# Process scheduler

**Names**

Eman Ashraf Ahmed (Section 1)

Aya Ahmed Mohamed (Section 1)

# Manual

**1) Select type of scheduler.**

**2) Enter number of processes.**

**3) Insert the processes.**

**4) Press Run.**

**5) For another trial press restart and repeat the previous steps.**

## Note

**Don’t Edit processes information in the table (data grid view).**

## EXE FILE

Process Scheduler.exe

# Snapshots of output

## 1) FCFS

## Example:

| Process | Burst Time | Arrival Time |
|---|---|---|
| P1 | 20 | 0 |
| P2 | 12 | 3 |
| P3 | 4 | 2 |
| P4 | 9 | 5 |

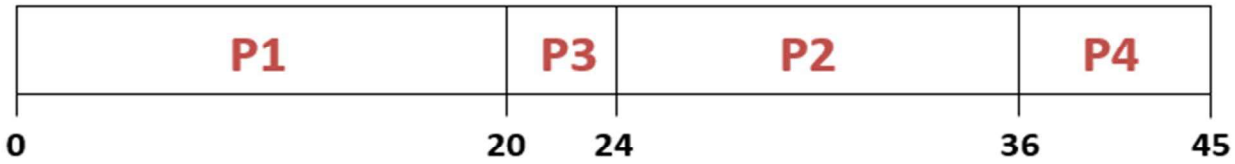
Waiting time : start time – arrival time

