

Programming Final
CSCI 201L Fall 2016
10% of course grade

Part 1 – New Stops

FactoryWorkers need a break! For this programming final, create two new stops for each FactoryWorker: Coffee Shop and Dining Table.

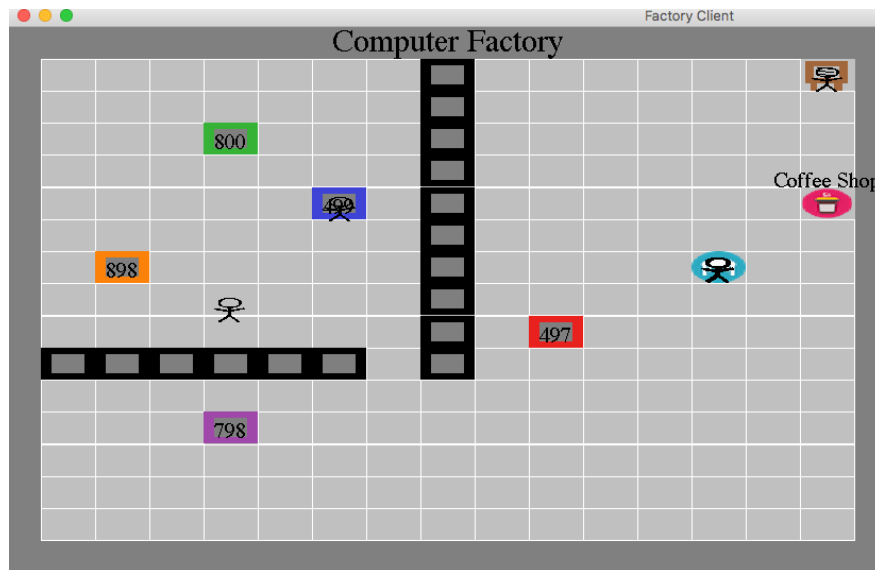


Figure 1 – Coffee Shop and Dining Table Example

A FactoryWorker must first visit the Coffee Shop immediately after each stop at the FactoryTaskBoard. There is no maximum to the number of workers who can be at the coffee shop at any given time. Each worker should stop at the Coffee Shop for exactly 0.5 seconds.

After a visit to the Coffee Shop, a FactoryWorker must visit the Dining Table. A maximum of 3 FactoryWorkers can be at the Dining Table at any given time. If there are no spots available, a FactoryWorker should wait at the Coffee Shop until one becomes available. Each worker should stop at the dining table for exactly 5 seconds. Your factory should remain thread safe, meaning no race conditions or deadlocks occur.

After finishing their break at the Dining Table, FactoryWorkers should resume work normally.

The Coffee Shop and Dining Table can be placed anywhere, but your 201 CPs should be able to change either location by *only* altering factory.txt. The image for the Coffee Shop should match coffee.png and the image for the Dining Table should match table.png - both files are posted on the 201 website. You are free to save the images anywhere within your factory project, just be sure it's included in your final GitHub submission.

When a mouse hovers over either new location, the label "Dining Table" or "Coffee Shop" should appear.

Part 2 – Sending Coffee Orders

Note: This part is dependent on Part 1, finish that first.

Now that FactoryWorkers visit the Coffee Shop and Dining Table, let's take their orders. The Coffee Shop should keep an inventory of coffee sales: the names of the FactoryWorkers who have visited, what time they visited, and the order in which they arrived.

When the Factory finishes, all past orders should be sent to the Server and displayed on the FactoryServerGUI in order (the first order taken is at the top, last order taken is at the bottom). Be sure no orders are displayed on the FactoryServerGUI before the factory finishes.

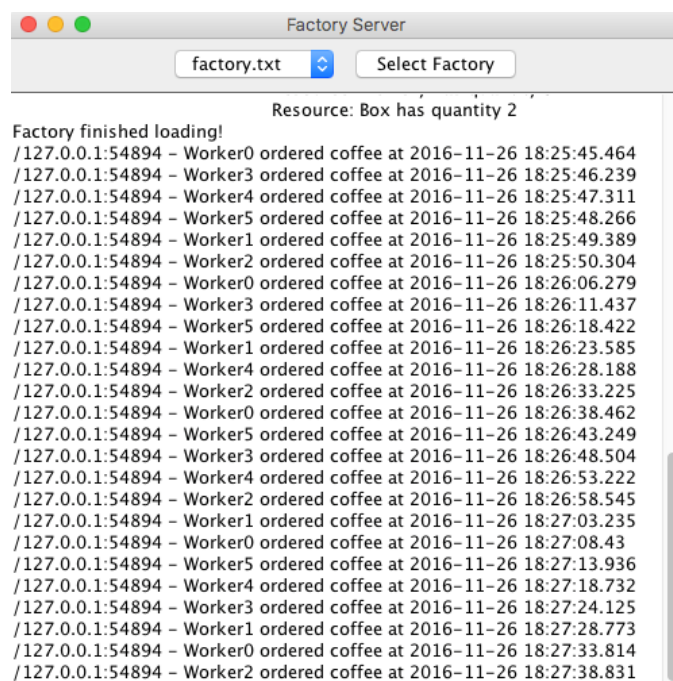


Figure 2 – FactoryServerGUI after Factory Completion

You're done! Please upload your code (either a .zip or the actual folders) to your GitHub repo. Include some variation of the name "Programming Final" in your submission. No submissions after 9:00p.m. will be graded.

Grading

*Note: Part 1 will be tested with both the new formatting of factory.txt and the old formatting of factory.txt. If either works, you will receive points on Part 1.

% of Final Grade	Criterion
Part 1 – 5.5% total	
2.00 %	New Coffee Shop and Dining Table locations added
0.50%	Changing factory.txt changes the location of the Dining Table or Coffee Shop
0.50%	FactoryWorkers navigate to the Coffee Shop properly then wait
0.50%	FactoryWorkers navigate to the Dining Table properly then wait
2.00 %	A maximum of 3 workers visit the Dining Table at once – others wait at the Coffee Shop
Part 2 - 3% total	
1.00%	FactoryServerGUI is populated with past orders only after finishing
0.75%	Past orders start with “WorkerN”, representing the FactoryWorker name
0.50%	Past orders include the “ordered coffee at” text
0.50%	Past orders include the time when coffee was ordered
0.25%	Past orders are ordered properly, beginning with the first item ordered and ending with the last item ordered
Part 1 + 2 – 1.50% total	
1.50%	No race conditions or runtime errors occur