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***Extra Points will be given to a program that has more realistic features.***

***When submitting your Program + Outputs, briefly and clearly explain your assumptions.***

This homework is graded based on its features and how it simulates a real world airport takeoff/landing activities. Write a program in a language of your choice (C, C++, Java, Phthon,.....) to do the following :

This program is to simulate an airport landing and takeoff patterns.

**You can make your own assumptions (or changes), as long as they are reasonable.**

The airport has 2 runways to handle all takeoffs and landings.

When a plane enters a holding queue, it is assigned an integer ID number. Use successive even (odd) integers for ID's of planes arriving at takeoff (landing) queues.

At each time, 0-3 planes may arrive at the holding queues and 0-3 planes may arrive at the takeoff queues.

Each runway can handle one takeoff or landing at each time slot.

Your program should simulate 120 minutes of activity at the airport.

Try to design your program so that neither landing nor takeoff queues grow excessively. However, arriving planes must be placed at the ends of queues.

The input can be on (file) or it can be generated by a random number generator. For each time unit, the input may have the following information (and any other you like to add):

- Indicating the number of planes arriving at takeoff queues.
- Indicating the number of planes arriving at landing queues
- Information about the plane (id, airline, other information)

Your simulation should make it clear to the user what is happening at each time step.  
Below is some sample output to use as a guide.

The time is 12:05 PM. There are 7 planes waiting to land.  
There are 4 planes waiting to take off.  
Plane #23 is cleared to land.  
The time is 12:10 PM.  
There are 6 planes waiting to land.  
There are 4 planes waiting to take off.  
Plane #26 is cleared to takeoff.

other statistics to be printed:

the contents of each queue

number of landings and takeoffs completed

the average takeoff waiting time

the average landing waiting time

any other statistics that you think are appropriate and useful

**See the *AirPort Simulation: Concepts and Requirement* handout for more information about Airport simulation.**