) rating system maintain all ontrol block in the process scheduling Queue

Their are three types of pr scheduling Queue

1) Job Queue :- The Job Queue all process in the system

2) ready Queue :- keeps all process residi

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3) Device queue :- The process which are blocked due to unavability deleting I/o Device.

Their are three types of scheduling
1) long term schedular
2) short term schedular
3) medium term schedular

3) medium term schedular :- This is a process take care swap out the process if process is running state some I/o. for the process execution.

Multilevel Feedback Queue are the process scheduling Queue which allows Job ~~re~~ move between Queue the idea for the Job use much cpu time for the move low priority Queue.
similarly a process which waiting long for low priority Queqy due to move high priority Queqy.
Job are assigned to Queqy enter to the system.

FCFS :-
This is a simple algorithm of First come First serve. That is a process request to cpu First allowed to the cpu First
It implemented manage by

(FIFO) First in First out
A process is enter the
add to the Queue end of
Queue.
when CPU is Free the
is in the Queue head of
process Running state to
waiting state

7) Non preemptive Algorithm :-
Here
resources can't be taken from
the process is called non
preemptive Algorithm

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18/20

Page No
Date

New Satara College of B.C.A. Pandharpur
Affiliated to Solapur University, Solapur.
Semister/Annual 2022 / 2023

Name...Kiran Madhukar Devkate ...Roll No...113...
Course...B.C.A.-I ...Year I/II/III
Subject...operating system ...Date..28/4/2023

Supervisor Sign. Attakar 28/4/23

Que. No.	1	2	3	4	5	6	7	8	9	10
Marks	5	5	8							

Obtained Marks ... Examiners Sign.

1) operating system definition :-
operating system is a program which act as interface between user of computer and hardware.

goals of operating system :-
primary goal to make user convinent to computer.
secondary goal is convient to computer hardware and Mang ner.

5

s of operating system :-

1) batch operating system :-
Batch operating system is do not intract computer directly To speed of processing Jobs with similar needs are batch

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together run as a group

2) Time sharing :-

Time sh
is a technique which e
many people located at
terminal on the compu
system.

3) Multiprograming :-

Multipro
is an attempt to increase
CPU utilization by someth
CPU to execute
operating system picks
Job in Job pool Job
have something I/O.
Now multiprogramming ne
wait for I/o
nsted operating syst
s simply switch to an
Job and execute it
As several Job os cha
one Job to executing
program and back to
called Job scheduling

Monitor
Job 1
Job 2
Job 3

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4) Real Time :-

Real Time operating system are ofen to application of dedicated application Real Time operating system has well fixed time consentrans.

5) Distributed operating system :-

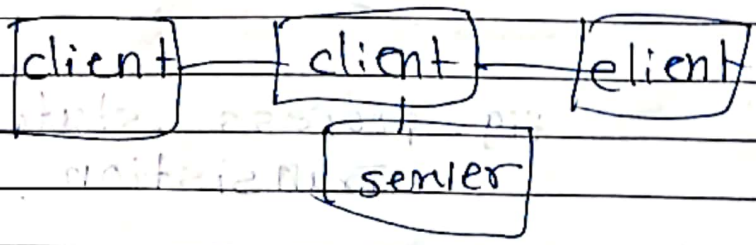
Networking is the Distributed operating system. Distributed system depends on the Networking and their functionality.

LAN (Local area netwok) :- are exsist with in city Flour, bulding.

MAN (Metro polinate area network) :- are exsist with in buldings with in cities.

WAN (wide area network) :- are exsists with in cities, cantry.

client server system :-



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Q 2) process state Transitio

A program address
has been secondary mem
process is wait for spe
event A process is Runn
swapped.

3 process state :-

Ready, Running, waiti

Transistion is the proces
in which something are
one state to another
state

5

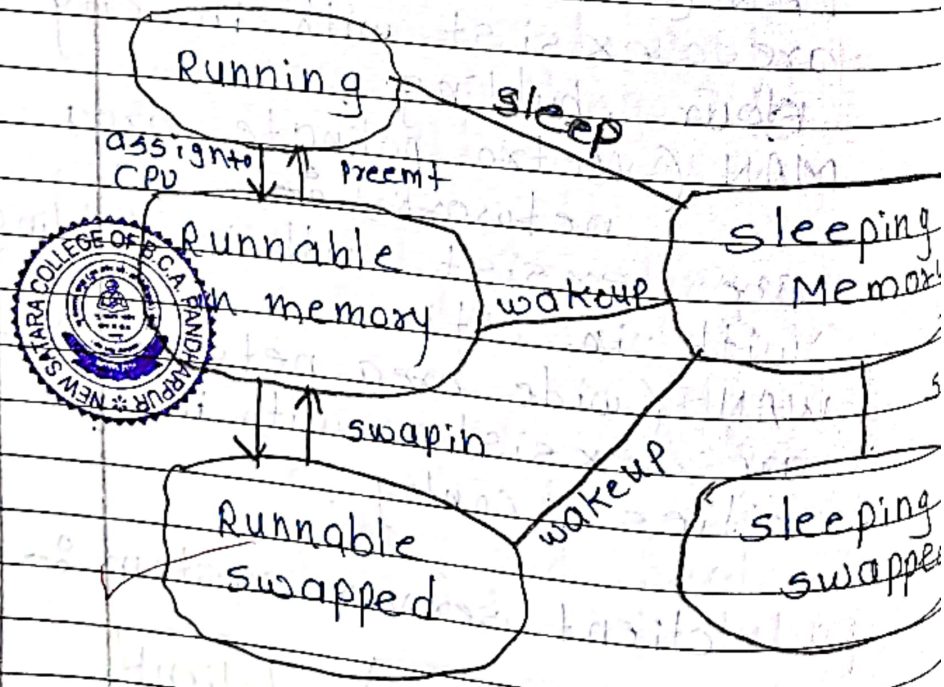

fig. process state Transistion.

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Roll.No-113

Name: Kiran Madhukar Devkate

28/4/23

1) The process is Running state if the process is assign to cpu.
2) The process is remove from Running state by its schedular
3) The process is also preemted process is equal periority
4) A process is sleeping in the memory But it primary memory is wait for specific specific event and process is ~~Runnable~~ before continous executing.
5) A process address space has been secondary memory process is wait for specific event. A process is Runnable in swapped
6) The process is wait for specific event in the Runable swapped
7) Then the process is Runnable swapped in the Runnable swapped then ~~aft~~ process is Runnable in memory the back to cpu.

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Q. 4)

1) virtual Machine are the

2) Monolitic and layered sy

Monolitic system :-

It is t

very basic operating sys

in which process manage

memory management, devic

management, file manag

are directly control wit

kernel.

kernel : can access all

present in system.

Layered system :-

layered s

is a system structure

all resources inthe ope

system are split into va

layer

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(3) process state :-

Their are 4 process state Ready, active, halted, waiting

process definition :-

process is a program in execution a tipacilly batch job time share in a system task

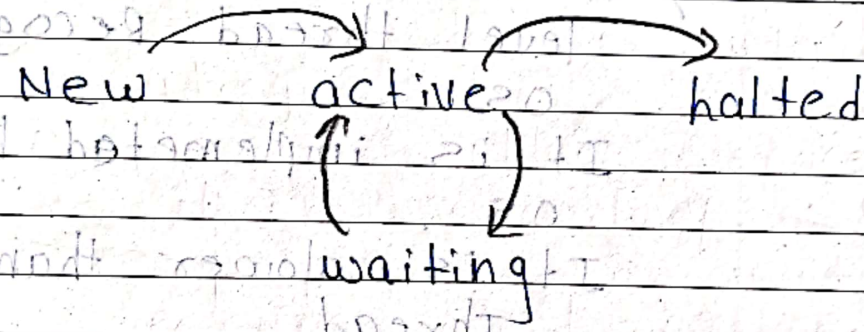

fig process state

New :- creating file (secondar to cpu)

Active :- Ready to Run, cpu allocate time (File created)

halted :- Running time Active state to halted state (schedular)

waiting :- I/O burst, cpu burst.

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⇒ (4) Threads :-
. Thread is a sing
sequential flow of execu
of task of process.

Types of thread.
1) user level thread
2) kernel level thread

1) kernel level Thread :- ke
level thread Recognise
os
It is implemeted by
os
It is slower than user
Thread
It is Implemented by
diffcult than user threa
2) User thread :- os do
not recoganise the user
thread.
It is faster and effi

⇒ Real time operating sys
are ofen of dedicated
real time operating
has well defined
constrans.

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Date / /
Page L&W

Name : Kiran Madhukar Devkate

Subject : Operating System

Roll No : 113

Std : BCA - I

Assignment No : 1

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Describe the system calls ?

Definition :-

system calls provide the face between Running and the operat system

Their are three Major categories.

1) process and job control :-
   1) end abort
   2) load , execute
   3) create process , termeniated p
   4) get process attributes , set pro attributes
   5) wait for time
   6) wait event , signal event
   7) allocate and free Memory

2) Device and File Manipulation :-
   Device Manipulation
   1) Request Device , Release Device
   2) Read , write Reposition
   3) Get Device attribute , set Device ribute
   4) ically attach a detach Device

   File Manipulators
   1) create File , Delete
   2) open , close
   3) Read write Reposition
   4) get File attribute , set File attri

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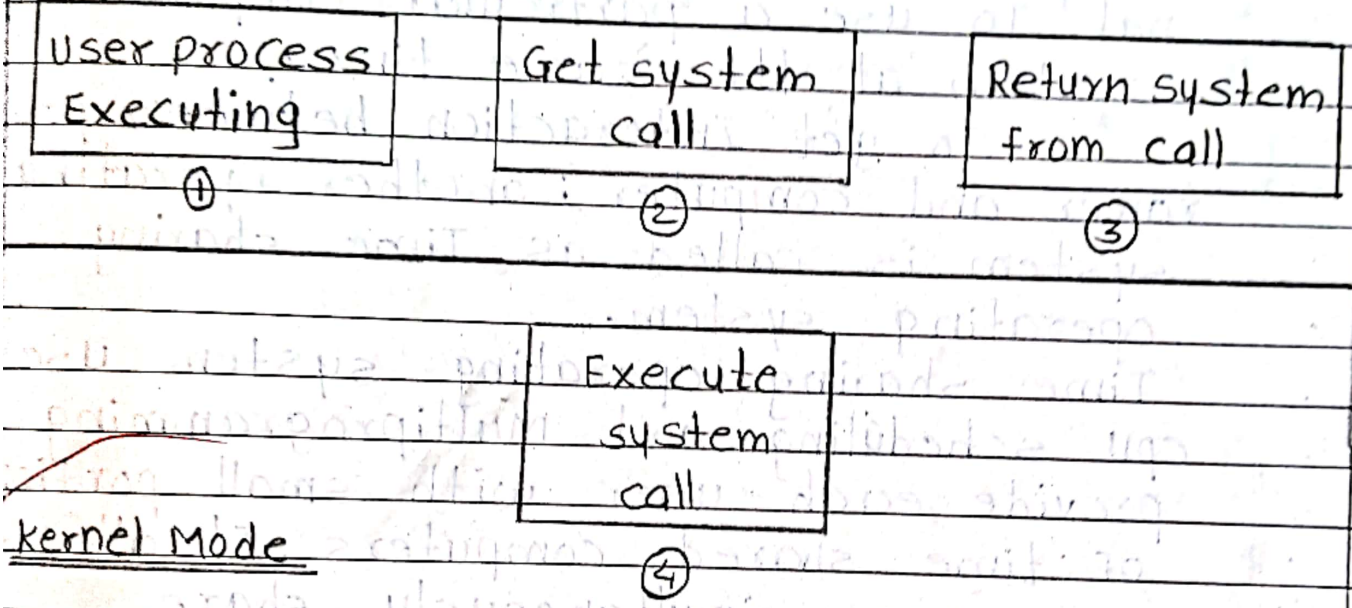
3) Information Maintenance :-

1) get time or date, set time or date
2) get system data, set system data
3) get process, File or Device attribute
4) set process, File or Device attribute



-Architecture of system call

Describe the type of operating system with Definition ?

Definition :-

operating system is a program which act as Interface between user of computer and computer hardward

Types of operating system.

1) Batch operating system :-

In user of batch operating system do not Intract with

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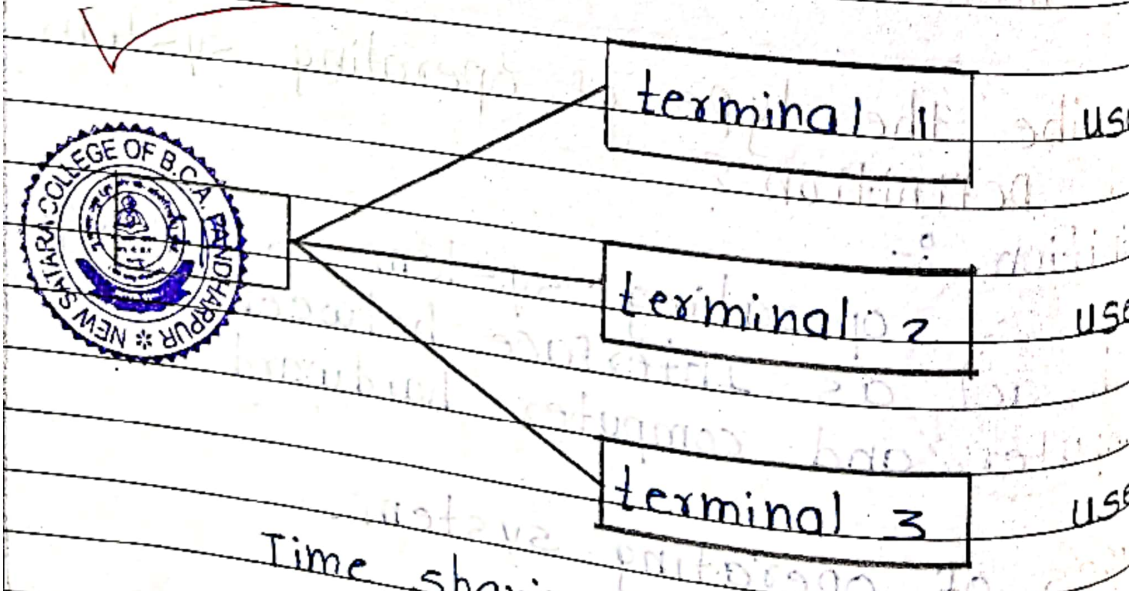
computer Directly. to speed of proce
Jobs with similar needs are ba
Together and Run as a group.
of Interaction between user and

2) Time sharing operating system

sharing is the technique which en
many people located at various
nal To use a particular computer
system at the same time.

To get Interaction between
ramer and computer; another opera
system is called as Time sharin
operating system.

Time sharing operating system
cpu scheduling and Multiprogrammi
provide each user with small po
of time shared computers. It al
many user simultaneously share
computer



Time sharing operating syste

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3) Multiprogramming :-

Multiprogramming is an attempt to Increase CPU utilization by always having something for the CPU to execute. The operating system picks one of the Job in Jop pool and begins to execute it Job may have to wait for something like I/p o/p.
Now in Multiprogramming CPU will Not wait for I/p o/p to complete.
Instead operating system will simply switch to another Job and execute it operating system. when that Job Needs to wait CPU switched to another Job eventually first Job will have Finished waiting will get the CPU back As several Job are ready to execute and present in Memory Desicion has to Made to choose which one from given Jobs is to be choosen for execution This is called Job scheduling.

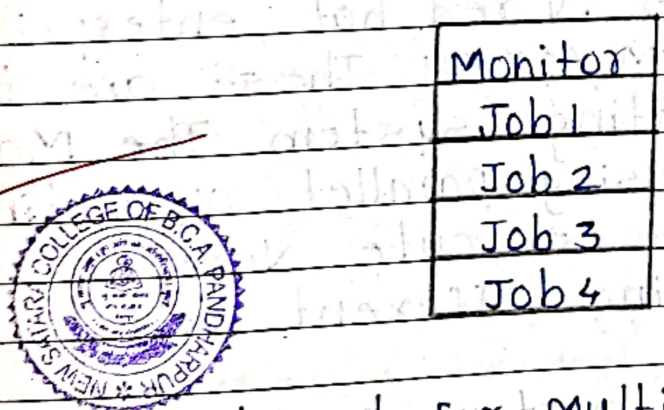

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fig. Memory layout for Multiprogramming system.

4) Real Time :-

It often used as a control device in a dedicated application Real-

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Time operating system has we
defined fixed time constraints

5) Distributed operating system :-

rk is a communication path betu
two or More system. Distributed
depends on Networking for there
Functionality.
Network are classified based
distance between there node
LAN :- (Local Area Network) exist
with in a room, a flour or a
bulding
MAN :- Metropoliton Area Network
exists between buildings with in
WAN :- Wide Area Network exists
between cities, buildings or co

6) parallel operating system :-

VM
Microsoft hyper, V red hat enterpri
VM KVM/QEMU These are
operating system The Mo
n for using parallel operati
system is to execute vertical
Machine having Different perpose

Describe the system Design & Im
ntation ?

system Design :-

An operating syst
is construct that allow user applica
program to intract with system har

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by itself. operating system does Not provide any function but it provide atmosphare in which diffrent application and program can do useful work.

Os design goal :-

It is quit completed to define all goal. The Design changes Depending on type of operating system Basically two type of goal

1) **User goal :-**

os should be convenient easy to use reliable, safe and fast according to user

2) **system goal :-**

system should be easy to design implement and Maintane

System Implementation :-

system calls occur in diffrent way depending upon the computer in use. A system call usually may a trap to the operating system the system call Identifies it self by sum number. The operating system then accourdingly process the system call.

for ex. to Read and input might Read to specify File name or Device. to use the address and length of the Memory operating system needs to be implemented After it is designed.

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> what are the system componen
Describe them?

system components :-

1) process Management :-

A proces
be define as a program in ex
A process needs certain res
like cpu, Memory whiles and
device during its execution.

Activities in connection with p
Management.

1) creating and deleting both us
and system process.
2) suspending and Resuming proce
3) provide Mechanism for Dead lo
handling.

2) Main Memory Management :-

It i
central to the operation of Mode
computer system Main Memory
ge array of words or bytes
d or bytes has its own ad

le Management :-

1) creating and deleting Files.
2) creating and deleting direct
3) supporting primitives for Man
Files or directories.
4) Mapping Files on to secondary s
5) Backup Files on stable storag

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4) I/o system Management :-

one of the purpose of an operating system is to hide the features of specific hardware devices from the user in some operating system like UNIX the features of I/o devices are hidden from operating system itself by I/o subsystem.

5) secondary storage Management :-

A computer Must always bring any program into main Memory for execution but the size of main memory is small and This Memory volatile so the program must stored some secondary storage to backup the Main Memory.

6) Networking :-

Distributed system is a collection of process that do not share Memory, peripheral Devices or a clock. insted each processor has it own local memory clock and the processor communicate with one another through various communication line such as high speed buses or Network.

7) protection system :-

Main Memory is a central to the operation of Modern

computer system initially wher
there were single user op
system. The programmer had
control over the system No pr
was needs.
for e.g Memory Addresing, har
ensures that a process can
only within its own address

8) comand Interpreter system

the one of the most important
operating system because, it
interface between user and the
ting system some system incl
comand interpreter in the kerne
other system like Dos & UNIX
the comand interpreter as a sp
program which is running when
first login.
such a program are called as c
card - interpreter or comand - li
interpreter
services provided by operating s
operating system provide
orenment for the execution
gram.

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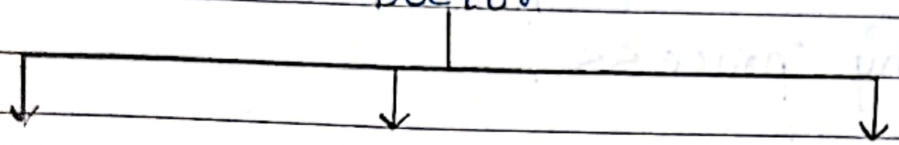
what is system generalization and generalization Identifies commonalities among set of entities.

for e.g. all graphic user interphase window have a title

e.g.



virtual Machine :-

Virtual Machine is digital version of physical computer virtual Machine software can Run programs and operating system, store data, connect to Network an do other computing function and require Maintanance such as update and system Monitoring.

Describe the process state with diagram.

As the program execute, the process changes state. A state of process is defined by its current activity process execution is an alternative sequence of cpu and (I/o burst), begning and ending with a cpu burst Thus each process may be in one of the following state New, Active, halted, waiting.

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Input output burst :-
Running state it may ask I/o while proces
process goes block or wait
here

cpu burst :-
Amount of time req
by process.

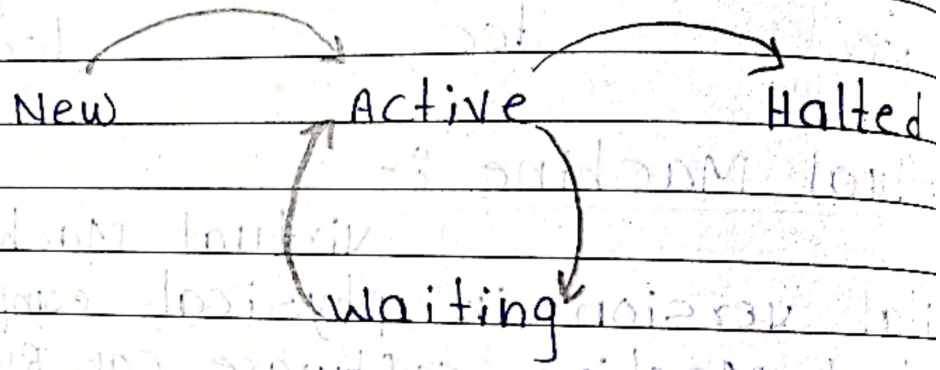

fig. process state diagram

New state :- creating of proces
(secondary to cp

Active state :- Ready to Run
cpu allocate time
(File created)

state :- Running Time fro
Active state to
stated
(schedular)

waiting :- I/o burst, cpu burst

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These process state can be further refined since the CPU may be shared Among several process and active process May either be waiting for the CPU or executing on it A process which is waiting for the CPU is ready A process which has been allocated the CPU is Running.

Describe the Threads and its types.

Thread is a single sequential flow of execution of task of a process so it is known as Thread of control
for eg. Browser, Many tab can be viewed as Thread

Types of Thread :-

1) kernel Thread
2) user Thread

1) kernel level Thread :- kernel level Thread recognition the operating system. kernel level Thread is implemented by operating system. It is slower than user level thread. Implementation of kernel thread is difficult than user Thread.

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2) user level thread :-

operating
does not recognition user leve
user level thread can be eas
Implemented and it is imple
by user.
It is faster and efficient
user level thread can be ea
Implemented than kernel leve
Thread

Q 8) what is Mean by operation on proc

⇒ 1) creation :-

once the process is
created it will be ready and c
into Ready queu (means come in
main memory and will be read
execution.

2) scheduling :-

out of many proces
present in the ready queu, the
operating system choose one pr
and start executing it.

execution / Blocking :-

process
me to block or wait state du
execution. then in that case th
processor start executing the
process.

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4) Deletion / killing :-
once the purpose of process gets over the operating system will kill the process.

5) cooperating process :-
There are various processes in computer system which can either Independent or cooperating processes that operate in operating system A cooperating process share data with another.

Advantage of cooperating process :-

1) Information sharing
2) Modularity :-
It Refers to the division of complex task into smaller subtask
3) computation speedup :-
Cooperating process can be use accomplish subtask of single task simultaneously it improves computation speed by allowing the task to be accomplished faster

Methods of cooperating process :-
It may coordinate with each other by sharing data or Message

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for ex producer ⟷ consumer

It generate information that consumer would consume

It consume information producer pr

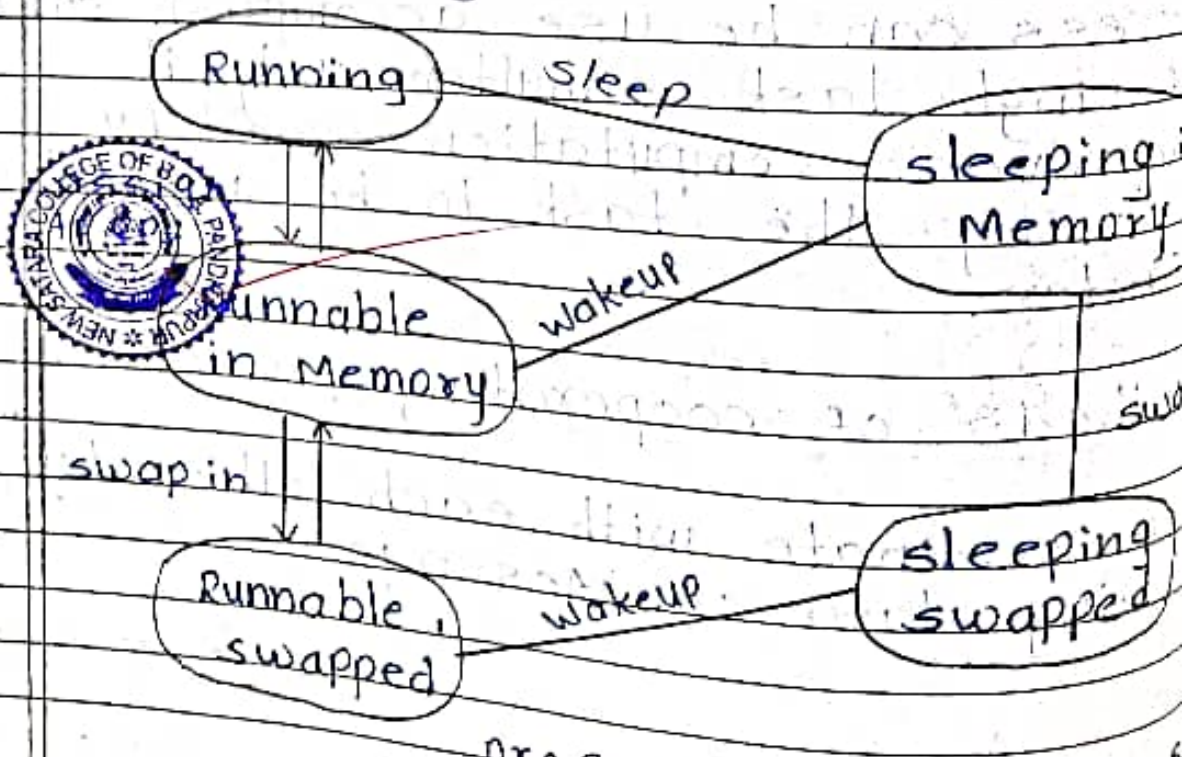
Q. 9) Describe the process state Tra with diagram.

⇒ Definition :-

when process addre space has been written to se Memory, that process is not for a specific event, The process is Runnable and swa

Three process state

1) Ready
2) Running
3) waiting



process state Trans

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1) A process is Running if the process assigned to CPU.
2) A process is Removed form Running state by the schedular if a process with higher priority becomes Runnable
3) A process is also preemted if a process of equal priority is Runnable when the orignal process consumes its entire time slice
4) process is sleeping in Memory if the process in primary memory But it is waiting for a specific event before continuing execution
5) for eg process sleep while waiting for an input output operation to complete, corloaded, locked resource to unlocked or for a time to expire when the event occur a wakeup call is sent to the process if the reason for its sleep is gone the process become Runnable
6) when a process Address space has been written to secondary Memory and that process is not in waiting for a specific event process is in runnable and swaped
7) if a process is waiting for specific event and had it's whole Address space written to secondary memory the process sleeping and swapped

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Define

1) Multithread
2) Interprocess communication
3) process control block

1) Multithread :-
It is the Functio
CPU that permits Multiple threa
to run independantly while sha
the same process resources m
ading allows many parts of p
of run simultaneously

2) Interprocess communication :-
Inte
communication is use for exchai
useful information between nu
threads in one or more pro

3) process control block :-
Each
is represented in the operating
system by its own process
block (PCB) which is a data
record containing many pi
information the process
be new ready or Running
waiting or halted.

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Name : Kiran Madhukar Devkate

Roll No : 113

Subject : Operating System

Assignment No : 2

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Explain scheduling criteria

Many criteria have been suggest
comparing cpu scheduling algori
1) cpu utilization :-
when the cpu
expensive we want to keep it
busy as possible.

2) Throughput :-
one Measure of
is number of Job which are c
per time unit This is Throughpu

3) Turn around time :-
The Interval
form the type of submission t
time of completion.

4) waiting time :-
waiting time is
time that Job spends in to Rea
Queue

sponse time :-
Time spent be
ssion of request and getti
respons is called as a re
time.

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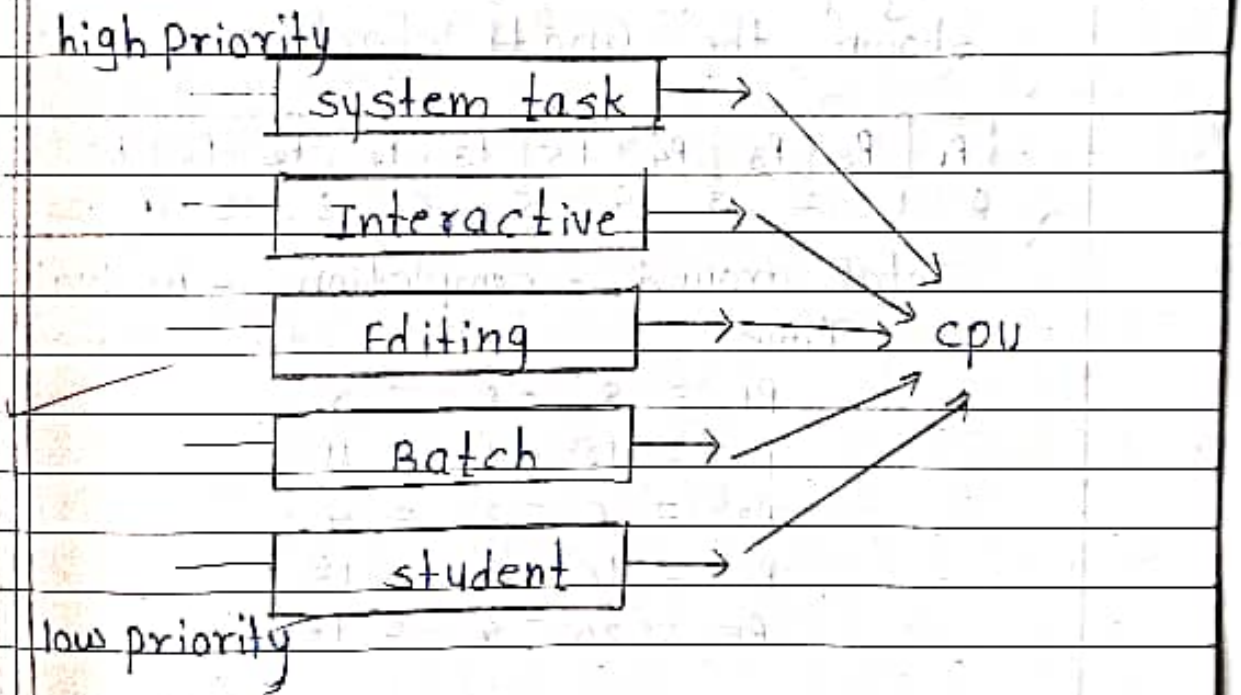
2) Explain Multilevel Queue ?

→ It may happen that process in the ready queue can be divided into different classes, where each class has its own scheduling needs The process are permant assigned to one queu, Generally base on some property such as memory size process priority and process type each queue has its own scheduling Algorithm.



seperate queu might be used for four ground and background process A multilevel scheduling can have following Queus.

i) system task
ii) Interactive
iii) Editing
iv) Batch
v) student

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Assume that you have following criteria Burst time Mode - preemptive mode.

process	A.T	B.T
P_1	0	3
P_2	1	5
P_3	2	2
P_4	3	5
P_5	4	5

using preemptive shortest Job shown the Gnatt chart.

P_1	P_2	P_3	P_4	P_5	P_3	P_1	P_2	P_4	
0	1	2	3	4	5	6	8	12	16

Total around - completion - Arr
Time Time Ti

$P_1 = 8 - 0 = 8$

$P_2 = 12 - 1 = 11$

$P_3 = 6 - 2 = 4$

$P_4 = 16 - 3 = 13$

$P_5 = 20 - 4 = 16$

$= \frac{8+11+4+13+16}{5}$

$= \frac{52}{5}$

$= 10.4$

waiting Time = completion Time - Burst Time

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Page No.
Date: 1/1

P1 = 8-3 = 5
P2 = 12-5 = 7
P3 = 6-2 = 4
P4 = 16-5 = 11
P5 = 20-5 = 15

$= \frac{5+7+4+11+15}{5}$

$= \frac{42}{5}$

= 8.4

Non-preemptive

waiting time = Initial Time - arrival time

P1 = 6 - 0 = 6
P2 = 8 - 1 = 7
P3 = 12 - 2 = 10
P4 = 16 - 3 = 13
P5 = 20 - 4 = 16

Total waiting time = 6+7+10+13+6
= 42

average waiting time = $\frac{6+7+10+13+6}{5}$

$= \frac{42}{5}$

= 8.4

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Turn around Time = complitation time - arrival time

$P_1 = 8 - 0 = 8$

$P_2 = 12 - 1 = 11$

$P_3 = 6 - 2 = 4$

$P_4 = 16 - 3 = 13$

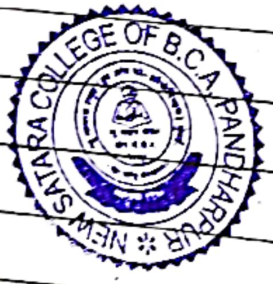
$P_5 = 20 - 4 = 16$

Total around Time = $8 + 11 + 4 + 13 + 16$

= 52

Average Turn around Time = $\frac{52}{5}$

= 10.4



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Name :- Kiran Madhukar Devkate

Roll No :- 113

subject :- Operating system

Assignment No :- 3

1) Explain the semaphore ?

It is just normal integer It can not be negative The least value of semaphore is 0. Maximum value of semaphore can be anything.

The two semaphore operation :-

1) wait() :-

wait operation is used for deciding the condition for the process to enter the critical state or wait of execution.

Here if the semaphore value is greater than zero or positive then the process can enter the critical section area the semaphore value =0 then the process has to wait for the process to exit critial section area.

Basic Algorithm of p Function or wait operation.

```
p(semaphore value)
{
```

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allow the process to enter if value of semaphore is greater than zero or positive
Do not allow the process if of semaphore is less than zero or zero
Decreament the semaphore value
the process leave the critical state
}

Here wait operation has different number.
a) sleep operation
b) down operation
c) decrease operation
d) p Function

2) signal semaphore operation :-
Its update value of semaphore. It is when new process are ready to enter critical section here is different name
a) wake up operation
b) up operation
c) Increase
d) v Function

algorithm
v (semaphore value)
{
if process goes out

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cs then add 1 to semaphore
else
keep calm until process exits
}

Types of semaphore :-

1) Binary semaphore :- There are only 2 value of Binary semaphore is 1 & 0 If value of Binary semaphore is 1 process has capability to enter critical section area. If value of B.S is 0 process does not have capability to enter critial section area.

2) Counting semaphore :- Here their are two type of value 1) values greater than and equal to one
2) value equal to zero. if value >=1 then process has capability to enter critical section area if value is 0 then process does not have capability to enter critical section area.

7) Explain the classical problem of synchronization ?

Reader writer problem :-
suppose that database is to be shared among several concurrent process. some of these

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process may want only to read database, where as others wants to update (i.e. read write) the database we distinguish between these type of processes by refering the former as readers and the writers.

parameters :-

one set of data shared among a number of proce once a writer is ready, its p its writer only one write write at a time

If a process is writting, no process can read it.

If atleast reader is reading other process can write. Read may not write and only read.

ning philosopher problem :-

Dini

osopher problem states that hilosopher seated around a table one chopstick with het each pair of philosophers thei one chopstick between each p pher A philosopher may it if h pickup the to chopstick adja to him.

one chopstick may be picked any one of its adjacent follow but not both

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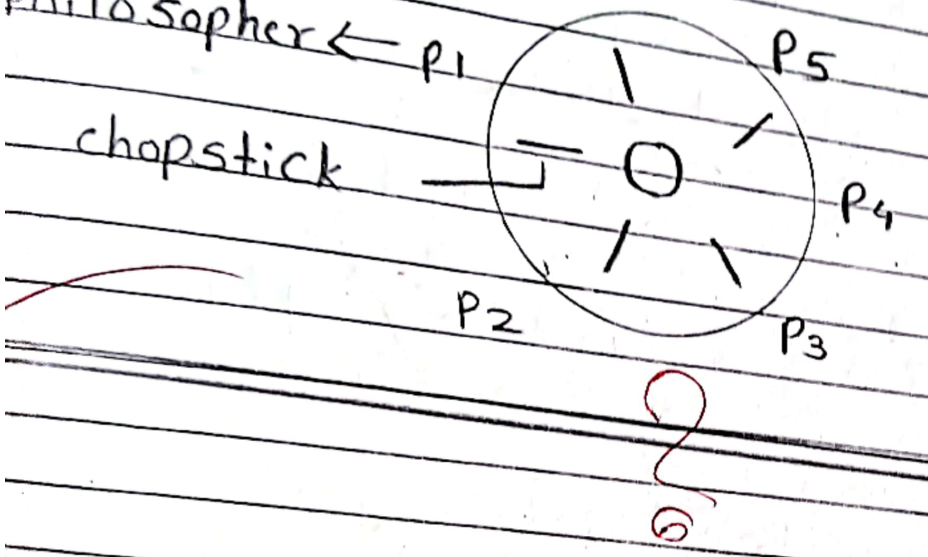
This problem involved the allocation of limited resources to a group of processes in a deadlock free and starvation free manner.



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Web Programming - IInd

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PAGE NO.
DATE:

Name :- kiran Madhukar Devkate

subject :- Javascript

Roll No :- 113

Assignment No :- 1

1) Explain control statement in Javascript

⇒ 1) if --- construct :

Syntax :-

```
if (condition)
{
several line of code ;
}
```

e/g if (day == " saturday ")
{
document.write (" its saturday ");
}

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2) if --- else construct

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syntax :-

```
if (condition)
{
(Javascript command);
}
else
{
(code);
}
```

e.g. if (day == "saturday")
{
: document.write ("its weake
}
else
{
document.write ("its not weak
}

3) if --- if --- else construct

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DATE:

syntax :-

```
if (condition 1)
{
Javascript command ;
if (condition 2)
{
Javascript commands
}
else
{
other commands
}
}
```

e.g
```
<html>
<head><title> control statement
</title>
<script>
var question = " what is 10 to 10 ?";
var answer = 20;
var correct = '<h1 align = center> you
are correct </h1>';
var response = prompt (question, "0")
if (response ! = answer)
{
```

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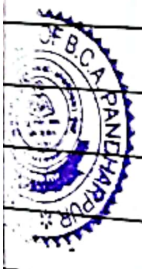
```
if condition (confirm (" wrong ! pr
        for second chance ")
response = prompt (" question
var output = (response == ans
        correct : incorrec
</script>
</head>
<body>
<script>
        document.write (ou
</script>
</body>
</html>
```



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2) Explain Loop is Javascript ?

for loop :-

Loops enables programmers to repeat section of program code or command blocks

most basic form. used to count

```
function calculate (form)
{
var number = form number.value;
for (var num = 1; num <= 10; n++)
{
form.element[num] value = number * num;
}
}
```

e.g.

```
<html>
<head> <title> for loop </title> </head>
<body>
<script>
var name = prompt ("what is your name?",
                   "name");
var query = " ";
document.write ("<h1>" + name + "s
favourite bollywood starts </h1>");
```

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```
for (var i=1; i<=5;i++)
  {
document.write (i " " + pr
('enter bollywood star name
    name') +
    '<br>');
  }
</script>
</body>
</html>
```

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3) Explain operator in Javascript

1) Arithmatic operator :- These are most similar operator beacuse they are used in everyday life.

operator	Description
+	Addition
-	substruction
*	Multiplication
* *	Exponentiation
/	division
%	Mudulus
++	increment
--	decrement

e.g let a = 3;
let x = (100 + 50) * a;

2) Assignment operator :-
It is used to update the value of variable

operator	Example	name As
=	x = y	x = y
+ =	x + = y	x = x + y
- =	x - = y	x = x - y
* =	x * = y	x = x * y
/ =	x / = y	x = x / y
% =	x % = y	x = x % y
** =	x ** = y	x = x ** y

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3) logical operator :-

used to
operator. an location op. stands
NoR.

operator	Descrip
&&	logical A
||	logical
!	logical N

4) comparison operator :-

used to comp
two values.

tor	Descrip
= =	Returns true if operands
= = =	Returns true if operands are equal
!=	Returns true if operands not equal
!= =	Returns true if operands not equal
>	Returns true if left is
<	Returns true if Right is
>=	Returns true if left is than or equal to left

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PAGE NO.
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5) Bitwise operator

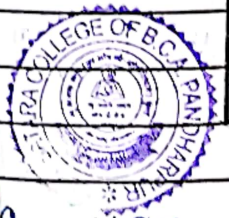
operator	Description
&	AND
|	OR
~	NOT
^	XOR
<<	left shift
>>	right shift
>>>	unsigned right shift

6) while loop :-

In addition to the for loop the while loop provides a different but similar function

syntax :-

```
while (condition)
{
Javascript commands ;
}
```



e.g var num = 1 ;
while (num <= 10)
{

```
    document.write (num);
    num++;
  }
```

3) Do---- while loop :-

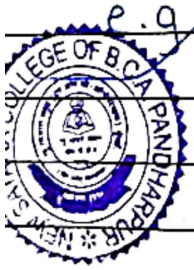
The do while statement camba defines a code block be executed once and repeated as long as a condition is True.

syntax :-

```
do {
  code block to be ex
}
while (condition);
```

e.g.

```
let text = " ";
let i = 0;
do {
  text += i + "<hr>";
  i++;
}
while (i < 5);
```



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Assignment No :- 2

PAGE NO.
DATE:

Name :- Devkate kiran Madhukar

subject :- Web programming - II

Roll.No :- 113

1) Answer the Any Five of the following

1) what is JQuery explain in details with examples

JQuery is developed by John Resig 2006
JQuery is use to Make Javascript code is simple.
JQuery is three open source Javascript labriray
JQuery is the extension of Javascript
JQuery is very fast, small and feature rich Java script library
The Main purpose of JQuery writless do more

Features of JQuery -
1) HTML DOM manipulation
2) CSS manipulations
3) Effect and Manipulation.

suntax :-

```
$("selector").action()
```

e.g $("#p").html()

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What are the different types of selectors in JQuery?

selector :- selector is used to or select HTML Element based class name, Tagname, Attribute name Idname

Types of selector
1) Id selector
2) class selector
3) Element selector
4) Advanced selector.

Id selector :-

Id selector is used Attribute to find or select html Id selector shown by #
Id is the unique

syntax :-

```
$("#Id name")
```

$("#test")

s selector :-

class selector class Attribute to find or select Element class selector show

syntax :-

```
$(".class selector name
```

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Element selector :-

Element selector is used the to find or select html element based on html element.

syntax :- $("Element selector")

e.g

```
<html>
<head>
<script src = "JQuery.Js"></script>
<script src = "abc.Js"></script>
</head>
<body>
<p> ---- </p>
<h1> ---- </h1>
</body>
</html>
```

external file :-

```
$(document).ready(function(){
a = $("h1").html()
alert(a)
});
```

Explain -- date object in Java script in details?

Date :-

syntax :-

```
var variable.Name = new Date();
```

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e.g. var d = new date();
document.write(d)

Method :-

1) toDatestring()
2) getDate()
3) getMonth()
4) getDay()
5) getFullyear()

Difference between Java script and Jquery.

Jquery	Javascript
1) Jquery is a Java script library	1) It is a web d ent programmin language
2) It depends on Javascript	2) It may or no depend on Ja Jquery is a Javascript
3) It creates DoM faster	3) Javascript than Jquery creating DoM

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PAGE NO.
DATE:

4) It is less time consuming	4) It is more time consuming beacuse you have to write the whole script.
5) It is compatible with all browsers	5) Developers write their code to handle multibrower compatibility
6) In JQuery we add animations with fewer lines of code	6) In Java script, we need to write many lines of code to make animations.
7) JQuery is light weight	7) Javascript is heavier than JQuery

Write short note on :-

1) location object :-

location it is a subobject of window. location object is used to getting information about the current URL (Uniform Resource Locator)

syntax :-

```
window.location.property ;
```

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2) window object :-

It represents b
browser's window All global J
objects, functions and variabl
automatically become members
the window object.
Global variables are properti
the window object
Global functions are methods
window object.

3) navigator object :-

The Javascript
navigator object is used for bro
detection.

syntax :-

```
window.Navigator.Property
```

Navigator are subobject of windo
Navigator are used to getting inf
about a browser.

WAP swap two number without us
third variable ?

