LAB 5 : Threads

Objective

- To learn threads creation and management in Linux.

Instructions

1. For each question produce a screen shot of the program and the result of the runs.
2. Show your work to your TA and upload the complete exercise on TEAMS before the end of the lab to get full marks.

Note: 1 mark (out of 10) deducted per day late. 3 days late maximum.

Exercises

1. Refer to program `code1.c`,
   (a) Is there any different in the output if `pthread_join ()` is removed?

   (b) Swap line 26 and 27. What is the output? Explain.

```
22 int main () {
23   pthread_t thread;
24
25   pthread_create (&thread,NULL, MyTurn, NULL);
26   YourTurn ();
27   pthread_join (thread, NULL);
28   return 0;
29 }
```

   (c) creates two different threads, one display "`My Turn`" and the other "`Your Turn`". The main thread does nothing other than waiting for both to finish. Show your output.

2. (a) Write a program which prints the message `Welcome to Madinah!` according to the number of threads as defined by MAX_THREAD (e.g. 5). Each thread executes function `welcome ()` that displays the message (as shown below).

```
void* welcome (void* arg) {

  printf ("Thread %lu: Welcome to Madinah!\n", pthread_self());

  pthread_exit (NULL);
}
```

```
~/Lab5$ ./a.out
Thread 139989185783360: Welcome to Madinah!
Thread 139989177390656: Welcome to Madinah!
Thread 139989168997952: Welcome to Madinah!
Thread 139989090301504: Welcome to Madinah!
Thread 139989081908800: Welcome to Madinah!
~/Lab5$ _
```

(b) Modify the program in 2(a) such that the number of threads created is determined by the user during run-time. However, maximum threads that can be created is 10.