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CS273

Final Summary

For my final project for CS273, I attempted to simulate a week in an emergency room. However, after a multitude of repeated tests, edits, rechecking, retesting and so forth, the final working implementation of the simulation was unachieved. My design for the simulation was to use a central Hospital class, containing a vector of Caregivers (nurses and doctors), a priority queue for patients (to simulate a waiting room) and a multimap for record keeping, where the name of the patient and the severity of their disease would be stored. Patients would arrive at a semi-predictable rate, where the average rate was dictated by the user. The patient would go through a triage function to assign a severity for sorting into the priority queue. After that, the queue of patients would be set up with an open caregiver. These caregivers would hold onto the patient for a set time before releasing them, recording their information and reopening themselves to another patient. The main difficulty I occurred while implementing was the calculating of visit length and the average time of each visit. Though flags implemented in testing, it became clear that the “arrival time” for each patient, which should have been steadily growing, was staying around 0, no matter what the clock value that should have been assigned was. Another issue I came across was the loss of my debugger capability through VisualStudio in the last portions of coding. Thankfully, this was easier to overcome through planted “flags” of cout statements and cin statements to stall long runs of code. Through this implementation, I learned the value and utility of priority queues for creating a hierarchy and multimaps for pairing data together. I also learned how to set up the basic simulator structure for future reference and testing of code.