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CS4348 Project 2 summary

Part 1 project simulation.

This project is implemented as 3 major threads. Customer which provides requests and act as a “consumer” in its majority of the scope of project. Teller which process customers’ requests in queued order, and act as a producer in majority of the project, countering to Customer. Loan Officer also process customers’ requests in queued order, and act as producer similar to Teller.

Since the project is running under multithread processes, the majority of the communication between different thread are using semaphores to stop and wait on different resource that’s shared. All of the part here are described in designed paper. In addition, all the queue used in the project is implemented using linked lists. All the requests are add at the end of linked list and teller only process the first one in the same linked list.

Lastly, the account is hold by each different Customer, and only able to change whenever a teller approves its requests. Long word short, this Project could easily be expended into a more realistic scenario.

Part 2 results and learned from project.

Most of project is a better practice of barbershop semaphore case. For example. The case of using matrix semaphore is not really practice in class until this project. The example from class really made this project way easy to tackle compare to project 1. However, I felt that this project can be too more challenging like fault check based on customers’ requests. For example, an overdraft protection preventing customer from withdrawing cash that they don’t have, or prevent loan amount from exceeding account. The output of the said project is also showed on next page Screenshots. For expected results.

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Request from Customer 2 approved by Teller 1
Customer 2 gets receipt from teller 1
Customer 2 has left
Customer 2 wants a loan of 100
Customer 1 has left
Teller 1 is now free
Loan Officer 1 is now free
Customer 4 wants a loan of 300
Loan Officer 1 is now serving Customer 5 with amount 200
Teller 1 is now serving Customer 3 with amount :200 Requested to Withdrawal
Teller 2 is now free
Customer 1 want to deposit 100
Request from Customer 3 approved by Teller 1
Customer 5 has acquired loan
Request from Customer 5 approved by Loan Offier
Customer 5 has left
Customer 3 gets cash and receipt from Teller 1
Teller 2 is now serving Customer 1 with amount :100 Requested to Deposit
Customer 3 has left
Loan Officer 1 is now free
Customer 3 want to deposit 200
Teller 1 is now free
Request from Customer 1 approved by Teller 2
Teller 1 is now serving Customer 3 with amount :200 Requested to Deposit
Loan Officer 1 is now serving Customer 2 with amount 100
Request from Customer 3 approved by Teller 1
Customer 1 gets receipt from teller 2
Customer 1 has left
Customer 3 gets receipt from teller 1
Customer 2 has acquired loan
Request from Customer 2 approved by Loan Offier
Customer 2 has left
Customer 3 has left
Teller 2 is now free
Customer 1 wants a loan of 100
Teller 1 is now free
Loan Officer 1 is now free
Loan Officer 1 is now serving Customer 4 with amount 300
Request from Customer 4 approved by Loan Offier
Customer 4 has acquired loan
Customer 4 has left
Loan Officer 1 is now free
Loan Officer 1 is now serving Customer 1 with amount 100
Request from Customer 1 approved by Loan Offier
Customer 1 has acquired loan
Customer 1 has left
Loan Officer 1 is now free

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	Bank Simulation	Summary
	EndBalance	Loan Amount
Customer 1	700	100
Customer 2	1100	500
Customer 3	1100	0
Customer 4	700	600
Customer 5	1300	200
Total	4900	1400

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{cslinux1:~} █
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{cslinux1:~} java Project2
Customer 1 is created
Loan Officer 1 is created
Teller 1 is created
Teller 2 is created
Customer 5 is created
Customer 5 want to deposit 400
Customer 4 is created
Customer 3 is created
Customer 3 want to deposit 100
Customer 2 is created
Teller 1 is now serving Customer 5 with amount :400 Requested to Deposit
Request from Customer 5 approved by Teller 1
Customer 4 want to Withdrawal 300
Customer 1 want to Withdrawal 400
Customer 5 gets receipt from teller 1
Customer 5 has left
Customer 2 wants a loan of 400
Teller 2 is now serving Customer 3 with amount :100 Requested to Deposit
Loan Officer 1 is now serving Customer 2 with amount 400
Request from Customer 2 approved by Loan Offier
Customer 2 has acquired loan
Customer 2 has left
Teller 1 is now free
Customer 5 want to Withdrawal 100
Teller 1 is now serving Customer 4 with amount :300 Requested to Withdrawal
Request from Customer 4 approved by Teller 1
Loan Officer 1 is now free
Customer 2 want to deposit 100
Request from Customer 3 approved by Teller 2
Customer 4 gets cash and receipt from Teller 1
Customer 3 gets receipt from teller 2
Customer 3 has left
Customer 4 has left
Customer 3 want to Withdrawal 200
Teller 2 is now free
Teller 1 is now free
Customer 4 wants a loan of 300
Teller 1 is now serving Customer 5 with amount :100 Requested to Withdrawal
Teller 2 is now serving Customer 1 with amount :400 Requested to Withdrawal
Request from Customer 1 approved by Teller 2
Request from Customer 5 approved by Teller 1
Loan Officer 1 is now serving Customer 4 with amount 300
Request from Customer 4 approved by Loan Offier
Customer 5 gets cash and receipt from Teller 1
Customer 5 has left
Customer 1 gets cash and receipt from Teller 2
Teller 1 is now free
Customer 5 wants a loan of 200
Customer 4 has acquired loan
Customer 4 has left
Teller 1 is now serving Customer 2 with amount :100 Requested to Deposit
Request from Customer 2 approved by Teller 1
Customer 2 gets receipt from teller 1
Customer 2 has left
Customer 2 wants a loan of 100
Customer 1 has left

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