



**EXCELSSIOR EDUCATION SOCIETY'S
K. C. College of Engineering & Management Studies & Research
Mith Bunder Road, Kopri, Thane (E)**



Cycle – 2 NAAC Accreditation 2024

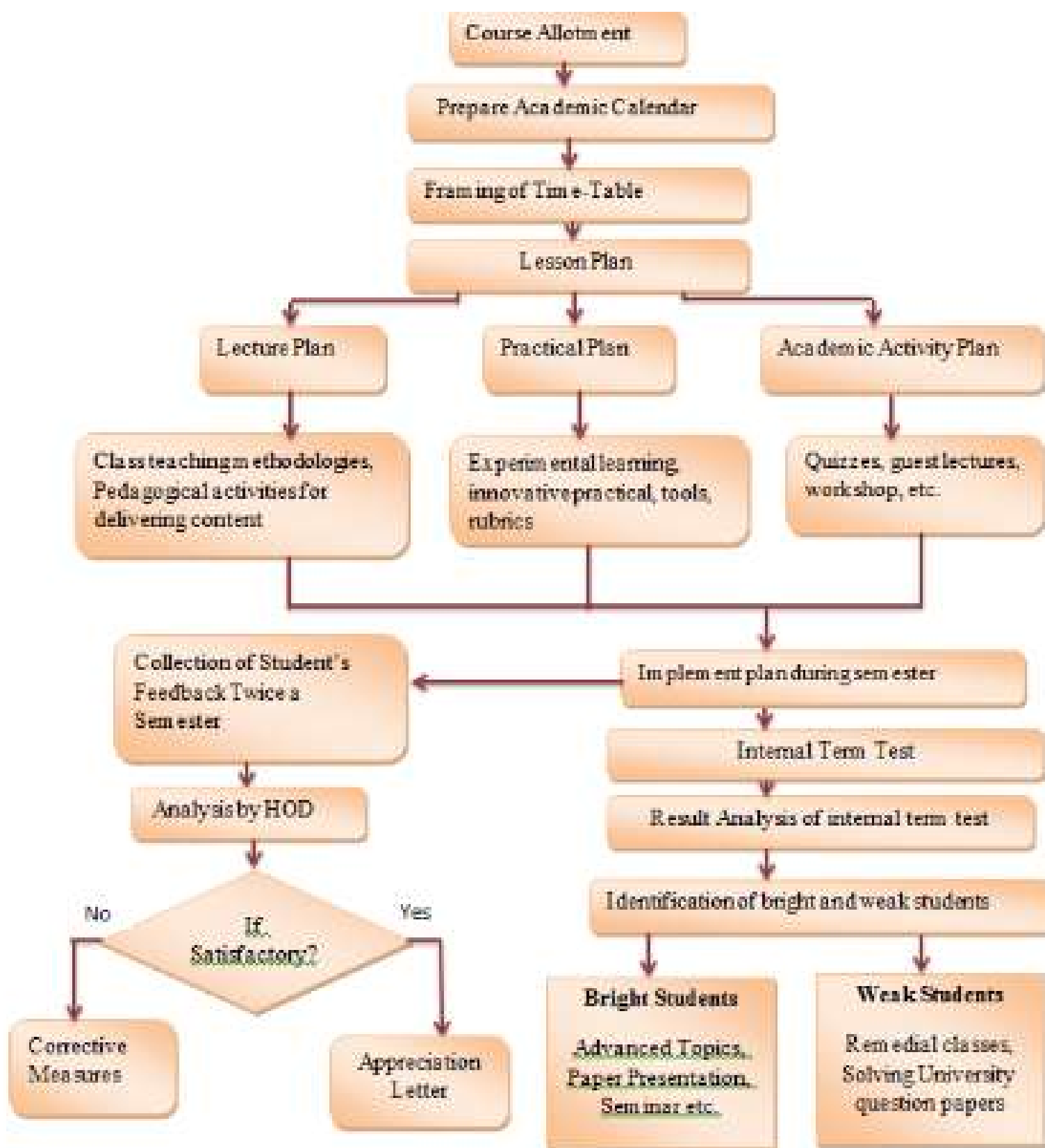
Criteria 2: Teaching- Learning and Evaluation

2.5.1 Mechanism of internal/ external assessment is transparent, and the grievance redressal system is time- bound and efficient.

Submitted to



National Assessment and Accreditation Council



Excelssior Education Society's



K.C.College of Engineering and Management Studies and Research
(Affiliated to the University of Mumbai)
Mith Bunder Road, Near Hume Pipe ,Kopri,Thane E-400603

Department of Information Technology

Ref: KCCEMSR/IT/2022-23/

Date: 28.02.2023

NOTICE

This is to inform all SE/TE/BE students that Internal Assessment Exam (Class Test 1) for Semester VI/VII/VIII will be conducted on 6th, 9th and 10th March 2023. Time table for the same will be displayed shortly.

Instructions:

1. Students must reach the examination hall 15 min before the exam begins.
2. Students must be in formals.
3. Students must carry ID card.

Exam Co-ordinator

Asst Prof. Seema Bhuravane

H.O.D.(I.T.Dept.)

Asst Prof Amarja Adgaonkar



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Date: 28.02.2023

NOTICE

This is to inform all faculties of SE/TE/BE-IT that Internal Assessment Exam (Class Test-1) for Semester IV/VI/VIII will be conducted on 6th, 9th and 10th March 2023. All should prepare 3 set of question papers with higher Blooms level as per the prescribed format for their respective courses and submit it before 03th March 2023.

Exam Co-ordinator

Asst Prof. Seema Bhuravane

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Department of Information Technology

TERM TEST 1 TIME TABLE

EVEN SEM 2022-23

Semester - IV

Class: SE (Rev-2019 'C')

Date	Day	Course	Timing
06.03.2023	Monday	Computer Organization and Architecture	10:30 am - 11:30 am
		Computer Network and Network Design	2:00 pm- 3:00 pm
09.03.2023	Thursday	Engineering Mathematics-IV	10:30 am - 11:30 am
		Operating System	2:00 pm- 3:00 pm
10.03.2023	Friday	Automata Theory	10:30 am - 11:30 am

Roll No 1-35: Room No. 203


Roll No. 36-71: Room No. 207

INSTRUCTIONS:

1. The Term test will be of duration 1 hour
2. Students must reach the examination hall 15 mins before the exam begins.
3. Students must follow Covid 19 guidelines and exam guidelines.
4. Students must carry valid ID proof (Aadhar card or Pan Card or Driving Licence)



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Department of Information Technology

TERM TEST 1 TIME TABLE

EVEN SEM 2022-23

Semester - VI

Class: TE (Rev-2019 'C')


Date	Day	Course	Timing
06.03.2023	Monday	Web X.0	10:30 am - 11:30 am
		Artificial Intelligence and Data Science-I	2:00 pm- 3:00 pm
09.03.2023	Thursday	Green IT / Ethical Hacking	10:30 am - 11:30 am
		Data Mining & Business Intelligence	2:00 pm- 3:00 pm
10.03.2023	Friday	Wireless Technology	10:30 am - 11:30 am

Roll No 1-32: Room No. 203

Roll No. 33-74: Room No. 207

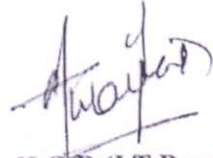
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Department of Information Technology

TERM TEST 1 TIME TABLE

EVEN SEM 2022-23

Semester - VIII

Class: BE (CBCS Rev. 2016)

Date	Day	Course	Timing
06.03.2023	Monday	Big Data Analytics	10:30 am - 11:30 am
09.03.2023	Thursday	User Interaction Design (DLOC)	10:30 am - 11:30 am
		Block chain and DLT	2:00 pm- 3:00 pm
10.03.2023	Friday	Environmental Management / Project Management (ILOC)	2.00 pm - 3:00 pm

Roll No 1-33: Room No. 213

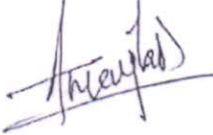
Roll No. 34-77: Room No. 306

INSTRUCTIONS:

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2. Students must reach the examination hall 15 mins before the exam begins.
3. Students must follow Covid 19 guidelines and exam guidelines.
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TERM TEST 1 TIME TABLE

EVEN SEM 2022-23

Semester - IV

Class: SE (Rev-2019 'C')

Date	Day	Course	Timing	Seating Arrangement
06.03.20 23	Monday	Computer Organization and Architecture	10:30 am - 11:30 am	Room no.213->1 to 32 Room no.207->33 to 71
		Computer Network and Network Design	2:00 pm- 3:00 pm	
09.03.20 23	Thursday	Engineering Mathematics-IV	10:30 am - 11:30 am	Room no.207->1 to 35 Room no.313->36 to 71
		Operating System	2:00 pm- 3:00 pm	
10.03.20 23	Friday	Automata Theory	10:30 am - 11:30 am	Room no.207->1 to 35 Room no.313->36 to 71

Roll No 1-35: Room No. 203

Roll No. 36-71: Room No. 207

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Department of Information Technology
CLASS TEST I(2022-23)

Semester: IV

Class: SE

Date:10/03/2023

Marks: 20

Subject: Automata Theory

Duration: 1hr

Question No.	Question	Marks	Bloom Taxonomy Level	Course outcome
Q.1. OR	Design a Regular Expression for Following Languages a. $\Sigma^*(0,1)$ containing all possible combination of 0's and 1's but not having two consecutive 0's. b. The set of all strings over $(0,1)$ with length 2	03 03	Applying	ITC404.1,
Q.2	a. Design a Finite Automata for $RE=1(011)^*0$ b. Design a Finite Automata for $RE=(010+00)^*(10)$	03 03	Applying	ITC404.1
Q.3 OR	Design a FSM for testing divisibility by 3 tester using Binary input. Draw Transition table	07	Applying	ITC404.2
Q.4	Design a DFA in which set of all string ending with 110 or 111 Draw Transition table and Diagram	07	Applying	ITC404.2
Q.5 OR	Let $G=\{V,T,P,S\}$ be the CGF having following productions , Derive the string "aabbaa" using Leftmost derivation , Draw Parse Tree $S \rightarrow aAS \mid a, A \rightarrow SbA \mid SS \mid ba$	07	Applying	ITC404.3
Q.6	Let $G=\{V,T,P,S\}$ be the CGF having following productions , Derive The string " bbaaabbaba" using Rightmost Derivation , Draw Parse Tree . $S \rightarrow aB \mid bA, a \rightarrow a a bAA, B \rightarrow b b aBB$	07	Applying	ITC404.3



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CLASS TEST II (2022-2023)

Semester: IV

Class: SE

Date: 17/04/2023


Marks: 20

Subject: Computer Organization and Architecture

Duration: 1hr

Question No.	Question	Marks	Bloom Taxonomy Level	Course outcome
Q.1.	Using Booth's Algorithm multiply the following : Multiplicand=7, Multiplier=3 OR Perform division of following numbers using restoring division algorithm: Dividend = 13, Divisor = 4	07	Applying	ITC405.4
Q.2	Compare SRAM and DRAM. OR Write short note on L1, L2 and L3 cache memory.	07	Understanding	ITC405.5
Q.3	What are the major requirements for an I/O module? OR What is the need of DMA? List out various DMA transfer modes.	06	Understanding	ITC405.6




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CLASS TEST II (2022-2023)

Semester: IV

Class: SE

Date: 17/04/2023

Marks: 20

Subject: Computer Organization and Architecture

Duration: 1hr

Question No.	Question	Marks	Bloom Taxonomy Level	Course outcome
Q.1.	Using Booth's Algorithm multiply the following : Multiplicand=7, Multiplier=3 OR Represent $(4.50)_{10}$ in IEEE754 single and double precision format.	07	Applying	ITC405.4
Q.2	Compare SRAM and DRAM. OR Write a short note on Associative memory.	07	Understanding	ITC405.5
Q.3	What is the simplest technique of performing input output data transfer? OR What is the need of DMA? List out various DMA transfer modes.	06	Understanding	ITC405.6




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CLASS TEST II (2022-2023)

Semester: IV

Class: SE

Date: 17/04/2023

Marks: 20

Subject: Computer Organization and Architecture

Duration: 1hr

Question No.	Question	Marks	Bloom Taxonomy Level	Course outcome
Q.1.	Represent $(4.50)_{10}$ in IEEE754 single and double precision format. OR Perform division of following numbers using restoring division algorithm: Dividend = 13, Divisor = 4	07	Applying	ITC405.4
Q.2	Write a short note on Associative memory. OR Write short note on L1, L2 and L3 cache memory.	07	Understanding	ITC405.5
Q.3	What are the major requirements for an I/O module? OR What is the simplest technique of performing input output data transfer?	06	Understanding	ITC405.6



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CLASS TEST II (2022-2023)

Semester: IV

Class: SE

Date: 17/04/2023

Marks: 20 Subject: Computer Organization and Architecture

Duration: 1hr

Question No.	Question	Marks	Marking Scheme
Q.1.	Using Booth's Algorithm multiply the following : Multiplicand=7, Multiplier=3 OR Perform division of following numbers using restoring division algorithm: Dividend = 13, Divisor = 4	07	7M for correct stepwise answer 7M for correct stepwise answer
Q.2	Compare SRAM and DRAM. OR Write short note on L1, L2 and L3 cache memory.	07	½ M for each point 2M for explanation of L1 2M for explanation of L2 2M for explanation of L3 1M for diagram
Q.3	What are the major requirements for an I/O module? OR What is the need of DMA? List out various DMA transfer modes.	06	6M for correct explanation. 1M for need of DMA 5M for DMA transfer modes




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Q.1 Using Booth's Algorithm multiply the following : Multiplicand=7, Multiplier=3 7M

	AC	S	S-1	Operation
$M = (7)_{10} = (0111)_2$ $S = (3)_{10} = (0011)_2$ $-M = (1001)_2$	0000	0011	0	AC = AC - M $\frac{0000}{1001}$ 1001
	1001	0011	0	A.S.R
	1100	1001	1	
2)	1100	1001	1	A.S.R
	1110	0100	1	
3)	0101	0100	1	AC = AC + M 1110 0111 0101
	0010	1010	0	A.S.R
4)	0001	0101	0	A.S.R
$(00010101)_{10} = (21)_{10}$				

Q.1 Perform division of following numbers using restoring division algorithm: Dividend = 13, Divisor = 4 7M

	C	A	S	Operation
	0	0000	1101	
	0	0001	101	S.L. $\frac{00001}{11100}$ A = A - M 11101
	1	1101	1010	AC = AC + M $\frac{11101}{00100}$ 00001
	0	0001	1010	
2)	0	0001	1010	S.L. $\frac{00011}{11100}$ 00100 11111 00100 11111 00011
	0	0011	010	AC = A + C
	0	0011	0100	
3)	0	0011	0100	S.L. $\frac{00110}{11100}$ AC = A - M 00010
	0	0110	100	
	0	0010	1001	
4)	0	0010	1001	S.L. $\frac{00101}{11100}$ AC = A - M 00001
	0	0101	001	
	0	0001	0011	
Quotient = (0011) = (3) ₁₀ Remainder = (0001) = (1) ₁₀				




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Q.2 Compare SRAM and DRAM

7M

Answer:

SRAM	DRAM
It stores information as long as the power is supplied.	It stores information as long as the power is supplied or a few milliseconds when the power is switched off.
Transistors are used to store information in SRAM.	Capacitors are used to store data in DRAM.
Capacitors are not used hence no refreshing is required.	To store information for a longer time, the contents of the capacitor need to be refreshed periodically.
SRAM is faster compared to DRAM.	DRAM provides slow access speeds.
It does not have a refreshing unit.	It has a refreshing unit.
These are expensive.	These are cheaper.
SRAMs are low-density devices.	DRAMs are high-density devices.
In this bits are stored in voltage form.	In this bits are stored in the form of electric energy.
These are used in cache memories.	These are used in main memories.
Consumes less power and generates less heat.	Uses more power and generates more heat.
SRAMs has lower latency	DRAM has more latency than SRAM
SRAMs are more resistant to radiation than DRAM	DRAMs are less resistant to radiation than SRAMs
SRAM has higher data transfer rate	DRAM has lower data transfer rate
SRAM is used in high-speed cache memory	DRAM is used in lower-speed main memory
SRAM is used in high performance applications	DRAM is used in general purpose applications



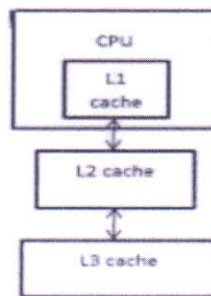
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Q.2 Write short note on L1, L2 and L3 cache memory.

7M

Answer:

1. Cache is a small but fast memory device that the CPU can access at relatively faster speeds and that holds a subset of the data in the main memory. They store information the CPU is most likely to need next. If the data item is present in the cache, it is termed as a cache hit otherwise it is a cache miss. A typical organization is shown in Figure 10.
2. The same reason we have a memory hierarchy prompts us to have multi-level caches as well. A cache miss, on the other hand, means the CPU has to go scampering off to find the data elsewhere. This is where the L2 cache comes into play — while it's slower, it's also much larger. If data can't be found in the L2 cache, the CPU continues down the chain to L3 and so on.



3. L1 caches are designed to be the fastest as they are closest to the CPU and thus it will be accessed typically by the CPU and the access time of L1 cache has a major effect on the clock rate of the CPU. L1 caches are normally much smaller than the other levels of cache but is much bigger than the CPU's registers. L1 cache is normally on chip with processor as shown in the diagram.
4. However recent processors are also known to have multiple levels of cache on the processor chip. Since the processor chip needs to be of a certain size, this highly limits the size of on chip cache. Thus external cache levels are also fairly common. L1 is the smallest in size and gives fastest access.
5. L2 on the other hand is relatively slower but is bigger in size giving higher hit rates. L3 is slower as far as the access time is considered (not as slow as the main memory) and even bigger when the size is considered. This continues for all the cache levels.
6. Some processors use an inclusive cache design (meaning data stored in the L1 cache is also duplicated in the L2 cache) while others have an exclusive cache design (meaning the two caches never share data).
7. The access time of the caches also depends on whether the caches are on chip with the processor or are external to the processor.



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8. If u consider a three level cache memory having L1, L2 and L3, the average access time (t) is given by

$$t = h_1 C_1 + (1 - h_1) h_2 C_2 + (1 - h_1) (1 - h_2) C_3 + (1 - h_1) (1 - h_2) (1 - h_3) M$$

h_1 = Hit rate in L1

h_2 = Hit rate in L2

h_3 = Hit rate in L3

C_1 = Access Time of L1

C_2 = Access Time of L2

C_3 = Access Time of L3

M = Access Time of Main memory

The number of misses in the L2 and L3 cache given be the terms $(1 - h_1) (1 - h_2)$ and $(1 - h_1) (1 - h_2) (1 - h_3)$ should be as low as possible. This is the reason why L2 and L3 are larger to get higher hit rates and lower miss rates, resulting in very few main memory accesses.

Q.3 What are the major requirements for an I/O module?

6M

Answer:

1. Processor communication -- this involves the following tasks: (a). exchange of data between processor and I/O module (b). command decoding - I/O module accepts commands sent from the processor. E.g., the I/O module for a disk drive may accept the following commands from the processor: READ SECTOR, WRITE SECTOR, SEEK track, etc. (c). status reporting – The device must be able to report its status to the processor, e.g., disk drive busy, ready etc. Status reporting may also involve reporting various errors. (d). Address recognition – Each I/O device has a unique address and the I/O module must recognize this address.
2. Device communication – The I/O module must be able to perform device communication such as status reporting.
3. Control & timing – The I/O module must be able to co-ordinate the flow of data between the internal resources (such as processor, memory) and external devices.
4. Data buffering – This is necessary as there is a speed mismatch between speed of data transfer between processor and memory and external devices. Data coming from the main memory are sent to an I/O module in a rapid burst. The data is buffered in the I/O module and then sent to the peripheral device at its rate.
5. Error detection – The I/O module must also be able to detect errors and report them to the processor. These errors may be mechanical errors (such as paper jam in a printer),




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or changes in the bit pattern of transmitted data. A common way of detecting such errors is by using parity bits.

Q.3 What is the need of DMA? List out various DMA transfer modes.

6M

Answer:

Need for DMA :

- In I/O data transfer ,data is transferred by using microprocessor . The microprocessor will read data from I/O device and then will write data to memory .In this case there are two operations for single data transfer.
- If the data is less ,then microprocessor will not waste its time ,transferring data from I/O to memory or back. But suppose data is large ,then the transfer rate from I/O to memory or back will slow down because of microprocessor intervention .
- In such cases to speed up the process of transferring the data we can think of Direct Memory Access (DMA)controller i.e direct transfer between memory and I/O but under supervision . The device which supervises data transfer is called as DMA Controller.

DMA transfer Modes :

1. Rotating Priority mode :

If the RP bit of mode set register is set then the 8257 operates in rotating priority mode . After each DMA cycle ,the priority of each channel changes.

Hence all the channels will get equal opportunity ,if they are enabled and their DMA requests exists. Initially CH- 0 gains highest priority while CH - 3 gains lowest priority .The channel which is just been serviced will get the lowest priority after the DMA cycle and other channels move to the next higher priority levels.

2. Fixed Priority Mode :

If the RP bit of mode set register is reset then 8257 operates in fixed priority mode. In fixed priority mode ,channel 0 has highest priority and channel 3 has lowest priority. The priority is resolved during state 4 of each DMA cycle.

3. TC Stop Mode :

If the TC stop bit in mode set register is set ,then 8257 disables the channel whose TC is reached. Thus it stops further DMA operations on that channel.


If the TC stop bit is reset ,then the TC have no effect on channel,corresponding channel must be disabled by the microcomputer system through software.

The TC stop bit option should be common for all channels

4. Extended Write Mode :

If the EW bit of mode set register is set ,then 8257 generates advacned or extended write control signals i.e the write signal will go low one clock cycle earlier .




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This mode is used to interface slower devices to the system. If the memory device or I/o device connected is slower ,then for synchronization READY signal is used. In this method the write signal is delayed by adding wait states into a DMA cycle. This reduces the speed of transfer. But in extended write mode ,the write signal is extended earlier without adding states i.e the set up time of write input signal of an I/o device or memory is increased in extended write mode without reducing the speed of transfer. This signal allows more time to external logic for deciding if additional wait states are needed.

5. Autoload Mode :

If AL bit of mode set register is set,the 8257 operates in autoload mode. In this mode the data is transferred by channel 2 only i.e other channels are not used for data transfer.

It can be used for repeat block or block chaining operations.




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ROLL NO.	NAME OF STUDENT	CLASS TEST I & II MARKSHEET ----- SE 2022-23 (EVEN SEM)														
		Computer Organization and Architecture			Computer Network and Network Design			Engineering Mathematics-IV			Operating System			Automata Theory		
		CLASS TEST I	CLASS TEST II	AVERAGE	CLASS TEST I	CLASS TEST II	AVERAGE	CLASS TEST I	CLASS TEST II	AVERAGE	CLASS TEST I	CLASS TEST II	AVERAGE	CLASS TEST I	CLASS TEST II	AVERAGE
		06.03.2023	17.04.23	Out of 20	06.03.23	18.04.23	Out of 20	09.03.23	18.04.23	Out of 20	09.03.23	19.04.23	Out of 20	16.03.23	19.04.23	Out of 20
1	BADHE OM ISHWAR	1	14	8	9	6	8	3	5	4	3	12	8	6	9	8
2	BHANDARE SOHAN SUNAND	0	11	6	7	5	6	0	6	3	0	4	2	6	8	7
3	BIRADAR SAKSHI	19	18	19	20	14	17	19	18	19	13	18	16	20	13	17
4	BONAGIRI DEEPAK KRISHNA	10	12	11	12	14	13	9	15	12	10	14	12	20	17	19
5	CHAUDHARY AARADHYA	13	18	16	15	18	17	12	8	10	17	17	17	14	13	14
6	CHAUHAN ANKITA VIRENDRA	13	17	15	15	9	12	8	13	11	16	10	13	19	13	16
7	CHAUHAN SAURABH	14	18	16	12	9	11	9	15	12	5	15	17	16	18	16
8	DEDHIA PARSHWA	18	18	18	18	9	14	14	15	12	18	11	15	10	17	14
9	DESHMUKH ISHWARI	16	18	17	17	13	15	9	15	12	14	15	15	18	13	16
10	GAWAS HARSH VIJAY	14	18	16	15	14	15	11	13	17	15	8	9	9	18	13
11	GHORPADE SANDESH	10	18	14	15	15	15	13	17	15	8	9	7	8	10	13
12	GUPTA ANMOL H.	1	18	10	8	12	10	11	14	13	8	7	8	10	13	12
13	JADHAV MANAV ARVIND	5	11	8	9	11	10	8	11	10	6	10	8	13	8	11
14	JAGTAP KAJAL SUDHAKAR	13	18	16	13	19	16	13	9	11	16	12	14	15	20	18
15	JATAK VRUSHALI DATTARAM	13	18	16	17	13	15	14	9	12	12	13	13	16	13	15
16	JOSHI TUSHAR RAMLAL	17	17	17	17	13	15	9	13	11	14	17	16	20	12	16
17	KAKADE SAGAR RAMESH	9	9	9	15	8	12	15	2	9	8	10	9	6	8	7
18	KALHA GURMEET SINGH	5	11	8	9	9	9	6	12	9	6	9	8	9	8	9
19	KESKAR ANIRUDDHA AMAR	8	9	13	17	10	14	15	12	14	14	15	15	13	8	11
20	KHAN MOHD ZAID MOHD	17	9	13	17	19	18	8	9	9	16	19	18	20	15	18
21	KONDA ADITYA SRINIVAS	10	18	14	17	12	14	13	10	12	8	13	11	9	10	10
22	KUNAL VILAS MORE	8	15	12	16	12	14	13	10	12	8	13	11	9	10	10
23	LAHANE TUSHAR BAJIRAO	5	18	12	18	15	17	13	8	11	12	9	11	11	9	10
24	MALL RASHI	18	17	18	14	15	15	13	18	16	16	19	18	13	9	11
25	MISHRA ARPITKUMAR	9	17	13	16	11	14	8	12	10	13	11	12	14	5	10
26	MISHRA RAJ HARIVANSH	12	11	12	20	11	16	8	9	9	10	10	10	13	8	11
27	MISHRA SHREYANSH	9	19	14	16	8	12	16	13	15	15	13	14	15	9	12
28	MITHARE RUTIKA VINOD	19	17	18	17	11	14	11	16	14	13	17	15	13	10	12
29	MOHITE SUDHANSHU	12	12	12	18	8	13	12	4	8	15	17	16	13	10	12
30	MORE VEDANT GAJANAN	20	18	19	19	19	19	15	14	15	17	17	17	20	14	17
31	NACHARE AKASH AVINASH	17	17	17	17	15	16	8	17	13	12	14	13	19	16	18
32	NAIK DURVESH RAVINDRA	20	19	20	20	20	20	13	19	16	20	18	16	16	13	11
33	NAIR AKSHITA VINU	13	12	13	13	10	12	8	11	10	16	16	16	20	9	15
34	NAR ADITYA VINOD	14	12	13	6	19	13	9	13	11	13	18	19	20	12	16
35	NARHE DATTATRAY	11	14	13	18	13	16	9	13	11	14	15	15	16	9	13
36	PAL BISHAL NIRMAL	18	17	18	18	14	16	15	10	13	14	15	15	16	9	13
37	PANCHAL VEDANT YOGESH	1	2	2	5	4	5	2	13	8	5	3	4	0	8	4
38	PANDEY HARSH LEKHRAJ	19	12	16	19	15	17	12	12	12	19	18	19	20	10	15
39	PARAB NIDHI SHRIDHAR	17	18	18	20	17	19	8	20	14	18	18	18	20	18	19
40	PINGALE RUTIKA RAJENDRA	18	19	19	20	13	17	15	16	16	14	19	17	20	18	19
41	PIRDANKAR MANISH	13	19	16	19	18	19	11	18	15	16	18	17	20	18	19
42	PRAJAPATI SANGAM MANOJ	13	18	16	18	11	15	5	19	12	9	18	14	2	13	8
43	ROY TANNU VIJAY	11	10	11	11	12	12	4	20	12	13	11	12	9	13	11
44	SABALE PRATIKSHA	8	12	10	11	12	12	6	20	13	10	11	11	10	19	15
45	SAHU RISHIKESH BASANT	20	19	20	19	11	12	15	19	20	15	16	16	20	20	20
46	SAKPAL PRERANA	20	18	19	20	18	19	18	20	19	17	19	18	20	19	20
47	SARGARAJIT RAVSAHEB	18	19	19	18	12	15	11	20	16	9	18	14	13	9	11

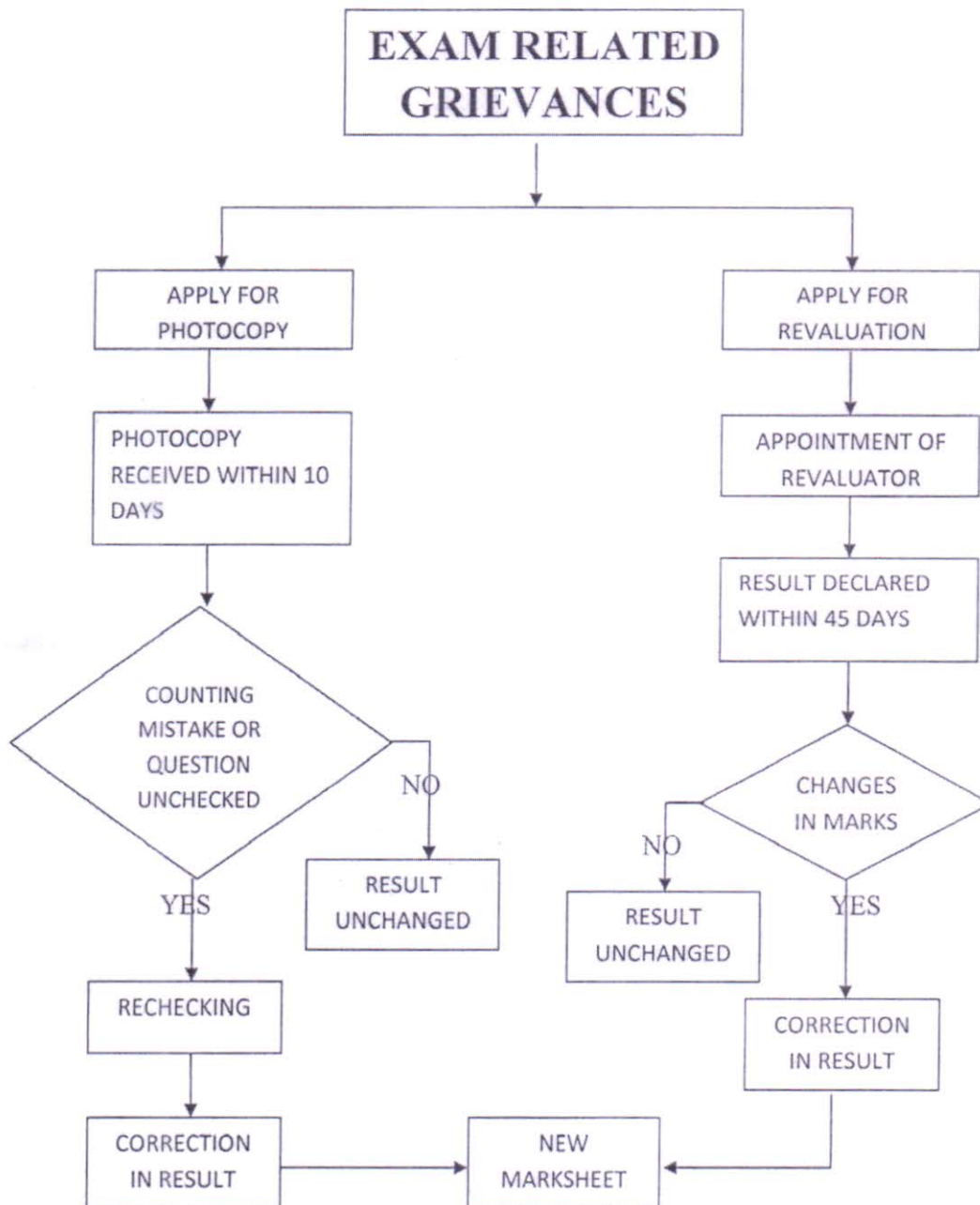


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48	SAWANT SARVESH VITHAL	16	19	18	20	16	18	15	20	18	12	13	13	20	10	15
49	SHAIKH SHAZMEEN FIROZ	20	18	19	20	20	20	14	20	17	18	19	19	20	15	18
50	SHE'TAGE PRATIK JOTIBA	7	17	12	11	4	8	6	20	13	8	8	8	12	13	13
51	SHEWALKAR SHASHANK	4	11	8	10	5	8	6	18	12	6	9	8	12	9	11
52	SHIRKE VEDANT SACHIN	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	#VALUE!	AB	AB	#VALUE!
53	RANE SHRAVANI PRASHANT	9	16	13	10	16	13	13	16	15	8	17	13	13	9	11
54	SHRIVASTAVA RUSHIL	10	13	12	9	8	9	12	12	12	8	8	8	12	9	11
55	SINGH ABHISHEK	13	18	16	14	12	13	2	17	10	12	12	12	13	13	13
56	SURVE CHINMAYEE	14	19	17	17	10	14	8	19	14	17	17	17	19	13	16
57	SURVE ROHAN PRAKASH	14	18	16	18	14	16	10	19	15	14	12	13	19	9	14
58	SURYAWANSHI KAUSTUBH	AB	11	6	0	12	6	0	19	10	0	6	3	0	4	2
59	TAKALKAR GAURAV	8	18	13	15	14	15	9	19	14	13	11	12	18	17	18
60	THAKUR MAYANK	8	11	10	11	15	13	13	19	16	16	9	13	20	13	17
61	TIWARI PRIVA RAJU	17	18	18	20	17	19	10	19	15	20	17	19	20	13	17
62	VAITY ARYAN RAKESH	18	19	19	16	18	17	15	19	17	18	18	18	20	13	17
63	VICHARE SHUBHAM	20	19	20	20	18	19	15	19	17	16	15	16	20	17	19
64	VICHARE SUVASH SUJIT	20	20	20	20	20	20	15	19	17	20	15	18	20	16	18
65	ZAPDEKAR VEDA SACHIN	20	13	17	19	20	20	9	19	14	19	19	19	20	15	18
66	Mishra Manu Kumar	15	14	15	17	17	17	14	12	13	18	12	15	20	15	18
67	Bhor Viraj Vinitas	17	17	17	16	17	17	13	13	13	16	18	17	11	15	13
68	Shaikh Mohd. Amin Mohd.	13	20	17	20	18	19	17	19	18	16	15	16	9	20	15
69	Muknak Sahil Suresh	17	19	18	20	14	17	15	19	17	17	19	18	15	20	18
70	Shaikh Maksud Phoolababu	17	11	14	20	20	20	20	19	20	12	19	16	17	12	15
71	Ansari Mohammed Ammar Khalil	17	9	13	11	15	13	12	19	16	11	18	15	14	13	14
Total No. of Students	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71
Total No. of Passed Students	60	69	67	66	65	67	59	66	68	61	66	67	63	68	66	66
Total no. of Failed Students	8	1	3	4	4	5	10	3	2	8	4	3	6	2	6	6
Total no. of Absent Students	2	1	1	1	1	1	1	1	1	1	1	0	1	1	0	0
NAME OF THE ASSESSOR	Sheetal Jadhav				Seema B.			S. Bhuma Devi			Devika Roy			Amarje Adgaonkar		
SIGN OF THE ASSESSOR																



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Receipt No : 2.5.3

Date :

EXCELSSIOR EDUCATION SOCIETY'S
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REVALUATION APPLICATION

At the _____ Branch in Sem _____ of exam held in _____ with Seat No _____

Name and Address of Candidate (in BLOCK LETTER)

Shri/Smt/Kum _____

Mobile No: _____

NAME OF THE SUBJECTS FOR WHICH REVALUATION IS REQUIRED:

<u>Sr No</u>	<u>Name of the Subjects</u>	<u>Question Paper Code No</u>	<u>Secured Marks in the Paper</u>
1			
2			
3			
4			
5			
6			

Place:

Date:

Signature of the Candidate

UNDERTAKING

I _____ studying in this college appeared at the _____

Examination with the Seat No _____ willingly giving the following undertaking for obtaining the revaluation of answer-books.

