CSE 344 Systems Programming Homework 4 Report

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In this homework we had to do thread creations. Thread H will read a file and fill a queue .

So we needed an queue. I got that queue implementaiton from geeksforgeeks. And used it.

Main thread will read from queue (and this situatıon also causes producer consumer problem.) I used semaphores to syncronize this case. Just like in the lecture slides.

I used a student struct which holds students informations and students situation in order to check its availablity and assign a homework to it.

At first i tried to use separate semaphores for each student but then, i used single one to syncronize just main thread and assign job.

In order to select students to hire, i sorted their properties and stored their indexes in an integer array. For example, when homeowrk needs to be done quickly, i check for speed array where students' speeds sorted in decremental order by their indexes. I mean speed_index[0] may refere student[6]

Also same for the quality and cost (where costs' indexes sorted incremental order).

Then i check these array for homework type and find avaliable one.

There are still syncronization issues and some memory leaks caused by pthread_create. And i could not complete budget condition to terminate threads.