```
<html>
<head>
</head>
<body>
<script>
```

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PAGE NO.
DATE:

```
var a = 10;
var b = 20;
var a = a+b;
var b = a-b;
var a = a-b;
alert ("a = " +a);
alert ("b = "+b);
</script>
</body>
</html>
```

WAP using java script to validate a number accepted through a text box is a prime or not

```
<html>
<head>
</head>
<body>
<label>
enter any number to check a number is prime or not </lable><br>
<input type = "number" id = "num" place holder = "enter any number"><br>
<button onclick = "prime()"> find </button>
<span id = "show"></span>
<script>
function prime()
{
var num= Number (document.getElement By Id ("num").value);
```

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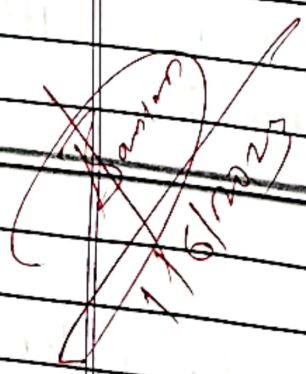
```
if (num <=1)
{
document.getElementById("show
innerHTML =num+" is not a prim
return;
}

for(i=2;i<num;i++)
{
if(num % i ==0)
{
document.getElementById("sho
innerHTML =num+" is not prime
return;
}
}
document.getElementById("show
innerHTML =num+" is ~~not~~ a prime"
return;
}
</script>
</body>
</html>
```



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Graph Theory

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New Satara College of B.C.A. Pandharpur
Affiliated to Solapur University, Solapur.
Semister/Annual 2022 / 2023
Name Kiran Madhukar Devkate Roll No. 113
Course BCA I Year I/II/III
Subject Graph Theory Date 29/4/2023
Sign VRaodeve

Q. No.	1	2	10
Marks			

18/20

1)

1) Graph k_8 is 8 regular graph

2) A graph without loop and multiple edges is called as d) none of these

3) complement of null graph is null graph

4) In graph G contains 4 vertices and 9 edgedes then order of its adjacency matrix is 4×9

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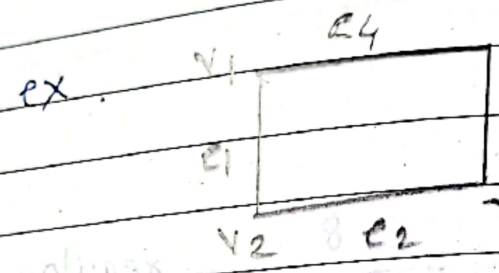
Q. (2)

2) pseudograph :-

The Graph ha
loop and multiple edge is
allowed is known as pse

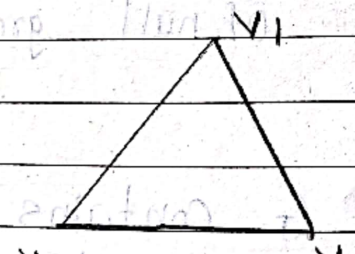
ex.

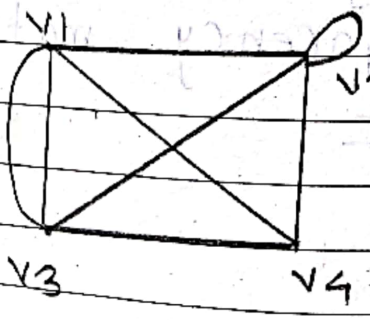


Regular graph :-

A Graph in
which degree of all ver
is same is known as
Regular graph.

ex.





deg (v1) = 4
deg (v2) = 5
deg (v3) = 4
deg (v4) = 3

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Page No.
Date / /

1) Handshaking Lemma :-

statement :-

The Number of vertices of odd degree in a Graph is always even.

proof :-

let us Number of vertex in which odd and even degree saperatly

$$\sum_{i=1}^{n} d(v_i) = \sum_{\text{even}} d(v_j) + \sum_{\text{odd}} d(v_k)$$

on left hand side we can express The sum of two sum take over vertex odd and even degree respectively.

$$\sum_{i=1} d(v_i) = \sum_{\text{even}} d(v_j) + \sum_{\text{odd}} d(v_k)$$

in this equation left side is even.
First expression on Right hand side even and second expression is also

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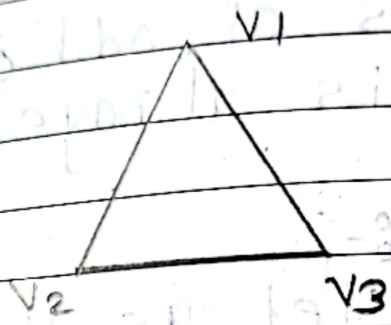
even.

$\sum d(v_k)$ is an even

But $d(v_k)$ is odd the sum term of sum and

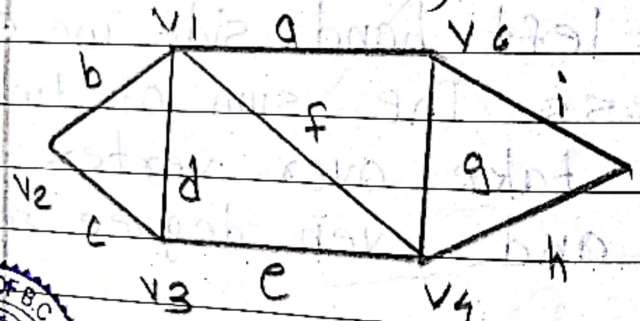


$$\sum_{h} d(v_i) = \sum d(v_j) + \sum d(v_k)$$

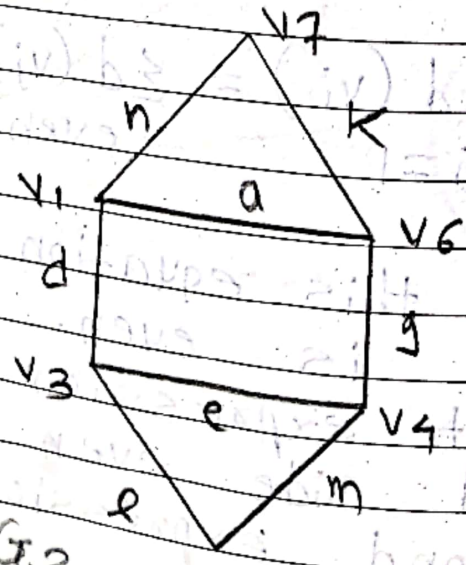
even = even + odd

4 2 2

Q.3 (3) $G_1 \cup G_2$ & $G_1 \cap G_2$



G_1



G_2

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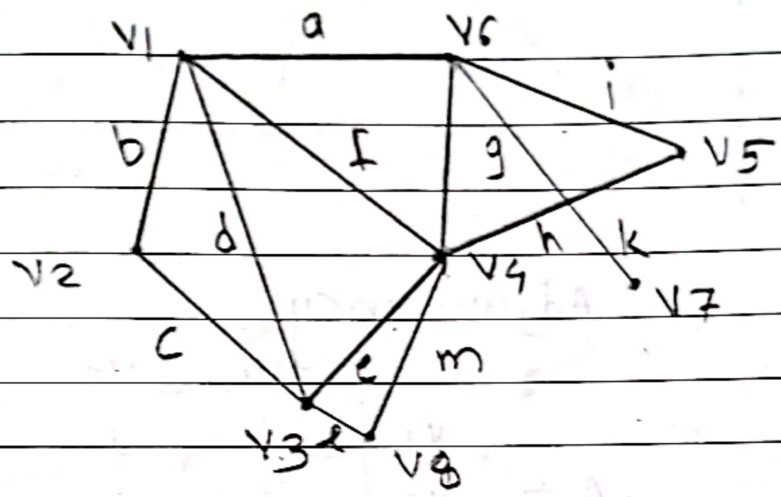
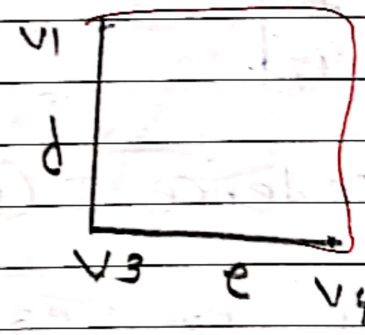
$G_1 \cup G_2$ The union of two Graph G_1 and G_2

$G_3 = G_1 \cup G_2$ and $V_3 = V_1 \cup V_2$ and $E_3 = e_1 \cup e_2$

$G_1 \cup G_2$



$G_1 \cap G_2$ it is a intersection of graph.



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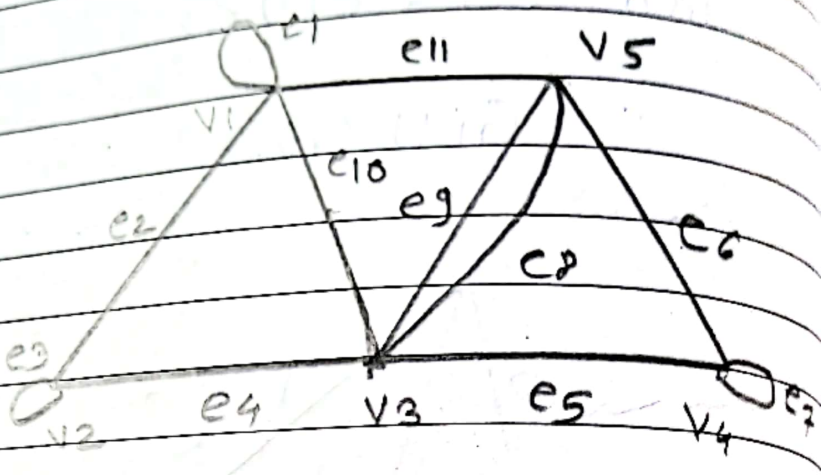
4. Adjancency A (G)



Adjancency

A =	V1	V2	V3	V4
V1	1	1	1	0
V2	1	1	1	0
V3	1	1	0	1
V4	0	0	1	1
V5	1	0	1	1
~~V6~~				
~~V7~~				

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Incedence I (G)

~~e1 e2 e3 e4 e5~~

V1
V2
V3
V4
V5

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Incedence I (G)

$I =$

	e1	e2	e3	e4	e5	e6	e7	e8	e9	e10
v1	1	1	1	0	0	0	0	0	0	1
v2	1	1	1	1	0	0	0	0	0	0
v3	1	0	0	1	1	0	1	1	1	1
v4	0	0	0	0	1	1	1	0	0	0
v5	1	0	0	0	0	1	1	1	1	0

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Affiliated to Solapur University, Sol...

Semister/Annual 2022 / 2023

Name...Kiran Madhukar Devkate.....Roll No...113....

Course...BCA - I.....

Subject...Graph Theory.....Year I/II/III

Date...23/5/2023

Supervisor Sign...URaodeo

Que. No.	1	2	3	4	5	6	7	8	9	
Marks										
Obtained Marks										

Examiner Sign...

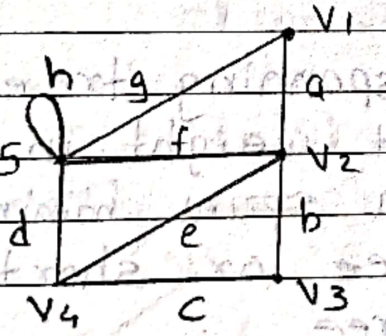
18/20

1)

1) connected graph :-

A graph G is connected atleast one path between every pair of vertices is called connected graph.

ex.



v1 - a - v2 - b - v3 - c - v4 - e - v2 - f - v5

disconnected graph :-

A graph G is said disconnected graph their is no path between every pair of vertices.

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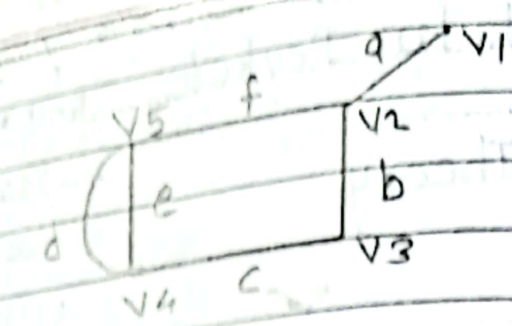
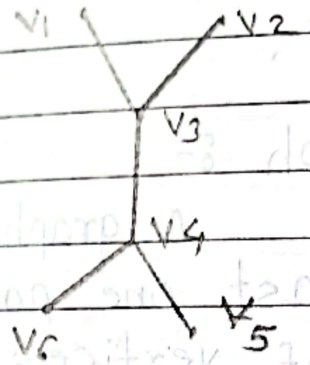
ex.



6) tree :-

tree is a connected graph without any circuit.

ex.



spanning tree and minimal spanning tree :-

A spanning tree defined as a smallest weight in weighted graph is a ~~spanning~~ minimal spanning tree or shortest spanning tree.

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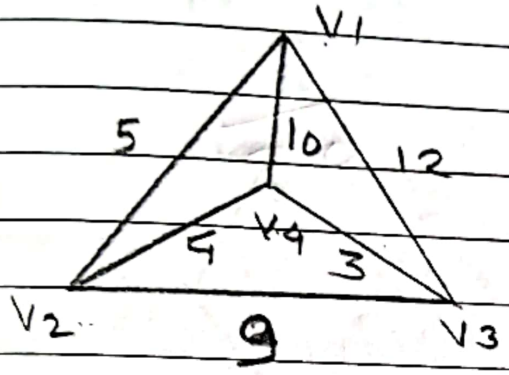
travelling salesman problem :-

travelling salesman problem is find the ~~distance in cities~~ shortest distance in cities and no vertex is repeated.

ex.

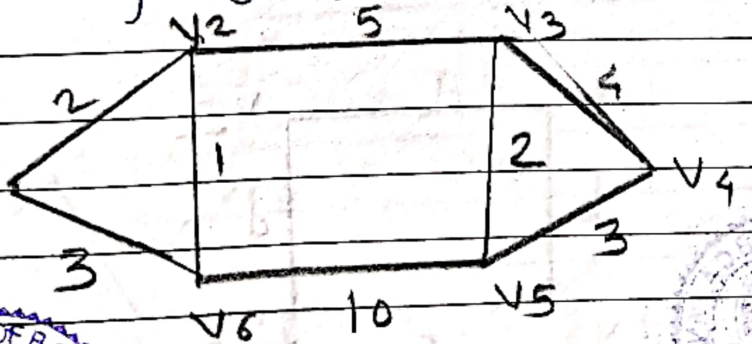


V1 - V2 - V4 - V3

chinese postman problem with example :-

chinese postman problem is the shortest closest path circuit visit every edge undirectly graph atleast one

ex.



V1 - V2 - V3 - V4 - V5 - V3 - V2 - V6 - V1

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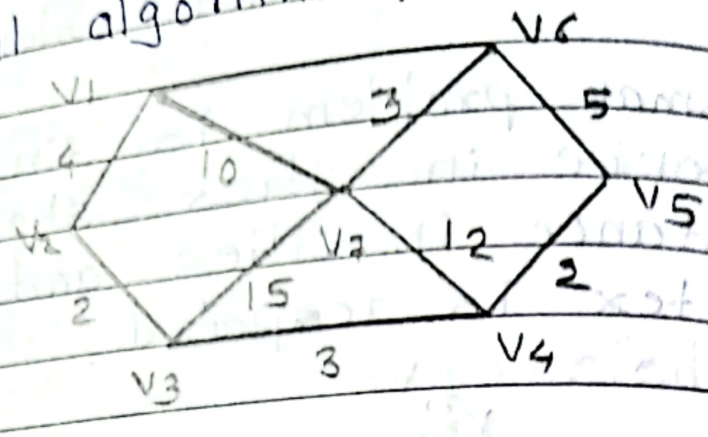
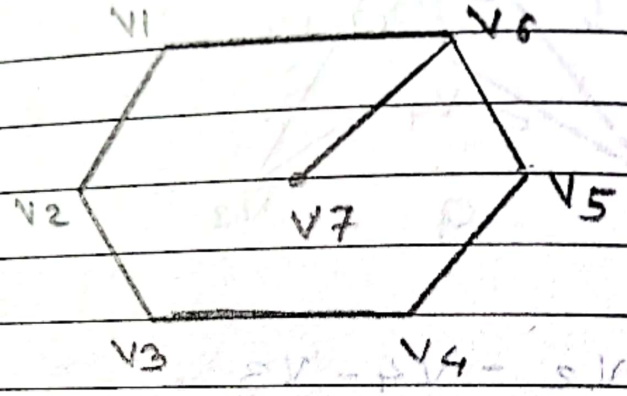
Q.5) kruskal algorithm.

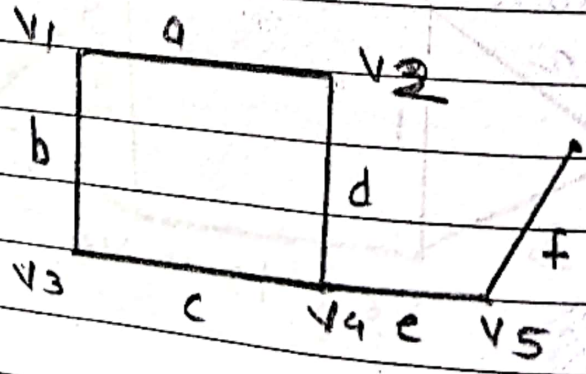
e.g.





Q.3) edge connected graph :-

Let x is edge connected graph the remov edgeof edge connected graph. is said to be edge connected graph.



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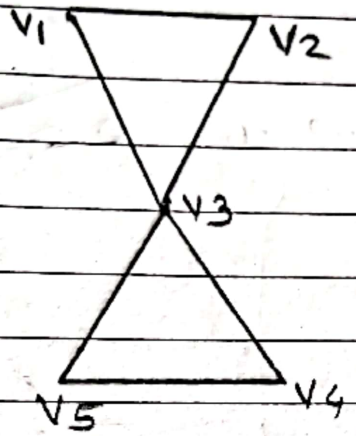
vertex connected graph :-

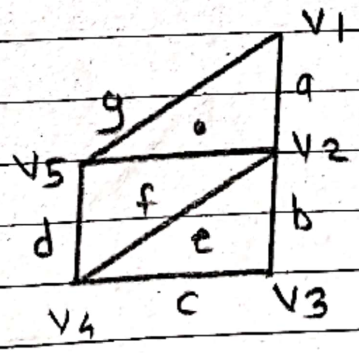
A vertex connected graph the vertex is removel of vertex connected graph is called vertex connected graph

ex.



3) 1) Eulars path :-

Eulars path is a open walk in which intial and terminal vertex are distingh.



a - V2 - b - V3 - c - V4 - d - V5

2) Eular circuit :-

Eular circuit in which no edge is repeated

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Page No:
Date: / /

Name :- kiran Madhukar Devkate

Roll No :- 113

subject :- Graph Theory

Assignment No :- 1

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Page No:
Date: / /

select correct Alternative from following

Graph k_8 is _____ regular graph
a) 8

A graph without loop and multiple edges is called as
d) none of these

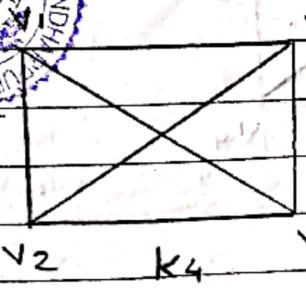
complement of null graph is _____
b) complete graph

In graph G contains 4 vertices and 9 edges then order of its adjacency matrix is
b) 4×9,

Solve Any Two

Define complete graph with examples
A Graph in which every pair of vertices is Joined or connected by an edge is called complete Graph
It is denoted by k_n where n is number of vertices.

e.g



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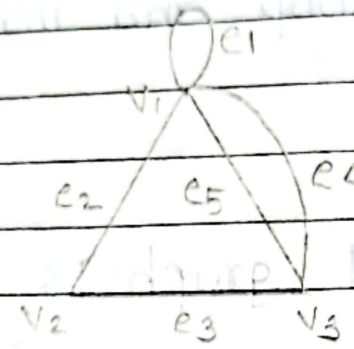
2) Define pseudograph & Regular graph

⇒ pseudo graph :-

A Graph in which and Multiple Edges are allowed called pseudo graph.

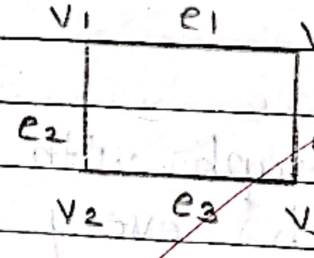
e.g.



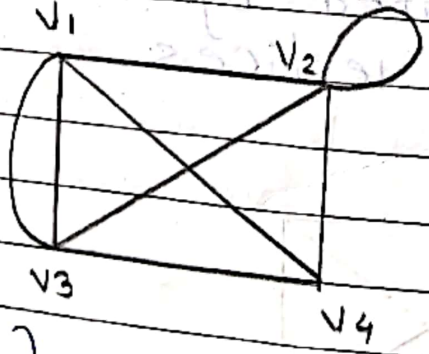
Regular graph :-

A Graph in which degree of all the vertices are same is called Regular graph.

e.g.



3) Find the degree of vertex of following graph.



deg (v1) = 4

deg (v2) = 5

deg (v3) = 4

deg (v4) = 3

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Q3] solve Any Three

1) state and prove Handshaking Lemma.

→ statement :-

The Number of Vertices of odd degree in a Graph is always even.

proof :-

let us consider the vertices which odd and even degree separate that is

let $\sum_{i=1}^{n} d(v_i) = \sum_{\text{even}} d(v_j) + \sum_{\text{odd}} d(v_k)$

on left hand side we can express as the sum of Two sums each taken over the vertices of even and odd degree respectively.

$\therefore \sum_{i=1} d(v_i) = \sum_{\text{even}} d(v_j) + \sum_{\text{odd}} d(v_k)$

since the left hand side in this equation is even and the first expression on the Right hand side is even, then second expression also be even.

$\sum_{\text{odd}} d(v_k)$ = an even number

Because in each $d(v_k)$ is odd the total number of terms in the sum

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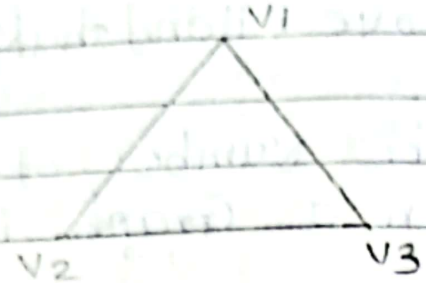
Must be even to Make the sum even Number.



$$\sum_{i=1}^{n} d(v_i) = \sum d(v_j) + \sum d(v_k)$$
even odd

even = even + odd
4 = 1 + 3

---

2) Describe the product of two graph complement of two

⇒ product of two Graphs :-

It is a bin operation on Graph that takes two graphs G_1 and G_2 and produces Graph h with the following pro The vertex set of h is the car product of $v(G_1)$ into $v(G_2)$ were $V(G_1)$ and $v(G_2)$ are the vert sets.

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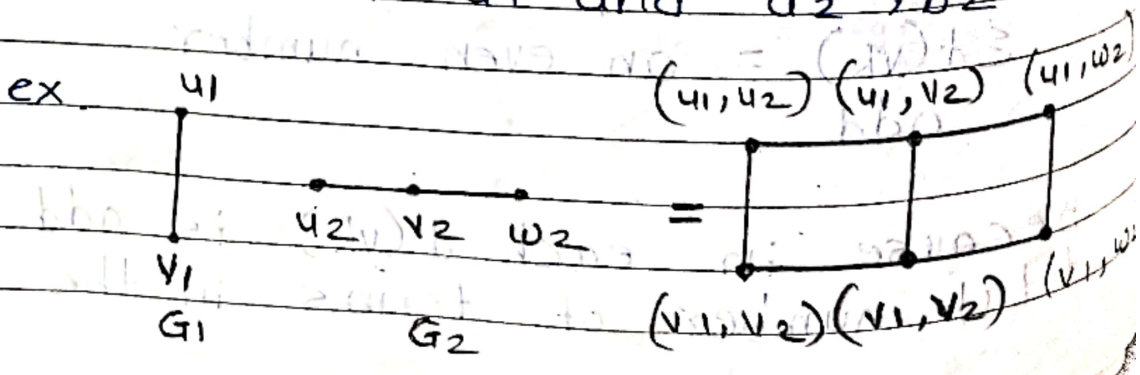
vertices (a_1, a_2) and $(b_1, b$ are connected by an edg and only if a condition abou a_1, b_1 in G_1 and a_2, b_2 in G_2

ex



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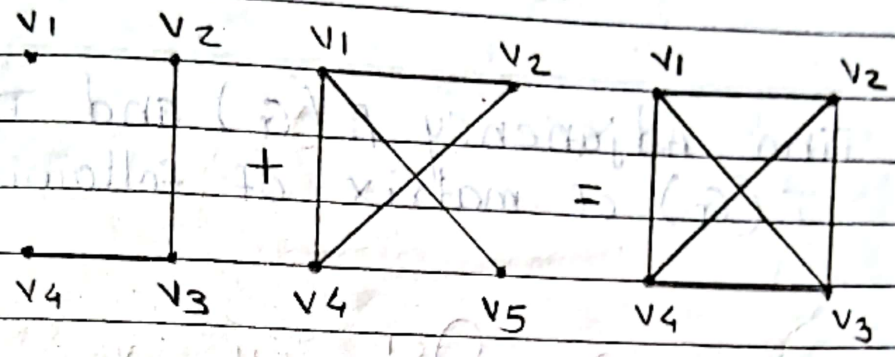
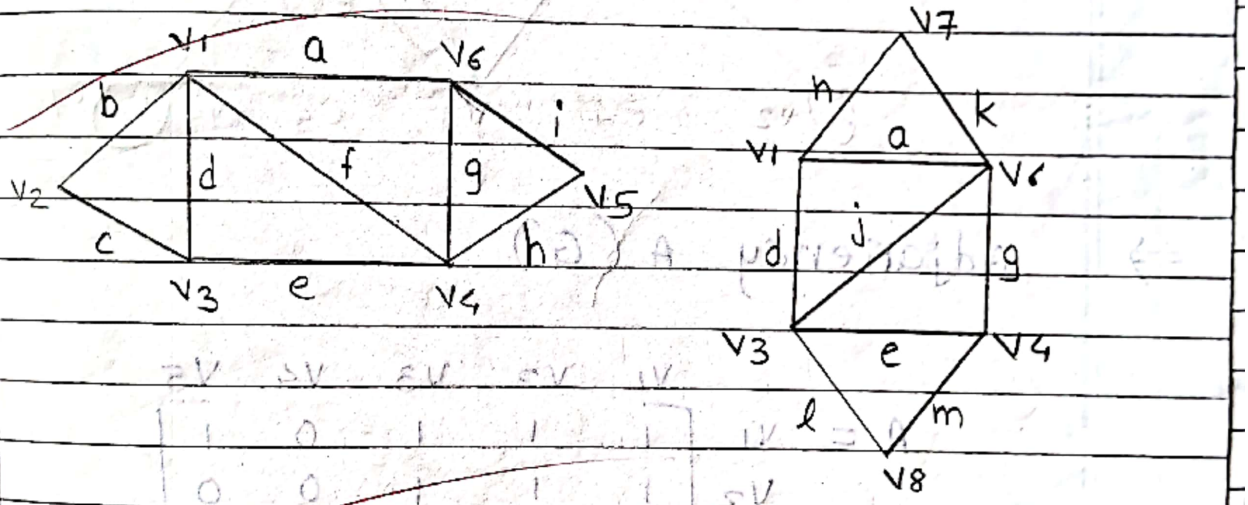
Complement Graph :-

The complement of Graph G is a Graph h on the same vertices such that two distingh vertices of H are adjacent if and only if they are not adjancent in G

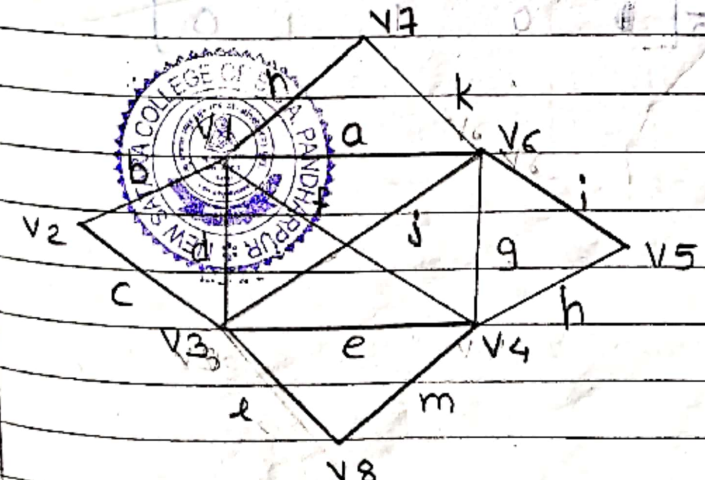
ex.



Q) Draw $G_1 \cup G_2$ & $G_1 \cap G_2$ of following



$G_1 \cup G_2$:-



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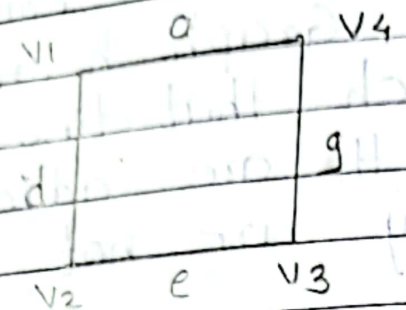
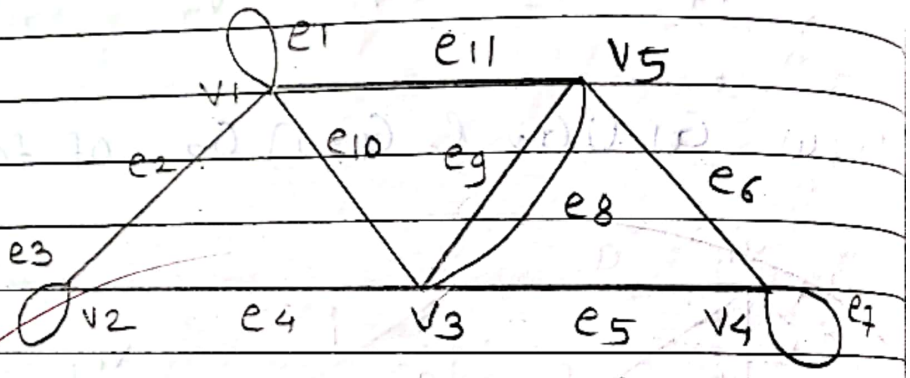
$G_1 \cap G_2$ ∴-



4) Find Adjacency A(G) and Inceder I(G) of matrix of following ma



⇒ Adjacency A(G)

$$A = \begin{array}{c} \\ V_1 \\ V_2 \\ V_3 \\ V_4 \\ V_5 \end{array} \begin{array}{c} \begin{array}{ccccc} V_1 & V_2 & V_3 & V_4 & V_5 \end{array} \\ \begin{bmatrix} 1 & 1 & 1 & 0 & 1 \\ 1 & 1 & 1 & 0 & 0 \\ 1 & 1 & 0 & 1 & 1 \\ 0 & 0 & 1 & 1 & 1 \\ 0 & 0 & 1 & 1 & 0 \end{bmatrix} \end{array}$$

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Incedence I (G)

I =	e1	e2	e3	e4	e5	e6	e7	e8	e9	e10	e11
V1	1	1	1	0	0	0	0	0	0	1	1
V2	1	1	1	1	0	0	0	0	0	0	0
V3	1	0	1	1	1	0	1	1	1	1	0
V4	0	0	0	0	1	1	1	0	0	0	0
V5	1	0	0	0	0	1	1	1	1	0	1

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Name :- Devkate Kiran Madhukar

subject :- Graph Theory

Roll.No :- 113

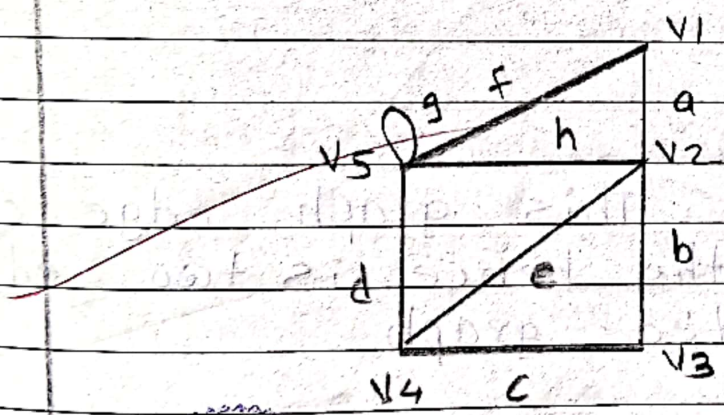
Assignment :- 2

1) Answer Any Five of the following

1) what is connected graph and disconnected graph. Explain with example.

⇒ connected graph :-

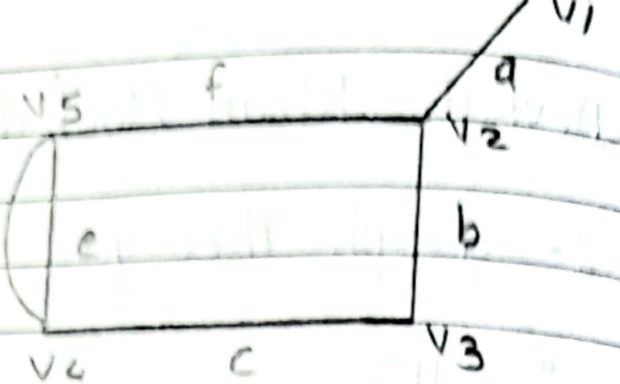
A Graph G is a connected if there is atleast one path between every pair of vertices in G.



path :- V1 - a - V2 - b - V3 - c - V4 - d - V2 - h - V5

Disconnected graph :-

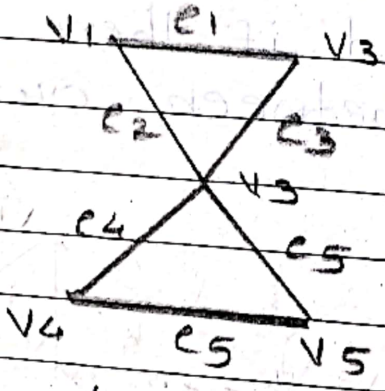
A Graph G is said to be disconnected graph if there is no path between every pair of vertices in G



2) Explain edge connected and vertex connected graph with example.

⇒ Edge connected graph :-

In a graph if any of the edges is removed then graph get disconnected is called edge connected graph.



This graph edge connecting is the hence is two edge connected graph

Vertex connected graph :-

In a connected graph if any of the vertices are removed the graph get disconnected then the graph is called vertex connected graph.

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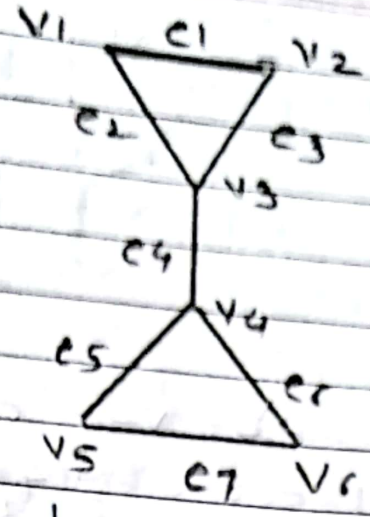
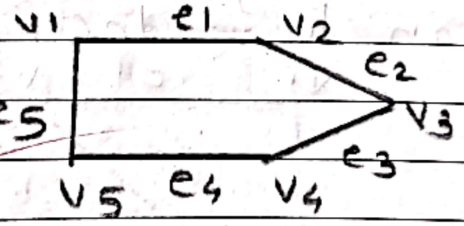


The above graph G is disconnected by removed of single vertex v_3 or v_4 hence vertex connectivity is 1.

3) Discribe Eular graph, Eulars path, Eulers circuit with example

⇒ Euler graph :-

A connected graph G is called an Eulers graph if there is a closed trail which includes every edges of the graph G.



$v_1 - e_1 - v_2 - e_2 - v_3 - e_3 - v_4 - e_4 - v_5 - e_5 - v_1$

Eulers path :-

An a path that uses every edge of a graph exactly once an Eulers path starts and ends with at different vertices

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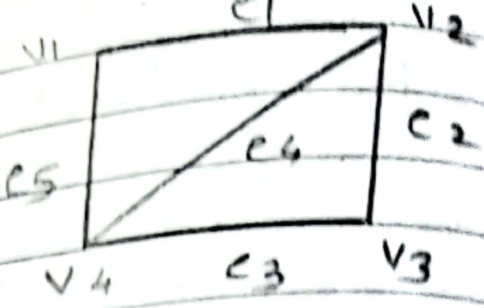
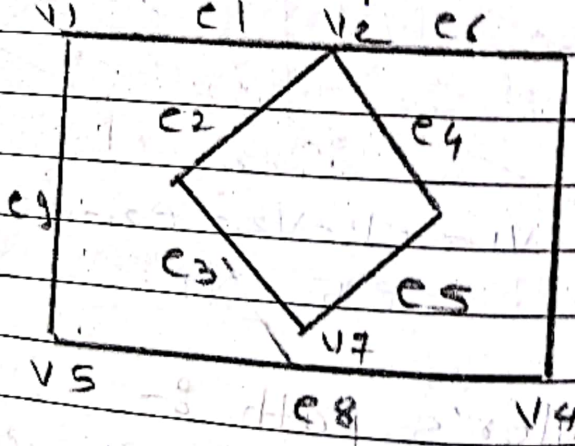


V2 - e4 - V4 - e3 - V3 - e2 - V2 - e1 - V1 - e5 - V4

Eulers Circuit :-

An euler cir
is a circuit that uses eve
edge of a graph Excatly on
An Euler circuit is always
start and ends at the sa
vertex. A connected graph G
is an Euler graph if and
only if all vertices of G
are of even degree. A conn
graph G is Fulurian graph
and only if its edge set
can be decomposed cycles



V1 - e1 - V2 - e4 - V6 - e5 - V7 - e
V8 - e2 - V2 - e6 - V3 - e6 - V3
e7 - V4 - e8 - V5 - e9 - V1

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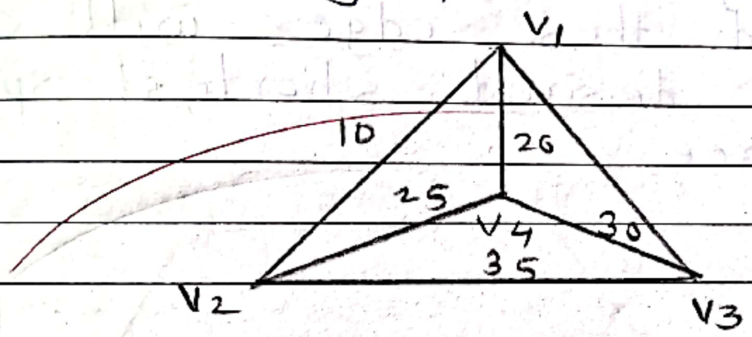
4] Explain travelling salesman problem and chinese postman problem with example

⇒ Travelling salesman problem :-

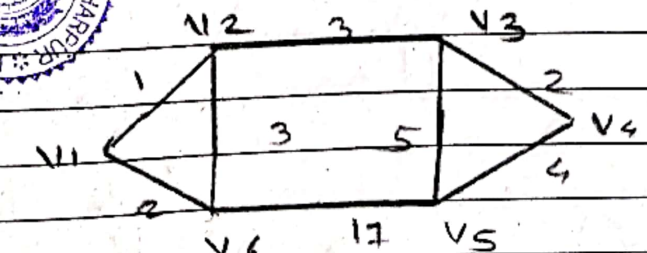
Give a set of cities and the distance between every pair of cities the problem is to find the shortest possible rule that visits every city exactly once and returns to the starting point



V1 - V2 - V4 - V3 - V1

chinese postman problem :-

chinese postman problem is to find shortest closed path or circuit that visit every edge of an (connected) undirected graph atleast once.



V1 - V2 - V3 - V4 - V5 - V3 - V2 - V6 - V1

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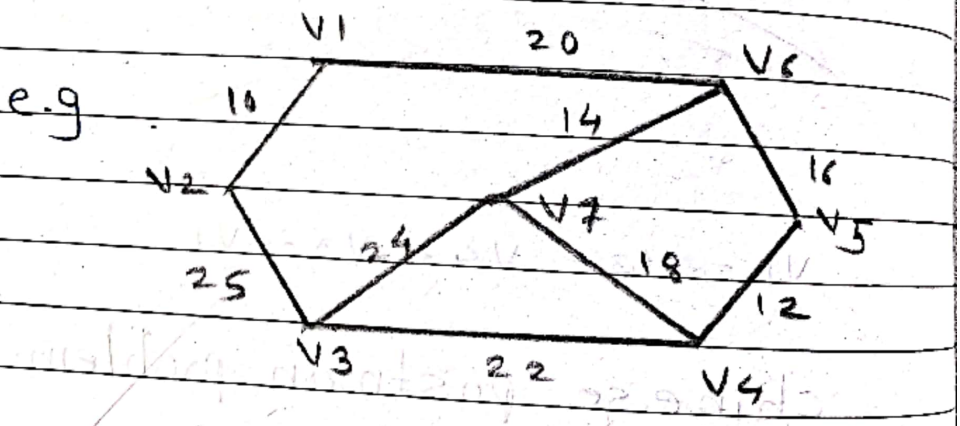
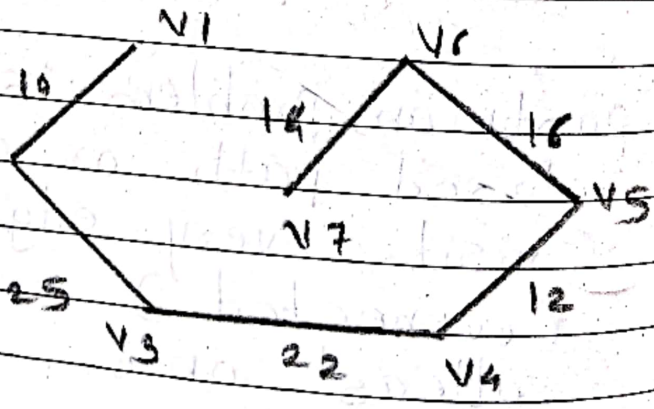
5) Explain kruskal algorithm with example.

⇒ List all edges of the graph G in order of nondecreasing weight next select a smallest edge of G then for each successive step select (from all remaning edges) another edge that makes no circuit with the previously selected edges continious until (n-1) edges have been selected and these edges will constitute the desired shortest spanning Tree

e.g





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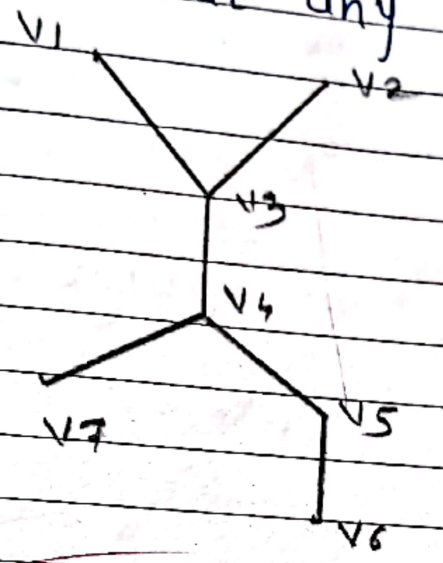
6) Define tree & explain the term spanning tree and minimal spanning tree.

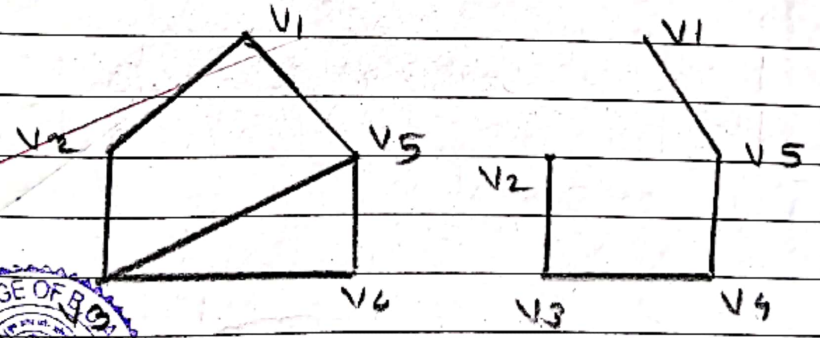
⇒ Tree :-

A tree is connected graph without any circuits



spanning Tree :-

A Tree T is a said to be spanning Tree of a connected graph G if T is subgraph of G and T contains all the vertices of G.



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shortest spanning Tree / Minimal spanning Tree :-

A spanning Tree with the smallest weight in a weighted graph is called a Minimal spanning Tree or

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shortest spanning Tree

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Probability Theory

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Affiliated to Solapur University, Solapur.

Semister, Annual 2022 / 2023

Name kiran Madhukar Devkate Roll No. 113

Course B.C.A - I sem - II Year I / II / III

Subject probability Theory Date 29/6/2023

Que. No.

Marks

1)

1) How many ways can 7 people sit at a circular table

⇒ b) 720

2) Different arrangement of a given number of things by taking some or all at a time is called

⇒ c) permutation

3) List of all possible outcome of random experiment is Event

4) when outcome does not depends on previous outcome known as independent event

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Q. (2) $P(A) = 1 - P(A^c)$

A and Ac are the Mutuclusive event.

$A \cup A^c = S$

by axioms -3 we have

$P(A \cup A^c) = P(S)$

but by axioms -2 we have $P(S) = 1$

$P(A \cup A^c) = 1$

$P(A) + P(A^c) = 1$

$\therefore P(A) = 1 - P(A^c)$

(3) In work MCA there are three letters

$n = 3$

$r = 2$

$${}^nP_r = \frac{n!}{(n-r)!}$$

$${}^3P_2 = \frac{3!}{(3-2)!}$$

$$= \frac{3!}{}$$

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$= 3 \times 2 \times 1$

$= 6$ ways.

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Q3 a) $P(\phi) = 0$

$A_1 = S$ and $A_2 = \phi$

A_1 and A_2 are Mutully exclusive event.

$S = A_1 \cup A_2$

$= S \cup \phi$

by axiom-3 we have

$P(S) = P(S \cup \phi)$

$P(S) = P(S) + P(\phi)$

by axiom-2 we have

$P(S) = 1$

$1 = 1 + P(\phi)$

$1 - 1 = P(\phi)$

$\therefore P(\phi) = 0$

04

Hence the proof probability of impossible event is zero.

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(3) In word MATHEMATICS their are 11 letters and A occur at 2 times T occurs 2 times and M occurs 2 times

number of ways required

$$= \frac{11!}{2!\,2!\,2!}$$

$$= \frac{11!}{(2-1)!\,(2-1)!\,(2-1)!}$$

$$= \frac{11 \times 10 \times 9 \times 8 \times 7 \times 6 \times 5 \times 4 \times 3 \times 2 \times 1}{2!\,2!\,2!}$$

$$= 11 \times 10 \times 9 \times 8 \times 7 \times 6 \times 5 \times 3$$

$$= 4989600 \text{ ways}$$

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2) simple event :-

An event can occur one possible outcome of random variable are known as simple event.

ex. one coin toss getting a head.

$\{h\}$

compound event :-

An event can outcome one possible sample point is an known as compund event.

ex.

$S = \{4, 5, 6, 7, 8, 9\}$

$A = \{4, 5, 7\}$,

$B = \{7, 8, 9\}$

thus

A and B are represent the compound event

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$P(X) = 0.5$

$P(Y) = 0.9$

$P(X \& Y) = P(X) * P(Y)$

$= 0.5 * 0.9$

$= 0.45$

$P(X \text{ or } Y) = P(X) + P(Y)$

$= 0.5 + 0.9$

$= 1.4$

The x & y are two independent events

$P(X \& Y) = 0.45$ &

$P(X \text{ or } Y) = 1.4$

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Ruf work

110
× 9
990
× 8
7920
× 7
55440
× 6

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New Satara College of B.C.A. Pandharpur
Affiliated to Solapur University, Solapur.
Semister/Annual 2022 / 2023
Name kiran Madhukar Devkate Roll No. 113
Course BCA - I
Subject probability Theory
23/5/2023

19/20

probability mass Function :- (P.M.F)
A probability mass function is a Discreate Random variable will be excatully equal to the particular value.

ex suppose a fair coin is tossed twice the possible outcome is HH, HT, TH, TT are outcome.

3

cumulative distribution Function :-
cumulative distribution function is a real value Random variable x is evalevated x the probability function x will take the value is less than or equal to x.

Bajaj

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It $F_X(x) = P(x \leq x)$

where x is a probability of value is less than or equal to x. it will lies between semiclosed interval (a,b) where a is $a<b$ the probability of interval is written as

$$P(a<x\leq b) = F_X(b) - F_X(a)$$

property of c.d.f is-

1) cumulative distribution function is a non decreasing function and write continious $\lim F_X(x) = 0$ and $F_X(x) = 1$

2) All the Real number A and B continious Random variable with x and function Fx such that function Devirate is

$$F_X(b) - F_X(a) = P(a<x\leq b) = f_X(x)$$

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4) an Expriment Result of two way success and failure p is the probability of success and q is that failure such that $p+q=1$ the r success of probability with

$$P = {}^{n}C_r\, p^r\, q^{n-r}$$

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Bajaj

PAGE No.
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Mean for distribution

Mean = $\bar{x} = np$

where p is the probability and n is the number of event

variance = $v(x) = npq$

where $q = 1-p$

standard deviation = $\sigma = \sqrt{npq}$

poissions distribution are the Function Discreate probability function that means variable are only take specific value the given number of list and probability number infinite.

formula for poission distribution

$$P(x) = \frac{e^{-\lambda} \lambda^x}{x!}$$

where λ is average Rate

Mean for distribution :-

Mean is denoted by λ in poission distribution and variance is denoted by $v(x)$ in poission distribution.

Bajaj

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Mean $\lambda = E(x)$ and
variance $V(x) = E(x)$
i.e. Mean = variance

the Mean and variance are
equal in position distribution.

5) Normal distribution Function is a probability density function of a random variable in the probability function.

formula for normal distribution

$$f(x, M, f) = \frac{1}{\sigma\sqrt{2\pi}} e^{\frac{-(x-M)^2}{2\sigma^2}}$$

where x is a variable, M is a mean and f is a standard Deviation

property of normal distribution.

1) In Normal distribution mean, mode and Median are equal

2) Normal distribution It should have one value.

3) The Normal distribution it should be symmentric in the center.

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Page No.
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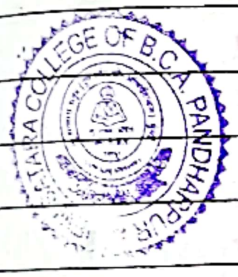
Name :- Kiran Madhukar Derkate

Roll No :- 113

Subject :- Probability Theory.

Assignment No :- 1



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Date: / /

select correct Alternative from following

How many ways can 7 people sit at a circular table ?

b) 720

Different arrangement of a given number of things by taken some or all at a time is called

c) permutation

list of all possible outcome of a random experiment is

a) sample space

when outcome does not depends on previous outcome is known as

d) independant event.

2) solve any two

show that $p(A) = 1 - p(A^c)$

Theorem :-
If S is a sample space and is any event of the experiment then
$p(A) + p(A^c) = 1$
i.e $p(A) = 1 - p(A^c)$
~~but By axioms (2) $p(S) = 1$~~
~~$p(A \cup A^c) = 1$~~

$= p(x \leq x)$

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$P(A) +$

proof :- since A and A^c are Mutu exclusive

Then

$$A \cup A^c = S$$

By axiom -③

$$P(A \cup A^c) = P(A) + P(A^c) \quad -①$$

$$\therefore P(A \cup A^c) = P(S)$$

But By axiom ② $P(S) = 1$

$$P(A \cup A^c) = 1$$

$$P(A) + P(A^c) = 1 \quad \text{from eqn.}$$

i.e $P(A) = 1 - P(A^c)$

---

what is conditional probability

If A and B are two events associated with the same sample space of a Random experiment then the conditional probability of event A given that B has occured is

$$P\left(\frac{A}{B}\right) = \frac{P(A \cap B)}{P(B)} \; ; P(B) \neq 0$$

here $P\left(\frac{A}{B}\right)$ is the conditional probability $P(A \cap B)$ is the join probability of events A and B $P(B)$ is probability of event B

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How considerable word can be created by using two letters from the term 'MCA'

Here 3 letters in 'MCA'

$n = 3$

$r = 2$

required number of way

$$^3P_2 = \frac{3!}{(3-2)!}$$

$$= \frac{3!}{1!}$$

$$= |3| = 3 \times 2 \times 1$$

$= 6$ ways

solve Any Three

show that probability of impossible event is zero i.e $P(\phi) = 0$

The probability of impossible event is zero $P(\phi) = 0$

proof :-

Let $A_1 = S$ and $A_2 = \phi$

Then A_1 and A_2 are Mutually exclusive event

$= A_1 \cup A_2$

$= S \cup \phi$

By axiom -3 we have

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$$P(S) = P(S \cup \phi)$$
$$= P(S) + P(\phi)$$

But by axiom -2 $P(S) = 1$

$$1 = 1 + P(\phi)$$
$$1 - 1 = P(\phi)$$
$$P(\phi) = 0$$

Define simple event and compound event.

simple Event :-

