JAVA PROGRAMMING
ASSIGNMENT 6

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1. Write a package called Clear, it contains one public method clrscr() to clear the screen, import the package and use it in other programs. Add another public method starline(). It prints the line of 15 starts.

PROGRAM:
//Package->Clear\Mainclear.java
```java
package Clear;
public class Mainclear {
    public static void clrscr() {
            System.out.print("\033[H\033[2J");
        System.out.flush();
    }
    public static void starline() {
        System.out.println("***************");
    }
}
```
//Testclear.java
```java
import Clear.Mainclear;
public class Testclear {
    public static void main(String[] args) {
        System.out.println("This text will be cleared in 2 seconds...");
        try {
            Thread.sleep(2000);
        } catch (InterruptedException e) {
            e.printStackTrace();}
        Mainclear.clrscr();
        Mainclear.starline();
        System.out.println("Screen cleared!");
        Mainclear.starline();
        }}
```

OUTPUT:

```
D:\bmsce\2sem\Java programming\week6>java Testclear
This text will be cleared in 2 seconds...
|
```

```
***************
Screen cleared!
***************

D:\bmsce\2sem\Java programming\week6>|
```

2. Define an exception called " No Equal Exception " that is thrown when a float value is not equal to 3.14. Write a program that uses the above user defined exception.

PROGRAM:
```java
import java.util.*;
class NoEqualException extends Exception {
   NoEqualException(String message) {
     super(message);
   }
}

 class TestEqual {
   public static void main(String[] args) {
     Scanner sc= new Scanner(System.in);
     System.out.println("Enter a float number:");
     float value=sc.nextFloat();

     try {
       if (value != 3.14f) {
          throw new NoEqualException("Value is not equal to 3.14");
       } else {
          System.out.println("Value is equal to 3.14");
       }
     } catch (NoEqualException e) {
       System.out.println("Caught Exception: " + e.getMessage());
     }
   }
}
```
OUTPUT:

```
PS D:\bmsce\2sem\Java programming\week6> java TestEqual
Enter a float number:
3.14
Value is equal to 3.14
PS D:\bmsce\2sem\Java programming\week6> java TestEqual
Enter a float number:
2
Caught Exception: Value is not equal to 3.14
PS D:\bmsce\2sem\Java programming\week6>
```

3. Write a java program using threads to simulate traffic lights switch between Red, Green, and Yellow with fixed delays.

PROGRAM:
```java
class TrafficLight extends Thread {
    String color;
    int delay;
    TrafficLight(String color, int delay) {
        this.color = color;
        this.delay = delay;
    }
    @Override
    public void run() {
        try {
            System.out.println(color + " light is ON");
            Thread.sleep(delay);
        } catch (InterruptedException e) {
            System.out.println("Interrupted: " + e.getMessage());
        }
    }
}
public class TrafficSimulation {
    public static void main(String[] args) {

        new TrafficLight("Red", 3000).start();
        try { Thread.sleep(3000); } catch (Exception e) {}
        new TrafficLight("Green", 2000).start();
        try { Thread.sleep(2000); } catch (Exception e) {}
        new TrafficLight("Yellow", 1000).start();
        try { Thread.sleep(1000); } catch (Exception e) {}
    }
}
```
OUTPUT:

```
PS D:\bmsce\2sem\Java programming\week6> java TrafficSimulation
Red light is ON
Green light is ON
Yellow light is ON
PS D:\bmsce\2sem\Java programming\week6>
```