The Revaluation of the assessed answerbooks shall be deemed to be an additional facility to the candidate, the delay supplying a revaluation for whatsoever shall not confer any right upon hi/her

Signature of Candidate

Requirements

1. Xerox copy of the Marksheet is required.
2. Xerox copy of relevant question paper/s and Xerox copy of Receipt of fees paid is compulsory to be attached.
3. No Eligibility of Marks for filling the Photocopy and Revaluation forms.



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2153
Form No :

Receipt No:

Receipt Date:

EXCELSSIOR EDUCATION SOCIETY'S
K.C. COLLEGE OF ENGINEERING, THANE (EAST)

PHOTOCOPY APPLICATION

At the _____ Branch in Sem _____ of exam held in _____ with Seat No _____

Name and Address of Candidate (in BLOCK LETTER)

Shri/Smt/Kum _____

Mobile No: _____

PARTICULARS OF SUBJECTS APPLIED FOR PHOTOCOPY OF ASSESSED ANSWERBOOKS

<u>Sr No</u>	<u>Name of the Subjects</u>	<u>Question Paper Code No</u>	<u>Date & Time of Examination</u>	<u>Secured Marks in the Paper</u>
1				
2				
3				
4				
5				
6				

The Supply of Photocopy of the assessed answer-books shall be deemed to be an additional facility to the candidate, the delay in supplying a photocopy of the assessed answer-books for any reason whatsoever shall not confer any right upon him/her as per the relevant Ordinances and Rules made by the University in that behalf.

Place:

Date:

Signature of the Candidate

Requirements

1. Xerox copy of the Question Paper/s in which Photocopy is required.
2. Xerox of Receipt of fees paid is compulsory to be attached.
3. No Eligibility of Marks for filling the Photocopy and Revaluation forms.



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Subject - NL (2022-23)

Class-SE

Term work Calculation

Roll	Name of the student	Experiment	Assignment	Attendance	TOTAL
1	BADHE OM ISHWAR	10	4	3	17
2	BHANDARE SOHAN SUNAND	10	4	3	17
3	BIRADAR SAKSHI PRABHAKAR	13	5	4	22
4	BONAGIRI DEEPAK KRISHNA	12	4	4	20
5	CHAUDHARY AARADHYA	13	5	4	22
6	CHAUHAN ANKITA VIRENDRA	11	5	3	19
7	CHAUHAN SAURABH	11	4	3	18
8	DEDHIA PARSHWA	12	4	4	20
9	DESHMUKH ISHWARI	11	4	4	19
10	GAWAS HARSH VIJAY	11	5	4	20
11	GHORPADE SANDESH	11	4	4	19
12	GUPTA ANMOL H.	12	4	4	20
13	JADHAV MANAV ARVIND	12	4	4	20
14	JAGTAP KAJAL SUDHAKAR	11	4	4	19
15	JATAK VRUSHALI DATTARAM	11	4	4	19
16	JOSHI TUSHAR RAMLAL	11	4	3	18
17	KAKADE SAGAR RAMESH	11	4	3	18
18	KALHA GURMEET SINGH TEJINDER	11	4	4	19
19	KESKAR ANIRUDDHA AMAR	11	4	4	19
20	KHAN MOHD ZAID MOHD MAJID	12	4	4	20
21	KONDA ADITYA SRINIVAS	13	5	4	22
22	KUNAL VILAS MORE	11	4	4	19
23	LAHANE TUSHAR BAJIRAO	11	4	4	19
24	MALL RASHI	11	4	4	19
25	MISHRA ARPITKUMAR	10	4	3	17
26	MISHRA RAJ HARIVANSH	12	4	4	20
27	MISHRA SHREYAS	12	4	4	20
28	MITHARE RUTIKA VINOD	11	5	4	20
29	MOHITE SUDHANSHU DEVDAS	11	4	4	19
30	MORE VEDANT GAJANAN	11	4	4	19
31	NACHARE AKASH AVINASH	12	5	4	21
32	NAIK DURVESH RAVINDRA	12	5	5	22
33	NAIR AKSHITA VINU	12	4	4	20
34	NAR ADITYA VINOD	11	4	4	19
35	NARHE DATTATRAY NAVNATH	12	4	4	20
36	PAL BISHAL NIRMAL	13	4	4	21
37	PANCHAL VEDANT YOGESH SMITA	10	4	4	18
38	PANDEY HARSH LEKHRAJ	11	4	4	19
39	PARAB NIDHI SHRIDHAR	12	4	4	20
40	PINGALE RUTIKA RAJENDRA	12	4	4	20
41	PIRDANKAR MANISH SANTOSH	13	5	4	22
42	PRAJAPATI SANGAM MANOJ	11	5	4	20
43	ROY TANNU VIJAY	10	3	3	16
44	SABALE PRATIKSHA SHAILENDRA	11	4	4	19
45	SAHU RISHIKESH BASANT	9	4	3	16
46	SAKPAL PRERANA	12	5	4	21
47	SARGAR AJIT RAVSAHEB	11	4	4	19
48	SAWANT SARVESH VITHAL	11	5	4	20
49	SHAIKH SHAZMEEN FIROZ	13	4	4	22



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Research

50	SHETAGE PRATIK JOTIBA	11	4	4	19
51	SHEWALKAR SHASHANK MAHESH	11	4	4	19
52	SHIRKE VEDANT SACHIN				
53	RANE SHRAVANI PRASHANT	11	4	4	19
54	SHRIVASTAVA RUSHIL	11	4	4	19
55	SINGH ABHISHEK MANVENDRA	11	4	4	19
56	SURVE CHINMAYEE MANGESH	12	4	5	21
57	SURVE ROHAN PRAKASH	12	4	4	20
58	SURYAWANSHI KAUSTUBH	9	3	3	15
59	TAKALKAR GAURAV APPASAHEB	12	4	5	21
60	THAKUR MAYANK	11	5	5	21
61	TIWARI PRIYA RAJU	13	4	5	22
62	VAITY ARYAN RAKESH GEETA	12	4	5	21
63	VICHARE SHUBHAM RAVINDRA	12	5	4	21
64	VICHARE SUYASH SUJIT	12	5	5	22
65	ZAPDEKAR VEDA SACHIN	12	5	5	22
66	Mishra Manu Kumar	13	4	4	21
67	Bhor Vijay Vuilas	12	5	5	22
68	Shaikh Mohd. Amin Mohd. Ibrahim	12	5	4	21
69	Muknak Sahil Suresh	11	5	4	20
70	Shaikh Maksud Phoolbabu	13	5	5	23
71	Ansari Mohammed Ammar Khalil	12	5	4	21



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INSTITUTE VISION

To be an organization with potential for excellence in engineering and management for the advancement of society and human kind.

INSTITUTE MISSION

- To excel in academics, practical engineering, management and to commence research endeavors.
- To prepare students for future opportunities.
- To nurture students with social and ethical responsibilities.


VISION OF DEPARTMENT

To shape Electronics & Telecommunication engineers to be professionally and socially competent.

MISSION OF DEPARTMENT

- To aim for excellence in teaching learning process and analytical thinking.
- To conduct skill development programs in order to become industry ready.
- To impart students with social and moral education.




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Excelssior's Education Society

K. C. COLLEGE OF ENGINEERING

AND MANAGEMENT STUDIES AND RESEARCH

Certificate
THANE (EAST).

This is to certify that Mr. / Ms. _____
of Semester _____ Branch _____ Roll No. _____
has performed and successfully completed all the practicals in the subject
of _____ for the
academic year 20__ to 20__ as prescribed by University of Mumbai.

DATE :- _____.

Practical Incharge

Internal Examiner

Head of Department

External Examiner



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Subject Code	Subject Name	Teaching Scheme (Hrs.)			Credits Assigned			
		Theory	Practical	Tutorial	Theory	Practical	Tutorial	Total
ECL502	Discrete-Time Signal Processing Laboratory	--	-2	--	--	01	--	01

Subject Code	Subject Name	Examination Scheme								
		Theory Marks					Term Work	Practical & Oral	Oral	Total
		Internal assessment			End Sem. Exam					
		Test 1	Test2	Avg. Of Test 1 and Test 2						
ECL502	Discrete-Time Signal Processing Laboratory	--	--	--	--	25	25	--	50	

Course Objectives:

1. To carryout basic discrete time signal processing operations.
2. To implement and design FIR filters and IIR filters.
3. To implement applications related to the field of biomedical signal processing and audio signal processing.

Course Outcome:

Learners will be able to ...

1. Perform basic discrete time signal processing operations such as Linear Convolution, Circular Convolution, Auto Correlation, Cross Correlation, etc. and interpret the results.
2. Demonstrate their ability towards interpreting and performing frequency analysis of different discrete time sequences and systems.
3. Design and implement the FIR and IIR Filters for given specifications.
4. Implement and analyse applications related to the field of biomedical signal processing and audio signal processing.





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Program Outcomes

Engineering Graduates will be able to:

1. **Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2. **Problem analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated CONCLUSIONS using first principles of mathematics, natural sciences, and engineering sciences.
3. **Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
4. **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid CONCLUSIONS.
5. **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
6. **The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
7. **Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
8. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9. **Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10. **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
11. **Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.




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12. **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.




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MithBunder Road, Kopri, Thane (E)


Department of Electronics and Telecommunication

Subject: Discrete-Time Signal Processing Laboratory

Class: T.E/Sem V

ECC404	Course outcome
	At the end of the course student will be able to
ECL502.1	Perform basic discrete time signal processing operations such as Linear Convolution, Circular Convolution, Auto Correlation, Cross Correlation, etc. and interpret the results.
ECL502.2	Demonstrate their ability towards interpreting and performing frequency analysis of different discrete time sequences and systems.
ECL502.3	Design and implement the FIR and IIR Filters for given specifications.
ECL502.4	Implement and analyse applications related to the field of biomedical signal processing and audio signal processing.




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RUBRICS OF PRACTICAL

Rubrics Description	Maximum Marks Weight	Excellent 15 – 12	Good 12-9	Fair 9-6	Poor 6-0
Implementation (R1)	5	Successful completion with accurate OUTPUT (5-4)	One error in the OUTPUT (4-3)	Two errors in the OUTPUT (3-2)	More than two errors in OUTPUT (2-0)
Understanding (R2)	5	Presents a logical explanation for findings and addresses most of the questions. (5-4)	Presents a logical explanation for findings and addresses some of the questions. (4-3)	Presents an illogical explanation for findings and addresses few questions. (3-2)	Presents an illogical explanation for findings and does not address any of the questions suggested in the template. (2-0)
Punctuality (R3)	5	Submission within a week (5-4)	Submission after a week (4-3)	Submission after two weeks (3-2)	Submission after three weeks or more (2-0)




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TABLE OF CONTENTS

Sr. No	Name of Experiment	Date of performance	Date of submission	Pg No	Grade	Sign
1	Program to compute linear convolution, auto- correlation and cross-correlation.					
2	Program to generate unit impulse, unit step, ramp and exponential sequences.					
3	Program to compute DFT, Circular Convolution using formula and DFT.					
4	Program to compute magnitude and phase response of a given equation.					
5	Program to compute transfer function using impulse invariance method and bilinear transformation method.					
6	Design and implementation of FIR filter to meet given specifications.					
7	Design the following Low Pass analog filters with the given specification. (1) Butter Worth (2) Chebyshev-I (3) Chebyshev-II.					
8	Musical Tone Generation [sa re ga ma pa dh ni sa] with each Tone has time duration 0.5 sec.					
9	Content Beyond Syllabus: Convert colour image to gray-scale image.					
10	Implementation and analyse the application of DSP.					
11	Assignment No. 01					
12	Assignment No. 02					
13	Assignment No. 03					




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Total Grade / Marks: -

Avg. marks of Experiments (A)		Avg. marks of Assignments (B)		Total Marks (A+B)
Obtained	Out of	Obtained	Out of	




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EXPERIMENT NO. _____

AIM: - _____

Lab Outcome: -

Date of Performance: - _____

Date of Submission: - _____

Implementation n (05)	Understanding g (05)	Punctuality & Discipline (05)	Total Marks (15)

Practical In charge




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EXPERIMENT NO: 01

AIM: Program to compute linear convolution, auto- correlation and cross-correlation.

SOFTWARE REQUIREMENT: Scilab 6.1.1

THEORY:**1. Linear Convolution**

In linear systems, convolution is used to describe the relationship between three signals of interest: the input signal, the impulse response, and the output signal.

If the input and impulse response of a system are $x[n]$ and $h[n]$ respectively, the convolution is given by the expression,

$$x[n] * h[n] = \sum_k x[k] h[n-k]$$

Where k ranges between $-\infty$ and ∞

If,

$x(n)$ is a M - point sequence

$h(n)$ is a N – point sequence

then, $y(n)$ is a $(M+N-1)$ – point sequence.

In this equation, $x(k)$, $h(n-k)$ and $y(n)$ represent the input to and output from the system at time n . Here we could see that one of the inputs is shifted in time by a value every time it is multiplied with the other input signal. Linear Convolution is quite often used as a method of implementing filters of various types.

- Correlation is the measure of the degree to which two signals are similar.
- Correlation with two different signals is called as cross correlation.
- While correlation of a signal with itself is called auto correlation.

2. Auto-Correlation

Auto correlation is the measure of similarity between the sequence $x(n)$ and its shifted version.

3. Cross-Correlation

Cross- correlation is the measure of similarity between the sequence $x(n)$ and its shifted version.

PROGRAM:


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RESULT:

CONCLUSION:




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EXPERIMENT NO. _____

AIM: - _____

Lab Outcome: -


Date of Performance: - _____

Date of Submission: - _____

Implementation (05)	Understanding (05)	Punctuality & Discipline (05)	Total Marks (15)

Practical In charge




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EXPERIMENT NO: 02

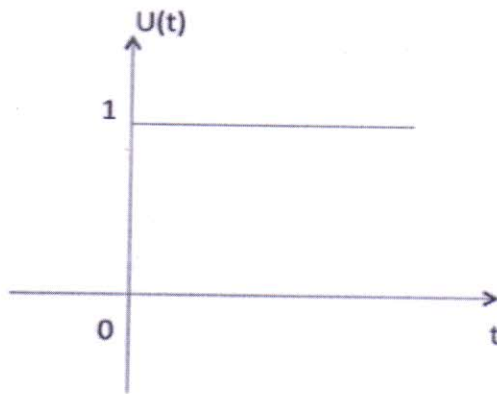
AIM: Program to generate unit impulse, unit step, ramp and exponential sequences.

SOFTWARE REQUIREMENT: Scilab 6.1.1

THEORY:

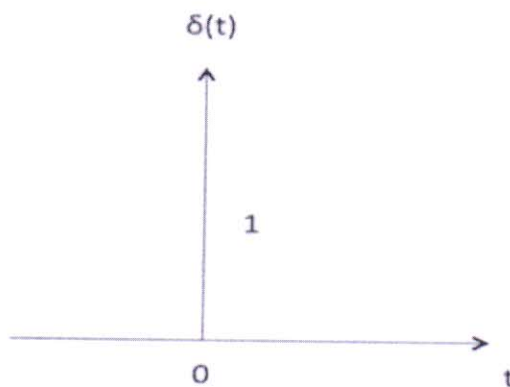
1. Unit step function is denoted by $u(t)$.

$$u(t) = \begin{cases} 1 & t \geq 0 \\ 0 & t < 0 \end{cases}$$



2. Impulse function is denoted by $\delta(t)$.

$$\delta(t) = \begin{cases} 1 & t = 0 \\ 0 & t \neq 0 \end{cases}$$

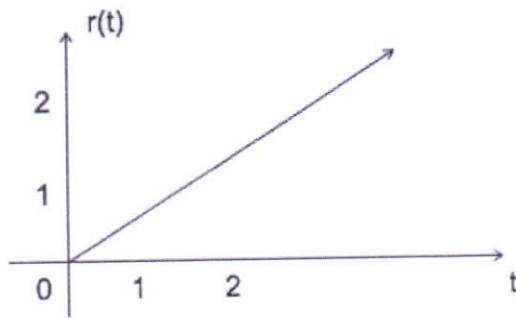


3. Ramp signal is denoted by $r(t)$.

$$r(t) = \begin{cases} t & t \geq 0 \\ 0 & t < 0 \end{cases}$$

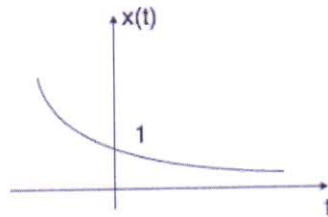


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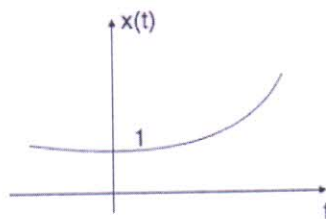


4. Exponential signal is in the form of $x(t) = e^{at}$. The shape of exponential can be defined by α .

Case ii: if $\alpha < 0$ i.e. -ve then $x(t) = e^{-at}$. The shape is called decaying exponential.



Case iii: if $\alpha > 0$ i.e. +ve then $x(t) = e^{at}$. The shape is called raising exponential.




PROGRAM:

RESULT:

CONCLUSION:




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EXPERIMENT NO. _____

AIM: - _____

Lab Outcome: -

Date of Performance: - _____

Date of Submission: - _____

Implementation (05)	Understanding (05)	Punctuality & Discipline (05)	Total Marks (15)

Practical In charge




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EXPERIMENT NO: 03

AIM: Program to compute DFT, Circular Convolution using formula and DFT.

SOFTWARE REQUIREMENT: Scilab 6.1.1

THEORY:


In mathematics, the discrete Fourier transform (DFT) converts a finite list of equally spaced samples of a function into the list of coefficients of a finite combination of complex sinusoids, ordered by their frequencies, that has those same sample values. It can be said to convert the sampled function from its original domain (often time or position along a line) to the frequency domain.

$$\begin{aligned}
 X_k &= \sum_{n=0}^{N-1} x_n \cdot e^{-\frac{i2\pi}{N} kn} \\
 &= \sum_{n=0}^{N-1} x_n \cdot \left[\cos\left(\frac{2\pi}{N} kn\right) - i \cdot \sin\left(\frac{2\pi}{N} kn\right) \right]
 \end{aligned}$$

The input samples are complex numbers (in practice, usually real numbers), and the output coefficients are complex as well. The frequencies of the output sinusoids are integer multiples of a fundamental frequency, whose corresponding period is the length of the sampling interval. The combination of sinusoids obtained through the DFT is therefore periodic with that same period. The DFT differs from the discrete-time Fourier transform (DTFT) in that its input and output sequences are both finite; it is therefore said to be the Fourier analysis of finite-domain (or periodic) discrete-time functions.

The DFT is the most important discrete transform, used to perform Fourier analysis in many practical applications. In digital signal processing, the function is any quantity or signal that varies over time, such as the pressure of a sound wave, a radio signal, or daily temperature readings, sampled over a finite time interval (often defined by a window function). In image processing, the samples can be the values of pixels along a row or column of a raster image. The DFT is also used to efficiently solve partial differential equations, and to perform other operations such as convolutions or multiplying large integers.

PROGRAM:**RESULT:**


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CONCLUSION:

EXPERIMENT NO. _____

AIM: - _____

Lab Outcome: -


Date of Performance: - _____

Date of Submission: - _____

Implementation n (05)	Understanding g (05)	Punctuality & Discipline (05)	Total Marks (15)

Practical In charge




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EXPERIMENT NO: 04

AIM: Program to compute magnitude and phase response of a given equation.

SOFTWARE REQUIREMENT: Scilab 6.1.1

THEORY:

The frequency response $H(j\omega)$ is a function that relates the output response to a sinusoidal input at frequency ω . They are therefore, not surprisingly, related. In fact the frequency response of a system is simply its transfer function as evaluated by substituting $s = j\omega$. The frequency response $H(j\omega)$ is in general is complex, with real and imaginary parts. This is often more useful and intuitive when expressed in polar coordinate. That is, we can separate $H(j\omega)$ into its magnitude (called amplitude response) and its phase component (called phase response).

PROGRAM:

RESULT:

CONCLUSION:

EXPERIMENT NO. _____




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AIM: - _____

Lab Outcome: -


Date of Performance: - _____

Date of Submission: - _____

Implementation (05)	Understanding (05)	Punctuality & Discipline (05)	Total Marks (15)

Practical In charge




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EXPERIMENT NO: 05

AIM: Program to compute transfer function using impulse invariance method and bilinear transformation method.

SOFTWARE REQUIREMENT: Scilab 6.1.1

THEORY:

1. **Impulse Invariance Method:** Impulse invariance is a technique for designing discrete-time infinite-impulse-response (IIR) filters from continuous-time filters in which the impulse response of the continuous-time system is sampled to produce the impulse response of the discrete-time system. The frequency response of the discrete-time system will be a sum of shifted copies of the frequency response of the continuous-time system; if the continuous-time system is approximately band-limited to a frequency less than the Nyquist frequency of the sampling, then the frequency response of the discrete-time system will be approximately equal to it for frequencies below the Nyquist frequency.
2. **Bilinear Transformation Method:** The bilinear transform is a special case of a conformal mapping often used to convert a transfer function $H_a(s)$ of a linear, time-invariant (LTI) filter in the continuous-time domain (often called an analog filter) to a transfer function $H_d(z)$ of a linear, shift-invariant filter in the discrete-time domain (often called a digital filter although there are analog filters constructed with switched capacitors that are discrete-time filters). It maps positions on the $j\Omega$ axis, $\text{Re}[s]=0$ in the s -plane to the unit circle, $|z|=1$, in the z -plane. Other bilinear transforms can be used to warp the frequency response of any discrete-time linear system (for example to approximate the non-linear frequency resolution of the human auditory system) and are implementable in the discrete domain by replacing a system's unit delays z^{-1} with first order all-pass filters.

PROGRAM:**RESULT:****CONCLUSION:**


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EXPERIMENT NO. _____

AIM: - _____

Lab Outcome: -

Date of Performance: - _____

Date of Submission: - _____

Implementation (05)	Understanding (05)	Punctuality & Discipline (05)	Total Marks (15)

Practical In charge




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EXPERIMENT NO: 06

AIM: Design and implementation of FIR filter to meet given specifications.

SOFTWARE REQUIREMENT: Scilab 6.1.1

THEORY:

An FIR filter is designed by finding the coefficients and filter order that meet certain specifications, which can be in the time domain (e.g. a matched filter) and/or the frequency domain (most common). Matched filters perform a cross-correlation between the input signal and a known pulse shape. The FIR convolution is a cross-correlation between the input signal and a time-reversed copy of the impulse response. Therefore, the matched filter's impulse response is "designed" by sampling the known pulse-shape and using those samples in reverse order as the coefficients of the filter.


When a particular frequency response is desired, several different design methods are common: 1) Window design method 2) Frequency sampling method.

The window design method, one first designs an ideal IIR filter and then truncates the infinite impulse response by multiplying it with a finite length window function. The result is a finite impulse response filter whose frequency response is modified from that of the IIR filter. Multiplying the infinite impulse by the window function in the time domain results in the frequency response of the IIR being convolved with the Fourier transform (or DTFT) of the window function. If the window's main lobe is narrow, the composite frequency response remains close to that of the ideal IIR filter.

The ideal response is often rectangular, and the corresponding IIR is a sinc function. The result of the frequency domain convolution is that the edges of the rectangle are tapered, and ripples appear in the passband and stopband. Working backward, one can specify the slope (or width) of the tapered region (*transition band*) and the height of the ripples, and thereby derive the frequency-domain parameters of an appropriate window function. Continuing backward to an impulse response can be done by iterating a filter design program to find the minimum filter order. Another method is to restrict the solution set to the parametric family of Kaiser windows, which provides closed form relationships between the time-domain and frequency domain parameters. In general, that method will not achieve the minimum possible filter order, but it is particularly convenient for automated applications that require dynamic, on-the-fly, filter design.

The window design method is also advantageous for creating efficient half-band filters, because the corresponding sinc function is zero at every other sample point (except the center one). The product with the window function does not alter the zeros, so almost half of the coefficients of the final impulse response are zero. An appropriate implementation of the FIR calculations can exploit that property to double the filter's efficiency.




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PROGRAM:

RESULT:

CONCLUSION:




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EXPERIMENT NO. _____

AIM: - _____

Lab Outcome: -

Date of Performance: - _____

Date of Submission: - _____

Implementation (05)	Understanding (05)	Punctuality & Discipline (05)	Total Marks (15)




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EXPERIMENT NO: 07

AIM: Design the following Low Pass analog filters with the given specification. (1) Butter Worth (2) Chebyshev-I (3) Chebyshev-II.

SOFTWARE REQUIREMENT: Scilab 6.1.1

THEORY:

- 1. Butterworth Filter:** Butterworth had a reputation for solving "impossible" mathematical problems. At the time, filter design required a considerable amount of designer experience due to limitations of the theory then in use. Such an ideal filter cannot be achieved, but Butterworth showed that successively closer approximations were obtained with increasing numbers of filter elements of the right values. At the time, filters generated substantial ripple in the passband, and the choice of component values was highly interactive. Butterworth showed that a low-pass filter could be designed whose cutoff frequency was normalized to 1 radian per second.
- 2. Chebyshev Filter:** Chebyshev filters are analog or digital filters having a steeper roll-off than Butterworth filters, and have passband ripple (type I) or stopband ripple (type II). Chebyshev filters have the property that they minimize the error between the idealized and the actual filter characteristic over the range of the but with ripples in the passband. This type of filter is named after Pafnuty Chebyshev because its mathematical characteristics are derived from Chebyshev polynomials. Type I Chebyshev filters are usually referred to as "Chebyshev filters", while type II filters are usually called "inverse Chebyshev filters". Because of the passband ripple inherent in Chebyshev filters, filters with a smoother response in the passband but a more irregular response in the stopband are preferred for certain applications.

PROGRAM:

RESULT:

CONCLUSION:




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EXPERIMENT NO. _____

AIM: - _____

Lab Outcome: -


Date of Performance: - _____

Date of Submission: - _____

Implementation n (05)	Understanding g (05)	Punctuality & Discipline (05)	Total Marks (15)

Practical In charge




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EXPERIMENT NO: 08

AIM: Musical Tone Generation [sa re ga ma pa dh ni sa] with each Tone has time duration 0.5 sec.

SOFTWARE REQUIREMENT: Scilab 6.1.1

THEORY:

In all of the instruments under consideration, there is a linear part, the resonator, which interacts with a nonlinear element, called the exciter. The resonator models the part where vibrations propagate, the exciter is the part used to model a generalized musical-tone generator. The dashed box points out the nonlinear predictor that will be used for sound compression.

PROGRAM:

RESULT:

CONCLUSION:




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EXPERIMENT NO. _____

AIM: - _____


_____Lab Outcome: -

Date of Performance: - _____

Date of Submission: - _____

Implementation n (05)	Understanding g (05)	Punctuality & Discipline (05)	Total Marks (15)

 Practical In charge



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EXPERIMENT NO: 09

AIM: Content Beyond Syllabus: Convert colour image to gray-scale image.

SOFTWARE REQUIREMENT: Scilab 6.1.1

THEORY:


1. **Gray-scale images:** Gray-scale images are monochrome images, Means they have only one color. Gray-scale images do not contain any information about color. Each pixel determines available different grey levels. A normal gray-scale image contains 8 bits/pixel data, which has 256 different grey levels. In medical images and astronomy, 12 or 16 bits/pixel images are used.
2. **Colour Images:** Colour images are three band monochrome images in which, each band contains a different color and the actual information is stored in the digital image. The color images contain gray level information in each spectral band. The images are represented as red, green and blue (RGB images). And each color image has 24 bits/pixel means 8 bits for each of the three color band (RGB).

PROGRAM:

RESULT:

CONCLUSION:




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EXPERIMENT NO. _____

AIM: - _____

Lab Outcome: -

Date of Performance: - _____

Date of Submission: - _____

Implementation n (05)	Understanding g (05)	Punctuality & Discipline (05)	Total Marks (15)

Practical In charge




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K. C. College of Engineering and Management Studies and Research
(Affiliated to the University of Mumbai)
MithBunder Road, Near Hume Pipe, Kopri, Thane (E)-400603

Department of Information Technology

Rubrics for Assignment/ Tutorial

Rubrics Description	Maximum Marks Weight	Excellent(05)	Good(04-03)	Fair(02)
Understanding	2.5	An in-depth understanding of the relevant concepts, theories & issues related are addressed. Appropriate solution is recommended after analysis of relevant constraints(2.5)	A thorough grasp of the subject matter is demonstrated solution is included with minor procedural or conceptual errors (2.0-1.5)	A basic grasp of the subject matter is demonstrated solution included is inappropriate or less accurate with major error(01-00)
Presentation	1.5	The wordings are precise & unambiguous. Sentence structure is consistently clear & lucid. Paper is clean & appropriately formatted .There are virtually no spelling or grammatical errors(1.5)	The most part is precisely worded & unambiguous. Sentence structure is mostly clear. There are a few minor spelling or grammatical errors (01)	Wordings are imprecise or ambiguous often. Sentence structure is often confusing .There are several spelling and grammatical errors. (0.5-00)
Punctuality	01	Submission is within a week or in timely manner as directed by the teacher(01)	Submission is after week beyond the submission date (01-0.5)	Submission is after 2 week beyond the submission date (0.5-00)




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MithBunder Road, Near Hume Pipe, Kopri, Thane (E)-400603

Department of Information Technology

Rubrics for Experiment

Rubrics Description	Maximum Marks Weight	15-12	12-9	9-6	6-0
Implementation	5	Successful completion with accurate output (5-4)	Output correct but not precise (4-3)	Few errors in the output (3-2)	Incorrect output (2-0)
Understanding	5	Understand experiment and drawn correct conclusion (5-4)	Understand experiment but conclusion less accurate (4-3)	Improper conclusion (3-2)	No conclusion (2-0)
Punctuality and Discipline	5	Submission within a week (5-4)	Submission after a week (4-3)	Submission after two weeks (3-2)	Submission after three weeks or more (2-0)




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K.C. College of Engineering & Management Studies & Research

Mith Bunder Road, Kopri, Thane (E)

Department of Electronics & Telecommunication

Date of display: 19/09/2022

Date of submission: 23/09/2022

Assignment No: 2 (2022-23)


Subject: DTSP

Semester: V

Class: TE (EXTC)

Q No.	Question	Bloom's Taxonomy Level	Course Outcomes
1.	The system function of analog filter is given by $H(s) = \frac{s+0.1}{(s+0.1)^2+9}$. Design IIR filter using impulse invariance method.	Applying	ECC502.3
2.	The system transfer function of analog filter is given by $H(s) = \frac{2}{(s+1)(s+2)}$. Obtain the system transfer function of digital filter using BLT with $T_s = 1$ sec.	Applying	ECC502.3
3.	Design a digital Butterworth filter for following specifications using Bilinear transformations Attenuation in passband = 1.93dB Passband edge frequency = 0.2π Attenuation in stopband = 13.97dB Stopband edge frequency = 0.6π	Creating	ECC502.3
4.	Design a Chebyshev filter with a maximum pass band attenuation of 2.5dB and $\Omega_p = 20$ rad/sec and stopband attenuation of 30 dB and $\Omega_s = 50$ rad/sec.	Creating	ECC502.3
5.	A high pass filter is to be designed with following desired frequency response $H_d(e^{jw}) = 0 \quad \frac{-\pi}{4} \leq w \leq \frac{\pi}{4}$ $H_d(e^{jw}) = e^{-j2w} \quad \frac{\pi}{4} \leq w \leq \pi$ Determine the filter coefficients $h(n)$ if the window function is defined as $w(n) = 1 \quad 0 \leq n \leq 4$ $= 0 \quad \text{otherwise}$	Creating	ECC502.3




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6.	Design a linear phase FIR low pass filter of length seven with cut off frequency 1 rad/sec. Using rectangular window.	Creating	ECC502.3
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THEORY ATTENDANCE

Academic Year: 2022-23

Semester: V

Class / Branch: TE - EXT C

Roll No.	Name of the Student	DATE	11/07/2022	13/07/2022	18/07/2022	19/07/2022	22/07/2022	25/07/22	27/07/22	29/07/22	29/07/22	01/08/20	03/08/22	05/08/22	05/08/22	08/08/22	08/08/22	10/08/22	22/08/22	24/08/22	26/08/22	12/09/22	14/09/22	19/09/22	
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	Abhishek kumar		P	P	P		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
2	Chandorkar Aaysh		P		P		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
3	Bandi Swati		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
4	Dhondu Naresh																								
5	Gadkar Om																								
6	Girase Devendra		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
7	Jadhav Chinmay		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
8	Jadhav Siddesh		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
9	Jumde Nikhil		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
10	Kanthe Tanya		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
11	Katkar Parth		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
12	Khade Harshada		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
13	Kharbe Yusuf		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
14	Kolhe Harshal		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
15	Kulkarni Rohan		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
16	Kumawat Bhakti		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
17	Maity Soumyadip		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
18	Malaye Mayur		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
19	Mishra Akshata		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
20	More Snehal		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
21	Nadar Anush ^{sen}																								
22	Panchal Sahil Kum		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
23	Panpatil Om																								
Topic Covered																									
Faculty Sign																									



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THEORY ATTENDANCE

Academic Year: 2022-23

Semester: V

Class / Branch: TE / EXTL

Roll No.	Name of the Student	DATE																							
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
24	Parkar Kunal	11/07/2022	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
25	Patade Saurabh	13/07/2022	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
26	Patel Rizwan	18/07/2022																							
27	Phadke Taraka	20/07/2022	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
28	Pol Chaitanya	22/07/2022																							
29	Rajak Avinash	28/7/20																							
30	Rane Dhaval	21/7/22	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
31	Raorane Shivani	29/7/22	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
32	Sabbani Shrikant	25/7/22	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
33	Sable Ruchita	01/08/22	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
34	Salvi Atharva	03/08/22	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
35	Salvi Swaraj	05/08/22	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
36	Shetty Ananya	05/08/22	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
37	Shinde Aryan	08/08/22	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
38	Singh Shradha	08/08/22	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
39	Tarmale Adesh	08/08/22	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
40	Walimbe Rohan	12/08/22	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
41	Yadav Vinayak	15/08/22																							
42	Bamne Niraj	12/08/22	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
43	Bhandari Vaibhav	12/08/22																							
44	Bhair Aniket	12/08/22	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
45	Dixit Pawan	12/08/22	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
46	Gawai Gayatri	14/08/22	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
Topic Covered																									
Faculty Sign																									



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THEORY ATTENDANCE

Academic Year: 2022-23

Semester: V

Class / Branch: TE/EXTC

Roll No.	Name of the Student	DATE	11/07/2022	13/07/2022	18/07/2022	20/07/2022	22/07/2022	25/7/22	27/07/22	29/07/22	29/07/22	01/08/22	03/08/22	05/08/22	05/08/22	08/08/22	08/08/22	10/08/22	22/08/22	24/08/22	26/08/22	29/08/22	31/08/22	
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
70	Solapure Raj															P	P	P						
71	Surve Pritesh			P	P	P	P	P	P	P														
72	Sutar Harshwar ^{dhah}																							
73	Swami Vedant	P	P	P	P	P	P	P	P				P	P	P	P	P	P	P	P	P	P	P	P
74	Talawedkar Vaibh ^{avi}	P	P	P	P	P	P	P	P	P			P	P	P	P	P	P	P	P	P	P	P	P
75	Tiwari Pratham	P	P	P	P	P	P	P	P	P			P	P	P	P	P	P	P	P	P	P	P	P
76	Undage Abodh		P	P	P	P	P	P	P	P			P	P	P	P	P	P	P	P	P	P	P	P
77	Yadav Chandan	P	P	P	P	P	P	P	P	P			P	P	P	P	P	P	P	P	P	P	P	P
Topic Covered																								
Faculty Sign																								



