

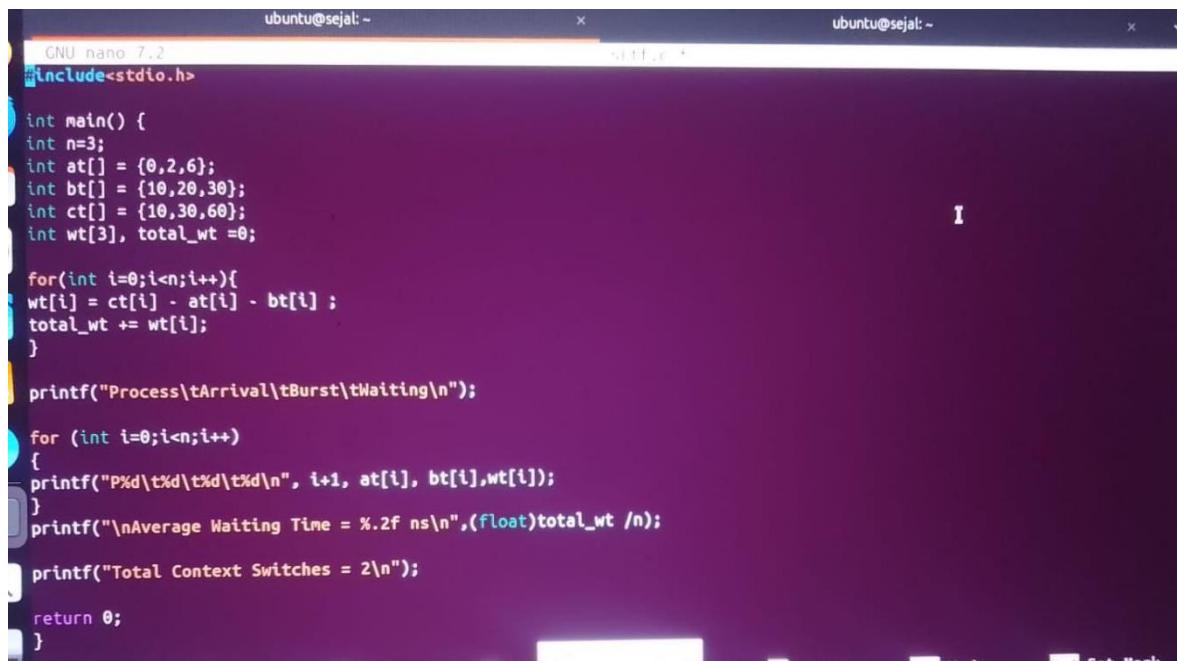
## PRACTICAL NO :- 04

**Output :-**

In an operating system, three CPU-intensive processes are ready for execution which require 10 ns, 20 ns, and 30 ns and arrive at times 0 ns, 2 ns, and 6 ns, respectively. Write a program to calculate:

- The total number of context switches needed if the operating system implements Shortest Job First (Preemptive) scheduling algorithm.
- The average waiting time of the processes before getting the CPU

**Code:-**



```

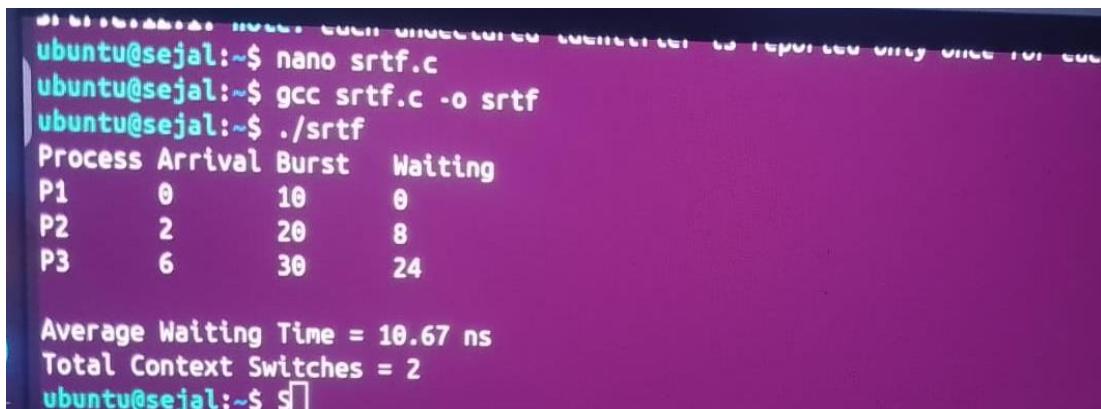
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ubuntu@sejal:~$ nano srtf.c
ubuntu@sejal:~$ gcc srtf.c -o srtf
ubuntu@sejal:~$ ./srtf
Process Arrival Burst Waiting
P1      0        10      0
P2      2        20      8
P3      6        30     24

Average Waiting Time = 10.67 ns
Total Context Switches = 2
ubuntu@sejal:~$ S

```

The terminal window shows the execution of a C program named srtf.c. The code implements the Shortest Job First (SJF) scheduling algorithm. It defines three processes (P1, P2, P3) with their arrival times, burst times, and waiting times calculated as the sum of their arrival and burst times minus the arrival time of the previous process. The output displays the process details and the calculated average waiting time and total context switches.

**Output:-**


```

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Average Waiting Time = 10.67 ns
Total Context Switches = 2
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```

The terminal window shows the execution of the srtf program. The output displays the process details and the calculated average waiting time and total context switches.