

Agustin Espinoza
SIE 431/531
Simulation Modeling and Analysis
Dr. Lin
16 February 2023

Homework 3 Summary

The acute-care facility model created for Homework 3 references many of the structural elements of Book Example 4-1 and 4-2. The assigned textbook problems for this homework assignment included 4-27, 4-28, and 4-29. Problem 4-27 requests the results of the average total time patients spend in the system. The values obtained from my model run results include an Average Total Time = 109.87 min. In the textbook problem 4-28, we are instructed to add a schedule to represent doctor availability and compare the run results to those in the previous 4-27. After modifying my model and running the simulation, the average total time patients spent in the system reduced to 91.5506 min. This makes sense as more doctors and a more efficient availability plan was implemented to reduce the overall wait times and therefore the total time in the system. The last section of this homework assignment, textbook problem 4-28, adds a probabilistic emergency room assignment decision after the patient registration process. In my model, I add a Decision module after the Registration Process and make the True connection a 95% probability leading to the next Decision module, Patient Examination Times, and the 5% probability link to the Dispose module representing the Redirection to the emergency room exterior entity. After implementing these changes to the model architecture, the Average Total Time of a patient dropped to 75.8067 min.