Emergency Simulation 

Michael Kwok
CS 342 - Summer 2024

Classes

1. EmergencySimulation
    a. Main program
2. Linked-List Stack
    a. Nurses, doctors, administrative assistants
3. Node
    a. Objects in the Linked-List Stack
4. Queue
    a. Priority queue of patients
    b. Checkout queue for patients

Steps

1. Get user input
    a. Number of doctors, etc
2. Create data structures
    a. Based on the given instructions
    b. Stack for nurses, etc
3. Create helper data structures
    a. Hashmap to “link” a doctor with a room
    b. Arraylist of patients waiting for a doctor, etc
4. Run simulation

Simulation overview

- Use hashmaps to “link” the following:
  - Doctor with room
  - Nurse with room
  - Room with patient
- Use “timers” to “time” how long each stage takes
  - Time is based on user-input

Simulation part 1 of 2

1. Intake patient
2. Prioritize based on severity probability
3. Assign a nurse and empty room, if available, to patient
4. Assign a doctor, if any, to rooms where nurse is done
5. Assign admin assistant, if any, to patient after doctor is done

Simulation part 2 of 2

1. Each stage of loop, keep track of how long each employee has been working on a patient
2. If they’re done, reset all variables
    a. Push employee back to stack
    b. Reset employee timer
    c. Clear up the room