1. Find out the number of days in between two given dates ?

```java
package javaTest;

import java.text.SimpleDateFormat;
import java.util.Calendar;
import java.util.Date;
import java.util.GregorianCalendar;

public class DaysBetweentwoDates {

        public static void main(String[] args) {
                Date Todaydate = new Date();
                System.out.println("Today Date and time  : "+Todaydate.toString());

                Calendar date1 = new GregorianCalendar();
                Calendar date2 = new GregorianCalendar();
                SimpleDateFormat FT = new SimpleDateFormat("dd/MM/yyyy");
                date1.set(2016, 4, 22);
                date2.set(2016, 9, 15);
                System.out.println("Start Date : " +FT.format(date1.getTime()));
                System.out.println("End  Date : " +FT.format(date2.getTime()));
System.out.println("\nDays gap is : " +daysBetween(date1.getTime(),date2.getTime()));

        }

        static int daysBetween(java.util.Date Dt1 , java.util.Date Dt2)  {
                return(int) ((Dt2.getTime()-Dt1.getTime())/(1000*60*60*24));
        }
}
```
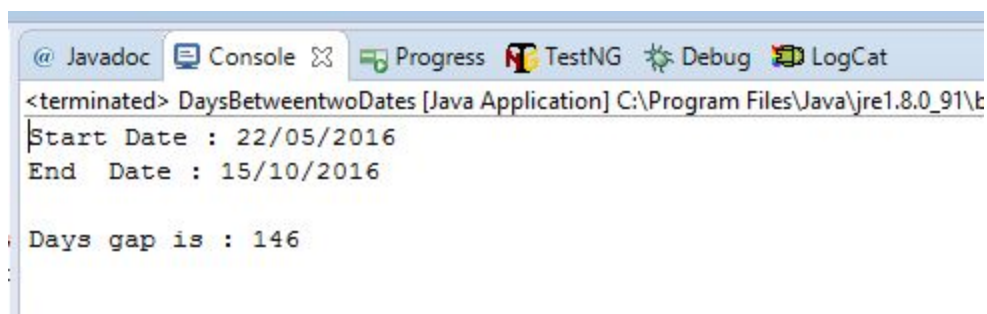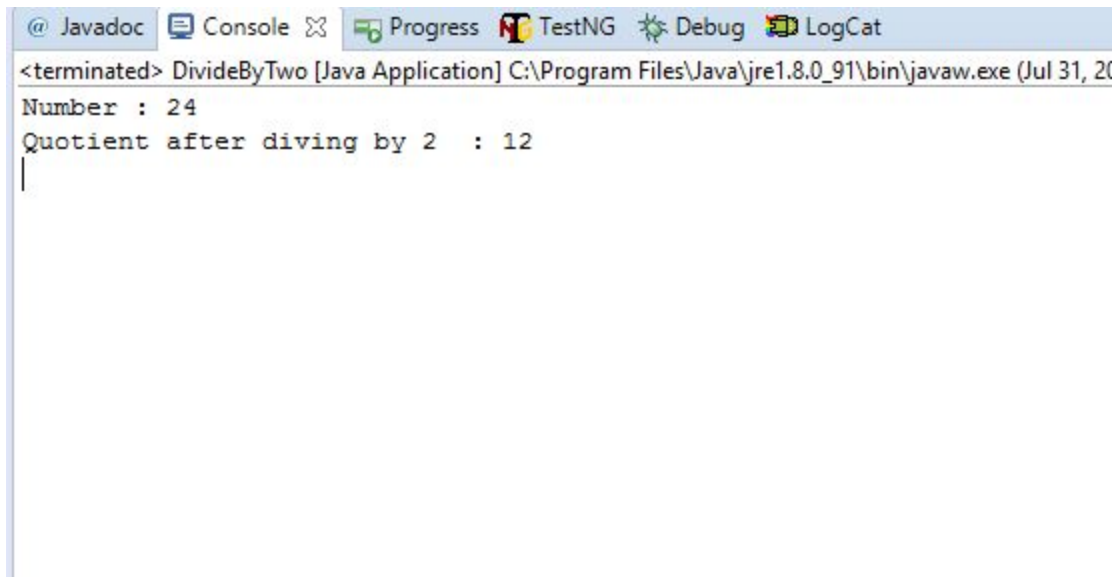
```
@ Javadoc    Console ⊠    Progress   TestNG   Debug   LogCat
<terminated> DaysBetweentwoDates [Java Application] C:\Program Files\Java\jre1.8.0_91\b
Start Date : 22/05/2016
End  Date : 15/10/2016

Days gap is : 146
```

