# 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
aabbbbbaaa
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

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