FCFS CPU scheduler Code and Report

Project objective: To learn more about OS CPU scheduling through a hands-on simulation programming experience. To simulate, compare, and evaluate CPU scheduling algorithms using a consistent set of data.

Directions The following information should be included in your document, numbered and in order:

Names: Kyle Frudakis Date: 03/05/2021 Language used: C++

- 1. Provide clear instructions on how to compile, build, and run the simulator (this will indicate that the application has been tested and works on the engineering student desktop)
- Open Microsoft Virtual Studios
- Create a project
- Create a .cpp file in project
- Copy and paste code from text file provided
- Click on "Local Window Debugger"
- Output should be showing now!

2. Introduction

So this assignment is late but I am very proud to produce this even if the final time is not perfect because it took me weeks to figure it out. I did not do the calculations for wait time, response time, and others because I would like to try and focus on the next part of the project. I am ready for this assignment to not be graded and get no credit for it but as long as I completed it to some extent, I'll be happy.

- 3. Insert one table (See the ASSIGNMENT EXAMPLE) that includes the entire simulation results for CPU Utilization, Response Time (RT), Waiting Time (WT), Turnaround Time (TT) PER PROCESS and Averages for both FCFS(710 time units) and SJF (810 time units)
- 4. Answer the following questions in full sentences with a brief explanation, IN YOUR OWN WORDS:
- a. Which algorithm (FCFS or SJF) has the best (highest) CPU utilization, why do you think that algorithm has a higher CPU utilization?
 - i. SJF has the highest CPu utilization because its priority is to do the shortest job first so more time of the cpu is used better
- b. How many context switches (context switch is from one process to another) are in the simulation of FCFS?

 i.
- c. How many context switches are in the simulation of SJF?
- d. How does the number of context switches effect the performance of the algorithm?
- e. Which algorithm (FCFS or SJF) has the lowest average waiting time?
- f. Which algorithm (FCFS or SJF) has the lowest average response time?
- g. Which algorithm (FCFS or SJF) has the lowest average turnaround time?
- 5. Insert a partial or complete Gantt chart for FCFS. (NOTE: IF YOU DID NOT GET YOUR CODE TO WORK CORRECTLY, OR YOUR SIMULATOR DOES NOT PRODUCE THE CORRECT OUTPUT YOU MUST COMPLETE AND SUBMIT A FULL GANTT CHART IN THIS REPORT DO NOT INSERT MY GANTT CHART, CREATE YOUR OWN)

- 6. Insert the calculated results that were produced by the simulation
- 7. Insert the FCFS Program Output.

(for some reason, the process and burst are shifted to the left after I copy and paste. Won't show like this in real output)

Current Time: 0

	_			
Now	Rт	ınnı	ng.	Ρ1
14044			115.	

Now in I/O: Process

Now Running:	P1	
Ready Queue: P2 P3 P4 P5 P6 P7	Process 19 12 11 16 20 3 15	Burst
Now in I/O: P1	Process 21	Remaining I/O Time
Current Time		
Current Time:	ь	
Now Running:	P2	
Doods Ossass		Downt
Ready Queue: P3		Burst
P3 P4	12	
P4 P5	11 16	
	16 20	
P6	20	
P7	3 15	
P8		
P1	9	
Now in I/O:	Process 48	Remaining I/O Time
Current Time:	25	
Now Running:	Р3	
Ready Queue:		Burst
P4	11	
P5	16	
P6	20	
P7	3	
P8	15	
P1	9	
P2	16	
N : 1/O-		Damaining I/O Time

Remaining I/O Time

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Now I	Runni	ng:	P4
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Now Running	: P4	
Ready Queue: P5 P6 P7 P8 P3 P1	Process 16 20 3 15 6 9	Burst
Now in I/O: P4		Remaining I/O Time
:::::::::::::::::::::::::::::::::::::::		
Current Time:	48	
Now Running	: P5	
Ready Queue:	Process	Burst
P6	20	
P7	3	
P8	15	
Р3	6	
P1	9	
P4	5	
P2	16	
	Process	Remaining I/O Time
P5	22	
Current Time:	64	
Now Running	: P6	
Ready Queue:	Process	Ruret
P7	3	Barat
P8	15	
P3	6	
P1	9	
P5	15	
P4	5	
P2	16	
Now in I/O:	Process	Remaining I/O Time
	31	
:::::::::::::::::::::::::::::::::::::::		
Current Time:	84	
Now Running	: P7	