Dr. Vilas N. Nirmawate
Principal
College of Engineering and Management Studies

PRACTICAL / TUTORIAL ATTENDANCE

Class: TE Batch: AI ^{Week} EXTC Name of the Subject: DTSP-AI

Roll No.	Name of Student	13/07/2022		20/07/2022		28/07/2022		08/08/2022	
		EXP 1		EXP 2		EXP 3		EXP 4	
		Date of Ch.	Att.	Date of Ch.	Att.	Date of Ch.	Att.	Date of Ch.	Att.
1	Abhishek Kumar	20/07	Present	28/07	Present	03/08	Present	10/08	Present
2	Chandorkar Aayush	24/08		20/08		24/08		24/08	
3	Bandi Swathi	20/07	Present	28/07	Present	03/08	Present	10/08	Present
4	Dhondur Naresh	03/08		03/08	Present	03/08	Present	17/08	Present
5	Gadkar Om	03/08		03/08	Present	10/08		17/08	Present
6	Girase Devendra	03/08	Present	28/07	Present	03/08	Present	10/08	Present
7	Jadhav Chirmay	28/07		28/07	Present	03/08	Present	10/08	Present
8	Jadhav Siddesh	20/07	Present	28/07	Present	03/08	Present	10/08	Present
9	Jumde Nikhil	28/07		03/08	Present	03/08	Present	10/08	Present
10	Kanthe Tanya	20/07	Present	28/07	Present	03/08	Present	10/08	Present
11	Katkar Parth	20/07	Present	28/07	Present	03/08	Present	10/08	Present
12	Khade Harshada	20/07	Present	28/07	Present	10/08	Present	10/08	
13	Kharbe Yusuf	10/08		10/08		10/08	Present	10/08	
14	Kolhe Harshal	20/07		28/07	Present	03/08	Present	17/08	Present
15	Kulkarni Rohan	28/07		28/07	Present	03/08	Present	17/08	Present
16	Kumawat Bhakti	08/08		08/08	Present	08/08	Present	10/08	Present
17	Maity Soumyadip	20/07	Present	03/08	Present	10/08		17/08	Present
18	Malaye Mayur	20/07	Present	03/08	Present	03/08		10/08	Present
19	Mishra Akshat	20/07	Present	28/07	Present	03/08	Present	10/08	Present
20	More Snehal	28/07		28/07	Present	03/08	Present	10/08	Present
21	Nadar Anushpencer								
Practical Covered		Linear conv		Sequences		DFT		Magk Phase	
Sign of Faculty									



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10/08/2022		17/08/2022		24/08/2022		31/08/2022		07/09/2022		14/09/2022	
EXP 5		EXP 6		EXP 7		EXP 8		EXP 9		EXP 10	
Date of Ch.	Att.	Date of Ch.	Att.	Date of Ch.	Att.	Date of Ch.	Att.	Date of Ch.	Att.	Date of Ch.	Att.
17/08	Abhishek	24/08	Abhishek	14/09	Abhishek	28/09	Abhishek	28/09	Abhishek	14/10	Abhishek
24/08		24/08	Aayush	12/09	Aayush	21/09		28/09		14/10	
17/08	Suy	24/08	Suy	14/09	Suy	21/09	Suy	28/09	Suy	14/10	Suy
24/08		14/09	Shank	21/09	Shank	21/09	Shank	28/09	Shank	28/09	
24/08		14/09	Om	21/09	Om	28/09		28/09	Om	14/10	Om
17/08	Shank	24/08	Shank	14/09	Shank	21/09	Shank	28/09	Shank	14/10	Shank
17/08	Radhika	24/08	Radhika	14/09	Radhika	21/09	Radhika	28/09	Radhika	14/10	Radhika
17/08		21/08		28/09		28/09		28/09		14/10	
17/08	Netaji	24/08	Netaji	24/09	Netaji	21/09	Netaji	28/09	Netaji	14/10	
17/08	Katka	24/08	Katka	14/09	Katka	21/09	Katka	28/09	Katka	14/10	Katka
17/08	Iti	24/08	Iti	14/09	Iti	21/09	Iti	28/09	Iti	14/10	Iti
24/08	Abhishek	21/09		21/09	Abhishek	21/09		14/10	Abhishek	14/10	Abhishek
14/09		14/09		28/09		21/09		28/09		14/10	
17/08	Abhishek	24/08	Abhishek	14/09	Abhishek	21/09	Abhishek	28/09	Abhishek	14/10	Abhishek
17/08	R. Ravi	24/08	R. Ravi	14/09	R. Ravi	21/09	R. Ravi	28/09	R. Ravi	14/10	R. Ravi
24/08	Ry	14/09		21/09	Ry	21/09		28/09	Ry	14/10	Ry
17/08		24/08	Sait	14/09	Sait	21/09	Sait	28/09	Sait	14/10	Sait
10/08	Amulya	24/08	Amulya	14/09	Amulya	21/09	Amulya	28/09	Amulya	14/10	
17/08	Abhishek	24/08	Abhishek	14/09	Abhishek	21/09	Abhishek	28/09	Abhishek	14/10	Abhishek
17/08	Smriti	24/08	Smriti	14/09	Smriti	21/09	Smriti	28/09	Smriti	14/10	Smriti
										14/10	
IM & BLT		FIR		IIR		Tone generator		Content Beyond		Applica tion	




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TE_ Mini _project _rubrics_Sem V

Rubrics Description	Maximum Marks Weight	Excellent A	Good B	Fair C
Project objective, problem formulation, Study of existing systems	4	Detailed and extensive explanation of the purpose and need of the project , study of existing system (04)	Average explanation of the purpose and need of the project, study of existing system (04-03)	Minimal explanation of the purpose and need of the project, study of existing system (03-01)
System Description , Hardware design, Trouble shooting	3	Well organized, appropriate design methodology (03-02)	Properly organized presentation but few errors in results, appropriate design methodology (02)	Poor Description, minimum knowledge design methodology not defined (02-01)
Completion of Mini-project with output	4	Successful completion with accurate output (04)	Output correct but not precise. (04-03)	Few errors in the output (03)
Contributed to Project Development and showed initiative	4	Good Team Work (04)	Average Team Work (03)	Poor Coordination (02)
Quality of Project report	5	Good organization; points are logically ordered; Experiments are well designed and cover most of the important conditions and able to draw conclusion (05-04)	Organized; points are somewhat jumpy; Experiments are somewhat well-designed and cover most of the important conditions and able to draw conclusion (04-03)	Some organization; points jump around; Experiments do not align well with problem statement or test overall claims of project ,not clear about conclusion (03-01)
Attendance	5	Reporting to supervisor for 5 to 4 weeks (05-04)	Reporting to supervisor for 4 to 3 weeks (03-02)	Reporting to supervisor less than 3 weeks (02-01)
Total Marks	25	25-22	20-16	15-9




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Department of Electronics & Telecommunication

Academic Year : 2022-23

Sem: V Sub: Mini Project 2A:Embedded System Project


Gr No.	Name of Student	Name of Guide/Supervisor	Title of the project
1	Girase Devendra Ravindra	Prof. Sushama Kore	Heat Ventilation System
	Jadhav Siddhesh Abhay		
	Khade Harshada Shahaji		
	Kumawat Bhakti Ramavatar		
2	Karangutkar Akshay	Prof. Yogesh Karunakar	ARM Based Blood Pressure Measurement
	Mhatre Purva Sanjay		
	Ramanna Shrinivas Baburao		
	Undage Abodh Ravindra		
3	Jadhav Chinmay Prasanna	Prof. Yogesh Karunakar	Device switch using Power line communication
	Katkar Parth Devendra		
	Kolhe Harshal Jitendra		
	Phadke Taraka Pravin		
4	Parkar Kunal Santosh	Prof. Hemalata Mote	Fire fighting robot
	Rajak Avinash Sunil		
	Shetty Ananya Umesh		
	Gujare Chinmay Mahendra		
5	Chandorkar Aayush Maheshwar	Prof. Hemalata Mote	Soil nutrient calculation
	Maity Soumyadip Swapan		
	Salvi Atharva Harshal		
	Shinde Aryan Vilas		
6	Dhondu Naresh Narsingh	Dr. Aarti Bakshi	Smart Watch
	Malaye Mayur Uttam		
	Mishra Akshat Gyanprakash		
	Panchal Sahilkumar Keshav		




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7	Shraddha Harishankar Singh	Prof. Hemalata Mote	Drowsiness alert system for Drivers safety
	Tarmale Adesh Pandurang		
	Gurjar Aryan Sanjay		
	Walimbe Rohan Anil		
8	Abhishek Kumar	Dr. Aarti Bakshi	RFID based Attendance system with recording
	Raorane Shivani Sandesh		
	Salvi Swaraj Vilas		
	Bandi Swathi Sampath		
9	Bhoir Aniket Prabhakar	Prof. Sushama Kore	Combustable leakage alarm
	Raut Tanmayee Sudhakar		
	Riddhi Sudhir		
	Shejwal Pratham Sanjay		
10	Kanthe Tanya Amol	Prof. Sushama Kore	Water Level Controller
	Kharbe Yusuf Farooque		
	Kamble Aniket Tanaji		
	Malekar Tejas Prakash		
11	Rane Dhaval Vinayak	Dr. Aarti Bakshi	Smart car parking
	Bamne Niraj Dilip		
	Rai Rupesh		
	Rane Aniket Vinayak		
12	Dixit Pawan Rajkumar	Prof. Yogesh Karunakar	Gas Leakage Detection using STM 32
	Pandey Abhishek Achutanand		
	Solapure Raj Balaji		
	Yadav Chandan Sheshram		
13	Pol Chaitanya Bharat	Prof. Yogesh Karunakar	Iot based fingerprint Attendance system
	Sabbani Shrikant Narendra		
	Sable Ruchita Vinay		
14	Ghegad Vaibhav Ramesh	Dr. Aarti Bakshi	Industrial Production Target counter with display system
	Surve Pritesh Pravin		
	Sutar Harshwardhan Tushar		
	Swami Vedant Virbhadra		




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15	Jumde Nikhil Tulsiram	Prof. Hemalata Mote	Motion sensing rotating camera base
	Kulkarni Rohan Rupesh		
	Gadkar Om Sanjay		
	More Snehal Maruti		
16	Panpatil Om Mangesh	Dr. Aarti Bakshi	Air quality monitoring system
	Patade Saurabh Sanjay		
	Patel Rizwan Mohammad Sharif		
17	Gawai Gayatri Yuvraj	Dr. Aarti Bakshi	DC to AC Inverter using STM 32
	Snehal Shinde (69)		
	Swapnil Utekar(78)		
18	Lawand Vrushali Sanjay	Prof. Hemalata Mote	Line Following Robot/Maze solving Robot
	Sagvekar Jayshree Yashvant		
	Talawdekar Vaibhavi Laxman		
	Tiwari Pratham Pramod		
19	Sayyed Adnan Zahid	Prof. Sushama Kore	Land mine detection
	Shaikh Murtuza Farooq		
	Sharma Amitkumar Vinodkumar		
	Shaikh Mehrajuddin Jalil		




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Department of Information Technology

Date: 09.10.2023

NOTICE

This is to inform all faculties of SE/TE/BE-IT that Internal Assessment Exam (Class Test II) for Semester III/V/VII will be conducted on **16th to 20th October 2023**. All should prepare 3 sets of question papers with higher Blooms level as per the prescribed format for their respective courses and submit it before **11th October 2023**.

Exam Co-ordinator

Asst Prof. Seema Bhuravane

H.O.D.(I.T.Dept.)

Prof. Amarja Adgaonkar



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Department of Information Technology

Date: 09.10.2023

NOTICE

This is to inform all SE/TE/BE students that the Internal Assessment Exam (Class Test II) for Semester III/V/VII will be conducted on **16th to 20th October 2023**. Time table for the same will be displayed shortly.

Instructions:

4. Students must reach the examination hall 15 min before the exam begins.
5. Students must be in formals.
6. Students must carry an ID card.

Exam Co-ordinator

Asst Prof. Seema Bhuravane

H.O.D.(I.T.Dept.)

Prof. Amarja Adgaonkar



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Department of Information Technology

TERM TEST II TIME TABLE

ODD SEM 2023-24

Semester - III

Class: SE (Rev-2019 'C')

Date	Day	Course	Timing
16/10/2023	Monday	Engineering Mathematics-III	2.00pm to 3.00pm
17/10/2023	Tuesday	Data Structure and Analysis	2.00pm to 3.00pm
18/10/2023	Wednesday	Database Management System	2.00pm to 3.00pm
19/10/2023	Thursday	Principle of Communication	2.00pm to 3.00pm
20/10/2023	Friday	Paradigms and Computer Programming Fundamentals	10.30pm to 11.30pm

INSTRUCTIONS:

1. The Term test will be of duration 1 hour
2. Students must reach the examination hall 15 mins before the exam begins.
3. Students must follow exam guidelines.
4. Students must carry valid ID proof (Aadhar card or Pan Card or Driving Licence)

Exam Co-ordinator

Asst Prof. Seema Bhuravane

H.O.D.(I.T.Dept.)

Asst Prof Amarja Adgaonkar



Dr. Vilas N. Nitnaware
Principal
K.C. College of Engineering &
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Department of Information Technology

TERM TEST II TIME TABLE

ODD SEM 2023-24

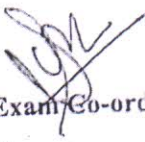
Semester - V

Class: TE (Rev-2019 'C')

Date	Day	Course	Timing
16/10/2023	Monday	Internet Programming	2.00pm to 3.00pm
17/10/2023	Tuesday	Computer Network Security	2.00pm to 3.00pm
18/10/2023	Wednesday	Entrepreneurship and E-business	2.00pm to 3.00pm
19/10/2023	Thursday	Software Engineering	2.00pm to 3.00pm
20/10/2023	Friday	DLOC- 1 Advance Data Management Technologies/ Advanced Data structure and Analysis	10.30pm to 11.30pm

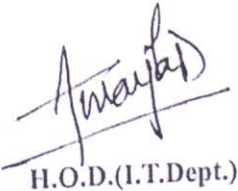
INSTRUCTIONS:

1. The Term test will be of duration 1 hour
2. Students must reach the examination hall 15 mins before the exam begins.
3. Students must follow exam guidelines.
4. Students must carry valid ID proof (Aadhar card or Pan Card or Driving Licence)



Exam Co-ordinator

Asst Prof. Seema Bhuravane



H.O.D.(I.T.Dept.)

Asst Prof Amarja Adgaonkar




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Department of Information Technology

TERM TEST II TIME TABLE

ODD SEM 2023-24

Semester - VII

Class: BE (CBCS Rev. 2016)

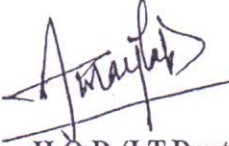
Date	Day	Course	Timing
16/10/2023	Monday	AI and DS -II	2.00pm to 3.00pm
17/10/2023	Tuesday	Internet of Everything	2.00pm to 3.00pm
18/10/2023	Wednesday	AR - VR	2.00pm to 3.00pm
19/10/2023	Thursday	Software Testing and QA	2.00pm to 3.00pm
20/10/2023	Friday	Institute Optional Course - 1 (MIS/CSL)	2.00pm to 3.00pm

INSTRUCTIONS:

1. The Term test will be of duration 1 hour
2. Students must reach the examination hall 15 mins before the exam begins.
3. Students must follow exam guidelines.
4. Students must carry valid ID proof (Aadhar card or Pan Card or Driving Licence)



Exam Co-ordinator

Asst Prof. Seema Bhuravane


H.O.D.(I.T.Dept.)

Asst Prof Amarja Adgaonkar




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Department of Information Technology

TERM TEST II TIME TABLE

ODD SEM 2023-24

Semester - III

Class: SE (Rev-2019 'C')

Date	Day	Course	Timing	Seating Arrangement
16/10/2023	Monday	Engineering Mathematics-III	2.00pm to 3.00pm	Room No.207-SE (1-50) Room No.300-SE (51-70)
17/10/2023	Tuesday	Data Structure and Analysis	2.00pm to 3.00pm	Room No.207-SE (1-50) Room No.300-SE (51-70)
18/10/2023	Wednesday	Database Management System	2.00pm to 3.00pm	Room No.207-SE (1-50) Room No.300-SE (51-70)
19/10/2023	Thursday	Principle of Communication	2.00pm to 3.00pm	Room No.207-SE (1-50) Room No.300-SE (51-70)
20/10/2023	Friday	Paradigms and Computer Programming Fundamentals	10.30pm to 11.30pm	Room No.207-SE (1-50) Room No.203-SE (51-70)


INSTRUCTIONS:

1. The Term test will be of duration 1 hour
2. Students must reach the examination hall 15 mins before the exam begins.
3. Students must follow exam guidelines.
4. Students must carry valid ID proof (Aadhar card or Pan Card or Driving Licence)



Exam Co-ordinator

Asst Prof. Seema Bhuravane




H.O.D.(I.T.Dept.)

Asst Prof Amarja Adgaonkar


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Department of Information Technology

TERM TEST II TIME TABLE

ODD SEM 2023-24

Semester - V

Class: TE (Rev-2019 'C')

Date	Day	Course	Timing	Seating Arrangement
16/10/2023	Monday	Internet Programming	2.00pm to 3.00pm	Room No.306-TE (1-50) Room No.300-TE (51-72)
17/10/2023	Tuesday	Computer Network Security	2.00pm to 3.00pm	Room No.306-TE (1-50) Room No.300-TE (51-72)
18/10/2023	Wednesday	Entrepreneurship and E-business	2.00pm to 3.00pm	Room No.306-TE (1-50) Room No.300-TE (51-72)
19/10/2023	Thursday	Software Engineering	2.00pm to 3.00pm	Room No.306-TE (1-50) Room No.300-TE (51-72)
20/10/2023	Friday	DLOC- 1 Advance Data Management Technologies/ Advanced Data structure and Analysis	10.30pm to 11.30pm	Room No.213-TE (1-32) Room No.203-TE (51-72)

INSTRUCTIONS:

1. The Term test will be of duration 1 hour
2. Students must reach the examination hall 15 mins before the exam begins.
3. Students must follow exam guidelines.
4. Students must carry valid ID proof (Aadhar card or Pan Card or Driving Licence)

Exam Co-ordinator

Asst Prof. Seema Bhurayant



H.O.D.(I.T.Dept.)

Asst Prof Amarja Adgaonkar

Dr. Vilas N. Nitnaware
Principal
K.C. College of Engineering &
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Department of Information Technology

TERM TEST II TIME TABLE

ODD SEM 2023-24

Semester - VII

Class: BE (CBCS Rev. 2016)

Date	Day	Course	Timing	Seating Arrangement
16/10/2023	Monday	AI and DS –II	2.00pm to 3.00pm	Room No.307-BE (1-50) Room No.213-BE (51-76)
17/10/2023	Tuesday	Internet of Everything	2.00pm to 3.00pm	Room No.307-BE (1-50) Room No.213-BE (51-76)
18/10/2023	Wednesday	AR – VR	2.00pm to 3.00pm	Room No.307-BE (1-50) Room No.213-BE (51-76)
19/10/2023	Thursday	Software Testing and QA	2.00pm to 3.00pm	Room No.307-BE (1-50) Room No.213-BE (51-76)
21/10/2023	Saturday	Institute Optional Course – 1 (MIS/CSL)	2.30pm to 3.30pm	Room No.207-BE (1-50) Room No.213-BE (51-76)

INSTRUCTIONS:

1. The Term test will be of duration 1 hour
2. Students must reach the examination hall 15 mins before the exam begins.
3. Students must follow exam guidelines.
4. Students must carry valid ID proof (Aadhar card or Pan Card or Driving Licence)

Exam Co-ordinator

Asst Prof. Seema Bhuravane

H.O.D.(I.T.Dept.)

Asst Prof Amarja Adgaonkar



Dr. Vilas N. Nitnaware
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Department of Information Technology

CLASS TEST II (2023-24)

Semester: V

Class: TE

Date: 16 /10/2023

Marks: 20

Subject: IP

Duration: 1hr

Question No.	Question	Marks	Bloom Taxonomy Level	Course outcome	PI
Q.1	What is react ref? How to create refs in react? OR Differentiate between Model-View-Controller and React Flux architecture?	07	Applying	ITC 501.4	2.5.2 4.5.1 2.6.5
Q.2	Write a program to run simple node js server ? Explain node js and dependencies if it? OR Write a programme for REPL? Explain it in detail?	07	Applying	ITC501.5	2.5.2 4.5.1 2.6.5
Q.3	Differentiate between Express.js and node.js? OR What is Express.js? What are core feature of Express framework?	06	Understanding	ITC501.6	1.6.1



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CLASS TEST I (2023-24)

Semester: V

Class: TE

Date: 16/10/23

Marks: 20

Subject: IP

Duration: 1hr

Question No.	Question	Marks	Bloom Taxonomy Level	Marking Scheme	PI
Q.1	What is react ref? How to create refs in react? OR What is react hooks? How to create hooks in react?	07	Applying	definition: 2M code:5M 7 points: 7M	2.5.2 4.5.1 2.6.5
Q.2	Write a programme for call-back function in node.js and explain call-back function in detail? OR Write a programme for REPL? Explain it in detail?	07	Applying	Definition :2M code:5M Program: 7M	2.5.2 4.5.1 2.6.5
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1) What is react ref? How to create refs in react?



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Refs can be created using React. createRef() function and attached it with the React element via the ref attribute. When a component is constructed the Refs are commonly assigned to an instance property so that they can be referenced in the component.

```
import * as React from "react";

const App = () => {
  // Creating textInputRef variable
  const textInputRef = React.createRef();

  // This method will be used to focus textInput
  const textInputFocusHandler = () => {
    // Focusing input element
    textInputRef.current.focus();
  };

  return (
    <div>

      {/** Attaching ref variable using element's ref attribute */}
      <input ref={textInputRef} type="text"
        placeholder="Enter something" />

      {/** Attaching textInputFocusHandler method to button click */}
      <button onClick={textInputFocusHandler}>
        Click me to focus input
      </button>
    </div>
  );
};

export default App;
```

2) Differentiate between Model-View-Controller and React Flux architecture?




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Features	MVC	Flux	Redux
Direction of data flow	Bidirectional	Unidirectional flow	Unidirectional flow
Stores	No store concept	Multiple stores	Single store
Logic handling	Controller manages logic handling	Stores manages logic handling	Reducer manages logic handling
Debugging	Debugging is difficult	Debugging is simpler with dispatcher	Debugging is faster with single store
Usage	Used for both server-side and client-side frameworks	Used for client-side frameworks	Used for client-side frameworks
Front-end frameworks supported	AngularJS, Backbone, Sprout, Knockout, Ember	React, Vue.js, Angular, Polymer	Backbone, Sprout, React, Meteor, Vue.js, Angular, Polymer
Back-end frameworks supported	Django, Ruby on Rails, Meteor	-	-




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- 3) Write a program to run simple node js server ? Explain node js and dependencies if it?

```
JS server.js X
express > JS server.js > app.listen() callback
1  const express = require("express");
2  const app = express();
3
4  app.listen(3000, () => {
5    console.log("Server running on 3000");
6  });
```

PROBLEMS TERMINAL GITLENS JUPYTER DEBUG CONSOLE

> TERMINAL

```
PS C:\Users\ARASH ARORA\Desktop\nodejs\express> node .\server.js
Server running on 3000
```

- 4) Write a programme for REPL? Explain it in detail?



