



# National Textile University

*Department of Computer Science*

**Subject:**

Operating system

**Submitted To:**

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**Registration No:**

23-NTU-CS-1221

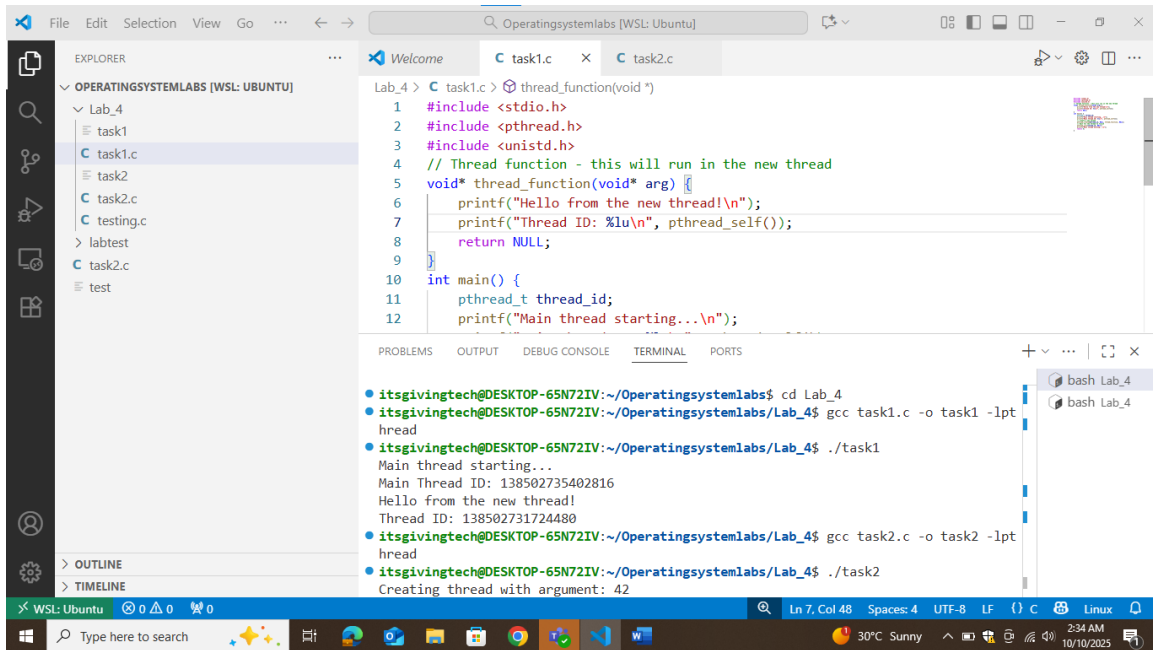
**Lab No:**

4

**Semester:**

5th

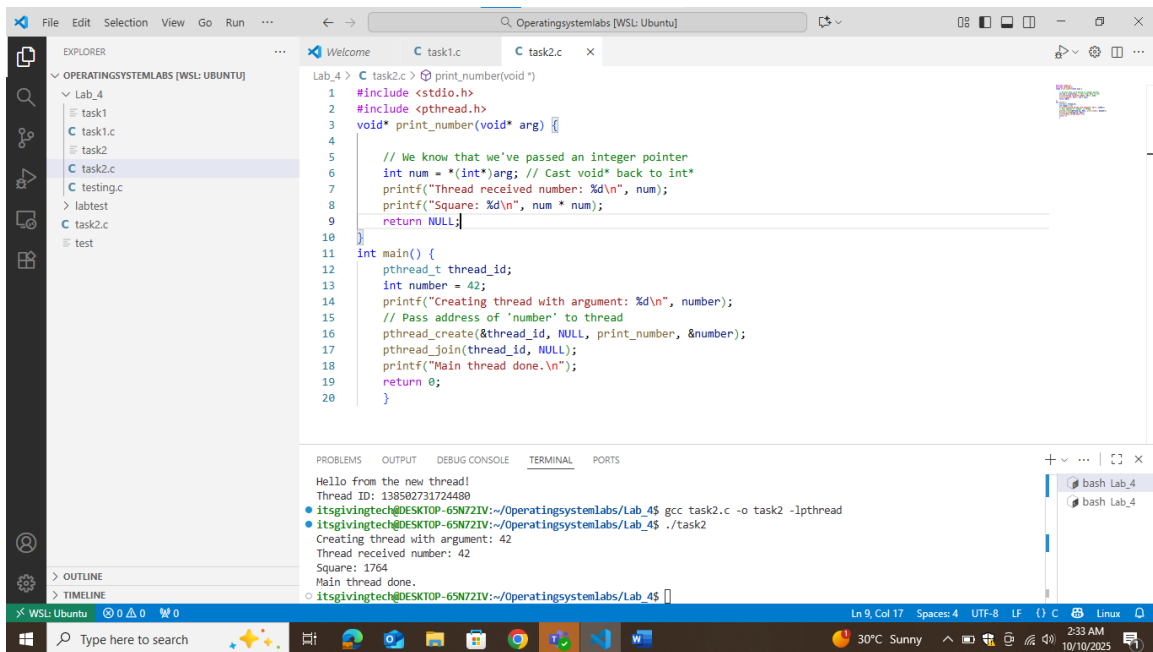
# Task 1:



```
Lab_4 > C task1.c > thread_function(void *)
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;
12     printf("Main thread starting...\n");
```

```
● itsgivingtech@DESKTOP-65N72IV:~/OperatingSystemLabs$ cd Lab_4
● itsgivingtech@DESKTOP-65N72IV:~/OperatingSystemLabs/Lab_4$ gcc task1.c -o task1 -lpthread
● itsgivingtech@DESKTOP-65N72IV:~/OperatingSystemLabs/Lab_4$ ./task1
Main thread starting...
Main Thread ID: 138502735402816
Hello from the new thread!
Thread ID: 138502731724480
● itsgivingtech@DESKTOP-65N72IV:~/OperatingSystemLabs/Lab_4$ gcc task2.c -o task2 -lpthread
● itsgivingtech@DESKTOP-65N72IV:~/OperatingSystemLabs/Lab_4$ ./task2
Creating thread with argument: 42
```

# Task 2:



```
Lab_4 > C task2.c > print_number(void *)
1 #include <stdio.h>
2 #include <pthread.h>
3 void* print_number(void* arg) {
4
5     // We know that we've passed an integer pointer
6     int num = *(int*)arg; // Cast void* back to int*
7     printf("Thread received number: %d\n", num);
8     printf("Square: %d\n", num * num);
9     return NULL;
10 }
11 int main() {
12     pthread_t thread_id;
13     int number = 42;
14     printf("Creating thread with argument: %d\n", number);
15     // Pass address of 'number' to thread
16     pthread_create(&thread_id, NULL, print_number, &number);
17     pthread_join(thread_id, NULL);
18     printf("Main thread done.\n");
19     return 0;
20 }
```

```
● itsgivingtech@DESKTOP-65N72IV:~/OperatingSystemLabs/Lab_4$ gcc task2.c -o task2 -lpthread
● itsgivingtech@DESKTOP-65N72IV:~/OperatingSystemLabs/Lab_4$ ./task2
Creating thread with argument: 42
Thread received number: 42
Square: 1764
Main thread done.
● itsgivingtech@DESKTOP-65N72IV:~/OperatingSystemLabs/Lab_4$
```