Third Assignment OS

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3.1 Programming with pthreads:

I doing build to program the observed "Hello, I am main process".

1- To make sure the main terminates before the threads finish, add a sleep(5) statement in the beginning of the thread functions. Can you see the threads' output? Why?

Solution:

No, I can't see why? Because I am not using pthread_join() function this function wait for this thread to finish and the **parameter** first one thread id and next is the return from the thread

2- Add the two pthread_join statements just before the printf statement in main. Pass a Value of NULL for the second argument. Recompile and rerun the program. What is the output? Why?

Solution:

The output:

Hello,I am thread 1

Hello,I am thread 2

Hello,I am main process

Why? Pthread_join() function waits for the thread specified by thread to terminate. If that thread has already terminated, then pthread_join() returns immediately.

3.2 Thread synchronization:

1- Compile and run t1.c, what is the output value of v?

Solution:

V = 0

2 - Delete the pthread_mutex_lock and pthread_mutex_unlock statement in both increment and decrement threads. Recompile and rerun t1.c, what is the output value of v? Explain why the output is the same, or di_erent.

Solution:

The output:

-990 OR 990 this value depend which thread started

Explain

The **v** variable is global variable when we delate lock and unlock statement the time scheduling interfere and It performs the second operation and changes the value of **v**

3.2.2 Conditional Variable:

In t2.c file

3.3 Modified Producer Consumer Problem

No Questions

SUMMARY

- **In the first question I do review the threads.**
- **I will simple search in pthread_join() function**
- **Doing simple search to how I can run pthreads library**
- **And finally I read t1.c file and understand content.**
- **In Second question I do review the synchronization**
- **I do review the lock and unlock**
- **In his question increased my understanding threads**
- **Run and compilation t1.c file and recorded the output and understand it**
- **In the third question I do review the threads** Producer Consumer Problem
- **I thinking in problem in sheet lab**
- **I understanded the consumer function and code in t3.c file**