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```
C:\Users\Parikshit\Desktop\GeeksForGeeks>node
> Math.ceil(10/3)
4
> Math.floor(10/3)
3
> math.round(math.e, 3);
ReferenceError: math is not defined
> Math.round(Math.e, 3)
NaN
> Math.round(2.57362, 3)
3
> Math.sqrt(16)
4
> Math.pow(3, 4)
81
>
(To exit, press ^C again or type .exit)
>
C:\Users\Parikshit\Desktop\GeeksForGeeks>node
```

5) Differentiate between Express.js and node.js?




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Company Factors	Node.js	Java
Definition	A server platform for working with JavaScript	A programming language & platform
Productivity & Resource Consumption	Node.js performance vs. Java is lower, but is lightweight and can be used to maintain lightweight tasks	Along with high performance, it requires a lot of memory
Flow Control	Uses two types of threads: the main thread processed by the event loop, and several additional threads	You can create an application & run multiple threads while the load is being distributed
Frameworks	Express.js, Sails.js, Socket.io, Partial.js, etc	Spring, Struts, JSF, Hibernate, Tapestry, etc.
Usage	Cross-platform applications, web applications	The multifunctional language for complex corporate applications
Runtime Environment	V8 engine from Google	Java virtual machine

6) What is Express.js? What are core feature of Express framework?

Express is a node js web application framework that provides broad features for building web and mobile applications. It is used to build a single page, multipage, and hybrid web application. It's a layer built on the top of the Node js that helps manage servers and routes. Why Express JS?

- Express was created to make APIs and web applications with ease,
- It saves a lot of coding time almost by half and still makes web and
- mobile applications are efficient.
- Another reason for using express is that it is written in javascript as javascript is an easy language even if you don't have a previous



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-
- knowledge of any language. Express lets so many new developers enter the field of web development.

The reason behind creating an express framework for node js is:

- Time-efficient
- Fast
- Economical
- Easy to learn
- Asynchronous

Features of Express JS

Fast Server-Side Development

The features of node js help express saving a lot of time.

- Middleware


Middleware is a request handler that has access to the application's request-response cycle.

- Routing

It refers to how an application's endpoint's URLs respond to client requests.

- Templating




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It provides templating engines to build dynamic content on the web pages by creating HTML templates on the server.

- Debugging

Express makes it easier as it identifies the exact part where bugs are.




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Department of Computer Engineering

Academic Year: 2022-2023 (EVEN SEM)

Semester: VI

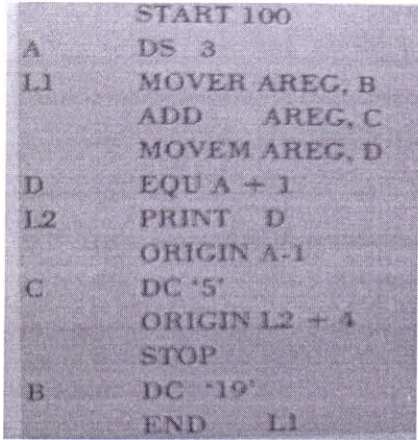
Class: T.E. (A&B)

Subject :SPCC

Date : 20/02/2023

Date of Submission: 27/02/2023

Assignment No: 1

BATCH	Sr. No.	Question	Bloom's Taxonomy Level	CO Mapped
A1	1	Differentiate Between System Software and Application Software	Analyzing	CSC601.1
	2	What is the forward reference problem? Explain single pass assembler with flowchart.	Understanding	CSC601.2
	3	Generate intermediate code for given assembly language code for two pass assembler. 	Evaluating	CSC601.2
	4	Explain macro definition and call.	Understanding	CSC601.3
	5	Explain positional parameter and keyword parameter	Understanding	CSC601.3
A2	1	Explain the difference between Compiler and Interpreter	Analyzing	CSC601.1




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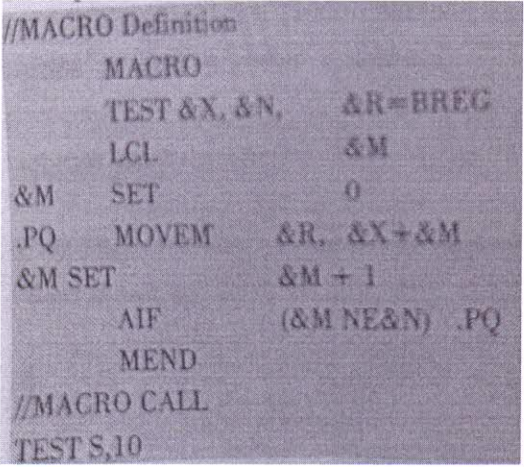
Department of Computer Engineering

Academic Year: 2022-2023 (EVEN SEM)


Semester: VI

Class: T.E. (A&B)

Subject :SPCC

	2	Draw and Explain flowchart for pass-I of two pass assembler	Understanding	CSC601.2
	3	Explain the Default parameter with an example.	Understanding	CSC601.3
	4	Explain Nested macro call with example	Understanding	CSC601.3
	5	Generate data structure for given code 	Evaluating	CSC601.3
	A3	1	Explain Component of System Software	Understanding
	2	Draw and Explain Flowchart for Pass 1 of macro processor	Understanding	CSC601.2
	3	Which are different advanced macro facility	Understanding	CSC601.3
	4	Explain following data structures with respect to macro processor MNT ,PNTAB,EVNTAB	Understanding	CSC601.3
	5	Prepare MNT , MDT, KPDTB, SSNTAB, SSTAB for given macro code.	Evaluating	CSC601.3




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Semester: VI

Class: T.E. (A&B)

Subject :SPCC

		MACRO TEST &A, &B, &C AIF (&B EQ &A) ONLY MOVER AREG, &A SUB AREG, &B ADD AREG, &C AGO .OVER ONLY MOVER AREG, &C OVER MEND		
B1	1	Explain various data structures used in assembler design	Understanding	CSC601.2
	2	Explain types of assembly language statements.	Understanding	CSC601.1
	3	Explain Conditional macro expansion	Understanding	CSC601.2
	4	Explain following data structures with respect to macro processor : SSNTAB , KPDTAB, MDT	Understanding	CSC601.2
	5	Draw and explain flowchart for pass II of macro processor	Understanding	CSC601.3
B2	1	Explain advanced assembler directive.	Understanding	CSC601.2
	2	Data structure used in assembler	Understanding	CSC601.2
	3	Explain following data structures with respect to macro processor :EVTAB, SSTAB, APTAB	Understanding	CSC601.3
	4	Explain with example AIF,AGO,ANOP	Understanding	CSC601.3
	5	Explain MACro definition and macro call.	Understanding	CSC601.3
B3	1	What are the different functions performed by a macro processor?	Understanding	CSC601.3




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Semester: VI

Class: T.E. (A&B)

Subject :SPCC

	2	Explain SYMTAB , LITAB, POOLTAB used in pass 1 of Assembler.	Understanding	CSC601.3
	3	Explain Advanced assembler directives.	Understanding	CSC601.2
	4	Which are different advanced macro facilities.	Understanding	CSC601.3
	5	Explain Assembly scheme?	Understanding	CSC601.2




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Name: Yalchi Shring
Class: TE B
Roll No: - 23

Subject: SPCC

Assignment: 02

Rubric	R1	R2	R3	total	Sign
	Understanding (2-5)	Presentation (1-5)	Punctuality (0-1)	(05)	.
marks obtained	2-5	1-5	01	05	<i>Suma</i>



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Assignment 2

Q1) Differentiate between Cohesion and coupling

Ans Cohesion

Coupling

1) It defines the degree of relationship how the modules are related to each other

1) It is the strength of interconnection between the modules.

2) It is based on the concept of intra module

2) It is based on concept of inter module

3) It represents the relationship within the module

3) It represents the relationship between the module.

4) It represents the functional strength of module

4) It represents independence of module.

5) Increasing the cohesion is good for software

5) Increasing the coupling is generally avoided.

6) High cohesion gives the best software

6) Low cohesion coupling gives best software

7) Modules focuses on one thing

7) Modules are connected to each other.



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Q2) Write test cases for black box testing for reservation page.

Ans	Test case ID	Test case	Test case data	Expected Result	Actual Result	Pass/Fail
	T001	click Sign in		login page will be displayed	As expected	Pass
	T002	Enter ⁱⁿ valid mobile number	Eg) 9839301158	error message will be displayed	As expected	Pass
	T003	Enter invalid email ID	abc@gmail.com	Invalid email ID message pops up	It accepted the invalid email ID	Fail
	T004	Enter valid otp code	eg) 111111	Login to page	As expected	Pass
	T005	click Forget Password		Forget password page will be displayed	As expected	Pass



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Q3) Explain steps involved in implementing Quality Assurance.

Ans. Software quality assurance is a set of exercises for ensuring quality in software measures. It ensures that created programming meets and follows the characterized or normalized quality determination.

• Steps involved in implementing Quality Assurance

1) Pre-project components.

• This stage is characterized ahead of executing the undertaking. A workout done are

a) Guaranteeing the assets, plan plus the investing plan required.

b) Apart from the assets, plan together with a spending plan, there are other plans that should be characterized.

2)

Components of project life cycle activities assessments:-

• The workouts are partitioned into 2 phases at this time.

They've been, the advancement life period phase and the activity upkeep stage.

• It is partitioned into sub-classes

a) Reviews

b) Expert opinions

c) Software testing

3) Components of infrastructure error prevention and improvement.

• The action that is fundamental of the stage would be to kill or make the mistakes disappeared as well, at any price reduce the state of blunders. Its based on relationship that is entire.



4) Components of software quality management:

- The concept goal is controlling the enhancement maintenance and period and in addition providing the help that is administrative for installing and limiting timetable and spending disappointment of the results.

5) Components of standardization, certification and SQA system assurance:

- This phase executes an expert that is the global administrative norm for the association.
- For the conventional, its partitioned into 2 teams, they're
 - a) Quality administration standard.
 - b) Task measure standard.

6) Organizing for SQA, the human components:

- At this phase, we're piecing together the individual who relate to SQA things. They are supervisors, buying staff, SQA trustees, SQA panel individuals and SQA gathering people.

Q4) Explain steps in version controlling.

Ans Steps to change control process are

1) Change request initiation and control

- Request for changes should be standardized and subject to management review
- Change requestor should be kept informed

2) Impact assessment

- Make sure all request for change are assessed in a structured way for analysing possible impacts.



3.3) Control and Documentation of changes

- A change log should be maintained that tells the date, person details who made changes and changes implemented

4) Documentation and Procedures

- Whenever system changes are implemented the procedures and associated documents should update accordingly

5) Authorized Maintenance

- System access right should be controlled to avert unauthorized access.

6) Testing and User signoff

- Software should be thoroughly tested

7) Version Control

- Control should be placed on production source code to make sure that only latest version is updated

8) Emergency changes

- A verbal authorization should be obtained, and the change should be documented as soon as possible.



Q5) Explain layered and data centered architecture.

Ans: Data Centered architecture

- A data stored will reside at the center of the architecture and is accessed frequently by other components that update, add, delete or modify the data present within the store.
- The client software access a central repository. Variation of this approach are used to transform the repository into a blackboard when data related to client or data of interest for the client change the notifications to client software.
- This data-centered architecture will promote integrability. This means that the existing components can be changed and new client components can be added to architecture without the permission or concern of other clients.

→ Advantages

- Repository of data is independent of clients
- Client work independent of each other.
- It may be simple to add clients
- Modification can be very easy.

→ Disadvantages

- There is a single point of failure
- Agents are highly dependent on the data structures of the data store.
- The evolution of data is costly and difficult

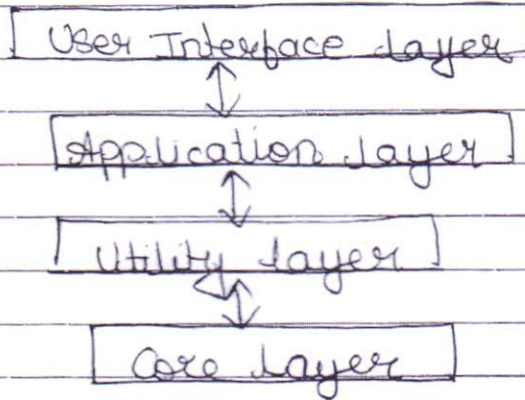
2) Layered architecture

- In layered architecture, the system is designed in a



of layers.

- Each layer hides the layer below it. The functionality of a system is organised into layers with each layer only dependent on the layer below it.



→ Advantages

- It supports incremental development.
- It allows the replacement of layer as long as interface of layer does not change.
- It is secure.
- Layers can be reused.
- The application is portable.

→ Disadvantages

- Clean separation between layers is hard to achieve.
- Multiple layers of processing may lead to the degradation of performance.
- It is difficult to structure some systems into layers.



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Summa
23/10/23 good
5/5




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Department of Electronics and Telecommunication

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DEPARTMENT OF ELECTRONICS & TELECOMMUNICATION

Analysis Report for Bright Students

A.Y. 2022-23 EVEN

SE EXTC (A)

Name of the student	ESE Sem III (SGPI)	IA1 Average
Arya Janhvi	8	15
Kadam Pratibha	6.5	17
Malvankar Dhanshree	8.21	18
Shinde Kaushal	7.46	17
Wayadanade Atharva	6.88	14



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DEPARTMENT OF ELECTRONICS & TELECOMMUNICATION

Analysis Report for Weak Students

A.Y. 2022-23 EXEN

SE EXTC (A)

Name of the student	ESE Semester III (SGPI)	IAI (Average)
Bhaidarkar Om	Fail	9
Bonude Aditya	Fail	7
Katare Abhijeet	Fail	7
Meshram Mansi	Fail	6
Mishra Shivam	Fail	5
Pal Dileepkumar	Fail	3
Palande Sahil	Fail	10
Pandey Rohan	Fail	7
Patil Vanita	Fail	8
Sarode Rohit	Fail	5


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DEPARTMENT OF ELECTRONICS & TELECOMMUNICATION
Improvement Report for Bright Students

A.Y. 2022-23 EVEN

SE A EXTC

Sr No.	Name of the students	IA1	IA2	IA (Average)	SEM III (SGPI)	SEM IV (SGPI)	REMARK
1	Arya Janhvi	15	17	16	8	8.58	Improvement in IA2 and ESE
2	Kadam Pratibha	17	13	15	6.5	7.75	Improvement in ESE
3	Malvanekar Dhanshree	18	17	18	8.21	8.5	Improvement in ESE
4	Shinde Kaushal	17	11	14	7.46	7.63	Improvement in ESE
5	Wayadmade Atharva	14	12	13	6.88	8.13	Improvement in ESE




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DEPARTMENT OF ELECTRONICS & TELECOMMUNICATION
Improvement Report for Weak Students

A.Y. 2022-23 EVEN

SE A EXTC

Sr No.	Name of the students	IA1	IA2	IA (Average)	SEM III (SGPI)	SEM IV (SGPI)	REMARK
1	Bhaindarker Om	9	8	9	Fail	Fail	No improvement
2	Borude Aditya	7	10	9	Fail	Fail	Improvement in IA2
3	Katire Abhijeet	8	10	9	Fail	Fail	Improvement in IA2
4	Meshram Mansi	6	9	8	Fail	Fail	Improvement in IA2
5	Mishra Shivam	5	5	5	Fail	Fail	No improvement
6	Pal Dileepkumar	3	6	5	Fail	Fail	Improvement in IA2
7	Palande Sahil	10	10	10	Fail	Fail	No improvement
8	Pandey Rohan	7	9	8	Fail	Fail	No improvement
9	Patil Varita	8	9	9	Fail	Fail	No improvement
10	Sarode Rohit	5	5	5	Fail	Fail	No improvement




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Department of Electronics and Telecommunication

Class: SE (EXTC)

Academic year (2022-23)

SEM: IV

Subject: Microcontrollers


Subject Incharge: Dhanashree Jadhav

Activity: Power Point Presentation

Activity Report: This PowerPoint presentation will help the student to understand the various timer operating modes of 8051 microcontroller IC. Also the students can use the theoretical knowledge for producing various delays using the 8051.

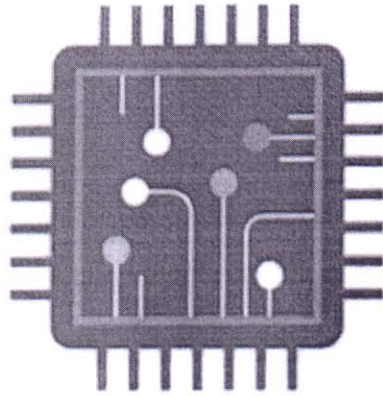
Outcome: This provided student with the knowledge of the timer structure and various operating modes has executed a program for generating delay and square and triangular wave.





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8051 TIMER PROGRAMMING | ASSEMBLY

- By Kaushal Shinde




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Guide:-Prof. Dhanashree Jadhav

INDEX

2

- 1. Square wave generation
- 2. Triangular wave generation
- 3. Interfacing LCD with 8051





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OBJECTIVES

- List the timers of the 8051 and their associated registers
- Describe the various modes of the 8051 timers
- Program the 8051 timers in Assembly to generate time delay





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PROGRAMMING 8051 TIMERS

4

- Basic registers of the timer**
- Timer 0 and Timer 1 are 16 bits wide**
- each 16-bit timer is accessed as two separate registers of low byte and high byte.**




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Department of Electronics and Telecommunication

Class: SE (EXTC)

Academic year (2022-23)

SEM: IV

Subject: Principles of Communication Engineering

Subject Incharge: Reeta Shaktivel

Activity: Power Point Presentation

Activity Report: This PowerPoint presentation will help the student to understand the various modulation techniques along with their comparisons and waveforms and generation techniques

Outcome: This provided student with the knowledge of modulation, various modulation techniques and comparison between the techniques.





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Analog communication

Presented by

1. Arya Janhvi
 2. Kadam Pratibha
 3. Malvankar Dhanshree
- for PCE S.E A




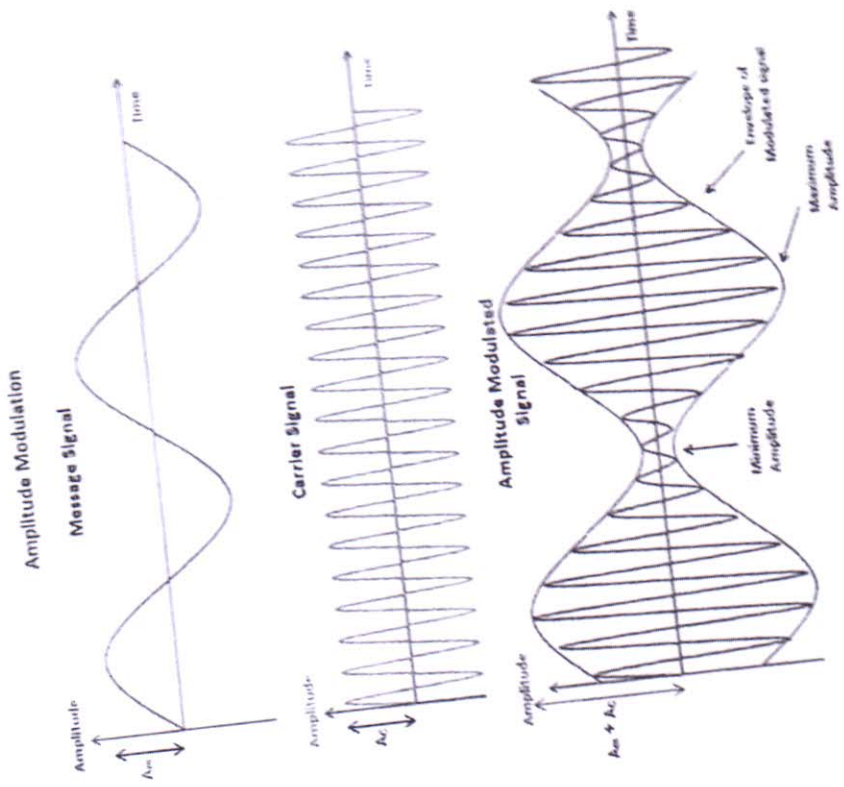

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Amplitude Modulation

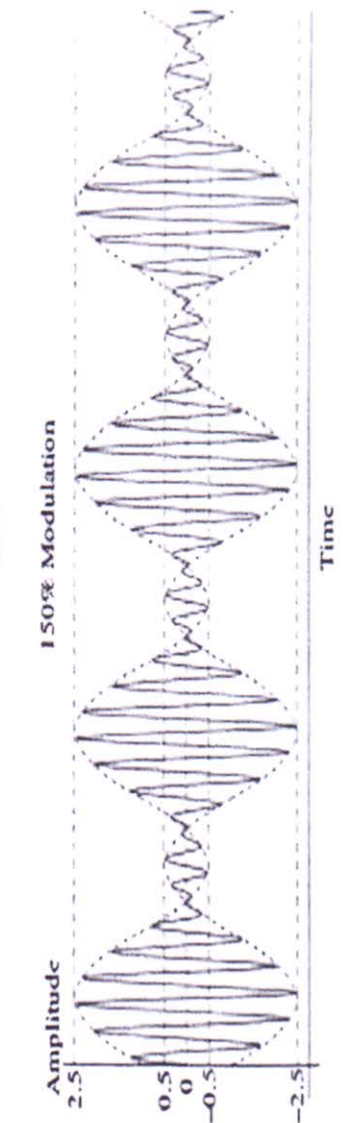
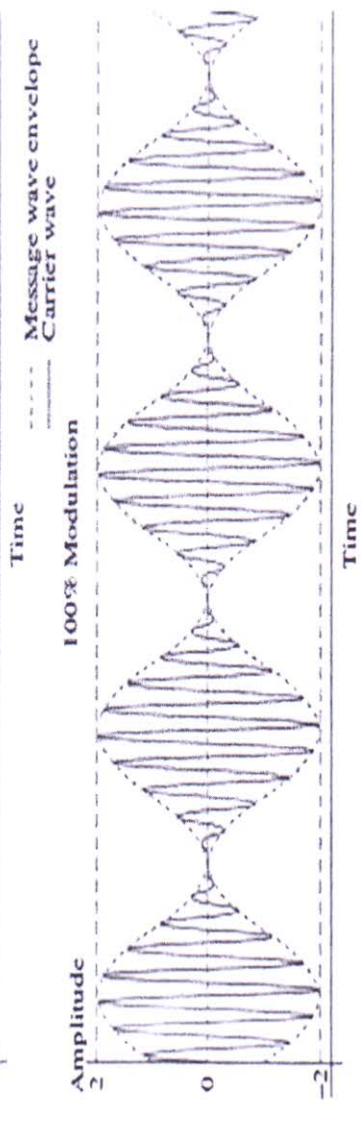
- Amplitude modulation (AM) is a modulation technique used in electronic communication, most commonly for transmitting messages with a radio wave. In amplitude modulation, the amplitude (signal strength) of the wave is varied in proportion to that of the message signal, such as an audio signal.




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Department of Electronics and Telecommunication

Class: SE

SEM: IV

Sub: Engineering Mathematics-IV, Microcontrollers, Signals and Systems, Linear Integrated Circuits, Principles of Communication Engineering


Activity: University repeated question paper solving and Remedial Lectures (for academically weak students)

Faculty: Dr. Pallavi Chopade, Ms. Dhanashree Jadhav, Mr. Yogesh Karunakar, Dr. Avishek Ray, Reeta Shaktivel

Activity report: Identified academically weak students were asked to solve at least two questions from the university paper covering the important topics from the syllabus for all the subjects mentioned. Also remedial lectures were conducted for the difficult topics

Outcome: This provided students with the revision of the subject through those important questions and helped them to perform well in the university examination.




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Microcontroller:

- 1) Draw and explain the internal architecture of 8051
- 2) Explain ARM7 Programmable model

PCE:

- 1) Explain SSB phase shift method and prove that output has only upper sidebands
- 2) Find the carrier and modulating frequencies, the modulation index, and the maximum deviation of FM wave represented by the voltage equation $v = 12 \sin(6 \times 10^3 t + 5 \sin 1250 t)$
. What power will this FM wave will dissipate in a 10Ω resistor?

SS:

Slow learner activity (Signals and Systems)

1. Find the Fourier series of the given waveform in figure 1.

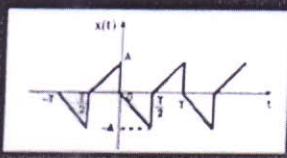


Figure 1.

2. Find the direct form-I, direct form-II, cascade and parallel form realizations of a discrete time system represented by transfer function,

$$H(z) = \frac{8z^3 - 4z^2 + 11z - 2}{\left(z - \frac{1}{4}\right)\left(z^2 - z + \frac{1}{2}\right)}$$

EM-IV

Q1.


Evaluate $\int_C \frac{e^{2z}}{(z-1)} dz$, where $is the (i) |z| = 2, (ii) |z| = 1/2$.

Q2.

Let X be a continuous random variable with Probability Distribution

$$f(x) = \begin{cases} x/6 + k & \text{if } 0 \leq x \leq 3 \\ 0 & \text{elsewhere} \end{cases} \text{ find } k \text{ and } P(1 \leq x \leq 2).$$




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Department of Electronics & Telecommunication
Remedial / Makeup/ Gate Coaching Attendance

Subject: MC
Semester: IV

Date: 10/4/2023
Class: SE EXTC

Subject Teacher: Prof. Dhanashree J

Topic covered: 8051 architecture, features, von numman &
harvard architecture, RISC & CISC architecture

Roll Number	Name of students	Sign
16	Yadnik Kambale	Y.Kamb
01	Janhvi Anya	Janhvi
03	Anirudha Gode	Anirudha
24	Dhanashree Malvankar	Dhanashree
06	Kadambni S. Bidvi	Bidvi
20	Aman Khan	Aman
31	Pall Dileep	Pall
26	Radheshan Mishra	Radhe
28	Kevinraj Nadar	Kevin
39	Prathamesh Hedau	PHedau
11	Aanya Gaikwad	A.
46	Rajata Shetty	Rajata
53	Atharva W	Atharva
47	Shivanand Shetge	Shetge
48	Kaushal Shinde	Kaushal
15	Suyyad Javshan Ali	Suyyad
42	Sumit Sable	Sumit
33	Rohan Poudy	Rohan
44	Chanel Sawant	Chanel

Subject Incharge Sign: - 10/4/2023

H.o.D.EXTC
Dr. Rajiv Iyer



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Department of Electronics & Telecommunication
 Remedial / Makeup / Gate Coaching Attendance

Subject: MC
 Semester: IV

Date: 11/14/2023
 Class: 15 E EXT

Subject Teacher: Dr. Vilas N. Nitaware

Topic covered: ARM register, ARM processor model, Page replacement

Roll Number	Name of students	Sign
16	Yadav Karan	Yadav
22	Shreyash Mall	Shreyash
01	Janki Aya	Janki
45	SAYAD FARHAN ALI	Farhan
24	Dhanshree M	Dhanshree
25	Meshram Manoj	Manoj
46	Rajata Shetty	Rajata
52	Vaishnavi Mane	Mane
51	Vaishnavi Thombare	Thombare
49	Rachika Sinha	Rachika
32	Pooja Pandey	Pooja
53	Ahanya W	Ahanya
47	Shivanshu S. Shetye	Shetye
48	Kaushal Shinde	Kaushal Kaushal
02	Khea Bagul	Khea
39	Prathmesh Hedau	PHedau
11	Aanya Gaikwad	A
26	Radhemohan Mishra	Radhe
27	Shivam Mishra	Shivam

Subject Incharge Sign: [Signature] 11/14/2023

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 Dr. Rajiv Iyer



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Name:- Vanita . S. patil
SE/EXTC(A)(33)
Sub:- PCE

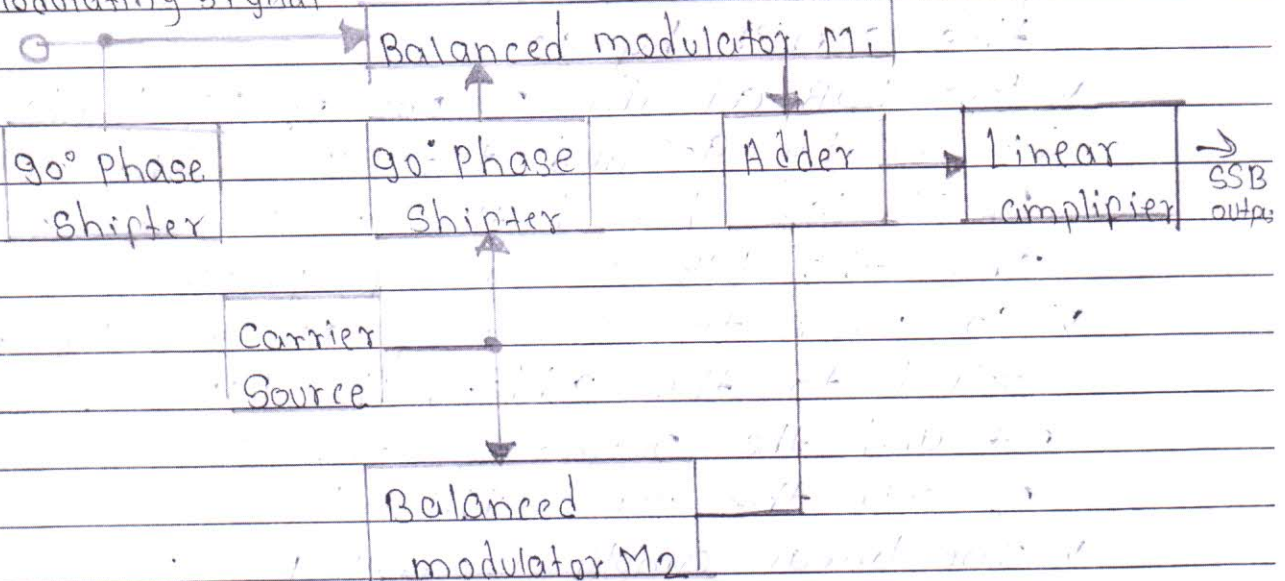
Assignment

Q. 1 Explain SSB phase shift method and prove that output has only upper sidebands

→ A] Block diagram

i] The Block diagram for the phase shift method of SSB generation.

Modulating signal



ii] This system is used for the suppression of lower sideband.

iii] This system uses two balanced modulators M_1 and M_2 and two 90° phase shifting method as shown in the fig.

B] operation:

i] The operation of the phase shift method is as follows:

ii] The balanced modulator M_1 has two inputs, the modulating signal without any phase shift and the RF carrier with a 90° phase shift.

iii] The other balanced modulator M_2 receives the modulating signal with a 90° phase shift.

carrier without any phase shift.

iii] At the output of both the balanced modulator we DSB-SC signal consisting of both sidebands. The carrier is completely removed.

iv] The upper sidebands (USBs) at the outputs of both the balanced modulators lead the carrier by 90° .

v] But LSB at the output of M_1 leads the carrier by 90° and the LSB at the output of M_2 lags behind the carrier by 90° .

Thus the LSB are out of phase.

vi] So when the output of M_1 and M_2 are applied to the adder, the LSB are cancelled out and the output of the adder consists of only the upper sideband.

vii] The linear amplifiers will follow the adder. They are class B or AB type amplifier used to amplify the USB without introducing any distortion.

viii] Mathematical proof of Sideband Suppression

⊕ The input to the balanced modulator M_1 are

Inputs to M_1 $\left\{ \begin{array}{l} \cos \omega_m t \\ \cos(\omega_c t + 90^\circ) \end{array} \right.$ Modulating signal as it is 90° phase shifted carrier.

⊙ And the inputs to balanced modulator M_2 are

Inputs of M_2 $\left\{ \begin{array}{l} \cos(\omega_m t + 90^\circ) \\ \cos \omega_c t \end{array} \right.$ 90° shifted modulating signal carrier as it is

⊙ So the output of $M_1 = \cos(\omega_c t + 90^\circ) \cdot \cos \omega_m t$

Sundaram



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$$\frac{1}{2} \cos [w_c t + w_m t + 90^\circ] + \frac{1}{2} \cos [w_c t - w_m t + 90^\circ]$$

USB with 90° advance

LSB with 90° delay

(1) And output of $M_2 = \cos w_c t \cdot \cos (w_m t + 90^\circ)$
 $= \frac{1}{2} \cos [w_c t + w_m t + 90^\circ] + \frac{1}{2} \cos [w_c t - w_m t - 90^\circ]$

USB with 90° advance

LSB with 90° delay

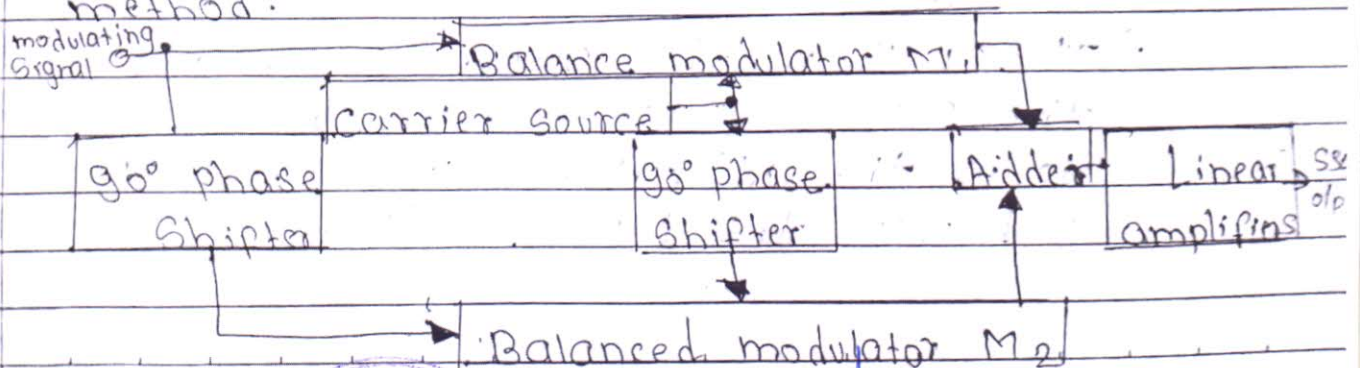
(2) Output of the adder = Output of M_1 + output of M_2
 $= \cos [w_c t + w_m t + 90^\circ]$

(3) This output is obtained by adding Equations and the LSB in the outputs of M_1 and M_2 are 180° out of phase with respect to each other

(4) Hence they are cancelled out when added. So the adder output contains only the upper sideband.

(5) Suppression of the upper sideband

(6) We can suppress the USB and generate the LSB signal consisting of the LSB by arranging the blocks in the phase shift method.



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② Here the Modulating and the carrier signals are applied to the upper balanced modulator M_1 directly without any phase shift.

③ Where as both these signals are 90° phase shifted and then applied to the lower balanced modulator M_2 .

④ Mathematical proof for USB suppression

① Inputs to M_1 are : $\cos \omega_m t$ and $\cos \omega_c t$

② Inputs to M_2 are : $\cos(\omega_m t + 90^\circ)$ and $-\cos(\omega_c t + 90^\circ)$

③ output of $M_1 = \cos \omega_m t \cos \omega_c t$
 $= \frac{1}{2} \cos(\omega_c t + \omega_m t) + \frac{1}{2} \cos(\omega_c t - \omega_m t)$

$$= \frac{1}{2} \cos(\omega_c + \omega_m)t + \frac{1}{2} \cos(\omega_c - \omega_m)t$$

USB with 0° phase shift LSB with 0° phase shift

④ output of $M_2 = \cos(\omega_c t + 90^\circ) \cos(\omega_m t + 90^\circ)$
 $= \frac{1}{2} \cos(\omega_c t + \omega_m t + 180^\circ) + \frac{1}{2} \cos(\omega_c t - \omega_m t)$

USB with 180° phase shift LSB with 0° phase shift

⑤ Adder output = $\cos(\omega_c - \omega_m t)$

① This output is obtained by adding outputs of M_1 & M_2

② The USB in the output of M_1 and that in the output of M_2 are 180° out of phase.

③ So in the adder they cancel each other and only the LSB is obtained.

Q.2 Find the carrier and modulating frequencies, the modulation index, and the maximum deviation of FM wave represented by the voltage equation $V = 12 \sin(6 \times 10^3 t + 5 \sin 1250 t)$. What power will this FM wave will dissipate in a 10Ω resistor?

→ FM wave represented by voltage eqn

To find:

Modulating frequency

Modulating index

Maximum deviation

Power.

Sol:

$$V = A \sin(\omega_c t + m_f \sin \omega_m t)$$

$$= 12 \sin(6 \times 10^3 t + 5 \sin 1250 t)$$

$$f_c = \frac{\omega_c}{2\pi} = \frac{6 \times 10^3}{2\pi} = 954.92$$

$$f_m = \frac{\omega_m}{2\pi} = 198.94$$

Amplitude = 12

$$\text{Power} = \frac{V_{\text{rms}}^2}{R}$$

$$= \frac{(12/\sqrt{2})^2}{10}$$

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$$= 7.2 \text{ WOH} \quad "$$

modulating freq = 5

$$\text{Deviation} = 5 \times 198.94 \\ = 994.7$$

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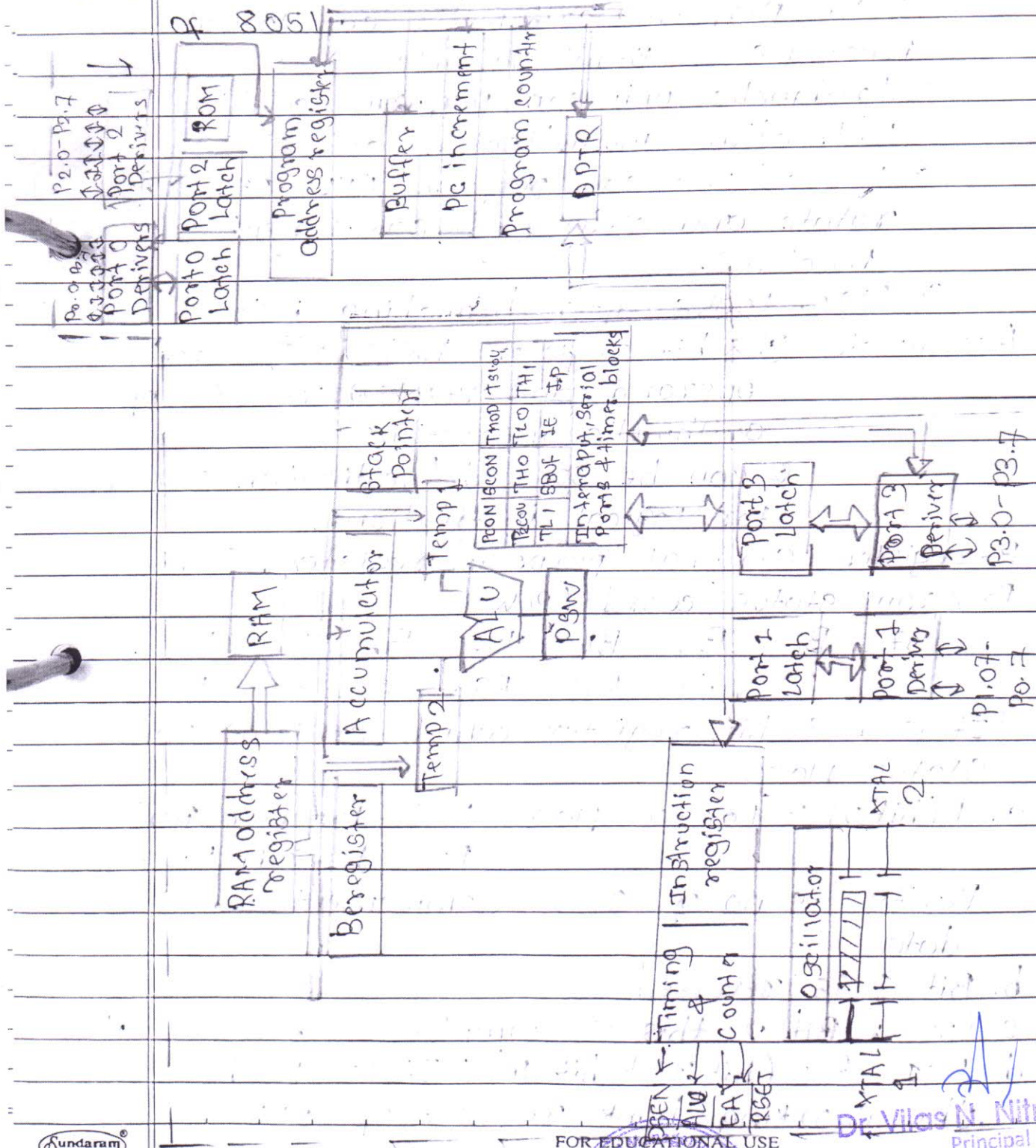



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Name:- Vanita Shalik Patil
 Div:- A/SE EXTC
 Roll No:- 33
 Microcontroller

Assignment

Q.1 Draw and explain the internal architecture of 8051



① CPU :- In consists of 8-bit ALU, register (A, B, Psw, CP) and 16-bit program counter and Data pointer (DPTR) registers.

② ALU :- ① can perform arithmetic and logical functions on 8-bit variable.

② Arithmetic unit can perform, addition, subtraction, multiplication and division.

③ Logical unit can perform AND, OR, EXOR, rotate and clear and complement functions.

④ Also, looks after branching instructions.

③ Accumulator :- ① 8 bit register, holds 1st / source operand and results of arithmetic instructions.

② can be sourced / destination register for logical instructions.

④ B-register: General purpose register, 8-bit.

⑤ Program status word (PSW)

B7	B6	B5	B4	B3	B2	B1	B0
CY	AC	FO	RST	RS0	OV	-	P

i] It is a 8-bit register which contains various status flags.

a. P(bit 0) :- Parity flag : P=1 for even parity.
P=0 for odd Parity.

Parity is no. of 1 is complement in the data.

b. Bit 1 is reversed.

c. (ov) :- Bit 2 this is complement in the data.

d. RST, RS0 (bit 3 & bit 4) :- It is used to select the working bank register of RAM.

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RS1	RS0	Bank Selection
0	0	00H - 07H (Bank 0)
0	1	08H - 0FH (Bank 1)
1	0	10H - 17H (Bank 2)
1	1	18H - 1FH (Bank 3)

F0 (Bit 5) It is used as a define flag (flag 0)

Ac (Bit 6) :- Auxillary carry flag for BCD (Binary coded decimal) operation

CY (Bit 7) :- Carry flag