2. How to divide a number by 2 without using / operator?

```
package javaTest;
public class DivideByTwo {
        public static void main(String[] args) {
                int num = 24;
                System.out.println("Number : " +num);
                int answer = divideByTwo(num);
                System.out.println("Quotient  :" +answer);
        }

        public static int divideByTwo(int num){
                return(num >> 1);
        }
}
```
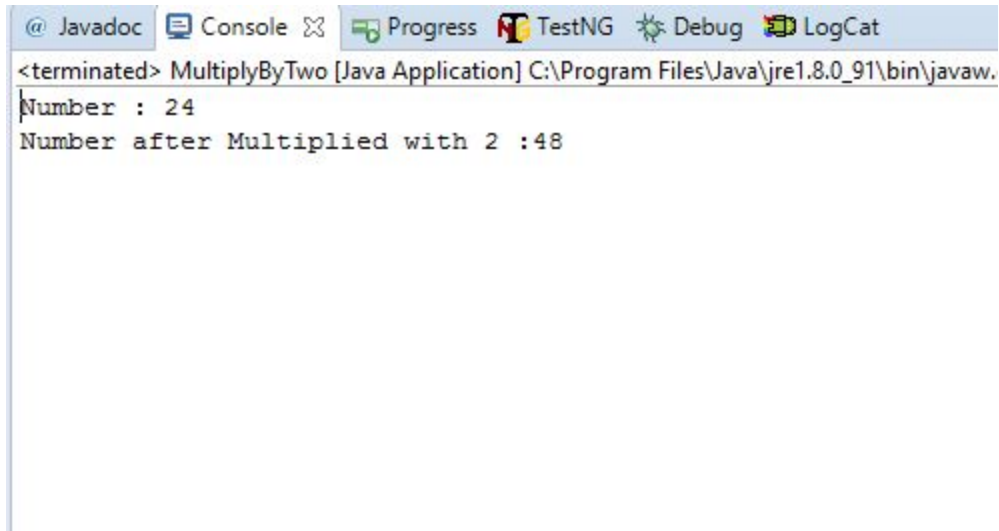
@ Javadoc ☐ Console ⊠ ☐ Progress ☐ TestNG ☀ Debug ☐ LogCat

\<terminated\> DivideByTwo [Java Application] C:\Program Files\Java\jre1.8.0_91\bin\javaw.exe (Jul 31, 20

```
Number : 24
Quotient after diving by 2  : 12
```

