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This project was implemented by programming an operating system. The main function of this project was to program the CPU to do the given task when it had a forked CPU and memory, and the instructions in each input file were read into memory and sent to the CPU by pipe. In the meantime, it was a project that allowed us to better understand what we were learning by applying and programming concepts such as timers and interrupt.

I created the project file and test file that I can test small pieces such as fork. Working on small pieces was not as hard as I thought before. First, I forked two children that are CPU and Memory and made sure they forked well. I did fork and pipe work very fast. The memory part was not that hard as well. I simply made memory save instructions, which are int, into array and changed the address when integer comes after a period. I tested if memory works by printing memory array. CPU part was the hardest and took a long time. First, I made sure that CPU could receive instruction array from the pipe by printing instruction from pipe. I created variables that project document asked me to use. I made a switch function for CPU running instruction one by one going over the project document. What I took care of was incrementing or changing values of variables such as AC or SP etc. I added timer counter and timer interrupt as well for the last step.

Starting the project, I was not sure if I could get it done by the due date even though I had more than a month because I was not remembering the concept of fork, pipe, and back then concept of OS was very hard. I studied before doing the project to make sure I have those concepts certainly. When I felt those concepts more comfortable, I started to break the project into many small tasks to how I mentioned on how I implemented the project. Got the first sample very quick but stuck on testing sample2.txt. I read the text file carefully to test it, and it seemed that there was an error in the text file no matter how hard I looked at it. So, I emailed TA and the professor to check the error, and they answered that there was no error, and I knew the problem was while reading the input file in memory array. If there is something like a blank, not an integer, I should just ignore it, but I treated it as a zero and saved it in array. So, I found out that there was an error in the memory array and solved it. This experience has always taught me to review what problems I faced and what results I should make. This is because there were several problems other than the examples just before that caused by not reading or missing the explanation very well during this project. I worked hard on this project. It can be said that it was the most difficult task in all the tasks and projects I've ever done while spending the computer science senior year. At first, when the professor recommended a phase and asked students to raise their hands to see how much they were progressing, I was worried if I was the only one who was lagging because more friends seemed to be doing well. It was stressful, but because of constant efforts, I was able to complete the project about a week earlier than the due date. I know better than anyone that the process of overcoming this difficulty and solving the problem has grown me. I hope that the two future projects will work

hard so that by the end of this semester, my understanding of OS and computer science will improve.