

# CPSC 410

## Project

### Motivation: Topics covered by this project;

- Mutexes, Threads

### Overview

Neither `std::cout` nor writing to a file are threadsafe. For instance if you try to send output to `std::cout` from many different threads the output can get garbled.

Your task, gentle reader, is to remedy this situation for both `cout` and `ofstream`

### Requirements:

Please provide me with

`410_proj_thread_log.cpp` - with all TODOs satisfied

`Logger.cpp` - with all TODOs satisfied

You will find that an implementation of `Logger.cpp` **that is not threadsafe** will produce output that is inconsistent. For instance, assume a non threadsafe `Logger` object used from 2 separate threads as shown below;

```
Logger lg2(LOG_CONSOLE);
:
//from thread 1
lg2.log(string("aaaaa"));
:
//from thread 2
lg2.log(string("bbbbb"));
```

The output may look like the following

aabbbbbbaaa

Instead of the expected;

aaaaa

bbbbb

Your task is to provide requested content as annotated by project TODOs so that the `Logger` class is threadsafe, and the `410_proj_thread_log.cpp` exercises the logger class in a multithreaded manner.

## Grading

50% 410\_proj\_thread\_log.cpp works correctly

50% Logger.cpp works correctly