OOJ LAB-WEEK 11-Extra Programs

Program and Output

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Program 1-

Write a program to create a thread and find the sum of odd numbers from 1 to 100 in this thread. Find the sum of even numbers for the same range in the main thread.

```
class NewThread implements Runnable
{ Thread t;
  NewThread()
  {
    t=new Thread(this, "SUM");
        System.out.println("CT:"+t);
        t.start();
  }


  public void run()
  {
     int sum=0;
         try
         {


                for(int n=1;n<=100;n++)
```

```java
                {
                        if(n%2!=0)
                        {
                        sum=sum+n;
                        }
                        else
                         Thread.sleep(500);
                }
                System.out.println("Sum of all odd numbers between 1-100\n"+sum);
        }
        catch(InterruptedException ie)
        {
                System.out.println("Odd Thread Interrupted");
        }
        System.out.println("Odd Thread quitting");
  }
}


class Main
{
        public static void main(String ss[])
        {
                int sum=0;
                NewThread n1=new NewThread();
```

```java
try
{

    for(int n=1;n<=100;n++)
    {
        if(n%2==0)
        {
            sum=sum+n;
        }
        else
        Thread.sleep(500);
    }
    System.out.println("Sum of all even numbers between 1-100:\n"+sum);
}
catch(InterruptedException ie)
{
    System.out.println("Even Main Thread interrupted");
}
System.out.println("Even Main Thread quitting");
}
}
```

Output-

```
CT:Thread[SUM,5,main]
Sum of all even numbers between 1-100:
2550
Even Main Thread quitting
Sum of all odd numbers between 1-100
2500
Odd Thread quitting


...Program finished with exit code 0
Press ENTER to exit console.█
```

Program 2-

Develop a multithreaded Java program to create three threads. First thread generates random integer for every second and if the value is even, second thread computes the square of number and prints. If the value is odd, the third thread will print the value of cube of number.

import java.util.Random;

class Square extends Thread

{

 int x;

 Square(int n)

 {

 x = n;

 }

```java
    public void run()

    {

    int sqr = x * x;

    System.out.println("Square of " + x + " = " + sqr );

    }

    }

class Cube extends Thread

    {

    int x;

    Cube(int n)

    {

    x = n;

    }

    public void run()

    {

    int cub = x * x * x;

    System.out.println("Cube of " + x + " = " + cub );

    }

    }

class Number extends Thread

    {

    public void run()

    {

    Random rand = new Random();
```

```java
for(int i =0; i<8; i++)

{

int randominteger = rand.nextInt(100);

System.out.println("Random Integer : " + randominteger);

if(randominteger%2==0)

{

    System.out.println("Even value");

Square s = new Square(randominteger);

s.start();

}

else{

    System.out.println("Odd value");

Cube c = new Cube(randominteger);

c.start();

}

try {

Thread.sleep(1000);


} catch (InterruptedException ex) {

System.out.println(ex);

}

}

}

}
```

```java
class Main {

 public static void main(String args[])

 {

 Number n = new Number();

 n.start();

 }

}
```

Output-

```
Random Integer : 57
Odd value
Cube of 57 = 185193
Random Integer : 20
Even value
Square of 20 = 400
Random Integer : 38
Even value
Square of 38 = 1444
Random Integer : 85
Odd value
Cube of 85 = 614125
Random Integer : 49
Odd value
Cube of 49 = 117649
Random Integer : 4
Even value
Square of 4 = 16
Random Integer : 47
Odd value
Cube of 47 = 103823
Random Integer : 93
Odd value
Cube of 93 = 804357


...Program finished with exit code 0
Press ENTER to exit console.
```