⑥ Stack pointer

① 8 bit register for on chip Ram RAM.

② incremented before (push) and (ALL) instruction.

③ Initialize to 07H after reset that means stack begins from location 08H.

⑦ Data pointer (DPTR)

① 16-bit register which can be divided into two independent 8 bit register (DPH & DPL)

② Server's has a base register, indirect jumps, lookup table instruction and external data transfer.

⑧ RAM :-

① consist of 4 bank register and 144 general purpose bits

② RS0 and RS1 bits in PSW are used to selected the desired bank.

③ 144 general purpose bits are used as software flag or program variables.

⑨ I/O ports :-

① 32 I/O pins of 4 (8-bits) ports [P0, P1, P2, P3]

② All Ports are by directional and consists of lach and drivers.

③ Ports 0 "Multiplex data and Address line"

④ Port 2 high order bits. where address is 16 bit wide

⑤ Port 3 "Multifunctional"

MSB				LSB			
\overline{RD}	\overline{WR}	T.1	T.0	$\overline{INT1}$	$\overline{INT0}$	TxD	RxD
P3.7	P3.6	P3.5	P3.4	P3.3	P3.2	P3.1	P3.0

• \overline{RD} :- Read data control output, active low. Pulse is generated by Hardware when external data memory is readed.

• \overline{WR} :- Write data control output active low. Pulse is generated by Hardware when external data memory is written.

• T1 :- Timer flash counter 1 external input pins.

• T0 :- Timer flash counter 0 external input pins

• $\overline{INT1}$:- Interact 1 input pin, active low

• $\overline{INT0}$:- Interact 0 input pin, active low

• TxD :- Transmitted data pin for Serial Port in UART mode. clock output in Shift register mode.

• RxD :- Received data pin for Serial Port in UART mode. data I/O pin in Shift register mode.

Q.2 Explain ARM 7 Programmers model.

→ ① The ARM 7 Processor has thirty seven 32 bit registers

② The registers include of -

i] A dedicated program counter.

ii] A dedicated current program status register.

iii] A dedicated saved program status register

These registers are governed by the particular GPR processor mode.

③ Each processor mode can access the particular set of R0-R12 register, R13 register (Stack pointer) and link register (R14), register R15 (Program counter) and CPSR. Privileged modes can access SPBR.

④ R0 to R12 are used as general purpose register and they used for holding the data or addresses.

⑤ R13 is a stack pointer. It stores the top of the stack in the current processor mode.

⑥ R14 is a link register. It is used for storing the return address in case of subroutine calls.

⑦ R15 is a program counter. It stores the address of the next instruction to be fetched from the memory by the processor. Generally it is used as pointer.

⑧ Registers (R0-R7) are called unbanked registers. Registers (R8-R14) are called banked registers.

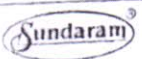
User 32 FIQ32 Supervisor 32 Abort 32

User 32 FIQ Supervi- Abort IRQ Undefined
System 32 Sor 32 32 32 32

r0	r0	r0	r0	r0	r0
r1	r1	r1	r1	r1	r1
r2	r2	r2	r2	r2	r2
r3	r3	r3	r3	r3	r3
r4	r4	r4	r4	r4	r4
r5	r5	r5	r5	r5	r5
r6	r6	r6	r6	r6	r6
r7	r7	r7	r7	r7	r7
r8	r8-fiq	r8	r8	r8	r8
r9	r9-fiq	r9	r9	r9	r9
r10	r10-fiq	r10	r10	r10	r10
r11	r11-fiq	r11	r11	r11	r11
r12	r12-fiq	r12	r12	r12	r12
r13(sp)	r13-fiq	r13-SV	r13-abt	r13-irq	r13-undef
r14(lr)	r14-fiq	r14-SV	r14-abt	r14-irq	r14-undef
r15(pc)	r15-pc	r15-pc	r15-pc	r15-pc	r15-sp

Program Status

CPSR	CPSR	CPSR	CPSR	CPSR	CPSR
	SPSR-fiq	SPSR-SV	SPSR-abt	SPSR-irq	SPSR-undef



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Name :- Vanita. S. Patil
Roll No :- 33 / Div :- A / SE (EXTC)
Sub :- Mathematics - IV

Q. 1 Evaluate $\int_C \frac{e^{2z}}{(z-1)} dz$, where is the (i) $|z|=2$,
ii) $|z|=1/2$.

$$\rightarrow I = \int_C \frac{e^{2z}}{(z-1)} dz$$

$$\text{Pole :- } z-1=0 \\ z=1$$

\therefore Poles is non-repeated

① $|z|=2 = \text{Radius}$

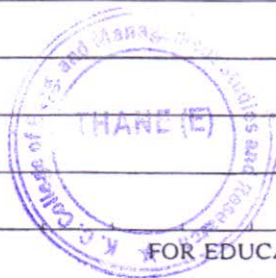
$z=1$ lies inside the circle

$$I = \int \frac{e^{2z}}{(z-1)}$$

$$\therefore I = 2\pi i f(1)$$

$$f(z) = f(1) = \frac{e^{2 \times 1}}{(1-1)} = \frac{e^2}{0} = \infty$$

$$\therefore I = 2\pi i \times \infty \\ = 0$$



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$$\textcircled{2} |z| = \frac{1}{2} = \text{Radius}$$

lies outside the circle

$$J = \int_c \frac{e^{2z}}{(z-1)} dz$$

Q.2 Let x be a continuous random variable with Probability Distribution.

$$f(x) = \begin{cases} x/6 + k & \text{if } 0 \leq x \leq 3 \\ 0 & \text{elsewhere} \end{cases} \quad \text{find } k \text{ and } P(1 \leq x \leq 2).$$

→ Since the total probability is one

$$\int_{-\infty}^{\infty} p(x) dx = \int_0^3 \left(\frac{x}{6} + k \right) dx = \left[\frac{x^2}{12} + kx \right]_0^3$$
$$= \frac{3}{4} + 3k = 1$$

$$\therefore 3 \left(\frac{1}{4} + k \right) = 1$$

$$\therefore \frac{1}{4} + k = \frac{1}{3}$$

$$\therefore k = \frac{1}{3} - \frac{1}{4} = \frac{1}{12}$$

$$\therefore p(x) = \begin{cases} \frac{x}{6} + \frac{1}{12} & \text{if } 0 \leq x \leq 3 \\ 0 & \text{elsewhere} \end{cases}$$

$$\therefore P(1 \leq x \leq 2) = \int_1^2 \left(\frac{x}{6} + \frac{1}{12} \right) dx = \left[\frac{x^2}{12} + \frac{x}{12} \right]_1^2$$

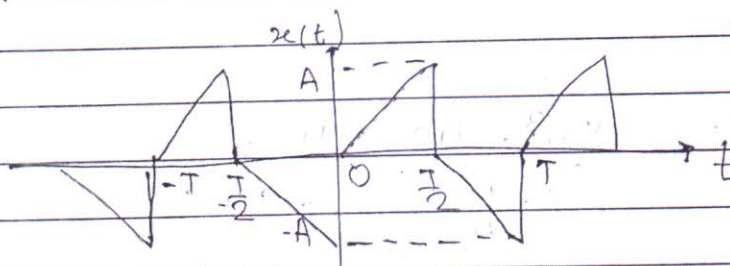
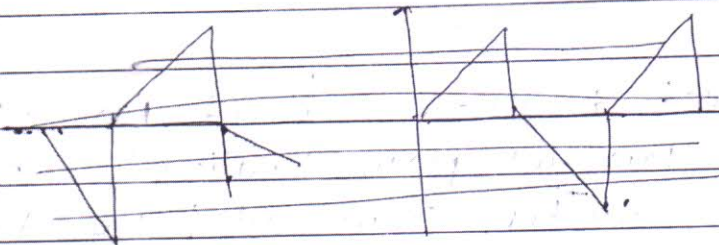
$$= \frac{1}{12} [(4+2) - (1+1)] = \frac{1}{12} (4) = \frac{1}{3}$$

Name:- Vanita. S. Patil
 Div:- A / SE (EXTC)
 (33) &
 Sub:- SS

Assignment

Q.1 Find the Fourier Series of the given waveform in figure.

→ The waveform has half wave symmetry. Hence the Fourier series consists of odd harmonic terms alone. The trigonometric Fourier series representation of the waveform is given by equation.

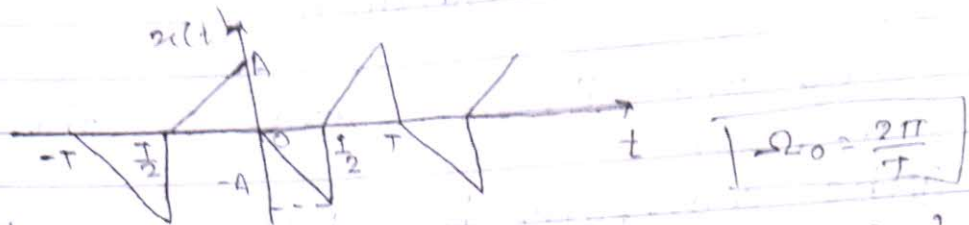


$$\Omega_0 = \frac{2\pi}{T}$$

$$x(t) = \frac{4A}{\pi^2} \left(\cos \Omega_0 t + \frac{\cos 3\Omega_0 t}{3^2} + \frac{\cos 5\Omega_0 t}{5^2} + \dots \right)$$

$$- \frac{2A}{\pi} \left(\sin \Omega_0 t + \frac{\sin 3\Omega_0 t}{3} + \frac{\sin 5\Omega_0 t}{5} + \dots \right)$$

② The waveform has half wave symmetry. Hence the Fourier series consists of odd harmonic terms alone. The trigonometric Fourier series representation of the waveform



$$x(t) = \frac{4A}{\pi^2} \left(\cos \Omega_0 t + \frac{\cos 3\Omega_0 t}{3^2} + \frac{\cos 5\Omega_0 t}{5^2} + \dots \right) - \frac{2A}{\pi} \left(\sin \Omega_0 t + \frac{\sin 3\Omega_0 t}{3} + \frac{\sin 5\Omega_0 t}{5} + \dots \right)$$

Q. 2 Find the direct form-I, direct form-II, cascade and parallel form realization of a discrete time system represented by transfer function

$$H(z) = \frac{8z^3 - 4z^2 + 11z - 2}{\left(z - \frac{1}{4}\right) \left(z^2 - z + \frac{1}{2}\right)}$$

Direct Form - I Structure

Given that $H(s) = \frac{8s^3 - 4s^2 + 11s - 2}{\left(s - \frac{1}{4}\right) \left(s^2 - s + \frac{1}{2}\right)}$

Let $H(s) = \frac{Y(s)}{X(s)}$; where $Y(s)$ = Output in

s-domain and $X(s)$ = Input in s-domain

$$\therefore X(s) = \frac{Y(s)}{\left(s - \frac{1}{4}\right) \left(s^2 - s + \frac{1}{2}\right)} = \frac{8s^3 - 4s^2 + 11s - 2}{\left(s^2 - s + \frac{1}{2}\right) \left(s - \frac{1}{4}\right)} = \frac{8s^3 - 4s^2 + 11s - 2}{2s^2 - \frac{1}{2}s + \frac{1}{4} - \frac{1}{4}s + \frac{1}{8}}$$

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$$8s^3 - 4s^2 + 11s - 2 = s^3 \left(8 - 4 \frac{1}{s} + 11 \frac{1}{s^2} - 2 \frac{1}{s^3} \right)$$

$$s^2 - \frac{5}{4} s + \frac{3}{4} - \frac{1}{8} = s^3 \left(\frac{1 - \frac{5}{4} \frac{1}{s} + \frac{3}{4} \frac{1}{s^2} - \frac{1}{8} \frac{1}{s^3} \right)$$

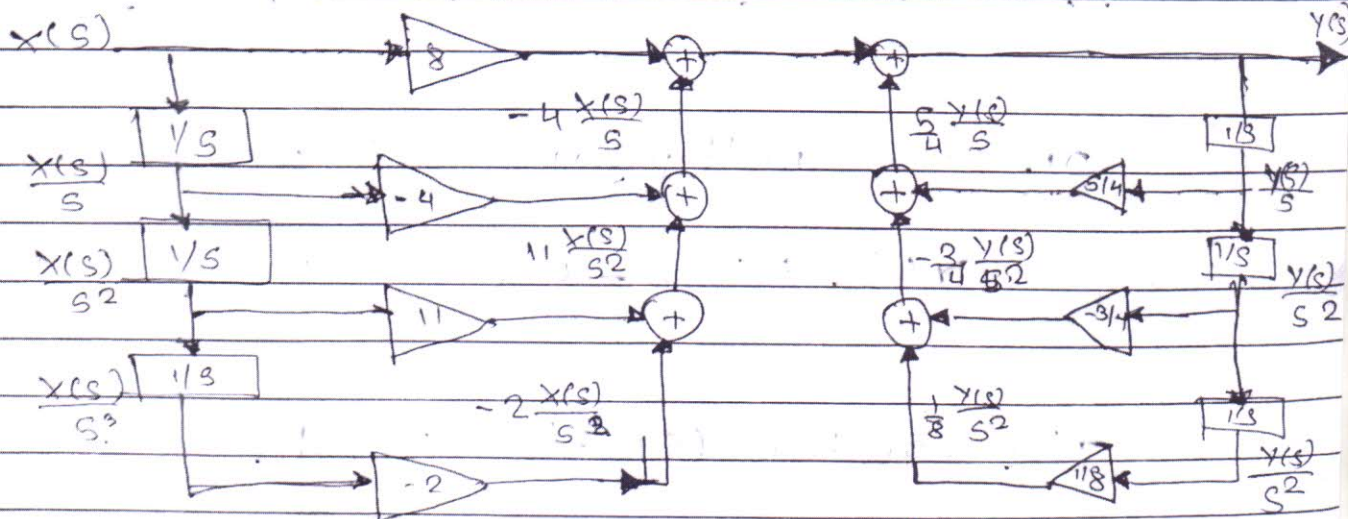
$$\therefore \frac{Y(s)}{X(s)} = \frac{8 - 4 \frac{1}{s} + 11 \frac{1}{s^2} - 2 \frac{1}{s^3}}{1 - \frac{5}{4} \frac{1}{s} + \frac{3}{4} \frac{1}{s^2} - \frac{1}{8} \frac{1}{s^3}}$$

On cross multiplying equation (1) we get

$$Y(s) - \frac{5}{4} \frac{Y(s)}{s} + \frac{3}{4} \frac{Y(s)}{s^2} - \frac{1}{8} \frac{Y(s)}{s^3} = 8X(s) - 4X(s) + \frac{11Y(s)}{s^2} - 2 \frac{X(s)}{s^3}$$

$$\therefore Y(s) = 8X(s) - 4 \frac{X(s)}{s} + 11 \frac{X(s)}{s^2} - 2 \frac{X(s)}{s^3} + \frac{5}{4} \frac{Y(s)}{s} - \frac{3}{4} \frac{Y(s)}{s^2} + \frac{1}{8} \frac{Y(s)}{s^3}$$

The direct form-1 Structure can be obtained from equation (2)



Direct Form-II structure

From equation (1) we get

$$\frac{Y(s)}{X(s)} = \frac{8 - 4\frac{1}{s} + 11\frac{1}{s^2} - 2\frac{1}{s^3}}{1 - \frac{5}{4}\frac{1}{s} + \frac{3}{4}\frac{1}{s^2} - \frac{1}{8}\frac{1}{s^3}}$$

$$\text{Let } \frac{Y(s)}{X(s)} = \frac{W(s)}{X(s)} \cdot W(s)$$

$$\text{where } \frac{W(s)}{X(s)} = \frac{1 - \frac{5}{4}\frac{1}{s} + \frac{3}{4}\frac{1}{s^2} - \frac{1}{8}\frac{1}{s^3}}{1 - \frac{5}{4}\frac{1}{s} + \frac{3}{4}\frac{1}{s^2} - \frac{1}{8}\frac{1}{s^3}}$$

$$\frac{Y(s)}{W(s)} = 8 - 4\frac{1}{s} + 11\frac{1}{s^2} - 2\frac{1}{s^3}$$

On cross multiplying equation (3) we get

$$W(s) = \frac{5}{4} \frac{W(s)}{s} + \frac{3}{4} \frac{W(s)}{s^2} - \frac{1}{8} \frac{W(s)}{s^3} = Y(s)$$

$$\Rightarrow W(s) + \frac{5}{4} \frac{W(s)}{s} - \frac{3}{4} \frac{W(s)}{s^2} + \frac{1}{8} \frac{W(s)}{s^3} = Y(s)$$

On cross multiplying we get

$$s^3 W(s) + 5s^2 W(s) - 3s W(s) + W(s) = s^3 Y(s)$$

The equation (4) can be written as



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**Skill Lab: Linux and Networking and Server
Configuration**

Excelsior Education Society's

**K. C. College of Engineering and Management Studies
and Research**

(Affiliated to the University of Mumbai)

Mith Bunder Road, Near Hune Pipe, Kopri, Thane (E)-400603

Department of Electronics & Telecommunication




Name: - Chinmay Prasanna Jadhav

Class: - T.E Roll No:- 07

Batch:- A1 Semester: - VII




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INSTITUTE VISION

To be an organization with potential for excellence in engineering and management for the advancement of society and human kind.

INSTITUTE MISSION

1. To excel in academics, practical engineering, management and to commence research endeavors.
2. To prepare students for future opportunities.
3. To nurture students with social and ethical responsibilities.


DEPARTMENT VISION

To shape Electronics & Telecommunication engineers who are professionally and socially competent.

DEPARTMENT MISSION

1. To aim for excellence in teaching learning process and analytical thinking.
2. To conduct skill development program in order to become industry ready.
3. To impart students with social and moral education.




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**K. C. COLLEGE OF ENGINEERING
 AND MANAGEMENT STUDIES AND RESEARCH
 THANE (EAST).**

Certificate

This is to certify that Mr. / Ms. Chinmay P. Jadhav
 of Semester 6 Branch EXTC Roll No. 07
 has performed and successfully completed all the practicals in the subject
 of SKILL Lab : Linux & Networking & server Configuration for the
 academic year 2022 to 2023 as prescribed by University of Mumbai.

DATE :- 20/04/2023

Bakshi
20/04/2023

Practical Incharge

Bakshi

Internal Examiner

ck

James

External Examiner

H.O.D.
 Head of Department
 Dept. of Electronics & Communication Engg.
 K.C. College of Engineering &
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Lab Objective:

- Install Linux and implement standard Linux commands
- Study basic theory of Linux Operating System
- Implement the system administrative functionality
- To write shell script programs to solve problems Study basic commands of networking
- Develop implementation skill of different servers on Linux

Lab Outcomes: The students will be able to

- Install Linux using different platform and execute standard Linux commands.
- Describe the basic knowledge of Linux Operating System
- Deploy the system administrative functionality
- Solve the problems using shell script programming.
- Develop network based applications.
- Apply the Linux commands using programming skill to deploy different servers like ftp, telnet etc.





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Module No.	Unit No.	Topics	Hrs.
1.0		Overview of Linux	08
	1.1	Installing Software on Debian Based Linux: Debian, Ubuntu, Kali Linux	
	1.2	Overview of Unix and Linux architectures, Linux files system, Linux standard directories, Linux Directory Structure, Basic Linux Commands, Linux Networking commands, Viewing Files and the Nano Editor, Editing Files in Vi, Graphical Editors, Deleting, Copying, Moving, and Renaming Files	
2.0		Linux OS	06
	2.1	Linux Design Principles, Linux Booting Process, Kernel Modules, Process Management, Scheduling, Memory Management, Input and Output, Inter-process Communication.	
3.0		System Administration	08
	3.1	Common administrative tasks, Configuration and log files, Role of system administrator, Managing user accounts –adding, deleting users, Changing permissions and ownerships, Creating and managing groups, Modifying group attributes.	
	3.2	Temporary disabling of users accounts, Creating and mounting file system, becoming super user using su, Getting system information with uname, host name. Disk partitions & sizes, users, kernel, installing and removing packages, rpm command	
4.0		Shell programming	12
	4.1	Basics of shell programming, various types of shell available in Linux, Shell programming in bash, Conditional statements, Looping statements, Case statements, Parameter passing and arguments	
	4.2	System shell variables, Shell variables, shell keywords, Creating Shell programs for automating system tasks. Scheduling repetitive jobs using cron.	
5.0		Linux Networking	08
	5.1	Basics of Network Management, Setting up Dynamic and Static Addressing, Monitoring network services, Talking with DNS Servers, Remote System Administration with OpenSSH-Server & Putty.	
	5.2	TCP/IP Networking for Linux System Administrators, DNS and hostnames, DHCP, , Network Troubleshooting.	
6.0		Servers and Configurations	10
	6.1	Create and configure DHCP, Mail, DNS, FTP, Squid, Apache, Telnet, Samba servers	
		Total	52



4



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Program Outcomes

Engineering Graduates will be able to:

1. **Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2. **Problem analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated CONCLUSIONS using first principles of mathematics, natural sciences, and engineering sciences.
3. **Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
4. **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid CONCLUSIONS.
5. **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
6. **The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
7. **Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
8. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9. **Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10. **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
11. **Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
12. **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.




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Department of Electronics and Telecommunication

Subject: Skill Laboratory: Linux & Networking & Server Configuration

Class: T.E/Sem VI

ECL604	Lab outcome
	At the end of the course student will be able to
ECL604.1	Install Linux using different platform and execute standard Linux commands.
ECL604.2	Describe the basic knowledge of Linux Operating System
ECL604.3	Deploy the system administrative functionality
ECL604.4	Solve the problems using shell script programming
ECL604.5	Develop network based applications
ECL604.6	Apply the Linux commands using programming skill to deploy different servers like ftp, telnet etc.





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RUBRICS OF PRACTICAL

Rubrics Description	Maximum Marks Weight	Excellent 15 – 12	Good 12-9	Fair 9-6	Poor 6-0
Implementation (R1)	5	Successful completion with accurate OUTPUT (5-4)	One error in the OUTPUT (4-3)	Two errors in the OUTPUT (3-2)	More than two errors in OUTPUT (2-0)
Understanding (R2)	5	Presents a logical explanation for findings and addresses most of the questions. (5-4)	Presents a logical explanation for findings and addresses some of the questions. (4-3)	Presents an illogical explanation for findings and addresses few questions. (3-2)	Presents an illogical explanation for findings and does not address any of the questions suggested in the template. (2-0)
Punctuality (R3)	5	Submission within a week (5-4)	Submission after a week (4-3)	Submission after two weeks (3-2)	Submission after three weeks or more (2-0)




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Total Grade / Marks :-

Avg. marks of Experiments (A)		Avg. marks of Assignments (B)		Total Marks (A+B)
Obtained	Out of	Obtained	Out of	
14.64	15			

Daksh
20/04/2023
Practical Incharge

20/04/2023
Date




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2	To execute basic Linux commands and Vi editor commands.	23/01/23	27/01/23	7	15	Bal
3	Write shell script to execute conditional and looping statement.	27/01/23	30/01/23	15	15	Bal
4	Write a shell script to show various system configuration like currently logged user and his logname, your current shell, home directory, operating system type, current path setting, current working directory, show currently logged number of users, show memory information, Hard disk information like size of hard-disk, cache model etc, and file system mounted.	30/01/23	03/2/23	23	13	Bal
5	To execute system administrator task.	3/2/23	6/2/23	27	14	Bal
6	Write a shell script to add user and password on Linux system	06/2/23	10/2/23	31	15	Bal
7	Write a shell script that delete all lines containing a specified word	10/2/23	13/02/23	34	15	Bal
8	Write a shell script to upgrade and cleans the system automatically instead of doing it manually.	13/2/23	17/2/23	37	15	Bal
9	Write a shell script to find the factorial of given integer.	17/2/23	20/2/23	46	15	Bal
10	Write a shell script to find the number of characters, words and lines in a file?	20/2/23	17/3/23	49	13	Bal
11	Install and Configure DHCP Server and Client	17/3/23	20/3/23	52	15	Bal
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15	Cisco Course Certificate- Skill Laboratory: Linux & Networking & Server Configuration			63	05	Bal




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Total Grade / Marks :-

Avg. marks of Experiments (A)		Avg. marks of Assignments (B)		Total Marks (A+B)
Obtained	Out of	Obtained	Out of	
14.64	15			

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20/04/2023
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EXPERIMENT NO. 1

Aim:- Linux installation process using following method CD-ROM, Network installation.

Lab Outcome: -

ECL604.1 - Install Linux using different platform and execute standard Linux commands.

Date of Performance: - 16/01/2023

Date of Submission: - 23/01/2023

Implementation (05)	Understanding (05)	Punctuality & Discipline (05)	Total Marks (15)
05	05	05	15

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EXPERIMENT NO.

AIM: Linux Installation process using following method CD-ROM. Network Installation.

SOFTWARE REQUIREMENT: Linux Operating System

THEORY:

- Linux is a modern, free operating system based on UNIX standards.
- First developed as a small but self-contained kernel in 1991 by Linus Torvalds, with the major design goal of UNIX compatibility, released as open source.
- Its history has been one of collaboration by many users from all around the world, corresponding almost exclusively over the Internet.
- It has been designed to run efficiently and reliably on common PC hardware, but also runs on a variety of other platforms.
- The core Linux operating system kernel is entirely original, but it can run much existing free UNIX software, resulting in an entire UNIX-compatible operating system free from proprietary code.
- Linux system has many, varying Linux distributions including the kernel, applications, and management tools.
- Linux is a multiuser, multitasking system with a full set of UNIX-compatible tools.
- Its file system adheres to traditional UNIX semantics, and it fully implements the standard UNIX networking model.
- Main design goals are speed, efficiency, and standardization.
- Linux is designed to be compliant with the relevant POSIX documents; at least two Linux distributions have achieved official POSIX certification.
- Supports Pthreads and a subset of POSIX real-time process control.
- The Linux programming interface adheres to the SVR4 UNIX semantics, rather than to BSD behavior.
- Like most UNIX implementations, Linux is composed of three main bodies of code: the most important distinction between the kernel and all other components.
- The kernel is responsible for maintaining the important abstractions of the operating system.
- Kernel code executes in kernel mode with full access to all the physical resources of the computer.
- All kernel code and data structures are kept in the same single address space.
- The system libraries define a standard set of functions through which applications interact with the kernel, and which implement much of the operating-system functionality that does not need the full privileges of kernel code.
- The system utilities perform individual specialized management tasks.
- User-mode programs rich and varied, including multiple shells like the bourne-again (bash).



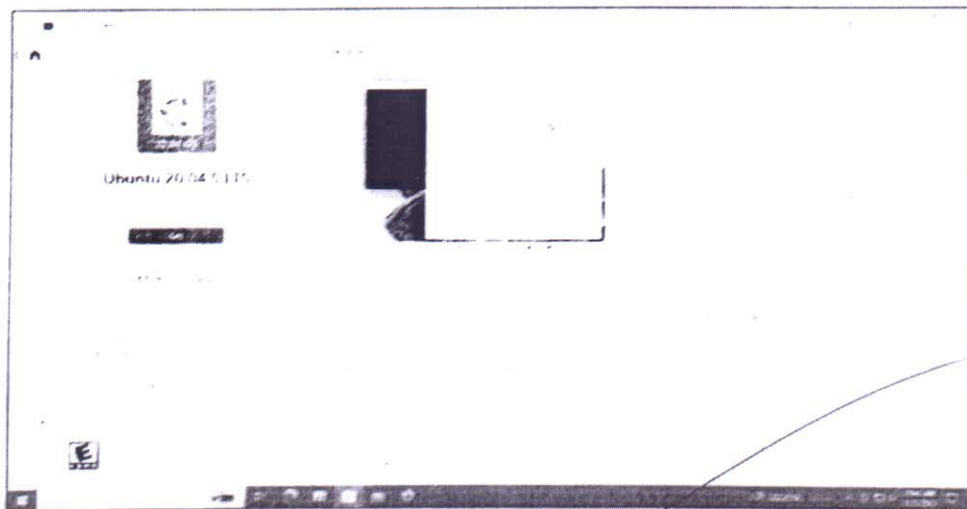

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INSTALLATION STEP:

Step-1. Open Microsoft Store in your PC

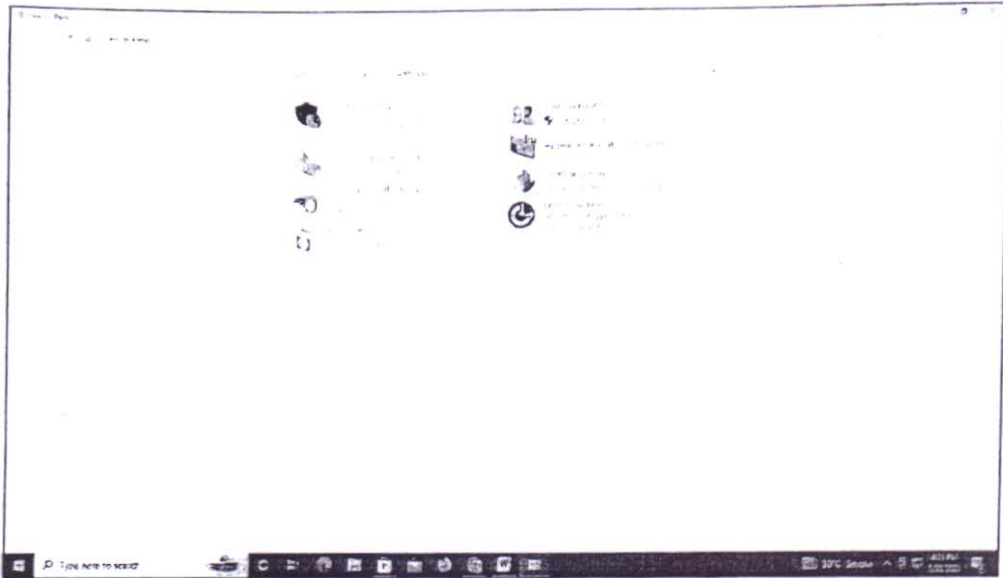


Step-2: Search for Ubuntu in its Search Bar and then click on Get

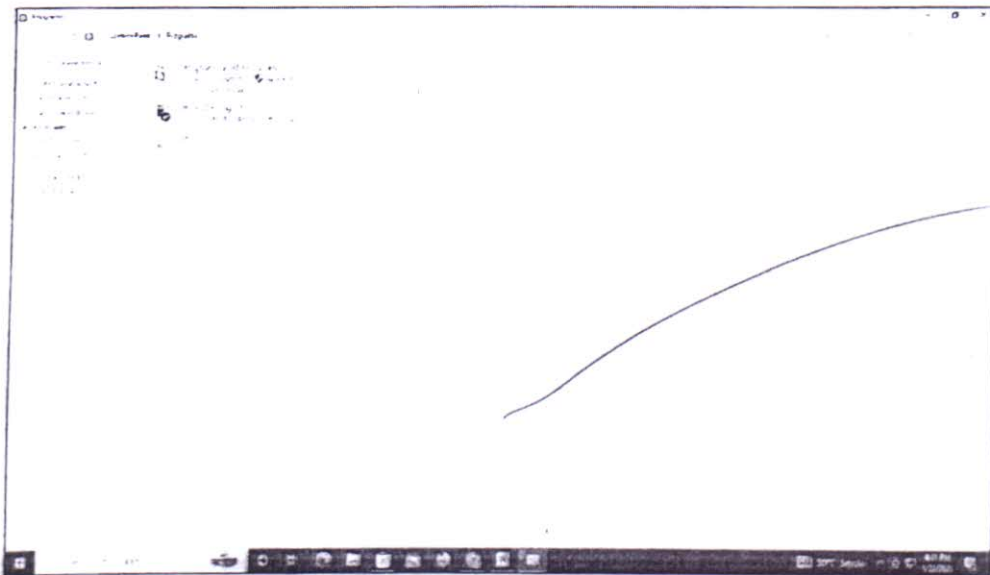




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Step-3: After Downloading go to Control Panel in your PC and click on Programs

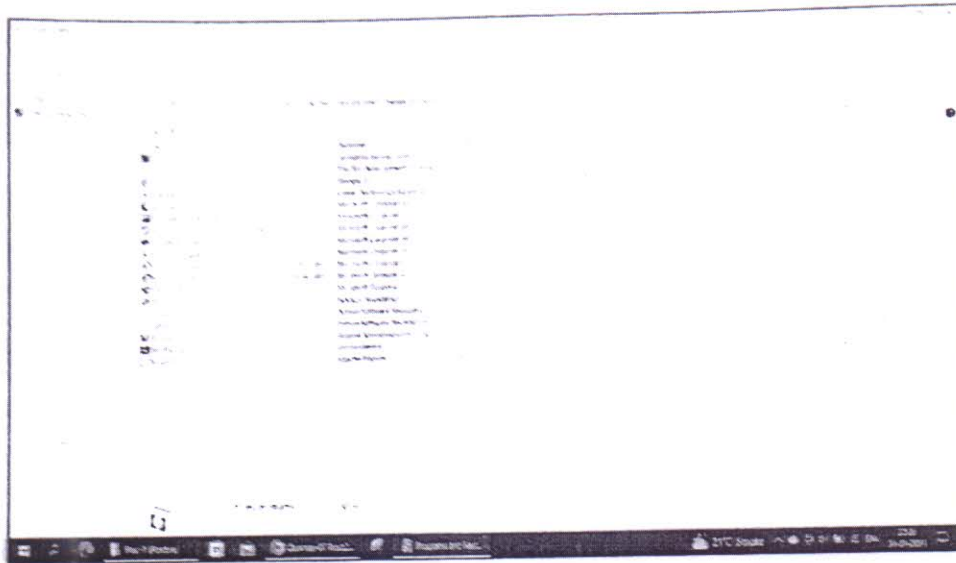


Step-4: Then click on Programs and Features

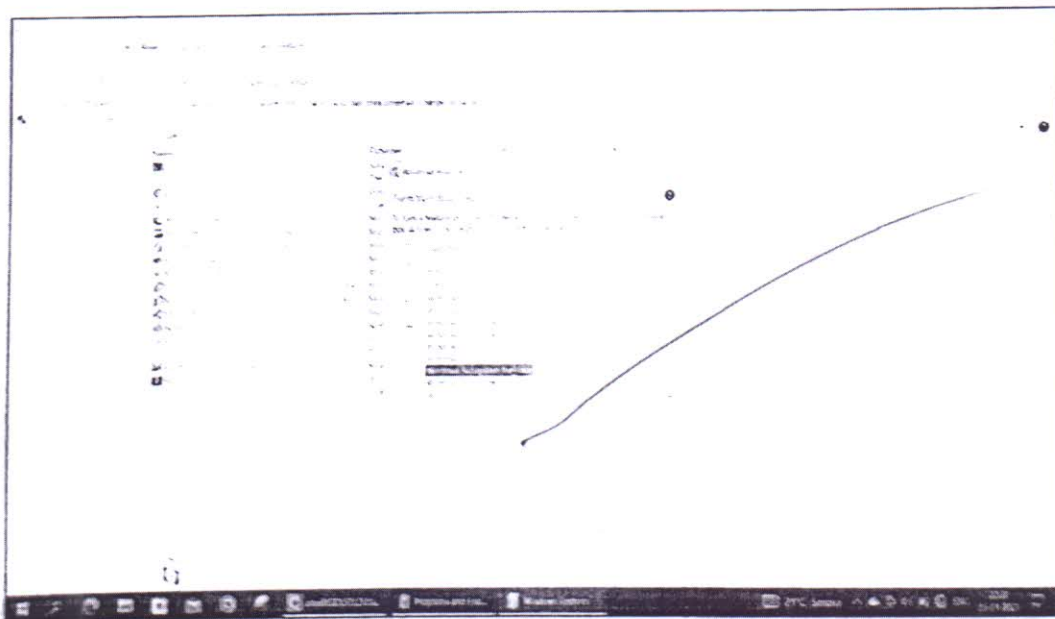




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Step-5: Then Click on Turn Windows Features on or off in left corner of the screen.

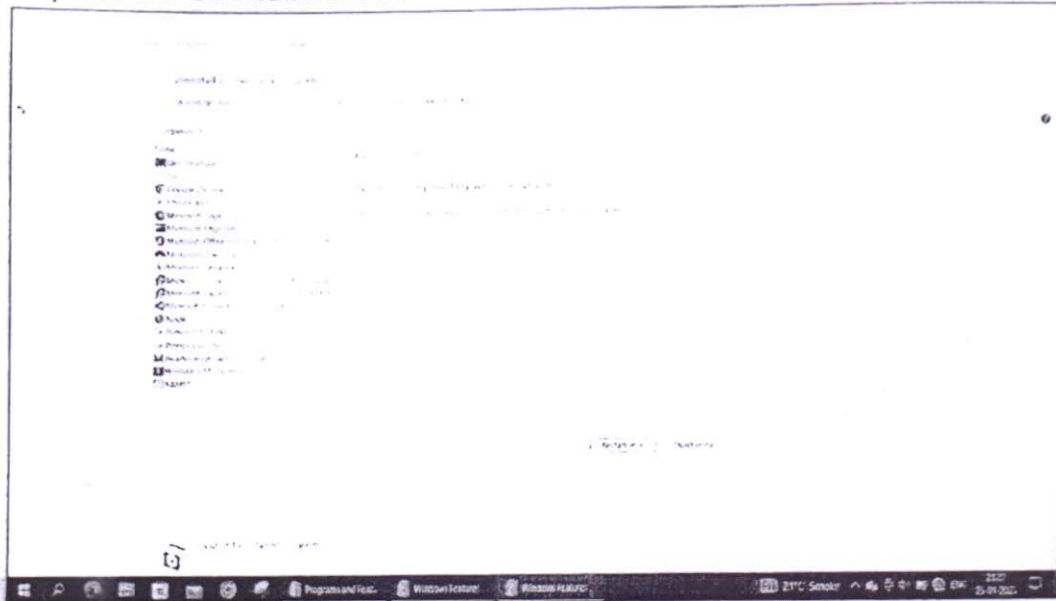


Step-6: Make Sure Windows Subsystem for Linux Option is Checked, if not check it.

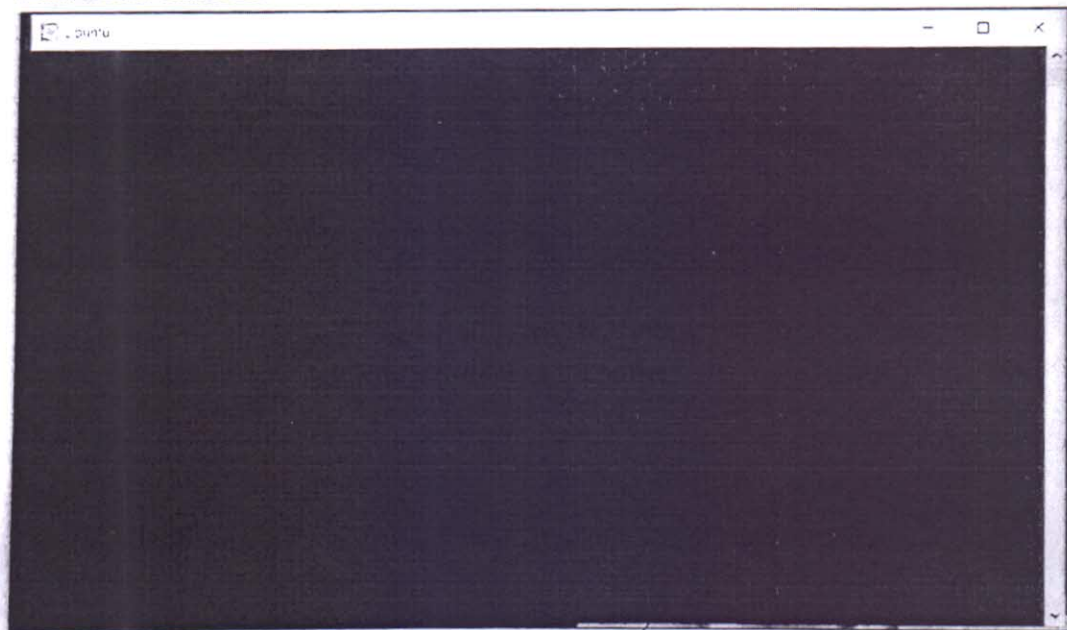



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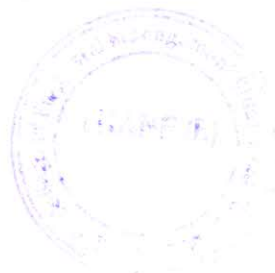
Step-7: Click on Restart Now.



Step-8: Launch Ubuntu from Start Menu and enter Username: unix and Password: unix123



CONCLUSION: We have successfully downloaded and installed ubuntu into our system and checked the window subsystem for linux for the same so that we can successfully run linux into our system.



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EXPERIMENT NO. 2

Aim:- To execute basic Linux commands and Vi editor commands.

Lab Outcome: -

ECL604.1 - Install Linux using different platform and execute standard Linux commands.

Date of Performance: - 23/01/2023

Date of Submission: - 27/01/2023

Implementation (05)	Understanding (05)	Punctuality & Discipline (05)	Total Marks (15)
05	05	05	15

Bakshi
27/01/2023

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EXPERIMENT NO.

AIM: To execute basic Linux commands and Vi editor commands.

SOFTWARE REQUIREMENT: Linux Operating System, Shell-Interpreter, Nano editor

THEORY:

1. pwd:

In Unix-like and some other operating systems, the `pwd` command (print working directory) writes the full pathname of the current working directory to the standard output.

2. ls:

In computing, `ls` is a command to *list* files in Unix and Unix-like operating systems. `ls` is specified by POSIX and the Single UNIX Specification. When invoked without any arguments, `ls` lists the files in the current working directory.

3. cd:

The `cd` command is used to change the current directory (i.e., the directory in which the user is currently working) in Linux and other Unix-like operating systems.

4. mkdir:

The `mkdir` command is used to create new directories. A directory, referred to as a folder in some operating systems, appears to the user as a container for other directories and files.


5. rmdir:

The `rmdir` command is used to remove empty directories in Linux and other Unix-like operating systems. ... In contrast to the `rm` command, which is used to delete both files and directories, there is no `-r` option for `rmdir`.

6. cat:

The `cat` (short for "concatenate") command is one of the most frequently used command in Linux like operating systems. `cat` command allows us to create single or multiple files, view contain of file, concatenate files and redirect output in terminal or files.




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7. **chmod:**

In Unix-like operating systems, chmod is the command and system call which may change the access permissions to file system objects (files and directories). It may also alter special mode flags. The request is filtered by the umask. The name is an abbreviation of change mode.

8. **touch**

The touch command is used to create empty files. We can create multiple empty files by executing it once.

9. **rm**

The rm command is used to remove a file.

10. **cp**

The cp command is used to copy a file or directory.

11. **mv**

The mv command is used to move a file or a directory from one location to another location.

12. **rename**

The rename command is used to rename files. It is useful for renaming a large group of files.

13. **head**

The head command is used to display the content of a file. It displays the first 10 lines of a file.

14. **tail**

The tail command is similar to the head command. The difference between both commands is that it displays the last ten lines of the file content. It is useful for reading the error message.


Vi or the Visual Editor

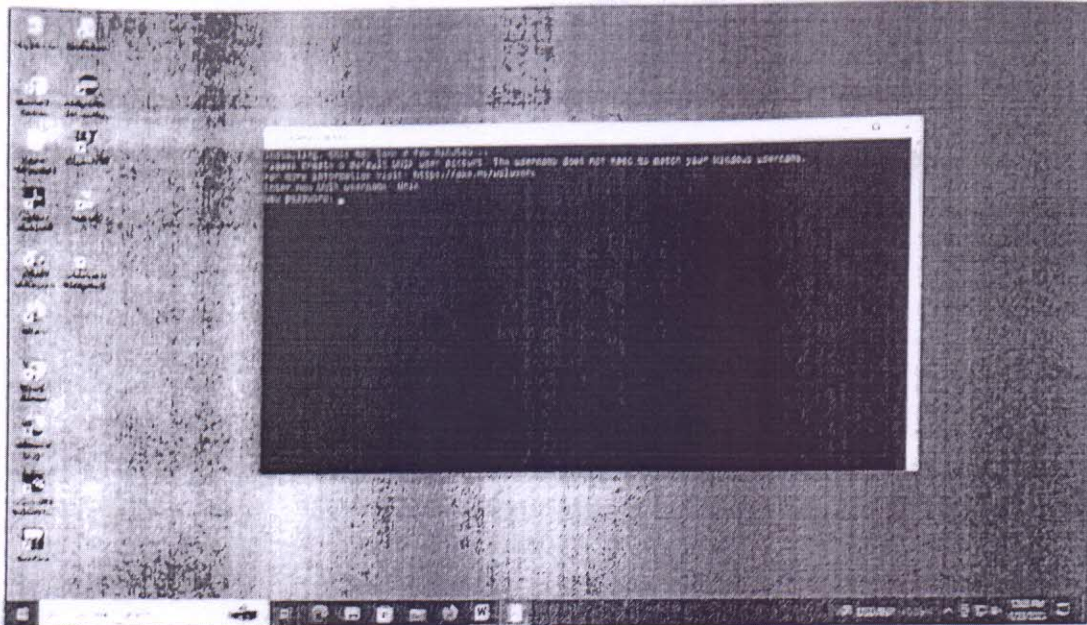
It is the default text editor that comes with most Linux systems. It is a Terminal-based text editor that users need to learn, essentially when more user-friendly text editors are not available on the system. Some other reasons to use Vi include: Vi is available on almost all operating systems.

Vi editing commands

- i – Insert at cursor (goes into insert mode)
- a – Write after cursor (goes into insert mode)
- A – Write at the end of line (goes into insert mode)
- ESC – Terminate insert mode
- u – Undo last change




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```

man(1)                                Manual page utility                                MAN(1)

man - an interface to the system reference database

SYNOPSIS
man [-m man-section] [-f filename] [man ...] ...
man -w (man-section) (man ... ) ...
man -l (man-section) (man-section) (man ...) ...
man -d (man-section) (man-section) (man ...) ...
man -e (man-section) (man-section) (man ...) ...
man -r (man-section) (man-section) (man ...) ...

DESCRIPTION
man is the system's manual, paper. Each man argument given to man is normally the name of a program, utility or function. The manual page associated with each of these arguments is then found and displayed. A section is provided, which tells you to look for in that listing of the results. The default section is to search in all of the available sections, following a pre-defined order (see DETAILS), and it shows only the first page found, even if more exists in another section.

The table below shows the section numbers, of the manual followed by the type of pages they contain.

1 Executable programs or shell commands
2 System calls (functions provided by the kernel)
3 Library calls (functions within program libraries)
4 Special files (usually /dev)
5 File formats and conventions, e.g. /etc/passwd
6 Games
7 Miscellaneous (including macro packages and conventions), e.g. man(7), groff(7)
8 System administration commands (usually only for root)
9 Kernel routines (non standard)

A manual page consists of several sections.
Conventional section names include NAME, SYNOPSIS, CONFIGURATION, DESCRIPTION, OPTIONS, EXIT STATUS, RETURN VALUES, ERRORS, ENVIRONMENT, FILES, VERSIONS, COMPILING TO, TOOLS, BUGS, EXAMPLES, AUTHOR, and SEE ALSO.

The following conventions apply to the SYNOPSIS section and can be used as a guide in other sections.


bold text      type exactly as shown.
[man]          replace with appropriate argument.
man on all arguments with [ ] one optional
              section, delimited by |, cannot be used together.
argument ...   argument is repeatable.
[man-section] ... entire [man-section] within [ ] is repeatable.

Page rendering may vary depending on the output device. For instance, man will usually not be able to render italics when running on a terminal, and will typically use underscores or coloured text instead.

The command on function illustration is a pattern that should match all possible invocations. In some cases it is convenient to illustrate several variants together, as is shown in the SYNOPSIS section of this manual.

