



# National Textile University

*Department of Computer Science*

**Subject:**

Operating Systems

**Submitted To:**

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**Registration No:**

23-NTU-CS-1135

**Lab No:**

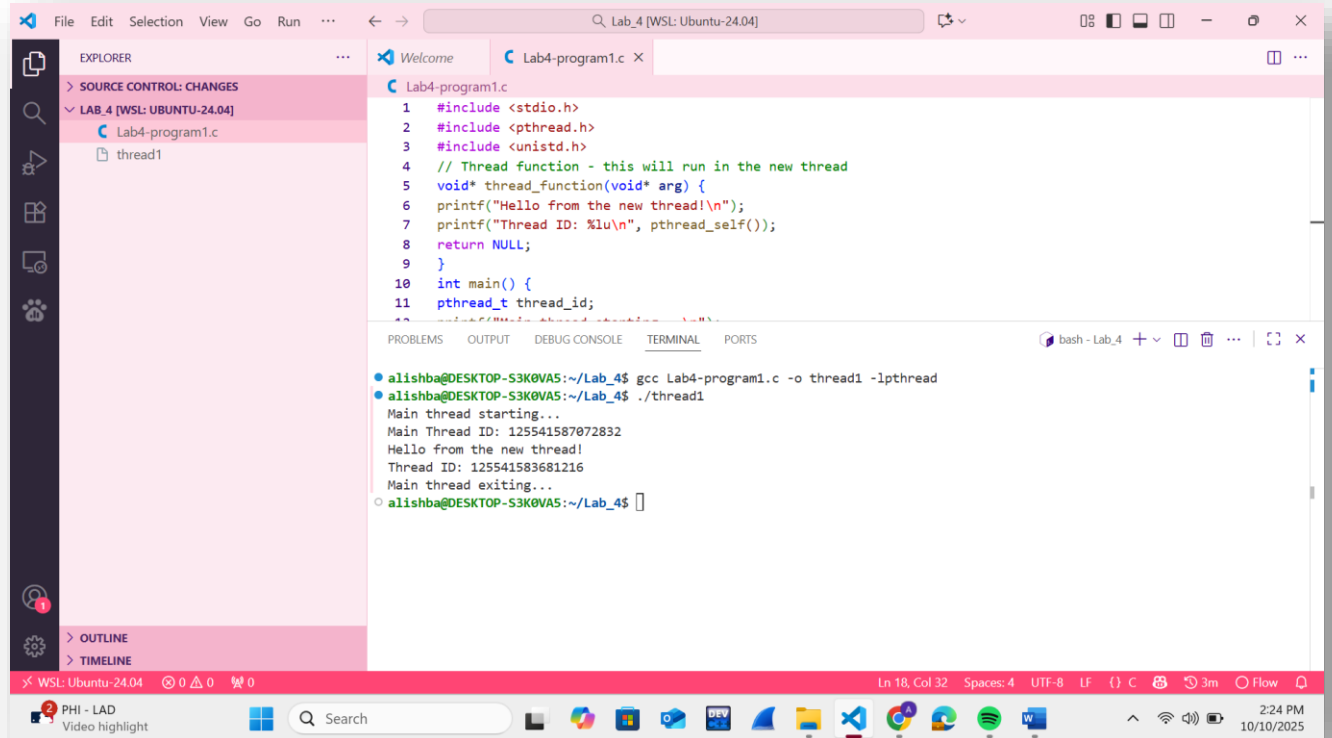
4

**Semester:**

5th

### 3. C Programs with Threads

#### Program 1: Creating a Simple Thread



The screenshot shows the Visual Studio Code editor with a C program named `Lab4-program1.c` open. The program creates a new thread and prints messages from both the main thread and the new thread. The terminal output shows the successful execution of the program.

```
1 #include <stdio.h>
2 #include <pthread.h>
3 #include <unistd.h>
4 // Thread function - this will run in the new thread
5 void* thread_function(void* arg) {
6     printf("Hello from the new thread!\n");
7     printf("Thread ID: %lu\n", pthread_self());
8     return NULL;
9 }
10 int main() {
11     pthread_t thread_id;
```

```
alishba@DESKTOP-53K0VA5:~/Lab_4$ gcc Lab4-program1.c -o thread1 -lpthread
alishba@DESKTOP-53K0VA5:~/Lab_4$ ./thread1
Main thread starting...
Main Thread ID: 125541587072832
Hello from the new thread!
Thread ID: 125541583681216
Main thread exiting...
```

## Program 2: Passing Arguments to Threads

```
1 #include <stdio.h>
2 #include <pthread.h>
3 void* print_number(void* arg) {
4     // We know that we've passed an integer pointer
5     int num = *(int*)arg; // Cast void* back to int*
6     printf("Thread received number: %d\n", num);
7     printf("Square: %d\n", num * num);
8     return NULL;
9 }
10 int main() {
11     pthread_t thread_id;
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
● alishba@DESKTOP-S3K0VA5:~/Lab_4$ gcc Lab4-program2.c -o thread2 -lpthread
● alishba@DESKTOP-S3K0VA5:~/Lab_4$ ./thread2
Creating thread with argument: 42
Thread received number: 42
Square: 1764
Main thread done.
○ alishba@DESKTOP-S3K0VA5:~/Lab_4$
```

WSL: Ubuntu-24.04 0 0 0 0 Ln 20, Col 1 Spaces: 4 UTF-8 LF C 13m Flow 2:28 PM 10/10/2025