ANIRUDH UMARJI -AMU180000 - CS 4348 (Operating System) Project 2

1. How did you approach the project?

The example that the professor provided really helped me to get started with creating threads and the acquire() and release() methods in python

- My first attempt at the code was in Java.

```
TellerThread[] tellerList = new TellerThread[tellers.length];

for (int i = 0; i < tellerList.length; i++) {
tellerList[i] = new TellerThread(tellers[i]);
}
for (int i = 0; i < tellerList.length; i++) {
System.out.println("tellerList: " + tellerList[i]);
}
for (TellerThread teller : tellerList) {
teller.start();
}

Customer[] customers = new Customer[maxCustomers];

for (int i = 0; i < maxCustomers; i++) {
String str = "Customer " + (i + 1);
customers[i] = new Customer(str);
}

CustomerThread[] customerList = new CustomerThread[customers.length];

for (int i = 0; i < customerList.length; i++) {
customerList[i] = new CustomerThread(customers[i]);
}
```

- After the failed java approach, I decided to do it in python with the help of YT videos and the example that the professor had provided
- Once the threads started working in sync for both tellers and customers, it was pretty easy to get the rest of the code to work in python

2. How did you organize the project?

- My first goal was to get the threads and semaphores to work for a single process like Teller.
- Created a lock that helped handle multiple inputs so my inputs do not overlap with each other
- Got everything to work in sync

3. What problems did you encounter?

In java, I was not able to get the threads to work together. Teller threads were working and Customer threads were working. I was not able to catch the threads and was getting NullPointerExceptions and Overflow errors as the teller threads were closing before the customer threads were getting in sync with them.

3.A. How did you fix them? – moved to python which has easier syntax and more examples.

4. What did you learn doing this project?

- Creating threads and semaphores
- How to handle multiple threads trying to work with each other
- Learned some python

5. If you did not complete some features of the project, why not?

Completed all features.