3. How to multiply a number by 2 without using * operator?

```java
package javaTest;
public class MultiplyByTwo {
        public static void main(String[] args) {
                int num = 24;
                System.out.println("Number : " +num);
            int answer = multiplyByTwo(num);
            System.out.println("Number after Multiplied with 2 :" +answer );
        }
        public static int multiplyByTwo(int num) {
                return (num << 1);
        }
}
```
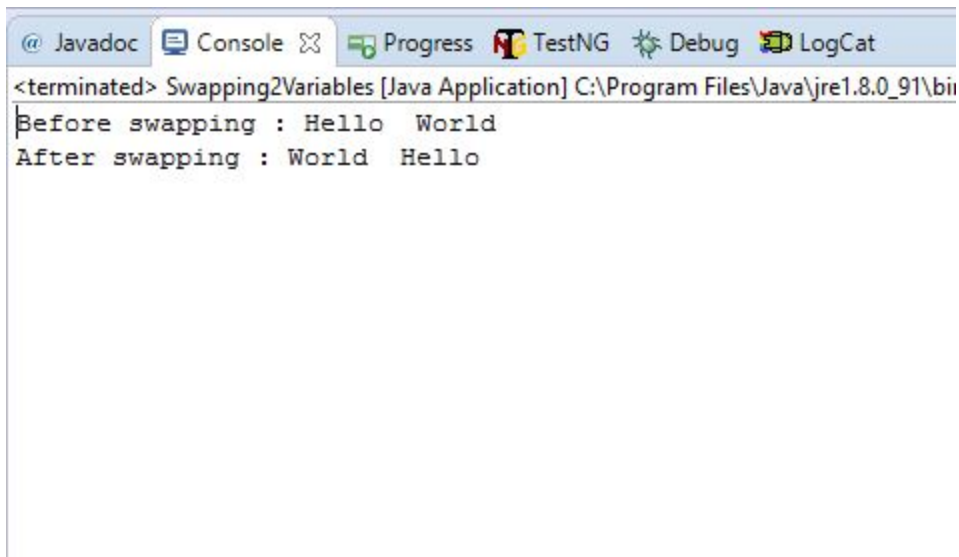
@ Javadoc 🖥 Console ⌘ 🗒 Progress 🔴 TestNG ⚙ Debug 🔵 LogCat

<terminated> MultiplyByTwo [Java Application] C:\Program Files\Java\jre1.8.0_91\bin\javaw.

```
Number : 24
Number after Multiplied with 2 :48
```

4. How to swap two variables, by using pass by reference method ?

```
package javaTest;
public class Swapping2Variables {
        public static void main(String[] args) {
                String a[] = {"Hello","World"};
                System.out.println("Before swapping : " +a[0] + "  " +a[1]);
                swap(a);
                System.out.println("After swapping : " + a[0] +"  " + a[1]);
        }
        static void swap(String[] a){
                String temp = a[0];
                a[0] = a[1];
                a[1] = temp;
        }
}
```

@ Javadoc 🖳 Console ⊠ 🔲 Progress 🔵 TestNG ✳ Debug 🔟 LogCat

\<terminated\> Swapping2Variables [Java Application] C:\Program Files\Java\jre1.8.0_91\bi

```
Before swapping : Hello  World
After swapping : World  Hello
```

5. How to make a list immutable?

```
package javaTest;
import java.util.ArrayList;
import java.util.Collection;
import java.util.Collections;
import java.util.List;
public class ImmutableList {
        public static void main(String[] args) {
                List<Character> list = new ArrayList<Character>();
                list.add('X');
                list.add('Y');
                list.add('Z');
                list.add('P');
                System.out.print("Mutable list before adding : "+list);
                list.set(1, 'A');
                list.add('Q');
                list.add('R');
                System.out.println();
                System.out.print("Mutable List after Adding : ");
                for(char j : list){
                        System.out.print(j +" ");
                        }
                System.out.println();
                Collection<Character> immutableCol = Collections.unmodifiableCollection(list);
//              immutableCol.add('B'); -- will show error -- cannot add , cannot modify
                System.out.println("Immutable list : "+immutableCol);
        }
}
```

@ Javadoc ☐ Console ⊠ ⊟ Progress ☀ TestNG ☀ Debug ☐ LogCat

<terminated> ImmutableList [Java Application] C:\Program Files\Java\jre1.8.0_91\bin\javaw

```
Mutable list before adding : [X, Y, Z, P]
Mutable List after Adding : X A Z P Q R
Immutable list : [X, A, Z, P, Q, R]
```