Ready Queue: Process Burst

P8	15		
Р3	6		
P1	9		
P5	15		
P6	22		
P4	5		
P2	16		
······································		······································	
		Remaining I/O Time	
P7	44		
C			
Current Time	:8/		
Now Running	g: P8		
Ready Queue	······································	Ruret	
P3	6	Buist	
P1	9		
P5	15		
P7	7		
P6	22		
P4	5		
P2	16		
Now in I/O:	Process	Remaining I/O Time	
P8	50		
		••••••	
Current Time	: 102		
Current Time			
Now Running	g: P3	Direct	
Now Running Ready Queue	g: P3 e: Process	Burst	
Now Running Ready Queue P1	g: P3 e: Process 9	Burst	
Now Running Ready Queue P1 P5	g: P3 e: Process 9 15	Burst	
Now Running Ready Queue P1 P5 P7	g: P3 e: Process 9 15 7	Burst	
Now Running Ready Queue P1 P5 P7 P6	g: P3 e: Process 9 15 7 22	Burst	
Now Running Ready Queue P1 P5 P7 P6 P4	g: P3 e: Process 9 15 7 22 5	Burst	
Now Running Ready Queue P1 P5 P7 P6 P4 P8	g: P3 e: Process 9 15 7 22 5 4	Burst	
Now Running Ready Queue P1 P5 P7 P6 P4	g: P3 e: Process 9 15 7 22 5	Burst	
Now Running Ready Queue P1 P5 P7 P6 P4 P8 P2	g: P3 e: Process 9 15 7 22 5 4 16		
Now Running Ready Queue P1 P5 P7 P6 P4 P8 P2	g: P3 e: Process 9 15 7 22 5 4 16	Burst Remaining I/O Time	
Now Running Ready Queue P1 P5 P7 P6 P4 P8 P2 Now in I/O:	g: P3 e: Process 9 15 7 22 5 4 16		
Now Running Ready Queue P1 P5 P7 P6 P4 P8 P2 Now in I/O:	g: P3 e: Process 9 15 7 22 5 4 16 Process 21		
Now Running Ready Queue P1 P5 P7 P6 P4 P8 P2 Now in I/O: P3	g: P3 e: Process 9 15 7 22 5 4 16 Process 21 :: 108		
Now Running Ready Queue P1 P5 P7 P6 P4 P8 P2 Now in I/O: P3 Current Time	g: P3 e: Process 9 15 7 22 5 4 16 Process 21 : 108	Remaining I/O Time	
Now Running Ready Queue P1 P5 P7 P6 P4 P8 P2 Now in I/O: P3 Current Time	g: P3 e: Process 9 15 7 22 5 4 16 Process 21 : 108	Remaining I/O Time	
Now Running Ready Queue P1 P5 P7 P6 P4 P8 P2 Now in I/O: P3 Current Time Now Running Ready Queue	g: P3 e: Process 9 15 7 22 5 4 16 Process 21 :: 108 e: Process	Remaining I/O Time	
Now Running Ready Queue P1 P5 P7 P6 P4 P8 P2 Now in I/O: P3 Current Time Now Running Ready Queue P5	g: P3 e: Process 9 15 7 22 5 4 16 Process 21 :: 108 g: P1 e: Process 15	Remaining I/O Time	
Now Running Ready Queue P1 P5 P7 P6 P4 P8 P2 Now in I/O: P3 Current Time Now Running Ready Queue P5 P7	g: P3 e: Process 9 15 7 22 5 4 16 Process 21 :: 108 g: P1 e: Process 15 7	Remaining I/O Time	
Now Running Ready Queue P1 P5 P7 P6 P4 P8 P2 Row in I/O: P3 Current Time Now Running Ready Queue P5 P7 P6	g: P3 :: Process 9 15 7 22 5 4 16 Process 21 :: 108 g: P1 :: Process 15 7 22	Remaining I/O Time	

P8	4	
P2	16	
Now in I/O:	Process	Remaining I/O Time
P1	28	
Current Time	e: 117	
Now Running	g: P5	
•	e: Process	Burst
P7	7	
P6	22	
	3	
	5	
P1		
P8		
P2	16	
		Remaining I/O Time
P5	21	
Current Time	e: 132	
	57	
Now Running	g: P/	
Dand. O		Donat
-	e: Process	Burst
P6	22	
P3	3	
P4	5	
P1	5	
P8	4	
P2	16	
P5	12	
N : 1/O-	D	Danasinina I/O Tima
		Remaining I/O Time
P7	24	
Current Time		
Current Time	2: 139	
Now Running	π· D6	
NOW Rulling	5. 10	
Ready Oueur	e: Process	Rurst
P3	3	Barse
P4	5	
P1	5	
P8	4	
P2	4 16	
P5	10	
P7	6	
۲/	U	
Now in I/O:	Process	Remaining I/O Time
P6	30	nemaning i/ O Time
10	30	

