

## Program 1

### Arithmetic Exception

```
public class MultipleCatchBlock1 {  
    public static void main(String[] args) {  
        try{  
            int a[]=new int[5];  
            a[5]=30/0; }  
        catch(ArithmeticException e) {  
            System.out.println("Arithmetic Exception occurs");  
        }  
        catch(ArrayIndexOutOfBoundsException e)  
        {  
            System.out.println("ArrayIndexOutOfBoundsException  
occurs");  
        }  
        catch(Exception e) {  
            System.out.println("Parent Exception occurs");  
        }  
        System.out.println("rest of the code");  
    }  
}
```

**Compile by: javac MultipleCatchBlock1.java**

**Run by: java MultipleCatchBlock1**

```
Arithmetic Exception occurs  
rest of the code
```

## Array Index out of Bounds

```
public class MultipleCatchBlock2 {  
    public static void main(String[] args) {  
        try{  
            int a[]=new int[5];  
            System.out.println(a[10]);  
        }  
        catch(ArithmeticException e)  
        {  
            System.out.println("Arithmetic Exception occurs");  
        }  
        catch(ArrayIndexOutOfBoundsException e)  
        {  
            System.out.println("ArrayIndexOutOfBoundsException  
occurs");  
        }  
        catch(Exception e)  
        {  
            System.out.println("Parent Exception occurs");  
        }  
        System.out.println("rest of the code");  
    }  
}
```

**Compile by: javac MultipleCatchBlock2.java**

**Run by: java MultipleCatchBlock2**

ArrayIndexOutOfBoundsException occurs  
rest of the code

## Null pointer Exception

```
import java.io.*;

class ne
{
    public static void main (String[] args)
    {
        // Initializing String variable with null value
        String ptr = null;

        // Checking if ptr.equals null or works fine.
        try
        {

            if (ptr.equals("gfg"))
                System.out.print("Same");
            else
                System.out.print("Not Same");
        }
        catch(NullPointerException e)
        {
            System.out.print("NullPointerException Caught");
        }
    }
}
```

**Output:**

**NullPointerException Caught**

## Program 2

```
class
Table
{
    void printTable(int n)
    {
        synchronized(this)
        {
            for(int i=1;i<=5;i++)
            {
                System.out.println(+n+"*"+i+"="+n*i);
                try
                {
                    Thread.sleep(400);
                }
                catch(Exception e)
                {
                    System.out.println(e);
                }
            }
        }
    }
}

class Mythread1 extends Thread
{
    Table t;
    Mythread1(Table t)
    {
        this.t=t;
    }
    public void run()
    {
        t.printTable(5);
    }
}

class Mythread2 extends Thread
{
    Table t;
    Mythread2(Table t)
    {
        this.t=t;
    }
}
```

```
        public void run()
        {
            t.printTable(100);
        }
    }

    class Use
    {
        public static void main(String args[])
        {
            Table obj = new Table();
            Mythread1 th1 = new Mythread1(obj);
            Mythread2 th2 = new Mythread2(obj);
            th1.start();
            th2.start();
        }
    }
```