If an Event consist of a single point or a single Result form a sample space it is called simple Events.

Ex. The event of getting less than 2 on a rolling a Fair Die is denoted by $E = \{1\}$

compound Events :-

If an event has more than one sample point it is called compound Event.

Ex. If $S = \{1, 2, 3, 4, 5, 6\}$ such

$E_1 = \{1, 3, 6\}$, $E_2 = \{2, 6\}$

E_1 and E_2 Represents compound Events.

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Page No.
Date

how many different ways can letter of word 'MATHEMATICS' be arranged.

There are 11 letters in the word 'MATHEMATICS' be arranged.

∴ number of ways = $\frac{11!}{2!2!2!}$

$= \frac{11\times10\times9\times8\times7\times6\times5\times4\times3\times2\times1}{(2\times1)(2\times1)(2\times1)}$

$= 4989600$ ways

Let x and y are two independent events such that $p(x) = 0.5$ and $p(y) = 0.9$ Find $p(x \text{ and } y)$; $p(x \text{ or } y)$

$p(x \text{ and } y) = p(x \cap y)$
$= p(x)\,p(y)$
$= 0.5 \times 0.9$
$= 0.45$

$p(x \text{ or } y) = p(x \cup y)$
$= p(x) + p(y) - p(x \cap y)$
$= 0.5 + 0.9 - 0.45$
$= 0.95$

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Name :- Devkate kiran Madhukar

subject :- probability Theory

Roll No :- 113

Assignment No :- 2

1) Answer the following

) Explain probability mass function

⇒ probability Mass Function can be defined as The probability that a Discreate Random variable will be excatully equal to some particular value.

e.g. suppose a fair coin is tossed twice and the sample space is HH, HT, TH, TT the probability of getting heads needs to be determine.

let x be random variable that shows How many heads are obtained Hence x can take are on values 0, 1, 2 the probability that x will be equals to 1 to 0.5 thus it can be said that The probability Mass function of x elavuated 1. will be 0.5

Discreate Random variable is given by formula $f(x) = p(x \leq x)$

what is cumulative
and its mean and variance also
explain its properties
The cumulative distribution Functio
(CDF) of a real valued Random
variable x evaluated at x is
the probability function that x
will takes a value less than
or equal to x
and its formula is
$F_x(x) = p(x \leq x)$

where x is the probability that
takes a value less than or equa
to x and that lies in the
semiclosed interval (a,b) whe
a is a<b therefore the probabi
with in the interval is written
as
$p(a < x \leq b) = F_x(b) - F_x(a)$

properties :-

1) every cumulative distribution
function Fx is non Descasing
and right continious lim Fx(x
and lim Fx(x) = 1
2) For all Real numbers a and
with continious Random vari
x then the function Fx is equ
to Derivite of Fx such that
$F_x(b) - F_x(a) = p(a < x \leq b) = \int_a^b$
3) If x is completly Discreate
Random variable then it fo

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the values $x_1, x_2 \cdots$ so on with probability $p_i = p(x_i)$ and the cumulative distribution of x will be continious at the points x_i them.

$$F_x(x) = p(x \leq x) = \sum_{x_i \leq x} p(x = x_i) = \sum_{x_i \leq x_i} p(x_i)$$

3) State and prove Addition theorem for mathmatical expection

⇒ statement :-

Let x and y be two random variables with respective expection $E(x)$ and $E(y)$ then Expection of sum of this Random variables is $E(x+y) = E(x) + E(y)$

proof :-

Let x and y be two discrete random variables with their probability distribution of $p_1(x) = \sum_y p(x,y)$ and $p_2(y) = \sum_x p(x,y)$ —①

Then by definition of mathmadical expectation.

$$E(x+y) = \sum_x \sum_y (x+y)\, p(x,y)$$

$$= \sum_x \sum_y x\, p(x,y) + \sum_x \sum_y y\, p(x,y)$$

$$= \sum_x x \sum_y p(x,y) + \sum_y y \sum_x p(x,y)$$

$\sum_x x p_1(x) + \sum_y y p_2(y)$ from

$= E(x) + E(y)$ — (by definitio

Define Binomial Distribution wi
its mean & variance

In an Experiment Result ca
in two ways success and Failu
and p is the probability of
success and q is that of Fail
such that $p+q=1$ then probab
of 'r' success when Exprime
is repeated n times is give
by

$$p(x) = {}^nC_r \, p^r \, q^{n-r}$$

The Resulting probability
Distribution is called Binomia
Distribution.

Mean $= \bar{x} = np$

where p is the
probability and n is number of
event.

2) Variance $= V(x) = npq$

where $q = 1-p$

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5) Explain Normal Distribution with its mean & variance

⇒ The normal distribution is defined by the probability density function for a continious Random variable in a system.

its formula is

$$f(x, \mu, \sigma) = \frac{1}{\sigma\sqrt{2\bar{x}}} e^{-\frac{(x-\mu)^2}{2\sigma^2}}$$

where x is variable μ mean and σ is standard deviation.

properties of Normal distribution :-

1) In a Normal distribution the mean mode & Median are equal

2) The total area under the curve should be equal to one

3) The normally distributed curve should be symmentric at the center

4) The normal distribution curve have only one peak.

5) There should be exactly half of values are to the right of the center and exactly half of

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the values are to the left of the center.

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Digital Fundamental of Computer

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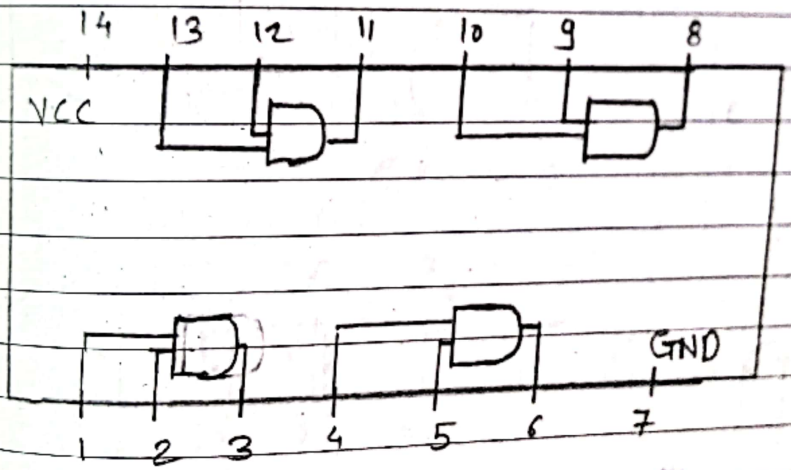
Satara College of B.C.A. Parnerkar Pur
Affiliated to Solapur University, Solapur.
Semister/Annual 2022 / 2023
Name kiran Madhukar Devkate Roll No. 103
Course BCA - I Year I/II/III
Subject Digital Fundamental Computer Date 29/12/2023
Exp. No. 1
Marks 10

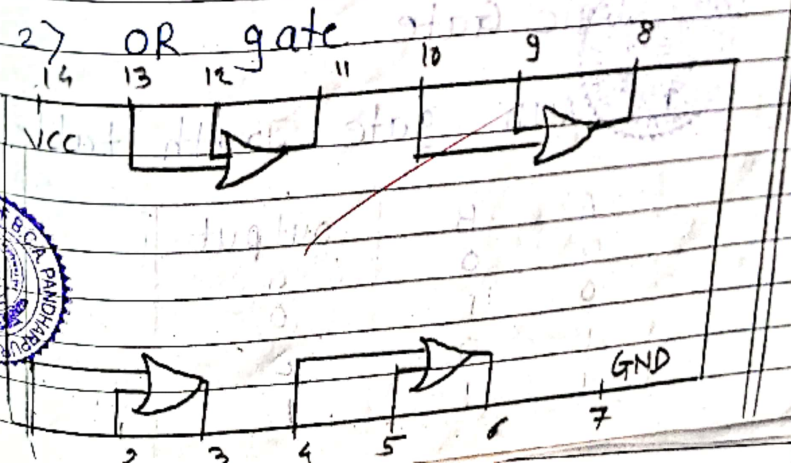
1)

2) logic gate

1) AND gate.



2) OR gate



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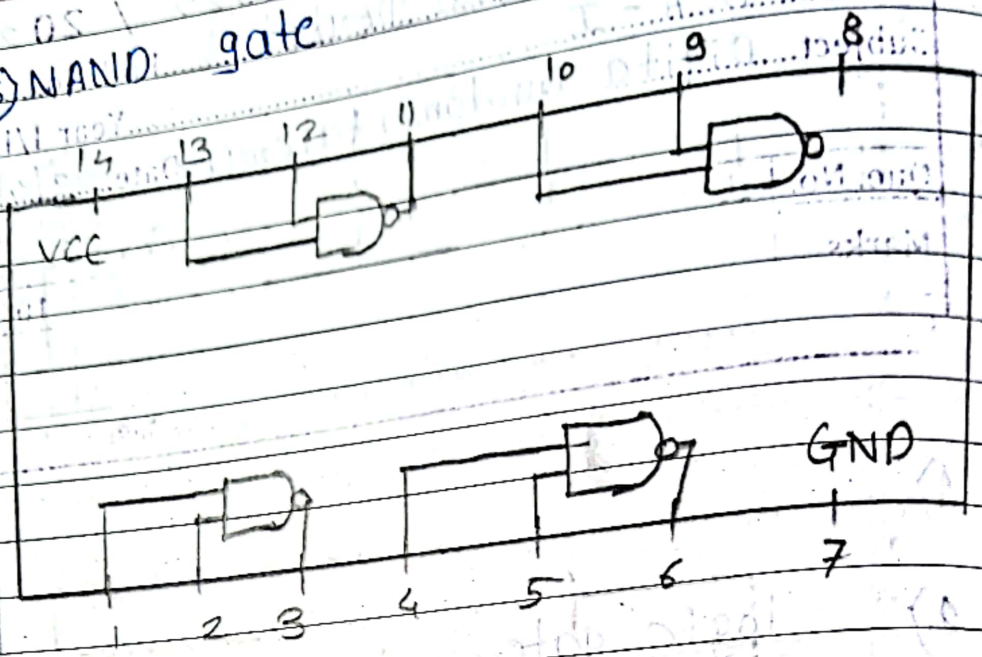
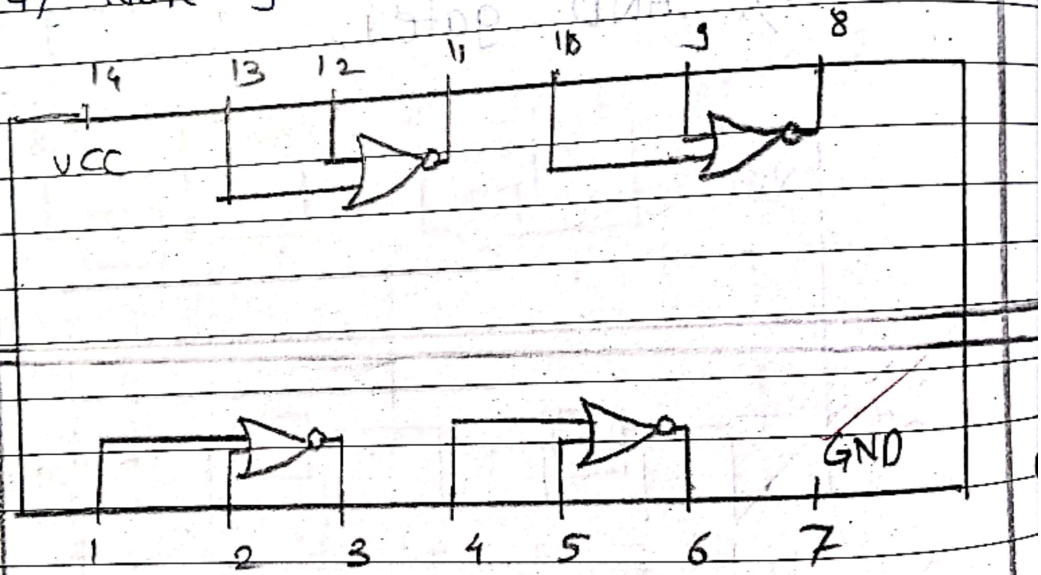
3) NAND gate



4) NOR gate



4

1. Logic Gate

AND gate Truth table

A	B	output
0	0	0
0	1	0
1	0	0
1	1	1

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2) OR gate Truth Table

A	B	output
0	0	0
0	1	1
1	0	1
1	1	1

3) NOR gate Truth Table

A	B	output
0	0	1
0	1	0
1	0	0
1	1	0

4) NAND gate Truth Table

A	B	output
0	0	1
0	1	1
1	0	1
1	1	0

5) NOT gate

A	A'
0	1
1	0

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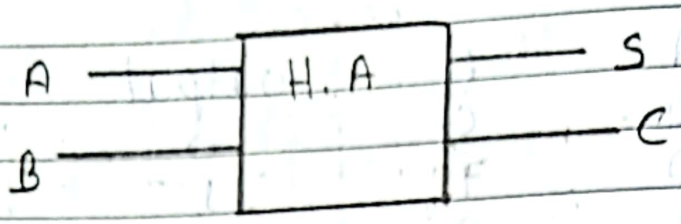
Q (5) Half adder



eqn : $S = A'B + AB'$

$C = A.B$

calculation :-

A \ B	$\bar{B}$ 0	B 1
0 $\bar{A}$	1	2
1 A	3	4

A \ B	0 $\bar{B}$	B 1
0 $\bar{A}$	1	2
1 A	3	4

$S = A'B + AB'$

$S = A \oplus B$ $\qquad C = A.B$

Truth table :-

A	B	S	C
0	0	0	0
0	1	1	0
1	0	1	0
1	1	0	1

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Logic diagram

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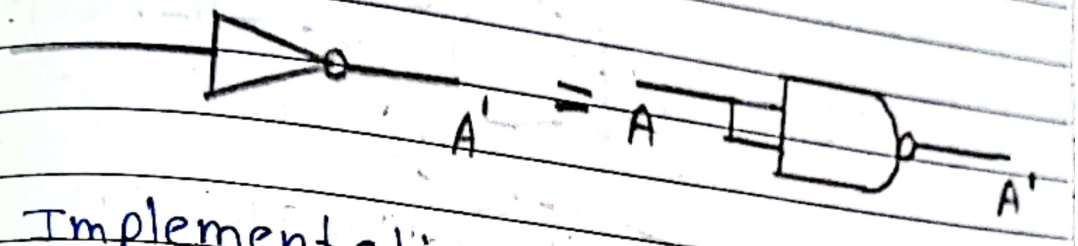
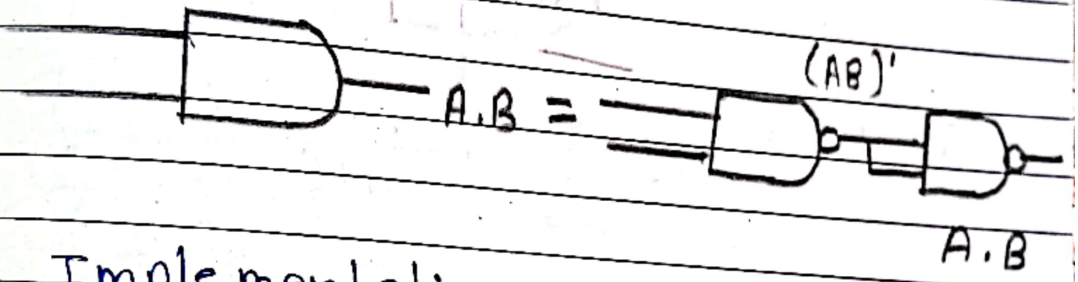
NAND gate :-

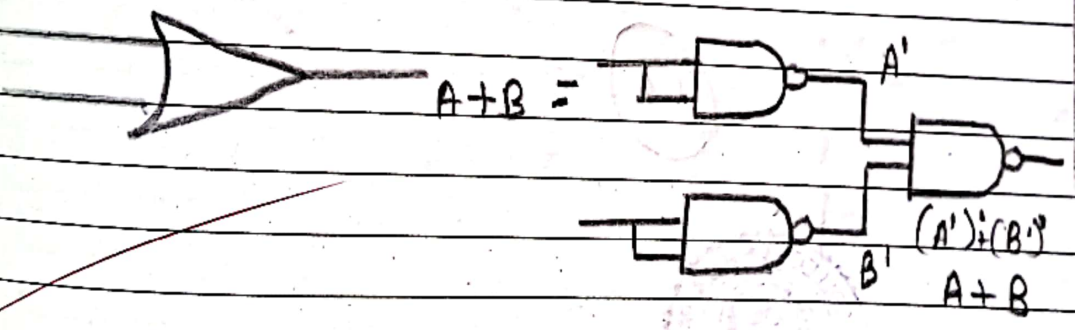
1) Implementation of NOT gate using NAND gate



2) Implementation of AND gate using NAND gate

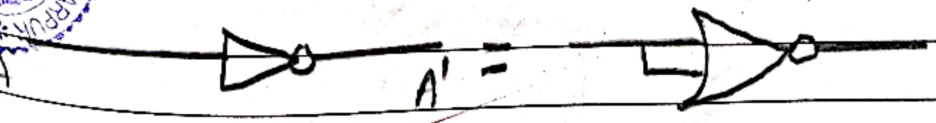


3) Implementation of OR gate using NAND gate



NOR gate :-

1) Implementation of NOT gate using NOR gate



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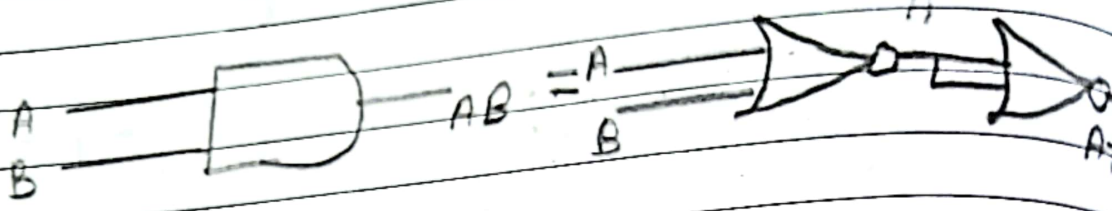
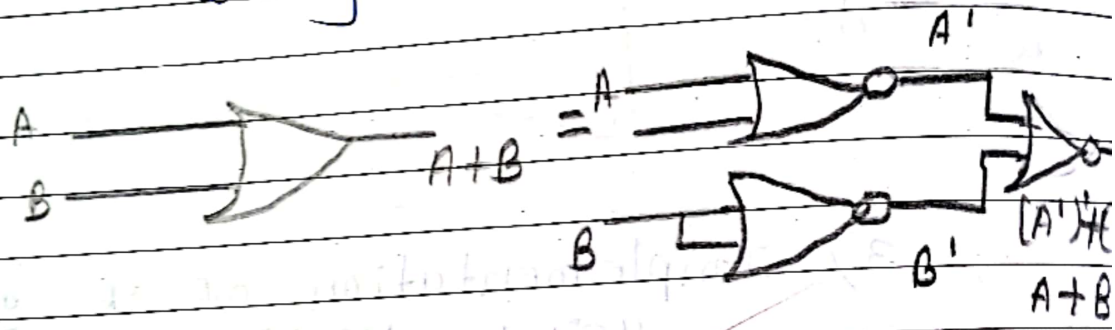
2) Implementation of and gate using NOR gate



3) Implementation of OR gate using NOR gate



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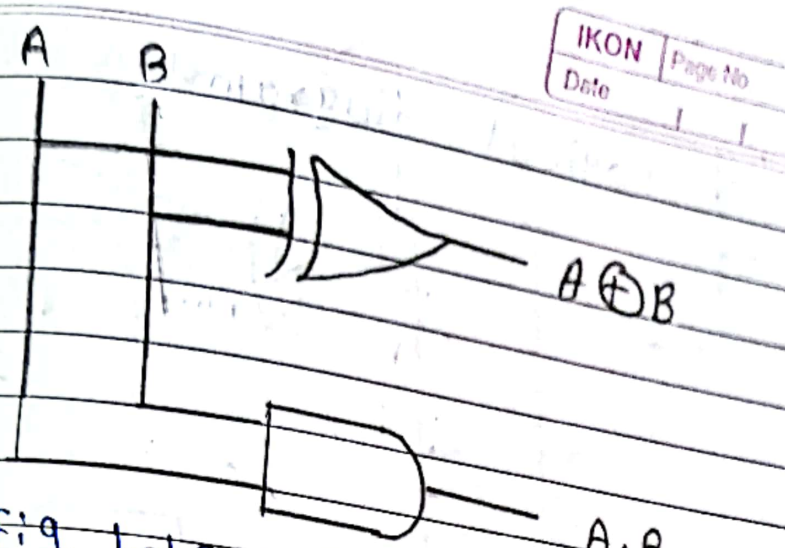
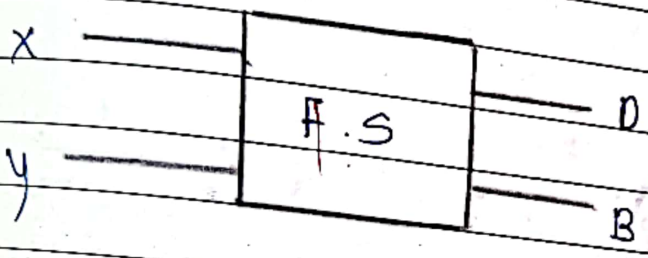


fig. half adder logic diagram

2 half substractor



eqn :-

$D = x'y + xy'$

$B = B'y$

calculation :-

A \ B	$\bar{B}$	B
$\bar{A}$		1
A	1	

A \ B	$\bar{B}$	B
$\bar{A}$		1
A		

Truth Table

x	y	D	B
0	0	0	0
0	1	1	1
1	0	1	0
1	1	0	0

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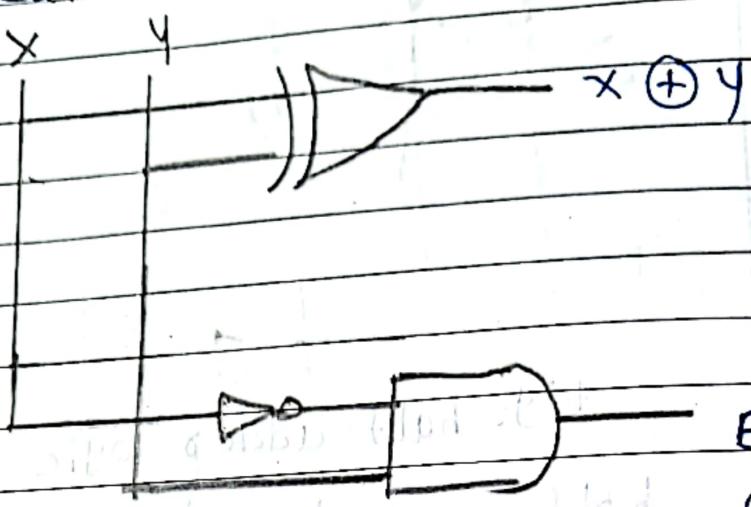
Logical diagram.



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Name : Kiran Madhukar Derkate

Roll No : 113

Subject : Digital Fundamental of Computer.

Assignment No : 1

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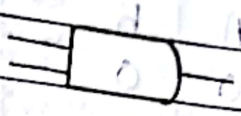
Answer Any Five of the Following

Explain the logic gates ?

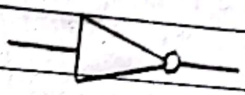
There are seven logic gates are following

1) AND → 7408

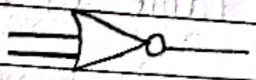


2) OR → 7432

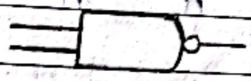
3) NOT → 7404



4) NOR → 7402

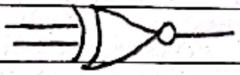


5) NAND → 7400



6) X-OR → 7486

7) X-NOR → 747266



1) Truth Table of AND gate

Input		output
A	B	Y
0	0	0
0	1	0
1	0	0
1	1	1

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5) Truth Table of NAND gate

Input		output
A	B	y
0	0	1
0	1	1
1	0	1
1	1	0

) Truth Table of NOR gate

Input		output
A	B	y
0	0	1
0	1	0
1	0	0
1	1	0

) Truth Table of x-OR gate

Input		output
A	B	y
0	0	0
0	1	1
1	0	1
1	1	0

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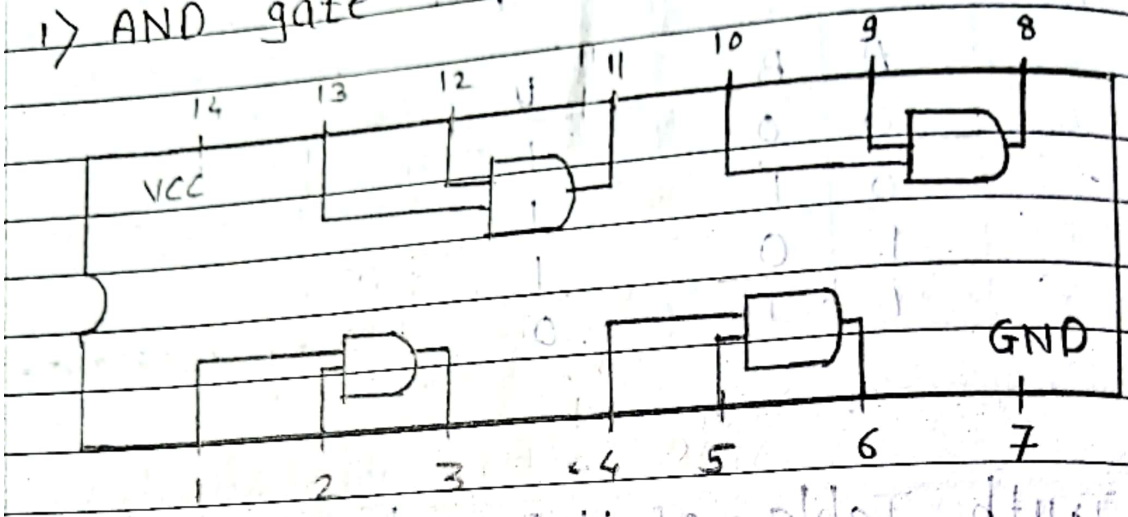
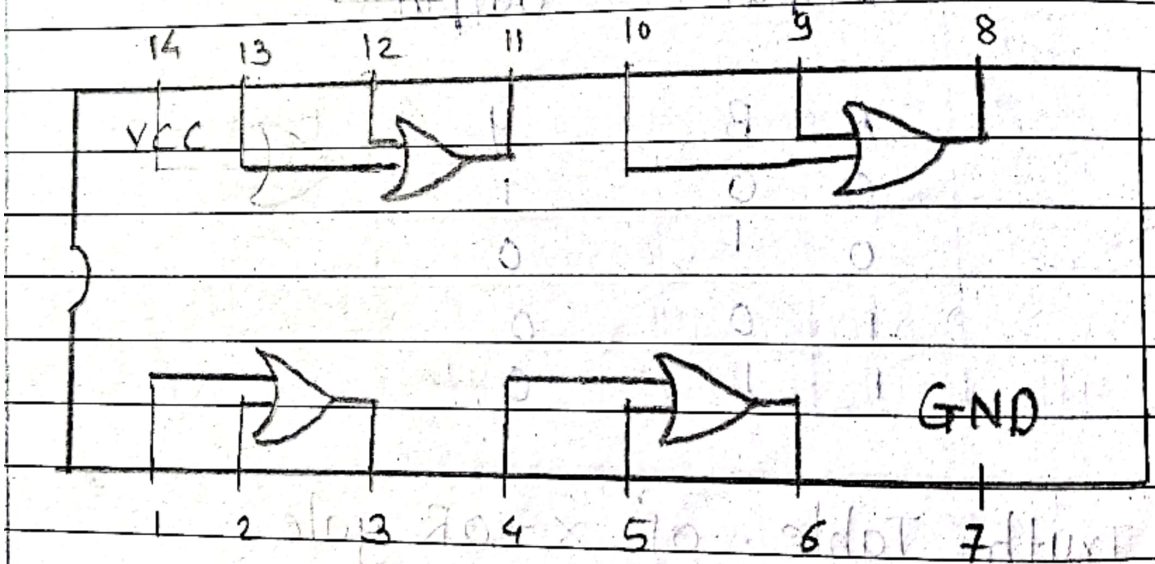
Draw any 4 logic ga...

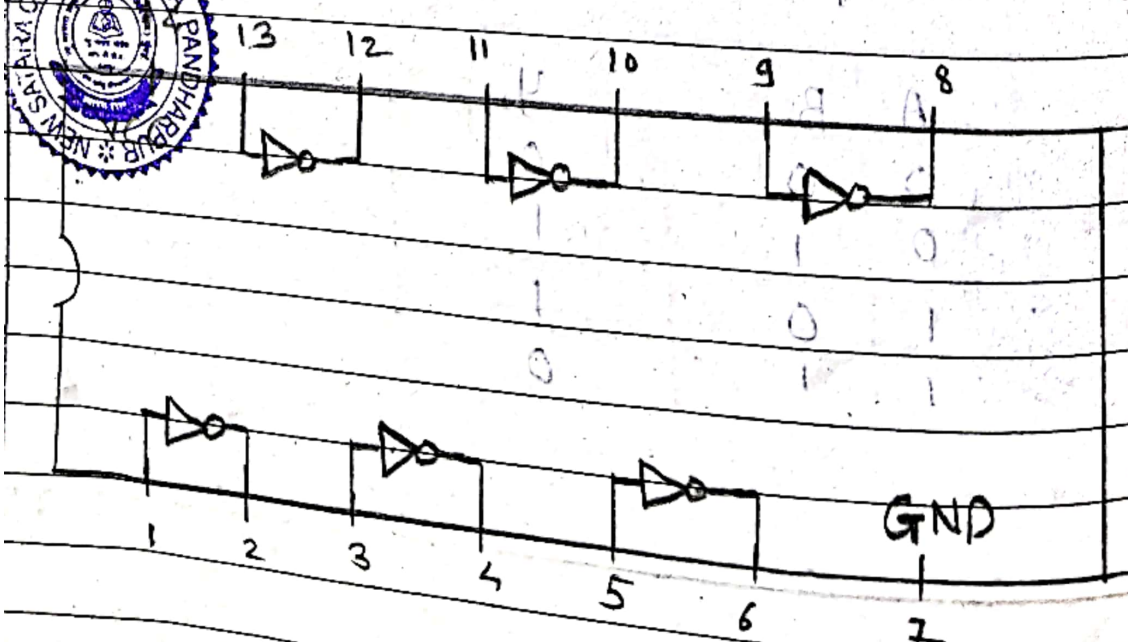
1) AND gate



2) OR gate



3) NOT gate



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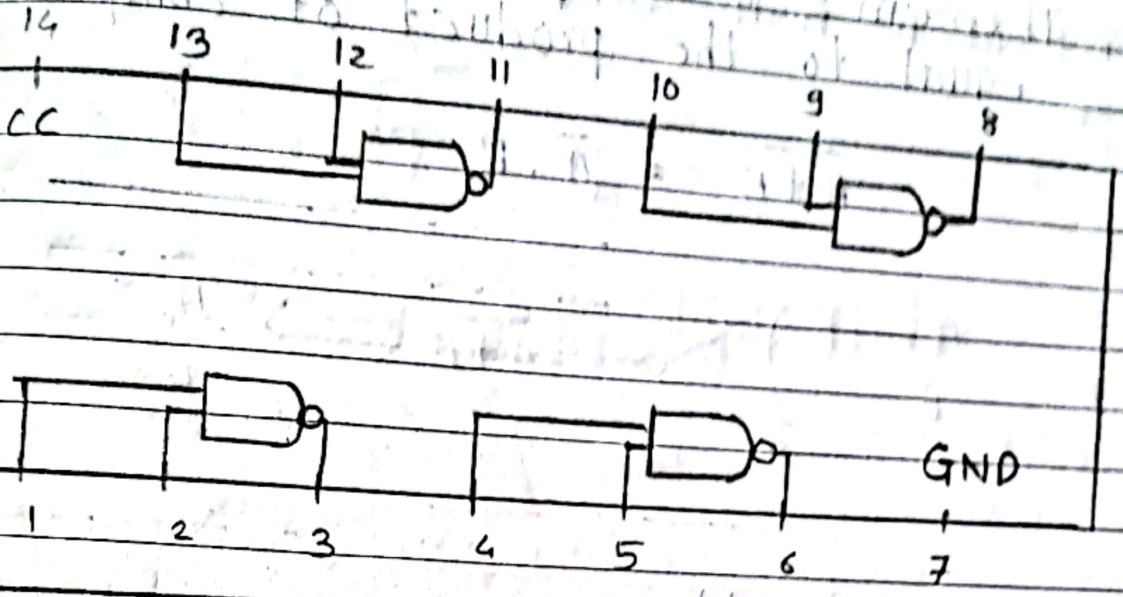
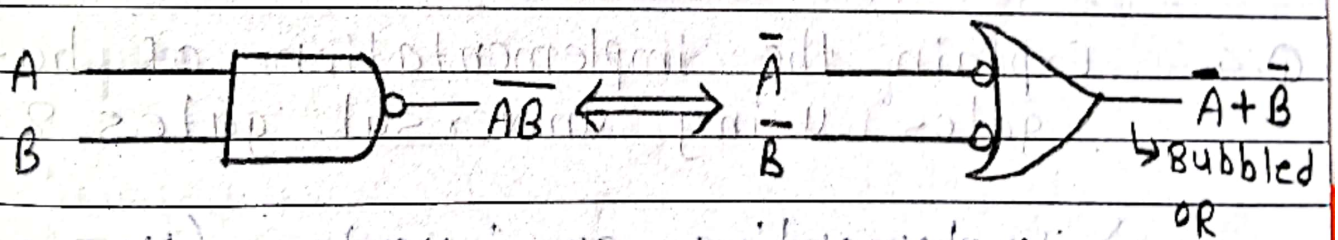
4) NAND gate



write a short Note on demorgan's theorem?

Theorem 1 :- complement of a product is equal to addition of the complements

$$\overline{AB} = \overline{A} + \overline{B}$$



Truth table

A	B	AB	$\overline{AB}$	$\overline{A}$	$\overline{B}$	$\overline{A} + \overline{B}$
0	0	0	1	1	1	1
0	1	0	1	1	0	1
1	0	0	1	0	1	1
1	1	1	0	0	0	0

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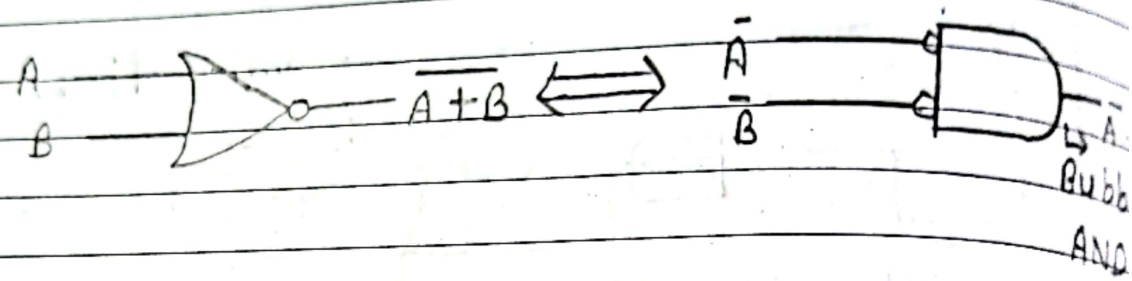
Theorem 2 :- complement of a sum is equal to the product of complements

$$\overline{A+B} = \bar{A} \cdot \bar{B}$$



Truth Table

A	B	A+B	$\overline{A+B}$	$\bar{A}$	$\bar{B}$	$\bar{A} \cdot \bar{B}$
0	0	0	1	1	1	1
0	1	1	0	1	0	0
1	0	1	0	0	1	0
1	1	1	0	0	0	0

Explain the implementation of basic gates using universal gates ?

1) Implementing an inverter (NOT gate) NAND gate

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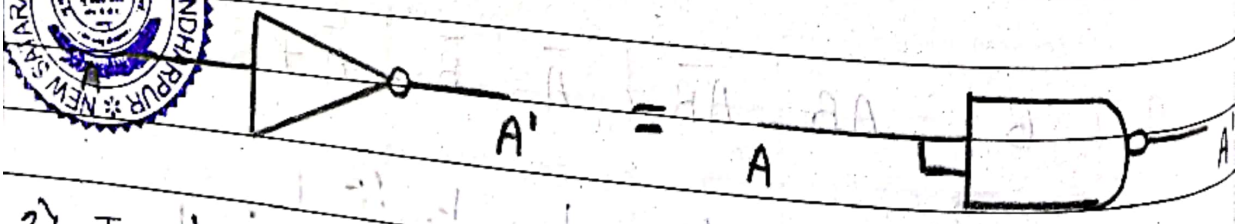
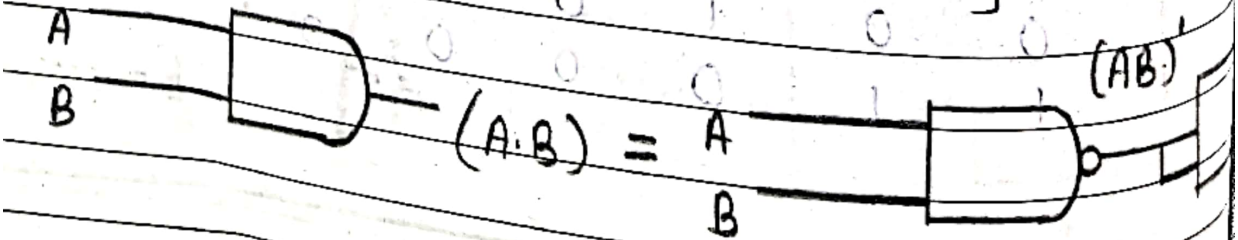


2) Implementing AND gate using NAND ga



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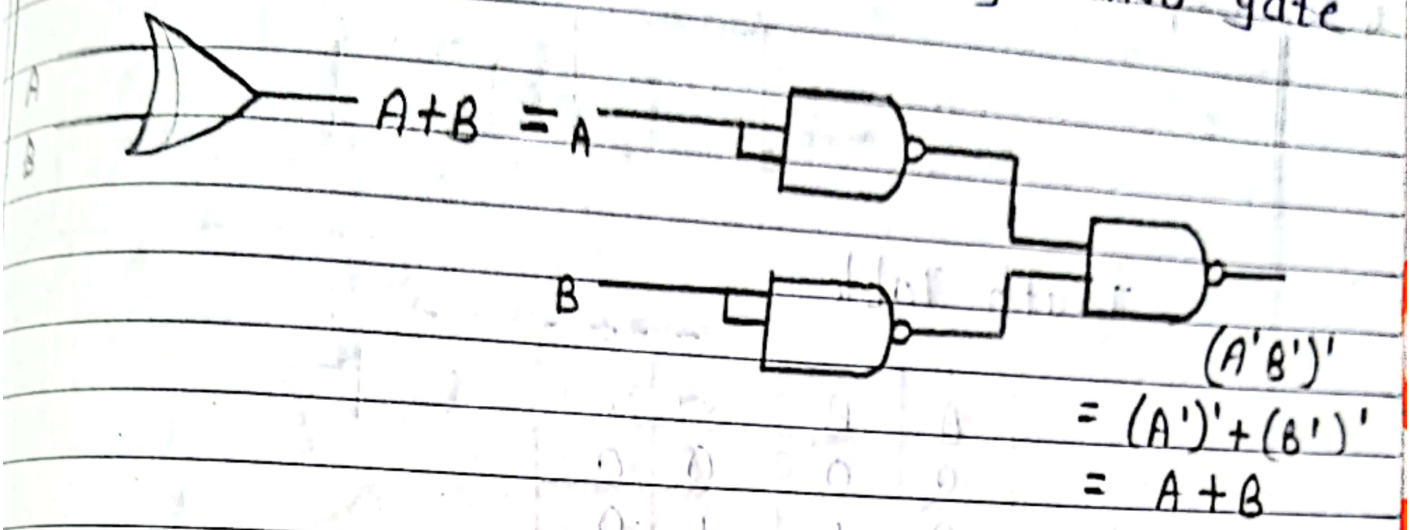
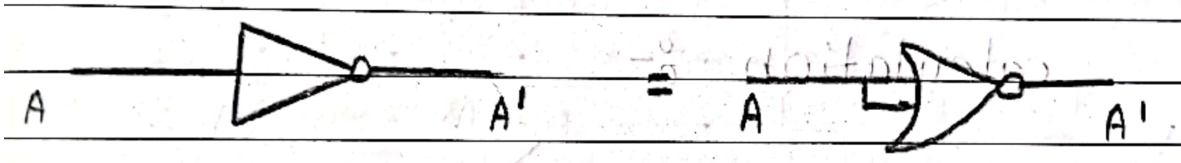
3) Implementing OR gate using NAND gate

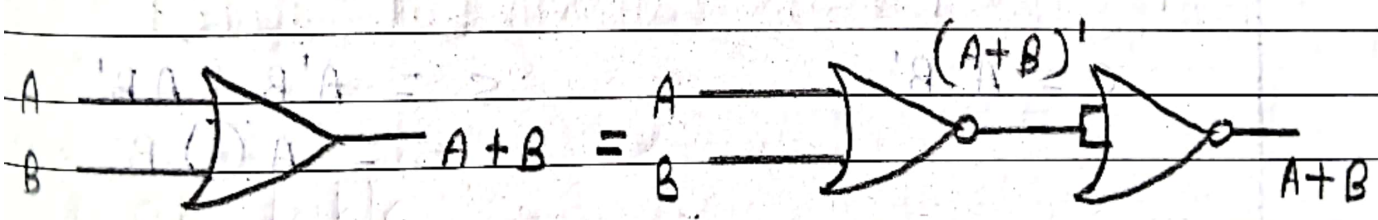


Implemention of Basic gate using NOR gate

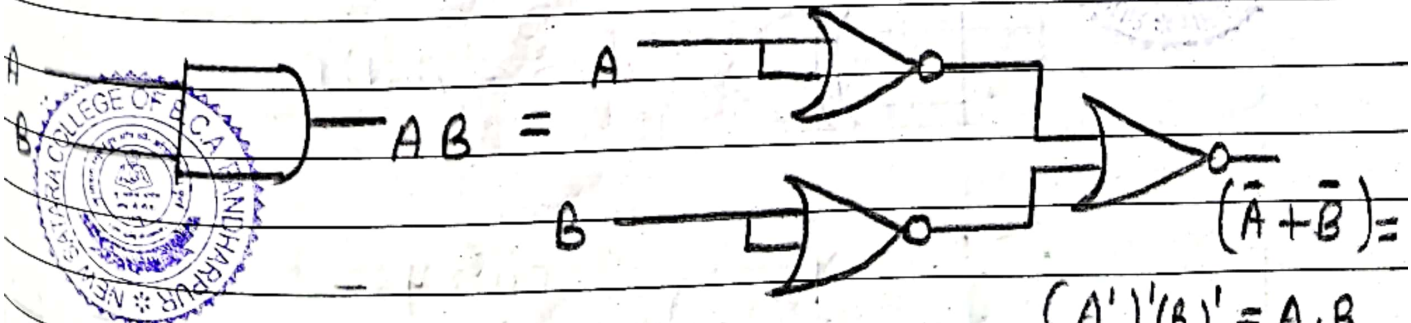
) Implementing an inverter (NOT gate) by NOR gate



) Implementing OR gate using NOR gate



) Implementing AND gate using NOR gate



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Q.5 Explain half adder

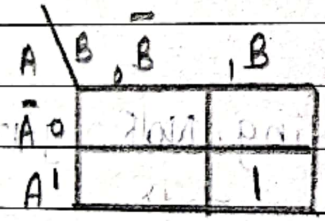
Truth Table

A	B	S	C
0	0	0	0
0	1	1	0
1	0	1	0
1	1	0	1

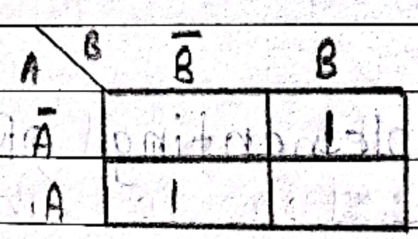
eqn :- $S = A'B + AB'$

$C = A \cdot B'$

calculation :-



$C = A \cdot B'$



$S = A'B + AB'$

$S = A \oplus B$

ical diagram

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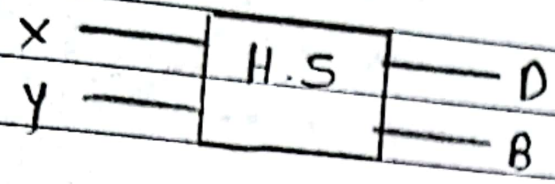
Explain half substractor :-



Truth Table

X	Y	D	B
0	0	0	0
0	1	1	1
1	0	1	0
1	1	0	0

$D = x'.y + x.y'$

$x \oplus y$

$B = x'y$

Eqn for Difference

x \ y	$\bar{y}_0$	y_1
$\bar{x}_0$		1
x_1	1	

$D = x'y + x.y'$

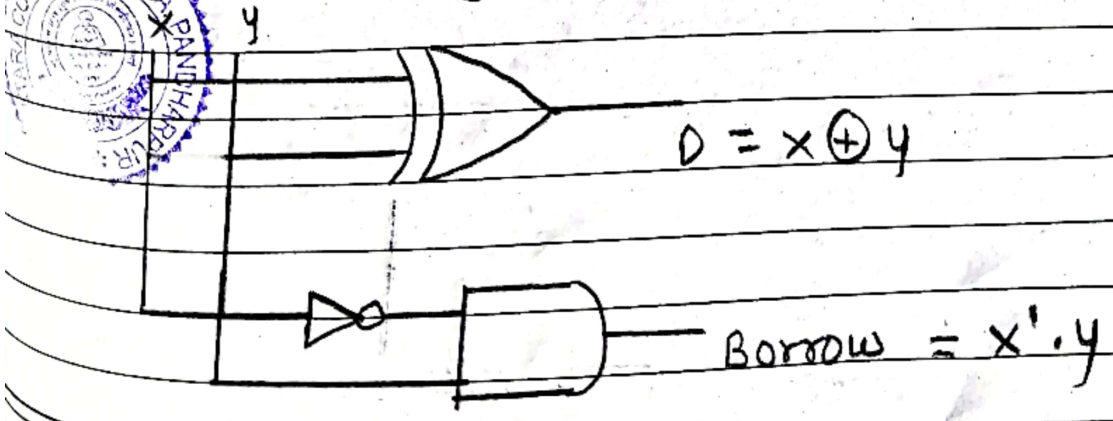
$= x \oplus y$

Eqn for Borrow

x \ y	$\bar{y}_0$	y_1
$\bar{x}_0$		1
x_1		

$B = \bar{x}.y$

Logical diagram



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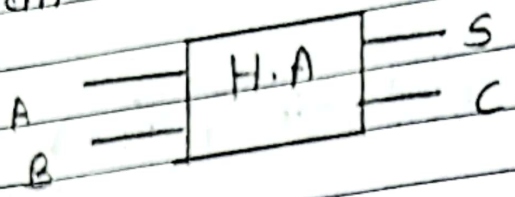
Explain half adder



Truth Table

A	B	S	C
0	0	0	0
0	1	1	0
1	0	1	0
1	1	0	1

eqn :- $S = A'B + AB'$

$C = A \cdot B'$

calculation :-

A \ B	$\bar{B}$	B
$\bar{A}$		1
A	1	

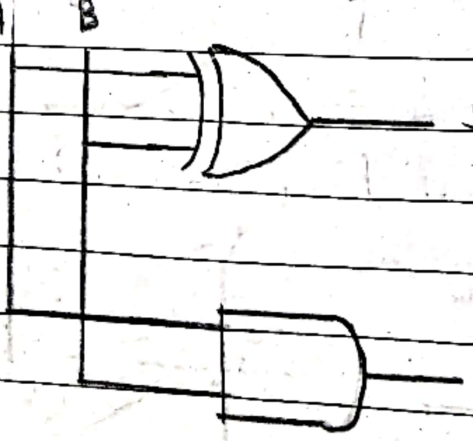
$C = A \cdot B'$

A \ B	$\bar{B}$	B
$\bar{A}$		1
A	1	

$S = A'B + AB'$

$S = A \oplus B$

Logical diagram



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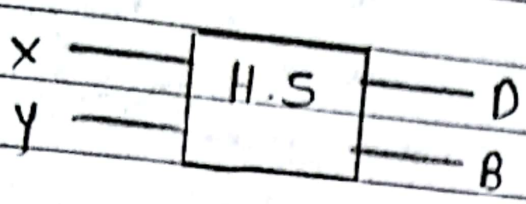
Explain half substractor :-



Truth Table

x	y	D	B
0	0	0	0
0	1	1	1
1	0	1	0
1	1	0	0

$D = x'.y + x.y'$

$x \oplus y$

$B = x'y$

Eqn for Difference

x \ y	$\bar{y}_0$	y_1
$\bar{x}_0$		1
x_1	1	

$D = x'y + x.y'$

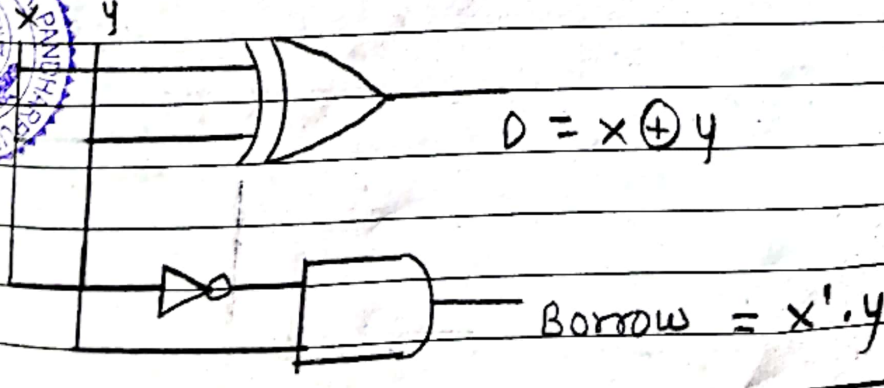
$= x \oplus y$

Eqn for Borrow

x \ y	$\bar{y}_0$	y_1
$\bar{x}_0$		1
x_1		

$B = \bar{x}.y$

Logical diagram



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Name :- kiran Madhukar Devkate

Roll No :- 113

subject :- Digital Fundamentals of Computer

Assignment No. :- 2

Explain any two Flip Flops

) T Flip - Flop :-

The number of Flip-Flops required can be determined by using the following equation:

$$M \leq 2^N$$

where, M is the MOD Number and N is the number of required Flip-Flops

Here MOD number is equal to 5 i.e $M = 5$

therefore, $5 \leq 2^N$

$\Rightarrow N = 3$

therefore to design a MOD 5 counter 3 Flip Flop would be required.

Excitation Table :-

QN	QN+1	T
0	0	0
0	1	1
1	0	1
1	1	0

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circuit state Table :-

QA	QB	QC	QA+1	QB+1	QC+1	TA	TB	TC
0	0	0	0	0	1	0	0	1
0	0	1	0	1	0	0	1	1
0	1	0	0	1	1	0	0	1
0	1	1	1	0	0	1	1	1
1	0	0	0	0	0	1	0	0
1	0	1	X	X	X	X	X	X
1	1	0	X	X	X	X	X	X
1	1	1	X	X	X	X	X	X

k Map :-

k Map for TA :-

	$\bar{Q}B\bar{Q}C$	$\bar{Q}BQC$	$QBQC$	$QB\bar{Q}C$
$\bar{Q}A$	0	0	1	0
QA	1	X	X	X

Therefore,

$TA = QA + \bar{Q}B \cdot QC$

k Map for TB :-

	$\bar{Q}B\bar{Q}C$	$\bar{Q}BQC$	$QBQC$	$QB\bar{Q}C$
$\bar{Q}A$	0	1	1	0
QA	0	X	X	X

Therefore,

$TB = \bar{Q}C$

k Map for TC :-

	$\bar{Q}B\bar{Q}C$	$\bar{Q}BQC$	$QBQC$	$QB\bar{Q}C$
$\bar{Q}A$	1	1	1	1
QA	0	X	X	X

Therefore,

$TC = \bar{Q}A$

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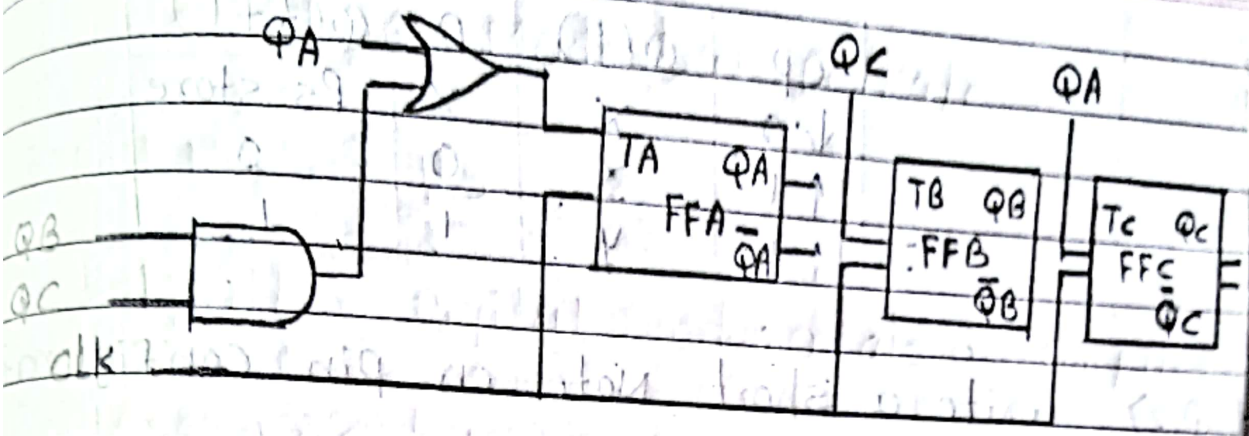
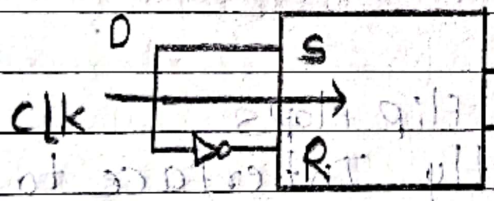


D Flip-Flop :-

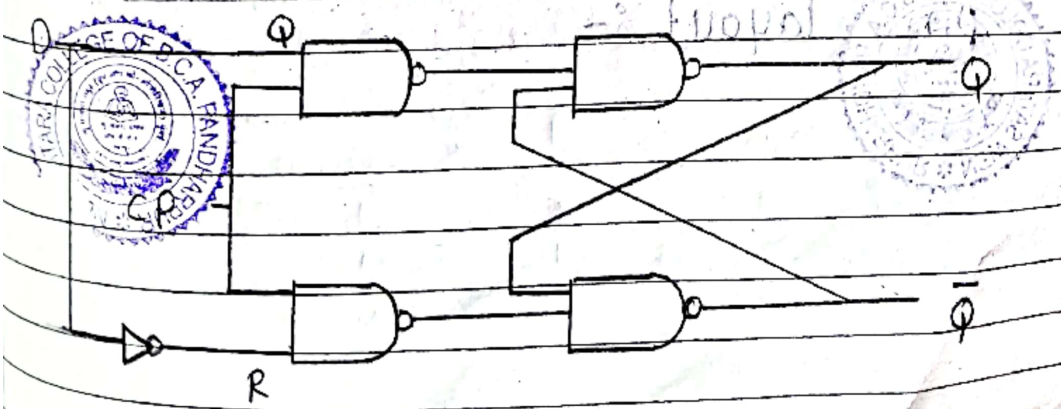
D Flip-Flop single input D(data)
D - HIGH → SET state
D - LOW → RESET state

Q Follows D at the clock edge
convert S-R Flip-Flop into a D Flip Flop:
add an inverter



Truth Table

D	clk	Q(t+1)	comment
1	↑	1	set
0	↑	0	Reset



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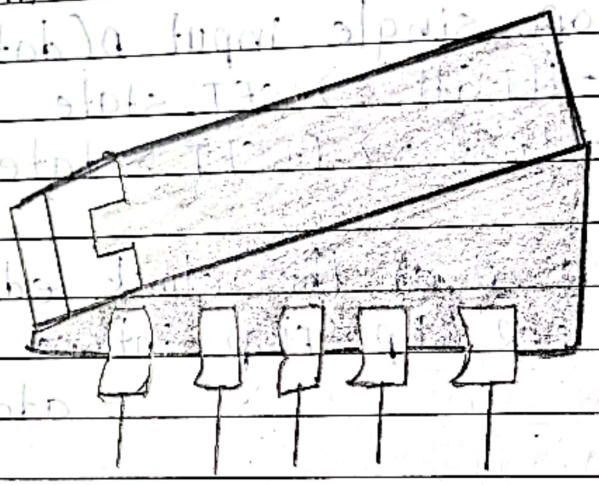
cp	Q(t)	D	Q(t+1)
↓ 0	x	x	Ps store
↑ 1	x	0	0
↑ 1	y	1	1

Q.2) write a short Note on pin configuration of IC 7474

⇒ Diagram :-



Features :-

- Two D-Type Flip Flops
- outputs directly Interface to CMOS, NMOS and TTL.
- Large operating voltage Range
- wide operating conditions
- NOT Recommended for New Designs are 74LS74

layout :-

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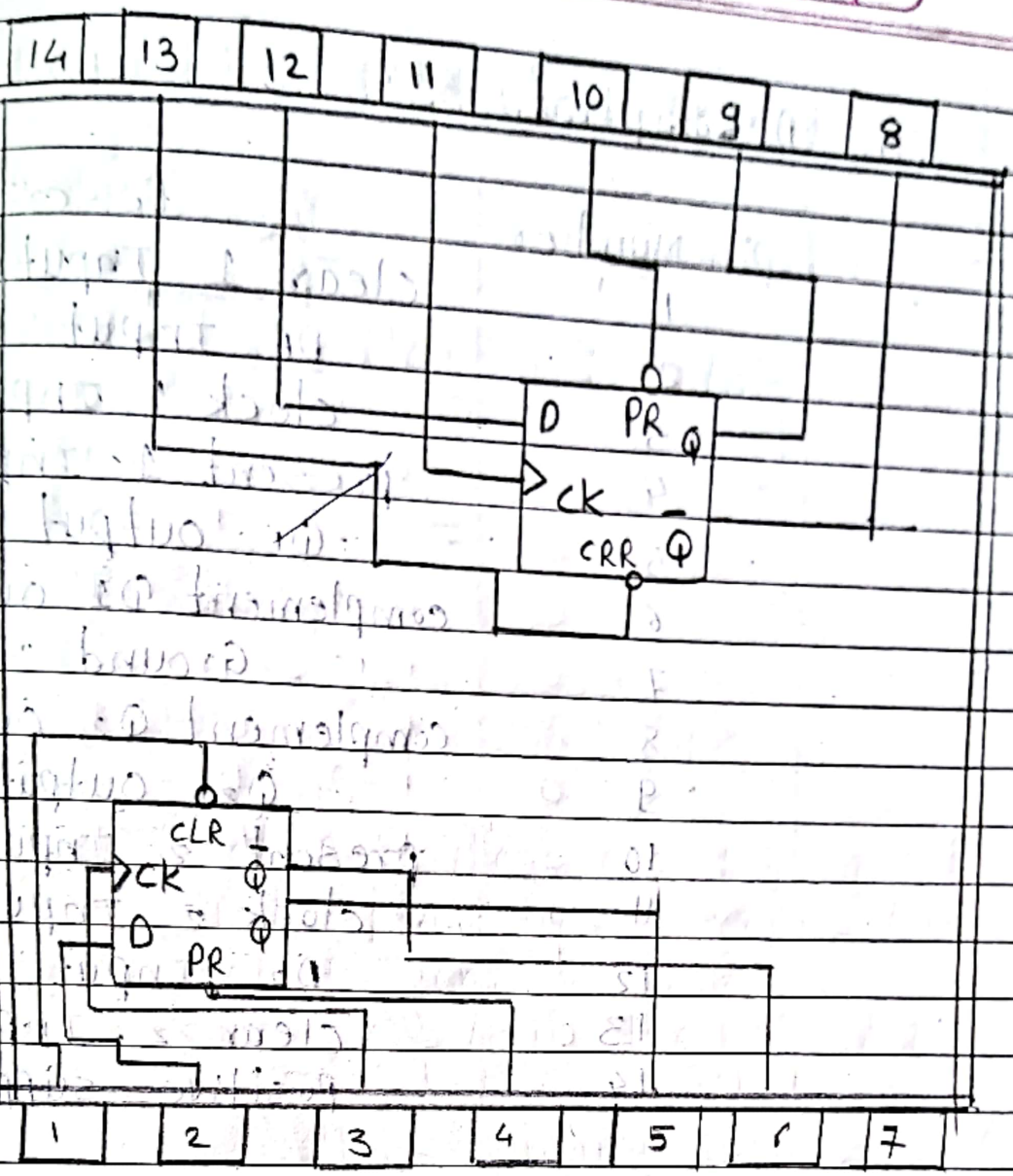

7474

Dual D Flip Flop with present and clear.

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Pin Description

Pin Number	Description
1	clear 1 Input
2	D_1 Input
3	clock 1 Input
4	present 1 Input
5	Q_1 output
6	complement Q_1 output
7	Ground
8	complement Q_2 output
9	Q_2 output
10	present 2 Input
11	clock 2 Input
12	D_2 Input
13	clear 2 Input
14	positive supply

write a short note on Ic 7490

Ic 7490 is a decode counter Ic which can generate output code in BCD It is an Asynchronous Decode counter Ic.

- Ic 7490 can count the binary numbers from 0000 to 1001
- After 1001 it gets reset and again starts counting
- the Ic 7490 gets reset after counting ten numbers it is called Mod - 10 Decode counter.

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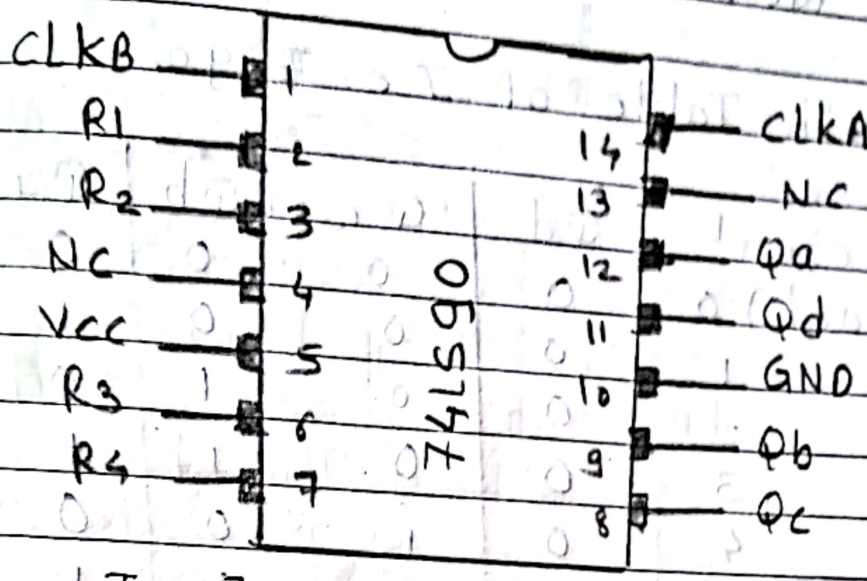
Date 1/1

pin diagram:-



IC 7490 pin diagram.

pin No. 1 :- CLKB → There are two clock inputs pins in IC 7490 It is one of them

pin No. 2 :- R1 → It is the reset pin to reset the circuit to share the counting again

pin No. 3 :- R2 → It is also the reset pin

pin No 4 :- NC → It is not connected to the circuit

pin No 5 :- VCC → It is a positive power supply pin

pin No 6 :- R3 → It is the reset pin

pin No 7 :- R4 → It is also Reset pin

pin No 8 :- Qc → output pin 3

pin No. 9 :- Qb → output pin 2

pin No 10 :- GND → It is the Negative power supply pin

pin No 11 :- Qd → output pin 4

pin No 12 :- Qa → output pin 1

pin No 13 :- NC → NoT connected to the circuit

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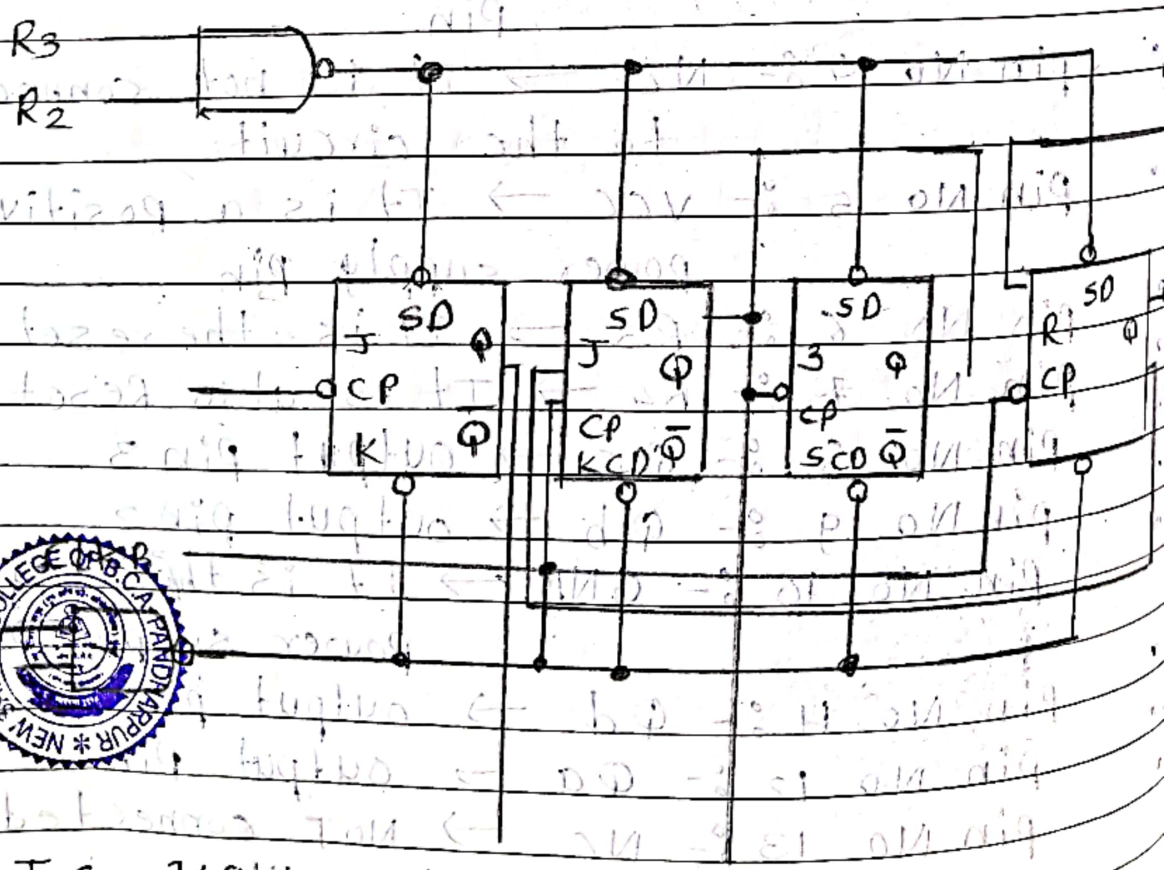
- pin No. 14 :- clack input pin 1

Truth Table of Ic 7490

count	Qd	Qc	Qb	Qa
(start) 0	0	0	0	0
1	0	0	0	1
2	0	0	1	0
3	0	0	1	1
4	0	1	0	0
5	0	1	0	1
6	0	1	1	0
7	0	1	1	1
8	1	0	0	0
9	1	0	0	1
new cycle 10	0	0	0	0

I.c 7490 Internal circuit



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Ic 7490 Internal circuit

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Here you can see the internal circuit of IC 7490 It consists of four numbers of Master - slave Jk Flip Flop that are internally connected . here the First Flip Flop is independant and is driven by the clkA pin Another three Flip Flop are connected to the ClkB pin

Application :-

Mainly IC 7490 is used in the digital counter circuits

IC 7490 also used in digital timers and clocks

IC 7490 is used in automatic controller circuits.

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Name :- kiran Madhukar Devkate

Roll No :- 113

subject :- Digital Fundamental of computer

Assignment No :- 3

compare synchronous and asynchronous counter

synchronous counter	asynchronous counter
In synchronous counter all Flip-Flops are triggered with same clock simultaneously	1) In Asynchronous counter different Flip Flop are trigged with different clock not simultaneously
The operation is faster in synchronous counter	2) The operation is slower in asynchronous counter
synchronous counter is also known as parallel counter	3) Asynchronous counter is also know as serial counter
synchronous counters does not produce any decoding errors	4) Asynchronous counter produce decoding errors
synchronous counters can work with a	Asynchronous can work with Fixed number

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Flexible number of count sequences	of count sequences
6) Design of synchronous counter is complex	6) Design of asynchronous counter is simple.
7) Ring counter, johnson counter are example of synchronous counters	7) Ripple UP counter, Ripple down counter are example of asynchronous counte

Explain Mod 2 Mod 5 and Mod-10 counte

Mod 5 counter :-

The number of Flip-Flops required can be determined by using the Following equation :

$$M \leq 2^N$$

where, M is the Mod number and N is the number of required Flip-Flops.

Here, MOD number is equal to 5

i.e $M = 5$

Therefore, $5 \leq 2^N \rightarrow N = 3$

Therefore to design a Mod 5 counter -Flops would be required

Excitation Table

QN	QN+1	T
0	0	0
0	1	1
1	0	1
1	1	0

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circuit state Table :-

QA	QB	QC	QA+1	QB+1	QC+1	TA	TB	TC
0	0	0	0	0	1	0	0	1
0	0	1	0	1	0	0	1	1
0	1	0	0	1	1	0	0	1
0	1	1	1	0	0	1	1	1
1	0	0	0	0	0	1	0	0
1	0	1	X	X	X	X	X	X
1	1	0	X	X	X	X	X	X
1	1	1	X	X	X	X	X	X

kMap :-

k Map for TA :-

	$\bar{Q}B\bar{Q}C$	$\bar{Q}BQC$	$QBQC$	$QB\bar{Q}C$
$\bar{Q}A$	0	0	1	0
QA	1	X	X	X

Therefore , $TA = QA + QB = QC$

kMap for TB :-

	$\bar{Q}B\bar{Q}C$	$\bar{Q}BQC$	$QBQC$	$QB\bar{Q}C$
$\bar{Q}A$	0	1	1	0
QB	0	X	X	X

Therefore , $TB = QC$

kMap for Tc :-

	$\bar{Q}BQC$	$\bar{Q}BQC$	$QBQC$	$QB\bar{Q}C$
$\bar{Q}A$	1	1	1	1
QB	0	X	X	X

Therefore $Tc = QA$

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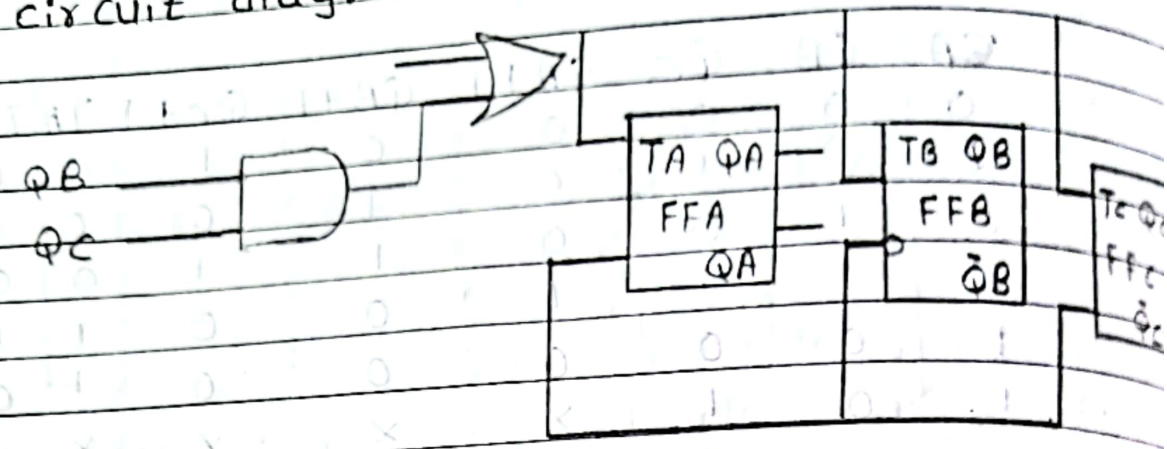
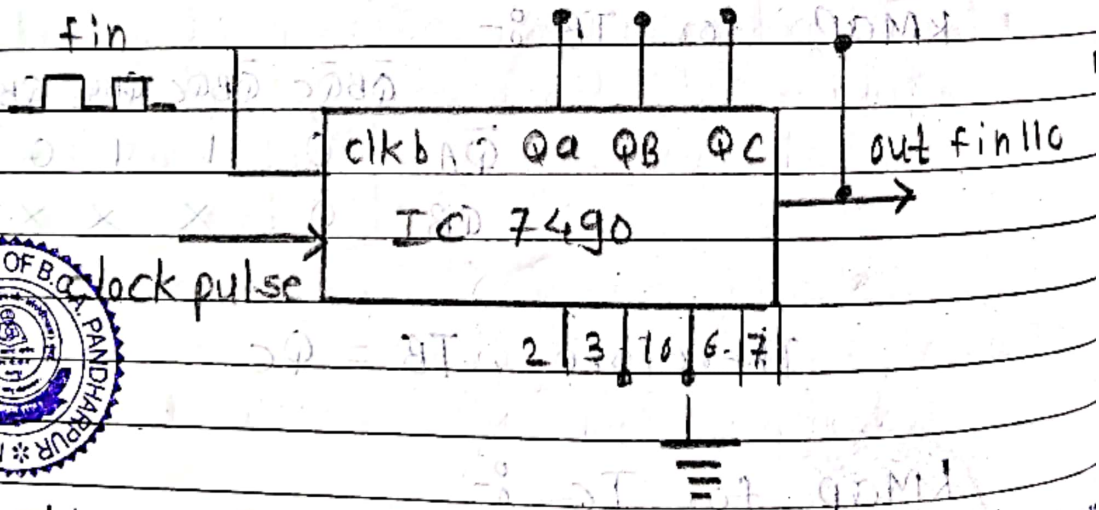
circuit diagram :-



Mod counter 10

IC 7490 Asynchronous Mod 10 counter IC. IC 7490 is also known as BCB counter Decode counter and Mod -10 These names are given based on the functionality and working principle of IC 7490

counter circuit :-



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It's a BCD counter it can count from 0 to 9 (10 states) hence it is called a Mod -10 counter. It has two separate counters, a mod -2 counter and another Mod 10 counter The output is used as a clock to clk B to use as Mod 5

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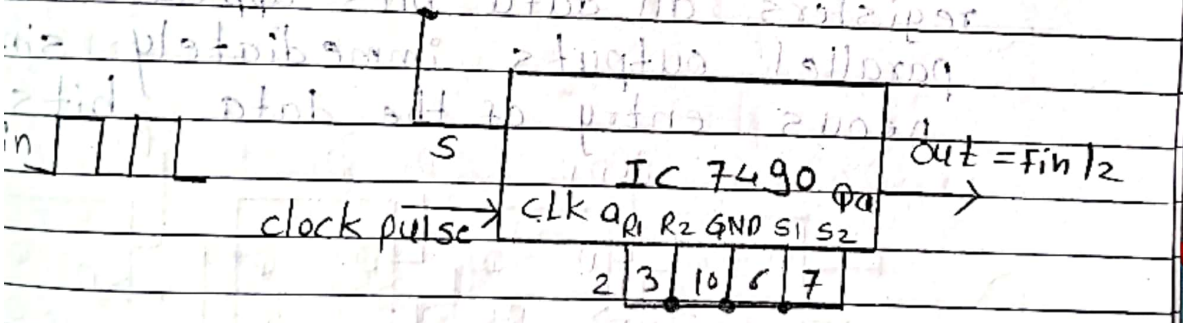
counter & given clock to clk A to use as mod 2 counter

Mod 2 counter :-

we can increase the count to 99 (mod-100) or 999 (mod-1000) as per our requirements. The higest output of the previous IC is used as a clock to the next IC. It can work as a mod-10 counter by connecting the 2nd clock input (pin 1) and Q_A and connecting all rest pins to the ground and giving pulse to pin 1

It can work as a mod-6 counter by supplying pulse at input 1 and grounding reset pins pulse at input 1 and grounding reset pins R_3 and R_4 and connecting Q_A with input 2



Explain shift Register ?

shift register are the type of sequential logic circuit mainly for storage of digital data They are a group of Flip-Flop connected in a chain so that the output from one Flip Flop becomes the input of the next Flip Flop

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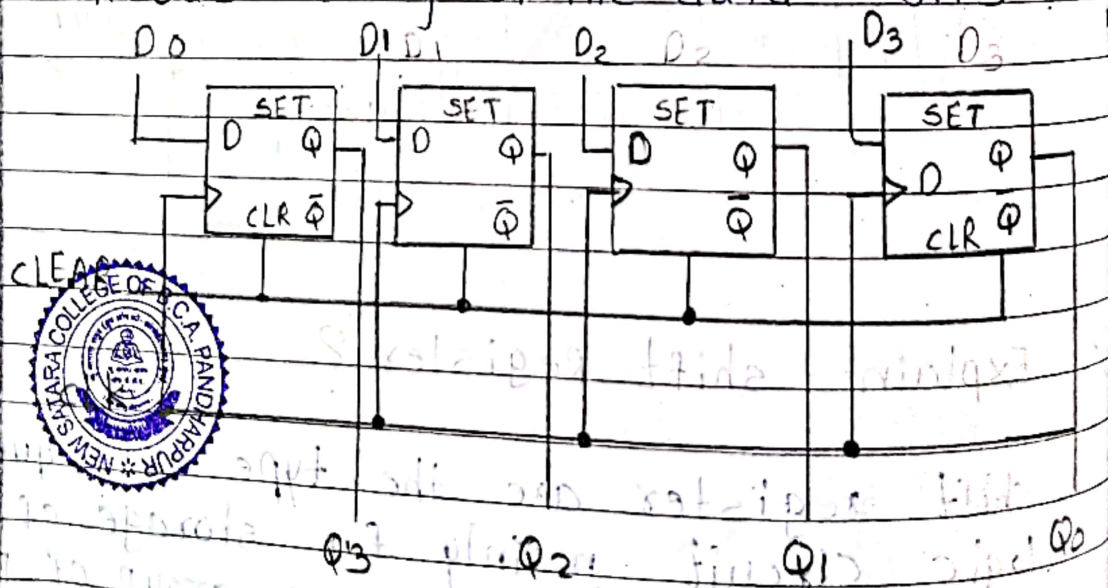
It is a group of Flip Flop
Flip Flop stores the digital data
There are four types
1) SISO (Serial In Serial out)
2) SIPO (Serial In parallel out)
3) PISO (parallel In serial out)
4) PIPO (parallel In parallel out)

Truth Table :-

I/P			O/P		
D_2	D_1	D_0	Q_2	Q_1	Q_0
0	0	0	0	0	0
1	1	0	1	1	0
1	1	1	1	1	1

PIPO (parallel In parallel out):

In parallel in parallel out shift registers, all data bits appear on the parallel outputs immediately simultaneous entry of the data bits



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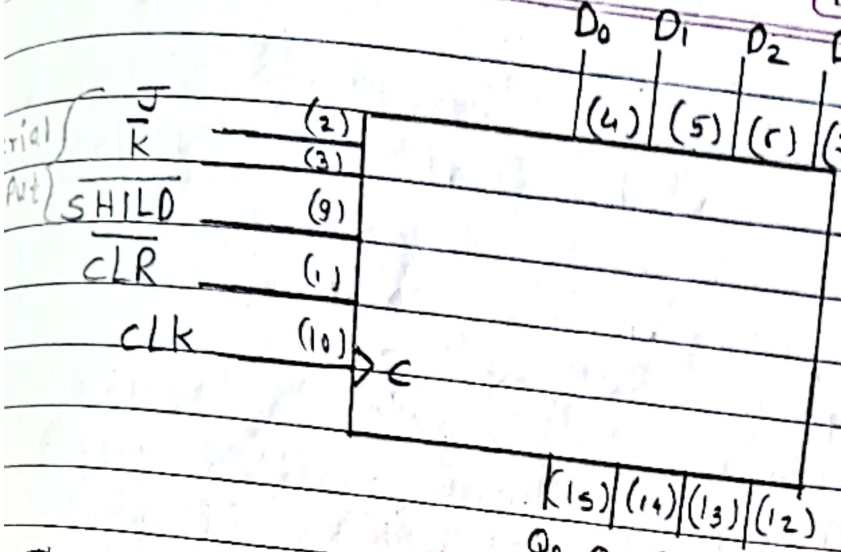
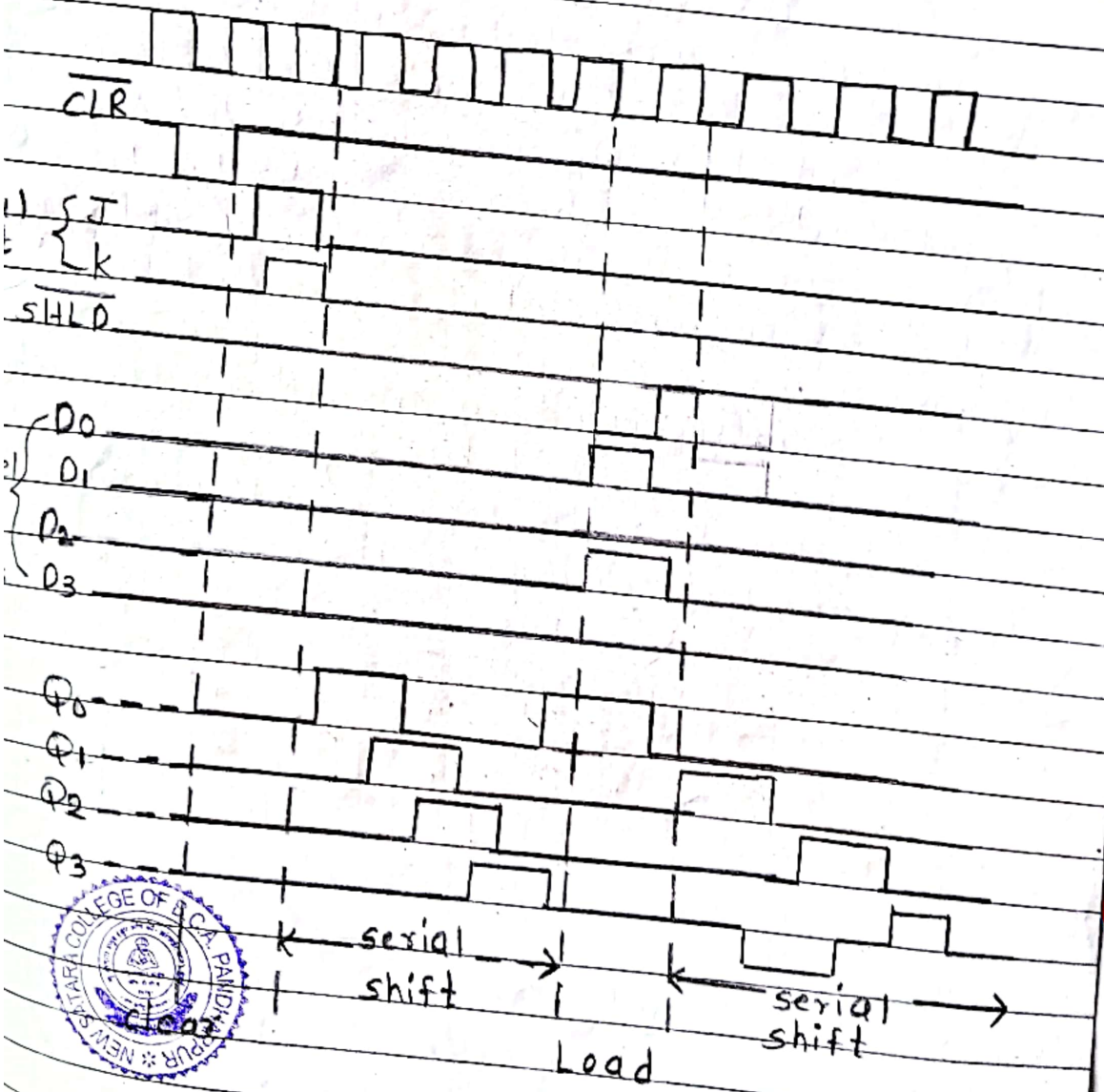


The 7495 4 bit parallel acces shift register



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Microprocessor & Interfacing

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Semister/Annual 2022/2023

Name Kiran Madhukar Deokate Roll No. 113

Course BCA - I Year I/II/III

Subject Microprocessor and Interface Date 29/4/2023

(Kadase)

basic system bus architecture

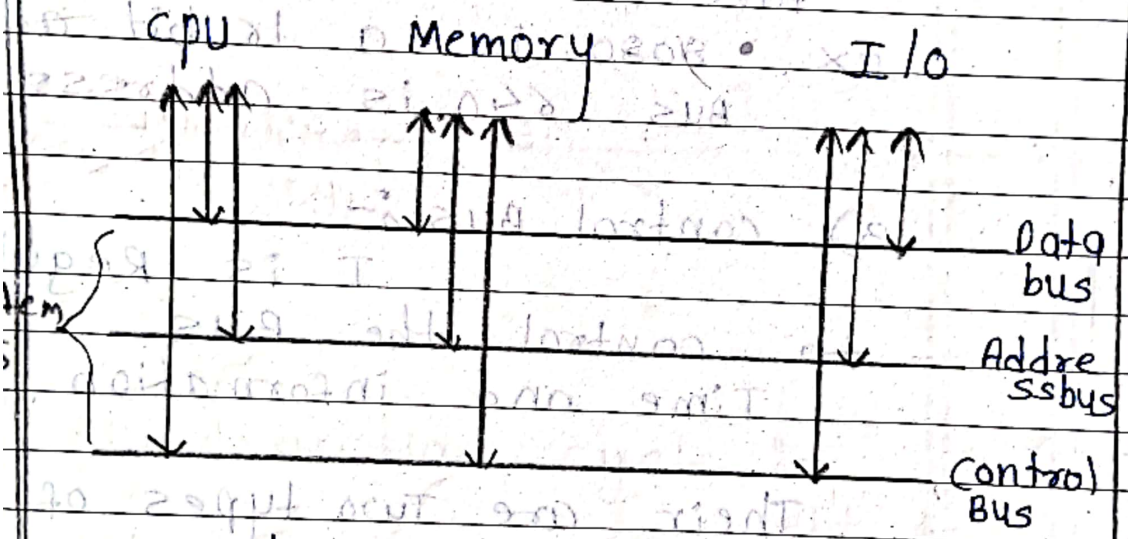

fig. basic system bus architecture

System Bus :-

A bus is communication path between two or more network A bus connect major component are known as system Bus.

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Bus is divided form 3 parts
1) Data Bus
2) Address Bus
3) control Bus

1) Data Bus :- 8 bit, 16 bit, 32 bit, 64 bit

2) Address Bus :-
Address is a collection of wire Instruction and The use this Instruct fore store the data Distinati
ex. 8080 is a 16 bit address Bus 640 is address space

3) control Bus :-
I is Regulate to control the Bus Time and information.

Their are Two types of signal
1) Memory Read
2) Memory write

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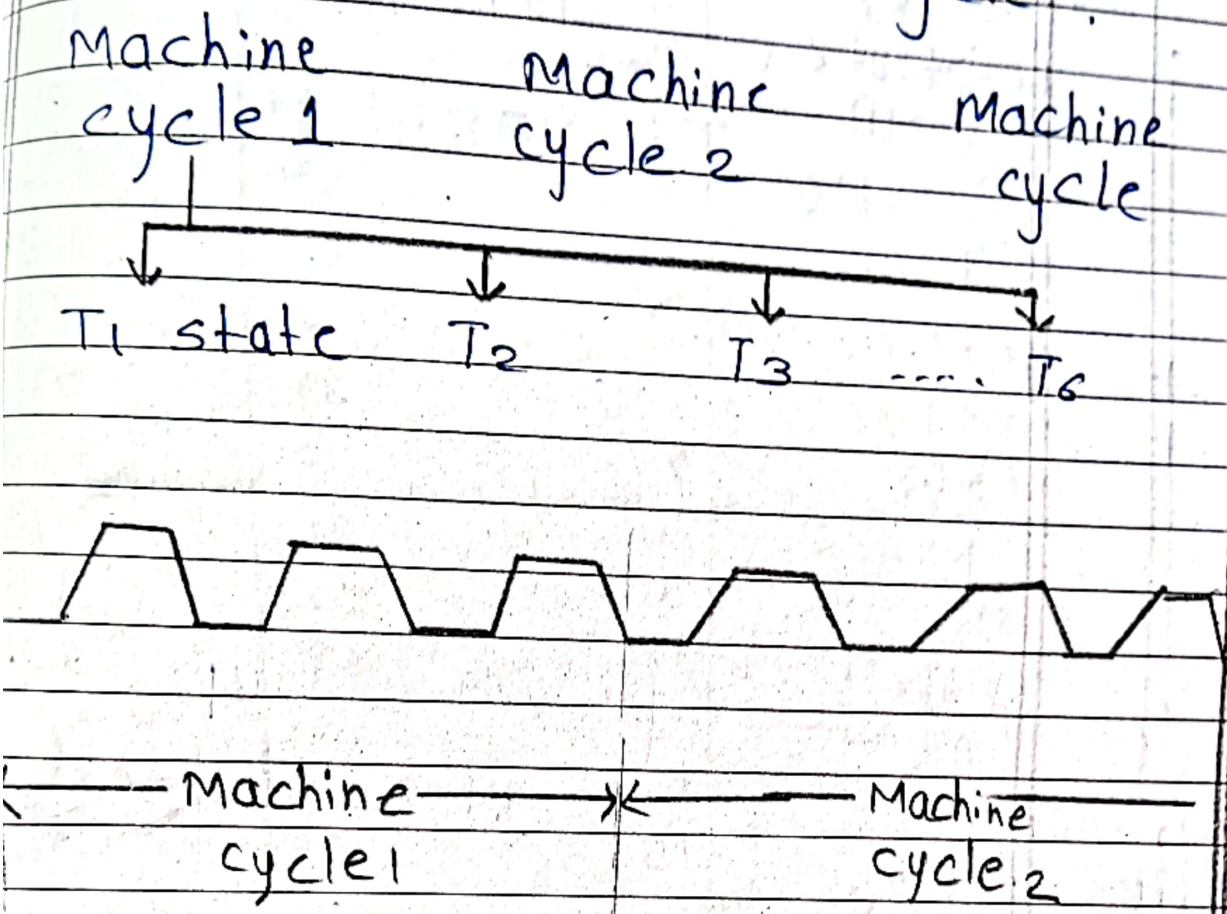
I state machine cycle

Instruction cycle



Instruction cycle :-
It is Time Required ~~on~~ execute one Instruction

Machine cycle :-
It is Time Required execute one operation Three to six state are involve in one machine cycle.

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(4)

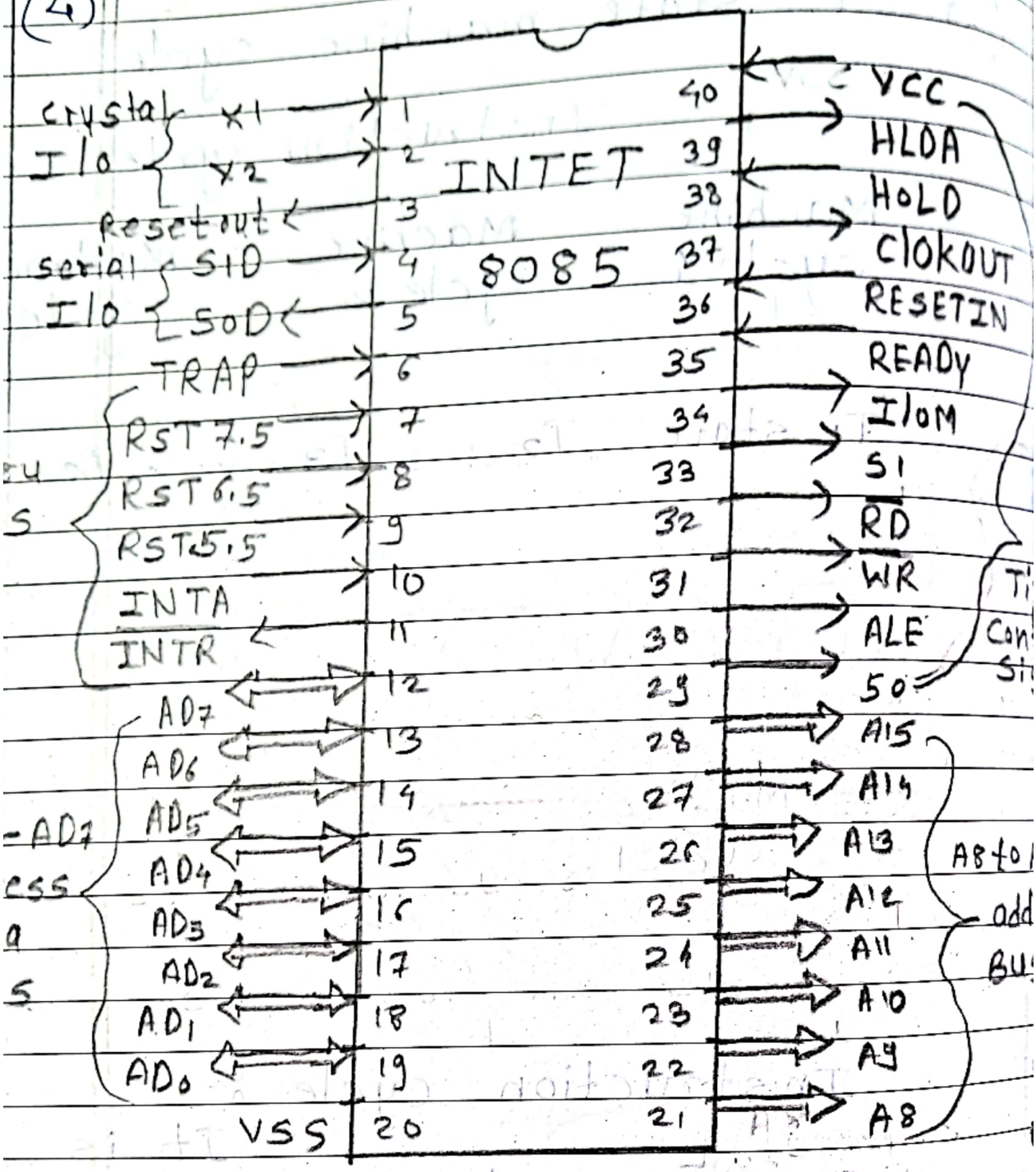

fig. pin diagram of 8085

1) X1 and X2 :- X1 and X2 are two crystal Input output

2) RESET IN :- control the low activity signal

(4)

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3) RESET OUT :- It control the high active signal

4) TRAP :- It is non maskable Intrupts

5) VCC :- It Regulate the +5v power supply

* addition of two 8-bit Number without carry

Memory	MENEMONICS	Comment
2000	LDA 2050H	A ← 2050
2003	MOV B, A	B ← A
2004	LDA 2051	A ← 2051
2007	ADD B	A ← A+B
2008	STA 2052	2052 ← A
200B	HLE	Terminated

with carry :-

```
LDA   0100H
MOV   B, A
LDA   0101H
ADD   B
MVIC  00H
NCR   NoC
ICR   C
```

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NOC :- STA 0102H
MOC C,A
STA 0103H

Q. 5) 1) X1 and X2 :- X1 and X2 are two crystal Input output pin

2) $\overline{\text{RESETIN}}$:- control the low activity signal

3) RESETOUT :- control the the high activity signal

4) TRAP :- It is Non maskable Interrupts

5) RST 7.5 :- It is maskable Interrupts

6) RST 6.5 :- It is maskable Interrupts

7) $\overline{\text{WR}}$:- $\overline{\text{WR}}$ stands for write

8) $\overline{\text{RD}}$:- RD stands for Read

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9) VCC :- +5V power supply

10) VSS :- Ground state

1) Features of microprocessor

1) 8 bit ALU

2) 8 bit Microprocessor

3) 8 bit Internal data storage

4) 8 bit external Data storage.

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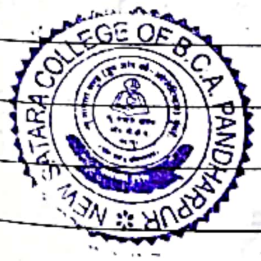
Name : Kiran Madhukar Devkate

Roll No : 113

Subject : Microprocessor & Interfacing

Assignment No :- 1



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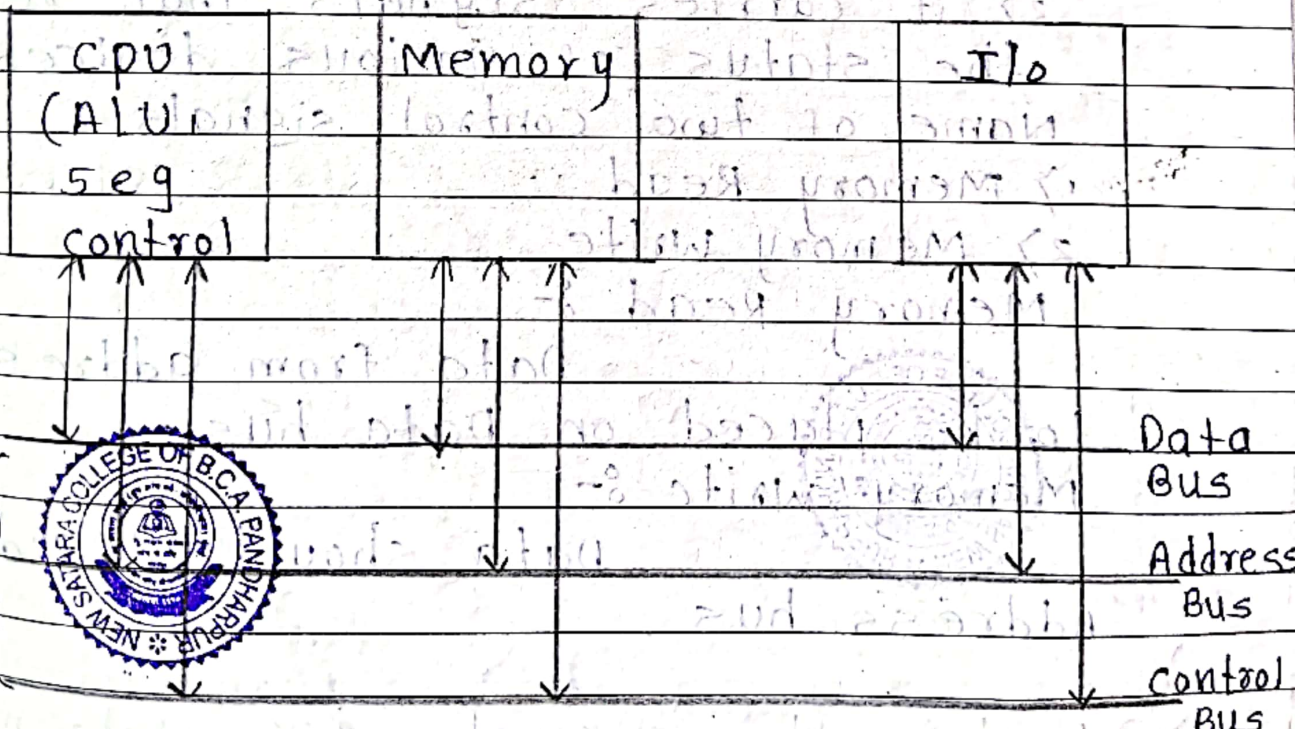
Answer Any Five of the Following :

Write any 8 features of 8085 microprocessor ?

- 8 bit Microprocessor
- 8 bit ALU
- 8 bit Internal data and resistors
- 8 bit external data bus
- It has 16 bit address but to access memory location $= 2^{16} = 2^6 \times 2^{10}$ $= 64 \times 1kB = 64\ kB$
- 8 bit address bus to I/O locations $= 2^8 = 256$ I/O locations
- single +5V power supply
- Duplex serial port (Tx - Rx)

Write a short note on basic system bus architecture ?



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Bus Architecture :-

A communication path way connecting two or more devices. A

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bus that connects mejor component (processor, memory) is called system bus.

system bus divided into three parts

1) Data bus :- 8 bit, 16 bit, 32 bit, 64 bit etc.
2) Address bus :- collections of wires used to identified particular location in Main Memory it is used to identified the source or destination of data.
ex. 8080 has 16 bit Address bus giving 64 Address space.
3) control bus :- control bus it regulate the activity on the bus.
1) control and timing information
2) it carries signals that report the status of various devices.

Name of two control signals :
1) Memory Read
2) Memory Write

Memory Read :-
Data from address bus to be placed on Data bus.

Memory Write :-
Data should placed on Address bus.

3) Explain the concept of T state machine cycle.

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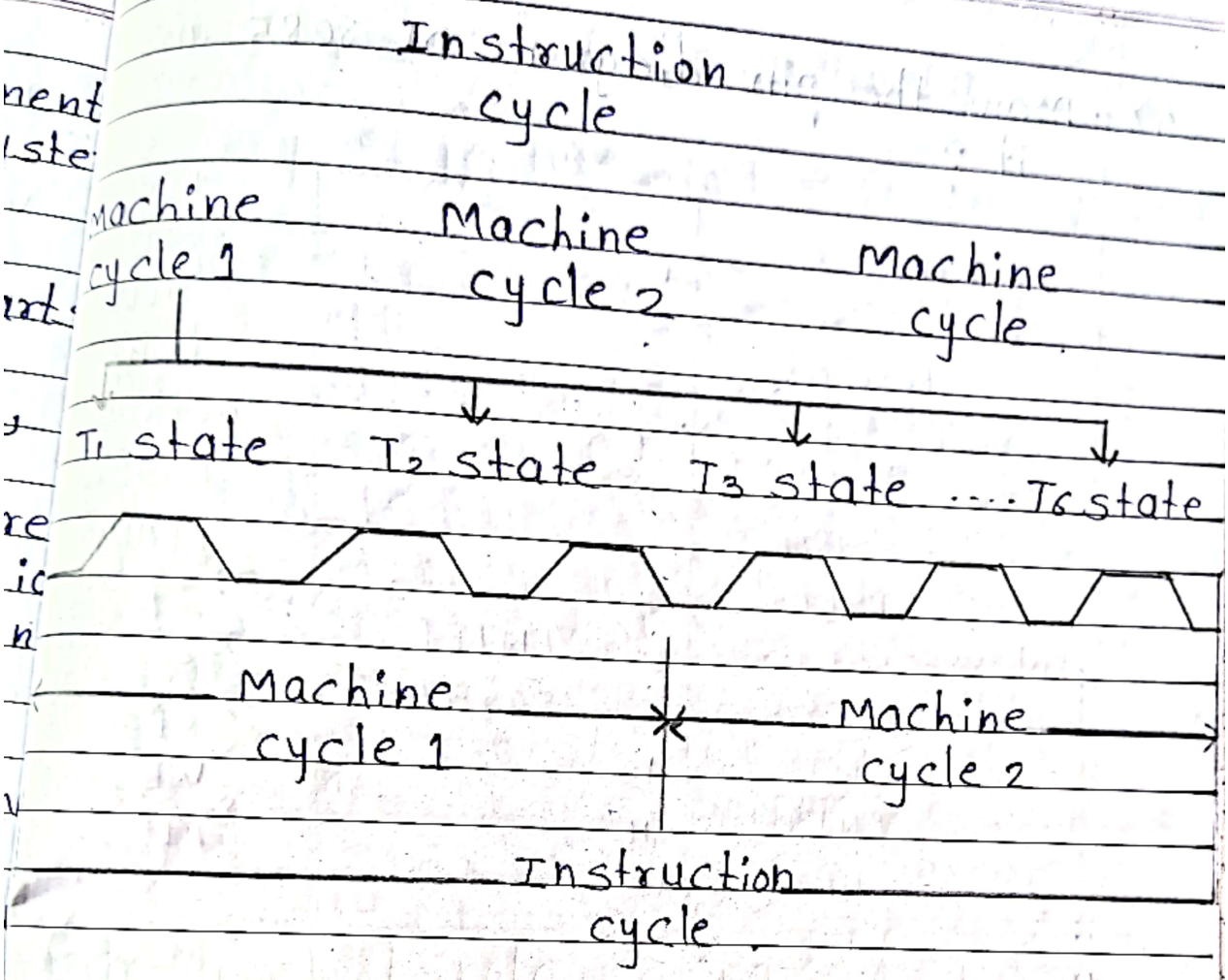

Instruction cycle :-
Time Required to execute one Instruction.

Machine cycle :-
Time Required to execute one operation.
Three to six T state are present in one Machine cycle.

	$IO/\overline{M}$	S_1	S_0	$\overline{RD}$	$\overline{WR}$	$\overline{INTA}$
Opcode Fetch	0	1	1	0	1	1
Memory Read	0	1	0	0	1	1
Memory write	0	0	1	1	0	1
IO Read	1	1	0	0	1	1
IO Write	1	0	1	1	0	1
Interrup Ack	1	1	1	1	1	0
	0	0	0	1	1	1

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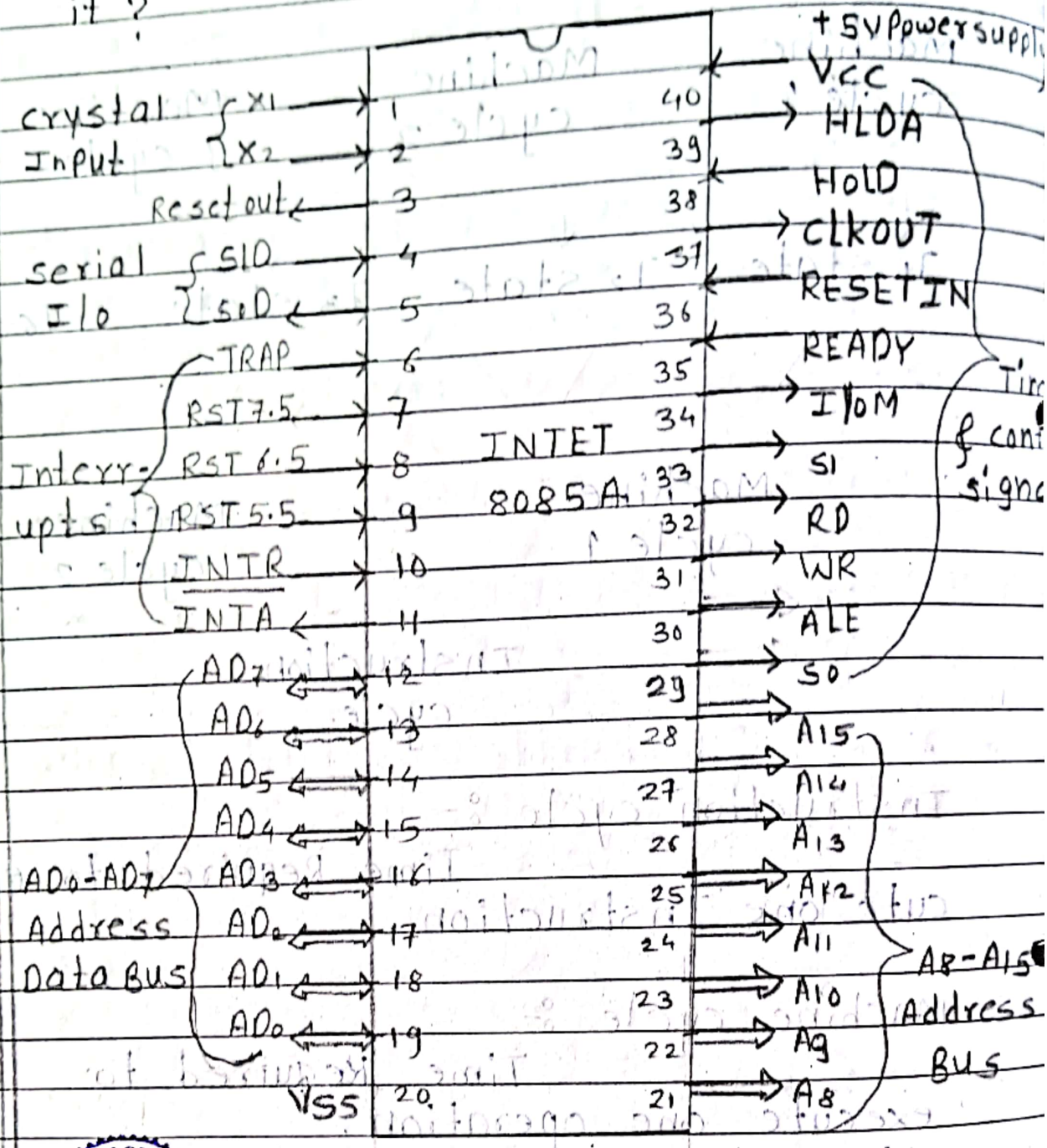
4) Draw the pin diagram of 8085 and explain it?



+5V power supply
Ground Reference
X1, X2 - A Crystal is connected at these two pins The frequency is internally divided by two therefore to operate a system at 3MHz the crystal should have frequency of 6MHz
CLKOUT - This signal can be used as the system clock for other devices

plain any 8 instructions of 8085 microprocessor?

ata Transfer Instruction :-

opcode	oprand	Description
MOV	Rd, Rsi M, Rs Rd, M	copy from source to destination

g. MOV B, C or MOV B, M

opcode	oprand	Description
MVI	Rd, Data M, Data	Mov immediate 8-bit

g: MVI B, 57H or MVI M, 57H

opcode	oprand	Description
LDA	16 bit address	Load Accummulator

g. LDA 2034H

opcode	oprand	Description
STA	16-bit address	store Accumm-ulator direct

e.g. STA 2034H

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5)

opcode	oprand	Description
LXI	Reg pair, 16-bit data	Load register pair immediate

e.g. LXI H, 2034H

6)

opcode	oprand	Description
LDAX	B/D Register pair	Load accumulator indirect

e.g. LDAX B

7)

opcode	oprand	Description
LHLD	16-bit address	Load H-L Register direct

e.g. LHLD 2040H

8)

opcode	oprand	Description
SHLD	16-bit address	store H-L Register direct

e.g. SHLD 2550H

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Write a pgm of addition of two 8 bit numbers ?
Without carry :-

Memory Address	MNEMONICS	Comment
2000	LDA 2050	A ← 2052
2003	MOV B,A	B ← A
2004	LDA 2051	A ← 2051
2007	ADD B	A ← A+B
2008	STA 2052	2052 ← A
200B	HLT	Terminate

With carry

```
LDA   0100H
MOV   B,A
LDA   0101H
ADD   B
MVI C  00H
JNC  NOC
INR   C

NOC : STA  0102H
      MOV  A,C
      STA  0103H
```

0100	7FH
0101	9AH
0102	19H
0103	01H

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ame :- Kiran Madhukar Devkate

oll No :- 113

ubject :- microprocess and interfacing

ssignment No :- 2

hat is Interfacing ?

Microprocessor combined with Memory and I/o Device forms a Microcomputer
he Microprocessor is the heart of Microprocessor.
Memories and input output Device are Interfaced to Microprocessor to form a Microcomputer.
The selected Memories and I/o Devices should be compatite with Microprocessor.

rite a short note on I/o mapped I/o

> Io devices are treated as Io devices.
> Io devices are accessed with $\overline{IOR}$ & $\overline{IOW}$. Memory devices are accessed with $\overline{MEMR}$ & $\overline{MEMW}$ sig.
> Io devices = 8 bit address.
> No. of Io = $2^8 = 256$
Memory = 64 kB

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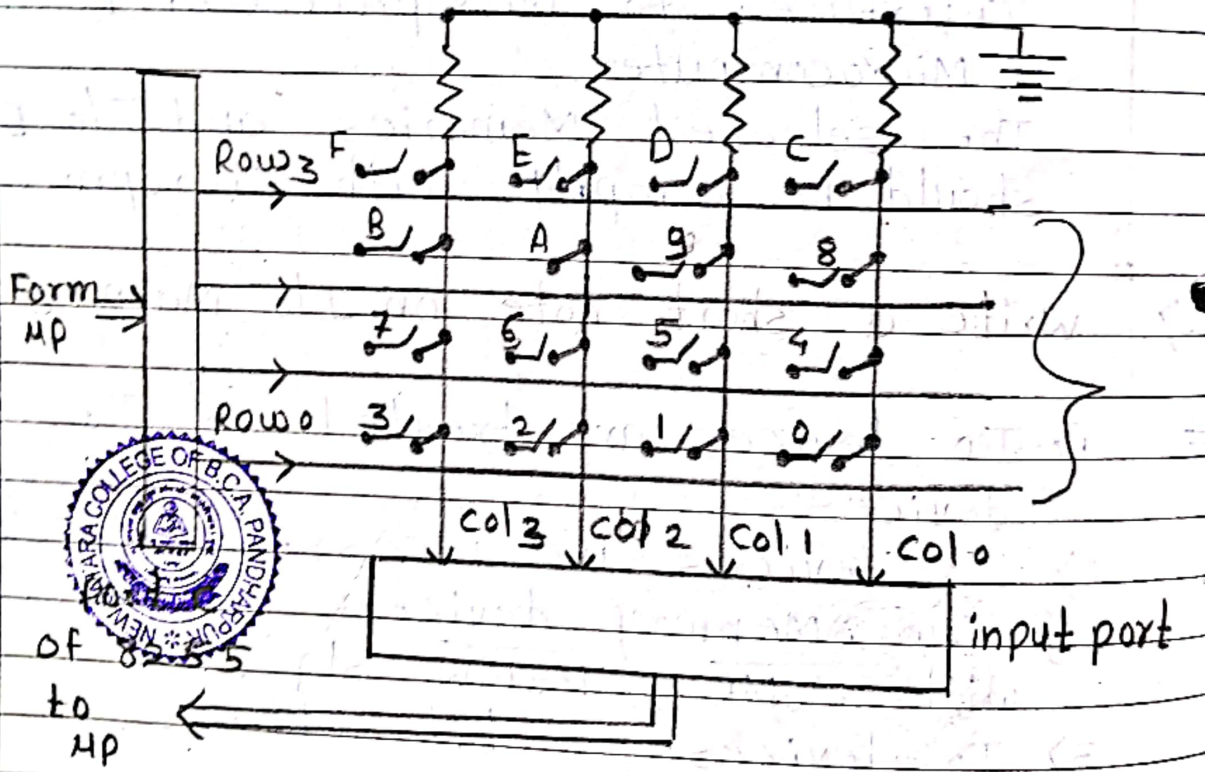
Q.3) Explain Interfacing of keyboard ?

⇒ Their are 104 keys on keyboard

1) Numeric keys
2) Function keys
3) keys for alphabeting
4) special keys
5) space bar
6) enter key
7) control key
8) Alt
9) keys throw window
10) shift key
11) arrow key
15) navigation key



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In a Matrix keyboard their are keys which are arranged in the form of a matrix which consists of several rows and columns. In the Figure which is stated below significantly.

Indicates the interfacing process of a matrix keyboard which consists four columns respectively we connect a key at the intersection of every rows and column Hence there is a total of 4×4 = 16 keys in the given Matrix. The lines of the columns get connected to Gnd through pull- down resistors.

even there is a matrix size were to be 8×8 for a sum total of 64 keys only one output port and one input port would be sufficient

```
MVI A,00000001B
   outpc
```

Then the processor will start to read the input port. presently according to given Byte pattern logic 1 is sent out only on row 0.

But no key is pressed on this row as such the input port receives the value 0000 from the keyboard because of the pull down resistor as shown in the circuit diagram. The reader might think about the key 9 that is pressed on row 2. But logic 0 is sent out presently on row 2.

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Page No.
Date / /

Name :- Kiran Madhukar Devkate

sub :- Microprocessor and Interfacing

Roll.No :- 113

Assignment No :- 3

ite a short note on memory mapped I/o?

devices are treated as a part of
lemory
Io devices & Memory are accessed
ith MEMR & MEWR
Io devics & Memory locations = 16
bit address
Memory + Io = 64kb
2^{16} Io devices
= 65536

plain interfacing of printer ?

terface is the path for communication
tween two components Interfacing is
two types, memory interfacing and
interfacing
processor consists of an ALU,
nit and register array where
ALU performs arithmetic and logical
erations on the data received form
in inupt device or memory and
egister identified by letters like B.C.

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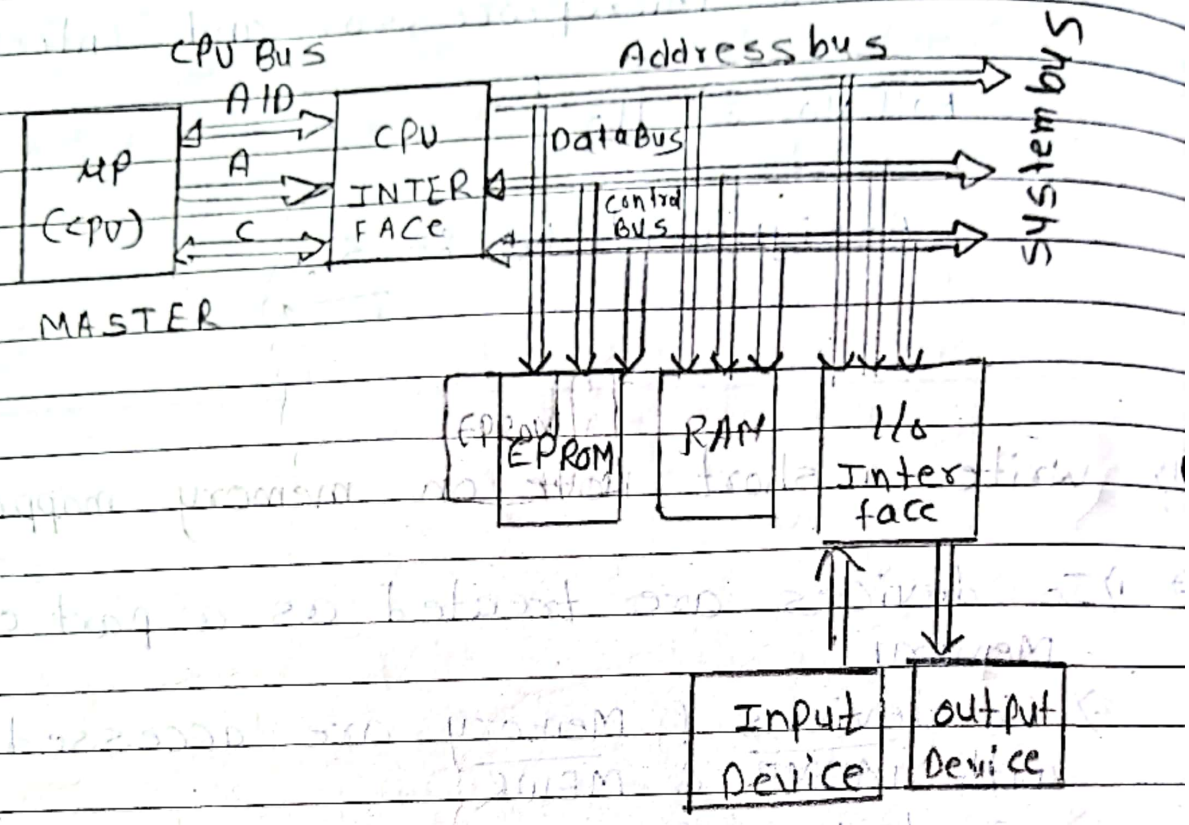
D, E, H, L and accumulator.



LPT Base address

I/o Base Address	LPT
0040 : 0008 - 0040 : 0009	LPT1
0040 : 000A - 0040 : 000B	LPT2
0040 : 000C - 0040 : 000D	LPT3
0040 : 000E - 0040 : 000f	LPT4

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Write a short note DMA controller & DMD Transfer ?

DMA controller :-

DMA is an input output technique used for high speed data Transfer.
Data transfer between system memory and floppy disk
It introduces two new signals that are
i) HOLD
ii) HLDA
DMA consists of DMA channels and interfacing DMA signal system interface, programming the 8287 DMA Execution consists of master and slave mode

DMA Transfer :-

Their are three modes of DMA Transfer
1) Burst mode 2) cycle stealing mode
3) Interleaving Mode

1) Burst mode :-

faster mode of DMA Transfer
User friendly beacuse during the DMA Transfer cpu will be blocked

2) cycle stealing mode :-

most efficient way for DMA transfer.

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Rate of DMA transfer will be less
CPU will not be blocked entire time
3) Interleaving Mode :-
CPU will not be blocked at all.
Slowest DMA Transfer Rate

Advance - 'C'

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Affiliated to Solapur University, Solapur.

Semister/Annual : 2022 / 2023

Name..Kiran...Madhukar Devkate.....Roll No...113....

Course.....BCA - I.....Year I/II/III

Subject...Advanced 'C' programming Date..24/5/2023

Que. No.	1				
Marks	04	04	04	04	10
Signature	16/20				

```
#include<stdio.h>
#include<conio.h>
main()
{
clrscr();
student();
student();
student();
getch();
}
student()
{
int roll-no;
char name[20];
Float mark;
printf("\n Enter the Roll no =");
scanf("%d", &Roll no);
printf("\n Enter the name of student=");
scanf("%s", &name);
printf("\n Enter the mark =");
```

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```
    scanf("%f", &mark);
    printf("\n Roll no = %d", Roll no);
    printf("\n student name = %s", name);
    printf("\n Mark = %f", mark);
}
```

Q.2) A pointer in C is a variable we store address of another variable.
This type of variable are Integer, float, character, array, function

declare in pointer :-
In 'c' language we declare pointer using Astrisk symbol * it is called as indirect operator.

Initialization of pointer :-
There are Two way to Initilized the pointer.
1) Astrisk operator
2) Ampersent operator.

1) Astrisk operator symbol is *
2) "Ampersent operator / symbol is &

syntax :-

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Page No.
Date

Datatype *pointer variable-name ;

ex. int *a
char *'A'
float *12.3

int &a
int &b

Their are four type of storage class

1) Automatic
2) static
3) extern
4) Register

1) Automatic :-

storage class	storage ~~Name~~ place	default value	scope	lifetime
Automatic	RAM	Garbage value	Local	till the end of function

2) static :-

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storage class	storage place	deafult value	scope	lifetime
static	RAM	zero	local	till the end of pgm

3) extern :-

storage class	storage place	deafult value	scope	lifetime
extern	RAM	zero	Global	till the end of pgm

4) Register :-

storage class	storage place	deafult value	scope	lifetime
register	CPU register	Garbage value	local	till the end of pgm or block

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Roll. No : 113

IKON Page No. Date

call by value :-

In this value of actual parameters will be copied to the formal parameter & this two different paramenter store value of different location.

e.x.

```
#include<stdio.h>
#include<conio.h>
    void main()
    {
    int x = 10, y = 20;
    fun1 (x, y);
printf("x = %d, y = %d", x, y);
    getch();
    }
    int fun1 (int x, int y);
    {
    x = 20;
    y = 10;
    }
```

call by Reference :-

Here both actual and formal parameter refers to same Memory location. therefore we made formal parameter reflect to get actual parameter.

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ex.

```
#include<stdio.h>
#include<conio.h>
 void main()
  {
   int x = 10, y = 20;
  fun1(&x, &y);
printf("x = %d, y = %d", x, y);
   getch();
  }
int fun1(int *x, int *y);
  {
  *x = 20;
  *y = 10;
  }
```

04

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Name :- Devkate kiran Madhukar

subject :- 'c' Advanced programming

Roll No :- 113

Assignment No :- 1

1) Write a program to accept and display 3 student record using Function

```
#include<stdio.h>
#include<conio.h>
main()
{

clrscr();
student();
student();
student();
 getch();
}
student()
{
 int roll-no;
 char name[20];
 float marks;
printf("\n enter the Roll no =");
 scanf("%d",&roll-no);
printf("\n Enter the name of
```

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```
scanf("%s", &name);
printf("\n Enter the marks =");
scanf("%f", &marks);
printf("\n Roll no = %d", rollno);
printf("\n name of student = %s",
                        name);
printf("\n marks of student = %f
, marks);
}
```

Q 2) What is pointer ? How to declare & initialize the pointer ? Give example.

⇒ Defⁿ :- The pointer in 'C' is a variable we stores address another variable
This variable can be Type of Integer, floating, character, array, function or any other pointer

Declaring a pointer :-

The pointer in 'c' language can be declare using astrick symbol (*) it is also known as indirection pointer used to Defrence a pointer.

syntax :-

Datatype *pointer-variable-name;

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e.g. int *a;
float *b;
char *c;

Initilization of pointer :-
In pointer we deal with two operators
1) Astrisk operator *
2) Ampersent operator & - address operator, reference operator.

e.g. int a=10, b=9
int *p, *q
p= &a;
q= &b;
printf("address of a = %x", p);
printf("value of a = %d", a);
printf("value of a = %d", *p);
printf("Address of p = %u", &p);

printf("address of b = %x", a);
printf("value of b = %d", b);
printf("value of b = %d", *q);
printf("address of p = %u", &a);

> write a short note on storage classes in C

> storage classes in 'C' used to determine the lifetime visibility or scope memory location and default or initial value of the variable There are four types of storage classes.

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1) Automatic
2) static
3) Resistor
4) Extern.

1) Automatic :-
i) The keyword used for defining variable is auto
ii) The automatic variables are initialised to garbage value by default.
iii) Automatic variables are allocated memory automatically at the Runtime.
iv) Every local variable is automatic in 'c' by default.

2) static storage class :-
i) The keyword used to define static variable is static
ii) The variable defined as static specifier can hold their values between Multiple function calls.
iii) Default initial value of static integral variable is 0 otherwise null
iv) The same static variable can be declared many times but can assigned at only one Time.

3) Extern storage class :-
i) The extern storage class is used to tell the compiler that variable defined as extern is

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linkage else where in the program we can only inisilised the extern variable Globly i.e. we canot inisilized extern variable within any block or function

4) Register storage class :-
Register storage class the variable defined as register is allocated memory into cpu register depending upon the size of memory remaining in cpu.
The Access time of register variable is faster than Automatic variable
The initial default value of Register variable is Garbage value.

4) Explain call by value & call by reference with example

⇒ call by value :-
In this values of actual parameter will be copied to formal parameters & this two different paraments stores values in different location.

```
#include<stdio.h>
#include<conio.h>
void main()
{
```

```
int x = 10 , y = 20 ;
    fun1 (x , y) ;
printf ( " x = %d , y = %d " , x , y ) ;
        getch() ;
        }
    int fun1 (int x , int y)
        {
        x = 20 ;
        y = 10 ;
        }
```

actual parameters are the parameters passed to the function. formal parameters are the parameters passed by a function.

call by Reference :-

Here own actual and formal parameters refers to same memory location therefore any changes made to the formal parameter will get reflect to the actual parameter Here instated of value we passed address or references

```
#include<stdio.h>
#include<conio.h>
    void main
        {
```

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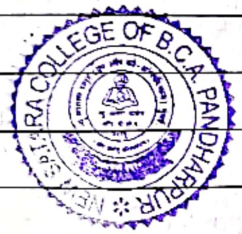
```
int x = 10, y = 20;
    fun1 (&x, &y);
printf ("x = %d, y = %d", x, y);
    getch();
    }

int fun1 (int *x, int *y)
    {

    *x = 20;
    *y = 10;
    }
```



Name :- Devkate kiran Madhukar

subject :- Advanced 'c' programming

Roll No :- 113

Assignment No :- 2

1) what is structure ? Explain array of structure.

⇒ structure is a user defined datatype in c language which allows us to combine data of different types together

The struct keyword is used to define the structure

syntax of structure :-

```
struct structure-name
{
// member var 1;
// member var 2;
} structure variable;
```

e.g. struct student

{

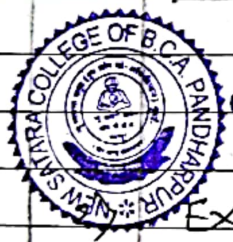
int Roll_No ;
char name [] ;
} s ;

Array of structure in C :-

An array of structure in C can be defined as the collection of Multiple structure variable where each variable contains information about different entities The array of structure in C are used to stored information about Multiple entities of different datatypes

syntax :-

```
struct structure name structure variable
                                [size];
```



eg. struct stud s[10];

Q. Explain self Referential structure.

⇒ self Referential structure are those structure in which those one or more pointers points to the structure of same type.

```
#include<stdio.h>
#include<conio.h>
int i;
```

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```
    char a;
    struct self * ptr;
    };
    Void main()
    {
    struct self var1;
    var1.i = 65;
    var1.a = 'A';
    var1.ptr = Null;
    struct self var2;
    var2.i = 66;
    var2.a = 'B';
    var2.ptr = Null;
    var1.ptr = & var2;
    printf("%d, %c", var1.ptr→i,
    var1.ptr → a);
    getch();
    }
```

3) Explain Nested structure.

⇒ 'C' provides us the feature of nesting one structure within another structure by using which complex data type are created. The attribute address may also have the subparts as street number, city, state and pin code.

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```
#include<stdio.h>
#include<conio.h>
 struct student
{
int Roll.no;
char name[10];
struct DOB {
 int Day;
 int Month;
 int year;
} d;
};
void main()
{
 struct student s;
printf("Enter Rollno, name & DoB");
 scanf("%d, %s, %d, %d, %d",
&s.Rollno, &s.name, &s.d.Day,
 &s.d.Month, &s.d.year);
intf("Roll no = %d", s.roll no);
rintf("name = %s", s.name);
rintf("DoB = %d, %d, %d",
 s.d.Day, s.d.Month, s.d.
year);
 getch();
}
```

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4) Explain structure using function

⇒ 1) passing member variable individually
2) passing entire structure
3) passing address of structure

1) passing member variable individually

```
#include<stdio.h>
struct student
{
int roll-no;
float per;
};
void main()
{
struct student s;
printf("Enter student Roll no & percentage");
scanf("%d, %f", &s.Rollno, &s.per);
display(s.Rollno, s.per);
getch();
}
int display(int a, float b)
{
printf("Roll no = %d", a);
printf("percentage = %f", b);
return 0;
}
```

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2) passing entire structure

```
#include<stdio.h>
 struct student
 {
 int Roll-no;
  float per;
 };
 void main()
 {
  struct student s;
printf("Enter student Roll no &
  percentage");
 scanf("%d, %f", &s.Roll no,
 &s.per);
  display (s);
   getch();
  }
int display (struct student s2
  {
printf("Roll no = %d", s2.Roll no);
printf("percentage = %f", s2.per)
   return 0;
  }
```

3) passing address of structure

```
#include<stdio.h>
```

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```
struct student
{
int Roll- no ;
float per ;
} ;
void main ( )
{
struct student s;
printf(" Enter student Roll no & percentage ");
scanf(" %d , %f ", & s. Roll no , & s. per);
display (& s) ;
getch( ) ;
}
int display (struct student * s2 );
printf ( "Roll no = %d ", s2 → roll-no );
printf ( " percentage = %f ", s2 → per );
return 0 ;
}
```

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Name :- Devkate kiran Madhukar

subject :- Advanced 'c' Programming

Roll. No :- 113

Assignment No :- 3

1) what is File ? Explain File Modes

⇒ File handling in c enables us to create, update, read and delete the files stored on the local file system through our c program

1) opening File : fopen()

fopen() Function is used to create a File as well as open a File

syntax :-

```
File pointer =fopen("Name or location of File", "Mode of File");
```

We can use of the following modes in the fopen() function.

Mode	Description
r	opens a text File in read mode
w	opens a text File in write mode
a	opens a text in append mode
r+	opens a text File in read & write mode
w+	opens a text File in read & write mode
a+	opens a text File in read & write mode
rb	opens a binary File in read mode
wb	opens a binary File in write mode
ab	opens a binary File in append mode
rb+	opens a binary File in read and write mode
wb+	opens a binary File in read and write mode
ab+	opens a binary File in read and write mode

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Q. 2) Explain Macro and preprocessor.

⇒ c source code → preprocessor → compiler.

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working of C preprocessor :-

The C preprocessor is a macro preprocessor that transforms your program before it is compiled. These transformation can be the inclusion of header Files, macro expansions.

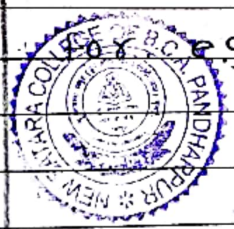
The C preprocessor is a macro-processor that transforms your program before it is compiled.
preprocessor is used # include
Macros is used to # define.

Types of Macro
1) object like Macro
2) Function like Macro
3) conditional Macro

1) object like Macro :-

syntax :-

```
#define Macro Macro_value
```



eg
```
#define pi 3.14
void main()
{
    int area, r = 5;
    area = pi * r * r;
printf("Area of circle = %d", area);
```

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```
    getch();
    }
```

2) Function like Macro :-

syntax :-

```
#define macro (parameter) expressi
```

e.g.
```
#define sum (a,b) a+b
void main()
{
int s, a=5, b=3;
s = sum (a,b);
printf ("%d", s);
getch();
}
```

3) conditional like Macro :-

syntax :-

```
#ifdef directives
// code
#endif
```

2)
```
#if Directive
#if expression
// code
#endif
```

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3) #if #else directives

```
#if expression
  // code
#else
  // code
#endif
```

4) #if #elif directives

```
#if expression
  // code
#elif expression
  // code
#else
  // code
#endif
```

Q) Explain standard input ?

A) 1) getchar()
2) getch()
3) getche()
4) gets()

1) getchar() :-

```
#include<stdio.h>
#include<conio.h>
void main()
{
  char ch;
  ch = getchar();
  printf("ch = %c", ch);
}
```

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getchar() function read single character form the keyboard we can add number of characters and output but print only one character when we press enter button of keyboard

2) getch() :-

```
#include<stdio.h>
#include<conio.h>
void main()
{
char ch;
ch = getch();
printf("ch = %c", ch);
}
```

getch() function used to hold output screen. whenever we press any key form the keyboard it will not recode on screen directly. it present in conio.h File.

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3) getche() :-

```
#include<stdio.h>
#include<conio.h>
void main()
{
```

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```
char ch;
ch = getche();
printf("ch = %c", ch);
}
```

getch() function whenever we press any key form the keyboard it will ecade on screen and imdiately next line executed. it present conio.h File

4) gets() :-

```
#include<stdio.h>
#include<conio.h>
#include<string.h>
  void main()
  {
  char ch[50];
    gets(ch);
printf("ch = %s", ch);
}
```

to Read complete string as an input we use gets() function gets() funtion is present in string.h file.

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Name :- Devkate Muktai Vitthal

Class :- B.C.A. - 1st year.

Roll No :- 114

Sub :- Advanced 'C' programming

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Write a program To Display Welcome Message

```
# include<Stdio.h>
# include<conio.h>
main( )
{
printf ("Welcome");
getch( );
}
```

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Output :-

Welcome

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WAP to swap two values without using third variable (use pointer)

```
#include<stdio.h>
#include<conio.h>
void main()
{
int a=10, b=20;
int *p, *q;
 p= &a;
 q= &b;
*p=*p+ *q;
*q=*p- *q;
*p=*p- *q;
printf("value of a=%d", *p);
printf("value of b=%d", *q);
 getch();
 }
```

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output:

Value of a = 20

Value of b = 10

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WAP to pointer and array to address of array element.

```
#include<stdio.h>
#include<conio.h>
Void main()
{
int a[] = {25,50,75,100,125};
    int i;
   clrscr();
for(i=0; i<=4; i++)
{
printf("%u\n", &a[i]);
}
getch();
}
```

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output :-

FFEC
FFEE
FFF0
FFF2
FFF4

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WAp to pointer in array

```
#include<stdio.h>
#include<conio.h>
Void main()
{
int a[] = {25,50,75,100,125};
  int i;
 clrscr();
for(i=0; i<=4; itt)
{
Printf("%d\n", a[i]);
 }
 getch();
 }
```

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output :-

25
50
75
100

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Write a program to register storage class

```
# include<Stdio.h>
# include<Conio.h>
Void main ( )
{
register int a = 20;
Printf ("value of a = %d", a);
  getch( );
 }
```

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Output :-

Value of a = 20

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WAp to Automatic Storage class of garbage value

```
#include<stdio.h>
#include<conio.h>
 int main( )
  {
  auto int a;
   auto float b;
   auto char c;
  printf("%d %f %s",a,b,c);
    return 0;
    }
```

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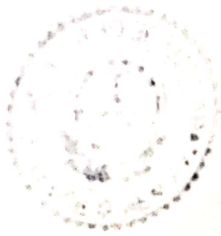
Output :-

garbage value
garbage value
garbage value



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```
# include<Stdio.h>
# include<Conio.h>
int main( )
 {
  int a = 10, i;
Printf ("%d", ++a);
 for (i=0; i<3; i++)
 {
 int a=20
 printf ("%d", a);
  }
  printf("%d", a);
    return 0;
    }
```

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output :-

```
11
20
 20
  20
   11
```

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WAp to using Static Storage class

```
#include<stdio.h>
#include<conio.h>
Void main( )
 {
 Static int a ;
 Static float b;
 Static Char c;
printf ("\n%d\n%f\n%s", a,b,c);
 getch( );
 }
```

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WAP to disp

```
# include<stdio.h>
# include<conio.h>
main ( )
{
int i ;
for (i = 1 ; i< 100 ; i ++)
{
if (i%2 != 0 )
printf ("%d\n", i );
}
getch ( );
}
```

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output :-

2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34
36 38 40 42 44 46 48 50 52 54 56 58 60
62 64 66 68 70 72 74 76 78 80 82 84
86 88 90 92 94 96 98 100

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WAp to Concatenate String

```
# include<stdio.h>
# include<conio.h>
# include<string.h>
main( )
{
Char S1 [20], S2 [20];
int i, j;
printf ("enter the string :\n");
Scanf ("%s \t %s", S1, S2);
 i = 0;
While (S1 [i] != '\0')
i++;
for (j=0; S2 [i] != '\0'; j++)
{
 S1 [i] = S2 [j];
i++;
}
S1 [i] = '\0';
 printf ("\n %s", S1);
 getch( );
 }
```

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Output :

enter the string

New york

Newyork

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String Reverse Using Strrev( ) liabrary Function

```
#include<stdio.h>
#include<conio.h>
#include<string.h>
main()
{
Char S1[20];
puts("enter string \n");
gets(S1);
Strrev(S1);
puts(S1);
getch();
}
```

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output

enter a string

BCA

ACB

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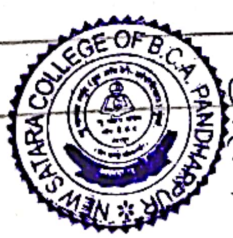
WAp to input number into array a and then copy them into array b

```
# include<stdio.h>
# include<conio.h>
main()
{
 int i, a[10], b[10];
 for(i=0; i<10; i++)
 {
 printf("Enter element:");
 Scanf("%d", &a[i]);
 printf("\n");
 }
  for(i=0; i<10; i++)
  {
  b[i] = a[i];
  }
 for(i=0; i<10; i++)
 {
 printf("a[i] b[i]");
 printf("\n%d %d", a[i], b[i]);
 }
getch();
}
```



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output :-

enter element 34

3434 a[i] b[i]

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WAP To print

```
1
2 2
3 3 3
4 4 4 4
5 5 5 5 5
```

```
#include<stdio.h>
#include<conio.h>
main()
{
int i, j, k = 1;
for (i = 1; i<=5; i++)
{
for (j = 1 ; j<=i; j++)
{
printf("%d", k);
}
printf("\n");
k++ ;
}
getch();
}
```

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output :-

```
1
2 2
3 3 3
4 4 4 4
5 5 5 5 5
```

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WAP To print

```
    1
   2 2
  3 3 3
 4 4 4 4
5 5 5 5 5
```

```
#include<stdio.h>
#include<conio.h>
main()
{
int i,j,k=1,s;
for(i=1;i<=5;i++)
{
for(s=i+1;s<=5;s++)
{
printf(" ");
}
for(j=1;j<=i;j++)
{
printf("%d",i);
}
printf("\n");
}
getch();
}
```

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output :-

```
    1
  2 2
 3 3 3
4 4 4 4
5 5 5 5 5
```

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```
A
B C
D E F
G H I J
k l M N O
```

```
# include<stdio.h>
# include<conio.h>
main( )
{
int i , j ;
char k = 65 ;
for (i = 1 ; i<= 5 ; i++ )
{
for (j = 1 ; j<= i ; j++ )
{
printf ("%c", k ) ;
 k++ ;
 }
printf ("\n" ) ;
}
getch( ) ;
}
```

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output :

```
A
B C
D E F
G H I J
K l M N O
```

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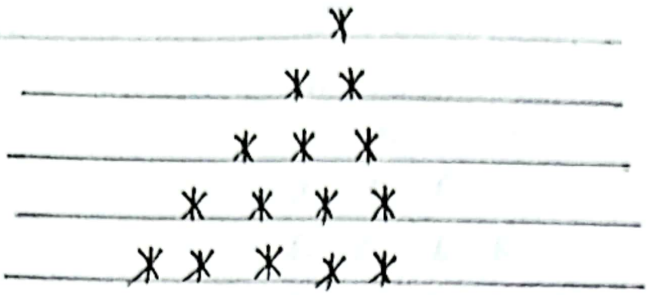
WAP to print



```
# include<Stdio.h>
# include<conio.h>
main ( )
{
int i, j, k = 1, S ;
for ( i = 1 ; i<=5 ; i++ )
{
for (S = i+1 ; S<=5 ; S++)
{
printf (" ");
}
for (j = 1 ; j<=i ; j++ )
{
printf ( "* ");
}
printf ("\n");
}
getch ( );
}
```

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output :-

```
* * * * *
  * * * *
    * * *
      * *
        *
```

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WAP To print Multiplication Table (padho)
Using for loop

```
# include <stdio.h>
# include <conio.h>
main( )
{
int n, i ;
printf(" enter the no = \n");
 scanf("%d", &n);
for (i = 1 ; i <= 10 ; i++ )
{
 printf ("\n%d", n * i );
 }
 getch( );
 }
```

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Output :-

2	3	4	5	6	7	8	9	10
4	6	8	10	12	14	16	18	20
6	9	12	15	18	21	24	27	30
8	12	16	20	24	28	32	36	40
10	15	20	25	30	35	40	45	50
12	18	24	30	36	42	48	54	60
14	21	28	36	42	49	56	63	70
16	24	32	40	48	56	64	72	80
18	27	36	45	54	63	72	81	90
20	30	40	50	66	70	80	90	100

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Using header file

```
#include<stdio.h>
#include<conio.h>
Void hello()
{
Clrscr();
printf("Hello BCA Student");
}
Void main()
{
Hello();
getch();
}
```

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Out put :-

Hello BCA student

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```
#include<stdio.h>
#include<conio.h>
main()
{
 int i;
 clrscr();
printf("Number\tCube");
 for(i=1; i<10; i++)
{
printf("\n%d\t%d", i, i*i);
}
getch();
}
```

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output :-

Number	Cube
1	1
2	4
3	9
4	16
5	25
6	36
7	49
8	64
9	81

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```
# include < Stdio.h >
# include < Conio.h >
main ( )
{
 int i, j ;
for ( i = 1 ; i < = 10 ; i ++ )
{
for ( j = 2 ; j < = 10 ; j ++ )
{
printf ( "%d \t", i * j ) ;
}
printf ( "\n" ) ;
}
getch ( ) ;
}
```

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output :-

```
 2  3  4  5  6  7  8  9  10
 4  6  8  10 12 14 16 18 20
 6  9  12 15 16 21 24 27 30
 8  12 15 20 24 28 32 36 40
 10 15 20 25 30 35 40 45 50
 12 18 24 30 36 42 48 54 60
 14 21 28 35 42 49 56 63 70
 16 24 32 40 48 56 64 72 80
 18 27 36 45 54 63 72 81 90
 20 30 40 50 60 70 80 90 100
```

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```
# include<stdio.h>
# include<conio.h>
# include<string.h>
main ( )
{
Char S1 [20], S2 [20];
printf ("\n enter String : \n");
Scanf ("%s", S1);
 Strcpy (S2, S1);
 printf ("%s", S2);
 getch ( );
 }
```

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output :-

enter string:

BCA

BCA

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String length Using Strlen( ) library Function

```
# include <stdio.h>
# include <conio.h>
# include<string.h>
 Void main( )
{
  Char S1[20];
  int n;
 printf("\n Enter String :");
 gets(S1);
 n = Strlen(S1);
 printf("\n%d", n);
 getch( );
 }
```

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output :

enter string : BCA

3

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To print a formate given in below

```
    *
    *
* * * * *
    *
    *
```

```
# include<stdio.h>
# include<conio.h>
 int main( )
 {
for (int i=1; i<=5; i++)
 {
 for (int j=1; j<=5; j++)
 {
if (i==3 || j==3)
printf("* ");
 else
printf(" ");
}
printf("\n");
}
}
```

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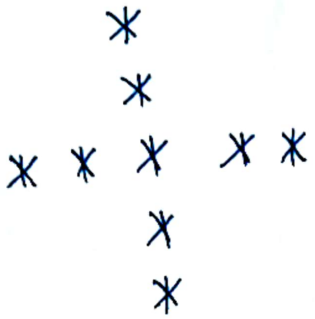
Output :-



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Write a program for Division of two number

```
#include<stdio.h>
#include<conio.h>
main()
{
float a,b,c;
Printf("Enter 1st Number\n");
Scanf("Enter 1st Number\n");
Printf("Enter 2nd Number\n");
Scanf("%f",&b);
c= a/b;
Printf("Div=%d",c);
}
```

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output :-

Enter 1st Number

200

Enter 2nd Number

50

Div = 4

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Write a program for inputs marks of five Subject like Math, Hindi, Chemistry, Physics English and Find average

```
#include<stdio.h>
#include<conio.h>
main( )
 {
float p,c,m,h,e,avg;
printf("Enter marks in Physics\n");
 Scanf("%f,&p);
Printf("Enter marks in Chemistry\n");
 scanf("%f,&c);
printf ("Enter marks in Math\n");
 Scanf("%f,&m);
printf("Enter marks in hindi\n");
 Scanf("%f &e);
 avg=(p+c+m+h+e)/5;
printf("Average of result=%f",avg);
}
```

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output :-

```
Enter marks in physics
45
Enter marks in Chemistry
65
Enter marks in Math
87
Enter marks in hindi

Average of result = 73.19
```

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Write a program for area of rectangle

```
#include<stdio.h>
#include<conio.h>
main()
{
int area, h, w;
printf("Enter height of rectangle\n");
 scanf("%d", &h);
printf("Enter width of rectangle\n");
 scanf("%d", &w);
 area = h * w;
printf("Area of ractangle = %d", area);
}
```

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Output :-

```
Enter height of rectangle
4
Enter width of rectangle
6
Area of rectangle = 24
```

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Write a program for greater value in 2 Number

```
#include<stdio.h>
#include<conio.h>
main()
{
int f,s;
Printf("Enter First number\n");
Scanf("%d",&f);
Printf("Enter Second number\n");
 Scanf("%d",&s);
  if (f>s)
  {
printf("first no is greater");
 }
 if (f<s)
 {
printf ("second no is greater");
}
if (f==s)
{
printf("both are equal");
}
}
```

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output :-

```
Enter First number
    45
Enter second number
    25
First no is greater
```

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WAP to swap the value of two variables

```
#include<stdio.h>
#include<conio.h>
Void main()
{
int a=10, b=20, temp;
temp=a;
a=b;
b=temp;
printf("%d %d", a, b);
getch();
}
```

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output :-

2010

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Write a program to print given formate in below

```
* * * * *
* * * * *
* * * * *
* * * * *
* * * * *
```

```
#include<stdio.h>
#include<conio.h>
 main()
 {
for(int i=1; i<=5; i++)
 {
 for(int j=1; j<=5 ; j++)
 {
 printf(" * ");
 }
 printf("\n");
 }
 getch();
}
```

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output :-

```
* * * * *
* * * * *
* * * * *
* * * * *
* * * * *
```

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```
# include<Stdio.h>
# include<Conio.h>
 main( )
 {
int area , Side ;
printf ("Enter Side of Square \n");
  Scanf ( "%d", & h);
   area = Side * Side;
printf ("Area of Square = %d ", area);
 }
```

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output :-

Enter side of square

4

Area of square = 16

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WAp to check String is palindrome or NoT

```
# include <stdio.h>
# include <conio.h>
  mainc )
  {
int i=0, j=0, count=0, flag;
char S1[20], S2[20];
Clrscr ( );
 Printf ("enter the string");
      getS(S1);
   While (S1[i]!='\0')
   {
   Count ++;
    i++;
  }
for (i=count-1, j=0; i>=0, j<=count
      -1; i--, j++)
 {
S2[j]=S2[i];
}
for (i=0' j=0; i<=count, j<=count;
       i++, j++)
{
if (S1[i]==S2[j])
   flag=1;
  else
 flag=0;
  break;
}
```

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```
if (flag == 1)
{
printf ("\n the given String is
  palindrome");
}
else
printf("\n the given string is not
  palindrome");
getch();
}
```

Output :-

enter the string

121

The given string is palindrom.

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WAp to print a factorial No

```
#include<stdio.h>
#include<conio.h>
Void main( )
{
int n,f;
Printf("enter one no");
Scanf("%d",&n);
f = fact(n);
Printf("factorial=%d",f);
}
int fact(n)
{
if(n==0)
{
return 0;
}
else if(n==1)
{
return 1;
}
else
{
return n* fact(n-1);
}
}
```

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output :-

enter one nos

120

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WAp to Check the number is even or odd

```
# include<stdio.h>
# include<conio.h>
Void main( )
{
int n = 12gg;
Scanf ("%d", &n);
 if (n %2 ==0)
 {
 Printf ("Even");
 }
 else
 {
 printf ("Odd");
 }
 getch( );
 }
```

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output :-

1299

Odd

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Factorial no using For loop

```
# include<Stdio.h>
# include<Conio.h>
 main( )
{
 int i , n , fact = 1;
printf ("Enter the no = \n");
Scanf ("%d", & n );
 for (i = 1 ; i<=n; i++ )
{
 fact = fact * i ;
}
printf ("Factorial of given no %d = %d", fact);
getch( ) ;
}
```

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output :-

enter the no = 5

factorial is given no 120

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Use of break Statement

```
#include<stdio.h>
#include<conio.h>
main()
{
int a;
for(a=1; a<=10; a++)
{
if(a==5)
{
break;
}
printf("\n%d", a);
}
getch();
}
```

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Output :-

1
2
3
4

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WAp to find out the prime numbers between 1 to 500

```
#include<stdio.h>
#include<conio.h>
main()
{
int i, n;
clrscr();
printf("enter number");
scanf("%d", &i);
{
n = i - 1;
if (n%2 == 0)
printf("prime");
else
printf("not prime");
}
getch();
}
```

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output :-

enter number 3

prime

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printf output as follow

1 2 3 4 5
6 7 8 9 10 using for

```
# include <stdio.h>
# include <conio.h>
main()
{
int i, n;
printf("enter the no=\n");
Scanf("%d", &n);
 for(i=1; i<=n; i++)
 {
printf("\t%d", i);
 if(i%5==0)
 {
printf("\n");
 }
getch();
}
```

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output :-

enter the no = 22

1 2 3 4 5
6 7 8 9 10
11 12 13 14 15
16 17 18 19 20

21

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WAp to Impliment Array

```
# include<stdio.h>
# include<conio.h>
main ( )
{
int a [5] , i ;
for (i = 0 ; i < 5 ; i++ )
{
  scanf("%d ", & a[i ]);
}
 for (i = 0 ; i<5 ; i++ )
 {
  printf ("%d ", a [i];
 }
 getch( );
 }
```

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output :-

Enter any 5 Number

20
45
56
89
83

2045568983

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WAp to make use of scanf( ) Function For Taking Input at Run - Time

```
#include<stdio.h>
#include<conio.h>
main( )
{
int a;
printf("\n Enter value of a :");
Scanf ("%d", & a);
printf ("\n The value of a= %d", a);
getch( );
}
```

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output :-

enter the value of

30

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WAP To print Multiplication Table (single Digit padha) using do While

```
#include<stdio.h>
#include<conio.h>
main()
{
int n, i;
printf("\n Enter Number");
Scanf("%d", &n);
i = 1;
do
{
printf("\n%d", n*i);
i++
} while(i<=10);
getch();
}
```

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output :-

enter Number 2

2
4
6
8
10
12
14
16
18
20

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WAp To print Fibonacci Series

```
# include <Stdio.h>
# include <Conio.h>
main ( )
{
int n , i , f1 = 0 , f2 = 1 , f3 ;
printf ("\n Enter The Number");
Scanf ("%d", & n );
for (i = 0 ; i<n ; i++ )
{
f3 = f1 + f2 ;
printf ("\n%d", f1 );
 f1 = f2 ;
 f2 = f3 ;
 }
 getch( ) ;
 }
```

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output :

Enter the Number 5

0
1
1
2
3

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Use of Continue Statement

```
# include<stdio.h>
# include<conio.h>
main()
{
int a;
for(a=1 ; a<=10 ; a++)
{
If(a==5)
{
Continue ;
}
printf("\n%d", a);
}
getch();
}
```

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output :-

1
2
3
4
5
6
7
8
9
10

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WAP For Addition of Two Number using Scanf() Function

```
# include<Stdio.h>
# include<Conio.h>
main( )
{
int a, b, C ;
printf("\nEnter Value of a=");
Scanf("%d", & a);
printf("\nEnter Value of b=");
Scanf("%d", & b);
C = a+b ;
printf("%d", C);
getch ( );
}
```

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output :-

enter the value of a = 20

enter the value of b = 30

c = 50

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```
#include<stdio.h>
#include<conio.h>
main()
{
add();
 getch();
 }
 add()
 {
 int a = 10, b=20, C;
  C = a+b;
  printf("Addition = %d"; C);
  }
```

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output :

addition = 30

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WAp To Check Enter Character is Vowel Or Consonant

```
#include <stdio.h>
# include <conio.h>
main ( )
{
Char ch ;
 printf ("Enter Single Character");
 Scanf ("%c", & Ch);
 if (ch == 'a' || ch == 'e' || ch == 'i' || == 'o'
  || ch == 'u')
 {
 printf ("\n It's a Vowel");
 }
 else
 {
 printf ("\n It's a Consonant");
 }
 getch ( );
 }
```

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output :-

enter a single character

w

it is a consonant

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WAP To Calculate Sum of Two Digit Number

```
#include<stdio.h>
#include<conio.h>
main()
{
int a, b, c, Sum;
printf("Enter two Digit Number");
Scanf("%d", &a);
C = a / 10;
b - a % 10;
Sum = C + b;
printf("\n The Sum of Digit is: %d",
  Sum);
getch();
}
```

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Output :-

enter two digit number 34

the sum of digit is : 7

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Convert String From Upper To lower Using StrlWr ( ) liabrary Function ( )

```
# include<stdio.h>
# include<conio.h>
# include<string.h>
main ( )
{
Char S1 [20];
ClrScr ( );
puts ("\n Enter String");
gets(S1);
StrlWr (S1);
puts (S1);
getch( );
}
```

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output :

enter string

BCA

bca

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WAP To Convert String From lower To Upper Using Strupr( ) liabrary function

```
# include<stdio.h>
# include<conio.h>
# include<string.h>
main( )
{
Char S1 [20];
puts("\n Enter String");
gets (S1);
Strupr(S1);
puts (S1);
getch( );
}
```

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Output :

enter string

bca

BCA

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WAp to Convert m into km

```
# include<Stdio.h>
# include<Conio.h>
 main()
{
 float m, km ;
 printf(" metres :") ;
 Scanf("%f", &m) ;
 km = m / 1000 ;
 printf (" km :%f", km) ;
 getch() ;
 }
```

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Output :-

meters : 12

km = 0.012000

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WAp To Check year IS leap year Or NoT

```
# include<stdio.h>
# include<conio.h>
main( )
{
int year ;
printf("enter year");
Scanf("%d", & year);
if ( year %. 4 == 0 )
{
printf(" leap year ");
}
else
{
printf("Not leap year");
}
getch( );
}
```

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Output :-

enter year 2003

not leap year

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Addition of even or odd through do while

```
#include<stdio.h>
#include<conio.h>
main()
{
int n, even=0, odd=0;
n=1;
printf("\n\t+Odd\+Even");
do
{
if(n%2==0)
{
eve = eve+n;
printf("\t%d", n);
}
else
{
printf("\n\t%d", n);
odd = odd+n;
}
n++;
}while(n<=10);
printf("\n\t odd =%d Even = %d", odd, eve);
getch();
}
```

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Output :-

odd + even

1	2
3	4
5	6
7	8
9	10

odd = 25 even = 30

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```
# include <stdio.h>
# include <conio.h>
# include <string.h>
main ( )
{
 Char name [50];
 gets(name);
 puts (name);
 getch ( );
 }
```

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output :-

Geeta

Geeta

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Use of goto Statement Example No.1 *

```
# include<stdio.h>
# include<conio.h>
main()
{
msg : printf("\n Welcome To BCA");
goto msg;
getch();
}
```

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output :-

Welcome to bca
welcome to bca
welcome to bca
welcome to bca ....

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WAP to Sort array element in ascending order

```
#include<stdio.h>
#include<conio.h>
main()
{
int i,j,m,n[5];
printf("\n array element:");
for(i=0; i<5; i++)
{
Scanf("%d", &n[i]);
}
for(i=0; i<4; i++)
{
for(j=i+1; j<5; j++)
{
if(n[i]>n[j])
{
m=n[i];
n[i]=n[j];
n[j]=m;
}
}
printf("\n the Sorted array:");
for(i=0; i<5; i++)
{printf("%d\t", n[i]);
}
getch();
}
```

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Output :-

array element

51834

the sorted array

13458

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WAp to transfer days into month

```
#include<stdio.h>
#include<conio.h>
main()
{
int month days;
printf("\n days:");
Scanf("%d", & days);
month = days / 30;
days = days %30;
printf("\n month = %d\n\n days = %d",
 month, days);
getch();
}
```

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Output

day : 331

month : 11

days : 01

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```
#include<stdio.h>
#include<conio.h>
main()
{
int n;
float p, r, intrest;
printf("Enter The principle Amount:");
Scanf("%f", &p);
printf("Enter The Rate of Intrest:");
Scanf("%f" &r);
printf("Enter The No of years :");
Scanf("%d", &n);
intrest = (p*n*r) / 100;
printf("\n The Simple Intrest Is = %f",
  intrest);
getch();
}
```

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enter the principle Amount = 1000

enter the Rate of interest = 3

enter the No. of year = 5

interest = 150

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WAP to Calculate average temperature for the day

```
#include<stdio.h>
#include<conio.h>
main()
{
int max, min, sum;
float avg;
printf("\n maximum temp=");
Scanf("%d", &max);
printf("\n minimum temp=");
Scanf("%d", &min);
Sum = max + min;
avg = Sum / 2;
printf("\naverage %f", avg);
getch();
}
```

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Output :-

maximum = 36

minimum : 30

avg : 33

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WAp to Calculate Square (power) of number

```
# include<stdio.h>
# include<conio.h>
main()
{
 int x, m, p, i=1;
printf("Enter value of x & m");
 Scanf("%d%d", &x, &m);
 p = x;
for(i=1; i<m; i++)
{
x = x * p;
}
printf("Answer = %d", x);
getch();
}
```

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Output :-

enter value of x & m

8 2

Ans = 9

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WAP to "Interchange" OR "SWAP" Values Of Two Numbers a and b

```
#include<stdio.h>
#include<conio.h>
main()
{
int a, b, c;
printf("\n value of a;");
Scanf("%d", &a);
printf("\n value of b:");
Scanf("%d", &b);
c = a;
a = b;
b = c;
printf("\n value of a:%d\n\n value of b:%d"
    a, b);
getch();
}
```

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Output :-

a = 10

b = 20

a = 20

b = 10

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WAP to Find maximum number among three numbers

```
#include<stdio.h>
#include<conio.h>
main()
{
int a, b, c;
printf("enter three number:");
Sconf("%d\t%d\t%d", &a, &b, &c);
if (a>b)
{
if (a > c)
printf("\n a is maximum");
}
else
if (b > c)
{
if (b > a)
printf("\n b is maximum");
}
else
printf("\n c is maximum");
getch();
}
```

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output :-

a = 20

b = 10

c = 30

C > a > b

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WAp to find the Smallest number in array

```
#include<stdio.h>
#include<conio.h>
main()
{
 int i, n, p, num[20];
 printf("\n enter element do you wish to
    enter ? : ");
 Scanf("%d", &n);
 printf("\n enter element of array : \n");
 for(i=0; i<n; i++)
 {
 Scanf("%d", &num[i]);
 }
 p = num[0];
 for(i=1; i<n; i++)
 {
 if(num[i] > p)
 p = num[i];
 }
 printf("\n maxnumber : %d", p);
 getch();
 }
```

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output :-

enter element do you wish to enter 25

enter element of array 56

mix number 56

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WAP To print Grade Using Switch

```
# include<stdio.h>
# include<conio.h>
main()
{
 Char grade ,a, b, c, d;
 Clrscr();
printf("Enter Code for Grade");
 Scanf("%s", & grade);
 Switch (grade)
 {
Case 'a':
     printf("\n First Class With Distinction");
      break;
Case 'b':
     printf("\n first Class");
      break;
Case 'c':
      printf("\n second class");
       break;
 Case 'd':
      printf("\n fail");
       break;
 default:
      printf("\n Result Declared");
       break;
      }
      getch();
      }
```

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Output :-

enter code for Grade

a

First class with Distinction.

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WAp To Calculate Area of Tringle

```
#include<stdio.h>
#include<conio.h>
main()
{
float len, breath, area;
printf("Enter the length and Breath");
Scanf("%f%f", &len, &breath);
area = len * breath;
printf ("Area = %f", area);
getch();
}
```

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Output :-

enter the length and breath 23

area = 1288.000000

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```
#include<stdio.h>
#include<conio.h>
main()
{
int i;
i=1;
do
{
printf("\n%d", i);
i++;
} while (i<=10);
getch();
}
```

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Output :-

1
2
3
4
5
6
7
8
9
10

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```
#include<stdio.h>
#include<conio.h>
main()
{
int i, j;
for(i=21; i<=30; i++)
{
for(j=1; j<=10; j++)
{
printf("%d\t", i*j);
}
printf("\n");
}
getch();
}
```

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output :-

21	22	23	24	25	26	27	28	29	30
42	44	46	48	50	52	54	56	58	60
63	66	69	72	75	78	81	84	87	90
84	88	92	96	100	104	108	112	116	120
105	110	115	120	125	130	135	140	145	150
126	132	138	144	150	156	162	168	174	180
147	154	161	168	175	182	189	196	203	210
168	176	184	192	200	208	216	224	232	240
189	198	207	216	225	234	243	252	261	270
210	220	230	240	250	260	270	280	290	300

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WAp To Check No. Is Armstrong or Not

```
# include<Stdio.h>
# include<conio.h>
main ( )
{
int n, m, Sum, p ;
Sum = 0 ;
printf("enter the number") ;
Scanf (" %d ", & n) ;
p = n ;
While (n > 0)
{
m = n % 10;
Sum = Sum + m * m * m ;
n = n / 10 ;
}
printf ("\n %d", Sum) ;
if (sum = = p )
printf ("\ narmstrong") ;
else
printf ("\n not armstrong") ;
getch ( ) ;
}
```

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output :-

enter the number

121

not armstrong

153

armstrong

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Use Increment & Decrement operator

```
#include<stdio.h>
#include<conio.h>
main()
{
int a = 10, b = 20;
 a = a++;
 b = b--;
printf("\n The Incremented value of
    a = %d", a);
printf("\n The Decreamented value of
    b = %d", b);
getch();
}
```

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Output :-

the incremented value of a = 11

the Decremented value of b = 19

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WAp For Addition of Two Number

```
# include<stdio.h>
# include<conio.h>
main()
{
int a = 10, b = 20, c;
c = a + b;
Printf("%d", c);
getch();
}
```

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Output

30

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```
# include<stdio.h>
# include<conio.h>
main()
{
int a;
abc: for(a=1;a<=10;a++)
{
printf("\n%d",a);
}
goto abc;
getch();
}
```

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Output:-

1 2 3 4 5 6 7 8 9 10 - 2 3 4 5 6 7 8 9 10

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WAp to determine wheather leap year or NOT using Conditional Operator.

```
# include<stdio.h>
# include<conio.h>
main()
{
 int year;
 printf("year:");
  scanf("%d", &year);
 (year%4==0)?printf("leapyear"):printf(
  "not leap year");
 getch();
 }
```

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output :-

2003

not leap year

2004

leap year

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WAp to Compare two String using StrCmp ( ) library function

```
#include<stdio.h>
#include<conio.h>
#include<string.h>
main()
{
Char S1[20], S2[20];
 gets(S1);
 gets(S2);
 if(strcmp(S1,S2)==0)
 {
 printf("str equal");
 }
 else
 {
 printf("str not equal");
 }
 getch();
 }
```

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output :-

12 or 12 str is equal

12 or 35 str is not equal

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WAP To print 1 to 10 using for loop

```
#include<stdio.h>
#include<conio.h>
main()
{
int i;
For (i=1; i<=10; i++)
{
printf("\n%d", i);
}
getch();
}
```

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output :

1
2
3
4
5
6
7
8
9
10

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WAp to display even number from 1 - 100

```
# include <Stdio.h>
# include <Conio.h>
main ( )
{
 int i;
 for (i = 1 ; i <= 100 ; i++ )
 {
 printf ( i %. 2 == 0 )
  {
 printf ("%. d \n", i ) ;
 }
 }
 getch ( ) ;
 }
```

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output :-

1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31
33 35 37 39 41 43 45 47 49 51 53 55 57
59 61 63 65 67 69 71 73 75 77 79 81 83 85
87 89 91 93 95 97 99.

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Programming & Problem Solving using 'C' - II

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'C' Programming - II

Name :- Waghmare Pujakta Shankar.

Class :- B.C.A. - I st year

Roll No :- 177

Sub. :- Programming & Problem Solving Using 'C' - II

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Write a program to input any number and print day of week.

```
#include<stdio.h>
int main()
{
int no;
printf("Enter any number\n");
scanf("%d",&no);
switch(no)
{
case 1:
printf("Monday");
break;
case 2:
printf("Tuesday");
break;
case 3:
printf("wednesday");
break;
case 4:
printf("Thrusday");
break;
case 5:
printf("friday");
break;
case 6;
printf("saturday");
break;
case 7:
printf("Sunday");
break;
default:
printf("Invalid input");
}
```

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Output

Enter any number

2

Tuesday

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String length using strlen() library function

```
#include<stdio.h>
#include<conio.h>
#include<string.h>
main()
{
char s1[20];
int n;
Printf("\n Enter String:");
gets(s1);
n = strlen(s1);
printf("\n %d", n);
getch();
}
```

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Output:-

Enter String:

College

7

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Write a program to display welcome message

```
#include<stdio.h>
#include<conio.h>
main()
{
printf("welcome");
getch();
}
```

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output:-

welcome

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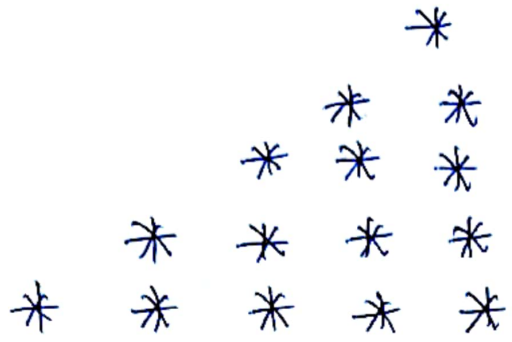
Write a program to print



```
#include<stdio.h>
# include<conio.h>
main()
{
int i,j,k=1,5;
for(i=1;ik=5;i++)
{
for(S=i+1;S<=5;S++)
{
print(" ");
}
for(j=1;j<=i;j++)
{
printf("*");
}
printf("\n");
}
getch();
}
```

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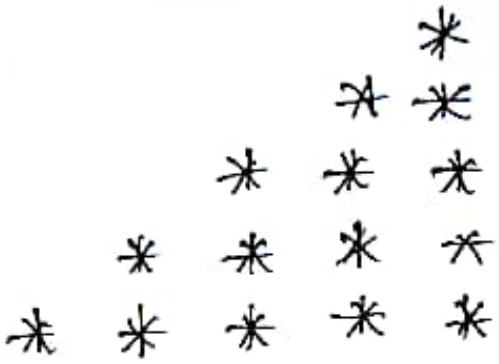
output :-



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Write a program to check alphabet is uppercase or lowercase

```
#include<stdio.h>
#include<conio.h>
#include<string.h>
int main()
 {
  char ch;
printf("Enter any alphabet \n");
scanf("%c",&ch);
if(ch>=65&& ch<=90)
 {
printf("uppercase");
 }
else
 {
printf("lowercase");
 }
 }
```

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Enter any albhabet

D

Uppercase

Write a program for String Comparison

```
#include<stdio.h>
#include<string.h>
int main()
{
char str1[20];
char str2[20];
 int value;
printf("Enter the first string:");
scanf("%s",str1);
printf("Enter the second string:");
scanf("%s", str2);
value =strcmp(str1,str2);
 if(value ==0)
 printf("strings are same");
 else
 printf("strings are not same");
 return0;
 }
```

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Output :-

```
Enter the first string: Monday
Enter the second string: Tuesday
strings are not same
```

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Write a program to copy string

```
#include<stdio.h>
int main()
{
char s1[100],s2[100],i;
printf("Enter string:");
fgets(s1,sizeof(s1),stdin);
for(i=0;s1[i]!='\0';++i)
{
s2[i]=s1[i];
}
s2[i]='\0';
printf("Copy string:%s",s2);
return 0;
}
```

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output:-

Enter string: hello World
Copy string: hello World

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Write a program to print (*) number of columns and rows

```
#include<stdio.h>
int main()
{
int i,j,rows;
printf("Enter the number of rows:");
scanf("%od",&rows);
for(i=1;i<=rows;++i)
{
for(j=1;j<=i;++j)
{
printf("*");
}
printf("\n");
}
return 0;
}
```

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Output:

Enter the number of rows: 5

```
*
* *
* * *
* * * *
* * * * *
```

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Write a program to print

```
A
A B
A B C
A B C D
A B C D E
```

```
#include<stdio.h>
int main()
{
for(int i=1;i<=5;i++)
{
for(int j=1;j<=5;j++)
{
if((i+j)>=6)
printf("%d",(i));
else
printf(" ");
}
printf("\n");
}
```

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Output :-

A

A B

A B C

A B C D

A B C D E

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Write a program to print first and last digit number

```
#include<stdio.h>
#include<conio.h>
int main()
{
int no,b,f;
printf("Enter any Number:\n");
Scanf("%d",&no);
f=no%10;
while(no!=0)
{
b=no%10;
no=no/10;
}
printf("First digit=%d and last digit=%d",b,f);
}
```

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Output:-

Enter any Number:
4859
First digit = 4 and last digit = 9

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Write a program to perform addition using command line argument

```
#include<stdio.h>
#include<stdlib.h>
void main(int argc,char *argv[])
{
int x,y,sum;
if(argc==3)
{
x=atoi(argv[1]);
y=atoi(argv[2]);
sum=x+y;
printf("sum=%d",sum);
}
else
{
printf("Enter two Numbers...");
}
}
```

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Output:-

```
Enter two number....
10 20
Sum = 30
```

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Write a program to print

```
    1
  2 2
 3 3 3
4 4 4 4
5 5 5 5 5
```

```
#include<stdio.h>
int main()
{
  for(int i=1; i<=5; i++)
  {
    for(int j=1; j<=5; j++)
    {
      if((i+j)>=6)
      printf("%d", (i));
      else
       printf(" ");
      }
    printf("\n");
  }
```

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Output

```
    1
   2 2
  3 3 3
 4 4 4 4
5 5 5 5 5
```

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Write a program to print

```
* * * * *
* * * * *
* * * * *
* * * * *
* * * * *
```

```
#include<stdio.h>
 int main()
  {
for (int i=1;i<=5;i++)
  {
 for (int j=1;j<=5;j++)
   {
  printf("*");
   }
  printf("\n");
 }
 }
```

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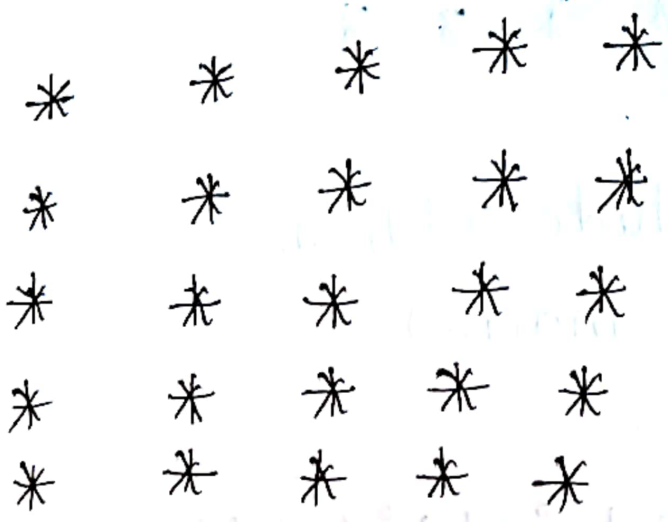
Output :-



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Write a program to print message according to age

```
#include <stdio.h>
void main(){
int age;
printf("Enter The your Age:");
Scanf("%d",&age);
if (age<18)
{
printf("You are child");
}
else if(age>18&&age<60)
{
printf("You are young");
}
else
{
printf("You are old");
}
}
```

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Output:-

Enter The your Age : 24

You are Young

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String length using strlen() library function

```
#include<stdio.h>
#include<conio.h>
#include<string.h>
main()
{
char s1[20];
int n;
printf("\n Enter string:");
gets(s1);
n=strlen(s1);
printf("\n%d", n);
getch();
}
```

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Output:-

Enter string

House

8

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WAP for using goto statment

```
#include<stdio.h>
#include<conio.h>
main()
{
msg: printf("\nwelcome to BCA");
goto msg;
getch();
}
```

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Output :-

Welcome to BCA
Welcome to BCA
. . . . . .
- - - - - - - - - -
- - - - - - - - -
- - - - - - - -

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String reverse using strrev() library function

```
#include<stdio.h>
#include<conio.h>
#include<string.h>
main()
 {
char s1[20];
puts("Enter string\n");
gets(s1);
strrev(s1);
puts(s1);
getch();
}
```

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output :-

Enter string

program

margorp

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WAP using break statement

```
include<stdio.h>
#includ<conio.h>
main()
 {
  int a;
  for (a=1; a<=10; a++)
   {
   if (a==5)
    {
    break;
    }
    printf("\n %d",a);
   }
   getch();
    }
```

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outputs:-

1
2
3
4

Write a program using static variable

```
#include <stdio.h>
int calc()
{
static int sum=2;
sum++;
return sum;
}
void main()
{
Printf("sum = %d \n", calc());
Printf("sum = %od \n", calc());
}
```

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output :-

Sum = 3

Sum = 4

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WAP to find average of five numbers.

```
#include<stdio.h>
#include<conio.h>
void main()
{
int a1,a2,a3,a4,a5,sum,avg;
clrscr();
printf("Enter 5 Number:");
scanf("%d%d%d%d%d",&a1,&a2,&a3,&a4,
 &a5);
sum =a1+a2+a3+a4+a5;
printf("\n Sum =%d",sum);
avg=sum/5;
printf("\n avg=%d",avg);
getch();
}
int avg (int a1, int a2, int a3, int a4, int a5,
int sum, int avg)
{
return(a1+a2+a3+a4+a5/5);
}
```

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Enter 5 Number : 45
67
90
78
56

Sum = 336

avg = 67

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Write a program using Automatic variable

```
#include<stdio.h>
int main()
{
auto int j=1;
{
auto int j=2;
{
auto int j=3;
printf("%d",j);
}
printf("\t %d",j);
}
printf("\t %d",j);
}
```

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Output :-

3 2 1

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WAP to Print A B C ... Z

```
#include<stdio.h>
int main()
{
for(char ch='A';ch<='Z';ch++)
{
printf("%c",ch);
}
}
```

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Output :-

A B C D E F G H I J K L M N O P Q R
W X Y Z

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WAP to check Year is Leap Year or Not.

```
#include<stdio.h>
#include<conio.h>
main()
{
int year;
printf("Enter Year");
scanf("%od",&year);
if(year%4==0)
{
printf("leap year");
}
else
{
printf("Not leap year");
}
getch();
}
```

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Output :-

Enter Year 2003

Not leap year

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WAP to series and find sum of
1+3+5....+n */

```
#include<stdio.h>
void main()
{
int n,i,sum=0;
printf("Enter any number:");
scanf("%d",&n);
for(i=1;i<n;i=i+2)
{
Printf("%d+",i);
sum=sum+i;
}
printf("%d",n);
printf("\n sum=%d",sum+n);
}
```

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Output:-

Enter any number: 7

1 + 3 + 5 + 7

Sum = 16

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WAP to using logical operator.

```
#include<stdio.h>
#include<conio.h>
int main()
{
int a;
clrscr();
a=(2<1)||(4<3);
printf("\n(2<1)||(4<3)=%d",a);

a=(2<1)||(4>3);
printf("\n(2<1)||(4>3)=%d",a);

getch();

return 0;
}
```

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Output:-

(2<1) || (4<3) = 0
(2<1) || (4>3) = 1

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VAP A to print addition of two number

```
#include<stdio.h>
int main()
{
int a, b, c;
printf("Enter first Number \n");
scanf("%d",&a);
printf("Enter Second Number\n");
scanf("%d",&b);
c = a+b;
printf("Add =%d",c);
}
```

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Enter first Number

20

Enter Second Number

50

Add = 70

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WAP to reading array using pointer and print it using pointer.

```
#include<stdio.h>
 int main(){
    int i;
    int arr[10];
     int *ptr;
      ptr = arr;
 Printf("Enter 5 Elements:");
  for (i=0;i<5;i++)
   {
   scanf("%d", ptr);
     ptr++;
    }
    ptr = arr;
 Printf("Entered Numbers: \n");
  for (i=0;i<5;i++)
   {
   printf("%d \n", *ptr);
      ptr++;
   }
   }
```

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Output:-

```
Enter 5 Elements:
1 2 3 4 5
Entered Numbers:
1
2
3
4
5
```

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WAP for value store using pointer

```
#include<stdio.h>
#include<conio.h>
void main()
 {
int *p, a[10], i ;
 clrscr();
 p= &a[10];
printf("Enter the value : \n");
for(i =0 ; i<5 ; i++, p++)
 {
 scanf("%od", &*p);
 }
 p=p-1 ;
 for(i =0 ; i<5 ; i++, p--)
 {
 printf("\n %od", *p);
 }
 getch();
  }
```

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Enter the value:

85	63
96	2
54	54
2	96
63	85

WAP to fi
using else

```
#include<sto
#include<co
#include <c
void main()
{
char c;
Printf("Enter
Scanf("%c",&
if(isupper(c))
Printf("It is
else if(islower(c
Printf("It is
else if(isdigit
Printf("It is
else
Printf("It
getch();
}
```

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WAP to find a type of character using else if.

