

Problem 3: Customers + Queues.

For the scenario we were given for problem 3, I ran my simulation for 12 "hours".

With no randomization, the average wait time was calculated to be around 8.7 minutes \approx 9 minutes. Customers had to wait an average of 9 minutes before being serviced.

The maximum customers in line at one time was 11. This means we never had more than 11 customers in line at the same time.

By randomizing the servicing and arrival times by $\pm 50\%$, the average wait times most often increase significantly w/ the values we've been given.

- Whenever we add a clerk, they have the same rate as the 1st clerk. If the first clerk takes longer after our randomization, our extra clerks will also take longer to service customers.

All in all, randomizing our times would lead to an increase in average wait times.