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("ArrayIndexOutOfBounds Exception
occurs");
                                }
                        catch(Exception e) {
                                System.out.println("Parent Exception occurs");
                                }
                        System.out.println("rest of the code");
        }
}
```

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("ArrayIndexOutOfBounds Exception
occurs");
                               }
                       catch(Exception e)
                    {
                                System.out.println("Parent Exception occurs");
                               }
                       System.out.println("rest of the code");
        }
}
```

Array index out of bounds Exception 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 -

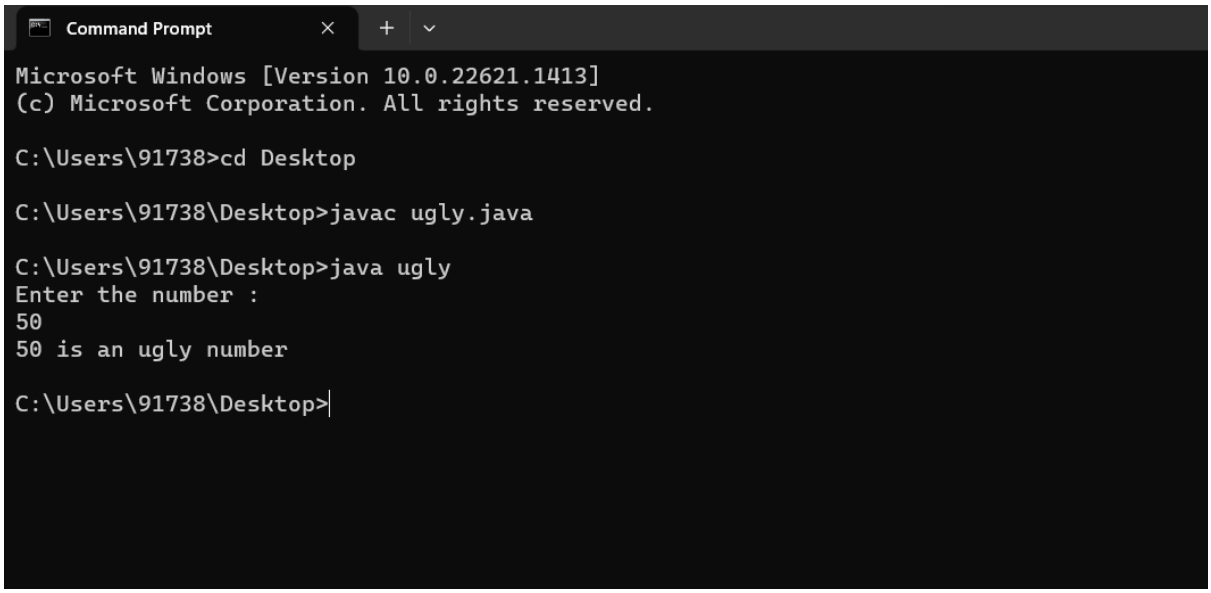
```
5*1=5
5*2=10
5*3=15
5*4=20
5*5=25
100*1=100
100*2=200
100*3=300
100*4=400
100*5=500
```

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;
  }
}
```

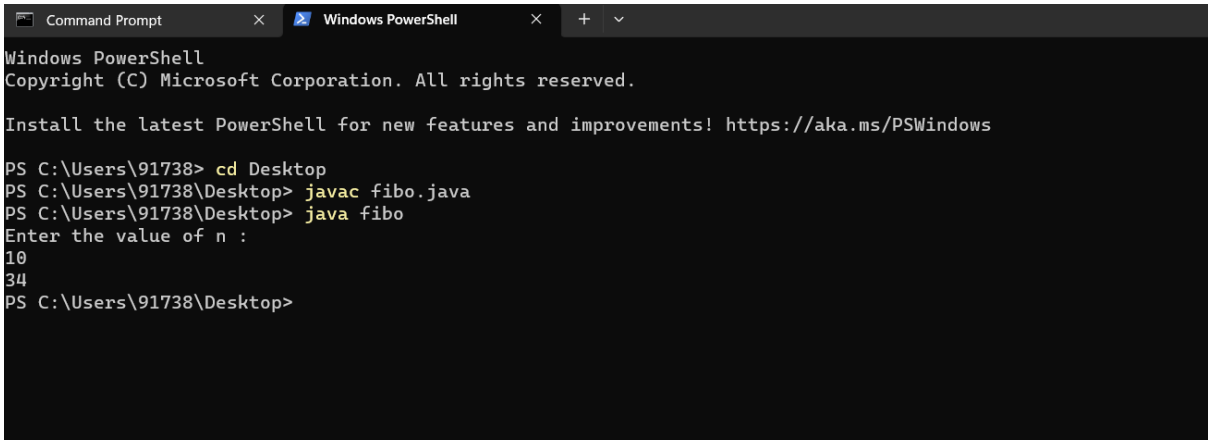
Output:



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));
         }
}
```

Output:



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]+" ");
        }
    }
}
```

Output: