Concurrent Queue Implementation Exercises

std::queue

- Briefly explain why, as it stands, std::queue is not suitable for use as a concurrent queue

Concurrent Queue Implementation

- Implement a concurrent queue which uses locks
- Make sure your implementation is thread-safe and exception-safe
- In the event that a client tries to pop() from an empty queue, your implementation throws an exception
- Write a multi-threaded program to exercise your implementation in which the exception is caught in the thread which calls pop()
- Modify your program so that the exception is caught in the main thread

Condition Variable

- Modify your implementation as follows:
- In the event that a client tries to pop() from an empty queue, your implementation waits until there is some data on the queue
- Write a multi-threaded program to exercise your implementation

Conclusion

- Suggest how your implementation could be improved (you are not required to write any code for this)