2C30349

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Test - 1

1. a) Operating system:

It is interface between the hardware and the service of the computer and User

Services of Operating System:

* The service of operating system given to program and create a program
* It provides different services according to the requirement of Users

Services are:

* User interface
* Program control
* communication
* I/O Operations
* File management
* error detection
* Resource allocation
* Protection

User Interface:

* It is basic services where all the Os uses this interface

It has 3 types

* Command line interface
* Batch interface
* Graphical User interface

Command line interface:

* a text command
* content to adopt and transfer of text command

D D M M Y Y Y Y

Batch interface:

* It is used to share the information of the file and directives

Graphical line interface:

* Used to share within the program to create a new process

Program Control:

* A process need to able to create and load the program and execute the program through normally or abnormally
* The program is executied with desired process:

File management:

* The file is able to create and open the file of particulas program.
* The file access to change attributes according to the requirement.
* Once file is open and it is write and read then it has to close or delete the file

error detection:

The CPU error : (Power failure)
I/O error (If is Arithmatic flow)
The Serivce of Os should be able to overcome the errors and make a better performance.

Communication:

* The communication is of 2 types - share memory
  message passig

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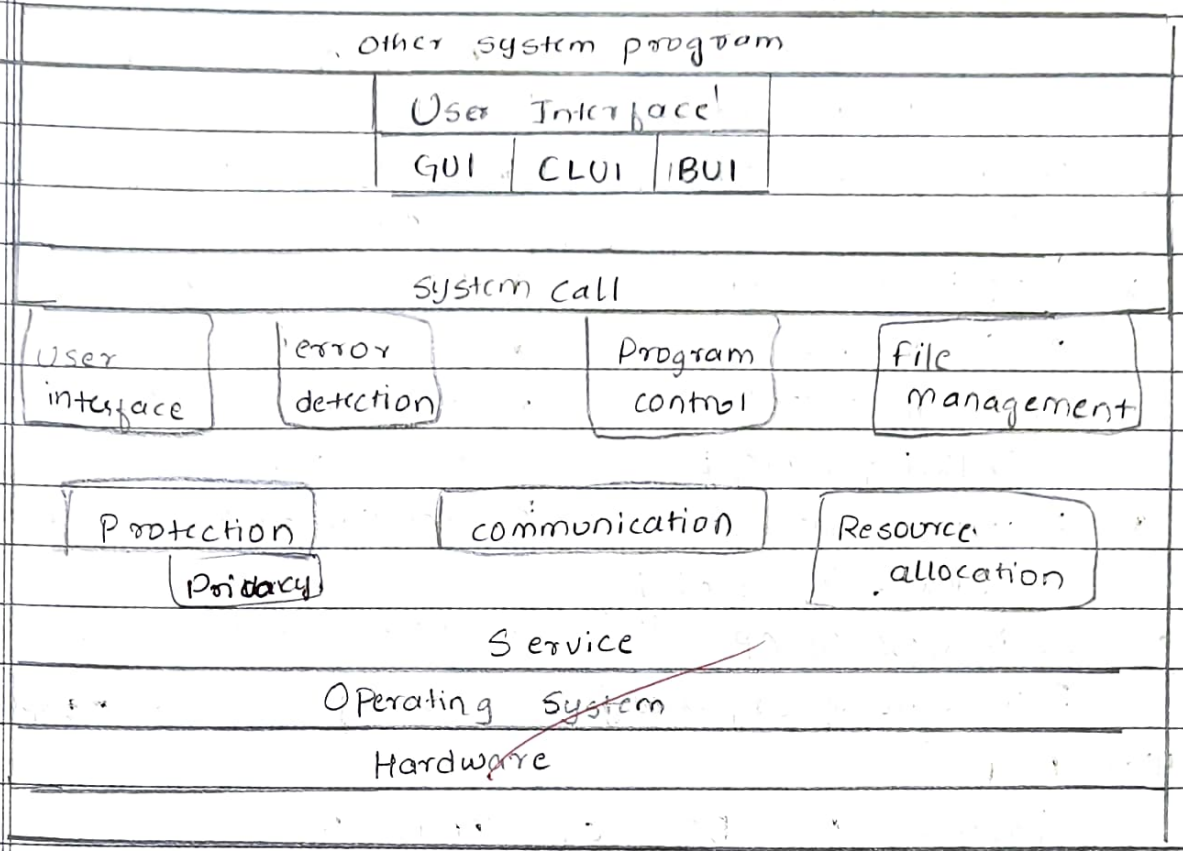


1 b)

multiprocessor	clustered system
* It is system which uses many process and one CPU to utilize	* It is connection of many combination of process and leads to effective CPU
* we need reduce the CPU idle time as possible.	* no need of reduce the CPU idle time
* The CPU utilisation is done maximum by organised job	* CPU is utilised most where it is kept busy always
* It uses less integrated model	* It requires complex integrated model.
* If one fails the process then whole system fails	* It one CPU fails it will work effectively cay (it is connect to many other system)
* It is cheaper	* It is Expensive and installation is difficult.
*	

→ slowes because it can access to the system by CPU

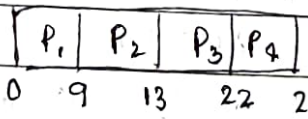
D D M M Y Y Y Y

multi-programming	multitasking
* It uses only one single CPU is used.	* It performs many task at same time multi allocation
* one program executed fast	* It exhibit many program fastes
* It is less traffic	* It is more traffic
* It is cheaper	* It is expensive
* It is of content Switching concept	* It is content of switching concept and time sharing
* Execution rate is slow. Job scheduling is done.	* Execution rate is fast
* It increase the CPU Performance by organised job	* It increase the CPU by Time sharing leads to responsivable.