Output -

5\*1=5

5\*2=10

5\*3=15

5\*4=20

5\*5=25

100\*1=100

100\*2=200

100\*3=300

100\*4=400

100\*5=500

### Program 3

```
import java.util.*;
import java.io.*;
public class ugly {
    public static void main(String args[]) {

        int inputNumber;
        Scanner sc=new Scanner(System.in);
        System.out.println("Enter the number :");
        inputNumber=sc.nextInt();

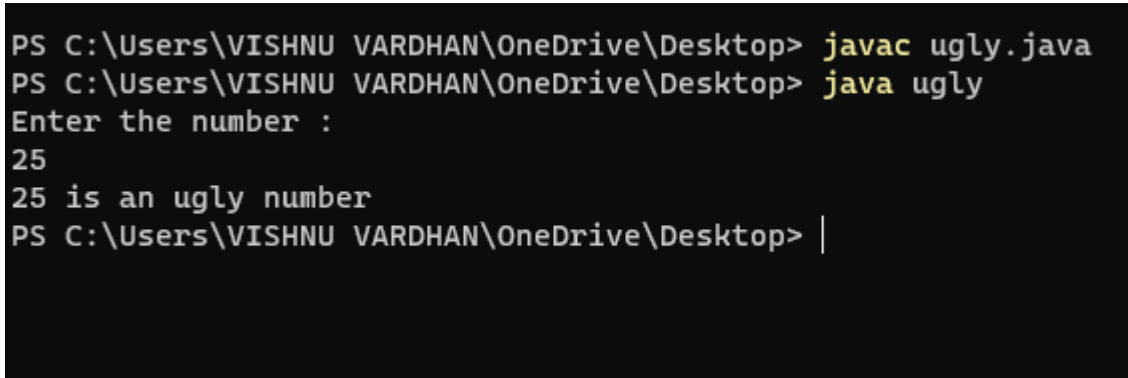
        boolean check = true;

        for(int i = 2; i<=inputNumber; i++) {

            if(i!=2&& i!=3&& i!=5) {
                if(inputNumber%i==0&& checkPrime(i)) {

                    check = false;
                    break;
                }
            }
        }
        if(check) {
            System.out.println(inputNumber+" is an ugly number");
        } else {
            System.out.println(inputNumber+" is Not an ugly number");
        }
    }
    static boolean checkPrime(int number) {
```

```
boolean flag = true;
for(int i = 2; i<=number/2; i++) {
    if(number%i==0) {
        flag = false;
        break;
    }
}
return flag;
}
```



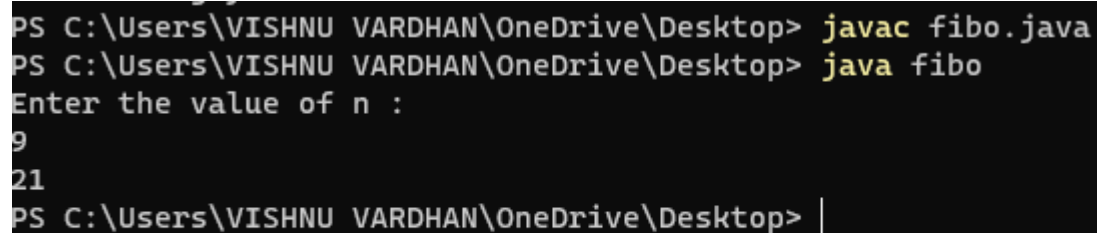
```
PS C:\Users\VISHNU VARDHAN\OneDrive\Desktop> javac ugly.java
PS C:\Users\VISHNU VARDHAN\OneDrive\Desktop> java ugly
Enter the number :
25
25 is an ugly number
PS C:\Users\VISHNU VARDHAN\OneDrive\Desktop> |
```

#### Program 4

```
import java.io.*;
import java.util.*;
class fibo {
    static int fib(int n)
    {
        if (n==0 | n==1)
            return 0;
        else if(n==2)
            return 1;
        return fib(n - 1) + fib(n - 2);
    }
}
```

```
    }

    public static void main(String args[])
    {
        int n;
        Scanner sc=new Scanner(System.in);
        System.out.println("Enter the value of n : ");
        n=sc.nextInt();
        System.out.println(fib(n));
    }
}
```



```
PS C:\Users\VISHNU VARDHAN\OneDrive\Desktop> javac fibo.java
PS C:\Users\VISHNU VARDHAN\OneDrive\Desktop> java fibo
Enter the value of n :
9
21
PS C:\Users\VISHNU VARDHAN\OneDrive\Desktop> |
```

### Program 5

```
import java.io.*;
import java.util.*;

class duplicate {
    static int removeDuplicates(int arr[], int n) {
        if (n == 0 || n == 1)
            return n;
        int[] temp = new int[n];
        int j = 0;
        for (int i = 0; i < n-1; i++) {
```



```
        if (arr[i] != arr[i+1])
            temp[j++] = arr[i];
    }
    temp[j++] = arr[n-1];
    for (int i = 0; i < j; i++) {
        arr[i] = temp[i];
    }
    return j;
}
```

```
public static void main(String[] args) {
    int arr[] = {10, 20, 20, 30, 40, 40, 40, 50, 50};
    int n = arr.length;
    n = removeDuplicates(arr, n);
    for (int i = 0; i < n; i++) {
        System.out.print(arr[i]+" ");
    }
}
}
```

```
PS C:\Users\VISHNU VARDHAN\OneDrive\Desktop> javac duplicate.java
PS C:\Users\VISHNU VARDHAN\OneDrive\Desktop> java duplicate
10 20 30 40 50
PS C:\Users\VISHNU VARDHAN\OneDrive\Desktop> |
```