TRINITY INTERNATIONAL COLLEGE

(Tribhuvan University Affiliated)

Lab Assignment 1.3: Advance Java Programming

Submitted By: **Submitted to:**

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Roll No:

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Date:

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Unit- #1.3

1) Write a program to demonstrate try-catch-finally.

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Program

```
package Q1_TryCatchFinally;

import java.util.Scanner;

class InvalidRadiusException extends Exception
{
    public InvalidRadiusException(String message)
    {
        super(message);
    }
}
class Circle
{
    private double r;
    public void setR(double r) throws InvalidRadiusException
    {
        if(r<0)
        {
            throw new   InvalidRadiusException("Invalid radius
                                    as it can't be negative
                                    value. ");
        }
        else{
            this.r = r;
        }
    }
}

public class TryCatchFinallyDemo
{
    public static void main(String[] args)
    {
        System.out.println("Enter the radius: ");
        Scanner in = new Scanner(System.in);
        double radius = in.nextDouble();
        Circle c = new Circle();
        try{
            c.setR(radius);
        }
        catch (InvalidRadiusException e)
        {
            System.out.println(e.getMessage());
        }
        finally{
            System.out.println("Finally block executed");
        }
    }
}
```

Output:

For try-block

```
TryCatchFinallyDemo
"C:\Program Files\Java\jdk-13.0.2\bin\java
Enter the radius:
5
Finally block executed

Process finished with exit code 0
```

For catch-block

```
TryCatchFinallyDemo
"C:\Program Files\Java\jdk-13.0.2\bin\java.exe"
Enter the radius:
-5
Invalid radius as it can't be negative value.
Finally block executed
```

2) Write a program to demonstrate try-finally.

⇨

Program

```
package Q2_TryFinally;

public class TryFinallyDemo
{
    public static void main(String[] args)
    {
        int[] arr = new int[4];
        try          {
            int i = arr[3];
            System.out.println("Inside try block");
        }
        finally          {
           System.out.println("Finally block executed.");
        }
    }
}
```

Output:

```
TryFinallyDemo
"C:\Program Files\Java\jdk-13.0.2\bin\java.exe"
Inside try block
Finally block executed.
```

3) Write a program to create two threads. The first thread should print numbers from 1 to 10 at intervals of 0.5 second and the second thread should print numbers from 11 to 20 at the interval of 1 second.

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Program

```
package Q3_TwoThread;

class First extends Thread
{
    @Override     public void run()
    {
        for (int i=1; i<=10; i++)
        {
            System.out.println(i);
            try             {
                Thread.sleep(500);
            }
            catch (InterruptedException e)
            {
                System.out.println(e.getMessage());
            }
        }
    }
}
class Second extends Thread
{
    @Override     public void run()
    {
        for (int i=11; i<=20; i++)
        {
            System.out.println(i);
            try{
                Thread.sleep(1000);
            }
            catch (InterruptedException e)
            {
                System.out.println(e.getMessage());

            }
        }
    }
}

public class ThreadInterval
{
    public static void main(String[] args)
    {
        Thread first = new First();
        Thread second= new Second();
        first.start();
        second.start();
    }

}
```

output:


ThreadInterval
"C:\Program Files\Java\jdk-13.0.2\bin
1
11
2
12
3
4
13
5
6
14
7
8
15
9
10
16
17
18
19
20
Process finished with exit code 0

4) Write a program to execute multiple threads in priority base. [2075]

⇨

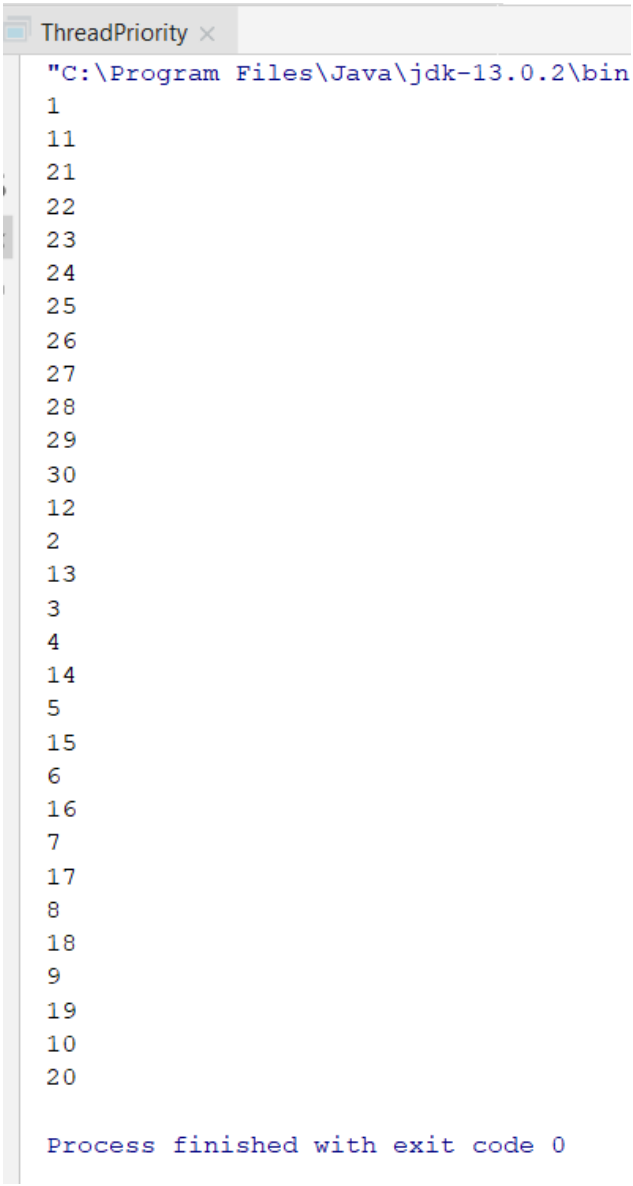
Program

```
package Q4_MultipleThread;

class First extends Thread
{
    @Override     public void run()
    {
        for (int i = 1; i <= 10; i++)
        {
            System.out.println(i);
        }
    }
}
class Second extends Thread
{
    @Override     public void run()
    {
        for (int i = 11; i <= 20; i++)
        {
            System.out.println(i);
        }
    }
}

class Third extends Thread
{
    @Override     public void run()
    {
        for (int i = 21; i <= 30; i++)
        {
            System.out.println(i);
        }
    }
}
public class ThreadPriority
{
    public static void main(String[] args) throws
                                        InterruptedException
 {
        Thread t1 = new First();
        Thread t2 = new Second();
        Thread t3 = new Third();
        t1.setPriority(Thread.MAX_PRIORITY);
        t2.setPriority(Thread.MIN_PRIORITY);
        t3.setPriority(Thread.NORM_PRIORITY);
        t1.start();
        t2.start();
        t3.start();
    }
}
```

Output:


ThreadPriority
"C:\Program Files\Java\jdk-13.0.2\bin
1
11
21
22
23
24
25
26
27
28
29
30
12
2
13
3
4
14
5
15
6
16
7
17
8
18
9
19
10
20
Process finished with exit code 0