7. Write a program to implement ArrayList and Linked list

```java
package javaTest;
import java.util.ArrayList;
import java.util.LinkedList;
public class LinkedListAndArrayList {
        public static void main(String[] args) {
                    ArrayList<String> obj = new ArrayList<String>();
                     obj.add("Pranav");
                     obj.add("pallavi");
                     obj.add("Sai");
                     obj.add("Bharath");
                     obj.add("Eesha");
                     System.out.println("Currently the array list has following elements:"+obj);
                     obj.add(0, "Anika");
                     obj.add(1, "Sahana");
                     obj.remove("Eesha");
                     obj.remove("Anika");
                     System.out.println("Current array list is:"+obj);
                     obj.remove(1);
                     System.out.println("Current array list is:"+obj);
            System.out.println("\n\nLinkedList example  ");
            LinkedList<String> ll = new LinkedList<String>();
                ll.add("Pranav");
                ll.add("Apple");
    ll.add("Grape");
    ll.add("Banana");
    System.out.println(ll);
    System.out.println("Size of the linked list: "+ll.size());
    System.out.println("Is LinkedList empty? "+ll.isEmpty());
    System.out.println("Does LinkedList contains 'Grape'? "+ll.contains("Grape"));
}      }
```

@ Javadoc | Console ⌷ | ⊟⊟ Progress | TestNG | Debug | LogCat   ▣ ✗ ✗ | ▤ ▦

<terminated> LinkedListAndArrayList [Java Application] C:\Program Files\Java\jre1.8.0_91\bin\javaw.exe (Jul 31, 2016, 11:20:01 PM)

```
Currently the array list has following elements:[Pranav, pallavi, Sai, Bharath, Eesha]
Current array list is:[Sahana, Pranav, pallavi, Sai, Bharath]
Current array list is:[Sahana, pallavi, Sai, Bharath]


LinkedList example
[Pranav, Apple, Grape, Banana]
Size of the linked list: 4
Is LinkedList empty? false
Does LinkedList contains 'Grape'? true
```

8. Write a program for Insertion Sort in java.

```java
package javaTest;
public class InsertionSort {
        public static void main(String[] args) {
                int [] input = {2,5,8,7,4,2,1};
//              printNumbers(input);
                insertionSort(input);
    }
        public static void printNumbers(int[] input){
    //   System.out.println("Array : ");
                for(int i=0;i<input.length;i++){
                        System.out.print(input[i]+" , ");
                }
                System.out.println("\n");
        }
        public static void insertionSort(int array[]){
                for(int j=1;j<array.length;j++){
                        int key = array[j];
//              System.out.println("Key : " +key);
                        int i=j-1;
//              System.out.println("i : "+i);

                        while((i > -1) && (array[i] > key) ){
                                array[i+1] =array[i];
                                i - - ;
                                }

                        array[i+1] = key;
                        printNumbers(array) ;
                }
                }
        }
```

```
@ Javadoc  🖵 Console ⌗   🔁 Progress  🅝 TestNG  🔆 Debu
<terminated> InsertionSort [Java Application] C:\Program Files\Jav
Array before InsertionSort :
2 , 5 , 8 , 7 , 4 , 2 , 1 ,

Array after InsertionSort
2 , 5 , 8 , 7 , 4 , 2 , 1 ,

2 , 5 , 8 , 7 , 4 , 2 , 1 ,

2 , 5 , 7 , 8 , 4 , 2 , 1 ,

2 , 4 , 5 , 7 , 8 , 2 , 1 ,

2 , 2 , 4 , 5 , 7 , 8 , 1 ,

1 , 2 , 2 , 4 , 5 , 7 , 8 ,
```

9. Write a program to get distinct word list from the given file.
package javaTest;

import java.util.ArrayList;
import java.util.List;
import java.util.Scanner;

 public class DistinctWordFromFile {

        public static void main(String[] args) {
                String str;
                System.out.println("Enter the String : ");
                Scanner sc =new Scanner(System.in);
                str = sc.nextLine();
                System.out.println("your String : "+str);
                        String[] arr = str.split(" ");
                        System.out.println("Array without Duplicates : ");
                        List<String> arrList = new ArrayList<String>();
         //   System.out.println("arrList : " +arrList);
                        int count= 0;
                        for(int i=0;i<arr.length;i++)   {

```java
                for(int j=i+1;j<arr.length;j++)  {
        //          System.out.println(arr[i]+" "+arr[j]);
                    if(arr[i].equals(arr[j]))  {
                            count+=1;
                            //System.out.println(count);
                    }
                }
            if(count<1)      {
                    arrList.add(arr[i]);
        //          System.out.println("arrList : " +arrList);
                    }
            count=0;
            } for(int k=0;k<arrList.size();k++)   {
                    System.out.print(arrList.get(k)+"  ");
                    }
        sc.close();


                }
        }
```