P1 = 0 – 0 = 0

P2 = 24 – 3 = 21

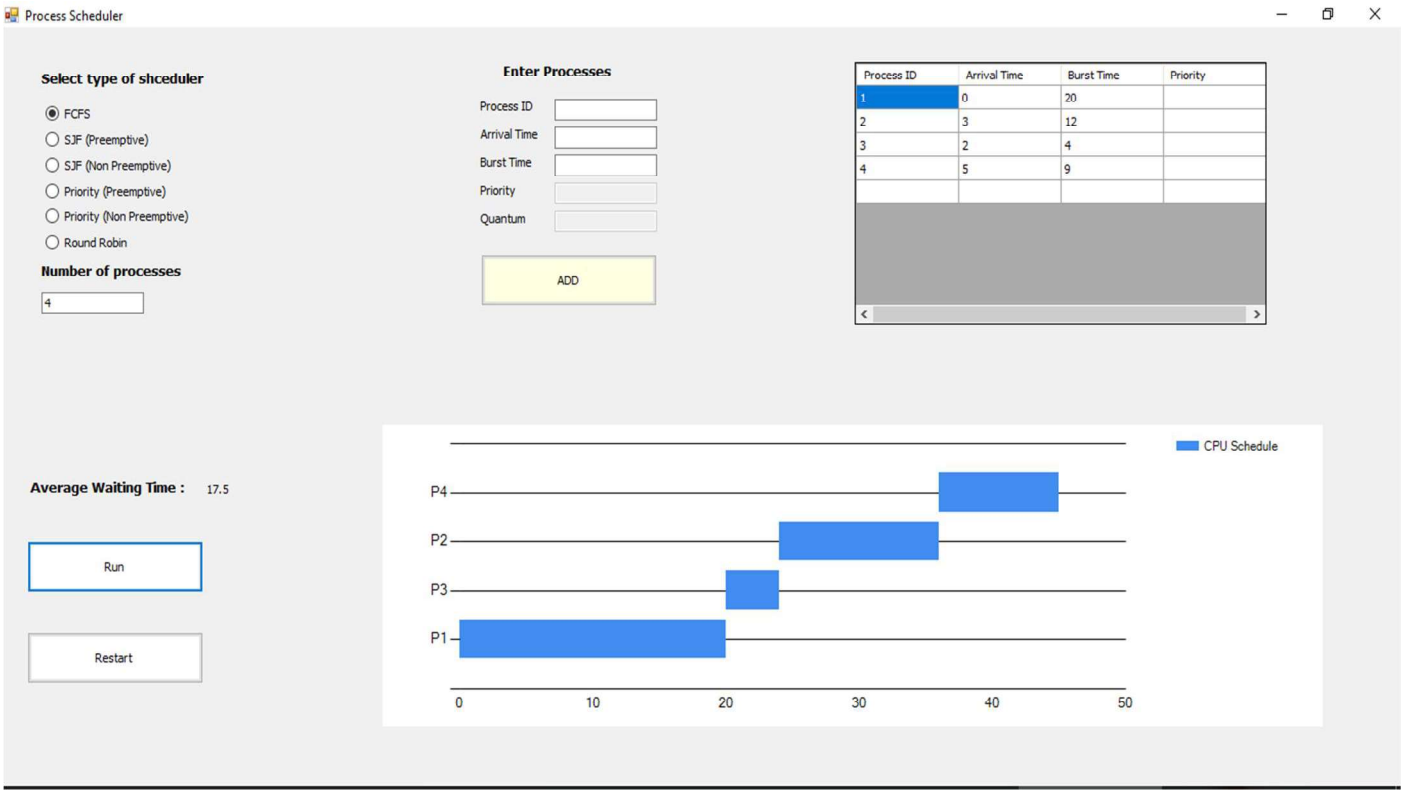
P3 = 20 – 2 = 18

P4 = 36 – 5 = 31




Average waiting time = (0 + 21 + 18 + 31) / 4 = 70 / 4

## Output



# 2) SJF (Non Preemptive)

## Example:

| Process | Burst Time | Arrival Time |
|---|---|---|
| P2 | 12 | 0 |
| P3 | 8 | 3 |
| P4 | 4 | 5 |
| P1 | 10 | 10 |
| P5 | 6 | 12 |

