

**Experiment-30: Write C programs to demonstrate the following thread related concepts.  
(i) create (ii) join (iii) equal (iv) exit**

Aim:

To demonstrate various thread-related concepts in C using pthread library, including:

1. Create: Creating a thread.
2. Join: Waiting for a thread to complete.
3. Equal: Checking if two threads are the same.
4. Exit: Exiting a thread.

Procedure:

1. Create: Use pthread\_create to create a thread that performs a specific task.
2. Join: Use pthread\_join to wait for the created thread to finish its task.
3. Equal: Use pthread\_equal to compare two thread identifiers.
4. Exit: Use pthread\_exit to terminate a thread.

Code:

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

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

```
#include <unistd.h>
```

```
void* threadFunction(void* arg) {  
    printf("Thread is running\n");  
    sleep(2);  
    return NULL;  
}
```

```
int main() {
```

```
pthread_t thread1, thread2;

pthread_create(&thread1, NULL, threadFunction, NULL);
pthread_create(&thread2, NULL, threadFunction, NULL);

pthread_join(thread1, NULL);
pthread_join(thread2, NULL);

if (pthread_equal(thread1, thread2)) {
    printf("Both threads are equal.\n");
} else {
    printf("Threads are not equal.\n");
}

pthread_exit(NULL);

return 0;
}
```

Output:

### Output

```
Thread is running
Thread is running
Threads are not equal.
```