OS PROJECT REPORT

SUBMITTED BY: 18-SE-04,18-SE-16,18-SE-86

CPU SCHEDULAR

FEATURES:

1. ENTER DATA:

USER WILL BE ABLE TO ENTER ANY SET OF DATA OF HIS CHOICE AND WILL BE ABLE TO CHOOSE AND IMPLEMENT ANY ALGORITHM.

2. GENERATE DUMMY DATA:

SO THIS FEATURE WILL CREATE RANDOM SETS OF DATA IN THE TABLE AND WE WILL BE ABLE TO IMPLEMENT ALGORITHMS WITH THAT DATA.

3. DELETE DATA:

THIS FEATURE WILL LET YOU TO DELETE ANY DATA OF YOUR CHOICE FROM THE TABLES.

4. <u>DATA IN FORM OF TABLES:</u>

DATA ENTERD BY THE USER IS SHOWN IN THE FORM OF TABLES AND FOLLOWING ARE THE FEATURES IN TABLES WHICH THE USER WILL BE ABLE TO USE:

➢ ALL DATA IN THE TABLE CAN BE SELECTED AT ONCE AND CAN BE DELETED.

➢ ALSO WE CAN DELETE THE DATA BY SELECTING IT AND THEN CLICKING THE KEYBOARD "DELETE" BUTTON(EVENT HANDLING).

➢ DATA IN THE TABLE CAN BE DIRECTLY EDITED(UPDATE DATA FEATURE).

5. CLEAR DATA:

THIS FEATURE IS USED TO CLEAR ALL THE DATA GIVEN BY THE USER.

6. SELECT ALGORITHM:

THERE WILL BE LIST TO SELECT ANY ALGORITHM OF YOUR CHOICE. THE LIST SHOWS THE FOLLOWING ALGORITHMS:

➢ FIRST COME FIRST SERVE (FCFS)

➢ SHORTEST JOB FIRST (SJF)

➢ ROUND ROBIN (RR) PREEMPTIVE

➢ PRIORITY SCHEDULING (NON-PREEMPTIVE)

➢ PRIORITY SCHEDULING (PREEMPTIVE)

7. <u>Validating Data:</u>

This feature will let you know that some value is missing so you have to insert it in order to get the gant chart.

8. <u>Showing Gant Chart:</u>

For every algorithm user will be able to enter the data and will be able to see the gant chart.

<u>Implementing Algorithms</u>

- <u>First come first serve (FCFS):</u>

It is an OS scheduling algorithm in which processes which request the CPU first

GET THE CPU ALLOCATION FIRST.THIS IS MANAGED BY FIFO QUEUE.

- **SHORTEST JOB FIRST (SJF):**

IT BASICALLY SELECTS FOR EXECUTION THE WAITING PROCESS WITH THE SMALLEST EXECUTION TIME.IT IS NON_PREEMPTIVE ALGORITHM.

- **ROUND ROBIN (RR) PREEMPTIVE:**

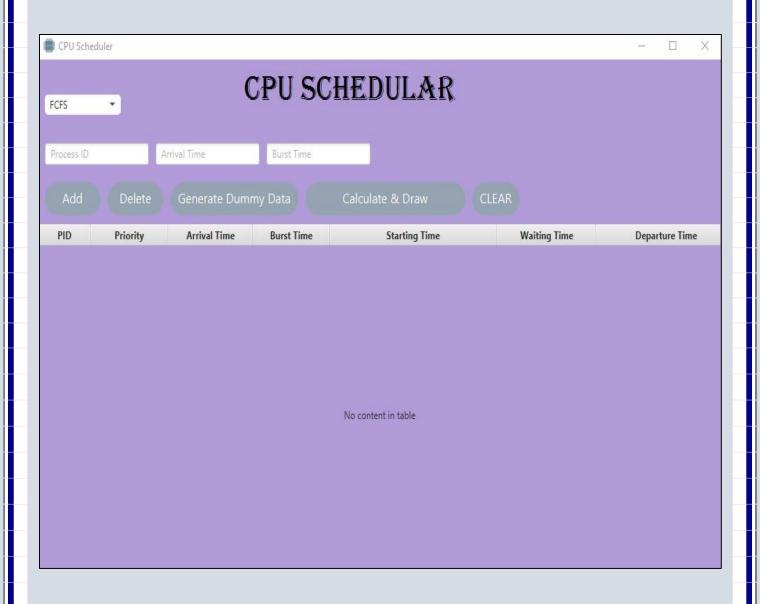ONCE A PROCESS IS EXECUTED FOR A GIVEN TIME PERIOD, IT IS PREEMPTED AND OTHER PROCESS EXECUTES FOR A GIVEN TIME PERIOD.CONTEXT SWITCHING IS USED TO SAVE STATES OF PREEMPTED PROCESSES.

- **PRIORITY SCHEDULING (NON-PREEMPTIVE):**

The processes are scheduled according to the priority number assigned to them.Once the process gets scheduled, it will run till the completion.Generally lower the number of priority, higher the priority of the process.

- PRIORITY SCHEDULING (PREEMPTIVE): With fixed priority preemptive scheduling, the schedular ensures that at any given time, the processor executes the highest priority task of all those tasks that are present in the ready queue.

INTERFACE:

DUMMY DATA:

CPU Scheduler

CPU SCHEDULAR

FCFS ▾

| Process ID | Arrival Time | Burst Time |

Add | Delete | Generate Dummy Data | Calculate & Draw | CLEAR

PID	Priority	Arrival Time	Burst Time	Starting Time	Waiting Time	Departure Time
P1	3	0.0	10.0	-1.0	-1.0	-1.0
P2	1	0.0	1.0	-1.0	-1.0	-1.0
P3	4	0.0	2.0	-1.0	-1.0	-1.0
P4	5	0.0	1.0	-1.0	-1.0	-1.0
P5	2	0.0	5.0	-1.0	-1.0	-1.0

GANT CHART:

Gantt Chart

P1	P2	P3	P4	P5

0   10   11   13   14   19

Average Waiting Time = 9.6
Average Turnaround Time = 13.4