Current Time:	::::::::::::::::::::::::::::::::::::::	
Now Running	: P3	
Ready Queue P4 P1 P8 P2 P5 P7	5 5 4 16 12 6 25	Burst
P3	29	Remaining I/O Time
Current Time:	: 164	
Now Running		
Ready Queue P1 P8 P2 P5 P7 P3 P6	: Process 5 4 16 12 6 7 25	Burst
		Remaining I/O Time
P4 :::::Current Time:	• • • • • • • • • • • • • • • • • • • •	
Now Running	: P1	
Ready Queue P8 P2 P5 P7 P3 P4 P6	4 16 12 6 7 6 25	
Now in I/O: P1	Process 26	Remaining I/O Time
Current Time:		
Now Running	: P8	

Ready Queue		Burst
P2 P5	16 12	
P5 P7	6	
P7	7	
P1	4	
P4	6	
P6	25	
Now in I/O:	Process	Remaining I/O Time
P8	23	
Current Time	: 178	
Now Running	g: P2	
Ready Queue	e: Process	Burst
P5	12	
P7	6	
P3	7	
Р8	11	
P1	4	
P4	6	
P6	25	
Now in I/O:	Process	Remaining I/O Time
P2	32	3,7
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::::::::::::::::::::::::::::::::::::::	::::::::::::::::::::::::::::::::::::::	
Current Time	::::::::::::::::::::::::::::::::::::::	
Current Time		
Now Running	g: P5	Rurst
Now Running	g: P5 e: Process	Burst
Now RunningReady Queue P7	g: P5 e: Process 6	Burst
Now Running Ready Queue P7 P3	g: P5 e: Process 6 7	Burst
Now Running Ready Queue P7 P3 P8	g: P5 e: Process 6 7 11	Burst
Now Running Ready Queue P7 P3 P8 P1	g: P5 e: Process 6 7 11 4	Burst
Now Running Ready Queue P7 P3 P8 P1 P4	g: P5 e: Process 6 7 11 4 6	Burst
Now Running Ready Queue P7 P3 P8 P1 P4 P6	g: P5 e: Process 6 7 11 4 6 25	Burst
Now Running Ready Queue P7 P3 P8 P1 P4	g: P5 e: Process 6 7 11 4 6	Burst
Now Running Ready Queue P7 P3 P8 P1 P4 P6 P2	g: P5 e: Process 6 7 11 4 6 25 17	
Now Running Ready Queue P7 P3 P8 P1 P4 P6 P2 Now in I/O:	g: P5 e: Process 6 7 11 4 6 25 17	Burst Remaining I/O Time
Now Running Ready Queue P7 P3 P8 P1 P4 P6 P2	g: P5 e: Process 6 7 11 4 6 25 17	
Now Running Ready Queue P7 P3 P8 P1 P4 P6 P2 Now in I/O: P5	g: P5 e: Process 6 7 11 4 6 25 17 Process 31	
Now Running Ready Queue P7 P3 P8 P1 P4 P6 P2 Now in I/O:	g: P5 e: Process 6 7 11 4 6 25 17 Process 31	
Now Running Ready Queue P7 P3 P8 P1 P4 P6 P2 Now in I/O: P5	g: P5 e: Process 6 7 11 4 6 25 17 Process 31	
Now Running Ready Queue P7 P3 P8 P1 P4 P6 P2 Now in I/O: P5 Current Time	g: P5 e: Process 6 7 11 4 6 25 17 Process 31 e: 206	Remaining I/O Time
Now Running Ready Queue P7 P3 P8 P1 P4 P6 P2 Now in I/O: P5 Current Time	g: P5 e: Process 6 7 11 4 6 25 17 Process 31 e: 206	Remaining I/O Time
Now Running Ready Queue P7 P3 P8 P1 P4 P6 P2 Now in I/O: P5 Current Time Now Running Ready Queue	g: P5 e: Process 6 7 11 4 6 25 17 Process 31 e: 206 g: P7	Remaining I/O Time
Now Running Ready Queue P7 P3 P8 P1 P4 P6 P2 Now in I/O: P5 Current Time Now Running Ready Queue P3	g: P5 e: Process 6 7 11 4 6 25 17 Process 31 e: 206 g: P7 e: Process 7	Remaining I/O Time
Now Running Ready Queue P7 P3 P8 P1 P4 P6 P2 Now in I/O: P5 Current Time Now Running Ready Queue P3 P8	g: P5 e: Process 6 7 11 4 6 25 17 Process 31 e: 206 g: P7 e: Process 7 11	Remaining I/O Time
Now Running Ready Queue P7 P3 P8 P1 P4 P6 P2 Now in I/O: P5 Current Time Now Running Ready Queue P3	g: P5 e: Process 6 7 11 4 6 25 17 Process 31 e: 206 g: P7 e: Process 7	Remaining I/O Time

