5103 Project

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Instructions on Running Test Cases

1. Change the permissions of all the .sh files to executable (chmod 755 *.sh)
2. Run "runAll.sh". This will run all the test scripts
3. Each test case will have its own separate output file. The standard output of each test case is redirected to an output file in the .sh script. Run each test case's executable (generated from the .sh file) to see the output in the terminal

The following are the test cases:

1. AsyncIO

   Script: TestCase-AsyncIO.sh
   Executable: test-case-async
   Output File: output-asyncio
   Expected Output: T1 will issue an async_read (library function) and yield to read the file. T2 and T3 will run until T1 comes back to check if the read is completed. If completed, it will close the file and print the data from the file, otherwise it will yield again.
   Reason for Actual Output: Since T1 yields after the async_read, T2 and T3 run. Once the read is completed, T1 prints the file data. The whole queue gets at least one time quanta.

2. Thread Join Test

   Script: TestCase-ThreadJoin.sh
   Executable: test-case-thread-join
   Output File: output-thread-join-test
   Expected Output: Main suspends everytime it calls join on a thread and gets resumed once that thread is ended.
   Reason for Actual Output: Main will join on T1 and get suspended. T1,T2 and T3 will run until T1 ends and resumes the main thread and puts it in the end of the queue. T2, T3 and main will run in a round robin manner. When main is scheduled again, it will join on T2 and get suspended again. This cycle repeats until all the threads are completed. After that main returns and ends.

3. Thread Yield Test

   Script: TestCase-ThreadYield.sh
   Executable: thread-yield-test-case
   Output File: output-thread-yield-test

Expected Output: Each thread will print 3 times and then switch to another thread.
Reason for Actual Output: Since each thread is yielding, the next ready thread in the ready queue will run. Since they are not completing in one time quanta, they are printed in a round robin fashion.