Time Sharing System Simulator

Design Documentation

CS320

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Keita Nonaka, Nick Smith, Kyle Wyse, Koki Omori

**Overview**

The goal of this project is to write a program which accurately models the function of a time sharing operating system. Our language of choice is Python 3.7 due to its familiarity and flexibility. In future iterations of this project, we will need to improve the selection algorithm to account for things like process priority and interrupts.

**Build**

The Python program will take an input file that contains the number of sets, the time the CPU allots for each set, and the sets and their own time to be completed. The program will run each set for an allotted amount of time before being put back on the queue. There will also be a fixed time added to account for overhead. The program will print to the audit log when the set is put on the processor, when it is pulled off, the time left for the set to be completed, or if the set was completed. The processor time will always be shown on the left side of the output. All of this information will be included in an output file.

### **Assumptions:**

* Processes are given equal priority, and will not be interrupted by I/Q.
* Overhead for context switching is a fixed time.
* The processes will fit into main memory.