CSA0979 Java programming

Assignment 3

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```
import java.util.*;
public class Main
{
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");
}
}
```

Output:

Main.java

```java
import java.util.*;
public class Main
{
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
```

2)

Array Index out of Bounds

Program

```
import java.util.*;

public class Main {

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");
}
}
```

Output:

Main.java

```
1  import java.util.*;
2  public class Main {
3  public static void main(String[] args) {
4   try{
5   int a[]=new int[5];
6   System.out.println(a[10]);
7   }
8   catch(ArithmeticException e)
9   {
10  System.out.println("Arithmetic Exception occurs");
11  }
12  catch(ArrayIndexOutOfBoundsException e)
13  {
14  System.out.println("ArrayIndexOutOfBounds Exception occurs");
15  }
16  catch(Exception e)
17  {
18  System.out.println("Parent Exception occurs");
19  }
20  System.out.println("rest of the code");
21 }
22 }
```

```
ArrayIndexOutOfBounds Exception occurs
rest of the code
```

3) Null pointer Exception

Program

```
import java.io.*;
class Main
```

```
{
public static void main (String[] args)
{
String ptr = null;
try
{
if (ptr.equals("gfg"))
System.out.print("Same");
else
System.out.print("Not Same");
}
catch(NullPointerException e)
{
System.out.print("NullPointerException Caught");
}
}
}
```

Output:

Main.java

```java
import java.io.*;
class Main
{
public static void main (String[] args)
{
String ptr = null;
try
{
if (ptr.equals("gfg"))
System.out.print("Same");
else
System.out.print("Not Same");
}
catch(NullPointerException e)
{
System.out.print("NullPointerException Caught");
}
}
}
```

```
NullPointerException Caught

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

Program-2

```
import java.util.*;

class Main

{

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();
}
}
```

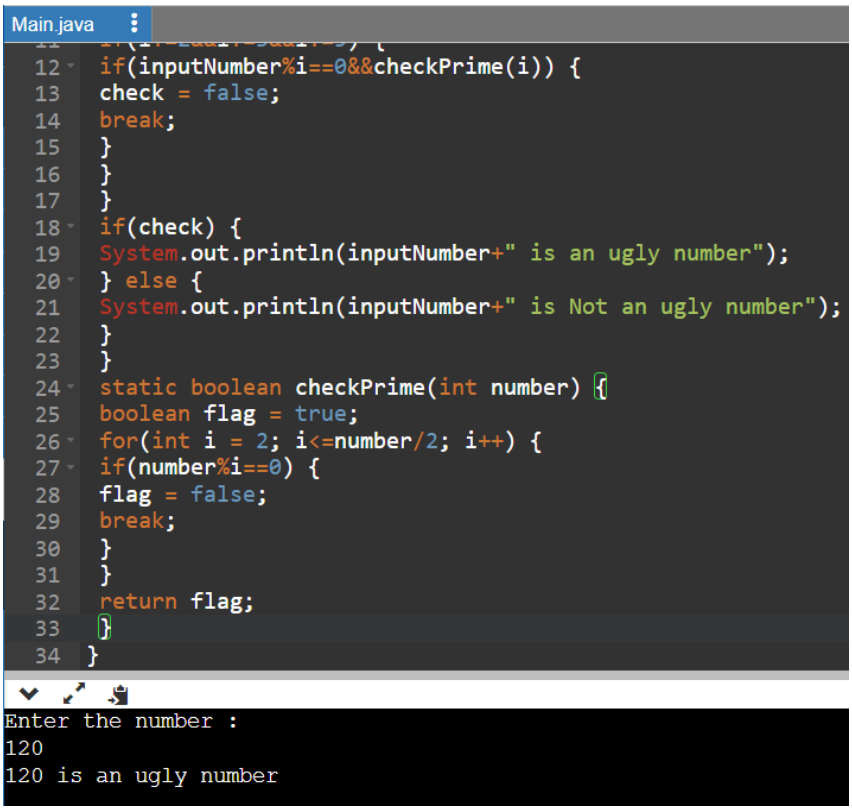
Program-3

```
import java.util.*;
import java.io.*;
public class Main {
 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:

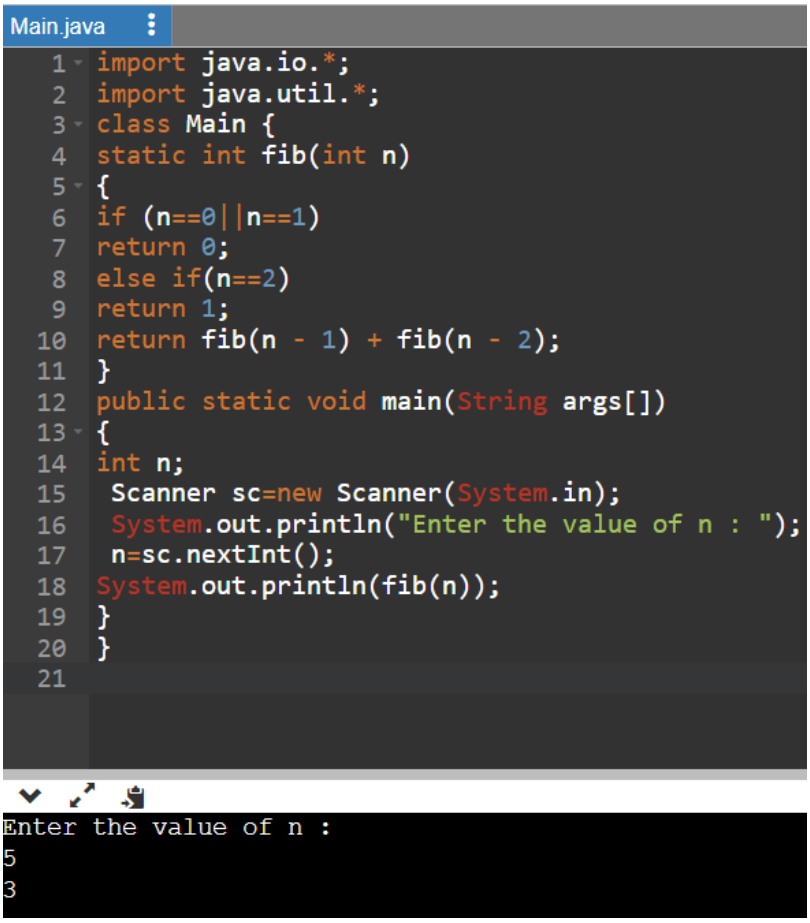


Program-4

```
import java.io.*;
import java.util.*;
class Main {
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 Main {
 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:

Main.java

```java
import java.io.*;
import java.util.*;
class Main {
 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++) {
```

```
10 20 30 40 50
```