Waiting time : start time – arrival time

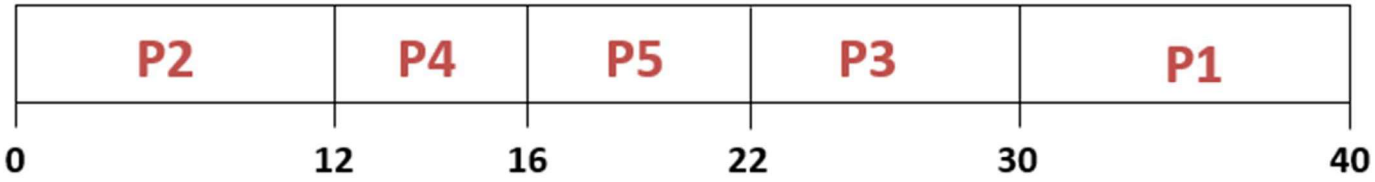
P1 = 30 – 10 = 20

P2 = 0 – 0 = 0

P3 = 22 – 3 = 19

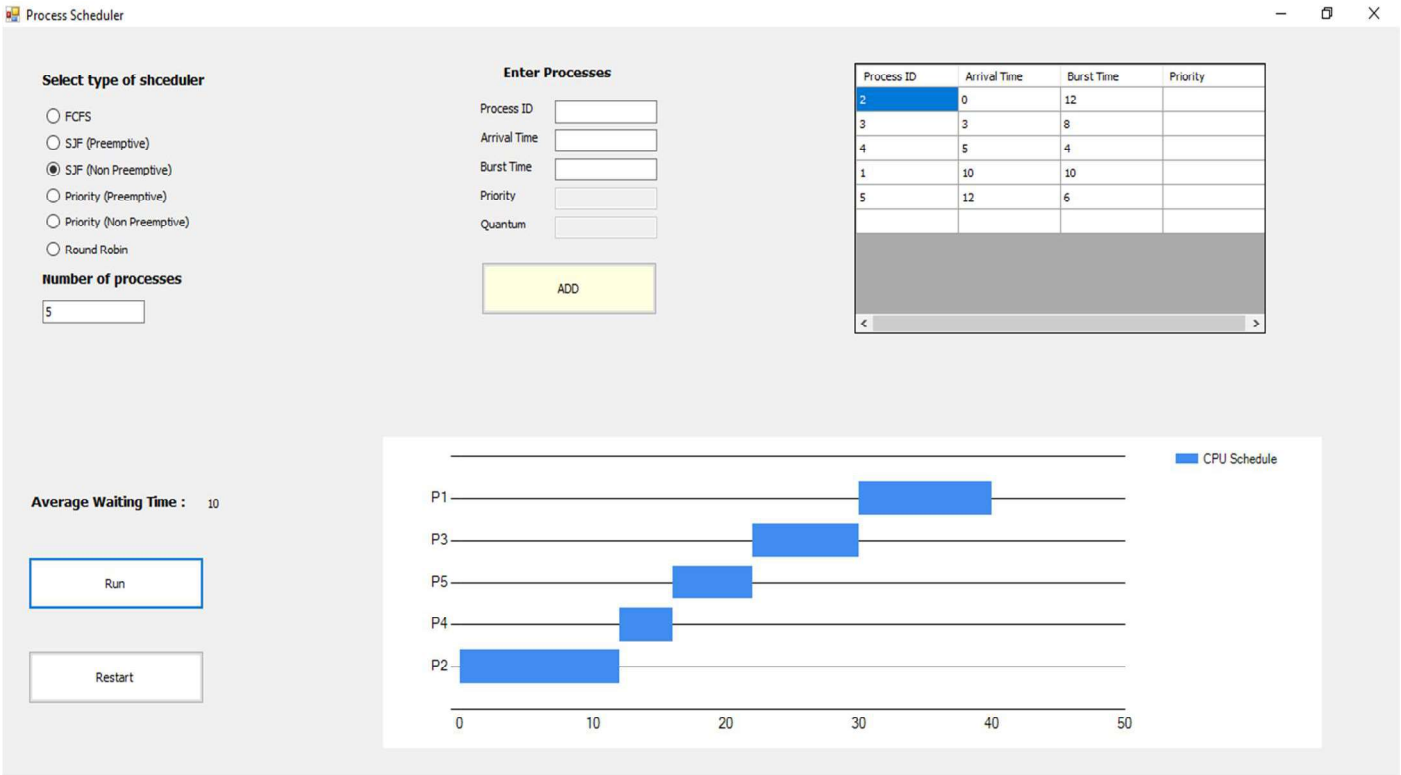
P4 = 12 – 5 = 7

P5 = 16 – 12 = 4




Average waiting time = (20 + 0 + 19 + 7 + 4) / 5 = 50 / 5 = 10

## Output



# 3) SJF (Preemptive)

## Same Example:

| Process | Burst Time | Arrival Time |
|---|---|---|
| ~~P2~~ | ~~12~~ 9 | ~~0~~ |
| ~~P3~~ | ~~8~~ 6 | ~~3~~ |
| ~~P4~~ | ~~4~~ | ~~5~~ |
| ~~P1~~ | ~~10~~ | ~~10~~ |
| ~~P5~~ | ~~6~~ | ~~12~~ |

