

CSE 344 HOMEWORK 4

REPORT

In this project, firstly I checked for all the input errors. If everything is alright, then I created all the semaphores, students, etc. I used a pipe as the queue data structure. Then I printed students status and created all the required threads due to the homework solving student number.

In cheater thread, the thread reads all the homeworks and sent them to the main thread through queue (pipe), then waits for a respond. Due to the respond, the thread informs the user about either lackness of money or completion of the homeworks and terminates.

In main thread, the thread waits for an available solver thread with a semaphore. Then It reads a homework from the queue, finds the best solver option due to the requirement of the homework, and sent the work to the solver with a pipe. In case of lackness of money or completion of all the homeworks, this thread informs all the solvers and the cheater through pipe. And It waits for all of them to terminate with join.

Lastly, a solver thread informs the user through semaphore to indicate that It is available and waits for a homework through pipe. After It gets the job, It handles and manages the job. Then It waits for another homework and It goes on that way. When It gets information about no more homeworks to get from the main thread through pipe, It terminates.

After all, the main thread releases all the resources and terminates.

In case of CTRL^C, the user is informed about the termination signal and prints jobs done and money earned for all the solvers, and then releases all the resources and exits the program.