

## Sample Input and Output

1. Here is the content of the sample "TaskSpec.txt":

T1,0,8  
T2,1,4  
T3,2,9  
T4,3,5

2. Here is the content of the "Output.txt" when the above "TaskSpec.txt" is processed by your program:

FCFS:

T1	0	8
T2	8	12
T3	12	21
T4	21	26

Waiting Time T1: 0  
Waiting Time T2: 7  
Waiting Time T3: 10  
Waiting Time T4: 18  
Average Waiting Time: 8.75

RR:

T1	0	4
T2	4	8
T3	8	12
T4	12	16
T1	16	20
T3	20	24
T4	24	25
T3	25	26

Waiting Time T1: 12  
Waiting Time T2: 3  
Waiting Time T3: 15  
Waiting Time T4: 17  
Average Waiting Time: 11.75

NSJF:

T1	0	8
T2	8	12
T4	12	17
T3	17	26

Waiting Time T1: 0  
Waiting Time T2: 7  
Waiting Time T3: 15

Waiting Time T4: 9  
Average Waiting Time: 7.75

PSJF:

T1	0	1
T2	1	5
T4	5	10
T1	10	17
T3	17	26

Waiting Time T1: 9

Waiting Time T2: 0

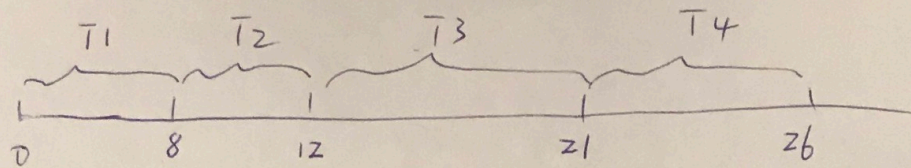
Waiting Time T3: 15

Waiting Time T4: 2

Average Waiting Time: 6.50

3. The detailed analysis of this sample scenario can be found in the following pages.

① FCFS



Arrival: 0 1 2 3

Time  $\uparrow \uparrow \uparrow \uparrow$   
 $T_1 \ T_2 \ T_3 \ T_4$

Waiting time:  $T_1: 0 - 0 = 0$

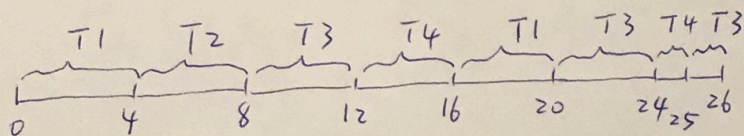
$T_2: 8 - 1 = 7$

$T_3: 12 - 2 = 10$

$T_4: 21 - 3 = 18$

Average Waiting Time:  $(0 + 7 + 10 + 18) / 4 = 8.75$

② RR:



Arrival

Time:

0 1 2 3

$\uparrow \uparrow \uparrow \uparrow$

$T_1 \ T_2 \ T_3 \ T_4$

Waiting Time:  $T_1: (0 - 0) + (16 - 4) = 12$

$T_2: (4 - 1) = 3$

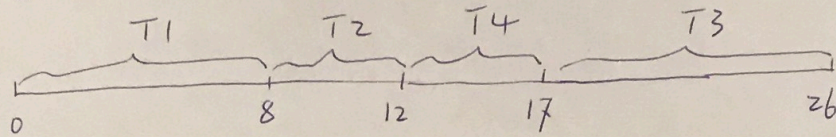
$T_3: (8 - 2) + (20 - 12) + (25 - 24) = 15$

$T_4: (12 - 3) + (24 - 16) = 17$

Average Waiting Time:  $(12 + 3 + 15 + 17) / 4 = 11.75$



③ NSJF:



Arrival    0   1   2   3  
Time:     ↑   ↑   ↑   ↑  
          T1 T2 T3 T4

Waiting Time: T1:  $0 - 0 = 0$

T2:  $8 - 1 = 7$

T3:  $17 - 2 = 15$

T4:  $12 - 3 = 9$

Average Waiting Time:  $(0 + 7 + 15 + 9) = 7.75$

④ PSJF:

Refer to Slide #26 of Lecture Notes for Chapter 5.