Waiting time : start time – arrival time

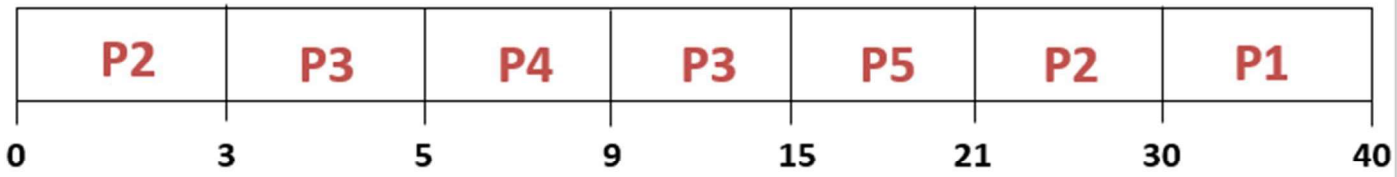
P1 = 30 – 10 = 20

P2 = (0 – 0) + (21 - 3) = 18

P3 = (3 – 3) + (9 - 5) = 4

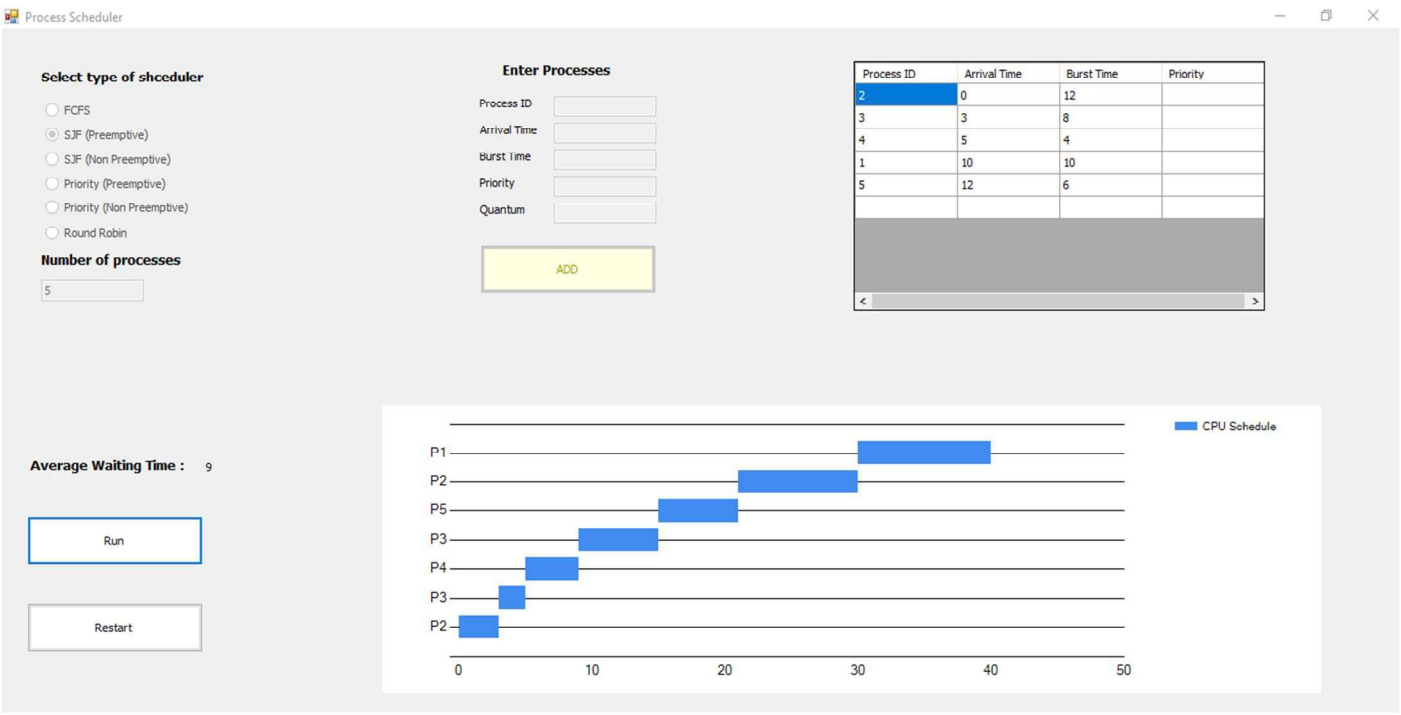
P4 = (5 – 5) = 0

P5 = 15 – 12 = 3




Average waiting time = (20 + 18 + 4 + 0 + 3) / 5 = 45 / 5 = 9

## Output



# 4) Priority (Non Preemptive)

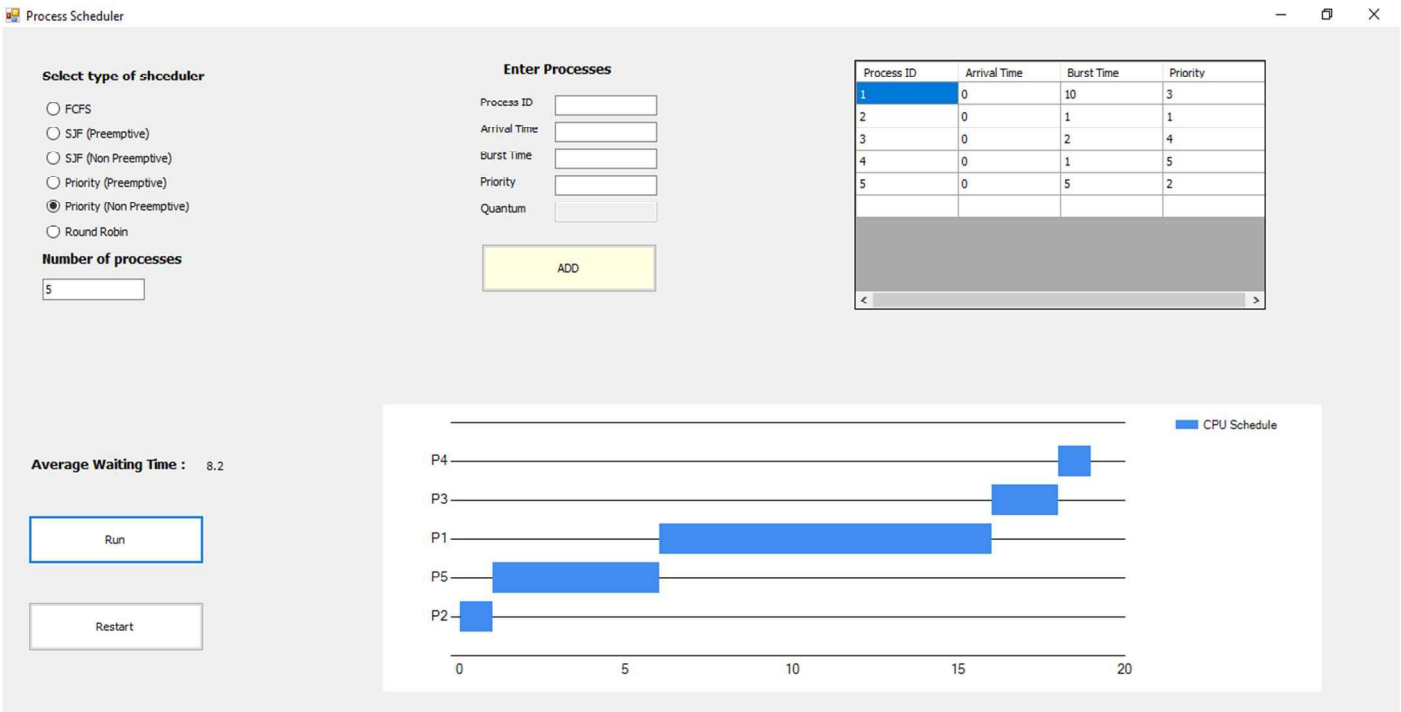
## Example:

| Process | Burst Time | Priority | Arrival Time |
|---|---|---|---|
