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**COSC 2203**

**Data Structures**

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**Algorithm Design for ER Simulator**

**Date Due: 10 Oct 2018**

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**Description:**

The section of the code that I will be designing is the input from the user asking how many rooms will be in the simulation of the hospital. Then how patients are added to queues.

**Variables:**

* Queue array: **rating** with four indexes
* StopWatch: **openHours** variable that will keep track of the time that the hospital has been open. Initialized equal to true
* Boolean: **check** used to check if the main while loop should still be running
* Boolean: **morePatients** variable used to check if more patients should be added
* Int: **randomTimeDelay** set equal to zero. This is the time between patients arriving at the hospital.

**Main Method:**

1. Output to the screen asking for how many rooms the hospital will have
2. Input the answer into the variable **userChoice**
   1. Catch any unexpected input
3. Initialize the **room** variable to be the size of of the **userChoice** variable..
4. Start the timer for **openHours**
5. Start the while loop that runs while **check** is true. This runs for the duration of the program while there are still patients in the lobby, and stops when told to by a metod.
   1. If there are more patients to be added
      1. If the currentTime is greater than or equal to the **randomTimeDelay**
      2. Then create a new Patient called **newPatient**
      3. Create a switch statement checking what the priority of the **newPatient** is
      4. If it is 1 then add the **newPatient** to **rating1**
      5. If it is 2 then add the **newPatient** to **rating2**
      6. If it is 3 then add the **newPatient** to **rating3**
      7. If it is 4 then add the **newPatient** to **rating4**
      8. Set the random time delay to **getRandomTime()** + the current elapsed time the hospital has been open

**getRandomTime()**

1. Returns a random time integer between 1 and 10