P2 17 P5 14	
Now in I/O: Process Remaining I/O Time	
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Current Time: 212	
Now Running: P3	
Ready Queue: Process Burst	
P8 11	
P1 4	
P4 6	
P6 25	
P2 17	
P5 14	
P7 5	
Now in I/O: Process Pompining I/O Time	
Now in I/O: Process Remaining I/O Time P3 45	
rs 45	
Current Time: 219	•
Current filme. 219	
Now Running: P8	
Ready Queue: Process Burst	
P1 4	
P4 6	
P6 25	
P2 17	
P5 14	
P7 5	
P3 8	
Now in I/O: Process Remaining I/O Time	
P8 31	
Current Time: 230	•
Now Running: P1	
David O David O	
Ready Queue: Process Burst P4 6	
P6 25	
P2 17	
P5 14	
P7 5	
P8 4	
P3 8	
Now in I/O: Process Remaining I/O Time	

P1 22
Current Time: 234
Now Running: P4
Ready Queue: Process Burst
P6 25
P2 17
P5 14
P7 5
P1 3
P8 4
P3 8
Now in I/O: Process Remaining I/O Time
P4 45
Current Time: 240
Now Running: P6
Ready Queue: Process Burst
P2 17
P5 14
P7 5
P1 3
P8 4
P3 8
P4 8
Name in 1/O. Drawns Boundains 1/O.Time
Now in I/O: Process Remaining I/O Time
P6 29
Current Time: 265
Current Time: 265
Now Running: P2
Ready Queue: Process Burst
P5 14
P7 5
P1 3
P8 4
P3 8
P4 8
P6 11
Now in I/O: Process Remaining I/O Time
P2 29
Current Time: 282

Now Running: P5

Ready Queue: Process Burst
P7 5
P1 3
P8 4
P3 8
P4 8
P6 11
P2 6
Now in I/O: Process Remaining I/O Time
P5 26
Current Time: 296
Carrette rimer 230
Now Running: P7
Doody Overse Dreeses Dwet
Ready Queue: Process Burst
P1 3
P8 4
P3 8
P4 8
P6 11
P5 13
P2 6
12 0
New in I/O: Present Persisted I/O Time
Now in I/O: Process Remaining I/O Time
P7 54
Current Time: 301
Now Running: P1
Now Running: P1
Now Running: P1 Ready Queue: Process Burst
Now Running: P1Ready Queue: Process Burst P8 4
Now Running: P1 Ready Queue: Process Burst P8 4 P3 8
Now Running: P1 Ready Queue: Process Burst P8 4 P3 8 P4 8
Now Running: P1 Ready Queue: Process Burst P8 4 P3 8 P4 8 P6 11
Now Running: P1 Ready Queue: Process Burst P8
Now Running: P1 Ready Queue: Process Burst P8
Now Running: P1 Ready Queue: Process Burst P8
Now Running: P1 Ready Queue: Process Burst P8
Now Running: P1 Ready Queue: Process Burst P8
Now Running: P1 Ready Queue: Process Burst P8
Now Running: P1 Ready Queue: Process Burst P8
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Now Running: P1 Ready Queue: Process Burst P8
Now Running: P1 Ready Queue: Process Burst P8
Now Running: P1 Ready Queue: Process Burst P8
Now Running: P1 Ready Queue: Process Burst P8
Now Running: P1 Ready Queue: Process Burst P8
Now Running: P1 Ready Queue: Process Burst P8

