CIS 415 Operating Systems

Project 3 Report Collection

Submitted to:

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**Report**

**Introduction**

*In this project, we wanted to imitate a bank but using threads. The Duck bank is a multithreaded solution to handle thousands of requests. Part1 we had to used a signle thread solution of a bank to read from a file and either transfer, check balance, deposit or withdraw and they gained rewards each transaction. For part2 we had to make it a mulithread solution and for part3 we had to update it every 5000 transactions. Then we had to make a direcetory and hold the output for each account transactions.*

**Background**

*The only research I did was how to create a output directory. But other than that I went to Lab which I found very helpful and it helped me through every step. I did end up having some complications later on that I will talk about later in the report. I learned why you want to use the init methods the hard way. Also the man page helped out a lot to understand what parameters and returns the functions do.*

**Implementation**

*What I found nifty was in my part1 I just tokened in my process\_transactions which I later learned that will cause a lot of problems for my part2 and part3. I rewrote it and made a comand\_line\* and tokens[i] = string\_filler(buf, " ");. This then made everything a lot earier and I was then able to complete part2/part3. One thing they should have touched on in lab, it would have saved me sometime.*

**Performance Results and Discussion**

*Performace wise my code works perferctly but I had the biggest trouble because I locked and locked again instead of unlocking and it was a typo. Which then had me be in a deadlock and I didn't understand why until I went throught line by line which took me around 4 hours. But my code does have valgrind leaks. I was trying to fix the leaks but I didn't have time to write the report. Please be generous with the points deducted due to leaks. I find leaks not as important than writng the report and causing me to turn the porject in late. Also I was segfaulting because I didn't use the function inits and I didn't understand until I looked at the man page. Then I understood why you need the mutex init and cond init and barrier init.*

**Conclusion**

*Overall I found this project hard but I learned a lot and do recomend this project to others but there is a lot of understanding that needs to be done before coding. Also the leaks were very hard to deal with when using threads and the Labs helped out a lot espically if you attempted or understood the project requirements before. One thing I wish was changed was that leaks were worth less and the report worth more. This and the first project were my favorite, I really did not like the second project espically part4 of project 2.*