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Cs 470
Dr. Hwang
Project: Process Management Project
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Discussion

The functionality of the major components of this program are process management(scheduling) by simulating the process state diagram (create, ready, running, waiting, and terminated). The program takes the commands from input file and print the output to the output file. The program contains process control block *struct PCB* that has the process's parent, list of its children processes, burst time, quantum time, ID number, and its waiting event number. Every process will be created as an instance of that *struct*. It also has ready and wait vectors of process control block *struct* and vector of events number. The burst time and the quantum time of the running process decremented by 1 at each iteration. The current process will be pushed back into the wait vector when the wait command, W n, inputted, and the process will be moved from the wait vector to ready vector when the event n finished. Event n finish when E n is inputted. When the process interrupted and not continuing, it will be pushed back into the ready vector and the first process in the ready vector will be running. If there is no process in the ready vector, the initial process PID 0 will run. When any process terminates, all of its children terminated too.

How to run the project:

```
g++ -std=c++11 main.cpp -o out
/out <quatum time value> <input file> <output file>
```

Mohammed's answers:

1) It's effective algorithm. When the quantum is large the processes have chance to finish their burst time before the other get in. Processes who placed on the ready queue will be less if the quantum is large.
2) Destroy method.
3) Terminate method.
4) I would like to make the project in object-oriented language such as Java or C#.
5) knowing how the process management works.

Abdulaziz's answers:

1) The bigger the quantum time is the faster the process is terminated. On the other hand, other processes need to wait longer time when the quantum time is big since the running process is not interrupted.
2) Destroying a process.
3) Creating a process. Creating a process is just instantiating the *PCB struct* and initializing the members of that instance.
4) I would change what is inside the while loop that is in the main function.
5) After implementing this project, I have more respect to these algorithms. They seem to be simple but programmatically I found them harder to implement than what I expected.

Bugs:

- The Destroy function produces a bug in test 3 when q = 1. The bug occurs when ‘D 3’ is the input. We used IDE to track the bug but unfortunately we are unable to detect why the bug is happening!