P5	13	
P2	6	
P1	6	
P7	4	
Now in I/O:	Drococc	Remaining I/O Time
		Kemaming I/O Time
P8	31	
Current Time	2: 308	
Now Running	g: P3	
Ready Queue	Process	Rurst
P4	8	Buist
P6	11	
P5	13	
P2	6	
P1	6	
P8	3	
P7	4	
. ,	•	
Now in I/O:	Drocoss	Pamaining I/O Timo
		Remaining I/O Time
P3	54	
Current Time	e: 316	
Now Running	g: P4	
Now Running	g: P4	
	•••••	Burst
Ready Queue	e: Process	Burst
Ready Queue	e: Process	Burst
Ready Queue P6 P5	e: Process 11 13	Burst
Ready Queue P6 P5 P2	e: Process 11 13 6	Burst
Ready Queue P6 P5 P2 P1	e: Process 11 13 6 6	Burst
Ready Queue P6 P5 P2 P1 P8	e: Process 11 13 6 6 3	Burst
Ready Queue P6 P5 P2 P1	e: Process 11 13 6 6	Burst
Ready Queue P6 P5 P2 P1 P8	e: Process 11 13 6 6 3	Burst
Ready Queue P6 P5 P2 P1 P8 P7	e: Process 11 13 6 6 3 4	Burst
Ready Queue P6 P5 P2 P1 P8 P7 P3	e: Process 11 13 6 6 3 4 11	
Ready Queue P6 P5 P2 P1 P8 P7 P3	e: Process 11 13 6 6 3 4 11	Burst Remaining I/O Time
Ready Queue P6 P5 P2 P1 P8 P7 P3	e: Process 11 13 6 6 3 4 11	
Ready Queue P6 P5 P2 P1 P8 P7 P3	e: Process 11 13 6 6 3 4 11 Process 51	
Ready Queue P6 P5 P2 P1 P8 P7 P3	e: Process 11 13 6 6 3 4 11 Process 51	
Ready Queue P6 P5 P2 P1 P8 P7 P3 Now in I/O: P4	e: Process 11 13 6 6 3 4 11 Process 51	
Ready Queue P6 P5 P2 P1 P8 P7 P3	e: Process 11 13 6 6 3 4 11 Process 51	
Ready Queue P6 P5 P2 P1 P8 P7 P3	e: Process 11 13 6 6 3 4 11 Process 51 :: 324	Remaining I/O Time
Ready Queue P6 P5 P2 P1 P8 P7 P3 Now in I/O: P4	e: Process 11 13 6 6 3 4 11 Process 51 :: 324	Remaining I/O Time
Ready Queue P6 P5 P2 P1 P8 P7 P3	e: Process 11 13 6 6 3 4 11 Process 51 :: 324	Remaining I/O Time
Ready Queue P6 P5 P2 P1 P8 P7 P3 Now in I/O: P4 Current Time Now Running Ready Queue P5	Process 11 13 6 6 3 4 11 Process 51 2: 324 g: P6	Remaining I/O Time
Ready Queue P6 P5 P2 P1 P8 P7 P3 Now in I/O: P4 Current Time Now Running Ready Queue P5 P2	Process 11 13 6 6 3 4 11 Process 51 2: 324 g: P6 2: Process 13 6	Remaining I/O Time
Ready Queue P6 P5 P2 P1 P8 P7 P3 Now in I/O: P4 Current Time Now Running Ready Queue P5 P2 P1	e: Process 11 13 6 6 3 4 11 Process 51 e: 324 g: P6 e: Process 13 6 6 6	Remaining I/O Time
Ready Queue P6 P5 P2 P1 P8 P7 P3 Now in I/O: P4 Current Time Now Running Ready Queue P5 P2 P1 P8	e: Process 11 13 6 6 3 4 11 Process 51 e: 324 g: P6 e: Process 13 6 6 3 3	Remaining I/O Time
Ready Queue P6 P5 P2 P1 P8 P7 P3	e: Process 11 13 6 6 3 4 11 Process 51 e: 324 g: P6 e: Process 13 6 6 3 4	Remaining I/O Time
Ready Queue P6 P5 P2 P1 P8 P7 P3 Now in I/O: P4 Current Time Now Running Ready Queue P5 P2 P1 P8	e: Process 11 13 6 6 3 4 11 Process 51 e: 324 g: P6 e: Process 13 6 6 3 3	Remaining I/O Time
Ready Queue P6 P5 P2 P1 P8 P7 P3	e: Process 11 13 6 6 3 4 11 Process 51 e: 324 g: P6 e: Process 13 6 6 3 4	Remaining I/O Time

