

Assignment 3

Instructions. Work on your own.

Start by downloading the JaamSim file found here:

<https://github.com/sa421-usna/assignment-03/zipball/master>

This file contains the model you created for Assignment 2. Recall that in Assignment 2 we expanded the NCB model from Lesson 1 to incorporate the following assumptions:

- 40% of customers order drip coffee;
- Nimitz Coffee Bar has one drip coffee dispenser which we assume does not run out of coffee;
- The time to pour coffee is best modeled by an exponential random variable with mean 40 seconds.

Do the following:

1. Modify the given JaamSim file to:
 - a. Run the model 500 times with 1, 2, 3, and 4 baristas in the café, for a total of 2000 runs.
 - b. Create an output file that contains the average delay at the barista, cashier, and dispenser queues from these runs.
2. Write a report in R Markdown that does the following:
 - a. Calls JaamSim to run the `.cfg` file you created in the previous step.
 - b. Computes the sample means and the confidence interval lengths for the average delay at each of the three different queues – barista, cashier, and dispenser – with 1, 2, 3, and 4 baristas in the café.
 - c. Presents your results by organizing them into tables or graphs.
 - d. Describes your results in prose. One short paragraph per queue should suffice.
3. Your `.Rmd` file from part 2 (with your `.cfg` file from part 1) should run in RStudio from top to bottom without any user intervention or errors.