```
#include<stdio.h>
#include<conio.h>
#include<Ctype.h>
Void main()
{
char c;
Printf("Enter any character:>>\n");
Scanf("%c",&c);
if(isupper(c))
Printf("It is UPPERCASE char-----!");
else if(islower(c))
  Printf("It is Lowercase char ---! ");
else if(isdigit(c))
 Printf("It is Digitcase char ....! ");
 else
  Printf("It is special char ....!");
  getch();
  }
```

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```
Enter any character :
D
It is UPPERCASE char!
```

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Write a program to swap the two values without using 3rd variable (use pointer)

```
#include<stdio.h>
#include<conio.h>
void main()
 {
 int a=10,b=20;
 int *p,*q;
  p=&a;
  q=&b;
 *p=*p+*q;
 *q=*p-*q;
 *p=*p-*q;
printf("\n value of a =%d",*p);
printf("\n value of b =%d",*q);
 getch();
 }
```

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Outputs-

value of a = 20
value of b = 10

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Write a program to print fibonacci series.

```
#include <stdio.h>
void main()
{
int i, x=0, y=1, s;
Printf("\n Fibonacci series:");
Printf("\n%d\t%d", x, y);
for(i=1; i<20; i++)
{
s=x+y;
printf("\t%d", s);
x=y;
y=s;
}
}
```

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Output:-

Fibonacci series:

0 1 1 2 3
610 987 1597 2584 4181

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Write A program for Substraction of two number

```
#include <stdio.h>
main()
{
int a,b,c;
printf("Enter 1st Number\n");
Scanf("%d",&a);
printf("Enter 2nd Number\n");
Scanf("%d",&b);
c = a-b;
printf("Sub = %d",c);
}
```

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Output :-

```
Enter 1st Number
200
Enter 2nd Number
50
Sub = 150
```

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Write a program for Multiplication of two number

```
#include <stdio.h>
main()
{
int a,b,c;
printf("Enter first Number\n");
scanf("%d",&a);
print("Enter Second Number\n");
scanf("%d",&b);
c = a*b;
printf("Multiply = %d",c);
}
```

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Output :-

```
Enter First Number
20
Enter second Number
50
Multiply = 1000
```

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Write a program for swapping of two number without using third variable.

```
#include <stdio.h>
main()
{
int a=10, b=20;
printf("Before swapping a=%d and
b=%d \n", a, b);
 a = a+b;
 b = a-b;
 a = a-b;
printf("After swapping a=%d and
b=%d \n", a, b);
}
```

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Output:-

Before swapping a = 10 and b

After swapping a = 20 and b

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Write a program for swapping of two number using third variable method

```
#include<stdio.h>
main()
{
int a =10, b=20, c;
printf("Before swapping a=%d and
b=%d \n",a,b);
c=a;
a=b;
b=c;
printf("After swapping a=%d and
b=%d \n",a,b);
}
```

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Output :-

Before swapping a = 10 and b = 20

After swapping a = 20 and b = 10

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SITARA COLLEGE OF BCA, PANCHAR

Write a program to print given formate in below

```
* * * * *
* * * * *
* * * * *
* * * * *
* * * * *
```

```
#include <stdio.h>
main()
{
for (int i=1;i<=5;i++)
  {
     for (int j=1;j<=5;j++)
      {
     printf(" *");
      }
      printf("\n");
     }
     }
```

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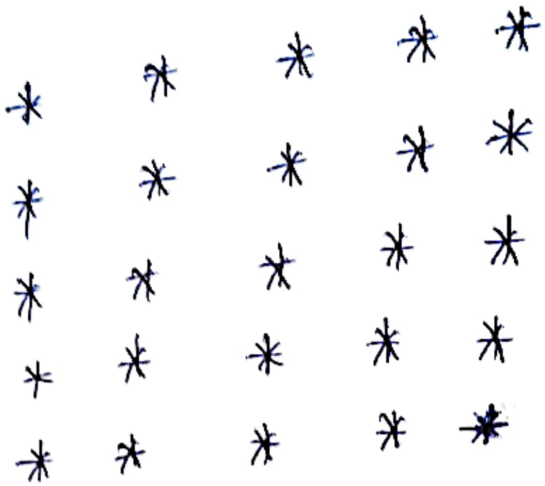
Output :-



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NEW SATARA COLLEGE OF B.C.A. PANDHARPUR

To Print a formate given in below

```
#include<stdio.h>
int main()
{
 for(int i=1;i<=5;i++)
  {
     for(int j=1;j<=5;j++)
      {
      if(i==3||j==3)
    Printf("*");
    else
   Printf(" ");
   }
  Printf("\n");
 }
}
```

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Output :-

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Write a program for greater value in 2 number

```
#include<stdio.h>
main()
{
int f,s;
printf("Enter first Number\n");
scanf("%od",&f);
printf("Enter second Number\n");
scanf("%od",&s);
if(f>s)
{
Printf("first no is greatr");
}
if(f<s)
{
Printf("Second no is greatr");
}
if(f==s)
{
Printf("both are equal");
}
}
```

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Output :-

```
Enter first number
45
Enter second number
25
first no is greatr
```

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Write a program for area of rectangle

```
#include<stdio.h>
main()
{
int area, h, w;
printf("Enter height of rectangle \n");
scanf("%d",&h);
printf("Enter width of rectangle\n");
scanf("%d",&w);
area = h * w;
printf("Area of rectangle =%d", area);
}
```

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Output:-

Enter height of rectangle
4
Enter width of rectangle
5
Area of rectangle = 24

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Write a program to use of gets and puts

```
#include<stdio.h>
#include<conio.h>
#include<string.h>
main()
{
char name[50];
gets(name);
puts(name);
getch();
}
```

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output :-

language
language

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Write a program for area of square

```
#include<stdio.h>
main()
{
int area,side;
print("Enter side of square \n");
scanf("%d",&h);
area =side * side;
printf("Area of square=%d",area);
}
```

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Output:-

Enter side of square
:4
Area of square :16

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Write a program by using continue statement

```
#include<stdio.h>
#include<conio.h>
main()
{
int a;
for (a=1;a<=10;a++)
{
if(a==5)
{
continue;
}
printf("\n%d",a);
}
getch();
}
```

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Outputs -

1
2
3
4
5
6
7
8
9
10

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Write a program to implement array

```
#include<stdio.h>
#include<conio.h>
main()
{
int a[5],i; printf("Enter any 5 number");
for(i=0;i<5;i++)
{
scanf("%d",&a[i];
}
for(i=0;i<5;i++)
{
printf("%d",a[i]);
}
getch();
}
```

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output :-

```
Enter any 5 number
20
45
56
89
83
20455689983
```

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Write a program for factorial number using for loop.

```
#include <stdio.h>
#include <conio.h>
main()
{
 int i,n,fact=1;
printf("Enter the no=\n");
scanf("%d",&n);
for(i=1;i<=n;i++)
{
fact=fact * i;
}
printf("factorial of given number %d=%d",
 fact);
 getch();
 }
```

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output:-

Enter the number = 5

factorial of given number 120

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ip to print multiplication (single digit
adha) using do while

```
#include<stdio.h>
#include<conio.h>
main()
{
int n,i;
clrscr();
printf("\n Enter Number:");
scanf("%d", &n);
 i=1;
 do
 {
 printf("\n%d",n*i);
   i++;
 }
 while (i<=10);
 getch();
 }
```

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Output :-

```
Enter Number: 6
6
12
18
24
30
36
42
48
54
60
```

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WAP to Calculate Sum of two digit Number.

```
#include<stdio.h>
#include<conio.h>
main()
{
int a,b,c,Sum;
printf("Enter two digit number");
scanf("%d",&a);
c=a/10;
b=a%10;
Sum=c+b;
printf("In The Sum of digit is:%d",sum);
getch();
{
```

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Outputs-

Enter two digit number 34

The sum of digit is: 7

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Write a program for reverse number.

```
#include<stdio.h>
#include<conio.h>
void main()
{
int a ,rem ,rev=0;
clrscr();
printf("Enter Any Number:");
Scanf("%d",&a);
while (a>0)
{
rem = a % 10;
rev = rev * 10+rem;
a=a /10;
}
printf("rev=%d",rev);
getch();
}
```

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output :-

Enter Any Number : 4563

rev = 3654

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Write a program to check alphabet is consonent or vowel using Switch statement

```
#include<stdio.h>
int main()
 {
 char ch;
printf("Enter any alphabet\n");
scanf("%c",&ch);
 switch(ch)
 {
 case 'a':
 case 'e';
 Case 'i';
 case 'o';
 case 'u';
 Printf("vowel");
 break;
 default:
Printf("consonent");
```

Output:-

Enter any alphabet
o
Vowel

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10 print the element of array in reverse order

```
#include<stdio.h>
int main()
 {
 int ar[5]={ 10,20, 30,40,50};
printf("Element in reverse order is
given below \n");
for(int i=4; i >=0;i--)
 {
printf("%d \n", ar[i]);
 }
 }
```

Output:-

Element in reverse order is give
below

50
40
30
20
10

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Write a program to check number is polidrome or not polidrome.

```
#include<stdio.h>
int main()
{
int no,b,rev=0,cpy;
printf("Enter any number\n");
scanf("%od",&no);
cpy=no;
while(no!=0)
{
b=no%10;
rev=rev*10+b;
no=no/10;
}
if(cpy==rev)
Printf("e polidrome");
else
Printf("Not polidrome");
}
```

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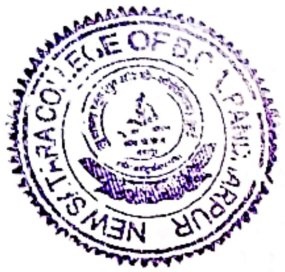
Output :-

Enter any Number

5885

Polidrome



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```
#include<stdio.h>
#include<conio.h>
int main()
{
int n;
clrscr();
printf("\n Enter any Number:");
scanf("%od",&n);
printf("\n(n<10) is = %od", (n<10));
printf("\n(n>10) is = %od", (n>10));
printf("\n(n<=10) is = %od", (n<=10));
getch();
return 0;
}
```

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output :-

(n<10) is =0

(n>10) is =0

(n<=10) is =1

Write a program for Division of two number

```
#include<stdio.h>
main()
{
float a, b, c;
printf("Enter 1st Number\n");
scanf("Enter 1nd Number\n");
printf("Enter 2nd Number\n");
scanf("%f", &b);
 c = a/b;
printf("Div = %d", c);
}
```

Output :-

Enter 1st Number

200

Enter 2nd Number

50

Div = 4

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a program for input marks of five
like Math, Hindi, Chemistry, Physics
glish and find average

```
include <stdio.h>
main()
{
float p,c,m,h,e, avg;
printf("Enter marks in physics \n");
scanf ("%of", &p);
printf("Enter marks in chemistry \n");
scanf("%f, &c);
printf("Enter marks in math \n");
scanf("%f, &m);
printf("Enter marks in hindi \n");
Scanf("%f, &h);
printf("Enter marks in english \n");
Scanf("%f, &e);
avg=(p+c+m+h+e)/5;
printf("Average of result =%f", avg);
}
```

Output :-

```
Enter marks in physics
45
Enter marks in chemistry
65
Enter marks in math
87
Enter marks in hindi
75
Enter marks in english
92
Average of result = 73.19
```

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WAP to print all the element of double dimension array

```
#Include<stdio.h>
 int main( )
 {
int array[3][3] ={{7,8,9},{1,2,3},{4,5,6}};
 int i,j;
printf("Elements of array isgiven
 below\n");
  for (i=0;i<2;i++)
  {
  for (j=0;j<=2;j++)
   {
  printf("%d",array[i][j]);
   }
   printf("\n");
   }
```

output:-

Elements of array is given below

7 8 9
1 2 3
4 5 6

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to print first and last digit of integer Number

```
#include<stdio.h>
int main()
{
 int no,b,f;
printf("Enter any number\n");
scanf("%d",&no);
 f = no%10;
while(no!=0)
 {
 b = no%10;
 no=no/10;
 }
printf("first digit =%d and last digit =%d",b,f);
}
```

outputs-

Enter any number

4859

first digit = 4 and last digit = 9

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ip demonstrate use of union

```
#include<stdio.h>
#include<string.h>
union book
 {
  int no;
  char name[30];
  float price;

 };
 void main()
  {
   union book b;
  b.no = 10;
printf("\n Number :%d", b.no);
strcpy(b.name, "C programming");
printf("\n Name : %s", b.name);
b.price = 100.0;
Printf("\n price : Rs.%0.2f", b.price);
}
```

Number: 10
Name: C programming
Price: Rs. 100.00

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WAP to Calculate product of two integers using pointer.

```
#include<Stdio.h>
  void main()
   {
   int x, y, m;
   int *p1, *p2;
Printf("\n Enter Two Number:");
scanf("%od %od", &x, &y);
   p1 = &x;
    p2 = &y;
    m = (*p1) * (*p2);
 Printf("\n %od x %od = %od", *p1, *p2, m);
  }
```

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outputs-

Enter Two Number : 10 10

10 x 10 = 100

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using pointer

```
#include<stdio.h>
void main()
{
int x;
int *p;
Printf("\nEnter The Number:");
scanf("%d",&x);
p=&x;
Printf("\n Memory Address : %u",p);
}
```

Outputs-

Enter The Number: 10

values: 10

Memory Address : 2752264

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WAP for pointer to array

```
#include<stdio.h>
 int main()
  {
  int
ar[10] ={10,20,50,40,60,80,70,25,45,65};
 for(int i=0;i<=9;i++)
  {
 printf("%d \n",*(ar+i));
 }
 }
```

Outputs-

10
20
50
40
60
80
70
25
45
65

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WAP to read numbers from user. If entered zero restart program.

```
#include<stdio.h>
 Void main()
  {
  int n;
  ZERO:
printf("\n Enter The Number:");
 scanf("%od",&n);
 if(n==0)
 {
  goto ZERO;
  }
printf("\n You Entered %od",n);
 }
```

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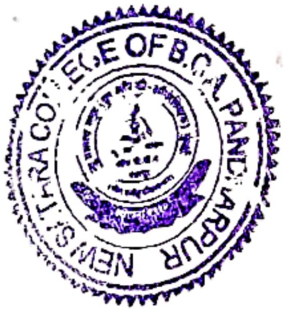
outputs-

Enter the Number : 0

Enter the Number : 0

Enter the Number : 2

You entered 2



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WAP to print multiplication table of given number.

```
#include<stdio.h>
void main()
{
int i,n,m;
Printf("Enter The Number:");
scanf("%d",&n);
for(i=1;i<=10;i++)
{
m=i*n;
Printf("\n%d",m);
}
}
```

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output:-

Enter The Number : 25

25
50
75
100
125
150
175
200
245
250

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WAP to read 10 integers in array and print its value.

```
#include<stdio.h>
void main()
{
int a[10], i;
for (i=0; i<10; i++)
{
printf ("Enter Number %d :", i+1);
scanf ("%d", &a[i]);
}
printf ("\n Entered Numbers are:");
for (i=0; i<10; i++)
{
printf ("%d ", a[i]);
}
}
```

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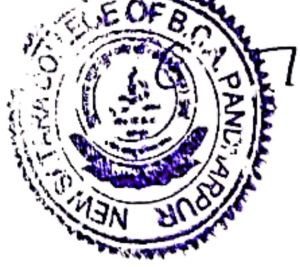
Output:-

Enter Number 1 : 34
Enter Number 2 : 564
Enter Number 3 : 234
Enter Number 4 : 64
Enter Number 5 : 23
Enter Number 6 : 6
Enter Number 7 : 7
Enter Number 8 : 43
Enter Number 9 : 67
Enter Number 10 : 54

Entered Numbers are : 34 564 234 64 23 6 7 43 67 54



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Aim: To declare a function 'add' and perform addition operation using function.

```
#include<stdio.h>
int add(int,int);
void main()
 {
  int a,b,Sum;
printf("\nEnter the Two numbers:");
scanf("%d%d",&a,&b);
 Sum = add(a,b);
printf("\n Addition : %d",Sum);
}
int add(int x,int y)
   {
    int add = x+y;
    return(add);
```

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outputs-

Enter the two numbers: 2 5

Addition is 7

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WAP to demonstrate register Storage class.

```
#include<stdio.h>
 void demoreg();
void main()
 {
 register int x=10;
printf("\n x=%d",x);
demoreg();
demoreg();
}
void demoreg()
{
register int x=10;
 x = x+2;
printf("\n x=%d",x);
}
```

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Output :-

x = 10

x = 12

x = 13

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WAP to read a string from user and then print it on monitor.

```
#include<stdio.h>
 void main()
 {
 char str[30];
printf("\n Enter The string: ");
 gets(str);
Printf("\n Enter String: %s", str);
```

3

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Output:-

Enter The String: SPDroid

Enter String: SPDroid.

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WAP to print 1 to 9 number cube.

```
#include<stdio.h>
#include<conio.h>
main()
{
int  i ;
 clrscr();
printf("Number\tcube");
 for (i=1;i<10;i++)
 {
printf("\n%d \t%d", i, i*i);
 }
getch();
 }
```

Number	Cube
1	1
2	4
3	9
4	16
5	25
6	36
7	49
8	64
9	81

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WAP by using function

```
#include<stdio.h>
#include<conio.h>
void hello()
 {
 clrscr();
printf("Hello BCA Students");
 }
 void main()
 {
 hello();
 getch();
 }
```

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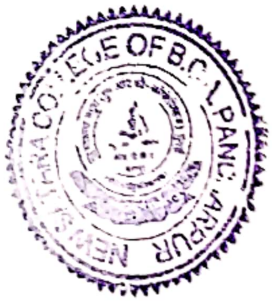
Hello BCA Students



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Write a program to check character is vowel or Consonent

```
#include<stdio.h>
main()
{
char ch;
printf("Enter any alphabet \n");
scanf("%c", &ch);
if(ch=='a'||ch=='e'||ch=='i'||ch=='o'||
ch=='u')
 {
printf("vowel");
}
else
{
printf("Consonent");
}
}
```

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Output:-

Enter Any alphabet

m

Consonent

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WAP to print 1 to 9 number using do while loop

```
#include<stdio.h>
#include <conio.h>
main()
{
int  a=1;
clrscr();
do
{
print ("\n%d",a);
a++;
while (a<=10);
getch();
}
```

1
2
3
4
5
6
7
8
9

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WAP to find the area of square.

```
#include<stdio.h>
# include<conio.h>
void main()
 {
  int r ;
  clrscr();
 printf("Area of square \t");
 r = square();
printf ("Area of Square =%d",r);
 getch();
 }
 int square()
 {
 int side;
 printf("\n\n Enter length of square:");
 scanf("%d", &side);
 r = side *side;
 }
```

Area of Square

Enter Length of Square: 3

Area of Square = 9

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WAP to find number is even or odd

```
#include<stdio.h>
#include<conio.h>
voidmain()
{
int a;
clrscr();
printf("Enter Any Number:");
scanf("%d",&a);
if(a%2==0)
{
printf("This Is Even Number");
}
else
{
printf("This Is odd Number");
}
getch();
}
```

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Enter Any Number: 8
This IS Even Number

Enter Any Number :7
This IS odd Number

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WAP to find maximum among three using conditional operator.

```
#include<stdio.h>
void main()
{
int a,b,c;
printf("Enter three numbers:");
scanf("%d %d %d",&a,&b,&c);
printf("max is:%d",a>b?a>c?a:c:b>c?b:c);
}
```

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output:-

```
Enter three numbers: 10 23 30
max is :23
```

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WAP to Print appropriate Message

If pressed...	Message
A	Excellent
B	Good
C	fair
D	Poor

```
#include<stdio.h>
void main()
 {
  char  C;
Printf("Enter The character :");
Scanf("%c",&C);
if(C=='A')
{
Printf("\n Excellent");
}
if(C=='B')
{
 Printf("\n very Good");
}
if(C=='C')
{
 Printf("\n fair");
}
 if(C=='D')
 {
 Printf("\n poor");
  }
 }
```

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output :-

Enter The character : B

Very Good

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WAP to find greatest number among entered 2 integer values.

```
#include<stdio.h>
void main()
{
int x,y;
printf("Enter Two Number:");
scanf("%d %d",&x,&y);
if(x>y)
{
printf("\n%d is Greatest Number",x);
}
if(x<y)
{
printf("\n%d is Greatest Number",y);
}
}
```

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Enter Two Number: 765
698
765 is Greatist Number.

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WAP for taking input at Run-Time

```
#include <Stdio.h>
#include <conio.h>
main()
{
int  a;
printf("\n Enter value of a:");
scanf ("%od",&a);
printf("\n The value of a=%od",a);
getch();
}
```

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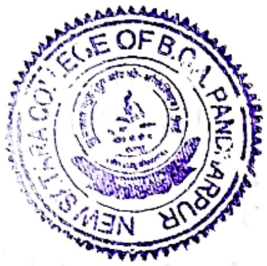
Output:-

Enter value of a:
30



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Wri... two number
using scanf() function.

```
#include<stdio.h>
# include<conio.h>
main()
 {
int a,b,c;
printf("\n Enter value of a=");
 scanf("%d",&a);
print ("\n Enter value of b=");
scanf("%od",&b);
 c = a+b;
 printf("%od",c);
  getch();
  }
```

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Output:-

Enter the value of a = 20

Enter the value of b = 30

c = 50

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JAP to ... and Decrement operator

```
#include<stdio.h>
#include<conio.h>
main()
{
int  a=10,b=20;
  a=a++;
  b=b--;
printf("\n The Incremented value of a=%d",a);
printf("\n The Decremented value of b=%d",b);
getch();
}
```

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Output:-

The Incremented value of a = 11

The Decremented value of b = 19

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Write a program for delete Character from String

```
#include<stdio.h>
#include<conio.h>
void main()
{
int len=0,i,f,k=0;
char s[40],d,store[40];
clrscr();
printf("enter original string:");
gets(s);
while(s[len]!='\0')
{
  len++;
 }
fflush(stdin);
printf("enter character to delete:");
scanf("%c",&d);
for(i=0;i<len;i++)
{
  if(s[i]!=d)
   {
     store[k++]=s[i];
   }
}
puts(store);
getch();
}
```

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Output:

enter original string: how are you

enter character to delete: o

hw are yu

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NAME- Rohan Rajaram Jadav

Roll No- 178

sub- Problem solving 'C'

BCA - I (sem II)

Problem Solving 'C'

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write a program to display welcome message.

```
#include<stdio.h>
#include<conio.h>
main()
{
  printf("welcome");
  getch();
}
```

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WAP for Addition of two numbers

```
#include<stdio.h>
#include<conio.h>
main()
{
  int a=10, b=20, c;
   c= a+b;
  printf("%d",c);
  getch();
}
```

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Wap to make use of scanf() function for taking Input at Runtime.

```
#include<stdio.h>
#include<conio.h>
main()
{
  inta int a;
Printf("\n Enter value of a:");
Scanf ("%d", &a);
Printf ("\n the value of a=%d", a);
getch();
}
```

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-WAP for Addition of two number using Scanf() function.

```
#include<stdio.h>
#include<conio.h>
main()
{
  int a,b,c;
printf("\n Enter value of a=");
 scanf("%d",&a);
Printf("\n Enter value of b=");
Scanf("%d",&b);
  c=a+b
  Printf("%d",c);
  getch();
}
```

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WAP to Calculate Area of triangle

```
#include<stdio.h>
#include<conio.h>
main()
{
 float len, breath area;
 Printf("enter the length and Breath");
 Scanf("%f%f",& len & breath);
 area = len* breath;
 Printf("Area =%f", area);
 getch();
}
```

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WAP use Increment and Decrement operator

```
#include<stdio.h>
#include<conio.h>
main()
{
int a=10,b=20;
a= a++;
b= b--;
printf("\n the Incremented value of
a=%d",a);
printf("\n the Decremented value of
b=%d",b);
getch();
}
```

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WAP to Check year IS Leap Year or No

```
#include<Stdio.h>
#include<conio.h>
main()
{
  int year;
printf("enter year");
Scanf ("%d",& year");
if(year % 4==0)
{
 Printf ("leap year");
}
else
{
 printf("Not leap year");
}
getch();
}
```

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Output :-

enter year 2003

Not leap year

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WAP to tranfer days into month

```
#include<stdio.h>
#include<conio.h>
main()
{
 int month days;
Printf("\n days:");
Scanf("%d",& days);
 month = days/30;
  days = days % 30;
Printf("\n month = %d\n\n days=%d";
                month, days);
getch();
}
```

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Output

day : 331

month = 11

days = 01

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WAP to "Interchange" OR "Swap" value of two Numbers a and b

```
#include<stdio.h>
#include<conio.h>
main()
{
 int a,b,c;
printf("\n value of a :");
Scanf("%d",&a);
Printf("\n value of b:");
Scanf("%d",&b);
  c=a;
  a =b;
   b =c;
Printf("\n value of a: %d\n: nvalue
OF b: %d", a,b);

 getch();
}
```

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Outputs

a = 10
b = 20

a = 20
b = 10

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WAP to convert m into km

```
#include<stdio.h>
#include<conio.h>
main()
{
float m, km;
printf("metres:");
scanf("%f",&m);
km=m/1000;
printf("km\n%f", km);
getch();
}
```

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output:

meters : 12

km = 0.012000

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CoAp to calculate Simple Interest

```
#include<stdio.h>
#include<conio.h>
main()
{
 int n;
 float p,r,intrest;
 Printf("enter the principle Amount:");
 Scanf("%f",&p);
 Printf("enter the Rate of Interest");
 Scanf("%f",&r);
 Printf("enter the no of years :");
  Scanf("%d",&n);
 intrest=(p*n*r)/100
 Printf("the Simple Intrest IS %f",
                intrest);
  getch();
}
```

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~~enter~~ output:

enter the principle Amount = 1
enter the Rate of interest = 5
enter the no of year = 5
interest = 150

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WAP to Calculate average temperature for day

```
#include<stdio.h>
#include<conio.h>
main()
{
 int max,min,sum;
 float avg;
printf("\n maximum temp = ");
Scanf(":id", &max);
printf("\n minimum temp= ");
Scanf("%d",&min);
Sum = max+min;
 avg =Sum/2;
Printf("\n average = %f", avg);
 getch();
}
```

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Output.

maximum = 36

minimum = 30

avg : 33

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WAP to Calculate Square (Power) of number.

```
#include <stdio.h>
#include <conio.h>
main()
{
   int x,m,p,i=1;
Printf("Enter value of x and m");
Scanf("%d %d &x,&m);
   p=x;
for(i=1; i<m; i++)
{
   x=x* p;
}
 Printf("Answer=%d", x);
 getch();
}
```

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Output

enter value of x & m 32

answer = 9

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WAP To Calculate Sum of two digit Number

```
#include <stdio.h>
#include <conio.h>
main()
{
 int a,b,c sum;
Printf("Enter two digit number");
 Scanf("%d"&a);
   c = a/10;
   b = a%10;
   Sum = c+b;
Printf("\n the Sum of digit is %d"$um);
 getch();
 }
```

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Output:

enter teoo digit number 34
the sum of digit is: 7

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WAP to determine whether leap year or not using conditional operator

```
#include <stdio.h>
#include <conio.h>
main()
{
  int year;
 printf("year");
 scanf("%d",&year);
 (year%4==0);
 Printf("leap year");
 Printf("not leap year");
 getch();
}
```

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2003

not leap year

2004

leap year.

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WAP to Convert Decimal to Binary

```
#include <stdio.h>
#include <conio.h>
main()
{
 int n, sum=0 mod;
 Printf ("Enter the no =\n");
 Scanf ("%d", &n);
 while (n!=0)
 {
  mod = n%2
 Sum = Sum*10+mod;
 n = n/2;
 }
 Printf ("\n the binary no = %d", Sum);
 getch ();
 }
```

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WAP to find number among three numbers.

```
#include <stdio.h>
#include <conio.h>
main()
{
 int a, b, c;
Printf("enter three number:");
Scanf("%d\t %d\t %d", &a &a &c);
 if (a > b)
{
  if (a > c)
 Printf("\n a is maximum");
}
else
 if (b > c)
{
 if (b > c)
 {
  if (b > c)
Print("\n: b is maximum");
}
else
Printf("\n k is maximum");
getch();
```

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Output

a : 20

b : 10

c = 30

c > a > b

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CAP to print Grade using Switch.

```
#include<stdio.h>
#include<conio.h>
main()
{
Char grade a, b, c, d;
Printf(" enter code for Grade ");
Scanf("%.5 " &grade);
Switch (grade)
{
Case a;
Printf("\n first class with Distinction);
break;
Case b;
PrintfC"\n first class");
break ;
case C;
Printf("\n second class");
break h;
case d;
Print ("\n fail);
default;
Printf ("\n Result Declared");
break;
}
getch ();
}
```

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WAP to Print no using Do while.

```
#include <stdio.h>
#include <conio.h>
main()
{
   int i;
   i=1
  do
{
 Printf("\n%d",i);
 i++;
 }
while(i<=10);
getch();
}
```

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Output:-

1 2 3 4 5 6 7 8 9 10

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Addition of even or odd through do.while.

```
#include <stdio.h>
#include <conio.h>
main ()
{
 int n, eve=0, odd=0;
   n=1;
 print ("\n\t add\t Even");
 do
 {
  if (e%.2==0)
 {else
  {
   Printf("\n\t%d", n );
  odd =odd+n;
 }
 n++;
 while(n<=10);
Printf ("\n\t odd=%d even %d",
          odd eve);
getch();
}
```

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Output.

odd

1
3
5
7
9

odd. 25

even

2
4
6
8
10

even = 30

Name :-

AP To Prin

#include<s
#include<
main()
{
int ni;
Printf ("
Scanf ("%.
i=1;
do
{
Printf (
i++;
}
le (i
h C
}

Scanned with OKEN Scanner

WAP To Print multiplication Table

```
#include<stdio.h>
#include<conio.h>
main()
{
   int n,i;
Printf("\nenter Number");
Scanf("%d",&n);
 i=1;
 do
 {
  Printf("\n%d*%d=%d",n,i,n*i);
  i++;
 }
 while(i<=10);
 getch();
}
```

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output

enter number 6.

6
12
18
24
30
36
42
48
54
60

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WAP to print 1 to 10 using for loop

```
#include<stdio.h>
#include<conio.h>
main()
{
  int i;
for(i=1;i<=10;i++)
{
 printf("\n%d",i);
 }
  getch();
```

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Output :-

1
2
3
4
5
6
7
8
9
10

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factorial no using for loop

```
#include <stdio.h>
#include <conio.h>
main()
{
 int i, n fact=1;
Printf ("enter the no=\n");
 Scanf ("%d", &n );
 for (i = 1; i<=n; i++)
{
 fact = fact * i;
 }
Printf ("factorial of given no %d=%d",
                fact);
getch ();
}
```

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Output :-

enter the no = 5

factorial is given no

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WAP to Print multiplication table (padhe) using for loop.

```
#include <stdio.h>
#include <conio.h>
main()
{
  int n i;
Printf("enter the no=\n");
Scanf("%d", &n);
for(i=1; i<=10; i++)
{
Printf("\n%d", n*i);
}
getch();
}
```

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Output.

2	3	4	5
4	6	8	10
6	9	12	15
8	12	16	20
10	15	20	25
12	18	24	30
14	21	28	35
16	24	32	40
18	27	36	45
20	30	40	50

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WAP to display even number from 1–100

```
#include<stdio.h>
#include<conio.h>
main().
{
 int i;
for(i=1;i<=100;i++)
{
 if(i%2==0)
{
  printf("%d\n",i);
}
getch();
}
```

OUTPUT:

2 4 6 8 12 14 16 18 20 2
28 30 32 34 36 38 40 42 44 4
52 54 56 58 60 62 64 66 68
76 78 80 82 84 86 88 90 92
100

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WAP to display odd number from i – 100

```
#include <stdio.h>
#include <conio.h>
main()
{
  int i;
for (i=1; i<100; i++)
{
 if (i%2!=0)
 printf("%d\n",i);
}
getch();
}
```

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Output:

1 3 5 7 9 11 13 15 1

23 25 27 29 31 33 35 37 3

45 47 49 51 53 55 57 59 6

67 69 71 73 75 77 79 81 8

89 91 93 95 97 99

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WAP to Check No. IS Armstrong or Not

```
#include<stdio.h>
#include<conio.h>
main()
{
 int n, m, sum p;
  sum = 0;
printf("enter the number");
 scanf("%d", &n);
  p = n;
 while(n>0)
 {
 r = n%10;
 }
 printf("\n%d", sum);
  if(sum == 0)
printf("\n armstrong");
else
printf("\n not armstrong");
getch();
}
```

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Output

enter the number

121

Not armstrong

153

armstong

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WAP to display multiplication table from 21 to 30

```
#include<stdio.h>
#include<conio.h>
main()
{
  int i,j;
for(i=21;i<=30;i++)
{
for(j=i;j<=10;j++)
{
printf("%d\t",i*j);
}
printf("\n");
}

getch();
}
```

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OUTPUT

21 22 23 24 25

42 44 46 48 50

63 66 69 72 75

84 88 92 96 100

105 110 115 120 125

126 132 138 144 150

147 154 161 168 175

168 176 184 192 200

189 198 207 216 225

210 220 230 240 250.

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WAP to Print.

```
1
2 2
3 3 3
4 4 4 4
5 5 5 5 5
```

```
#include<stdio.h>
#include<conio.h>
main
{
int i, j, k=1;
for(i=1; j<=5; i++)
{
for(j=1; j<=4  j++)
{
Printf("%d ", k);
}
Printf ("\n");
k++;
getch();
}
```

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WAP to Print

```
A
B C
D E F
G H I J
K L M N O
```

```
#include<stdio.h>
#include<conio.h>
main()
{
  int i, j;
  char k = 65;
  for (j=1; i<5; i++)
  {
  printf (j=1; j<=i; j++)
   k++;
  }
  printf ("\n");
  getch ();
}
```

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Output:

```
4 8 0 8 4
V I M V
1 4 3
V 3 0
```


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output as follows

1 2 3 4 5
6 7 8 9 10
- - - - using for

```
#include <stdio.h>
#include <conio.h>
main()
{
 int i, n;
 printf("enter the no=\n");
 scanf("%d" &n);
 for(i=1; i<n; i++)
 {
 printf("\t%d", i);
 if(i%5==0)
 {
 printf("\n")
 }
 getch();
 }
```

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Output.

Enter the no = 22

1 2 3 4 5
6 7 8 9 10
11 12 13 14 15
16 17 18 19 20
21

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C Pgm to Print

```
    1
  2 2
3 3 3
4 4 4 4
5 5 5 5 5
```

```
#include<stdio.h>
#include<conio.h>
main()
{
int i,j,k=1,5;
for(i=1;i<=5;i++)
{
for(s=i+1;s<=5;s++)
{
printf("  ");
}
for(j=1;j<=i;j++)
{
printf("%d",i);
}
printf("\n");
}
getch();
}
```

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Output.

```
    1
   2 2
  3 3 3
 4 4 4 4
5 5 5 5 5
```

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WAP to Impliment Array

```
#include<stdio.h>
#include<conio.h>
main()
{
 int a[5];i++)
{
 scanf("%d",&a[i]);.
 }
 for(i=0;i<5;i++)
 {
  printf("%d",a[i]);
 }
 getch();
```

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Output

Enter any 5 number

20
45
56
89
83

20 45 56 89 83

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WAP to use of gets & puts

```
#include<stdio.h>
#include<conio.h>
#include<string.h>
main()
{
 char name[50];
 gets(name);
 puts(name);
 getch();
}
```

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Output:

Rohan

Rohan.

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String length using Strlen()
Library function

```
#include <stdio.h>
#include <conio.h>
#include <string.h>
void main()
{
char s1[20];
int n;
Printf("\n Enter String :");
gets(s1);
n = Strlen(s1);
Printf("\n %d", n);
getch();
}
```

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Output.

enter String : [redacted] RUTURAJ

7

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Convert String from upper to Lower using Strlwr() Liabrary function()

```
#include <stdio.h>
#include <conio.h>
#include <string.h>
main()
{
char s1[20];
clrscr();
puts("\n enter string");
gets(s1);
puts(s1)
getch();
}
```

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Output

enter String

ROHAN

Rohan.

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pap to find out ~~the~~ the prime numbers between 1 to 500

```
#include<stdio.h>
#include<conio.h>
main()
{
 int i,n;
 clrscr();
printf("enter number");
scanf("%d",&i);
 {
 n=i-1;
 if (n%2==0)
 printf("prime");
 else
 printf("not prime");
 }
 getch();
 }
```

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Output

enter number 3

prime.

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use of goto Statement Example

```
#include<stdio.h>
#include<conio.h>
main()
{
msg;printf("\nWelcome to BCA");
goto msg;
getch();
}
```

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Output

welcome to bCA
welcome to bCA
welcome to bCA

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WAP to Print following format

```
    *
    *
*   * *   * *
    *
    *
```

```
#include<stdio.h>
#include<conio.h>
int main()
{
 for(int i=1;i<=5;i++)
 {
 for(int j=1;j<=5;j++)
 {
 if(i==3||j==3)
 printf("*");
 else
 printf(" ");
 }
 printf("\n");
 }
 getch();
}
```

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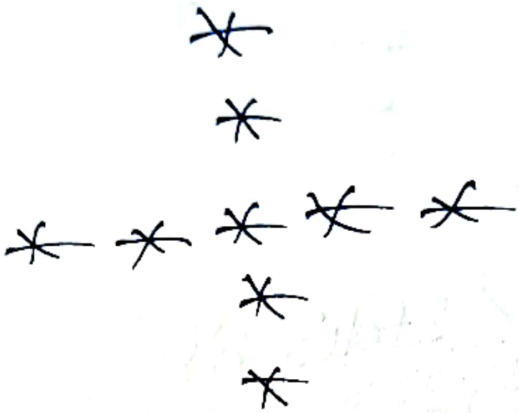
OUTPUT :



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WAP to define a structure in C

```
#include <stdio.h>
struct Student {
    char name[50];
    int roll_no;
    float marks;
};
int main()
{
struct Student s;
Printf("Enter name");
Scanf("%.s" &s1.name);
Printf("Enter roll number");
Scanf("Enter marks");
Printf("Name : %s\n" s1.name);
Printf(Roll Number %.dd\n s1.roll no);
    ("marks :,2f\n" s1.marks);
urn 0;
```

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Output

Enter name ; John
Enter roll number = 123
Enter marks = 85.50%

Name : John
Roll Number : 123
marks : 85.50%

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by value

```
#include <stdio.h>
#include <conio.h>
  x=100;
}
int main()
{
  int a=10;
  change(a);
printf("a=%d\n",a);
return 0;
}
```

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output =

a = 10.

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Prp to Calculate Sum of 1 to 10 using recursion

```
#include<stdio.h>
#include<conio.h>
Void main()
{
 int result = sum(10);
printf("Add=%d",result);
 getch();
}
 int sum(int k)
 {
   if (k>0)
  {
   return k + sum(k-1)
   }
   else
   {
   return 0;
```

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Output

55

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rite a Program to calculate sum
given number 129

```
#include<stdio.h>
#include<conio.h>
int main()
{
int n, t, sum=0, rem;
printf("enter a number");
scanf("%d", &n);
t=n;
while(t!=0)
{
rem = t%10;
sum = sum+rem;
t = t/10;
}
printf("Sum of digits %d", sum);
return 0;
}
```

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Output

Sum of digits = 21

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write a program to reverse the number

```
#include <stdio.h>
#include <conio.h>
void main()
{
int a=1234,rev=0,rem;
while(a!=0)
{
rem=a%10;
rev=rev*10+rem;
a=a/10;
}
printf("Reverse=%d",rev);
getch();
}
```

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OUTPUT

Reverse = 4321

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WAP to Print following format

```
* * * * *
* * * * *
* * * * *
* * * * *
* * * * *
```

```
#include<stdio.h>
#include<conio.h>
main()
{
for(int i=1; i<5=; i++)
{
for(int j=1; j<=5; j++)
{
printf("*")
}
printf("\n");
getch();
}
```

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Output.

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ap to swap two values without
sing third variable (use Pointer)

```
#include<stdio.h>
#include<conio.h>
main()
{
int a=10,b=20;
int *p,*pj
  p=&a;
  q=&b;

*p=*p+*q;
*q=*p-*q;
*p=*p-*q;
printf("a=%d",*p);
printf("b=%d",*q);
getch();
```

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Output

a = 20

b = 10.

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AP to Reverse the Number

```
#include <Stdio.h>
#include <Conio.h>
void main()
{
int a=1299, rev=0, rem;
while(a!=0)
{
rem=a%10;
rev=rev*10+rem;
 a=a/10;
}
Printf("rev=%d", rev);
getch();
}
```

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Output

rev = 3971

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number

```
#include<stdio.h>
#include<conio.h>
main()
{
int a=200,b=50;c;
 c=a* b;
printf("Div=%d",c);
 getch();
}
```

Scanned with OKEN Scanner

OUTPUT

DN=4

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tp to print following format

```
    1
  2 2
3 3 3
4 4 4 4
5 5 5 5 5
```

```
#include<stdio.h>
#include<conio.h>
main()
{
int i,j k=1;
for(i=1; i<=5; i++)
{
for(j=1;j<=i; j++)
{
printf("%d", k);
}
printf("\n");
k++
}
getch();
}
```

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OUTPUT

```
    1
  2 2
3 3 3
4 4 4 4
5 5 5 5 5
```

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2 number

```
include<stdio.h>
include<conio.h>
ain()

int f, s;
rintf("Enter first no\n");
scanf("%d", &f);
rintf("Enter second no\n");
canf("%d", &s);
if(f>s)
{
Printf("frist is greater");
}
if(f<s)
{
Printf" second is greater");
}
if(f==s)
{
Printf("both are eaual");
}
```

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output.

Enter first no
45
Enter second no
25
first is greater.

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,AP ... use of break statement

```
#include<stdio.h>
#include<conio.h>
main()
{
 int a;
 for(a=1;a<10;a++)
 {
  if(a==5)
  {
   break;
  }
  printf("\n%d",a);
 }
 getch();
}
```

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Output

Scanned with OKEN Scanner

p to use of continue Statement

```
#include<stdio.h>
#include<conio.h>
main()
{
 int a;
for(a=1;a<=10;a++)
{
 if (a==5)
{
 continue;
}
 printf ("n%d",a);
}
 getch();
}
```

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Output.

1
2
3
4
5
6
7
8
9
10

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ap to Print fibonacci series

```
#include <stdio.h>
#include <conio.h>
main()
{
int n, i  f1=0, f2=1, f3;
printf("\n Enter the Number");
scanf("%d",&n);
for(i=0; i<n; i++)
{
f3 = f1 + f2;
printf("\n%d",f1);
f1 = f2;
f2 = f3;
}
getch();
}
```

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Enter the Number 5

6
1
2
3

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ap to Check Enter Character is
vel or consonant

```
#include <stdio.h>
#include<conio.h>
main()
{
char ch;
printf("Enter single character");
scanf("%c", &ch);
if(ch=='a'||ch=='e'||ch=='i'
 ||ch=='o'|| ch=='u')
{
Printf("\n it is a vowel")
}
else
{
Printf("\n it's a consonat");
}
getch();
```

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Output

Enter single character a

It's a vowel

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p to find out prime number between
to 500

```
#include<stdio.h>
#include<conio.h>
main()
{
int i,n;
clrscr();
printf("Enter number");
scanf("%d",&i);
{
n=i-i;
if(n%2==0)
Printf("prime");
else
Printf("not prime");
}
getch();
}
```

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Output

enter number 3

Prime.

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p to Calculate addition of two
mber using function add()

```
include <stdio.h>
#include <conio.h>

main()

add();
getch();

add().

int a=10, b=20.();
c=a+b;
Printf("Addition=%d", c);

}
```

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Output

Addition = 30

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ite a program for area of triangle

```
#include<stdio.h>
#include<conio.h>
main()
{
int area,h,w;
printf("enter height:\n");
scanf("%d",&h);
printf("enter width:\n");
scanf("%d",&w);
area = h*w;
Printf("Area=%d",area");
getch()
}
```

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OUTPUT

```
enter height
4
enter width
6
Area=24
```

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for area of Square

```
#include <stdio.h>
#include <conio.h>
main()
{
int area, side;
printf("Enter side\n");
scanf("%d", &n);
area = side * side
printf("Area = %d", area);
getch();
}
```

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Output

Enter Side
4
Area = 16

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p to Swap value of two
riable

```
#include<stdio.h>
#include<conio.h>
main()
{
int a=10, b=20 temp;
 temp = a;
  a = b;
  b = temp;
  printf ("a = %d", a);
  printf ("b = %d", b);

  getch ();
}
```

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output

a = 20

b = 10

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to use of goto Statement Example

```
#include<stdio.h>
#include<conio.h>
main()
{
 int a;
 a,b,c: for(a=1;a<=10;a++)
 {
abc ;for(a=1;a<=10;a++)
 {
   printf("\n%d",a);

 }
goto abc;
 getch();
}
```

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Output:

```
0
0 1 2 3 4 5 6 7 8 9 10
0 2 4 6 8 10 12 14 16 18 20
```

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AP to use formatted input
canf () function

```
#include <stdio.h>
int main()
{
Char Str[] = "hello";
 Char coord [6];
SScanf(Str, "%.5" word;
printf("coord = %.5\n" word );

return 0;
}
```

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OUTPUT

Coord = hello

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Prog to use formatted input functions Scanf()

```
#include<stdio.h>
int main()
{
  char str[100];
  printf("Enter a string");
  Scanf("%s", str);
Printf("you entered %s", str);
return 0;
}
```

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Output

Enter a string : Hellow

you entered ; Hellow

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AP to use unformated input function gets()

```
#include<stdio.h>
#include<conio.h>
int main()
{
 char str[100];
printf("enter a string");
gets (str);
Printf ("you entered:%s" str);

return 0;
```

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Output

Enter a String : Hello

You entered = Hellow

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pap to use unformated inputs
function getche()

```
#include <stdio.h>
#include <conio.h>
int main()
{
 char c;
printf("Enter a character:");
 c = getch();
printf("\n you entered %c",c);

return 0;
}
```

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output

Enter a character : A

You entered A

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~~#includ~~

ap to use unformated input
tch() function.

```
#include <stdio.h>
#include<conio.h>
int main()
{
  char c;
printf("Press any key to canhe--\n");
 c=getch();
printf("you pressed the '%c' key\n",c)

return 0;
}
```

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Output

Press any key to continue
you pressed the 'A' key

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ap to that uses the getchar()
unction

```
#include<stdio.h>
int main()
{
 int c;
 printf("enter a character");
 c=getchar();
printf("you entered:%c\n",c);

return 0;
}
```

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Output

Enter a Character : A

You entered A

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gram that demostrate the
se of macross in C.

```
#include <stdio.h>
#include <conio.h>
#define MESSAGE "HelloWorld"
int main ();
{
printf ("%s\n", MESSAGE);

return 0;
}
```

Scanned with OKEN Scanner

Output

Hello world!

Scanned with OKEN Scanner

Name : Sanika Vijay Talekar

Class : BCA - Ist

Sub : 'C' programming

Roll no. : 172

Scanned with OKEN Scanner

WAP demostrate use of union

```
#include<stdio.h>
#include<string.h>
union book
{
int no;
char name[30];
float price;
};
Void main()
{
union book b;
b.no=10;
printf("\n number:%d", b.no);
strcpy(b.name,"Cprogramming");
Printf("\n name:%s", b.name);
b.price=100.0;
Printf("\n price:RS%.2f", b.price);
}
```

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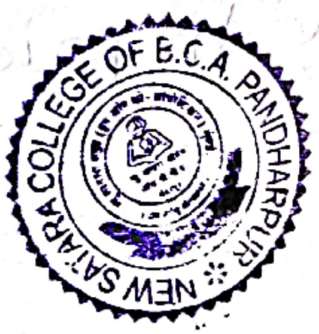
Number :10
Name: Cprogramming
price : RS. 100.00



WAP to print multiplication table of given number

```
#include<stdio.h>
 void main()
 {
 int i,n,m;
printf("Enter The Number :");
scanf("%d",&n);
for(i=1;i<=10;i++)
{
 m= i*n;
 printf("\n%d",m);
}
}
```

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Enter ~~the~~ The Number : 25

25
50
75
100
125
150
175
200
245
250

Scanned with OKEN Scanner

```
#include <stdio.h>
Void main()
{
int a[10],i;
for(i=0;i<10;i++)
{
Printf("Enter Number %d:",i+1);
scanf("%d",&a[i]);
}
Printf("\nEntered Numbers are:");
for(i=0;i<10;i++)
{
printf("%d",a[i]);
}
}
```

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Enter Number 1: 34
Enter Number 2: 564
Enter Number 3: 234
Enter Number 4: 64
Enter Number 5: 23
Enter Number 6: 6
Enter Number 7: 7
Enter Number 8: 43
Enter Number 9: 54
Enter Number 10: 67
Entered Numbers are: 34 564 234 64 23
6 7 43 54 67

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String length using strlen() library function

```
#include<stdio.h>
#include<conio.h>
#include<string.h>
main()
{
char s1[20];
int n;
printf("\n Enter string:");
gets(s1);
n=strlen(s1);
printf("\n%d",n);
getch();
}
```

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Output

```
Enter string:
college
7
```

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* Write a program to print

```
        *
      * *
    * * *
  * * * *
* * * * *
```

```
#include<stdio.h>
#include<conio.h>
main()
{
int i,j,k=1,s;
for(i=1;i<=5;i++)
{
for(s=i+1;s<=5;s++)
{
Print(" ");
}
for(j=1;j<=i;j++)
{
printf("*");
}
Printf("\n");
}
getch();
}
```

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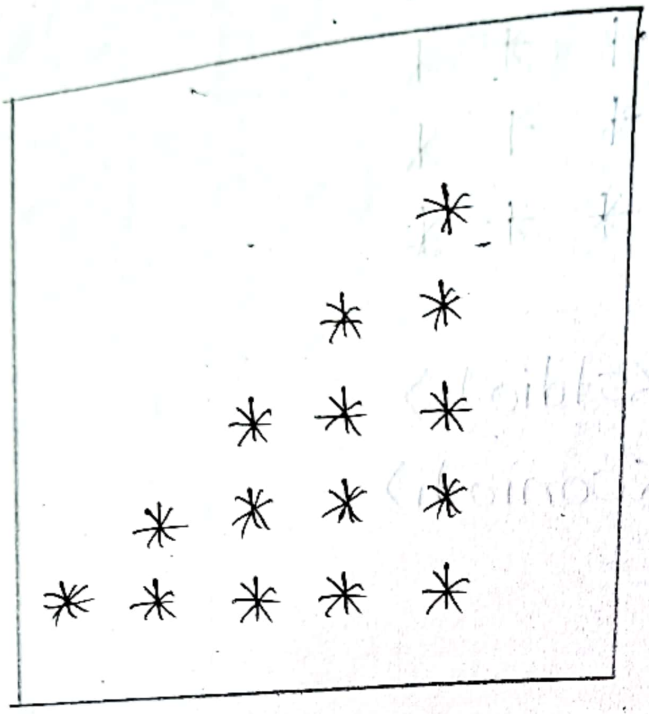
Output



Write a program for reverse number

```
#include<stdio.h>
#include<conio.h>
void main()
{
int a, rem, rev=0;
clrscr();
printf("Enter any number");
scanf("%d",&a);
while(a>0)
{
rem=a%10;
rev=rev*10+rem;
a=a/10;
}
printf("rev=%d",rev);
getch();
}
```

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Enter Any number : 4563

rev = 3654

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te a program to check alphabet is consonent or vowel using switch statement

```
#include<stdio.h>
int main()
{
char ch;
printf("Enter any alphabet \n");
scanf("%c",&ch);
switch(ch)
{
case'a':
case'e':
case'i':
case'o':
case'u':
printf("vowel");
break;
default:
printf("Consonent");
}
}
```

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Enter any alphabet
O
Vowel

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To print the element of array in reverse order.

