National University of Computer & Emerging Sciences

CL2006 – Operating Systems – Lab (Spring 2024)

BSCS-4E

Lab Work 9 (Thread Creation, Thread Attributes)

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Instructions:

1. Make a word document paste all your work here.
2. Plagiarism is strictly prohibited, 0 marks would be given to students who cheat.
3. Make a Word File and paste all of your work done at the LINUX prompt.
4. You have to submit a Word File including the command name, description of the command and the screen shot of your output when you are done with your work.
5. Make a zip file and Word Document with the convention "ROLLNO_NAME_ SECTION_Lab#"

Lab Tasks:

Task 1:

Write a program that creates no. of threads based on the input given by user. Each thread should execute a function named "thread_creation" that will display its thread ID using pthread_self().
The output should be like:
"Hello I am thread 1 my ID is 123
Hello I am thread 2 my ID is 234
Hello I am thread 2 my ID is 571……

The main thread should wait for the child threads to terminate and then call exit.

Use pthread_self (void); Returns the unique thread ID of the calling thread

Task 2:

Write a program which reads a list of numbers in a given range. The main program (i.e. Main thread) is passed a range of numbers as argument. Main thread performs the following tasks.

- It performs standard error checking on thread creation
- Creates a set of worker threads.
- Compute the total number of integers entered by user
- Divide these integers into 3 parts
- Passes each part as a parameter to worker threads.

Worker thread performs the following tasks

- Each thread separately finds that the number is prime or not.
- Print the prime numbers.
- Check each no. is prime or not

- Return those numbers which are prime, to the main thread

Note: Error checking on pthread_create() zero when the call completes successfully. Any other return value indicates that an error occurred.