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CS-273

31 October 2018

Requirements Specifications

We are making a emergency room simulator. We are going to have doctors and nurses, which are a subclass of caregivers, to treat patients. The patients will be pulled from the text file of names and given a random severity, these names will also be crossed checked when pulled so we don’t have a overlapping name in the waiting queue. The patients will then be put into a queue depending on their severity. This way the doctor will pull from the top of the queue, with the range of severity from 20-10, and nurses can pull the highest patient with a severity of 10-1. A clock will be set up where a tick will represent a minute and at each tick a new patient can be added to the queue and/or a caregiver treats, or continues to treat, a patient. Information will be recorded to a record class which will store the patient's name, severity, number of times they visited, arrival and discharge time to calculate their visit time. The user can input the hourly patient arrival rate, the number of doctors and the number of nurses on staff. At the end of the simulation a menu will ask if you want to view the list of patients treated or search a single residents record by name. For the final presentation a graph must be presented for the increasing patient arrival rate with our choice of numbers of doctor and nurses.

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| --- | --- | --- |
| Step | User’s Input | System’s Output/response |
| 1 |  | Prompts for manual or auto run |
| 2 | User enters auto |  |
| 3 |  | Runs preset simulations and logs the data in csv form in a txt file |
| 4 | User enters manual |  |
| 5 |  | Prompts the user for the rate of patients,number of doctors, and number of nurses |
| 6 | User enters three numbers for rate, number of doctors, and number of nurses |  |
| 7 |  | Runs the simulation with the specified values and prompts the user to choose what information they want to see |
| 8 | User inputs r (for record) |  |
| 9 |  | Outputs all of the information stored in the record and prompts for what information the user wants to see |
| 10 | User inputs s (for search) |  |
| 11 |  | Prompts for what name to search for |
| 12 | User inputs a name |  |
| 13 |  | Outputs how many times that person visited the er during the simulation. Prompts for the user to make a selection |
| 14 | User inputs e (for exit) |  |
| 15 |  | Program ends |

UML:

