**Project 3 Report**

Explanation:

The program creates NUM\_THREADS threads, each with a unique ID ranging from 1 to NUM\_THREADS which is 5 in this case. Each thread runs the threadFunction, which is responsible for accessing the shared variable CurrentID. Threads loop NUM\_ITERATIONS times, attempting to acquire the mutex lock. If the current value of CurrentID is not equal to the thread's ID, it waits using pthread\_cond\_wait(). Once it acquires the lock and finds it's its turn, it prints its ID, increments CurrentID, and checks if CurrentID reaches NUM\_THREADS + 1. If so, it resets CurrentID to 1. The program continues until each thread has printed "My Turn!" NUM\_ITERATIONS times. Finally, the program joins all threads and cleans up resources. To count the number of times the code prints "Not My Turn", we can modify the program to increment a counter whenever the thread prints "Not My Turn".

Sample output:

Not My Turn! Thread 2

Not My Turn! Thread 3

Not My Turn! Thread 4

Not My Turn! Thread 5

Not My Turn! Thread 1

Not My Turn! Thread 3

Not My Turn! Thread 4

Not My Turn! Thread 5

Not My Turn! Thread 1

Not My Turn! Thread 2

Not My Turn! Thread 4

Not My Turn! Thread 5

Not My Turn! Thread 1

Not My Turn! Thread 2

Not My Turn! Thread 3

My Turn! Thread 4

My Turn! Thread 1

My Turn! Thread 5

My Turn! Thread 3

My Turn! Thread 2

Not My Turn! Thread 3

Not My Turn! Thread 4

Not My Turn! Thread 5

Not My Turn! Thread 1

Not My Turn! Thread 2

Not My Turn! Thread 4

Not My Turn! Thread 5

Not My Turn! Thread 1

Not My Turn! Thread 2

Not My Turn! Thread 3

My Turn! Thread 4

My Turn! Thread 1

My Turn! Thread 5

My Turn! Thread 3

My Turn! Thread 2

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so on

Total number of times 'Not My Turn!' printed: 36