Now in I/O: P6	Process 44	Remaining I/O Time
Current Time	e: 335	
Now Running	g: P5	
Ready Queue	e: Process	Burst
P2	6	
P1	6	
P8	3	
P7	4	
P3	11	
P4	4	
P6	17	
Now in I/O:		Remaining I/O Time
P5	31	
Current Time		
Current fille	. 340	
Now Running	g: P2	
Ready Queue		Burst
P1	6	
P8	3	
P7	4	
P3	11	
P5	16	
P4	4	
P6	17	
Noin 1/0		Domoining I/O Time
Now in I/O: P2	Process 44	Remaining I/O Time
PZ	44	
Current Time	······································	
Current fille	:. 334	
Now Running: P1		
Ready Queue	e: Process	Burst
P8	3	24.00
P7	4	
P3	11	
P5	16	
P2	8	
P4	4	
P6	17	
Now in I/O:	Process	Remaining I/O Time
P1	45	.
:::::::::::::::::::::::::::::::::::::::		
C T:	. 200	

Now Running:	P8	
Ready Queue:	Process	Burst
, P7	4	
Р3	11	
P5	16	
P2	8	
P4	4	
P6	17	
P1	4	
Now in I/O: F	Process	Remaining I/O Time
P8	47	
Current Time: 3	363	
Now Running:	P7	
Ready Queue:	Process	Burst
P3	11	
P5	16	
P2	8	
P4	4	
P6	17	
P1	4	
P8	5	
Now in I/O:	rocess	Remaining I/O Time
P7	24	nemaning i, 0 mile
Current Time: 3	 367	
Now Running:	P3	
Ready Queue:	Process	Burst
, . P5	16	
P7	7	
P2	8	
P4	4	
P6	17	
P1	4	
P8	5	
	Process empty]	Remaining I/O Time
Current Time: 3	::::::::::::::::::::::::::::::::::::::	
Now Running:	P5	
Ready Queue:	Process	Burst

P2 P4 P6 P1 P8 P3	8 4 17 4 5	
Now in I/O: P5	Process 18	Remaining I/O Time
Current Time	e: 394	
Now Running	g: P7	
Ready Queue P2 P4 P6 P1 P8 P5	e: Process 8 4 17 4 5 12 9	Burst
Now in I/O:	Process 44	Remaining I/O Time
Current Time		
Ready Queue P4 P6 P1 P8 P5 P3	2: Process 4 17 4 5 12 9 6	Burst
P2	34	Remaining I/O Time
Current Time		
Ready Queue P6 P1 P8 P5 P2 P3		Burst

P7	6	
Now in I/O:		Remaining I/O Time
Current Time	e: 413	
Now Running	g: P6	
Ready Queue	e: Process	Burst
, P1	4	
P8	5	
P5	12	
P2	21	
P3	9	
P7	6	
P4	13	
Now in I/O: P6		Remaining I/O Time
Current Time	e: 430	
Now Running	g: P1	
Ready Queue	Process	
P8	5	54.50
P5	12	
P2	21	
P3	9	
P7	6	
P6	18	
P4	13	
		Remaining I/O Time
P1	27	
Current Time	2: 434	
Now Running	g: P8	
Ready Queue	e: Process	Burst
P5	12	54.50
P1	8	
P2	21	
P3	9	
P7	6	
P6	18	
P6 P4	13	
F4		
Now in I/O:	Process 21	Remaining I/O Time

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Now	Run	ning:	Р5
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Now Running	: P5	
Ready Queue:	· Drocess	Burst
P8	8	Burst
P1	8	
P2	21	
P3	9	
P7	6	
P6	18	
P4	13	
Now in I/O:	Process	Remaining I/O Time
P5	21	
Current Time:	: 451	
Now Running	: P8	
Ready Queue:	· Process	Rurst
P1	8	Barse
P2	21	
P3	9	
P7	6	
P6	18	
P5	10	
P4	13	
Now in I/O:	Process	Remaining I/O Time
P8	31	
Current Time:	: 459	
Now Running	: P1	
Doody Overes		Duret
Ready Queue: P2	21	Burst
P2 P3	9	
P5 P7	6	
P7 P6	18	
P5	10	
P4	13	
P8	6	
Now in I/O:	Process	Remaining I/O Time
	[empty]	<i>5 </i>
'		
Current Time:	: 467	
Now Decision	. na	
Now Running	. ۲۷	