11. Write a program to remove duplicates from sorted array

```java
package javaTest;
public class RemoveDuplicatesSortedArray{
	public static void main(String[] args) {
		int[] array={3,3,9,7,3,7,1,7,8};
		System.out.print("Array  : ");
		for ( int i = 0; i< array.length; i++){
			System.out.print(array[i] + " ");
		}
		int temp;
		for( int i=0;i<array.length;i++){
			for(int j=i+1;j<array.length;j++){
			if(array[i] > array[j]){
				temp = array[j];
				array[j] = array[i];
				array[i] = temp;
}
			}
		}
		System.out.println("\nUnique numbers in Array : ");
		int i,j;
		for(i=0;i<array.length;i++){
				for(j=i+1;j<array.length;j++)
				 if (array[i] == array[j])   {
				array[i]=-1;
				}
					}
		for(i=0;i<array.length;i++){
			if(array[i] != -1){
				System.out.print(array[i] +" ");
			}
		}
			}
		}
```

```
<terminated> RemoveDuplicatesSortedArray [Java Application] C:\Program Files\Java\jre1.
Array   : 3 3 9 7 3 7 1 7 8
Unique numbers in Array :
1 3 7 8 9
```
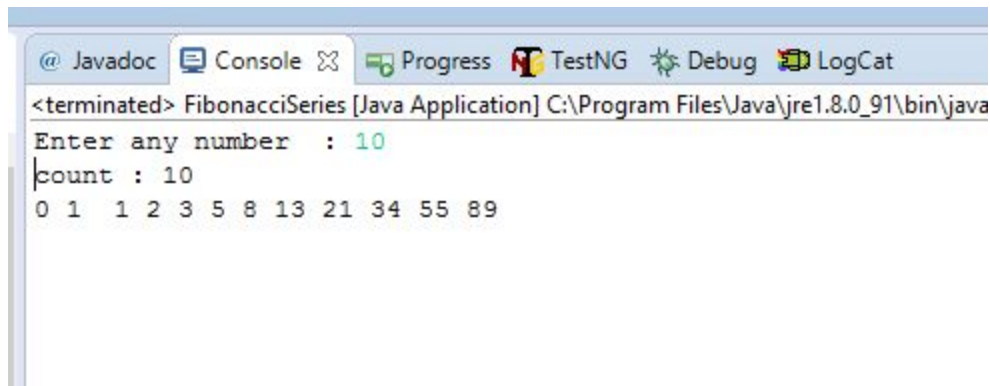
12. Write a program to print fibonacci series.

```java
package javaTest;

import java.util.Scanner;

public class FibonacciSeries {
public static void main(String[] args) {
    int num1=0;
    int num2=1;
    int num3;
     Scanner sc = new Scanner(System.in);
    System.out.print("Enter any number  : ");
    int n = sc.nextInt();
     System.out.println("count : " + n);
     if (n == 0) {
        System.out.println("0");
     } else if (n == 1) {
        System.out.println("0 1");
     } else {
        System.out.print("0 1 ");
     }
    for(int i=0;i<n;i++) {
        num3 = num1 + num2;
        System.out.print(" " +num3);
        num1= num2 ;
        num2 = num3;
     }
      sc.close();

        }
}
```
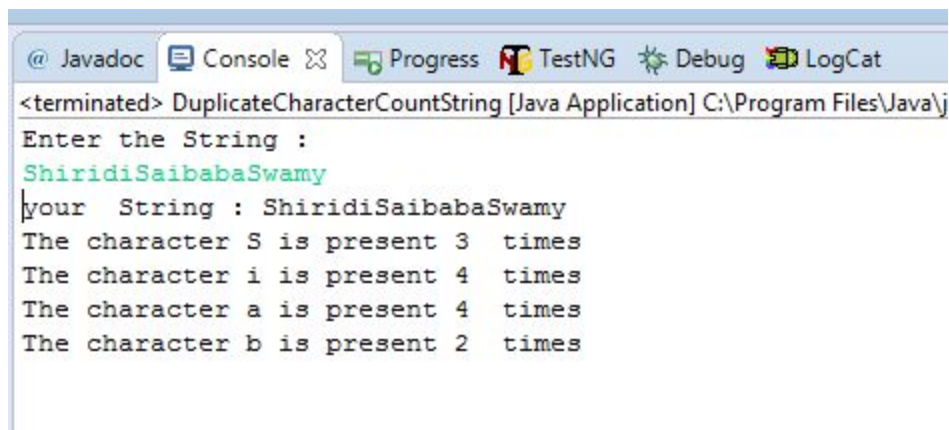
13. Write a program to find out duplicate characters in a string

```java
package javaTest;
import java.util.Scanner;
public class DuplicateCharacterCountString {
        public static void main(String[] args) {
                // https://www.youtube.com/watch?v=xQ-df8uVCA4
                String str;
                System.out.println("Enter the String : ");
                Scanner sc =new Scanner(System.in);
                str = sc.nextLine();
                System.out.println("your  String : "+str);
                char[] c = str.toCharArray();
                int i,j,count;
                for(i=0;i<c.length;i++){
                        count = 0;
                        for(j=0;j<c.length;j++)  {
                                if(j<i && c[i] == c[j])  {
                                        break;
                                }  if (c[j] == c[i])  {
                                        Count++;                                   }
                                if(j ==( c.length-1) && (count>1)) {
            System.out.println("The character " +c[i] +" is present " + count + "  times");
                                }
                        } // end of j loop
                }//end of i loop
                sc.close();
        }
}
```