| P1 | 10 | 3 | All Processes Arrived at The Same Time |
| P2 | 1 | 1 | |
| P3 | 2 | 4 | |
| P4 | 1 | 5 | |
| P5 | 5 | 2 | |

Waiting time :
start time – arrival time

P1 = 6
P2 = 0
P3 = 16
P4 = 18
P5 = 1


## Output



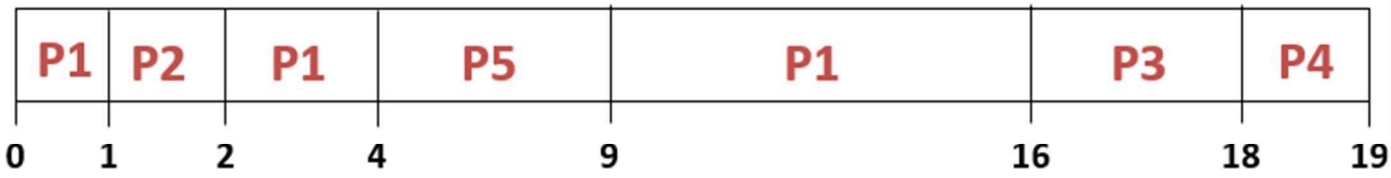
# 5) Priority (Preemptive)

## Same Example:

| Process | Burst Time | Priority | Arrival Time |
|---|---|---|---|
| ~~P1~~ | ~~10 9 7~~ | ~~3~~ | ~~0.0~~ |
| P2 | 1 | 1 | 1.0 |
| P3 | 2 | 4 | 2.0 |
| P4 | 1 | 5 | 3.0 |
| P5 | 5 | 2 | 4.0 |

