CPSC 340
Lab # 4

The amazing race is the premise of the *queue programming assignment*. A number of teams are competing for the final million dollars. Your program must determine who has won the race.

Details:
Teams will all start at the same time. You will randomly generate the time it takes to get to the first pit stop. Once arriving at the first pit stop you will insert them into the queue. Now it is time to go to the next pit stop, you will dequeue them in order and once again randomly generate a time it takes to complete that leg of the race. You will continue this process until all pit stop have been process and at that point give away the million dollars. The team that arrives first to the last pit stop wins. In addition, for each pit stop, if you are the last team to arrive at the pit stop you have been eliminated

Your program should read in the pit stops from a file. The file should contain on pit stop per line.
For example:
New York
Madrid City
Hong Kong
Sudan
Iraq
Asia

Your program should also read in the Team Names from a file. One name per line.
For Example:
Crazy TEams
Sleep Deprived
Go ToSleep
Stop Talking
Ihave aHeadache
Ohmy Goodness
Stop It
Urggg Urgg

Additional Notes:

- The last city is the ending point.
- You must keep a record of every team's time for each city.
    - It should take a team between 5 and 24 hours to reach each pit stop from the previous stop. Times should be in hours and minutes.
- At the end of the race you will print out a chart for each team that displays all the times (See the example below).
- A team should leave a pit stop 12 hours after they arrive at the current pit stop. For example:
    - If team 1 arrived at 6 am they leave at 6pm. Let's say they take 12 hours on the next leg of the race. Therefore, they arrive at the 6am.
    - If team 2 arrived at 7 am they leave at 7pm. Let's say they take 11 hours on the next leg of the race. Therefore they arrive at 6am with the first team.

Additional Coding Requirements:
Your program should have a class to represent a team. The class should contain, at a minimum:

- The team name,
- A linked-list of arrival times to each pit stop (one node per city).

Your program should have a class to represent the game. The class should included, at a minimum:

- A linked-list of teams (see the above class description).
- A queue of teams (the teams are entered into the queue by the smallest randomly generate time each leg of the race). The queue should be implemented using a linked list, not an array.
- After you dequeue all teams meaning you have reached the next city a team is eliminated and new times are randomly generated for all the remaining teams and reinserted into the queue.

Sample Run:

```
##################################
## WELCOME TO THE AMAZING RACE! ##
##################################

Enter team list file name: teams
Enter city list file name: cities

The Go ToSleep were the last team to reach New York.

The Stop Talking were the last team to reach Madrid City.

The Stop It were the last team to reach Hong Kong.

The Sleep Deprived were the last team to reach Sudan.

The Ohmy Goodness were the last team to reach Iraq.

The Urggg Urgg were the last team to reach Asia.

The final three teams are: the Crazy TEams, and the Ihave aHeadache... and the
winner of the million dollars is the Crazy TEams!!!

TEAMS                Round 1   Round 2   Round 3   Round 4   Round 5   Round 6

Crazy TEams         17h 59m   21h  9m   20h  1m   35h 36m   5h 12m    18h 29m
Ihave aHeadache      8h 18m    15h 14m   35h 41m   38h 45m   40h  0m   31h 28m
Urggg Urgg          22h 19m   30h 43m   15h 39m   28h 51m   19h 17m   38h  8m
Ohmy Goodness        3h 22m    7h 18m    6h 24m    25h 16m   45h 23m
Sleep Deprived       0h 21m    10h 33m   11h 43m   42h 23m
Stop It              3h 25m    20h 39m   47h 37m
Stop Talking        39h 36m   41h 44m
Go ToSleep          46h 23m


##################################
##      THANKS FOR PLAYING!     ##
##################################
```