DAY 23 :

ASSIGNMENTS 1:

Task 1: Creating and Managing Threads

Write a program that starts two threads, where each thread prints numbers from 1 to 10 with a 1-second delay between each number.

ANSWER:

```
public class NumberPrinter implements Runnable {
  private String threadName;


  public NumberPrinter(String threadName) {
    this.threadName = threadName;
  }


  @Override
  public void run() {
    try {
      for (int i = 1; i <= 10; i++) {
        System.out.println(threadName + ": " + i);
        Thread.sleep(1000); // Delay for 1 second
      }
    } catch (InterruptedException e) {
      System.out.println(threadName + " interrupted.");
    }
  }


  public static void main(String[] args) {
    // Create two NumberPrinter objects
    NumberPrinter np1 = new NumberPrinter("Thread 1");
    NumberPrinter np2 = new NumberPrinter("Thread 2");
    // Create two threads with the NumberPrinter objects
    Thread t1 = new Thread(np1);
    Thread t2 = new Thread(np2);

    // Start the threads
    t1.start();
    t2.start();

    // Wait for both threads to finish
    try {
      t1.join();
      t2.join();
    } catch (InterruptedException e) {
      System.out.println("Main thread interrupted.");
    }

    System.out.println("Both threads have finished.");
  }
}
```

Explanation:

1. NumberPrinter ClasS: Implements Runnable interface and contains the code to print numbers from 1 to 10 with a 1-second delay.

- threadName is used to distinguish between the two threads.

- The run method contains a loop that prints numbers and calls Thread.sleep(1000) to delay for 1 second between prints.

2. Main Method:

- Creates two instances of NumberPrinter, each with a unique thread name.

- Creates two Thread objects, passing the NumberPrinter instances to their constructors.

- Starts both threads using start() method.

- Uses join() method to wait for both threads to complete before printing a final message indicating that both threads have finished.

Running the Program:

When you run this program, you will see interleaved output from the two threads, each printing numbers from 1 to 10 with a delay of 1 second between each number.