P3 P7 P6 P5 P4 P1 P8	34 488	Burst Remaining I/O Time
Now Running:	P3 	
Ready Queue: P7 P6 P5 P4 P1 P8 P2 Completed Pro P3	Process 6 18 10 13 3 6 19 ocesses: 0	
_		
Ready Queue: P6 P5 P4	18 10	Burst
P1 P8 P2	13 3 6 19	
P8 P2	3 6 19	Remaining I/O Time
P8 P2	3 6 19 Process 54	•
P8 P2 Now in I/O: I	3 6 19 Process 54	Remaining I/O Time
P8 P2 Now in I/O: P7 Current Time: !	3 6 19 Process 54 503	
P8 P2 Now in I/O: I P7 Current Time: ! Now Running:	3 6 19 Process 54 503	
P8 P2 Now in I/O: P7 Current Time: Now Running: Ready Queue:	3 6 19 Process 54 503 P6	
P8 P2 Now in I/O: I P7 Current Time: ! Now Running:	3 6 19 Process 54 503	
P8 P2 Now in I/O: I P7 Current Time: ! Now Running: Ready Queue: P5	3 6 19 Process 54 503 P6 Process 10	
P8 P2 Now in I/O: P7 Current Time: Now Running: Ready Queue: P5 P4	3 6 19 Process 54 503 P6 Process 10 13	
P8 P2 Now in I/O: P7 Current Time: S Now Running: Ready Queue: P5 P4 P1	3 6 19 Process 54 503 P6 Process 10 13 3	

Now in I/O: P6	Process 31	Remaining I/O Time
Current Time:	521	
No Books	D.E.	
Now Running:		
Ready Queue:	Process	Burst
P4	13	
P1	3	
P8		
P2	19	
P6	6	
P7	5	
Now in I/O:	Process	Remaining I/O Time
	empty]	G ,
:::::::::::::::::::::::::::::::::::::::		
Current Time:	531	
Now Running:	P4	
D		D
Ready Queue:		Burst
P1	3	
P8	6	
P2	19	
P5	11	
P6	6	
P7	5	
Now in I/O		Pompining I/O Time
P4	54	Remaining I/O Time
P4		
Current Time:	544	
current rime.	J44	
Now Running:	P1	
Ready Queue:	Process	Burst
, P8	6	
P2	19	
P5	11	
P6	6	
P7	5	
P4	11	
Completed Pro		
P3	0	
P1	0	
o	- 47	

Now Running: P8

Ready Queu P2 P5 P6 P7 P4	e: Process 19 11 6 5 11	Burst
Now in I/O:	Process [empty]	Remaining I/O Time
Current Time	e: 553	
Now Runnin	g: P2	
Ready Queu	e: Process	
P5	11	
P6	6	
P7	5	
P8	9	
P4	11	
Now in I/O:	Process 39	Remaining I/O Time
Current Time	e: 572	
Now Runnin	g: P5	
		 Burst
	_	Burst
Ready Queu	e: Process	Burst
Ready Queu P6	e: Process 6	Burst
Ready Queu P6 P7	e: Process 6 5	Burst
Ready Queu P6 P7 P8 P4 P2	e: Process 6 5 9 11 10	Burst
Ready Queu P6 P7 P8 P4 P2 Completed F	e: Process 6 5 9 11 10	Burst
Ready Queu P6 P7 P8 P4 P2 Completed F	e: Process 6 5 9 11 10 Processes: 0	Burst
Ready Queu P6 P7 P8 P4 P2 Completed F P3 P1	e: Process	Burst
Ready Queu P6 P7 P8 P4 P2 Completed F	e: Process 6 5 9 11 10 Processes: 0	Burst
Ready Queu P6 P7 P8 P4 P2 Completed F P3 P1 P5	e: Process 6 5 9 11 10 Processes: 0 0	Burst
Ready Queu P6 P7 P8 P4 P2 Completed F P3 P1	e: Process 6 5 9 11 10 Processes: 0 0	Burst
Ready Queu P6 P7 P8 P4 P2 Completed F P3 P1 P5	e: Process 6 5 9 11 10 Processes: 0 0 0	Burst
Ready Queu P6 P7 P8 P4 P2 Completed F P3 P1 P5 Current Time	e: Process 6 5 9 11 10 Processes: 0 0 0	
Ready Queu P6 P7 P8 P4 P2 Completed F P3 P1 P5 Current Time	e: Process 6 5 9 11 10 Processes: 0 0 0 e: 583 g: P6	
Ready Queu P6 P7 P8 P4 P2 Completed F P3 P1 P5	e: Process 6 5 9 11 10 Processes: 0 0 0	
Ready Queu P6 P7 P8 P4 P2 Completed F P3 P1 P5	e: Process	
Ready Queu P6 P7 P8 P4 P2 Completed F P3 P1 P5	e: Process 6 5 9 11 10 Processes: 0 0 0	

