

Simulation Time: 1

Runway1(-1)

L1:

L2:

T:

Runway2(-1)

L1:

L2:

T:

Runway3(-1)

L1:

L2:

T:

Runway4(-1)

L1:

L2:

T:

$T = 1$

Step 0:
Initial queue state

Plane id

Fuel
level

```
Step 1:  
landing plane:(1, 2), (3, 1), (5, 1),
```

```
Runway1(-1)
```

```
L1:
```

```
L2:
```

```
T:
```

```
Runway2(-1)
```

```
L1: (1, 2),
```

```
L2:
```

```
T:
```

```
Runway3(-1)
```

```
L1: (3, 1),
```

```
L2:
```

```
T:
```

```
Runway4(-1)
```

```
L1: (5, 1),
```

```
L2:
```

```
T:
```

$T = 1$

Step 1:
Handle landing planes.

Plane id

```
Step 2:  
takeoff plane:(0),
```

```
Runway1(-1)  
L1:  
L2:  
T: (0),
```

```
Runway2(-1)  
L1: (1, 2),  
L2:  
T:
```

```
Runway3(-1)  
L1: (3, 1),  
L2:  
T:
```

```
Runway4(-1)  
L1: (5, 1),  
L2:  
T:
```

$$T = 1$$

Step 2:
Handle takeoff planes.

Step 3:
emergency plane:

If there are emergent planes, you need to print their id here.

Runway1(-1)

L1:

L2:

T: (0),

$T = 1$

Runway2(-1)

L1: (1, 2),

L2:

T:

Runway3(-1)

L1: (3, 1),

L2:

T:

Runway4(-1)

L1: (5, 1),

L2:

T:

Step 3:
Check whether there are emergent planes.

Id of the chosen plane.

Step 4:

Runway1(0)

L1:

L2:

T:

Runway2(1)

L1:

L2:

T:

Runway3(3)

L1:

L2:

T:

Runway4(5)

L1:

L2:

T:

$$T = 1$$

Step 4:
Each empty runway chooses a plane.

```
How Many Time Unit You Want to Simulate: 500  
average landing waiting time: 1.391(s)  
average takeoff waiting time: 3.007(s)  
average fuel saved: 4.201(s)  
total plane in emergency: 182  
total plane crased: 0
```

After simulation, you need to print the statistics information.