Parallel Programming [PARP]

Assignment report

The Bar Problem

|  |  |  |
| --- | --- | --- |
| Student name | Student number |  |
| Cezar Gerard Zawadka | 100941 |  |
| Jeffrey Ellis Jankowski | 100836 |  |
| Mann Jonathan | 100837 |  |

Table of content

[1. Abstract 3](#_Toc280656359)

[2.Problem statement 3](#_Toc280656360)

[3. Requirements 3](#_Toc280656361)

[4. Description of the application 3](#_Toc280656362)

[5. Conclusion 3](#_Toc280656363)

[6. Reference list 3](#_Toc280656364)

# 1. Abstract

Parallel programming assignment was developing program to simulate operation of imaginary bar. The bar consists of number of resources and people who either work there or drink there as customers. Each person had to be abstracted as independent thread of execution. The aim of the project was designing multithreaded program which synchronization and communication takes place between several concurrent threads. It is intended to solve a range of typical synchronization problems.

# 2.Problem statement

As the assignment description states, an owner of a Public House suspects that the way in which the bar is operated and a simulation of the Bar has been commissioned to evaluate the situation.

But the main goal of the project is to design multithreaded application with good synchronization techniques solving common synchronization problems.

# 3. Requirements

The programming language has to be C/C++ with obligatory use of POSIX threads and pthread library.

I t is required to solve inter thread synchronization problems using available tools: mutexes, semaphores, messages queues etc, not by avoiding them.

Polling, spin loops and busy-waiting are not allowed.

Logging system showing what is going on during simulation should be developed

## 3.1 Bar description

[I am not sure about this section – should repeat what was said in the assignment??]

# 4. Description of the application

## 4.1 Design principles

## 4.2 Possible deadlocks

## 4.3. Solutions taken

# 5. Conclusion

# 6. Reference list