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Customer Recommendations

After writing a program to simulate business over a 20-minute interval, I have come to the following conclusions.

* During light demand only one server is ever needed because by the end of the 20 minutes the server will have finished all customers. This is because light demand consists of .25 customers per minute and with a maximum of 3 minutes of service time. This means that at most over the 20 minutes of the simulation 5 customers will come in and even if everyone was at the max service time that a single server could still handle this in under 20 minutes.
* During heavy demand 8 servers is the best amount to keep the average wait time under 5 minutes. However, the minimum wait time is the same no matter how many servers there are. This is because under the heavy demand conditions some customers will have long service times that can occupy a server for a while.

Because of my findings it is my recommendation that 8 employees be hired if keeping wait times below 5 mins is essential. When business is predicted to be slow some employees can be sent home.

Run instructions: To run make sure you have sim.java Queue.java and QueueNode.java in the same file. URL: https://github.com/nfishel48/Donut-Shop