



NATIONAL TEXTILE
UNIVERSITY

DEPARTMENT OF COMPUTER SCIENCE

Subject

Operating System

SUBMITTED BY:

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SECTION SE: 5th (A)

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Lab 4

Task1: Creating the simple thread.

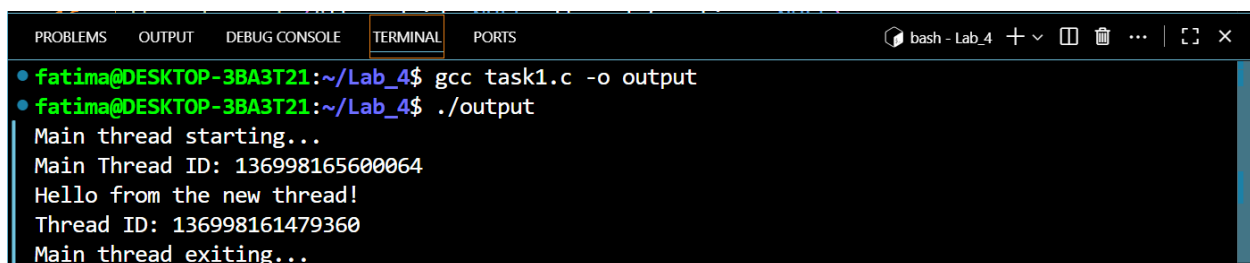
Code:

```
#include <stdio.h>
#include <pthread.h>
#include <unistd.h>
// Thread function - this will run in the new thread
void* thread_function(void* arg) {
    printf("Hello from the new thread!\n");
    printf("Thread ID: %lu\n", pthread_self());
    return NULL;
}

int main() {
    pthread_t thread_id;
    printf("Main thread starting...\n");
    printf("Main Thread ID: %lu\n", pthread_self());
    // Create a new thread
    pthread_create(&thread_id, NULL, thread_function, NULL);

    // Wait for the thread to finish
    pthread_join(thread_id, NULL);
    printf("Main thread exiting...\n");
    return 0;
}
```

Output:



```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
fatima@DESKTOP-3BA3T21:~/Lab_4$ gcc task1.c -o output
fatima@DESKTOP-3BA3T21:~/Lab_4$ ./output
Main thread starting...
Main Thread ID: 136998165600064
Hello from the new thread!
Thread ID: 136998161479360
Main thread exiting...
```

Task2:

Passing Arguments to threads.

Code:

```
#include <stdio.h>
#include <pthread.h>

void* print_number(void* arg) {
    // We know that we've passed an integer pointer
    int num = *(int*)arg; // Cast void* back to int*
    printf("Thread received number: %d\n", num);
    printf("Square: %d\n", num * num);
    return NULL;
}

int main() {
    pthread_t thread_id;
    int number = 42;
    printf("Creating thread with argument: %d\n", number);
    // Pass address of 'number' to thread
    pthread_create(&thread_id, NULL, print_number, &number);
    pthread_join(thread_id, NULL);
    printf("Main thread done.\n");
    return 0;
}
```

Output:

```
fatima@DESKTOP-3BA3T21:~/Lab_4$ gcc thread2.c
fatima@DESKTOP-3BA3T21:~/Lab_4$ ./a.out
Creating thread with argument: 42
Thread received number: 42
Square: 1764
Main thread done.
fatima@DESKTOP-3BA3T21:~/Lab_4$
```