\<terminated\> DuplicateCharacterCountString [Java Application] C:\Program Files\Java\j

```
Enter the String :
ShiridiSaibabaSwamy
your  String : ShiridiSaibabaSwamy
The character S is present 3  times
The character i is present 4  times
The character a is present 4  times
The character b is present 2  times
```

14. Write a program to create deadlock between two threads

```java
package javaTest;
public class DeadLockTwoTheads {

    String str1 = "Java";
    String str2 = "UNIX";

    Thread trd1 = new Thread("My Thread 1"){
        public void run(){
            while(true){
                synchronized(str1){
                    synchronized(str2){
                        System.out.println(str1 +"  "+ str2);
                    }
                }
            }
        }
    };

    Thread trd2 = new Thread("My Thread 2"){
        public void run(){
            while(true){
                synchronized(str2){
                    synchronized(str1){
                        System.out.println(str2 +"  "+ str1);
                    }
                }
            }
        }
```

```java
        }
    };

    public static void main(String a[]){
        DeadLockTwoTheads mdl = new DeadLockTwoTheads();
        mdl.trd1.start();
        mdl.trd2.start();

    }
}
```

package javaTest;

//15. Find out middle index where sum of both ends are equal

public class MiddleIndex {

```java
        public static int findMiddleIndexMethod(int[] intArray){

        int sumArray = 0;

        int leftSumArray=0;

        for (int i=0; i<intArray.length;i++){