Current Time: 5	 589	
Now Running:	P7	
Ready Queue: P8 P6 P4 P2	Process 9 16 11 10	Burst
Now in I/O: F	21	Remaining I/O Time
Current Time: 5	594	
Now Running:	P8	
Ready Queue: P6 P7 P4 P2 Completed Pro P3 P1 P5 P8	16 6 11 10 cesses: 0 0 0 0	Burst
Ready Queue: P7 P4 P2 Completed Pro P3 P1 P5 P8 P6 :::::::::::::::::::::::::::::::::	6 11 10 cesses: 0 0 0 0 0	Burst
Now Running:		Puret
Ready Queue: P4 P2	Process 11 10	Burst

Now in I/O:	Process [empty]	Remaining I/O Time
Current Time	::::::::::::::::::::::::::::::::::::::	:::::::::::::::::::::::::::::::::::::::
Now Running	g: P4	
Ready Queue P2 P7	e: Process 10 4	Burst
Now in I/O:	Process [empty]	Remaining I/O Time
::::::::::::::::::::::::::::::::::::::	::::::::::::::::::::::::::::::::::::::	
Now Running		
Ready Queue P7 P4	e: Process 4 10	Burst
Now in I/O:	Process [empty]	Remaining I/O Time
Current Time	e: 646	
Current Time		
	g: P7	Burst
Now Running Ready Queue P2 P4 Completed P	g: P7 e: Process 7 10 rocesses:	Burst
Now Running Ready Queue P2 P4 Completed P	g: P7 e: Process 7 10 rocesses: 0	Burst
Now Running Ready Queue P2 P4 Completed P	g: P7 e: Process 7 10 rocesses:	Burst
Now Running Ready Queue P2 P4 Completed P P3 P1	g: P7 e: Process 7 10 rocesses: 0 0	Burst
Now Running Ready Queue P2 P4 Completed P P3 P1 P5 P8 P6	g: P7 e: Process 7 10 rocesses: 0 0 0 0	Burst
Now Running Ready Queue P2 P4 Completed P P3 P1 P5 P8	g: P7 e: Process 7 10 rocesses: 0 0 0	Burst
Now Running Ready Queue P2 P4 Completed P P3 P1 P5 P8 P6	g: P7 e: Process	Burst
Now Running Ready Queue P2 P4 Completed P P3 P1 P5 P8 P6 P7	g: P7e: Process 7 10 rocesses: 0 0 0 0 0 :::::::::::::::::::::::	Burst
Now Running Ready Queue P2 P4 Completed P P3 P1 P5 P8 P6 P7 Current Time	g: P7	
Now Running Ready Queue P2 P4 Completed P P3 P1 P5 P8 P6 P7 Current Time Now Running Ready Queue P4	g: P7 e: Process 7 10 rocesses: 0 0 0 0 0 0 0 0 0 e: 650 g: P2	
Now Running Ready Queue P2 P4 Completed P P3 P1 P5 P8 P6 P7 Current Time Now Running Ready Queue P4 Completed P	g: P7 e: Process	
Now Running Ready Queue P2 P4 Completed P P3 P1 P5 P8 P6 P7 Current Time Now Running Ready Queue P4	g: P7 e: Process 7 10 rocesses: 0 0 0 0 0 0 0 0 0 e: 650 g: P2	

P8	0
P6	0
P7	0
P2	0
Current Time: 657	

Now Running: P4

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Ready Queue:	Process	Burst
Completed Prod	cesses:	
Р3	0	
P1	0	
P5	0	
P8	0	
P6	0	
P7	0	
P2	0	
P4	0	

.....

final time: 667

linked list has been destroyed linked list has been destroyed linked list has been destroyed

C:\Users\fruda\OneDrive\Desktop\FAU\FAU 2020-2021 Spring Classes\Computer Operating Systems\FCFS_project\Debug\FCFS_project.exe (process 21952) exited with code 0.

To automatically close the console when debugging stops, enable Tools->Options->Debugging->Automatically close the console when debugging stops.

Press any key to close this window . . .