```




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```
ana@PC21:~$ sudo chown
ana@PC21:~$ sudo chown -R
ana@PC21:~$ sudo chown -R /pract1: Permission denied
ana@PC21:~$ sudo chown -R /pract1
ana@PC21:~$ ping
Command 'ping' not found, did you mean:
  command 'ping' from deb qemu-guest-agent (1:2.4+dfsg1)
  command 'ping' from deb ping (3:9.13-1)
  command 'ping' from deb iputils-ping (3.28-1ubuntu2)
  command 'ping' from deb install-ping (2:1.0.4-1ubuntu0.1)
Try: sudo apt install cmd name
ana@PC21:~$ ping
ping: usage error: destination address required
ana@PC21:~$ ping google.com
PING google.com (172.217.160.206): 64(84) bytes of data:
 0 bytes from 172.217.160.206: icmp_seq=1 ttl=59 time=27.5 ms
 0 bytes from 172.217.160.206: icmp_seq=2 ttl=59 time=16.9 ms
 0 bytes from 172.217.160.206: icmp_seq=3 ttl=59 time=16.8 ms
 0 bytes from 172.217.160.206: icmp_seq=4 ttl=59 time=17.8 ms
 0 bytes from 172.217.160.206: icmp_seq=5 ttl=59 time=17.1 ms
 0 bytes from 172.217.160.206: icmp_seq=6 ttl=59 time=21.8 ms
 0 bytes from 172.217.160.206: icmp_seq=7 ttl=59 time=21.7 ms
 0 bytes from 172.217.160.206: icmp_seq=8 ttl=59 time=16.6 ms
 0 bytes from 172.217.160.206: icmp_seq=9 ttl=59 time=16.3 ms
 0 bytes from 172.217.160.206: icmp_seq=10 ttl=59 time=16.2 ms
 0 bytes from 172.217.160.206: icmp_seq=11 ttl=59 time=16.2 ms
 0 bytes from 172.217.160.206: icmp_seq=12 ttl=59 time=16.2 ms
 0 bytes from 172.217.160.206: icmp_seq=13 ttl=59 time=16.2 ms
 0 bytes from 172.217.160.206: icmp_seq=14 ttl=59 time=16.2 ms
 0 bytes from 172.217.160.206: icmp_seq=15 ttl=59 time=16.2 ms
 0 bytes from 172.217.160.206: icmp_seq=16 ttl=59 time=16.2 ms
 0 bytes from 172.217.160.206: icmp_seq=17 ttl=59 time=16.2 ms
 0 bytes from 172.217.160.206: icmp_seq=18 ttl=59 time=16.2 ms
 0 bytes from 172.217.160.206: icmp_seq=19 ttl=59 time=16.2 ms
 0 bytes from 172.217.160.206: icmp_seq=20 ttl=59 time=16.2 ms
--- google.com ping statistics ---
 20 packets transmitted, 20 received, 0% packet loss, time 2607ms
rtt min/avg/max/mdev = 16.144/16.137/17.135/15.251 ms
ana@PC21:~$
```

```
ana@PC21:~$ sudo apt install net-tools
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following NEW packages will be installed:
  net-tools
0 upgraded, 1 newly installed, 0 to remove and 0 not upgraded.
Need to get 106 kB of archives.
After this operation, 824 kB of additional disk space will be used.
Get:1 http://archive.ubuntu.com/ubuntu focal/main amd64 net-tools [106 kB]
debconf: unable to initialize frontend: dialog
debconf: (Dialog frontend is not installed.)
debconf: falling back to frontend: readline
Unpacking net-tools (1:6.0-2ubuntu1) ...
Setting up net-tools (1:6.0-2ubuntu1) ...
Processing triggers for man-db (2.9.1-1) ...
ana@PC21:~$ ifconfig
enp0s3: flags=4096<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 172.17.0.210 netmask 255.255.0.0 broadcast 172.17.0.255
    ether 74:17:4a:14:a0:0f (Ethernet)
    tx packets 0 bytes 0 (0.0 B)
    rx errors 0 dropped 0 overruns 0 frame 0
    tx packets 0 bytes 0 (0.0 B)
    rx errors 0 dropped 0 overruns 0 carrier 0 collisions 0

lo: flags=7393<LOOPBACK,UP,UICLD> mtu 65536
    inet 127.0.0.1 netmask 255.0.0.0
    inet6 ::1 prefixlen 128 scopeid host default
    loop (LOCAL)
    tx packets 0 bytes 0 (0.0 B)
    rx errors 0 dropped 0 overruns 0 frame 0
    tx packets 0 bytes 0 (0.0 B)
    rx errors 0 dropped 0 overruns 0 carrier 0 collisions 0
ana@PC21:~$
```



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EXPERIMENT NO. 3

Aim:- Write shell script to execute conditional and looping statement.

Lab Outcome: -

ECL604.4 - Solve the problems using shell script programming.

Date of Performance: - 27/01/2023

Date of Submission: - 30/01/2023

Implementation (05)	Understanding (05)	Punctuality & Discipline (05)	Total Marks (15)
05	05	05	15

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EXPERIMENT NO:

AIM: Write shell script to execute conditional and looping statement.

SOFTWARE REQUIREMENT: Linux Operating System, Shell-Interpreter,
Nano editor

THEORY: Following are the conditional statements which can be used in bash programming

1. if statement
2. if-else statement
3. switch statement

There are total 3 looping statements which can be used in bash programming

1. while statement
2. for statement
3. until statement

if statement

• This block will process if specified condition is true.

Syntax:

```
if [ expression ]  
then  
statement  
fi
```

if-else statement

• If specified condition is not true in if part then else part will be execute.

Syntax

```
if [ expression ]  
then  
statement1  
else  
statement2  
fi
```

if...elif...else...fi statement (Else If ladder)

• To use multiple conditions in one if-else block, then elif keyword is used in shell.

• If expression1 is true then it executes statement 1 and 2, and this process continues. If none of the condition is true then it processes else part.

Syntax

```
if [ expression1 ]  
then  
statement1  
statement2
```

```
elif [ expression2 ]  
then  
statement3
```




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statement4

else
statement5
fi

switch statement

- case statement works as a switch statement if specified value match with the pattern then it will execute a block of that particular pattern
 - When a match is found all of the associated statements until the double semicolon (;;) is executed.
 - A case will be terminated when the last command is executed.
- If there is no match, the exit status of the case is zero.

Syntax:

```
case in  
Pattern 1) Statement 1;;  
Pattern n) Statement n;;  
esac
```

while statement

Here command is evaluated and based on the result loop will executed, if command raise to false then loop will be terminated

Syntax

```
while command  
do  
Statement to be executed  
Done
```

for statement

The for loop operate on lists of items. It repeats a set of commands for every item in a list. Here var is the name of a variable and word1 to wordN are sequences of characters separated by spaces (words). Each time the for loop executes, the value of the variable var is set to the next word in the list of words, word1 to wordN.

Syntax

```
forvar in word1 word2 ...wordn  
do  
Statement to be executed  
Done
```

until statement

The until loop is executed as many as times the condition/command evaluates to false. The loop terminates when the condition/command becomes true.

Syntax

- until command
- do




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- Statement to be executed until command is true
- done

Example:

PROGRAM:

IF-ELSE Statement:

```

nano Ifelse_new.sh
"Enter the score:"
a
55
"Good score"
done
"not a good score"
"average score"

```

OUTPUT:

```

unix@PC-17: ~
unix@PC-17: $ nano Ifelse_new.sh
unix@PC-17: $ nano Ifelse_new.sh
unix@PC-17: $ bash Ifelse_new.sh
Enter the Score:
55
Good score
unix@PC-17: $ bash Ifelse_new.sh
Enter the Score:
65
Average score
unix@PC-17: $ bash Ifelse_new.sh
Enter the Score:
45
Not a good score
unix@PC-17: $

```




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Switch Statement:

```
GNU nano 4.8 caseSt.sh Modified
# Using switch statement
day=$(date +%a)
case $day in
Mon)
    "Monday"
Tue)
    "Tuesday"
Wed)
    "Wednesday"
Thur)
    "Thursday"
Fri)
    "Friday"
Sat|Sun)
    "Holiday"
*)
    " "
esac
```

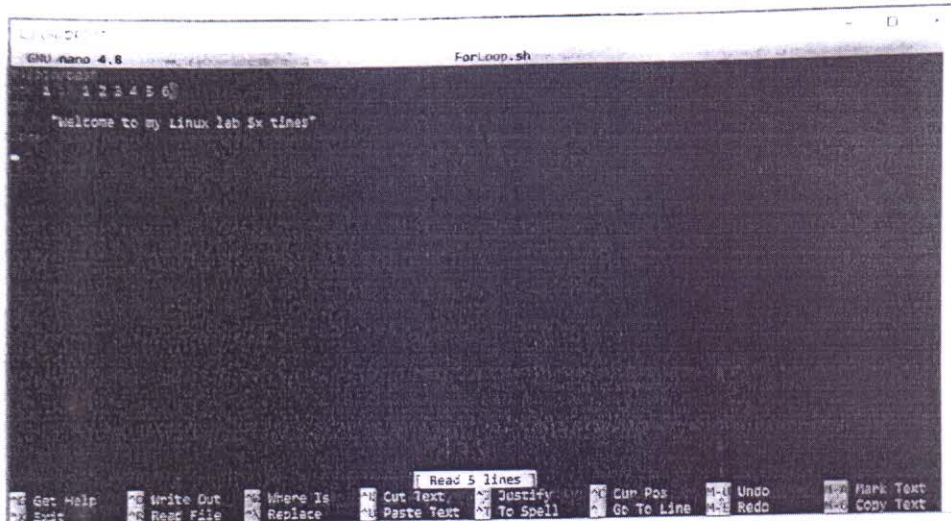
OUTPUT:

```
unix@PC-17: ~
unix@PC-17: $ nano caseSt.sh
unix@PC-17: $ bash caseSt.sh
Monday
unix@PC-17: $ nano caseSt.sh
unix@PC-17: $
```



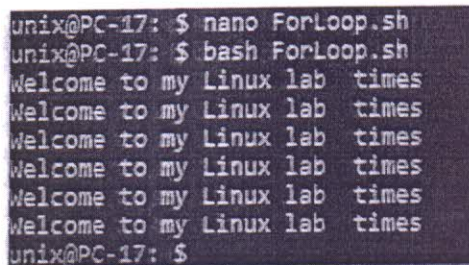

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FOR Loop:




```
GNU nano 4.8 ForLoop.sh
1 1 2 3 4 5 6
"welcome to my Linux lab $x times"
```

OUTPUT:



```
unix@PC-17: $ nano ForLoop.sh
unix@PC-17: $ bash ForLoop.sh
Welcome to my Linux lab times
Welcome to my Linux lab times
Welcome to my Linux lab times
Welcome to my Linux lab times
Welcome to my Linux lab times
Welcome to my Linux lab times
unix@PC-17: $
```



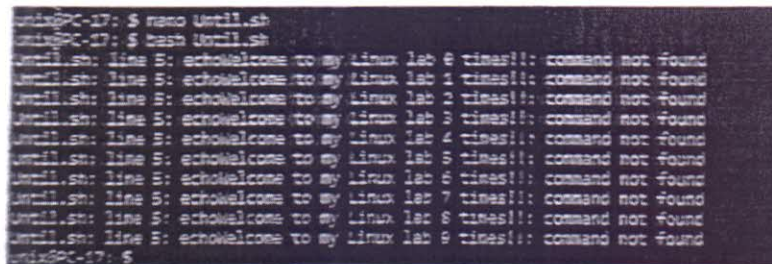

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UNTIL Loop:



```
LinuxPC-17: ~$ nano Until.sh
LinuxPC-17: ~$ bash Until.sh
Welcome to my Linux Lab. How about?
Welcome to my Linux Lab. How about?
Welcome to my Linux Lab. How about?
Welcome to my Linux Lab. How about?
Welcome to my Linux Lab. How about?
Welcome to my Linux Lab. How about?
Welcome to my Linux Lab. How about?
Welcome to my Linux Lab. How about?
Welcome to my Linux Lab. How about?
Welcome to my Linux Lab. How about?
```

OUTPUT:




```
LinuxPC-17: ~$ nano Until.sh
LinuxPC-17: ~$ bash Until.sh
Until.sh: line 5: echoWelcome to my Linux Lab 6 times!!: command not found
Until.sh: line 5: echoWelcome to my Linux Lab 4 times!!: command not found
Until.sh: line 5: echoWelcome to my Linux Lab 3 times!!: command not found
Until.sh: line 5: echoWelcome to my Linux Lab 2 times!!: command not found
Until.sh: line 5: echoWelcome to my Linux Lab 1 times!!: command not found
Until.sh: line 5: echoWelcome to my Linux Lab 6 times!!: command not found
Until.sh: line 5: echoWelcome to my Linux Lab 7 times!!: command not found
Until.sh: line 5: echoWelcome to my Linux Lab 8 times!!: command not found
Until.sh: line 5: echoWelcome to my Linux Lab 9 times!!: command not found
Until.sh: line 5: echoWelcome to my Linux Lab 10 times!!: command not found
LinuxPC-17: ~$
```

CONCLUSION:

A shell script can execute conditional and looping statements to automate tasks and improve efficiency. Conditional statements like "if-else" and "case" can help the script make decisions based on certain conditions, while looping statements like "for" and "while" can help the script repeat tasks until a certain condition is met. By using these statements in a shell script, complex tasks can be automated and executed quickly and reliably.




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EXPERIMENT NO. 4

AIM:- Write a shell script to show various system configuration like currently logged user and his logname, your current shell, home directory, operating system type, current path setting, current working directory, show currently logged number of users, show memory information, Hard disk information like size of hard disk, cache model, etc. and file system mounted.

Lab Outcome: -

ECL604.2 - Describe the basic knowledge of Linux Operating System.

Date of Performance: - 30/01/2023


Date of Submission: - 03/02/2023

Implementation (05)	Understanding (05)	Punctuality & Discipline (05)	Total Marks (15)
05	05	03	13

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10/02/2023

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Experiment No. 4

AIM: Write a shell script to show various system configuration like currently logged user and his log name, your current shell, home directory, operating system type, current path setting, current working directory, show currently logged number of users, show memory information, Hard disk information like size of hard-disk, cache model etc., and file system mounted.

SOFTWARE REQUIREMENT: Linux Operating System, Shell-Interpreter, Nano editor

THEORY: Every operating system provides a feature of multiple user accounts. Linux-based operating systems have some commands or functionalities to check user accounts' details and change them. This ability is mainly used by the admin account user that is the root user, to provide permissions and access to different users. The admin can also check how many users are currently logged in, how many are logged out, and the login time.

User Management Commands

Who - The standard Unix command who displays a list of users who are currently logged into the computer.

Who am i-The *who am i* command prints the user name of the effective user ID.


Login- *login* is used when signing onto a system. It can also be used to switch from one user to another at any time

Logout- Logging out of UNIX may be achieved simply by typing *logout*, or *<ctrl-D>* or *exit*. All three terminate the login shell and, in the former case, the shell performs commands from the *. bash_logout* file in your home directory

Exit - *exit* command in linux is used to exit the shell where it is currently running.

Passwd - **passwd** command in Linux is used to change the user account passwords. The root user reserves the privilege to change the password for any user on the system, while a normal user can only change the account password for his or her own account.




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PROGRAM:

```
root@PC-35 ~
GNU nano 4.8 exp 4.sh
! cat exp4.sh
"Logged user:\n"
who -u "Current Home Directory"
whoami "Current operating system"
uname "Login names : "
users "Current shell "
      "Home Directory"
      "Operating System type : "
uname -o "Current path setting : "
      "Current working directory : "
pwd "Number of logged users:"
users wc -k "File system mount"
df "Memory Location : "
sudo lshw -short "Hard Disk Information : "
sudo lshw -c disk
```




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OUTPUT:

```
root@PC-30:~# nano exp_4.sh
root@PC-30:~# nano exp_4.sh
root@PC-30:~# bash exp_4.sh
Logged user: \n
Current Home Directory
root
Login names :
root@PC-30:~# nano exp_4.sh
root@PC-30:~# bash exp_4.sh
Logged user: \n
Current Home Directory
root
exp_4.sh: line 6: echoCurrent operating system: command not found
Linux
Login names :
Current shell
/bin/bash
Home Directory
None
/ncop
Operating System type :
GNU/Linux
Current path setting :
/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin:/usr/games:/usr/local/games:/mnt/c/Program Files/WindowsApps/CanonicalGn
Unlimited.Ubuntu20.04 LTS 2004.5.11.0 x64_7arkn31fndgsc:/mnt/c/Program Files (x86)/Common Files/Oracle/Java/javapath:/mnt/c/Windows/Sy
stem32:/mnt/c/Windows/mnt/c/Windows/System32/Shell/v1.0:/mnt/c/Windows/System32/OpenSSH:/o
nt/c/Program Files/MikTeX 2.9/miktex/bin/x64:/mnt/c/Users/PC-30/AppData/Local/PUcrosoft/WindowsApps/snap/bin
Current working directory :
/ncop
Number of logged users:
0
File system mount
filesystem 1K-blocks Used Available Use% Mounted on
rootfs 61120288 50044356 41075932 55% /
none 61120288 50044356 41075932 55% /dev
none 61120288 50044356 41075932 55% /run
none 61120288 50044356 41075932 55% /run/lock
none 61120288 50044356 41075932 55% /run/user
tmpfs 61120288 50044356 41075932 55% /sys/fs/cgroup
c:\ 61120288 50044356 41075932 55% /mnt/c
D:\ 32273468 7251336 25582132 23% /mnt/d
exp_4.sh: line 24: echoMemory Location :: command not found
-----
M/A path Device Class Description
-----
/0 System Computer
/0 Bus Motherboard
/0/0 memory 15616 system memory
/0/1 processor Intel(R) Core(TM) i5-3570 CPU @ 3.40GHz
/1 eth0 network Ethernet interface
exp_4.sh: line 26: echo Hard Disk Information :: command not found
root@PC-30:~#
```

CONCLUSION:

The shell script shows various system configurations such as the currently logged-in user and their log name, current shell, home directory, operating system type, current path setting, current working directory, the number of currently logged-in users, memory information, hard disk information, and mounted file systems. This script is useful for quickly accessing important system information and can be customized to suit the specific needs of the user.




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EXPERIMENT NO. 5

Aim:- To execute system administrator task.

Lab Outcome: -

EEL604.3 - Deploy the system administrative functionality.

Date of Performance: - 03/02/2023

Date of Submission: - 06/02/2023

Implementation (05)	Understanding (05)	Punctuality & Discipline (05)	Total Marks (15)
05	05	04	14

Bakshi
10/02/2023

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EXPERIMENT NO.

AIM: To execute system administrator task.

SOFTWARE REQUIREMENT: Linux Operating System. Shell-Interpreter. Nano editor

THEORY: A system administrator manages configuration, upkeep and reliable operations of computer operations. System admin handles servers, has to manage system performance and security without exceeding the budget to meet users need.

A system administrator only deals with terminal interface and hence it is very important to learn and become master in commands to operate from terminal.

PS command used to view currently running process on the system


- **PID** is the process ID of running command
- **TTY** is the type of terminal where current command is running
- **TIME** tells how much time is used by CPU to run the process
- **CMD** is current command

Kill command in Linux (located in /bin/kill), is a built-in command which is used to terminate processes manually. kill command sends a signal to a process which terminates the process. If the user doesn't specify any signal which is to be sent along with kill command then default TERM signal is sent that terminates the process.

useradd is a command in Linux that is used to add user accounts to your system. It is just a symbolic link to adduser command in Linux and the difference between both of them is that useradd is a native binary compiled with system.

In Linux, there can be many users of a single system, (normal user can take uid from 1000 to 60000, and one root user (uid 0) and 999 system users (uid 1 to 999)). In a scenario where there are many users, there might be some privileges that some users have and some don't, and it becomes difficult to manage all the permissions at the individual user level. So using groups, we can group together a number of users, and set privileges and permissions for the entire group. **groupadd** command is used to create a new user group.




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OUTPUT:

```

root@DESKTOP-6000W3:~# ps
  PID TTY          TIME CMD
   10 pts/0    00:00:01 bash
  124 pts/0    00:00:00 su
  125 pts/0    00:00:00 bash
  154 pts/0    00:00:00 ps
root@DESKTOP-6000W3:~# ps -e
  PID TTY          TIME CMD
  124 pts/0    00:00:00 su
  125 pts/0    00:00:00 bash
  155 pts/0    00:00:00 ps
root@DESKTOP-6000W3:~# ps -A
  PID TTY          TIME CMD
    1 ?           00:00:02 init
    8 ?           00:00:00 init
    9 ?           00:00:00 init
   10 pts/0    00:00:01 bash
  124 pts/0    00:00:00 su
  125 pts/0    00:00:00 bash
  156 pts/0    00:00:00 ps
root@DESKTOP-6000W3:~# ps -t
  PID TTY          STAT TIME COMMAND
   10 pts/0     Ss   0:01 -bash
  124 pts/0     S    0:00 su
  125 pts/0     S    0:00 bash
  157 pts/0    R+   0:00 ps -t
root@DESKTOP-6000W3:~# ps -T
  PID SPID TTY          TIME CMD
   10  10 pts/0    00:00:01 bash
  124 124 pts/0    00:00:00 su
  125 125 pts/0    00:00:00 bash
  158 158 pts/0    00:00:00 ps
root@DESKTOP-6000W3:~# ps -e
  PID TTY          TIME CMD
    1 ?           00:00:02 init
    8 ?           00:00:00 init
    9 ?           00:00:00 init
   10 pts/0    00:00:01 bash
  124 pts/0    00:00:00 su
  125 pts/0    00:00:00 bash
  159 pts/0    00:00:00 ps
root@DESKTOP-6000W3:~# ps -u
USER      PID %CPU %MEM    VSZ   RSS TTY      STAT START   TIME COMMAND
root         10  1.2  0.1 10036  4972 pts/0    Ss   20:26   0:01 -bash
root        124  0.0  0.0  9988  3480 pts/0     S    20:27   0:00 su
root        125  0.0  0.1  8964  3984 pts/0     S    20:27   0:00 bash
root        160  0.0  0.0 10616  3348 pts/0    R+   20:28   0:00 ps -u

```




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```

root@DESKTOP-6000W3:~# ps -w
  PID TTY          TIME CMD
   10 pts/0    00:00:01 bash
  124 pts/0    00:00:00 su
  125 pts/0    00:00:00 bash
  161 pts/0    00:00:00 ps
root@DESKTOP-6000W3:~# ps -c
  PID CLS PRI TTY          TIME CMD
   10 TS   19 pts/0    00:00:01 bash
  124 TS   19 pts/0    00:00:00 su
  125 TS   19 pts/0    00:00:00 bash
  162 TS   19 pts/0    00:00:00 ps
root@DESKTOP-6000W3:~# ps aux
USER      PID %CPU %MEM    VSZ   RSS TTY      STAT START   TIME COMMAND
root         1   0.0  0.0  1756  1080 ?        Ss   20:26   0:02 /init
root         8   0.0  0.0   2112  344 ?        Ss   20:26   0:00 /init
root         9   0.1  0.0   2112  352 ?        R    20:26   0:00 /init
root        10   1.0  0.1  10036  4972 pts/0    Ss   20:26   0:01 -bash
root        124   0.0  0.0   9988  3480 pts/0    S    20:27   0:00 su
root        125   0.0  0.1   8964  3984 pts/0    S    20:27   0:00 bash
root        163   0.0  0.0  10616  3280 pts/0    R+   20:29   0:00 ps aux
root@DESKTOP-6000W3:~# kill -9 10

```

CONCLUSION:

The ability to troubleshoot and resolve technical issues quickly and efficiently is crucial. Strong communication and collaboration skills are also essential, as administrators often work with teams across multiple departments. Finally, staying up-to-date with new technologies and industry trends is vital for staying relevant and maintaining a secure and efficient network infrastructure.



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EXPERIMENT NO. 6

Aim:- Write a shell script to add user and password on Linux system.

Lab Outcome: -

ECL604.3 - Deploy the system administrative functionality.

Date of Performance: - 06/02/2023


Date of Submission: - 10/02/2023

Implementation (05)	Understanding (05)	Punctuality & Discipline (05)	Total Marks (15)
05	05	05	15

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EXPRERIMENT NO. 6

AIM: Write a shell script to add user and password on Linux system

SOFTWARE REQUIREMENT: Linux Operating System, Shell-Interpreter, Nano Editor


THEORY: Sometimes, we might want to automate the user creation process without having to interact with the command line. We'll execute the script from the command line and provide it with the `-username` and `-password` arguments. In case of validation errors, we'll be presented with the script usage message that contains the instructions. Once the script executes successfully, we'll print out the username and the password. Now, we need to process the command options. We'll simply iterate through the arguments using a `if` loop and assign the values to variables.

The `user add` command creates a user with the provided username. We can also create the user with a password by supplying the `-p` or `-password` option to the `user add` command. The `passwd` command creates or changes the password for an existing user account. It takes a username as an argument and presents an interactive prompt for password modification.

As we can see, the `passwd` command presents us with an interactive prompt. For that reason, we'll make use of the `echo` command alongside `passwd` to skip the interactive prompt. The `echo` command is a utility that takes input from the standard input and prints it to the standard output.

- We enabled the *escape sequence characters* support for the `echo` command through the `-e` flag
- The `-n` flag disables printing the trailing newline
- We *echo* the current password followed by the new and confirmed password




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PROGRAM:

```
GNU nano 6.2
#!/bin/bash
# Write a shell script to user and password
if [ $(id -u) -eq 0 ]
then
read -p "Enter username:" username
read -p "Enter the password:" password
egrep "^username"/etc/passwd:dev/null
if [ $? -eq 0 ]
then
"username exists!"
exit 1
else
pass=$(perl -e 'print crypt($ARGV[0],"$1$ " ) "password")'$password)
useradd -m -p "$pass" "$username"
if [ $? -eq 0 ]
then "user has been added to the system" || echo "Failed to add user"
else
"Only root may add a user to the system"
exit 2
fi
fi
```

OUTPUT:

```
Enter username:swati
Enter the password:add_user_password: line 7: dev/null: No such file or directory
String found where operator expected at -e line 1, near ") "password""
(Missing operator before "password"?)
Number found where operator expected at -e line 1, near ")7890"
(Missing operator before 7890?)
Final $ should be \$ or $name at -e line 1, within string
syntax error at -e line 1, near ", "$1$ ""
Execution of -e aborted due to compilation errors.
user has been added to the system
root@PC-23:~# bash add_user_password
Enter username:swati
Enter the password:add_user_password: line 7: dev/null: No such file or directory
String found where operator expected at -e line 1, near ") "password""
(Missing operator before "password"?)
Number found where operator expected at -e line 1, near ")7890"
(Missing operator before 7890?)
Final $ should be \$ or $name at -e line 1, within string
syntax error at -e line 1, near ", "$1$ ""
Execution of -e aborted due to compilation errors.
useradd: user 'swati' already exists
Failed to add user
root@PC-23:~#
```

CONCLUSION: The script can be used to create multiple users with different passwords, and it saves time and effort for system administrators. By using this script, system administrators can easily and quickly add new users to a Linux system.




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EXPERIMENT NO. 7

Aim:- Write a shell script that delete all lines containing a specified word.

Lab Outcome: -

ECL604.4 - solve the problems using shell script programming.

Date of Performance: - 10/2/2023

Date of Submission: - 13/02/2023

Implementation (05)	Understanding (05)	Punctuality & Discipline (05)	Total Marks (15)
05	05	05	15

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17/02/2023

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EXPERIMENT NO.

AIM: Write a shell script that delete all lines containing a specified word


SOFTWARE REQUIREMENT: Linux Operating System, Shell-Interpreter, Nano editor

THEORY: A shell script is a computer program designed to be run by the Unix shell, a Command-line interpreter. The various dialects of shell scripts are considered to be scripting languages. Typical operations performed by shell scripts include file manipulation, program execution, and printing text. A script that sets up the environment, runs the program, and does any necessary cleanup, logging, etc. is called a wrapper.

PROGRAM:

```
unix@PC-19: ~$ nano Delete_word_main.sh
GNU nano 4.8 Delete_word_main.sh
"Enter file name:"
read file
"Enter the specific word:"
read word
"File before removing word" $word:-
cat file
+1 -1 $word $file > test
test $file
"File after deleting all lines containing specific word"
cat file
```




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OUTPUT:

```
unix@PC-19: ~$ nano delete_line.txt
unix@PC-19: ~$ nano Delete_word_main.sh
unix@PC-19: ~$ bash Delete_word_main.sh
Enter file name:
delete_line.txt
Enter the specific word:
student
File before removing word student:-


I am in extc department
I am student of KCCEMSR
I am third year student
I am student of six semester
File after deleting all lines containing specific word

I am in extc department
unix@PC-19: ~$
```

CONCLUSION:

This script prompts the user for the filename and the word to delete, and then uses sed to delete all lines containing the specified word. The modified file is saved to a temporary file, and then renamed back to the original filename. Finally, a message is displayed to indicate that the script has finished executing.




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EXPERIMENT NO. 8

Aim:- Write a shell script to upgrade and cleans the system automatically instead of doing it manually.

Lab Outcome: -

ECL604.3 - Deploy the system administrative functionality.

Date of Performance: - 13/02/2023

Date of Submission: - 17/02/2023

Implementation (05)	Understanding (05)	Punctuality & Discipline (05)	Total Marks (15)
05	05	05	15

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EXPERIMENT NO.

AIM: - Write a shell script to upgrade and cleans the system automatically instead of doing it manually.

SOFTWARE REQUIREMENT: Linux Operating System, Shell-Interpreter, Nano editor.

THEORY:

update: is used to resynchronize the package index files from their sources. The indexes of available packages are fetched from the location(s) specified in `/etc/apt/sources.list`. For example, when using a Debian archive, this command retrieves and scans the `Package.gz` files, so that information about new and updated packages is available. An update should always be performed before an upgrade or `dist-upgrade`. Please be aware that the overall progress meter will be incorrect as the size of the package files cannot be known in advance.

upgrade: is used to install the newest versions of all packages currently installed on the system from the sources enumerated in `/etc/apt/sources.list`. Packages currently installed with new versions available are retrieved and upgraded; under no circumstances are currently installed packages removed, or packages not already installed retrieved and installed. New versions of currently installed packages that cannot be upgraded without changing the install status of another package will be left at their current version. An update must be performed first so that `apt-get` knows that new versions of packages are available.


autoremove: Sometimes the packages which are automatically installed to satisfy the dependencies of other packages, are no longer needed then `autoremove` command is used to remove these kind of packages.

autoclean: clears the local repository of retrieved package files, but it only removes files that can no longer be downloaded and are virtually useless. It helps to keep your cache from growing too large.

