Due Date: Wednesday, Nov. 9, 2016 before 4:00pm.

Instructions: This is an individual homework assignment. There are two problems worth 20 points each. Solve the problems below by yourself (unlike the labs, where you work collaboratively), and submit the solution as a C++ source code file.

Because all homework assignments are submitted and tested electronically, the following are important:

- You follow any naming conventions mentioned in the homework instructions.
- You submit the correct file(s) through Moodle by the due deadline.
- You follow the example input and output formats given in each problem description.
- Regardless of how or where you develop your solutions, your programs compile and execute on cselabs computers running the Linux operating system.

This homework is based off the SimUniversity.cpp file posted on the website. A large part of solving these problems are understanding of what the original code does. You should first run the game to get an idea of what it contains. The find main() at the bottom and start trying to work through to get a general idea of how the program is organized. Once you understand the structure, focus on the pieces of code where you need to change (and ignore the rest).

Problem A: Win SimUniversity (20 points)
Currently there is not way to “win” the game. Modify the SimUniversity.cpp file to have a “hours until graduation” variable that starts at 48 (you may change this number for testing, but ensure you the code you submit has it at 48). In addition to the normal output, give the time left to graduate as shown in the example below. When you have graduated, end the game and tell them they have won. If you are expected to graduate right when you would normally lose the game, you should graduate anyways and win the game (see 2nd example). Please ensure you follow the sample output exactly.

Example 1 (user input is underlined, board is not displayed because it is too big... do not change it):
Current stats are: Energy = 70, Entertainment = 70, Smartness = 70.
Current time: 8:00.
You are at the Dorm.
Do you want to (S)leep, do (H)omeowrk or (W)atch some YouTube?
Do you want to (G)o to a different location?

Where do you want to travel to: (O, U, D)?

You go to University.
From your actions changed your stats by... Energy: -4, Entertainment: 0, Smartness: 0.
You have 47 hours left until graduation...
(Press enter to advance an hour)

Current stats are: Energy = 66, Entertainment = 70, Smartness = 70.
Current time: 9:00.
You are at the University.
Do you want to (A) ttend class or (S)leep through lecture?
Do you want to (G)o to a different location?

You take copious notes and pay close attention to the material. 
From your actions changed your stats by... Energy: -4, Entertainment: -8, Smartness: 3.
You have 46 hours left until graduation...
(Press enter to advance an hour)

... (skipping some time, this line is not actually output!)

Current stats are: Energy = 67, Entertainment = 50, Smartness = 73.
Current time: 9:00.
You are at the Dorm.
Do you want to (S)leep, do (H)omeowrk or (W)atch some YouTube?
Do you want to (G)o to a different location?

You break out the books and pound through some problems. 
From your actions changed your stats by... Energy: -3, Entertainment: -20, Smartness: 3.
You have 1 hours left until graduation...
(Press enter to advance an hour)

Current stats are: Energy = 64, Entertainment = 30, Smartness = 76.
Current time: 10:00.
You are at the Dorm.
Do you want to (S)leep, do (H)omeowrk or (W)atch some YouTube?
Do you want to (G)o to a different location?

OMG!! CATS!!!!
From your actions changed your stats by... Energy: -2, Entertainment: 20, Smartness: -1.
You have 0 hours left until graduation...
You graduate from college.
(Press enter to advance an hour)
You win!

Example 2 (user input is underlined, board is not displayed because it is too big... do not change it):

... (skipping some time, this line is not actually output!)

Current stats are: Energy = 64, Entertainment = 30, Smartness = 76.
Current time: 10:00.
You are at the Dorm.
Do you want to (S)leep, do (H)omeowrk or (W)atch some YouTube?
Do you want to (G)o to a different location?

h

You break out the books and pound through some problems.
From your actions changed your stats by... Energy: -3, Entertainment: -20, Smartness: 3.
You have 1 hours left until graduation...
(Press enter to advance an hour)

Current stats are: Energy = 61, Entertainment = 10, Smartness = 79.
Current time: 11:00.
You are at the Dorm.
Do you want to (S)leep, do (H)omeowrk or (W)atch some YouTube?
Do you want to (G)o to a different location?

h

You break out the books and pound through some problems.
From your actions changed your stats by... Energy: -3, Entertainment: -10, Smartness: 3.
You have 0 hours left until graduation...
You graduate from college.
(Press enter to advance an hour)

You win!

When you are done, name the source code file <username>_6A.cpp. Here you replace <username> with your U of M email address; for example, if your email address is smithx1234@umn.edu, your file should be named smithx1234_6A.cpp. Then submit your program using the HW 6 Problem A submission link in Moodle.
Problem B: Basic needs (20 points)
Add another room to the game. This room should be the “Toilet”, indicated by T’s on the board at the spot shown (again, make sure you match the sample output exactly). You do not need to create any actions in the toilet, but you should be able to move to it (and out of it...).

Example 1 (user input is underlined):

```
Current stats are: Energy = 70, Entertainment = 70, Smartness = 70.
Current time: 8:00.
You are at the Dorm.
Do you want to (S)leep, do (H)omework or (W)atch some YouTube?
Do you want to (G)o to a different location?

You go to Toilet.
From your actions changed your stats by... Energy: -4, Entertainment: 0, Smartness: 0.
(Press enter to advance an hour)
```
Current stats are: Energy = 66, Entertainment = 70, Smartness = 70.
Current time: 9:00.
You are at the Toilet.
You are lost in the abyss...
Do you want to (G)o to a different location?

Where do you want to travel to: (O, U, D, T)?

You go to Outside.
From your actions changed your stats by... Energy: -4, Entertainment: 0, Smartness: 0.
(Press enter to advance an hour)
Current stats are: Energy = 62, Entertainment = 70, Smartness = 70.
Current time: 10:00.
You are at the Outside.
Do you want to (S)ocialize or (P)lay Rugby?
Do you want to (G)o to a different location?

When you are done, name the source code file <username>_6B.cpp. Here you replace
<username> with your U of M email address; for example, if your email address is
smithx1234@umn.edu, your file should be named smithx1234_6B.cpp. Then submit your
program using the HW 6 Problem B submission link in Moodle.