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II SEM G SECTION

SRN : PES1UG19CS019

ROLL NO : 10

UE19CS151 PROJECT OUTPUTS

THE EXPECTED OUTPUT

```
The default interactive shell is now zsh.
To update your account to use zsh, please run `chsh -s /bin/zsh`.
For more details, please visit https://support.apple.com/kb/HT208050.
[Abhisheks-MacBook-Pro:~ abhishekaditya$ cd Desktop
[Abhisheks-MacBook-Pro:Desktop abhishekaditya$ cd pilot
[Abhisheks-MacBook-Pro:pilot abhishekaditya$ make
gcc -c -Wall co.c
gcc -c -Wall server.c
gcc co.o server.o
[Abhisheks-MacBook-Pro:pilot abhishekaditya$ ./a.out

Program that simulates an airport_operations with only one runway.
One plane can land or depart in each unit of time.
Up to 3 planes can be waiting to land or take off at any time.
How many units of time will the simulation run?30

Expected number of arrivals per unit time? 0.47

Expected number of departures per unit time? 0.47

1: Runway is idle.

Plane 1 ready to take off.
2: Plane 1 took off in queue 0 units

Plane 2 ready to land with fuel 3.
3: Plane 2 landed in queue 0 units

4: Runway is idle.

Plane 3 ready to land with fuel 4.
Plane 4 ready to land with fuel 9.
Plane 5 ready to land with fuel 10.
5: Plane 3 landed in queue 0 units

Plane 6 ready to land with fuel 6.
Plane 7 ready to take off.
6: Plane 6 landed in queue 0 units

7: Plane 4 landed in queue 2 units
```

Plane 8 ready to land with fuel 10.
8: Plane 5 landed in queue 3 units

9: Plane 8 landed in queue 1 units

Plane 9 ready to land with fuel 10.
10: Plane 9 landed in queue 0 units

11: Plane 7 took off in queue 5 units

Plane 10 ready to take off.
12: Plane 10 took off in queue 0 units

13: Runway is idle.

Plane 11 ready to take off.

Plane 12 ready to take off.
14: Plane 12 took off in queue 0 units

Plane 13 ready to land with fuel 4.
15: Plane 13 landed in queue 0 units

16: Plane 11 took off in queue 2 units

17: Runway is idle.

Plane 14 ready to take off.
18: Plane 14 took off in queue 0 units

19: Runway is idle.

Plane 15 ready to land with fuel 3.

Plane 16 ready to take off.

Plane 16 ready to take off.
20: Plane 15 landed in queue 0 units

Plane 17 ready to land with fuel 6.
21: Plane 17 landed in queue 0 units

Plane 18 ready to take off.
22: Plane 18 took off in queue 0 units

Plane 19 ready to land with fuel 7.
23: Plane 19 landed in queue 0 units

24: Plane 16 took off in queue 4 units

Plane 20 ready to land with fuel 2.

Plane 21 ready to land with fuel 4.
25: Plane 20 landed in queue 0 units

26: Plane 19 landed in queue 3 units

Plane 22 ready to land with fuel 8.
27: Plane 22 landed in queue 0 units

Plane 23 ready to land with fuel 5.

Plane 24 ready to take off.
28: Plane 23 landed in queue 0 units

29: Plane 24 took off in queue 1 units

Plane 25 ready to land with fuel 5.

Plane 26 ready to land with fuel 2.
30: Plane 26 landed in queue 0 units

Simulation has concluded after 30 units.

Total number of planes processed: 26

Number of planes landed: 16

Number of planes taken off: 9

Number of planes refused use: 0

Number left ready to land: 1

Number left ready to take off: 0

Percentage of time runway idle: 16.666667

Average wait time to land: 0.562500

Average wait time to take off: 1.333333

Abhisheks-MacBook-Pro:pilot abhishekaditya\$

**PRIORITY IS GIVEN TO THE PLANE WITH
LEAST FUEL TO LAND FIRST**

```
a.out          co.o          server.h
[Abhisheks-MacBook-Pro:pilot abhishekaditya$ make
gcc -c -Wall server.c
gcc co.o server.o
[Abhisheks-MacBook-Pro:pilot abhishekaditya$ ./a.out

Program that simulates an airport_operations with only one runway.
One plane can land or depart in each unit of time.
Up to 3 planes can be waiting to land or take off at any time.
How many units of time will the simulation run?30

Expected number of arrivals per unit time? 0.9
Expected number of departures per unit time? 0.1

1: Runway is idle.

2: Runway is idle.

3: Runway is idle.

Plane 1 ready to land with fuel 4.
Plane 2 ready to land with fuel 9.
Plane 3 ready to land with fuel 10.
Plane 4 ready to take off.
4: Plane 1 landed in queue 0 units

5: Plane 2 landed in queue 1 units

Plane 5 ready to take off.
6: Plane 3 landed in queue 2 units

Plane 6 ready to land with fuel 3.
7: Plane 6 landed in queue 0 units

8: Plane 5 took off in queue 2 units

Plane 7 ready to land with fuel 6.
9: Plane 7 landed in queue 0 units
```

```
Plane 8 ready to land with fuel 10.
Plane 9 ready to land with fuel 7.
Plane 10 ready to land with fuel 5.
Plane 11 ready to land with fuel 2.
    plane 11 directed to another airport.
10: Plane 10 landed in queue 0 units

Plane 12 ready to land with fuel 7.
11: Plane 9 landed in queue 1 units

12: Plane 12 landed in queue 1 units

13: Plane 8 landed in queue 3 units

Plane 13 ready to land with fuel 8.
Plane 14 ready to land with fuel 9.
Plane 15 ready to take off.
14: Plane 13 landed in queue 0 units

15: Plane 14 landed in queue 1 units

16: Plane 4 took off in queue 12 units

17: Plane 15 took off in queue 3 units

Plane 16 ready to take off.
18: Plane 16 took off in queue 0 units

Plane 17 ready to land with fuel 5.
Plane 18 ready to land with fuel 1.
19: Plane 17 landed in queue 0 units

Plane 19 ready to land with fuel 3.
```

```
Plane 19 ready to land with fuel 3.
Plane 20 ready to land with fuel 1.
20: Plane 20 landed in queue 0 units

Plane 21 ready to land with fuel 5.
Plane 22 ready to land with fuel 3.
    plane 22 directed to another airport.
21: Plane 19 landed in queue 1 units

22: Plane 21 landed in queue 1 units

Plane 23 ready to land with fuel 10.
23: Plane 14 landed in queue 9 units

24: Plane 23 landed in queue 1 units

Plane 24 ready to land with fuel 8.
25: Plane 24 landed in queue 0 units

Plane 25 ready to land with fuel 5.
Plane 26 ready to land with fuel 3.
Plane 27 ready to land with fuel 6.
26: Plane 26 landed in queue 0 units

Plane 28 ready to land with fuel 3.
Plane 29 ready to land with fuel 6.
    plane 29 directed to another airport.
27: Plane 28 landed in queue 0 units

28: Plane 25 landed in queue 2 units

Plane 30 ready to land with fuel 5.
29: Plane 27 landed in queue 3 units
```

```
30: Plane 30 landed in queue 1 units
    Simulation has concluded after 30 units.
    Total number of planes processed: 31
    Number of planes landed: 23
    Number of planes taken off: 4
    Number of planes refused use: 3
    Number left ready to land: 1
    Number left ready to take off: 0
    Percentage of time runway idle: 10.000000
    Average wait time to land: 1.173913
    Average wait time to take off: 4.250000
Abhisheks-MacBook-Pro:pilot abhishekaditya$ █
```