

CAB403 Systems Programming

Assignment – Process Management and Distributed Computing

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Statement of Completeness

We attempted to complete all task as close to the assignment specification as possible.

A problem we had was that one of us was able to play the game perfectly fine without any faults, while the other had a problem whilst playing and had a segmentation fault.

Team Information

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Contribution

We both contributed equally on this assignment.

Task 1

The leader board was produced by copying the users which will be printed to be copied from the userList array into the sortedUsers array. This is then sorted with the sortUsers function that compares the users with a created user comparison function. Once the users are sorted it sends the data to the client which formats and prints the leaderboard.

Task 2

The critical section problem was attempted by creating various pthread mutex locks. These were applied where we think the user will enter the critical section, but weren't sure if they actually worked or not.

Task 3

When a user connects it creates a request in the form of a struct, this struct is then placed in a linked list that defines the current requests. A request handler function is running in an infinite loop to address these requests in a first in first out order. The handler loop assigns a thread to the request which will handle the operations towards the client locking it. This thread is selected from the pool; an array of threads created containing the number of threads

available for use. Once the thread has performed its duties to service the client, the lock placed on the thread is released and it is available for selection again.

Instructions

Compiling the program can be done by just running the make file.