

## EXPERIMENT-11

**Illustrate the concept of multithreading using a C program.**

### **AIM:-**

To illustrate the concept of multithreading in C, where multiple threads execute concurrently within the same process.

### **ALGORITHM:-**

1. Create multiple threads using pthread\_create.
2. Define the thread function that will be executed concurrently by each thread.
3. Each thread will print a message.
4. Use pthread\_join to ensure the main thread waits for all threads to complete execution.
5. Terminate the threads.

### **CODE:-**

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

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

```
void* print_message(void* arg) {  
    printf("Thread %d is running\n", *((int*)arg));  
    return NULL;  
}
```

```
int main() {  
    pthread_t threads[3];
```

```
int thread_ids[3] = {1, 2, 3};
```

```
for (int i = 0; i < 3; i++) {
```

```
    pthread_create(&threads[i], NULL, print_message, (void*)&thread_ids[i]);
```

```
}
```

```
for (int i = 0; i < 3; i++) {
```

```
    pthread_join(threads[i], NULL);
```

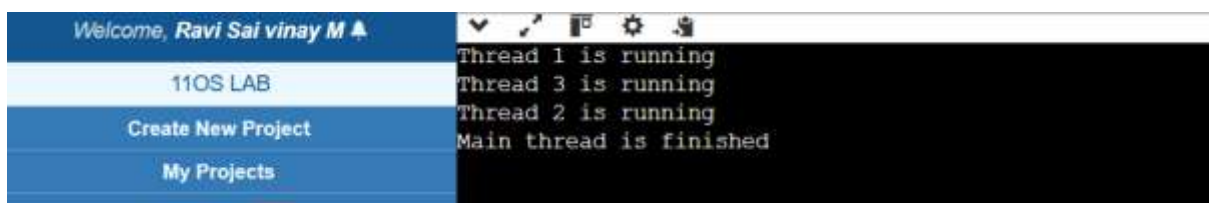
```
}
```

```
printf("Main thread is finished\n");
```

```
return 0;
```

```
}
```

## **OUTPUT:-**



## **RESULT:-**

The program successfully demonstrates multithreading. Three threads are created, each printing a message concurrently. The main thread waits for all threads to finish using `pthread_join`. This illustrates how multiple threads can run simultaneously in a C program..