Practical No.: 02

Aim: Threads:

a. Write a program to work with a single thread.

b. Write a program to work with multi threads.

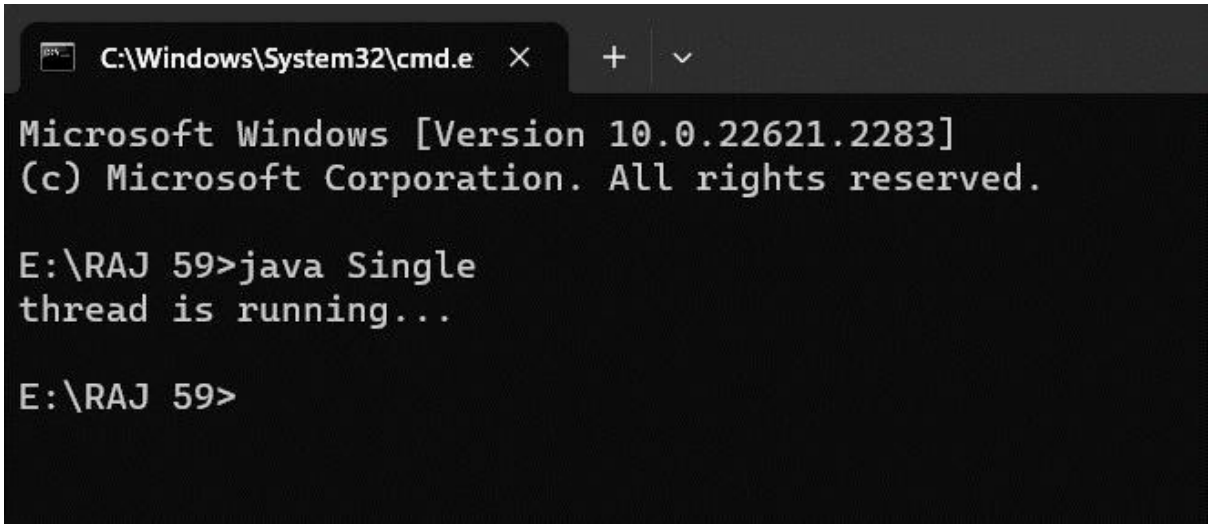
c. The Fibonacci sequence is the series of numbers 0, 1, 1, 2, 3, 5. 8, ... Formally, it can be expressed as: fib0 = 0, fib1 = 1, fibn = fibn-1 + fibn-2. Write a multithreaded program that generates the Fibonacci sequence.

Source Code:

a. Write a program to work with a single thread.

```
class Single extends Thread
{
        public void run()
        {
                System.out.println("Thread is Running");
        }
        public static void main(String args[])
        {
                Single t1=new Single();
                t1.start();
        }
}
```

Output:



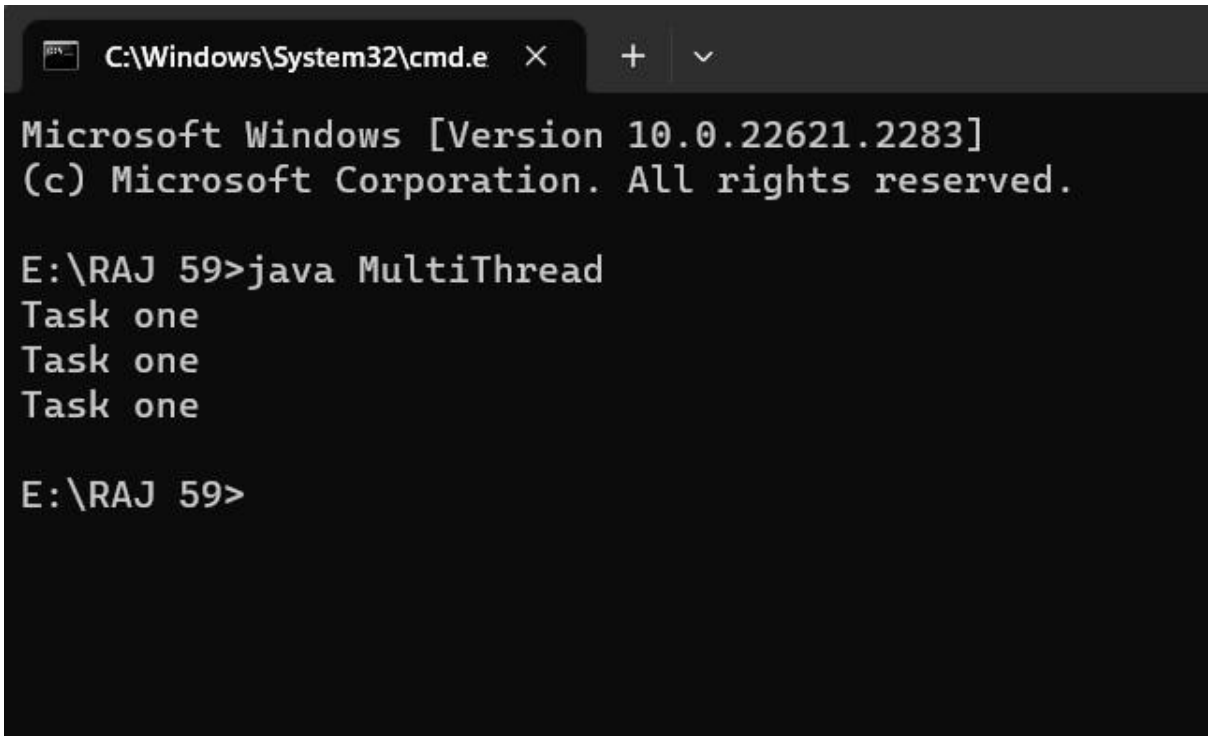
Source Code:

b. Write a program to work with multi threads.

```
class MultiThread extends Thread
{
	public void run()
	{
		System.out.println("Task one");
	}
	public static void main(String args[])
	{
		MultiThread t1=new MultiThread();
		MultiThread t2=new MultiThread();
		MultiThread t3=new MultiThread();

		t1.start();
		t2.start();
		t3.start();
	}
}
```

Output:


C:\Windows\System32\cmd.e
Microsoft Windows [Version 10.0.22621.2283]
(c) Microsoft Corporation. All rights reserved.
E:\RAJ 59>java MultiThread
Task one
Task one
Task one
E:\RAJ 59>

Source Code:

c. The Fibonacci sequence is the series of numbers 0, 1, 1, 2, 3, 5. 8, ... Formally, it can be expressed as: fib0 = 0, fib1 = 1, fibn = fibn-1 + fibn-2. Write a multithreaded program that generates the Fibonacci sequence.

```
import java.io.*;
class Fibonacci extends Thread
{
	public static void main(String args[])
	{
		try
		{
			Fibonacci fib=new Fibonacci();
			fib.start();
			fib.sleep(4000);
		}
		catch(Exception ex)
		{
			ex.printStackTrace();
		}
	}
	public void run()
	{
		try
		{
			int a=0,b=1,c=0;
			BufferedReader br=new BufferedReader(new
InputStreamReader(System.in));
			System.out.println("enter the limit for Fibonacci:");

			int n= Integer.parseInt(br.readLine());
			System.out.println("/n====================");
			System.out.println("fibonacci series:");
			while(n>0)
			{
				System.out.println(c+" ");
				a=b;
				b=c;
				c=a+b;
				n=n-1;
			}
		}
```

```
                catch (Exception ex)
                {
                        ex.printStackTrace();
                }
        }

}
```

Output: