CS273: Final Code Review

1. Luke Lattig and Bao Tran evaluating Justice/Andrew/Oscar
2. Clock is a loop from 0 to total\_time were the user can enter in the amount of time to simulate and that input is multiplied by 60 for a simulation time.
3. During each clock cycle, hospital\_queue, high\_prio, and low\_prior. There are also 2 for loops that update the doc\_vec and nurse\_Vec classes.
   1. Hospital\_queue checks a random value to match the arrival rate set by the user, then it assigns severity randomly based on the percentages of low and high priority rates. Names are randomly generated and added to a map. Checks if patient is already in map, in not add, else update. Pushes the patient into a queue afterwards.
   2. Checks patient’s priority, if within the range, add it to the queue for either high or low priority. Then checks the vector of doctors to see if there’s room for a patient to be treated.
   3. Doc\_Vec and Nurse\_Vec checks and updates the treatment time for patients.
4. File input/output is machine localized, path is hardcoded and needs to be changed on different machines. Ifstream could have made the path adaptable. There is no exit procedure if the files for first and last name are not found, the program would continue anyways and either get stuck in a forever loop or crash.
5. Well, there's a queue. And there's a map. The map keeps track of patient records (key is patient name, data stored is patient records). The queue stores incoming patients. There's a priority queue in both the high priority and low priority classes that is then pushed on to the respective doctor/nurse vectors. The priority queue in HighPrioQ contains values > 10, the greatest of which is then assigned to the first available doctor. Likewise with LowPrioQ, but with values <= 10 and the first available nurse.
6. The record storage map was originally not set in stone. It could have been a set or a multiset. Other than that, the vector of doctors/nurses was added in later, as multiple doctors/nurses weren't originally part of the design.
7. I have to admit to preffering a set/multiset of patients/patient records. That said, that the map of patients is declared "extern" is interesting (today I learned what extern meant).
8. Yes, the hierarchy makes sense but there were refactoring opportunities, the nurse class and doctor class could’ve been in separate .h files to make finding those classes easier. Creating classes for high priority and low priority patients looks good, could use some more comments. Low priority and high priority classes could also use some refactoring
9. New patients don’t get deleted when created to be pushed into the queue in hospitalQueue. Otherwise no other "new” function used.
10. Decimal number inputs are not handled and crashes the simulation when run, file input output has no exception for when a file cannot be loaded.