CPSC 410

Project 3

Motivation: Topics covered by this project;

- Mutexes, Threads
- Chapter 5 in Stallings

Overview

std::cout is not threadsafe, if you try to send output to it from many different threads the output can get garbled. Especially if you do something like this;

std::cout<<data1<<data2<<data3<<data4<<std::endl;

Your task, gentle reader, is to remedy this situation and produce a tool that will ease the considerable burden of developing and debugging your upcoming project 4. So please implement 5 threadsafe PRINT functions as defined in print_ts.h and the tester functions in tester.h.

What I've given you:

tester.h
print_ts.h

I will use my own main.cpp that calls functions in tester.cpp and/or print_ts.cpp

Requirements:

Please provide me with the following 2 files (**please note the case**)
tester.cpp
print_ts.cpp //make all the PRINTs threadsafe

And an answer to the questions below in the file answers.txt
1. How do you determine the number of threads you should launch to realistically test your application?
2. If you are launching several threads, under what circumstances would these threads not run in parallel on a modern processor?

Sample use

The following code

```
string s1 = "some";
string s2 = "data";
PRINT2(s1,s2);
PRINT3(s1,s1,s1);
```

should output

```
somedata
somesomesome
```

Teams

Individual effort. No teams for this project please.

Grading

Please submit just the 3 files (tester.cpp, print_ts.cpp and answers.txt) , please do not zip them, or enclose them in a directory structure in any way. Just the 3 files.

10% project files submitted correctly
20% questions correct
30% tester.cpp works correctly
40% print_ts.cpp works correctly

This assignment is relatively easy so it is weighted 1.0 times the weight of project 1