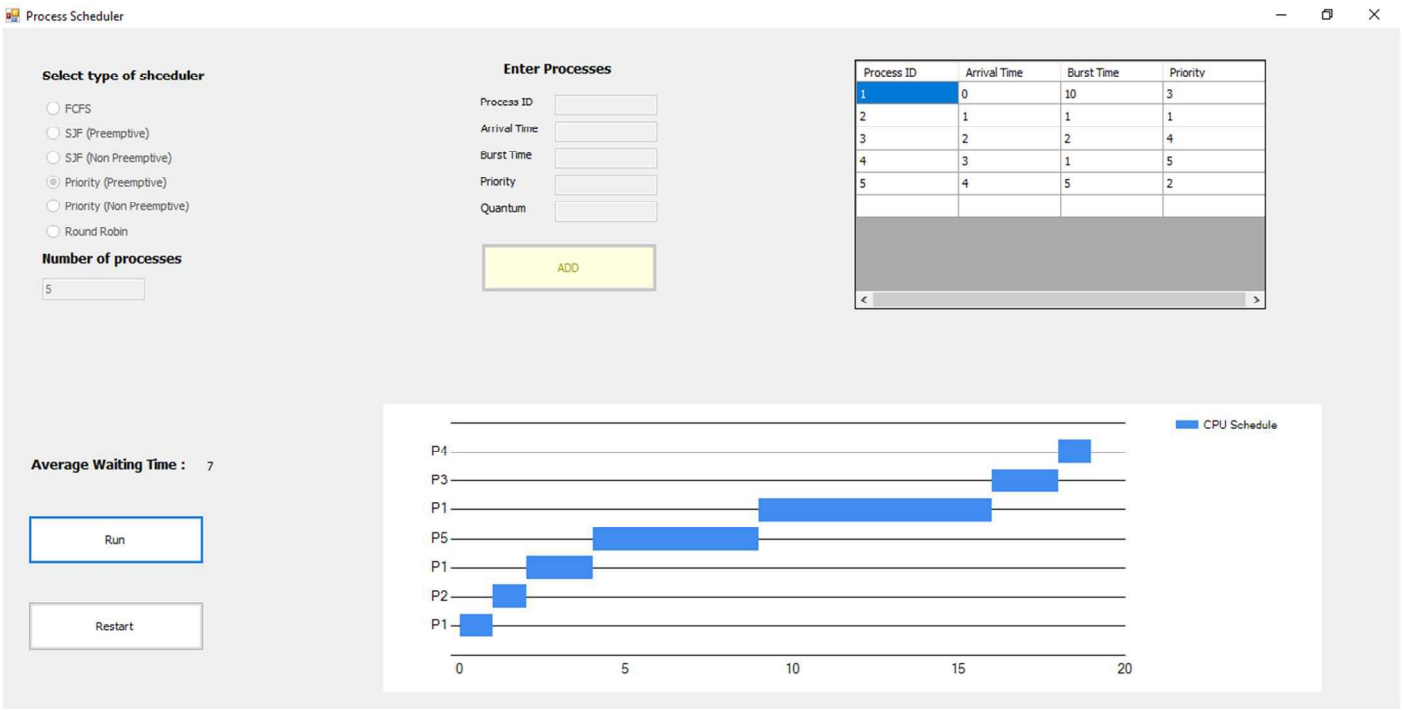
**Waiting time :**
**start time – arrival time**

P1 = (0 - 0)+(2 - 1)+(9 - 4) = 6
P2 = 1 – 1 = 0
P3 = 16 – 2 = 14
P4 = 18 – 3 = 15
P5 = 4 – 4 = 0




Average waiting time = (6 + 0 + 14 + 15 + 0) / 5 = 35 / 5 = 7

## Output



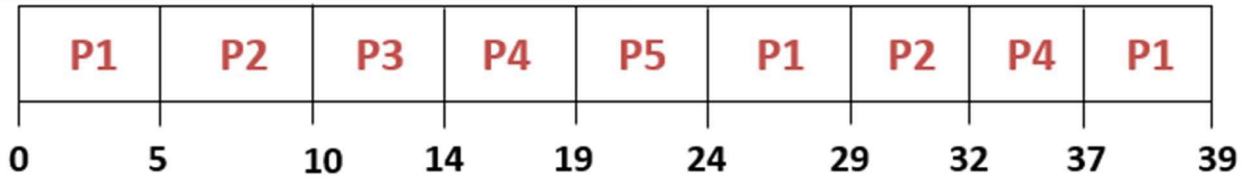
# 6) Round Robin (RR)

## Example:

| Process | Burst Time |
|---|---|
| P1 | 12 7 2 |
| P2 | 8 3 |
| P3 | 4 |
| P4 | 10 5 |
| P5 | 5 |

Waiting time :

P1 = 0 + (24 - 5) + (37 - 29) = 27
P2 = 5 + (29 - 10) = 24
P3 = 10
P4 = 14 + (32 - 19) = 27
P5 = 19




Average waiting time = (27 + 24 + 10 + 27 + 19) / 5 = 107 / 5 = 21.4

## Output