        sumArray+=intArray[i];

        }

         for (int j=0; j<intArray.length; j++){

        sumArray=sumArray-intArray[j];

         if (leftSumArray==sumArray){

        return j;

        }

        leftSumArray+=intArray[j];

        }
```

```
            return -1;

        }

        public static void main(String[] args) {

        int[] Array = {1, 5, 8, 7, 8, 1, 5};

        int middle = findMiddleIndexMethod(Array);

        System.out.print("Middle index of the array when both ends sums equal:
"+Array[middle]);

        }

    }
```
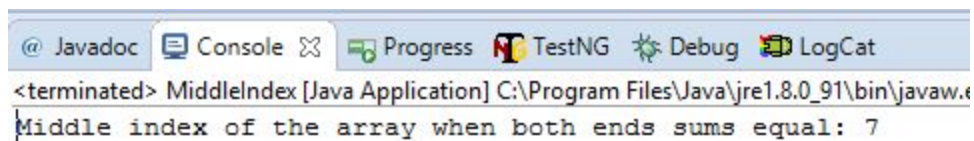
16. Write a program to find the given number is Armstrong number or not?

```
package javaTest;

class ArmstrongNumber{
        public static void main(String[] args)  {
          int c=0,a,temp;
          int n=153;
          System.out.println("your number : " +n);
          temp=n;
          while(n>0)
          {
          a=n%10;
          System.out.println("a : " +a);
```
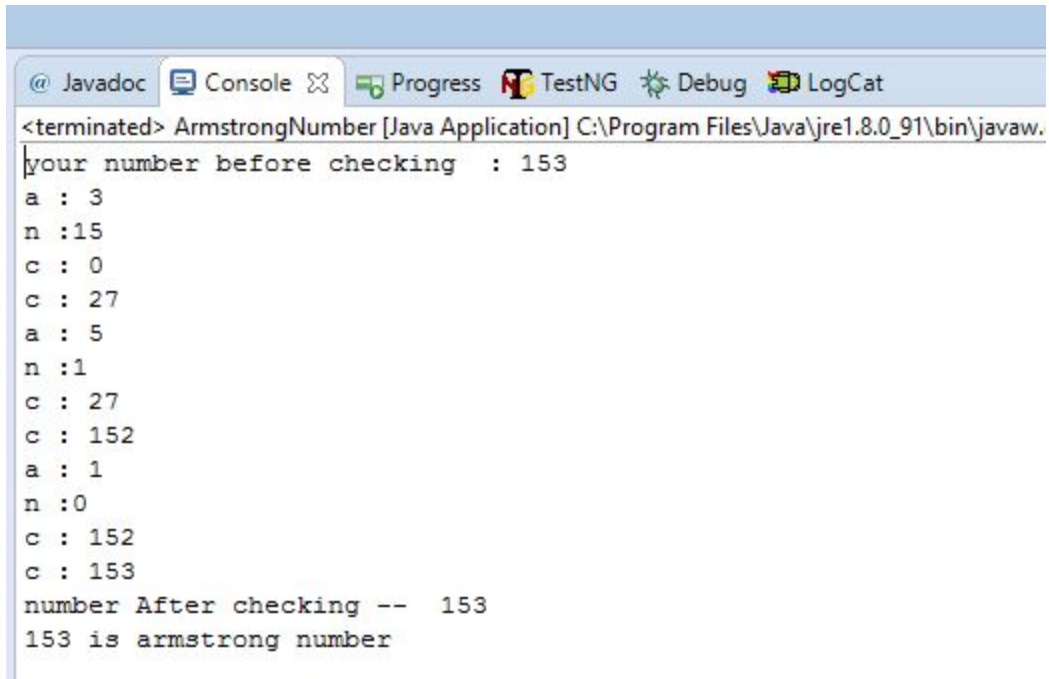
```java
        n=n/10;
        System.out.println("n :" +n);
        System.out.println("c : " +c);
        c=c+(a*a*a);
        System.out.println("c : " +c);
        }
        System.out.println("number After checking : " +c+" -- " +temp);
        if(temp==c)
        System.out.println(temp+" is armstrong number");
        else
            System.out.println("Not armstrong number");
      }
    }
```

```
your number before checking  : 153
a : 3
n :15
c : 0
c : 27
a : 5
n :1
c : 27
c : 152
a : 1
n :0
c : 152
c : 153
number After checking --  153
153 is armstrong number
```