PROGRAM:

```
#!/bin/bash
# update "+0-0-0-0-0-0" ---Starting workin'
sudo apt-get update
sudo apt-get upgrade
sudo apt-get autoremove
sudo apt-get autoclean
# update "+0-0-0-0-0-0" to Script Termination
```




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OUTPUT:

```
unix@A120: $ nano newprac1.sh
unix@A120: $ bash newprac1.sh

29-03-2023---10:37:49 ---Starting work

[sudo] password for unix:
Hit:1 http://archive.ubuntu.com/ubuntu focal InRelease
Get:2 http://archive.ubuntu.com/ubuntu focal-updates InRelease [114 kB]
Get:3 http://security.ubuntu.com/ubuntu focal-security InRelease [114 kB]
Get:4 http://archive.ubuntu.com/ubuntu focal-backports InRelease [108 kB]
Get:5 http://archive.ubuntu.com/ubuntu focal/universe amd64 Packages [8620 kB]
Get:6 http://security.ubuntu.com/ubuntu focal-security/main amd64 Packages [2800 kB]
Get:7 http://security.ubuntu.com/ubuntu focal-security/main Translation-en [338 kB]
Get:8 http://security.ubuntu.com/ubuntu focal-security/main amd64 c-n-f Metadata [12.5 kB]
Get:9 http://security.ubuntu.com/ubuntu focal-security/restricted amd64 Packages [1605 kB]
Get:10 http://security.ubuntu.com/ubuntu focal-security/restricted Translation-en [227 kB]
Get:11 http://security.ubuntu.com/ubuntu focal-security/restricted amd64 c-n-f Metadata [620 B]
Get:12 http://security.ubuntu.com/ubuntu focal-security/universe amd64 Packages [820 kB]
Get:13 http://archive.ubuntu.com/ubuntu focal/universe Translation-en [5124 kB]
Get:14 http://security.ubuntu.com/ubuntu focal-security/universe Translation-en [164 kB]
Get:15 http://security.ubuntu.com/ubuntu focal-security/universe amd64 c-n-f Metadata [17.5 kB]
Get:16 http://security.ubuntu.com/ubuntu focal-security/multiverse amd64 Packages [22.9 kB]
Get:17 http://security.ubuntu.com/ubuntu focal-security/multiverse Translation-en [5488 B]
Get:18 http://security.ubuntu.com/ubuntu focal-security/multiverse amd64 c-n-f Metadata [516 B]
Get:19 http://archive.ubuntu.com/ubuntu focal/universe amd64 c-n-f Metadata [265 kB]
Get:20 http://archive.ubuntu.com/ubuntu focal/multiverse amd64 Packages [144 kB]
Get:21 http://archive.ubuntu.com/ubuntu focal/multiverse Translation-en [104 kB]
Get:22 http://archive.ubuntu.com/ubuntu focal/multiverse amd64 c-n-f Metadata [9136 B]
Get:23 http://archive.ubuntu.com/ubuntu focal-updates/main amd64 Packages [2465 kB]
Get:24 http://archive.ubuntu.com/ubuntu focal-updates/main Translation-en [420 kB]
Get:25 http://archive.ubuntu.com/ubuntu focal-updates/main amd64 c-n-f Metadata [16.4 kB]
Get:26 http://archive.ubuntu.com/ubuntu focal-updates/restricted amd64 Packages [1713 kB]
Get:27 http://archive.ubuntu.com/ubuntu focal-updates/restricted Translation-en [242 kB]
Get:28 http://archive.ubuntu.com/ubuntu focal-updates/restricted amd64 c-n-f Metadata [620 B]
Get:29 http://archive.ubuntu.com/ubuntu focal-updates/universe amd64 Packages [1045 kB]
Get:30 http://archive.ubuntu.com/ubuntu focal-updates/universe Translation-en [246 kB]
Get:31 http://archive.ubuntu.com/ubuntu focal-updates/universe amd64 c-n-f Metadata [24.1 kB]
Get:32 http://archive.ubuntu.com/ubuntu focal-updates/multiverse amd64 Packages [25.1 kB]
Get:33 http://archive.ubuntu.com/ubuntu focal-updates/multiverse Translation-en [7408 B]
Get:34 http://archive.ubuntu.com/ubuntu focal-updates/multiverse amd64 c-n-f Metadata [592 B]
Get:35 http://archive.ubuntu.com/ubuntu focal-backports/main amd64 Packages [45.7 kB]
Get:36 http://archive.ubuntu.com/ubuntu focal-backports/main Translation-en [16.3 kB]
Get:37 http://archive.ubuntu.com/ubuntu focal-backports/main amd64 c-n-f Metadata [1420 B]
Get:38 http://archive.ubuntu.com/ubuntu focal-backports/restricted amd64 c-n-f Metadata [116 B]
Get:39 http://archive.ubuntu.com/ubuntu focal-backports/universe amd64 Packages [24.9 kB]
Get:40 http://archive.ubuntu.com/ubuntu focal-backports/universe Translation-en [16.3 kB]
Get:41 http://archive.ubuntu.com/ubuntu focal-backports/universe amd64 c-n-f Metadata [880 B]
Get:42 http://archive.ubuntu.com/ubuntu focal-backports/multiverse amd64 c-n-f Metadata [116 B]
Fetched 26.2 MB in 12s (2272 kB/s)
Reading package lists... Done
Reading package lists... Done
Building dependency tree
```



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```
Setting up the-chef-client (0.4.1-2-ubuntu0.04.0) ...
Installing new version of config file /etc/apparmor.d/sbin.chefclient ...
Setting up foomp-timed (1.51-20.04.1+1.2-ubuntu0.2) ...
Setting up libbtrfs-progs (1:2017.3.28AR.3-ubuntu1.3) ...
Setting up libbtrfs-progs (1:17-ubuntu0.3) ...
Setting up libbtrfs-progs (1:13.2.2-ubuntu0.9) ...
Setting up libbtrfs-progs (1:2.1-ubuntu0.1) ...
Setting up nsd (2:0.1.2009-ubuntu1.12) ...
Setting up ntp-daemon (1:2017.3.28AR.3-ubuntu1.3) ...
Setting up libfacter (1.3.3-ubuntu0.1) ...
Setting up libfacter-support (1.3.3-ubuntu0.1) ...
Setting up tzdata (2022g-ubuntu0.04.1) ...

Current default time zone: 'Asia/Kolkata'
Local time is now: Wed Mar 29 10:41:43 IST 2023.
Universal time is now: Wed Mar 29 05:11:43 UTC 2023.
Run 'dpkg-reconfigure tzdata' if you wish to change it.

Setting up apparmor (2.13.3-ubuntu0.2) ...
Installing new version of config file /etc/apparmor/parser.conf ...
Setting up vim-common (2:0.1.2209-ubuntu0.12) ...
Setting up libbus-1-3:amd64 (1.12.10-ubuntu0.2) ...
Setting up dbus (1:1.12.10-ubuntu0.3) ...
Setting up udav (200.0-ubuntu0.20) ...
invoke-rc.d: could not determine current runlevel
update-initramfs: deferring update (trigger activated)
Setting up sudo (1.0.31-ubuntu0.4) ...
Setting up libksmtp (1.17-ubuntu0.3) ...
Setting up libksmtp-helmal:amd64 (7.7.0dfsg-ubuntu1.4) ...
Setting up nosreport (4.4-ubuntu0.20.04.1) ...
Setting up python3-urllib3 (1.25.0-ubuntu0.2) ...
Setting up python3-apt-common (2.0.1-ubuntu0.20.04.1) ...
Setting up dbus-x11 (1:12.10-ubuntu0.2) ...
Setting up kpartx (0.0.3-ubuntu0.2) ...
Setting up libperl5.30:amd64 (5.30.0-ubuntu0.3) ...
Setting up git-man (1:2.25.1-ubuntu0.10) ...
Setting up isc-dhcp-common (4.4.1-2-ubuntu0.20.04.5) ...
Setting up libkrb5-3:amd64 (1.17-ubuntu0.3) ...
Setting up vim-runtime (2:0.1.2209-ubuntu0.12) ...
Setting up openssl (1:1.1-ubuntu0.17) ...
Setting up libxml2:amd64 (2.9.10dfsg-ubuntu0.20.04.5) ...
Setting up kmod (3.0-ubuntu0.4) ...
Setting up psync (3.1.3-ubuntu0.5) ...
invoke-rc.d: could not determine current runlevel
Setting up bolt (0.9.1-ubuntu0.04.2) ...
Setting up libheimal-helmal:amd64 (7.7.0dfsg-ubuntu1.4) ...
Setting up libwayland-client:amd64 (1.18.0-ubuntu0.1) ...
Setting up tcpdump (4.9.3-ubuntu0.2) ...
Installing new version of config file /etc/apparmor.d/usr.bin.tcpdump ...
Setting up libpython3.8-minimal:amd64 (3.8.10-ubuntu0.20.04.7) ...
Setting up cloud-init (23.1.1-ubuntu0.20.04.1) ...
Installing new version of config file /etc/cloud/cloud.cfg ...
```

```
Setting up libbss2-essys0 (2.3.2-ubuntu0.20.04.1) ...
Setting up python3-apt (2.0.1-ubuntu0.20.04.1) ...
Setting up libbss1-8-helmal:amd64 (7.7.0dfsg-ubuntu1.4) ...
Setting up vis-tiny (2:0.1.2209-ubuntu0.12) ...
Setting up libbss1-8-helmal:amd64 (7.7.0dfsg-ubuntu1.4) ...
Setting up multi-ssh-tools (0.0.3-ubuntu0.2) ...
invoke-rc.d: could not determine current runlevel
Setting up python3-appopt (2.20.11-ubuntu0.27.25) ...
Setting up ca-certificates (20211010ubuntu0.20.04.1) ...
Updating certificates in /etc/ssl/certs...
rehash: warning: skipping ca-certificates.crt, it does not contain exactly one certificate or CA
done, 3 removed, done.
Setting up perl (5.30.0-ubuntu0.3) ...
Setting up libheimal-helmal:amd64 (7.7.0dfsg-ubuntu1.4) ...
Setting up python3-software-properties (0.99.9.11) ...
Setting up libgsapi-krb5-2:amd64 (1.17-ubuntu0.3) ...
Setting up python3.8-minimal (3.8.10-ubuntu0.20.04.7) ...
Setting up open-vm-tools (2:11.3.0-ubuntu0-ubuntu0.20.04.4) ...
invoke-rc.d: could not determine current runlevel
Setting up libcurl4:amd64 (7.68.0-ubuntu0.2.10) ...
Setting up curl (7.68.0-ubuntu0.2.10) ...
Setting up ubuntu-advantage-tools (27.13.6-20.04.1) ...
Installing new version of config file /etc/opt/apt.conf.d/20apt-esm-hook.conf ...
Installing new version of config file /etc/ubuntu-advantage/help_data.yaml ...
Installing new version of config file /etc/ubuntu-advantage/uaclient.conf ...
Installing new version of config file /etc/update-motd.d/01-contract-ua-esm-status ...
Setting up libpython3.8-stillbss04 (3.8.10-ubuntu0.20.04.7) ...
Setting up python3-libbss04 (1:0.16.1-ubuntu0.2.14) ...
Setting up libbss00-5-helmal:amd64 (7.7.0dfsg-ubuntu1.4) ...
Setting up libcurl3-gnutls:amd64 (7.68.0-ubuntu0.2.10) ...
Setting up software-properties-common (0.99.9.11) ...
Setting up appopt (2.20.11-ubuntu0.27.25) ...
invoke-rc.d: could not determine current runlevel
Setting up libpython3.8:amd64 (3.8.10-ubuntu0.20.04.7) ...
Setting up git (1:2.25.1-ubuntu0.10) ...
Setting up bind9-host (1:9.16.1-ubuntu0.2.14) ...
Setting up libkrb5-26-helmal:amd64 (7.7.0dfsg-ubuntu1.4) ...
Setting up vim (2:0.1.2209-ubuntu0.12) ...
Setting up libhelmtino-helmal:amd64 (7.7.0dfsg-ubuntu1.4) ...
Setting up libgsapi3-helmal:amd64 (7.7.0dfsg-ubuntu1.4) ...
Setting up bind9-dnswalk (1:9.16.1-ubuntu0.2.14) ...
Setting up systemd (245.4-ubuntu0.20) ...
Initializing machine ID from D-Bus machine ID.
Setting up system-timesyncd (245.4-ubuntu0.20) ...
Setting up python3-update-manager (1:20.04.10.11) ...
Setting up snapd (2.50~20.04) ...
Installing new version of config file /etc/apparmor.d/usr.lib.snapd.snap-confine.real ...
Installing new version of config file /etc/apt/apt.conf.d/20snapd.conf ...
Created symlink /etc/systemd/system/multi-user.target.wants/snapd.service → /lib/systemd/system/snapd.service.
Setting up systemd-sysv (245.4-ubuntu0.20) ...
Setting up libbss-sysv0:amd64 (245.4-ubuntu0.20) ...
```



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```

unix@A120: ~
Setting up python3-distupgrade (1:20.04.41) ...
Setting up ubuntu-release-upgrader-core (1:20.04.41) ...
Setting up update-manager-core (1:20.04.10.11) ...
Setting up libpan-systemd amd64 (245.4-4ubuntu3.20) ...
Setting up update-notifier-common (3.192.30.17) ...
Setting up dbus-user-session (1.12.10-2ubuntu2.3) ...
Processing triggers for plymouth-theme-ubuntu-text (0.9.4git20200323-0ubuntu6.2) ...
update-initramfs: deferring update (trigger activated)
Processing triggers for install-info (6.7.0.dfsg.2-5) ...
Processing triggers for mime-support (3.64ubuntu1) ...
Processing triggers for initramfs-tools (0.136ubuntu6.7) ...
Processing triggers for libc-bin (2.31-0ubuntu9.9) ...
Processing triggers for rsyslog (8.2001.0-1ubuntu1.3) ...
invoke-rc.d: could not determine current runlevel
Processing triggers for man-db (2.9.1-1) ...
Processing triggers for ca-certificates (20211016ubuntu0.20.04.1) ...
Updating certificates in /etc/ssl/certs...
0 added, 0 removed; done.
Running hooks in /etc/ca-certificates/update.d...
done.
Reading package lists... Done
Building dependency tree
Reading state information... Done
0 upgraded, 0 newly installed, 0 to remove and 3 not upgraded.
Reading package lists... Done
Building dependency tree
Reading state information... Done
10:43:47 Script Terminated
unix@A120: ~

```

CONCLUSION: In conclusion, automating the process of upgrading and cleaning the Linux system through a shell script can save time and effort compared to manually performing these tasks. It can also help ensure that the system is kept up-to-date and optimized regularly




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EXPERIMENT NO. 9

Aim:- Write a shell script to find the
factorial of given integer.

Lab Outcome: -
ECL604.4 - solve the problems using shell
script programming.

Date of Performance: - 17/02/2023


Date of Submission: - 20/02/2023

Implementation (05)	Understanding (05)	Punctuality & Discipline (05)	Total Marks (15)
05	05	05	15

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EXPERIMENT NO.10

AIM: Write a shell script to find the factorial of given integer.

SOFTWARE REQUIREMENT: Linux Operating System, Shell-Interpreter, Nano editor.

THEORY: The factorial of a number is the function that multiplies the number by every natural number below it. Symbolically, factorial can be represented as "!". So, n factorial is the product of the first n natural numbers and is represented as $n!$.

The formula for n factorial is: $n! = n \times (n-1)!$ $n! = n \times (n-1)!$


$$n! = n \times (n-1)! \quad n! = n \times (n-1)!$$

This means that the factorial of any number is, the given number, multiplied by the factorial of the previous number. So, $8! = 8 \times 7! = 8 \times 7! \dots$ And $9! = 9 \times 8! = 9 \times 8! \dots$ The factorial of 10 will be $10! = 10 \times 9! = 10 \times 9! \dots$ Like this if we have $(n+1)$ factorial then it can be written as, $(n+1)! = (n+1) \times n!$

PROGRAM:

```
Linux@PC19:~$ nano factorial.sh
GNU nano 4.8 factorial.sh
#!/bin/bash
echo "Enter a Number"
read num
fact=1
while [ $num -gt 0 ]
do
    fact=$((fact * num))
    num=$((num - 1))
done
echo "factorial of $num is $fact"
```




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OUTPUT:

```
unix@PC-19: $ nano factorial.sh
unix@PC-19: $ nano factorial.sh
unix@PC-19: $ bash factorial.sh
Enter a Number
4
factorial.sh: line 6: [: command not found
factorial of 4 is 1
unix@PC-19: $ nano factorial.sh
unix@PC-19: $ bash factorial.sh
Enter a Number
4
factorial of 4 is 24
unix@PC-19: $ bash factorial.sh
Enter a Number
65
factorial of 65 is -9223372036854775808
unix@PC-19: $ bash factorial.sh
Enter a Number
70
factorial of 70 is 0
unix@PC-19: $
```

CONCLUSION:

Take the integer as input from the user. Initialize a variable to store the factorial value. Use a for loop to iterate from 1 to the input integer. Within the loop, multiply the current value with the factorial variable. Finally, display the factorial value to the user. This script will calculate the factorial of a given integer using a for loop and display the result to the user.




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EXPERIMENT NO. 10

Aim:- Write a awk script to find the number of characters, words and lines in a file.

Lab Outcome: -

EEL604.4 - solve the problems using shell script programming.

Date of Performance: - 20/02/2023

Date of Submission: - 17/03/2023

Implementation (05)	Understanding (05)	Punctuality & Discipline (05)	Total Marks (15)
05	05	03	13

Bakshi
24/03/2023

Practical Incharge




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EXPERIMENT NO.

AIM: Write a awk script to find the number of characters, words and lines in a file.


SOFTWARE REQUIREMENT: Linux Operating System, Shell Interpreter, Vim editor

THEORY: Awk is a scripting language used for manipulating data and generating reports. The awk command programming language requires no compiling and allows the user to use variables, numeric functions, string functions, and logical operators. Awk is a utility that enables a programmer to write tiny but effective programs in the form of statements that define text patterns that are to be searched for in each line of a document and the action that is to be taken when a match is found within a line. Awk is mostly used for pattern scanning and processing. It searches one or more files to see if they contain a line that matches with the specified patterns and then perform the associated actions. Awk is abbreviated from the names of the developers - Aho, Weinberger, and Kernighan.

PROGRAM:

```
unix@A120: ~
GNU nano 4.8                               n1.sh
# nano: old bear
file_path="/home/unix/newtext.txt"
"number of line:"
number_of_lines= wc --lines$file_path
"number of words:"
number_of_words= wc --words$file_path
"number of characters:"
number_of_characters= wc -c$file_path
```





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OUTPUT:

```
unix@A120: $ cat newtext.txt
Hey I am student of kc college
I am currently in TE EXTC
unix@A120: $ nano n1.sh
unix@A120: $ bash n1.sh
number of line:
2
number of words:
13
number of characters:
57
unix@A120: $ nano n1.sh
unix@A120: $
```

CONCLUSION: In conclusion, Linux provides a robust and flexible environment for performing various system operations and data processing tasks. The use of an awk script to find the number of characters, words, and lines in a file on Linux is an efficient approach due to the powerful text processing capabilities of the operating system. Awk is a standard tool in Linux and provides a concise and powerful syntax for manipulating text data. By leveraging the built-in functions and features of awk, the script can accurately count the desired metrics in a file. The combination of Linux and awk offers a powerful and efficient solution for data processing and analysis task




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EXPERIMENT NO. 11

Aim:- Install and configure DHCP server and client.

Lab Outcome: -

ECL604.5 - Develop network based applications.

ECL604.6 - Apply the Linux commands using programming skill to develop different servers like ftp, telnet, etc.

Date of Performance: - 17/03/2023

Date of Submission: - 20/03/2023

Implementation (05)	Understanding (05)	Punctuality & Discipline (05)	Total Marks (15)
05	05	05	15

Batil
24/03/2023

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EXPERIMENT NO.

AIM: Install and Configure DHCP Server and Client

SOFTWARE REQUIREMENT: Linux Operating System, Shell-Interpreter , Nano editor.

THEORY: Dynamic Host Configuration Protocol (DHCP) is a client/server protocol that automatically provides an Internet Protocol (IP) host with its IP address and other related configuration information such as the subnet mask and default gateway. RFCs 2131 and 2132 define DHCP as an Internet Engineering Task Force (IETF) standard based on Bootstrap Protocol (BOOTP), a protocol with which DHCP shares many implementation details. DHCP allows hosts to obtain required TCP/IP configuration information from a DHCP server. Windows Server 2016 includes DHCP Server, which is an optional networking server role that you can deploy on your network to lease IP addresses and other information to DHCP clients. All Windows-based client operating systems include the DHCP client as part of TCP/IP, and DHCP client is enabled by default.

OUTPUT:

```
root@chinmay-vb:~# sudo apt update
Hit:1 http://in.archive.ubuntu.com/ubuntu janny InRelease
Get:2 http://security.ubuntu.com/ubuntu janny-security InRelease [119 kB]
Get:3 http://in.archive.ubuntu.com/ubuntu janny-updates InRelease [119 kB]
Get:4 http://in.archive.ubuntu.com/ubuntu janny-backports InRelease [108 kB]
Fetched 337 kB in 2s (198 kB/s)
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
8 packages can be upgraded. Run 'apt list --upgradable' to see them.
root@chinmay-vb:~# sudo apt-get install isc-dhcp-server -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  libirs-export161 libiscfg-export163
Suggested packages:
  isc-dhcp-server-ldap policycoreutils
The following NEW packages will be installed:
  isc-dhcp-server libirs-export161 libiscfg-export163
0 upgraded, 3 newly installed, 0 to remove and 8 not upgraded.
Need to get 529 kB of archives.
After this operation, 1,546 kB of additional disk space will be used.
Get:1 http://in.archive.ubuntu.com/ubuntu janny/main amd64 libiscfg-export163 amd64 1:9.11.19+dfsg-2.1ubuntu3 [53.0 kB]
Get:2 http://in.archive.ubuntu.com/ubuntu janny/main amd64 libirs-export161 amd64 1:9.11.19+dfsg-2.1ubuntu3 [28.0 kB]
Get:3 http://in.archive.ubuntu.com/ubuntu janny-updates/main amd64 isc-dhcp-server amd64 4.4.1-2.3ubuntu2.4 [456 kB]
Fetched 529 kB in 3s (192 kB/s)
Preconfiguring packages ...
Selecting previously unselected package libiscfg-export163.
(Reading database ... 198601 files and directories currently installed.)
Preparing to unpack .../libiscfg-export163_1%3a9.11.19+dfsg-2.1ubuntu3_amd64.deb ...
Unpacking libiscfg-export163 (1:9.11.19+dfsg-2.1ubuntu3) ...
Selecting previously unselected package libirs-export161.
Preparing to unpack .../libirs-export161_1%3a9.11.19+dfsg-2.1ubuntu3_amd64.deb ...
Unpacking libirs-export161 (1:9.11.19+dfsg-2.1ubuntu3) ...
Selecting previously unselected package isc-dhcp-server.
Preparing to unpack .../isc-dhcp-server_4.4.1-2.3ubuntu2.4_amd64.deb ...
Unpacking isc-dhcp-server (4.4.1-2.3ubuntu2.4) ...
Setting up libiscfg-export163 (1:9.11.19+dfsg-2.1ubuntu3) ...
Setting up libirs-export161 (1:9.11.19+dfsg-2.1ubuntu3) ...
Setting up isc-dhcp-server (4.4.1-2.3ubuntu2.4) ...
Generating /etc/default/isc-dhcp-server...
Created symlink /etc/systemd/system/multi-user.target.wants/isc-dhcp-server.service → /lib/systemd/system/isc-dhcp-server.service.
Created symlink /etc/systemd/system/multi-user.target.wants/isc-dhcp-server6.service → /lib/systemd/system/isc-dhcp-server6.service.
Processing triggers for libc-bin (2.35-0ubuntu3.1) ...
Processing triggers for man-db (2.10.2-1) ...
root@chinmay-vb:~#
```

CONCLUSION: In conclusion, installing and configuring a DHCP server and client in Linux allows for automatic network configuration and IP address assignment, simplifying network management and reducing the likelihood of conflicts or errors. This enables seamless communication between devices on the network, making it a useful tool for organizations with multiple devices or users.



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EXPERIMENT NO. 12

Aim:- Install and configure DNS server.

Lab Outcome: -

ECL604.5 - Develop network based applications.

ECL604.6 - Apply the Linux commands using programming skills to deploy different servers like ftp, telnet, etc.

Date of Performance: - 20/03/2023

Date of Submission: - 24/03/2023

Implementation (05)	Understanding (05)	Punctuality & Discipline (05)	Total Marks (15)
05	05	05	15

Bakul
27/03/2023

Practical Incharge




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EXPERIMENT NO. 13

Aim:- Install and configure Web server.

Lab Outcome: -

ECL604.5 - Develop network based applications.

ECL604.6 - Apply the linux commands using programming skill to deploy different servers like ftp, telnet etc.

Date of Performance: - 24/03/2023

Date of Submission: - 27/03/2023

Implementation (05)	Understanding (05)	Punctuality & Discipline (05)	Total Marks (15)
05	05	05	15

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EXPERIMENT NO.

AIM: - Install and configure Web Server

SOFTWARE REQUIREMENT: Linux Operating System, Shell-Interpreter , Nano editor.


THEORY: A web server is an information technology that processes requests via HTTP, the basic network protocol used to distribute information on the World Wide Web. The term can refer either to the entire computer system, an appliance, or specifically to the software that accepts and supervises the HTTP requests

The primary function of a web server is to store, process and deliver web pages to clients. The communication between client and server takes place using the Hypertext Transfer Protocol (HTTP). Pages delivered are most frequently HTML documents, which may include images, style sheets and scripts in addition to text content. Multiple web servers may be used for a high traffic website, here Dell servers are installed together being used for Wikimedia Foundation

A user agent, commonly a web browser or web crawler, initiates communication by making a request for a specific resource using HTTP and the server responds with the content of that resource or an error message if unable to do so. The resource is typically a real file on the server's secondary storage, but this is not necessarily the case and depends on how the web server is implemented.

While the primary function is to serve content, a full implementation of HTTP also includes ways of receiving content from clients. This feature is used for submitting web forms, including uploading of files.




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PROGRAM:


GNU nano 6.2

index.html

```
<html>
<head>
  <title> UBUNTU ROCKS!! </title>
</head>
<body>
  <p> I am running this website on an UBUNTU server!
</body>
</html>
```

```
root@chinmay-vb: /etc/apache2/sites-available  Q  ≡  -  □  ×
root@chinmay-vb: /etc/apache2/sites-a...  whitedevil69@chinmay-vb: ~
whitedevil69@chinmay-vb:~$ sudo apt install apache2
[sudo] password for whitedevil69:
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
apache2 is already the newest version (2.4.52-1ubuntu4.4).
0 upgraded, 0 newly installed, 0 to remove and 8 not upgraded.
whitedevil69@chinmay-vb:~$ sudo mkdir /var/www/gci/
mkdir: cannot create directory '/var/www/gci/': File exists
whitedevil69@chinmay-vb:~$ cd /var/www/gci/
whitedevil69@chinmay-vb:/var/www/gci$ ls
index.html
whitedevil69@chinmay-vb:/var/www/gci$ pwd
/var/www/gci
whitedevil69@chinmay-vb:/var/www/gci$ nano index.html
whitedevil69@chinmay-vb:/var/www/gci$ sudo chmod 777 index.html
whitedevil69@chinmay-vb:/var/www/gci$ sudo su
root@chinmay-vb:/var/www/gci# cd /etc/apache2/sites-available/
root@chinmay-vb:/etc/apache2/sites-available# sudo cp 000-default.conf gci.conf
root@chinmay-vb:/etc/apache2/sites-available# sudo nano gci.conf
root@chinmay-vb:/etc/apache2/sites-available# sudo a2ensite gci.conf
Site gci already enabled
root@chinmay-vb:/etc/apache2/sites-available# nano index.html
root@chinmay-vb:/etc/apache2/sites-available#
```




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OUTPUT:

Apache2 Ubuntu Default Page

Ubuntu

It works!

This is the default welcome page used to test the correct operation of the Apache2 server after installation on Ubuntu systems. It is based on the equivalent page on Debian, from which the Ubuntu Apache packaging is derived. If you can read this page, it means that the Apache HTTP server installed at this site is working properly. You should replace this file (located at `/var/www/html/index.html`) before continuing to operate your HTTP server.

If you are a normal user of this web site and don't know what this page is about, this probably means that the site is currently unavailable due to maintenance. If the problem persists, please contact the site's administrator.

Configuration Overview

Ubuntu's Apache2 default configuration is different from the upstream default configuration, and split into several files optimized for interaction with Ubuntu tools. The configuration system is fully documented in `/usr/share/doc/apache2/README.Debian.gz`. Refer to this for the full documentation. Documentation for the web server itself can be found by accessing the **MANUAL** if the `apache2-doc` package was installed on this server.

The configuration layout for an Apache2 web server installation on Ubuntu systems is as follows:

```
/etc/apache2/  
|-- apache2.conf  
|   |-- ports.conf  
|-- mods-enabled  
|   |-- *.load  
|   |-- *.conf  
|-- conf-enabled  
|   |-- *.conf  
|-- sites-enabled  
|   |-- *.conf  
|
```

- `apache2.conf` is the main configuration file. It puts the pieces together by including all remaining configuration files when starting up the web server.
- `ports.conf` is always included from the main configuration file. It is used to determine the listening ports for incoming connections, and this file can be customized anytime.
- Configuration files in the `mods-enabled/`, `conf-enabled/` and `sites-enabled/` directories contain particular configuration snippets which manage modules, global configuration fragments, or virtual host configurations respectively.
- They are activated by symlinking available configuration files from their respective `*-available/` counterparts. These should be managed by using our helpers `a2enmod`, `a2dismod`, `a2ensite`, `a2dissite`, and `a2enconf`, `a2disconf`. See their respective man pages for detailed information.
- The binary is called `apache2` and is managed using `systemd`, so to start/stop the service use `systemctl start apache2` and `systemctl stop apache2`, and use `systemctl status apache2` and `journalctl -u apache2` to check status. `system` and `apache2ctl` can also be used for service management if desired. Calling `/usr/sbin/apache2` directly will not work with the default configuration.

Document Roots

By default, Ubuntu does not allow access through the web browser to any file outside of those located in `/var/www`, `public_html` directories (when enabled) and `/usr/share` (for web applications). If your site is using a web document root located elsewhere (such as in `/srv`) you may need to whitelist your document root directory in `/etc/apache2/apache2.conf`.

The default Ubuntu document root is `/var/www/html`. You can make your own virtual hosts under `/var/www`.

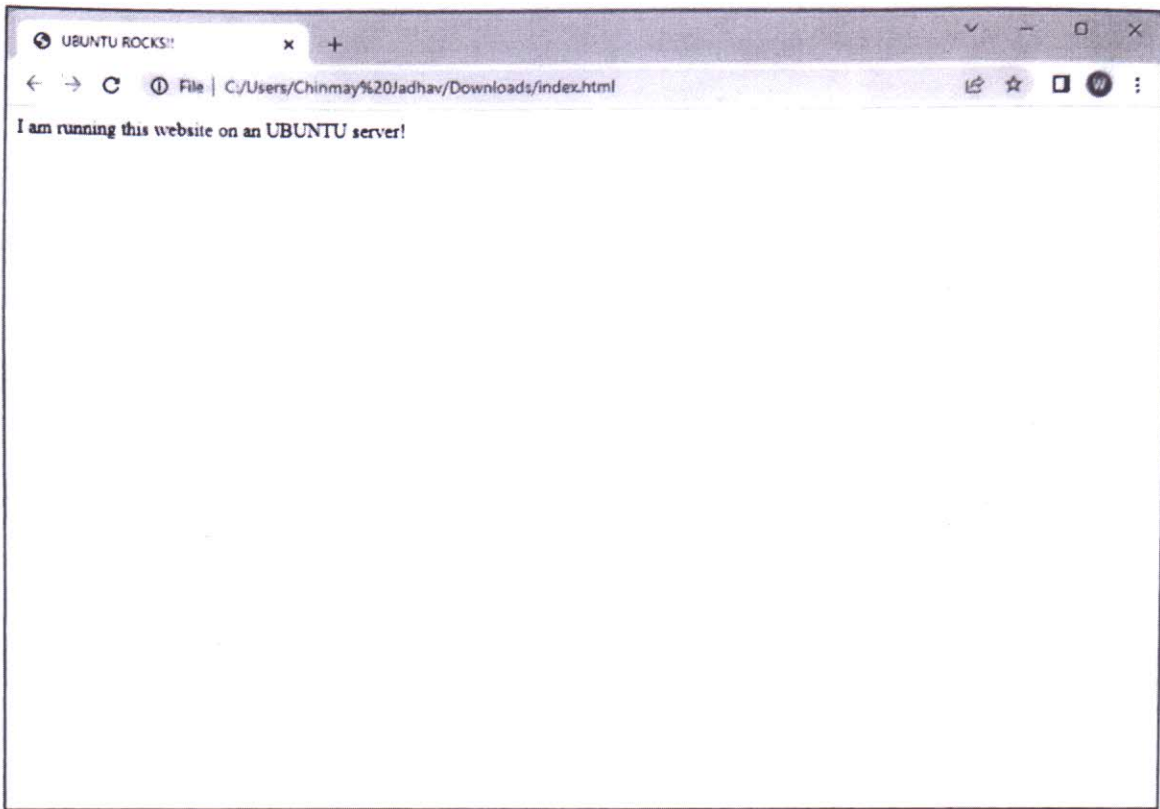
Reporting Problems

Please use the `ubuntu-bug` tool to report bugs in the Apache2 package with Ubuntu. However, check [existing bug reports](#) before reporting a new bug.

Please report bugs specific to modules (such as PHP and others) to their respective packages, not to the web server itself.



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CONCLUSION: In conclusion, installing and configuring a web server in Linux provides a powerful and flexible platform for hosting websites and other web-based applications. By setting up a web server, organizations can make their content available to a global audience, enhance their online presence, and provide a reliable and scalable platform for delivering web-based services. With a range of open-source web server software available for Linux, there are options to suit a wide range of needs and use cases.




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EXPERIMENT NO. 14

AIM: - Study of basic commands of Git

Lab Outcome: -

ECL604. 1, 2, 3, 4, 5, 6.

Date of Performance: - 27/03/23

Date of Submission: - 31/03/23

Implementation (05)	Understanding (05)	Punctuality & Discipline (05)	Total Marks (15)
05	05	05	15

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EXPERIMENT NO.14

AIM: - Study of basic commands of Git

SOFTWARE REQUIREMENT: Command Line

THEORY: Basic Git commands


To use Git, developers use specific commands to copy, create, change, and combine code. These commands can be executed directly from the command line or by using an application like GitHub Desktop. Here are some common commands for using Git:

- git init initializes a brand new Git repository and begins tracking an existing directory. It adds a hidden subfolder within the existing directory that houses the internal data structure required for version control.
- git clone creates a local copy of a project that already exists remotely. The clone includes all the project's files, history, and branches.
- git add stages a change. Git tracks changes to a developer's codebase, but it's necessary to stage and take a snapshot of the changes to include them in the project's history. This command performs staging, the first part of that two-step process. Any changes that are staged will become a part of the next snapshot and a part of the project's history. Staging and committing separately gives developers complete control over the history of their project without changing how they code and work.
- git commit saves the snapshot to the project history and completes the change-tracking process. In short, a commit functions like taking a photo. Anything that's been staged with git add will become a part of the snapshot with git commit.
- git status shows the status of changes as untracked, modified, or staged.
- git branch shows the branches being worked on locally.
- git merge merges lines of development together. This command is typically used to combine changes made on two distinct branches. For example, a developer would merge when they want to combine changes from a feature branch into the main branch for deployment.
- git pull updates the local line of development with updates from its remote counterpart. Developers use this command if a teammate has made commits to a branch on a remote, and they would like to reflect those changes in their local environment.
- git push updates the remote repository with any commits made locally to a branch.

CONCLUSION:

In conclusion, the study of basic commands of Git is essential for effective version control and collaboration in software development projects. With Git, developers can easily manage different versions of their code, collaborate with other team members, and track changes made to the codebase. By learning the basic commands of Git, users can perform common tasks such as creating a repository, committing changes, branching, merging, and more. This knowledge can be applied to various workflows and projects, making it a valuable skill for any developer using Linux.