```
#include <stdio.h>
int main()
{
int ar[5]={10,20,30,40,50};
printf("Element in reverse order is given below
        \n");
for(int i=4 ;i>=0;i--)
{
printf ("%d\n",ar[i]);
}
}
```

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Element in reverse order is given below

50
40
30
20
10

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Write a program to check number is palinedrome or not palindrome

```
#include <stdio.h>
int main()
{
int no, b, rev=0, cpy;
printf("Enter any number \n");
scanf ("%d", &no);
cpy = no;
while = (no!=0)
{
b= no%10;
rev = rev*10+b;
no = no/10;
}
if (cpy==rev)
printf ("palinedrome");
else
Printf("Not palinedrome");
}
```

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Enter any number
5885
Palinedrome

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WAP to read numbers from user
If entered zero restart program

```
#include <stdio.h>
Void main()
{
int n;
ZERO;
printf("\n Enter The Number :");
scanf("%d",&n);
if (n==0)
{
goto ZERO;
}
printf("\n your Entered %d",n);
}
```

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```
Enter the number:0
Enter the number:0
Enter the number:2
you entered.2
```

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```
#include<stdio.h>
int main()
{
 int
ar[10]={10,20,50,40,60,80,70,25,45,65};
for(int i=0;i<=9;i++)
{
printf("%d\n",*(ar+i));
}
}
```

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10
20
50
40
60
80
70
25
45
65

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```
#include<stdio.h>
#include<conio.h>
main()
{
int n,i;
clrscr();
printf("\n Enter number:");
scanf("%d",&n);
i=1;
do
{
printf("\n%d",n*i);
i++;
}
while(i<=10);
getch();
}
```

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Enter number 6

6
12
18
24
30
36
42
48
54
60

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WAP to find greatest number among entered 2 intege values.

```
#include<stdio.h>
void main()
{
 int x,y;
printf("Enter Two Number:");
scanf("%d%d",&x,&y);
if (x>y)
{
printf("\n%d is Greatest Number",x);
}
if (x<y)
{
printf("\n%d is Greatest Number",y);
}
}
```

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```
Enter Two Number : 765
698
765 is Greatest Number.
```

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```
#include<stdio.h>
#include<conio.h>
main()
{
int i, n, fact=1;
printf("Enter the no=\n");
scanf("%d", &n);
for(i=1; i<=n; i++)
{
fact=fact*i;
}
printf("factorial of given number %d=%d",
fact);
getch();
}
```

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```
Enter the number =5
factorial of given number 120
```

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```
#include<stdio.h>
#include<conio.h>
main()
{
int a;
for(a=1;a<=10;a++)
{
if(a==5)
{
continue;
}
Printf("\n%d",a);
}
getch();
}
```

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1 2 3 4 5 6 7 8 9 10

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```
#include<stdio.h>
#include<conio.h>
main()
{
int a[5],i;printf("Enter any 5 number");
for(i=0;i<5;i++)
{
scanf("%d",&a[i];
}
for(i=0;i<5;i++)
{
Printf("%d",a[i]);
}
getch();
}
```

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Enter any 5 number

20
45
56
89
83

2045568983

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WAP for area of square

```
#include<stdio.h>
main()
{
int area, side;
Printf("Enter side of square\n");
Scanf("%d", &h);
area=side * side;
Printf("Area of square = %d", area);
}
```

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```
Enter side of square
4
Area of square = 16
```

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```
#include<stdio.h>
#include<conio.h>
#include<string.h>
main()
{
char name[50];
gets(name);
puts(name);
getch();
}
```

Scanned with OKEN Scanner

language
language

Scanned with OKEN Scanner

```
#include <stdio.h>
#include<conio.h>
void hello ()
{
clrscr ();
printf("Hello BCA Students ");
}
Void main ()
{
hello ();
getch();
}
```

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Hello BCA students

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VAP to access data using pointer.

```
# include <stdio.h>
Void main()
{
 int x;
 int *p;
printf("\n Enter The Number:");
scanf("%d",&x);
p=&x;
printf("\n memory address: %u",p);
}
```

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Enter the Number : 10
Values: 10
Memory address : 2752264

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```
#include<stdio.h>
#include<conio.h>
void main()
{
int a=10, b=20;
int *p, *q;
p=&a;
q=&b;
*p = *p+*q;
*q = *p-*q;
*p = *p-*q;
printf("\n value of a=%d", *p);
printf("\n value of b=%d", *q);
getch();
}
```

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Value of $a = 20$
value of $b = 10$

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WAP to find maximum among three using conditional operator

```
#include<stdio.h>
 void main()
 {
 int a,b,c;
printf("Enter three numbers:");
scanf("%d%d%d",&a,&b,&c);
printf("max is:%d",a>b&&a>c?a:c:b>c?b:c
}
```

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```
Enter three numbers : 102330
max is : 23
```

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```
#include<stdio.h>
int main()
{
int no, b, f;
printf("Enter any number \n");
scanf("%d", &no);
f = no%10;
while(no!=0)
{
b=no%10;
no = no/10;
}
printf("first digit =%d and last digit =%d", b, f);
}
```

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Enter any number
4859
first digit = 4 and last digit = 9

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```
#include<stdio.h>
struct student
{
int Roll-no;
float per;
};
Void main ()
{
Struct student s;
printf ("Enter student Rollno & percentage");
Scanf("%d", %f", &s.Rollno.&s.per);
display (s.Rollno"s.per);
getch();
}
int display (int a, float b);
{
Printf ("Rollno=%d", a);
printf("percentage=%f", b);
return 0;
}
```

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Enter student Roll no & Percentage

1
75.6
Roll no=1
Percentage=75.6

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NAP to find a type of character using else if

```
#include<stdio.h>
#include<conio.h>
#include<ctype.h>
Void main()
{
char c;
Printf("enter any character:>>\n");
scanf("%c",&c);
if(isupper(c))
Printf("It is UPPERCASE char....!");
else if(islowercase(c))
Printf("It is Lowercase char....!");
else if(isdigit(c))
Printf("It is Digitcase char---!");
else
Printf("It is special char---!");
getch();
}
```

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```
Enter any character:
D
it is uppercase
```

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IAP to print 1 to 9 number cube

```
#include<stdio.h>
#include<conio.h>
main ()
{
 int i ;
 clrscr ();
 Printf ("Number \t cube");
 for (i=1; i<10; i++)
 {
Printf ("\n%d\t%d", i, i*i);
}
getch ();
}
```

Scanned with OKEN Scanner

Number	Cube
1	1
2	4
3	9
4	16
5	25
6	36
7	49
8	64
9	81

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WAP to read a string from user and then print it on monitor

```
#include<stdio.h>
void main()
{
 char str[30];
printf("\n Enter the string:");
gets(str);
printf("\n Enter string::%s", str);
}
```

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Enter the string : SPDroid

Enter string : SPDroid

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```
#include<stdio.h>
void demoreg();
void main()
{
register int x=10;
printf("\n x=%d",x);
demoreg();
demoreg();
}
void demoreg()
{
register int x=10;
x=x+2;
printf("\n x=%d",x);
}
```

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$x = 10$

$x = 12$

$x = 12$

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a function 'add' and perform addition operation using function

```
#include <stdio.h>
int add (int, int);
Void main()
{
int a, b, sum;
printf("\n Enter the two numbers: ");
scanf("%d %d", &a, &b);
sum = add (a, b);
printf("\n addition: %d", sum);
}
int add (int x, int y)
{
 int add = x+y;
 return (add);
 }
```

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Enter the two numbers:
Addition :230

Write a program to check alphabet is uppercase or lowercase

```
#include<stdio.h>
#include<conio.h>
#include<string.h>
int main()
{
char ch;
printf("Enter any alphabet \n");
scanf("%c",&ch);
if(ch>=65&&ch<=90)
{
printf("uppercase");
}
else
{
printf("lowercase");
}
```

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Output

```
Enter any alphabet

D
uppercase
```

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WAP for delete character from using string

```
#include<stdio.h>
#include<conio.h>
void main()
{
int len=0,i,f,k=0;
char s[40],d,store[40];
clrscr();
printf("Enter original string:");
gets(s);
while(s[len]!='\0')
{
 len++;
}
fflush(stdin);
printf("enter character to delete:");
scanf("%c",&d);
for(i=0;i<len;i++)
 {if(s[i]!=d)
  {
  store[k++]=s[i];
  }

puts(store);
getch();
}
```

Scanned with OKEN Scanner

```
enter original string: how are
enter character to delete: o
how are you.
```

Scanned with OKEN Scanner

```
#include<stdio.h>
#include<conio.h>
main()
 {
 int a=10, b=20;
 a=a++;
  b = b--;

 printf("\n The Incremented value of a=%d", a);
printf("\n The Decremented value of b=%d", b);
getch();
 }
```

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The Incremented value of a=11

The Decremented value of b=19

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WAP for addition of two number using scanf() function

```
#include<stdio.h>
#include<conio.h>
main()
{
int a,b,c;
printf("\n Enter value of a=");
scanf("%d",&a);
printf("\n Enter value of b=");
scanf("%d",&b);
c=a+b;
printf("%d", c);
getch();
}
```

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```
Enter the value of a =20
Enter the value of b= 30
C=50
```

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```
#include<stdio.h>
int main()
{
int no;
printf("Enter any number\n");
scanf("%d",&no);
switch(no)
{
case 1:
printf("Monday");
break;
case 2:
 printf("Tuesday");
break;
Case 3:
 printf("Wednesday");
 break;
Case 4:
printf("Thrusday");
break;
case5:
printf("friday");
break;
case 6:
printf("saturday");
break;
Case7:
printf("Sunday");
break;
default:
printf("Invalid input");
```

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Output

```
Enter any number
2
Tuesday
```

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```
#include<stdio.h>
#include<conio.h>
main()
{
int a, b, c, sum;
printf("Enter two digit number");
scanf("%d", &a);
c = a/10;
b = a%10;
sum = c+b;
printf("\n The sum of digit is: %d", sum);
getch();
{
```

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```
Enter two digit number 34
The sum of digit is:7
```

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```
#include<stdio.h)
Void main()
{
int n,i,sum=0;
Printf("Enter any number:");
Scanf("%d",&n);
for(i=1; i<n; i=i+2)
{
Printf("%d+",i);
Sum=sum+i;
}
Printf("%d ",n);
Printf("\n sum=%d", sum+n);
}
```

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Enter any number: 7
1+3+5+7
Sum=16

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```
#include<stdio.h>
#include<conio.h>
void main()
{
int a1, a2, a3, a4, a5, sum, avg;
clrscr();
Printf("Enter 5 number:");
scanf("%d%d%d%d%d", &a1, &a2, &a3, &a4, &a5);
sum = a1+a2+a3+a4+a5;
Printf("\n sum=%d", sum);
avg = sum/5;
Printf("\n avg = %d", avg);
getch();
}
int avg (int a1, int a2, int a3, int a4, int a5, int
sum, int avg)
{
return (a1+a2+a3+a4+a5/5);
}
```

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Enter 5 number : 45
67
90
78
56

Sum = 336
avg = 67

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Write a program for area of rectangle

```
#include <stdio.h>
#include <conio.h>
main()
{
int area, h, w;
Printf("Enter height of rectangle \n");
scanf("%d", &h);
Printf ("Enter width of rectangle\n");
scanf("%d", &w);
area = h * w;
Printf ("Area of rectangle = %d", area);
}
```

Scanned with OKEN Scanner

```
Enter height of rectangle
4
Enter width of rectangle
6
Area of rectangle = 24
```

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```
#include<stdio.h>
main()
{
int f,s;
printf("Enter first Number \n");
scanf("%d",&f);
printf("Enter second number\n");
scanf("%d",&s);
if(f>s)
{
Printf("first no is greater");
}
if(f<s)
{
Printf("second no is greater");
}
if(f==s)
{
Printf("both are equal");
}
}
```

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```
Enter first number
45
Enter Second number
25
first no is greater
```

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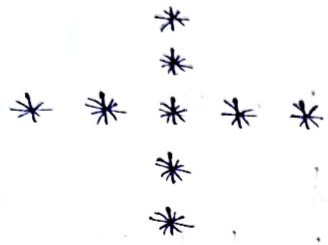
To print a formate given in below



```
#include<stdio.h>
int main()
{
for(int i=1;i<=5;i++)
{
for (int j=1;j<=5;j++)
{
if(i==3||j==3)
printf("*");
else
printf(" ");
}
printf("\n");
}
}
```

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Scanned with OKEN Scanner

to print appropriate message

If Pressed	Message
A	Excellent
B	Good
C	fair
D	Poor

```
#include<stdio.h>
void main()
{
char c;
printf("Enter The character:");
scanf("%c",&c);
if(c=='A')
{
printf("\n Excellent");
}
if(c=='B')
{
printf("\n very Good");
}
if(c=='C')
{
printf("\n fair");
}
if(c=='D')
{
Printf("\n poor");
}
```

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Enter The character : B
Very Good.

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Write a program to check character is vowel or consonent

```
#include<stdio.h>
main()
{
char ch;
printf("Enter any alphabet \n");
scanf("%c",&ch);
if(ch=='a'||ch=='e'||ch=='i'||ch=='o'||
ch=='u')
{
printf("vowel");
}
else
{
printf("consonent");
}
}
```

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Enter any alphabet
m
Consonant

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WAP to print 1 to 9 number using do while loop

```
# include <stdio.h>
# include<conio.h>
main()
{
int a=1;
clrscr ();
do
{
printf ("\n%d", a);
a++
while (a<=10);
getch ();
}
```

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1
2
3
4
5
6
7
8
9

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Wap to print elements of double dimensionarray

```
#include <stdio.h>
int main()
{
int array[3][3]={{7,8,9},{1,2,3},{4,5,6}};
int i,j;
printf("Elements of array is given below\n");
for(i=0;i<2;i++)
{
for(j=0;j<=2;j++)
{
printf("%d ",array[i][j]);
}
printf("\n");
}
}
```

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Elements of array is given below.

7 8 9
1 2 3
4 5 6

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Write a program for swapping of two number using third variable method.

```
#include<stdio.h>
main()
{
int a=10; b=20, c;
Printf("Before swapping a=%d and b=%d\n",
        a, b);

c=a;
a=b;
b=c;
Printf("After swapping a=%d and b=%d \n",a,b);
}
```

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Before Swapping a=10 and b=20
After swapping a=20 and b=10

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Write a program for swapping of two number without using third variable.

```
#include<stdio.h>
main()
{
int a=10, b=20;
printf("Before swapping a=%d and b=%d\n",a,b);
a=a+b;
b=a-b;
a=a-b;
Printf("After swapping a=%d and b=%d\n",a,b);
}
```

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Before swapping a=10 and b=20
After swapping a=10 and b=10

WAP to

```
#incl
#incl
void
{
int a
clrsc
Print
scan
if(a
{
print
}
else
{
print
}
getch
}
```

Scanned with OKEN Scanner

...p to find number is even or odd

```
#include <stdio.h>
#include <conio.h>
void main ()
{
int a;
clrscr ();
Printf ("Enter the any number :");
scanf("%d", &a);
if(a%.2==0)
{
printf ("This is even number");
}
else
{
printf ("This is odd number");
}
getch ();
}
```

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Enter the any number : 8
This is even number

Enter the any number : 7
This is odd number

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...p to find ... of square

```
#include<stdio.h>
#include<conio.h>
Void main()
{
int r;
clrscr();
printf("Area of square\t");
r=square();
printf("Area of square =%d",r);
getch();
}
int square()
{
int side;
Printf("\n\nEnter length of square:");
Scanf("%d",&side);
return side*side;
}
```

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Area of square

Enter length of square : 3

Area of square = 9

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Scanned with OKEN Scanner

ite a program to perform addition using command line argument.

```
#include<stdio.h>
#include<stdlib.h>
void main(int argc,char *argv[])
{
int x,y,sum;
if(argc==3)
{
x=atoi(argv[1]);
y=atoi(argv[2]);
sum=x+y;
printf("sum=%d",sum);
}
else
{
printf("enter two numbers...");
}
}
```

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Output

```
Enter two number....
10 20
sum=30
```

Scanned with OKEN Scanner

Write a program to display welcome message

```
#include<stdio.h>
#include<conio.h>
main()
{
printf("welcome");
getch();
}
```

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Output

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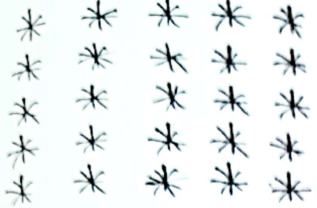

```
#include<stdio.h>
int main()
{
for (int i=1;i<=5;i++)
{
for (int j=1;j<=5;j++)
{
printf ("* ");
}
printf("\n");
}
}
```

Scanned with OKEN Scanner

```
#include<stdio.h>
int main()
{
int i,j,n;
printf("Enter the number of rows:");
scanf("%d",&n);
for(i=1;i<=n;i++)
{
for(j=1;j<=n;j++)
{
printf("*");
}
printf("\n");
}
return 0;
}
```

Output

```
*****
*****
*****
*****
*****
```


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Write a program for string comparison

```
#include<stdio.h>
#include<conio.h>
int main()
{
char str1[20];
char str2[20];
int value;
printf("Enter the first string:");
scanf("%s",str1);
printf("Enter the second string:");
scanf("%s",str2);
Value=strcmp[str1],str2);
if(value ==0)
printf("strings are same");
else
printf("strings are not same");
return 0;
```

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Output

```
Enter the first string : Monday
Enter the second string: Tuesday
Strings are not same
```

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Write a program to print message according to age.

```
#include <stdio.h>
void main()
{
int age;
printf("Enter the your age:");
scanf("%d",&age);
if(age<18)
{
Printf("you are child");
}
else if(age>18&&age<60)
{
printf("you are young");
}
else
{
printf("you are old");
}
}
```

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Output

```
Enter the your age:24
you are young
```

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AP to check year is Leap year or Not.

```
#include<stdio.h>
#include<conio.h>
main()
{
int year;
printf("Enter year");
scanf("%d", &year);
if (year %.4==0)
{
printf("leap year");
}
else
{
printf("Not leap year");
}
getch();
}
```

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Output

```
Enter year 2003
Not leap year.
```

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Write a program to print fibonacci series.

```
#include <stdio.h>
void main()
{
int i, x=0, y=1, s;
printf("\n fibonacci series:");
printf("\n%d\t%d", x, y);
for (i=1; i<20; i++)
{
s = x+y;
printf("\t%d", s);
x=y;
y=s;
}
}
```

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Output

```
fibonacci series:

0 1 1 2 3
610 987 1597 2584 4181
```

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Write A program for Substraction of two number.

```
#include<stdio.h>
main()
{
int a, b, c;
printf("Enter 1st number\n");
scanf("%d", &a);
Printf("Enter 2nd number\n");
scanf("%d", &b);
c = a-b;
printf("Sub = %d", c);
}
```

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Output

```
Enter 1st number
200
Enter 2nd number
50
Sub = 150.
```

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Write a program for multiplication of two number.

```
#include<stdio.h>
main()
{
int a, b, c;
printf("Enter first number\n");
scanf("%d", &a);
Printf("Enter second number\n");
scanf("%d", &b);
c = a * b;
printf("Multiply = %d", c);
}
```

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Output

```
Enter first number
20
Enter Second number
50
multiply = 1000
```

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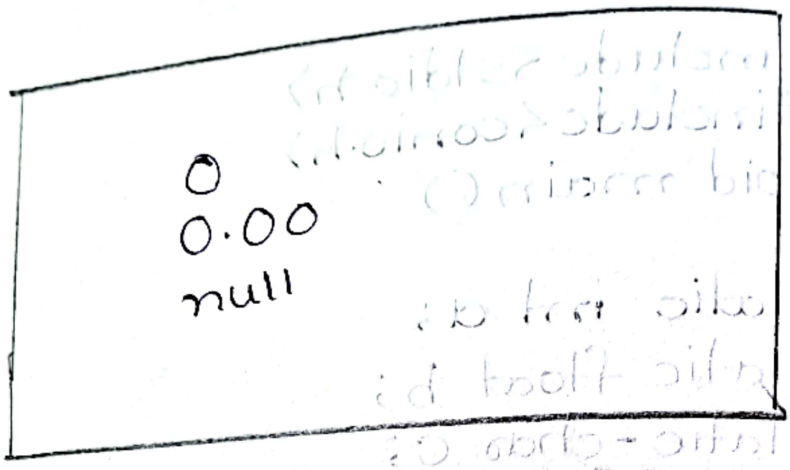
10. static storage class

```
#include<stdio.h>
#include<conio.h>
void main()
{
static int a;
static float b;
static char c;
printf("%d %f %s", a, b, c);
getch();
}
```



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AP to print ABC ---- Z

```
#include<stdio.h>
int main()
{
for(char ch='A'; ch<='Z'; ch++)
{
printf("%c", ch);
}
}
```

Output

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

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Write a program using Automatic Variable

```
#include<stdio.h>
int main()
{
auto int j = 1;
{
auto int j = 2;
{
auto int j = 3;
printf("%d",j);
}
printf("\t%d",j);
}
printf("\t%d",j);
}
```

Output

```
321
```

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Write a program using static variable

```
#include<stdio.h>
int calc()

static int sum=2;
sum++;
return sum;
}
void main()

printf("sum=%d\n",calc());
printf("sum=%d\n",calc());
}
```

Output

```
Sum = 3
Sum = 4
```

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String length using strlen() library function :

```
#include <stdio.h>
#include <conio.h>
#include<string.h>
main()
{
char s1 [20];
int n;
printf("\n Enter string :");
gets (s1);
n = strlen (s1);
printf ("\n %d", n);
getch();
}
```

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Output:

```
Enter string
House
8
```

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WAP using break statement

```
#include<stdio.h>
#include<conio.h>
main()
{
int a;
for(a=1; a<=10; a++)
{
if(a==5)
{
break;
}
printf("\n %d", a);
}
getch();
}
```

Output

```
1
2
3
4
```

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Output

```
Enter string
Program
margorp
```

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WAP for using goto statement

```
#include <stdio.h>
#include<conio.h>
main()
{
msg: printf("\n welcome to BCA");
goto msg;
getch();
}
```

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Output

```
Welcome to EJA
Welcome to EJA
```

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```
#include <stdio.h>
#include <conio.h>
void main()
{
int *p, a[10], i;
clrscr();
p=&a[10];
Printf("Enter the value:\n");
for(i=0;i<5;i++,p++)
{
scanf("%d",&*p);
}
p=p-1;
for(i=0;i<5;i++,p--)
{
Printf("\n %d",*p);
}
getch();
}
```

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Enter the Value:

85
96
54
2
63

63
2
54
96
63

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to reading array using pointer and print it using pointer

```
#include<stdio.h>
int main(){
int i;
int arr[10];
int *ptr;
ptr=arr;
Printf("Enter 5Elements:");
for(i=0;i<5;i++)
{
scanf("%d",ptr);
ptr++;
}
Ptr=arr;
Printf("Entered numbers:\n");
for(i=0;i<5;i++)
{
Printf("%d\n",*ptr);
Ptr++;
}
}
```

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```
Enter 5 Elements:
1 2 3 4 5
Entered Numbers:
1
2
3
4
5
```

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WAP to print addition of two numbers

```
#include <stdio.h>
int main()
{
int a, b, c;
Printf("Enter first number \n");
scanf("%d", &a);
Printf ("Enter second number \n");
Scanf ("%d", &b);
c = a+b;
Printf ("Add = %d", c);
}
```

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Enter first number
20
Enter second number
30
Add : 40

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...p to using logical operator

```
#include<stdio.h>
#include<conio.h>
int main()
{
int a;
clrscr();
a=(2<1)||(4<3);
Printf("\n(2<1)||(4<3)=%d",a);
a=(2<1)||(4>3);
Printf("\n(2<1)||(4>3)=%d",a);
getch();
return 0;
}
```

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(2<1)||(4<3) =0

(2<1)||(4>3) =1

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- to make use of scanf() function for taking input at Runtime.

```
#include <stdio.h>
#include <conio.h>
main()
{
int a;
printf("\n Enter Value of a :");
scanf("%d", &a);
printf("\n The Value of a=%d", a);
getch();
}
```

Find a value of θ :

$\theta =$

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WAP to find a average

```
#include<stdio.h>
#include<conio.h>
void main()
{
int a1,a2,a3,a4,a5,sum,avg;
clrscr();
printf("Enter 5 numbers:");
scanf("%d%d%d%d%d",&a1,&a2,&a3,
&a4,&a5);
sum=a1+a2+a3+a4+a5;
printf("\n sum=%d",sum);
avg=sum/5;
printf("\n avg=%d",avgrage);
getch();
}
int avg(int a1,int a2,int a3,int a4,int a5,
int sum,int avg)
{
return(a4+a2+a3+a4+a5/5);
```

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Enter 5 numbers: 45
67
90
78
56
sum = 336
avg = 67

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English and find average

```
nclude <stdio.h>
ain()

loat p, c, m, h, e, avg;
intf ("Enter marks in physics \n");
canf ("%.df", &p);
rintf ("Enter marks in chemistry \n");
canf ("%.f", &c);
rintf ("Enter marks in math \n");
Scanf ("%.f", &m);
printf ("Enter marks in hindi \n");
scanf ("%.f", &h);
printf ("Enter marks in english \n");
scanf ("%.f", &e);
avg = (p+c+m+h+e)/5;
printf ("Average of result = %f", avg);
}
```

Enter marks in physics

45

Enter marks in chemistry

65

Enter marks in math

87

Enter marks in Hindi

75

Enter marks in english

94

Average of result = 73.19

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...pfor Division of two number

```
#include<stdio.h>
main()
{
float a, b, c;
Printf("Enter 1st number \n");
scanf("Enter 1st number \n");
Printf("Enter 2nd number \n");
scanf("%f", &b);
c=a/b;
Printf("Div=%d", c);
}
```

Enter 1st number
200
Enter 2nd number
50
Div = 4

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WAP to using relational operators

```
#include <stdio.h>
#include <conio.h>
int main()
{
int n;
clrscr();
Printf("\nEnter any number:");
Scanf("%d", &n);
printf("\n(n<10) is=%d", (n<10));
Printf("\n(n>10) is=%d", (n>10));
Printf("\n(n<=10) is=%d", (n<=10));
getch();
return 0;
}
```

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(n<10) is=0
(n>10) is=0
(n<=10) is=1

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WAP to calculate product of two integers using pointer.

```
#include<stdio.h>
Void main()
{
int x,y,m;
int *p1,*p2;
printf("\nEnter Two Number:");
  scanf("%d %d",&x,&y);
   p1=&x;
   p2=&y;
  m=(*p1)*(*p2);
printf ("\n%d x%d=%d",*p1,*p2,m);
}
```

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Enter Two Number : 10 10

10 X 10 = 100

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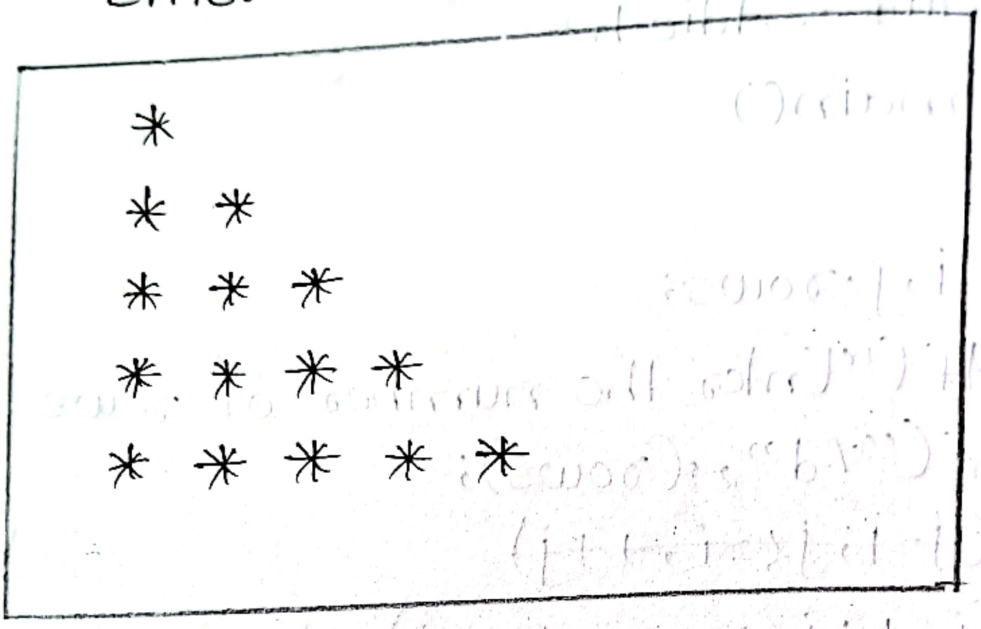
Write a program to print (*) number of columns and rows

```
#include<stdio.h>
int main()
{
int i,j,rows;
printf("Enter the number of rows :");
scanf("%d",&rows);
for(j=1;j<=i;++j)
for(i=1;i<=rows;++i)
{
for(j=1;j<=i;++j)
{
printf("*");
}
printf("\n");
}
return 0;
}
```

Output

Enter the number of rows: 5



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Write a program to copy string.

```
#include<stdio.h>
int main()
{
char s1[100],s2[100],i;
printf("Enter string:");
fgets(s1,sizeof(s1),stdin);
for(i=0;s1[i]!='\0',++i)
{
s2[i]=s1[i];
}
s2[i]='\0';
printf("copy string :%s",s2);
return 0;
}
```

Output

```
Enter string : hello World
Copy string : hello World
```

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Write a program to print

A
A B
A B C
A B C D
A B C D E

```
#include<stdio.h>
int main()
{
for(int i=1;i<=5;i++)
{
for(int j=1;j<=5;j++)
{
if((i+j)>=6)
printf("%d", (i));
else
printf(" ");
}
printf("\n");
}
```

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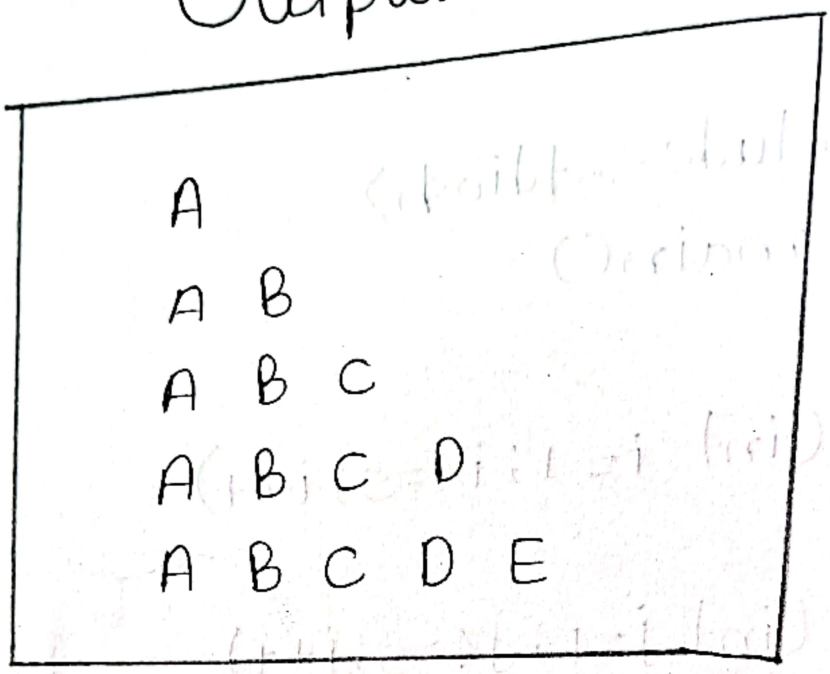
Output



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Write a program to print first and last digit number

```
#include<stdio.h>
#include<conio.h>
int main ()
{
int no, b, f;
Printf ("Enter any number:\n");
Scanf ("%d", &no);
f = n%.10;
while (no!=0)
{
b = no%. 10;
no = no/10;
}
Printf ("first digit = %.dand last
        digit =%.d", b, f);
}
```

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Output.

```
Enter any number:
4859
first digit = 4 and last digit = 9
```

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d program to print

```
1
2 2
3 3 3
4 4 4 4
5 5 5 5 5
```

```
#include <stdio.h>
#include <conio.h>
int main()
{
for(int i=1;i<=5;i++)
{
for(int j=1;j<=5;j++)
{
if((i+j)>=6)
printf("%d", (i));
else
printf(" ");
}
printf("\n");
}
```

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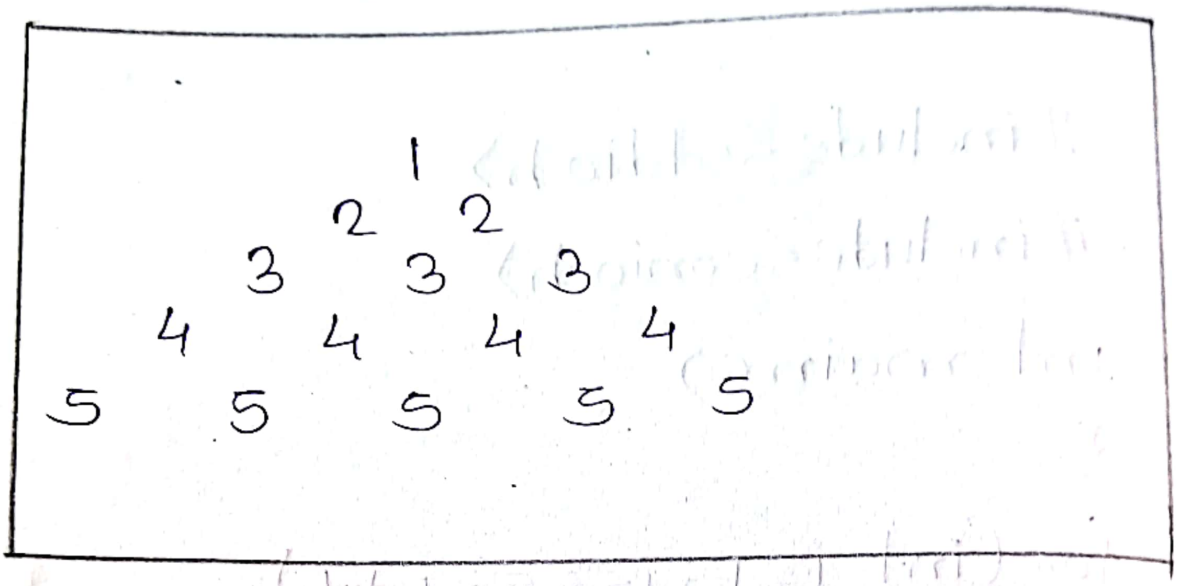
Output



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NAME - Sumit Shantilal Rokade.

Roll No - 159

Sub. Problem solving 'C'

BCA - I (Sem - II)

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51 WAP to use of goto statement Example NO.2

```
#include<stdio.h>
#include<conio.h>
main()
{
 int a;
abc: for(a=1; a<=10; a++)
 {
  Print("\n%d", a);
 }
 goto abc;
  getch();
 }
```

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output

1
2
3
4
5
6
7
8
9
10

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52) WAP to use of break statement

```
# include <stdio.h>
# include <conio.h>
  main()
{
  int a;
  for (a=1; a<10; a++)
  {
   if (a==5)
    {
     break;
    }
   printf ("\n%d", a);
  }
  getch();
}
```

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output

1

2

3

4

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53) WAP to use of continue statement

```
#include <stdio.h>
#include <conio.h>
main()
{
int a;
for (a=1; a<=10; a++)
{
if (a==5)
{
continue
}
printf("\n%d", a);
}
getch();
}
```

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54) WAP to print fibonacci series

```
#include <stdio.h>
#include <conio.h>
{
  int n, i; f1 = 0, f2 = 1, f3;
Printf ("\n Enter the Number");
scanf ("%d", &n);
for (i=0; i<n; i++)
{
f3 = f1 + f2;
printf ("\n%d", f1);
    f1 = f2;
    f2 = f3;
  }
  getch ();
}
```

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Output :

Enter the Number 5

0
1
2
3

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55) wap to check string is palindrome or not

```
#include <stdio.h>
#include <conio.h>
main()
{
 int i=0, j=0, count=0 flag;
 char s1[20], s2[20];
 clrscr();
printf("Enter the string:");
gets(s1)
while(s1[i]!="\0")
{
 count++;
  i++
}
for(i=count-1; j=0, i>=0, i<=count-1, i++, j++)
{
s2[j] = s1[i];
}
For(i=0;j=0: i<=count j<=count : i++, j++)
{if[s1[i] = s2[i]]
}
 flag=1
else
flag=0
 break;
 break;
 if(flag==1)
 print("\n the given string is palindrome);
}
else
print("\n the given string is not palindrome");
  getch();
}
```

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Output

Enter string
nitin
The given string is palindrom

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56) WAP to find out the prime number between 1 to 500

```
#include<stdio.h>
#include<conio.h>
main()
{
int i, n;
clrscr();
printf("enter number");
scanf("%d",&i);
{
n=i-1;
if(n%2==0)
printf("prime");
else
printf("not prime");
}
getch();
}
```

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output

Enter number 3

prime

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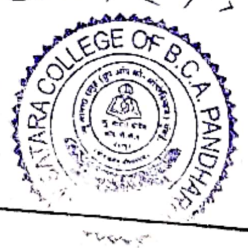
57) WAP to check entered character is vowel or consonant

```
#include<stdio.h>
#include<conio.h>
main()
{
 char ch;
 printf("Enter single character");
 scanf("%c",&ch);
if(ch='a'||ch='e'||ch='i'||ch='o'
    ||ch='u');
{
 printf("\n It's a vowel");
}
else
{
 printf("\n Its a consonant");
}
getch();
}
```



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#include

enter a single character: a
It is a vowel

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5(c) WAP to calculate addition two number using function add()

```
#include <stdio.h>
#include <conio.h>
main()
{
  add();
  getch();
}
add()
{
int a=10, b=20, c;
  c= a+b;
printf("Addition=%d",c);
}
```

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output

Addition = 30

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59 Write a program for area of trangle

```
# include <stdio.h>
# include <conio.h>
main()
{ int area, h, w;
printf("enter height : \n");
scanf("%d", &w);
area = h * w;
Print f ("Area = %d", area);
    getch()
}
```

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output

Enter height

4

Enter width

6

Area = 24.

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GO WAP for area of square

```
#include <stdio.h>
#include <conio.h>
main()
{
 int area, side;
printf("Enter side\n");
scanf("%d", &side);
area = side * side;
printf("Area = %d", area);
 getch();
}
```

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output

Enter side

4.

Area = 16

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61. WAP to swap the value of two variable

```
# include <stdio.h>
# include <conio.h>
main()
{
 int a = 10, b = 20. temp;
   temp = 0;
   a = b
 b = temp;
print ("a = %.d", a);
print ("b = %.d', 'b );
    getch()
  }
```

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Output

a = 20

b = 10

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62) WAP for grater value in 2 numbe,

```
#include <stdio.h>
#include <conio.h>
main()
{
int f,s;
printf("enter first no\n");
scanf("%d",&f);
printf("enter second no\n");
scanF("%d",&s);
if(F>S)
{
print("first is grater");
}
if(F<S)
{
print("second is grater");
}
if(F==S)
{
printf("both are equal");
}
getch()
}
```

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output

Enter first no
45
Enter second no.
25
first is greater

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63) WAP to print following format

```
# include <stdio.h>
# include <conio.h>
main()
{
  int i, j, k=1;
for (i=1; i<=5; i++)
{
 for (j=1; j<=i; j++)
{
 printf ("%d", k)
 printf ("\n");
  k++;
}
getch();
```

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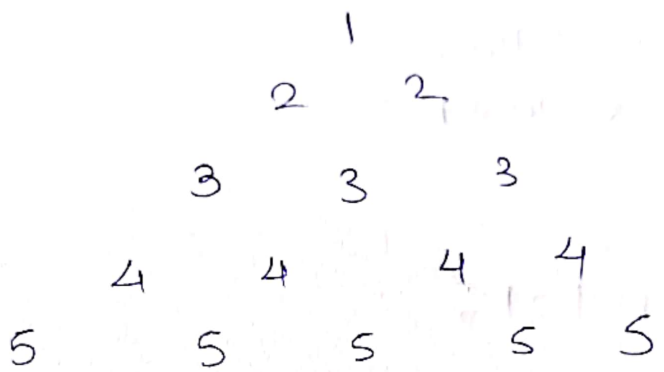
Output



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64. WAP for Division of two number

```
# include <stdio.h>
# include <conio.h>
main ()
{ int a=200, b=50, c;
 c= a/b ;
printf("DIV =%d",c);
 getch ()
}
```

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output

DN = 4

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65) WAP to Reverse the number

```
#include <stdio.h>
#include <conio.h>
void main()
{ int a=1299, rev=0, rem;
  while (a!=0)
  {
 rem = a%10;
rev = rev*10+rem;
  a = a/10;
 }
printf("rev = %d", rev);
  getch();
 }
```

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Output

rev = 99 :

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66.) WAP to swap to value without using thr third variable (use pointer)

```
#include <stdio.h>
#include <conio.h>
main()
{
int a=10, b=20;
int *p, *p1
p = &a;
a = &b;
*p = *p + *q;
*q = *p - *q;
*p = *p - *q;
printf("a=%d", *p);
printf("b=%d", *q);
getch
}
```

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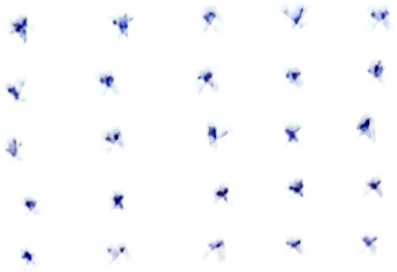
6) WAP to print following format



```
# include <stdio.h>
# include <conio.h>
main()
{
 for (int i=1; i<5=; i++)
{
for (int j=1; j<=5; i++)
{
 print ("*")
}
 print ("\n");
 }
  getch();
}
```

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output

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6. WAP to print following format

```
# include <stdio.h>
# include <conio.h>
  int main()
  {
 for(int i=1; i<=5; i++)
  {
  if(i==3||j==3)
  printf("*");
   else
   print("*");
  }
   print("\n");
  }
  getch();
}
```

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Output

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69) Write a program to reverse the number

```
# include <stdio.h>
# include <conio.h>
  void main()
{
int a=1234, rev=0, rem;
while (a!=0)
{
rem = a%10;
rev = rev * 10 + rem;
   a= a/10;
}
printf ("reverse = %d", rev);
   getch()
}
```

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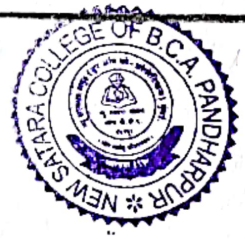
Output

Reverse = 4321



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40. Write a program to calculate sum of given number 1299

```
# include <stdio.h>
# include <conio.h>
  int main()
{
 int n, t, sum =0, rem;
 printf ("enter a number:");
 scanf ("%d", &n);
 t = n;
 while (t!=0)
 {
  rem = t%10;
  sum = sum + rem;
   t = t/10
 }
print ("sum of digit %d" sum);
  return 0
}
```

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Output

Sum of digit : 21

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71. WAP to calculate sum of 1 to 10 using recursion

```
# include <stdio.h>
# include < conio.h>
  void main ()
{
  int result = sum (10);
  printf ("Add = %d: result);
   getch ();
}
int sum (int k)
{
 if (k>0)
 {
  return k + sum (k-1)
}
else
{
 return 0;
}
```

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output

55

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Q2) WAP to use call by value

```
#include <stdio.h>
void change (int x) {
    x = 100;
}
int main ()
{
    int a = 10
change (a);
printf ("a = %d \n", a);
    return 0;
}
```

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Output :

a = 10

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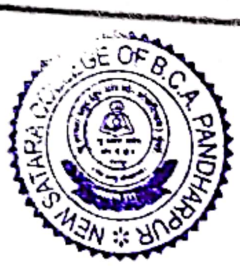
73

Program that demostrate the use of macres in C

```
#  mcuudu <stdio.h>
#  drefiru MESSAGE "Hello World"
   Int man ()
   {
   print ("%s \n", MESSAGE).
   return 0
   }
```



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output

Hello word

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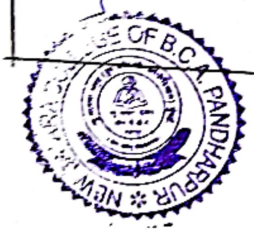
Q4.

WAP to that wap the getch() function

```
# include <stdio.h>
int main()
{
  int c;
print("Enter a character:");
c = getchar();
printf("you entered %c\n", c);
return 0;
}
```



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Output

Enter a character. A

you entered : A

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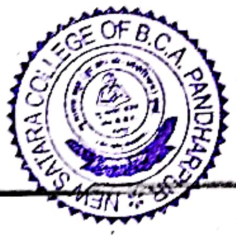
75. WAP to use unformatted input getch() function

```
# include <stdio.h>
# include <conio.h>
  int main()
{
  char c;
printf("press any key to continue:.\n")
   c; getch();
printf("you pressed the %c key \n", c);
  return 0
}
```



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output :

Press any key to continue..

you pressed the 'n' key

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#6 WAP to use unformatted input function getch()

```
# include <stdio.h>
# include <conio.h>
  int main()
  {
Printf ("Enter a character:");
   c = getche();
printf ("\n you enterd %c", c);

 return 0

}
```

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output

Enter a character : A

You enterd : A

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77. Wap to use unformatted input function get Cl

```
# include <stdio.h>
# include <conio.h>
  int main()
  {
  char str[100];
 printf["enter a string];
  gets(str);
printf("you entered : %s" str);
  return 0;
```

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Output

Enter a string : Hello

You entered : Hello.

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WAP to use formatted input function scanf()

```
#include<stdio.h>
int main()
{
 char str[100];
printf("Enter a string");
scanf("%s", str);
printf("you entered : %s", str);
return 0;
}
```

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output :

Enter a string : Hello
you entered : Hello

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WAP to use formatted input sscanf () function.

```
#include<stdio.h>
int main()
{
Char str[] = "Hello";
Char word[6]
sscanf(str, "%s", word);
printf("word = %s\n", word);
return 0;
}
```

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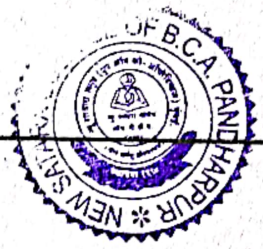
output :-

Word = Hello.



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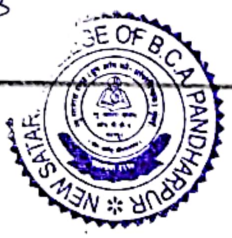
80 WAP to define a structure in C

```
# include <stdio.h>
  struct student {
    char name[50];
    int roll_no
    float marks
  };
  int main()
  {
  struct student s;
  print("Enter name:");
  scanf("%s",&s.name);
  printf("Enter roll no");
  scanf("%d",&s.roll_no);
  printf("Enter marks:");
  scanf("%f",&s.marks);
  printf("name %s\n",s.name);
  Printf("Roll number %d\n",s.roll_no);
  printf("marks : %.2f\n",s.marks);
  return 0;
}
```



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Output

```
Enter name: John
Enter roll number: 123
Enter mark: 85.50
Name: John
Roll No: 123
Marks: 85.50
```

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