4'a) FCFS

Process	AT	BT	CT	TAT	WT
P_1	0	9	9	9	0
P_2	1	4	13	12	8
P_3	2	9	22	20	11
P_4	3	5	27	24	19

Gnattchart



TAT = WFCT - AT

WT = TAT - BT

$$\text{Avg TAT} = \frac{9+12+20+24}{4} = 16.25 \text{ ms}$$

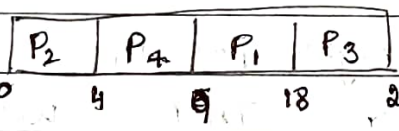
$$\text{Avg WT} = \frac{8+11+19}{4} = 9.5 \text{ ms}$$

D D M M Y Y Y Y

SRTF

Process	AT	BT	CT	TAT	WT
P_1	0	9	18	18	9
P_2	1	4	4	3	1
P_3	2	9	27	25	16
P_4	3	5	9	6	1

Gnattchart

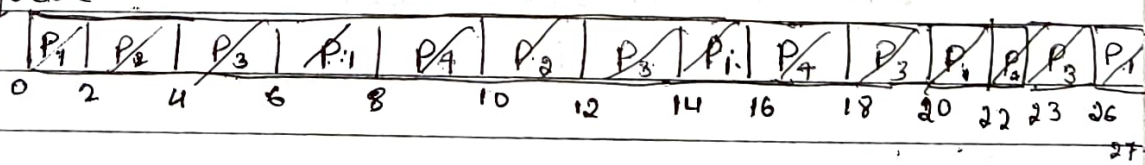


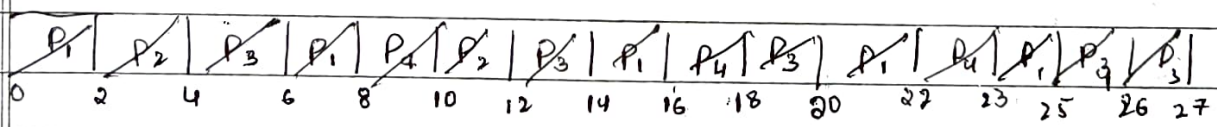
Avg TAT = $\frac{18+3+25+6}{4}$ = 13 ms Avg WT = 6.75 ms

Round Robin: q = 2 ms

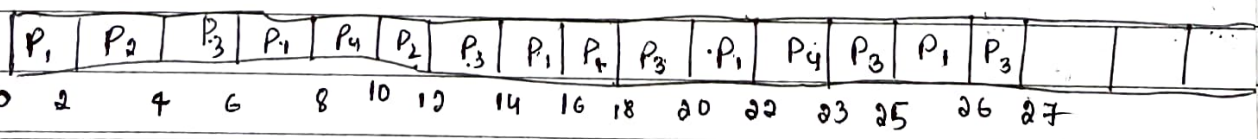
Process	AT	BT	CT	TAT	WT
P_1	0	9	26	26	17
P_2	1	4	12	11	7
P_3	2	9	27	25	16
P_4	3	5	18	15	10

ready queue





Gnattchart



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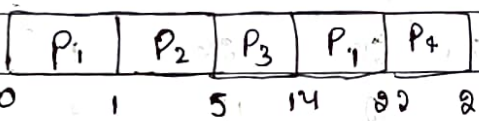
Avg TAT = $\frac{26+11+25+15}{4}$ = 19.25 ms

Avg WT = $\frac{17+7+16+10}{4}$ = 12.5 ms

Priority algorithm

lower priority number higher priority

Pr	Process	AT	BT	CT	TAT	WT (TAT - BT)
3	P_1	0	9	22	22	13
2	P_2	1	4	5	4	0
1	P_3	2	9	14	12	3
4	P_4	3	5	27	24	19



Avg TAT = $\frac{22+4+12+24}{4}$ = 15.5 ms

Avg WT = $\frac{13+3+19}{4}$ = 8.75 ms

D D M M Y Y Y Y

	Process	Thread
*	It is heavyweight Model	* It is lightweight model.
*	It uses the interface to process	* It doesn't require interface in the Process
*	It has more resources in the process to execute the program	* It has less resource Compare to process
*	If the one process blocks then the whole process System stops works until is unblock.	* If One thread blocks then another thread can access and run the function
*	Process are independent of each other	* Threads are dependent on each other.

Quiz:

1. b) create

2. a) When process is schedoled to run after some execution

3. b) communication between two process

4. b) Program Counter

5. b) 5