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Date 19 Mar 2023



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DEPARTMENT OF INFORMATION TECHNOLOGY

Project - I Titles with Project Category 2022-23

Sr.No	Group No	Group Members	Roll no	Title	Co-Guide Name	Guide Name	Inhouse/Outhouse
1	1	Tejas Phanse	47	AR Fitness	Prof.Amarja Agaonkar	Prof.Amarja Agaonkar	Inhouse
2		Atharva Mulgund	34				
3		Angad Singh Obbi	36				
4	2	Mrunmai Patil	42	Cliniro	Prof.Nutan Dolzake	Prof.Amarja Agaonkar	Inhouse
5		Baliram Pansare	38				
6		Vaishnavi Kulkarni	25				
7	3	Shriyash Jadhav	18	Stock prediction	Prof. Shaikh Nikhat	Prof. Shaikh Nikhat	Inhouse
8		Nilay Patil	43				
9		Ashutosh Rajput	50				
10	4	Durgesh Kolhe	23	Sign language detection for deaf and dumb people	Prof.Amarja Agaonkar	Prof.Amarja Agaonkar	Inhouse
11		Omkar Mandavkar	30				
12		Sameer Metkar	31				
13		Shubham More	33				
14	5	Shaival Jadhav	17	Liver Cancer Deduction Using HCNN	Dr. Brinthakumrai S	Dr. Brinthakumrai S	Inhouse
15		Hrushikesh Bagade	6				
16		Meghna Dasgupta	10				
17		Prathamesh Chikane	9				
18	6	Chaitanya Parab	40	Speach to Text Conversion using NLP	Prof. Shaikh Nikhat	Prof. Shaikh Nikhat	Inhouse
19		Pratham Pawar	45				
20		Jenil Nayak	35				
21		Akram Kunda	27				
22	7	Daksha Kotharkar	24	Safety App	Prof.Priyanka Sonawane	Dr. Kiran Bhandari	Inhouse
23		Dhanlaxmi Maddi	28				
24		Owaiz Majoriya	73				
25	8	Kris Dsouza	12	Client Cyber Security Application	Prof.Devika Rani Roy	Prof.Devika Rani Roy	Inhouse
26		Aaradhya Desai	11				
27		Dhananjay	21				
28	9	Shivani Gupta	16	Object Tracking using Deep Learning	Prof.Devika Rani Roy	Prof.Devika Rani Roy	Inhouse
29		Akshada Golhe	15				
30		Krishna Khandelwal	20				
31	10	Deeksha Durgapu	13	Brain Stroke Detection using ML	Prof.Priyanka Sonawane	Dr. Kiran Bhandari	Inhouse
32		Saakshi Chaudhary	8				
33		Rahul Gaikwad	14				
34		Sruthi Mhatre	32				
35	11	Aashish Sharma	54	All in one Social media downloader	Prof.Priyanka Sonawane	Dr. Kiran Bhandari	Inhouse
36		Alok Salian	51				
37		Vinay Thakur	58				
38		Vivek Tiwari	59				
39	12	Shreyas Kumbhar	26	Data Leakage Detection	Prof. Shaikh Nikhat	Prof. Shaikh Nikhat	Inhouse
40		Aditya Belekar	4				
41		Yash Chalke	7				
42	13	Vaishnavi Jambhale	19	A Speculative approach for Brain Tumor Detection using Image	Dr. Brinthakumari	Dr. Brinthakumari	Inhouse
43		Janhavi Panvekar	39				
44		Supriya Prajapati	49				
45	14	Mayur Kirloskar	22	Design and Development of AR mobile application for Medical Training	Dr. Kiran Bhandari	Dr. Kiran Bhandari	Inhouse
46		Jagdish Singh Dhanjal	80				
47		Mohammad Kaif	68				
48	15	Bhakti Machha	77	Optical Music Recognition	Prof.Rachana Borole	Dr. Brinthakumari	Inhouse
49		Tanvi Sawant	75				
50		Neha Shah	71				
51	16	Vinay Gavas	61	virtual Campus Tour using AR technology.	Dr. Kiran Bhandari	Dr. Kiran Bhandari	Inhouse
52		Ritanshu Bhoir	63				
53		Atharva Sagare	62				
54		Yashraj Upadhyay	60				
55	17	Vrunal benke	5	Rental Farming Equipments	Prof.Nutan Dolzake	Prof.Amarja Agaonkar	Inhouse
56		Shraddha apraj	1				
57		Mrunal Ubale	64				
58	18	Tejas Tamkar	56	Food Donation app (FreeMorsel)	Prof.Devika Rani Roy	Prof.Devika Rani Roy	Inhouse
59		Manish Talele	55				
60		Siddhi Salian	52				
61		Sakshi Sarang	53				
62	19	Abhishek	77	Block chain based crypto exchange website/Block chain based voting system	Dr. Kiran Bhandari	Dr. Kiran Bhandari	Inhouse
63		Mayuresh Patil	78				
64		Tejinder Sandhu	79				



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65	20	Omkar Awari	2	Music Recommendation Using Emotion Recognition	Prof.Rachana Borole	Dr. Brinthakumari	Inhouse
66		Vanshdeep Singh Banga	3				
67		Anurag Pandey	37				
68	21	Aniket Patel	41	Visual Question answering for helping visually disabled people	Prof Amarja Agaonkar	Prof Amarja Agaonkar	Inhouse
69		Pratik Pote	48				
70		Rutik Patil	44				
71		Harshad Phalke	46				
72	22	Bharat chopra	69	Cashify(Deep learning Approch for indian currency identification	Prof.Nutan Dolzake	Prof Amarja Agaonkar	Inhouse
73		Nitesh khuman	70				
74		Viraj Shinde	72				
75	23	Mitali Mall	29	Smart Farming Application	Dr. Brinthakumari	Dr. Brinthakumari	Inhouse
76		Homeshwari Thakre	57				
77		Anupam kolwadkar	66				

Bhandari

Project Co-ordinator

Anupam

H.O.D.(I.T.Dept.)



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Department of Information Technology

PROJECT EVEN SEM(2022-23)

PROJECT EVEN SEM SCHEDULE

Sr.NO	Date	Work to be done
1	15/2/2023	Project process evaluation through panel (40% of Implementation-working model)
2	15/3/2023	Project progress evaluation through panel (80% of Implementation-working model)
3	29/3/2023	100% Completion of project
4	5/4/2023	Internal Project Presentation

Note:

- **All students have to report regularly on all wednesday (Project day) with all members in your group.**




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Rubrics (100 Marks)

Sr. No.	Rubric	Marks
1	Regular Reporting to guide	10
2	Project Implementation	25
3	Final Results & Summarization	10
4	Test Cases	10
5	Communication	10
6	Report preparation	20
7	Final Presentation	5
8	Paper Publication & Project competition	10

Review I Guidelines :

1. 40 % implementation of project
2. Partial report preparation (Introduction , literature Survey, proposed methodology etc.
3. Partial paper preparation
4. Communication
5. Question and answering

Review II Guidelines

1. 80 to 100 % Project implementation
2. Results
3. Remaining Report completion covering screen shots , test cases etc.
4. Soft copy of paper
5. Communication
6. Question & answering

Internal Project Presentation Guidelines :

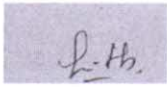
1. 100 % project
2. Complete result and summarization
3. All test cases
4. Paper
5. Black Book
6. Communication
7. Final Presentation




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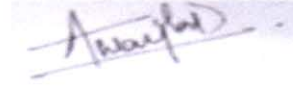
Other Guidelines

1. All Groups have to report on project day to their respective guide with all the group members
2. Reporting & entry in the register to Project Lab is necessary
3. Mandatory to report on all the reviews of project
4. One Internal and One External project Competition is mandatory
5. Paper Publication will be done as mentored by guide



Project Co-ordinator

Dr.S.Brinthakumari



H.O.D.(I.T.Dept.)

Prof Amarja Adgaonkar




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Major Project Weekly report A Y 2022-23

Weekly report for BE-VII Sem (2022-23)



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Department of Information Technology
A. Y. 2022-23

Class: BE

Semester: VII

Course: IT

Year: 22-23

Guide Name: Prof.Devika Rani Roy

Date	27/07/2022	
Project Group(Name & Sign)	Name	Sign
	Siddhi Salian (52)	<i>Siddhi Salian</i>
	Sakshi Sarang(53)	<i>Sakshi Sarang</i>
	Manish Talele(55)	<i>Manish Talele</i>
	Tejas Tamkar(56)	<i>Tejas Tamkar</i>
Project Topic	FreeMorsel (Donation App)	
Task Completed	Submitted three best ideas /paper for approval.	
Resources used	IEEE Xplore, Research Gate, Smart India Hackathon Problem statements.	
Outcome	Research of real-time Problem Statement and IEEE papers.	
Next Meeting Target	Literature Survey about the ideas & discussion with Project Co-ordinator & Topic Finalization	
Guide remark & sign	<i>Devika Roy</i>	



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Weekly report for BE-VIII Sem (2022-23)



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Department of Information Technology

A. Y. 2022-23

Class: BE-IT

Semester: VIII

Course: Information Technology

Year: BE.

Guide Name: Prof. Aarati Abhyankar

Date	15/2/23	
Project Group(Name & Sign)	Name	Sign
	Shrushikesh Bhagade (6)	
	Shaival Gadhar (17)	
	Meghna Dasgupta (10)	
	Prathamesh Chikane (9)	
Project Topic	Liver Cancer detection	
Task Completed	40% Implementation of project, searching of Research papers.	
Resources used	Github, vscode	
Outcome	Browsing images and getting masked image as output.	
Next Meeting Target	50% implementation of project and creation of GUI webpages.	
Guide remark & sign		



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DEPARTMENT OF INFORMATION TECHNOLOGY
Project - II Internal Presentation 2022-23

Sr.No	Group No	Group Members	Roll no	Title	Co-Guide Name	Guide Name	Implementation (25)	Test Cases (10)	Results (10)	Communication (5+5)	Final Presentation & Q & A (05)	Project Competition (10)	Publication of Paper (10)	Regular Reporting (10)	Report Completion (10)	Total (100)
1	1	Tejas Phanse	47	AR Fitness	Prof. Amarja Agaonkar	Prof. Amarja Agaonkar	24	9	9	10	5	9	9	10	10	95
2		Atharva Mungund	34				24	9	9	10	5	9	9	10	10	95
3		Angad Singh Obbi	36				24	9	9	10	5	9	9	10	10	95
4	2	Mrunal Patil	42	Cliniro	Prof. Angelin	Prof. Angelin	24	9	9	10	5	9	9	10	10	95
5		Baliram Panare	38				24	9	9	10	5	9	9	10	10	95
6		Vaishnavi Kulkarni	25				24	9	9	10	5	9	9	10	10	95
7	3	Shrivash Jadhav	18	Stock prediction	Dr. Rajesh Kapur	Dr. Rajesh Kapur	24	9	9	10	5	9	9	10	10	95
8		Nitay Patil	43				24	9	9	10	5	9	9	10	10	95
9		Ashutosh Rajput	50				24	9	9	10	5	9	9	10	10	95
10	4	Dargesh Kolbe	23	Sign language detection for deaf and dumb people	Prof. Aarti Abhyankar	Prof. Aarti Abhyankar	24	9	9	10	5	9	9	10	10	95
11		Omkar Mandavkar	30				24	9	9	10	5	9	9	10	10	95
12		Samuel Meekar	31				24	9	9	10	5	9	9	10	10	95
13		Shubham More	33				24	9	9	10	5	9	9	10	10	95
14	5	Shaival Jadhav	17	Liver Cancer Deduction Using HCNN	Prof. Aarti Abhyankar	Prof. Aarti Abhyankar	22	8	8	9	4	9	9	8	8	85
15		Hrushikesh Bagade	6				22	8	8	9	4	9	9	8	8	85
16		Meghna Dasgupta	10				23	9	9	9	4	9	9	9	9	90
17		Prathamesh Chikane	9				22	8	8	9	4	9	9	8	8	85
18	6	Chaitanya Parab	40	Speech to Text Conversion using NLP	Dr. Rajesh Kapur	Dr. Rajesh Kapur	22	8	8	9	4	9	9	8	8	85
19		Pratham Pawar	45				22	8	8	9	4	9	9	8	8	85
20		Jemil Nayak	35				22	8	8	9	4	9	9	8	8	85
21		Akram Kunda	27				23	9	9	9	4	9	9	9	9	90
22	7	Daksha Kobarkar	24	Safety App	Prof. Priyanka Sonawane	Dr. Kiran Bhandari	23	9	9	9	4	9	9	9	9	90
23		Dhanrajini Madi	28				23	9	9	9	4	9	9	9	9	90
24		Owasit Majojvia	73				23	9	9	9	4	9	9	9	9	90
25	8	Kris Dsouza	12	Client Cyber Security Application	Prof. Devika Rani Roy	Prof. Devika Rani Roy	23	9	9	9	4	9	9	9	9	90
26		Aaradhy Desai	11				23	9	9	9	4	9	9	9	9	90
27		Dhananjay Khedkar	21				23	9	9	9	4	9	9	9	9	90
28	9	Shivani Gupta	16	Object Tracking using Deep Learning	Prof. Devika Rani Roy	Prof. Devika Rani Roy	23	9	9	9	4	9	9	9	9	90
29		Akhada Golhe	15				23	9	9	9	4	9	9	9	9	90
30		Krushna Shandehval	20				23	9	9	9	4	9	9	9	9	90
31	10	Deebolika Dasgupta	13	Brain Stroke Detection using ML	Prof. Priyanka Sonawane	Dr. Kiran Bhandari	24	9	9	9	5	9	9	9	10	93
32		Sakshi Chandhary	8				24	9	9	9	5	9	9	9	10	93
33		Rahul Gaikwad	14				23	9	9	9	4	9	9	9	9	90
34		Sruathi Mhatre	32				23	9	9	9	4	9	9	9	9	90
35	11	Aashish Sharma	54	All in one Social media downloader	Prof. Priyanka Sonawane	Dr. Kiran Bhandari	23	9	9	9	4	9	9	9	9	90
36		Alok Salian	51				23	9	9	9	4	9	9	9	9	90
37		Vinay Thakar	58				23	9	9	9	4	9	9	9	9	90
38		Vivek Tiwari	59				23	9	9	9	4	9	9	9	9	90
39	12	Shreyas Kumbhar	26	Data Leakage Detection	Prof. Angelin	Prof. Angelin	15	7	6	6	3	7	7	7	7	65
40		Adeya Delekar	4				15	6	6	6	3	6	6	6	6	60
41		Yash Chalka	7				15	6	6	6	3	6	6	6	6	60
42	13	Vaishnavi Jambhale	19	A Speculative approach for Brain Tumor Detection using Image	Prof. Sheetal Jadhav	Prof. Sheetal Jadhav	23	9	9	9	4	9	9	9	9	90
43		Janhavi Panekar	39				23	9	9	9	4	9	9	9	9	90
44		Supriya Prajapati	49				22	8	8	9	4	9	9	8	8	85
45	14	Mayur Kirokar	22	Design and Development of AR mobile application for Medical Training	Dr. Kiran Bhandari	Dr. Kiran Bhandari	15	6	6	6	3	6	6	6	6	60
46		Jagdish Singh Dhanjal	80				15	6	6	6	3	6	6	6	6	60
47		Mohammad Karif	68				15	6	6	6	3	6	6	6	6	60
48	15	Hakshi Lachha	77	Optical Music Recognition	Prof. Sheetal Jadhav	Prof. Sheetal Jadhav	22	8	8	9	4	9	9	8	8	85
49		Harvi Sarwat	75				22	8	8	9	4	9	9	8	8	85
50		Neha Shah	71				22	8	8	9	4	9	9	8	8	85
51	16	Vinay Gavay	61	virtual Campus Tour using AR technology.	Dr. Kiran Bhandari	Dr. Kiran Bhandari	21	7	7	7	4	7	8	7	7	75
52		Ritanshu Bhoir	63				21	7	7	7	4	7	8	7	7	75
53		Atharva Sagare	62				21	7	7	7	4	7	8	7	7	75



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54	Vishay Upadhyay	60				24	9	9	10	5	9	9	10	10	95
55	Vrinal benke	5	Rental Farming Equipments	Prof. Seema Bhuravane	Prof. Seema Bhuravane	22	8	8	9	4	9	9	8	8	85
56	Shradha apraj	1				22	8	8	9	4	9	9	8	8	85
57	Mrunal Ubale	64				22	8	8	9	4	9	9	8	8	85
58	Tojan Tamkar	56	Food Donation app (FreshMeat)	Prof. Devika Rani Roy	Prof. Devika Rani Roy	24	9	9	10	5	9	9	10	10	95
59	Mansih Talele	55				24	9	9	10	5	9	9	10	10	95
60	Siddhi Salian	52				24	9	9	10	5	9	9	10	10	95
61	Sakshi Sunag	53				24	9	9	10	5	9	9	10	10	95
62	Abhishek Vishwakarma	77	Block chain based crypto exchange website/Block chain based voting system	Dr. Kiran Bhandari	Dr. Kiran Bhandari	22	8	8	9	4	9	9	8	8	85
63	Mayuresh Patil	78				22	8	8	9	4	9	9	8	8	85
64	Tejinder Sandhu	79				22	8	8	9	4	9	9	8	8	85
65	Onkar Awari	2	Music Recommendation Using Emotion Recognition	Prof. Sheetal Jadhav	Prof. Sheetal Jadhav	21	7	7	8	3	9	9	8	8	80
66	Vishaldeep Singh Banga	3				21	7	7	8	3	9	9	8	8	80
67	Amaraj Pandey	37	Visual Question answering for helping visually disabled people	Prof. Amartya Agastekar	Prof. Amartya Agastekar	22	8	8	9	4	9	9	8	8	85
68	Aniket Patil	41				22	8	8	9	4	9	9	8	8	85
69	Pratik Pote	48				21	7	7	7	4	7	8	7	7	75
70	Ratik Patil	44				21	7	7	7	4	7	8	7	7	75
71	Harishad Phalke	46				21	7	7	8	3	9	9	8	8	80
72	Bharat chopra	69	Cashify(Deep learning Approach for indian currency identification	Prof. Angelin	Prof. Angelin	23	9	9	9	4	9	9	9	9	90
73	Nitesh khuman	70				23	9	9	9	4	9	9	9	9	90
74	Viraj Shinde	72				23	9	9	9	4	9	9	9	9	90
75	Mitali Mali	29	Smart Farming Application	Prof. Seema Bhuravane	Prof. Seema Bhuravane	23	9	9	9	4	9	9	9	9	90
76	Himeshwar Thakre	57				23	9	9	9	4	9	9	9	9	90
77	Anupam kobrodkar	66				23	9	9	9	4	9	9	9	9	90


Project Coordinator


HOD IT




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Department of Computer Engineering

Table 1: Rubrics for Grading Projects (Semester - VII)

Sem VII_PROJECT	Maximum Marks Weight	Excellent A	Good B	Fair C
Rubrics Description				
Regular Reporting and Attendance(R1)	10	Regularly reporting to project guide (09-10)	Reporting but not very regular (06-08)	Irregular(03-05)
Report preparation (R2)	10	Report depicts contribution made by each member, group reflects team work.(09-10)	Report was made by few member, group hardly reflects team work.(06-08)	Report was not in format specified and group does not reflects team work.(03-05)
Creative Thinking (R3)	5	Student begins to analyze information by Paper Reading/referring and draw conclusion. Attempt to solve non familiar problems.(04-05)	Student do not analyze information by Paper reading/referring and draw conclusion. But can work for familiarize problem.(02-03)	Student is unable to develop new original ideas.(01_02)
Literature Survey (R4)	10	Have referred 15-20 International Journal/ conference paper . (09-10)	Have referred 10-15 International Journal/ conference paper. (06-08)	Have referred 5-10 International Journal/ conference paper. (03-05)
Problem Formulation and Proposed	5	Problem clearly and concisely defined after studying drawbacks of	Problem just defined with no proper correlation to existing	




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Solution(R5)		existing systems(04-05)	systems .(02-03)	Problem poorly defined .(01_02)
Report and Team work(R6)	5	Report depicts contribution made by each member, group reflects team work. (04-05)	Report was made by few member, group hardly reflects team work.(02-03)	Report was not in format specified and group does not reflects team work. .(01_02)
Representation of content and Communication (R7)	5	Complete and correct description of operating procedure were communicated. (04-05)	operating procedure were not clearly understood and neither communicated.(02-03)	Operating procedure were not developed(01-02)
Total Marks	50	47-50	34-46	30-33




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Table 2: Project review week wise (Semester VII)

Sr. No.	Project Task (Work)	Date & Duration
1	Submission of three Project Ideas along with Base paper	1 st & 2 nd Week (20th July)
	Research Topic Given by Guide	
2	Presentation of project ideas in front of Internal Panel	3 rd Week(27th July)
3	Finalization of Project Idea & Project Title Submission	4 th week (3 August)
5	Briefing of 15 literature Survey paper and Define Problem Statement	7 th Week (5th Oct)
6	Finalized Problem Statement and methodology (e.g. Technology, Algorithm and Architecture) & Initial Designing (e.g. DFD, UML Diagram for project)	8 th & 10 th Week (12 th October)
8	Internal Project Presentation & Final Report Submission	11 th Week(19 th October)
9	External Project Presentation.	12 th week(as per University schedule)




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Table 3: Rubrics for Grading Project (Semester - VIII)

Sem VIII_PROJECT Rubrics Description	Maximum Marks Weight	Excellent A	Good B	Fair C
Project Innovation	5	Innovative New (5)	Part of the concept repetitive (4)	Old repetitive concept (3)
Regular reporting and attendance	5	Regularly reporting to project guide (5)	Reporting but not very regular (4-5)	Less Attendance (3-4)
Complete Implementation	5	Some latest hardware and software tools used (5)	Conventional tools used (4-5)	Design repetitive by nature (3-4)
Testing and Result	5	Result were included with accurate testing	Result were included without accurate testing	Result were included without testing
Paper presentation (National/ International Journal or conference/ Project Competition participation)	5	International Paper presentation or project competition (5)	National Paper presentation (4-5)	Poster presentation (3-4)
Black Book Preparation	10	Black book prepared with all research finding (10)	Black book prepared without research finding and result are poorly drafted (08)	Black book prepared without proper alignment & result were poorly drafted with many grammatical




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				error (06)
Communication and Team work skills	10	Good Report and team work (9-10)	Report just made team work just ok (6-9)	Very poor report and teamwork skills (6)
Final Presentation and Question answering	10	Excellent (9-10)	Good (6-9)	Average (6)
Total Marks	50	47-50	34-46	30-33





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Table 4: Project review week wise (Semester VIII)

Sr. No.	Project Task (Work)	Date & Duration
1	Reporting to respective guides & review the project work (report every week)	1st week (28 th Jan)
2	20 % Implementation of project (Creation of front end/ started working on algorithm)	2 nd and 3rd week (13th February)
3	50 % Implementation of project (working on actual component/state of project/creating & using data set required for project/ creating backend)	4 th and 5th week (26 February)
4	80 % Implementation of project(collaborating the models created and identified result are noted and tested for accuracy, Integration Testing)	6 th and 7th week (27 march)
5	100 % Implementation of project (acceptance testing)	8th and 9 thweek (10 April)
6	Result & Conclusion, paper presentation on Project Topic	10th week (30th March)
7	Verification of Black book & PPT by respective guides	11th week (6th April)
8	Internal Project Presentation	12th week (13th April)




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**Department of Information Technology
Academic Year 2022-23(Even Semester)**



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Index

- Introduction to Topic
- Need of Project
- Problem Statement
- Literature survey In Tabular Format
- Algorithm for Project Development
- Block Diagram
- Flow-chart
- Requirement Hardware and Software
- Implementation Details/ Screenshots of GUI
- Applications
- Conclusion
- References(Books, Websites, Databases Etc.)

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Vision


To create IT graduates with ethical and employable skills.

Mission

- To imbibe problem solving and analytical skills through teaching learning process.
- To impart technical and managerial skills to meet the industry requirement.
- To encourage ethical and value based education.

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Introduction to Topic

- Speech to text conversion is the process of converting spoken words into written text. This technology has been around for a while, but recent advancements in artificial intelligence and machine learning have made it more accurate and accessible than ever before.
- One of the main benefits of speech to text conversion is that it allows people to communicate more efficiently. For example, someone who has difficulty typing due to a physical disability can use speech to text software to write emails, documents, and even entire books.



Need of Project

- ❖ To easy the typing work
- ❖ To help people to write using there voice or language

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Problem Statement

- To build a speech to text conversion model using Natural Language Processing for Physical Disabled person.
- Our main objective is to ensure that the system was adequately trained on a word by word basis from various speakers so that it could recognize new speakers fluently.





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Literature survey

Sr.No	Title of the paper	Methodology of the paper	Advantages	Limitation
1	Deep learning based Bangla Speech-to-text Conversion	Speech-to-text Conversion is the process of recognizing speech in audio and producing text transcript for it. These paper present a complete speech to text conversion for Bangla language using Deep Recurrent neural network.	95% accuracy for training set and 50% accuracy for testing data	Scarcity of data
2	Visual-speech to text conversion applicable to telephone communication for deaf individuals.	The access to communication technologies has become essential for the handicapped people. This study introduces the initial step of an automatic translation system able to translate visual speech used by deaf individuals to text, or auditory speech	For continuous phoneme recognition, a 86% phoneme correct was achieved for the normal-hearing cuer and a 82.7% phoneme correct for the deaf cuer were achieved, respectively.	The deaf cuer was also speech-impaired and the intelligibility of her speech was very low.

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3	A Real Time Speech to Text Conversion Technique for Bengali Language.	This paper presents a model to convert natural Bengali language to text. The proposed model requires the usage of the open sourced framework Sphinx 4 which is written in Java and provides the required procedural coding tools to develop an acoustic model for a custom language like Bengali.	The proposed model showed 71.7% accuracy for the tested dataset.	In experimenting with the book recording in Model A the accuracy rate was very poor, 33.6% to be exact.
4	A REAL TIME SPEECH TO TEXT CONVERSION SYSTEM USING BIDIRECTIONAL KALMAN FILTER IN MATLAB	We used the design of a bidirectional nonstationary Kalman filter to enhance the ability of this Real time speech recognition system. Bidirectional Kalman filter has been proved to be the best noise estimator in nonstationary noiseous environment.	System was tested in different noise conditions and we obtained overall word accuracy of 90%.	we tested this system at a college laboratory with fan noise and background music. It was not able to recognize a single word 'moon' in the sentence named 'cry for the moon'.



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5	Bangla Speech-to-Text Conversion using SAPI	Microsoft Corporation developed Speech Application Program Interface (SAPI) for speech related works in its Windows operating systems that includes features for only eight languages including English.	Experimental study is carried out for the technique on an article from a news paper and the recognition rate was approximately 78% on an average.	The problem of SAPI is slow and its sequential operations
6	Speech to Text Conversion for Multilingual Languages	The objective of this system is to extract, characterize and recognize the information about speech. The proposed system is implemented using Mel-Frequency Cepstral Coefficient (MFCC) feature extraction technique and Minimum Distance Classifier, Support Vector Machine (SVM) methods for speech classification.	The % accuracy of the proposed system for Marathi language of 93.625% is achieved	Low accuracy for English-Marathi mix languages.
7	A study on impact of Language Model in improving the accuracy of Speech to Text Conversion System	This paper gives a comparative analysis of the technologies used in small, medium, and large vocabulary Speech Recognition System. The comparative study determines the benefits and liabilities of all the approaches so far.	The experiment shows high accuracy for randomly selected sentences compared to sequential sentences.	Also depicts the change in accuracy with respect to the number of sentences with sequential sentences taken versus the random sentences taken.



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8	A Spell-checker Integrated Machine Learning Based Solution for Speech to Text Conversion	Bengali speech data using 'DeepSpeech', which creates a neural network to recognize the audio files containing speech and then, to transform the audio speech into its text format.	BLEU score of 30.49 using CMUSphinx, which gets mounted to 45.16 after applying proposed spell corrector achieving a substantial improvement (48%) over the baseline approach	Require a larger and more effective dataset for the Bengali language so that the machine can process data better and faster.
9	A Survey on Bengali Speech-to-Text Recognition Techniques	Speech-to-text research has found new idea to help the handicap people with the voice prompted writing tools. Research in the Bengali speech recognition field is still in the primary stage.	Experimental results revealed that the fuzzy logic based system was 86% accurate and ANN based system was 90% accurate compared to a commercial Hidden Markov Model (HMM)	However, there are significant differences in accent and pronunciation of Bengali and English phonemes, the performance of these APIs in our experiments gave poor results in detecting the Bengali phonemes and words as well.
10	Kannada Speech to Text Conversion Using CMU Sphinx	We propose a novel Kannada Automated Speech to Text conversion System (ASTC). We train and test the Speech Processing System using CMUSphinx framework.	The system investigates extensibility of recognizing all letters and morphological variants of spoken Kannada words.	The decoder generates the sentence and word error rate for the given speech sample.

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Algorithm for Project Development

Hidden Markov Model

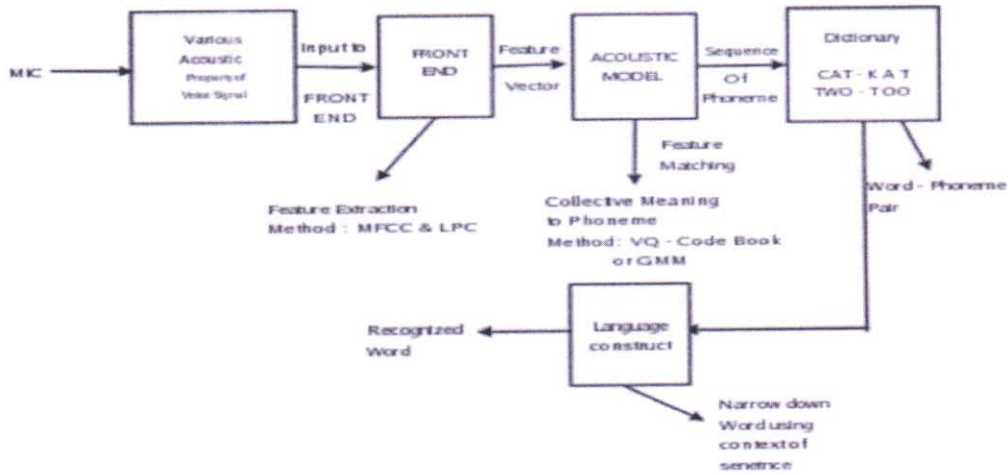
- Hidden Markov Model Recognizer In recognition or classification of the speech signal, there are many approaches to recognize the test audio file.
- The methodologies of speech recognition are: ANN, GMM, DTW, HMM, Fuzzy logic and various other methods.
- Among them, HMM techniques are widely used in many applications than any other ones.
- The phonemes in speech follow the left to right sequences, so the structure of HMM is a left-to-right structure.

Web APIs

- Web APIs that offer speech to text conversion services typically use cloud-based servers to perform the heavy lifting. Users can send audio recordings to these servers via an API call and receive a transcription in real-time.




Block Diagram

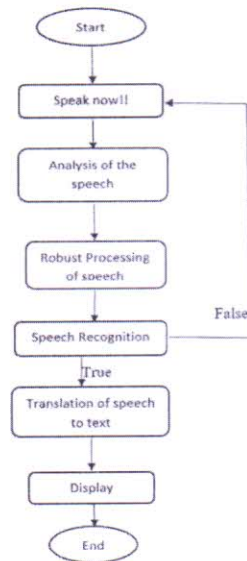


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Flow-chart



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Requirement Hardware and Software

Hardware Requirements:


1. Min -4GB RAM
2. Graphic Card 4GB
3. Amd A4
4. Min- 1GB HDD

Software Requirements:

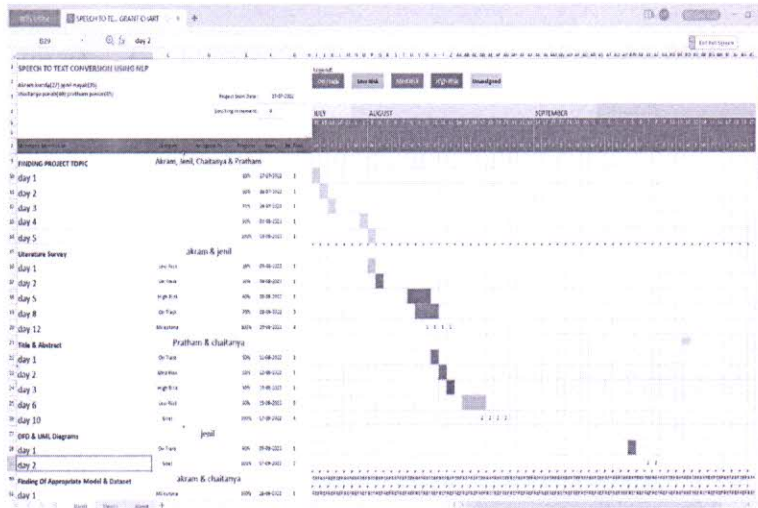
1. VS Code
2. Tail Wind
3. Web API

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Activity Diagram

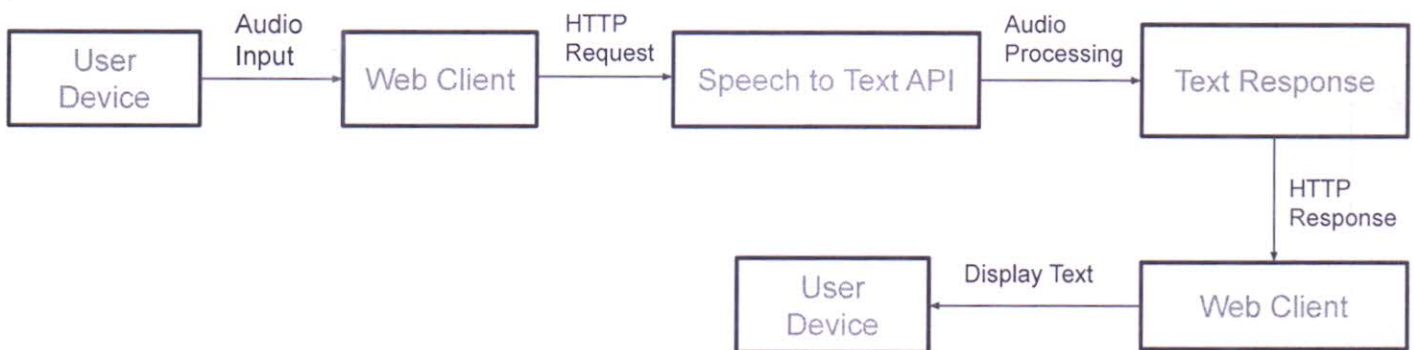


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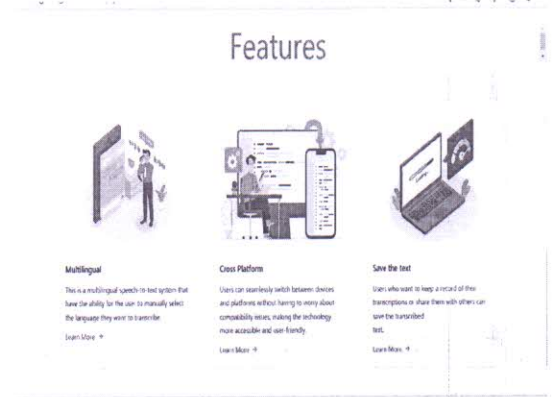


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Implementation Details



Screenshots of GUI



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Screenshots of GUI

Speech to Text

Language
English

Start Listening

Result :

Clear Download

Speech to Text

Language
English

Listening...

Result :

Clear Download

Speech to Text

Language
English

Start Listening

Result :

good morning everyone this is our project

Clear Download

Speech to Text

Language
Hindi

Start Listening


Result :

नमस्कार दोस्तों

Clear Download

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Screenshots of GUI

Speech to Text

Language

Urdu

Start Listening

Result :

کدھر جا رہے ہو جناب

Clear

Download

Speech to Text

Language

Arabic

Start Listening

Result :


الحيوي والحيوي الحيوي

Clear

Download

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Applications

- Speech to text conversion has a wide range of applications in both personal and professional settings. In addition to helping people with disabilities, it can also be used to transcribe interviews, lectures, and meetings.
- Another emerging application of speech to text technology is in virtual assistants like Siri, Alexa, and Google Assistant. These devices use speech recognition to understand voice commands and perform tasks like setting reminders, playing music, and answering questions.





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Conclusion

- Multilingual speech to text conversion is a powerful technology that has the potential to revolutionize communication across different languages. With the help of web APIs, this technology is becoming more accessible and affordable for businesses and individuals alike.
- While there are still challenges to overcome, the benefits of multilingual speech to text conversion are clear. As this technology continues to evolve, we can look forward to a future where language is no longer a barrier to communication and understanding.

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References


- [1] Dan Jurafsky. CS 224S / LINGUIST 181 Speech Recognition and Synthesis. World WideWeb, <http://www.stanford.edu/class/cs224s/>.
- [2] Lawrence R. Rabiner. A Tutorial on Hidden Markov Model and Selected Application in Speech Recognition. IEEE, 1989.
- [3] Willie Walker, Paul Lamere, and Philip Kwok. Sphinx-4: A Flexible Open Source Framework for Speech Recognition. SUN Microsystem, 2004.
- [4] Steve Young and Gunnar Evermann. The HTK Book. Microsoft Corporation, 2005.



Thank You!!!

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