**Implement Shortest Job First Scheduling Algorithm**

The following five processes each having its own unique burst time and arrival time.

|  |  |  |
| --- | --- | --- |
| Process Queue | Burst time | Arrival time |
| P1 | 6 | 2 |
| P2 | 2 | 5 |
| P3 | 8 | 1 |
| P4 | 3 | 0 |
| P5 | 4 | 4 |

1] At time=0, P4 arrives and starts execution.

|  |
| --- |
| P4 |

0

|  |
| --- |
| P4 |

**2]** At time= 1, Process P3 arrives. But, P4 still needs 2 execution units to complete. It will continue execution.

0

Wating queue=

|  |
| --- |
| P3 |

|  |
| --- |
| P4 |

3] At time =2, process P1 arrives and is added to the waiting queue. P4 will continue execution.

0

Wating queue=

|  |
| --- |
| P3 p1 |

4] At time = 3, process P4 will finish its execution. The burst time of P3 and P1 is compared. Process P1 is executed because its burst time is less compared to P3.

|  |  |
| --- | --- |
| P4 |  |

3

0

|  |
| --- |
| P3 p1 |

5] At time = 4, process P5 arrives and is added to the waiting queue. P1 will continue execution.

|  |  |
| --- | --- |
| P4 | P1 |

0

3

|  |
| --- |
| P3 p5 |

6] At time = 5, process P2 arrives and is added to the waiting queue. P1 will continue execution.

|  |  |
| --- | --- |
| P4 | P1 |

0

3

|  |
| --- |
| P3 p5 p2 |

7] At time = 9, process P1 will finish its execution. The burst time of P3, P5, and P2 is compared. Process P2 is executed because its burst time is the lowest.

|  |  |  |
| --- | --- | --- |
| P4 | P1 |  |

9

0

3

|  |
| --- |
| P3 p5 p2 |

Which is the job having smaller Burst time between this?

8] At time=10, P2 is executing and P3 and P5 are in the waiting queue.

|  |  |  |  |
| --- | --- | --- | --- |
| P4 | P1 | P2 |  |

0

11

9

3

Which is the job having smaller Burst time between this?

|  |
| --- |
| P3 p5 |

9] At time = 15, process P5 will finish its execution

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| P4 | P1 | P2 | P5 |  |

15

11

0

3

9

|  |
| --- |
| P3 |

10] At time = 23, process P3 will finish its execution.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| P4 | P1 | P2 | P5 | P3 |

23

15

11

0

3

9

Wait time =

P4= 0-0=0

P1=3-2=1

P2= 9-5=4

P5= 11-4=7

P3= 15-1=4