

# Assignment – 5

## Basic Java Programs

Vishwas Cp

Engineering Intern

Tecnotree Mysore

### 1. Write a program to swap two numbers in Java.

<https://codeshare.io/OdEzvv>

The screenshot shows a Java development environment with the following details:

- Code Editor:** The file `swapnum.java` is open. The code implements a simple swap operation using temporary variables `a` and `b`. It prints the initial values, swaps them, and then prints the swapped values.
- Console Output:** The output window shows the execution of the program. It prints "First Number = 50", "Second number = 70", "After swapping...", "First number = 70", and "Second number = 50".

```
1 swapnum.java ×
1  /* Program to swap two numbers */
2
3
4 package javatraining;
5
6 public class swapnum {
7
8     public static void main(String[] args) {
9         // TODO Auto-generated method stub
10        int a=50,b=70;
11        System.out.println("First Number = "+a);
12        System.out.println("Second number = "+b);
13
14        a=a+b;
15        b=a-b;
16        a=a-b;
17
18        System.out.println("After swapping...");
19        System.out.println("First number = "+a);
20        System.out.println("Second number = "+b);
21
22    }
23
24 }
25
```

Console

```
<terminated> swapnum [Java Application] C:\Program Files\Java\jdk-19\bin\javaw.exe (27-Feb-2023, 8:11:51 pm – 8:11:52 pm) [pid: 4168]
First Number = 50
Second number = 70
After swapping...
First number = 70
Second number = 50
```

## 2. Write a program to print all the elements of the Fibonacci series.

<https://codeshare.io/6pkgy0>

The screenshot shows an IDE interface with a code editor and a terminal window. The code editor contains a Java file named 'fibonacci.java' with the following content:

```
1 /* program to print all the elements of the Fibonacci series. */
2
3 package javatraining;
4
5 public class fibonacci {
6
7     public static void main(String[] args) {
8         // TODO Auto-generated method stub
9         int num=20;
10        int a=0,b=1;
11        System.out.print(a+" "+b+",");
12        int temp;
13        for(int i=2;i<num;i++) {
14            temp=a+b;
15            a=b;
16            b=temp;
17            System.out.print(temp+",");
18        }
19    }
20
21 }
```

The terminal window below shows the output of the program:

```
<terminated> fibonacci [Java Application] C:\Program Files\Java\jdk-19\bin\javaw.exe (27-Feb-2023, 8:13:51 pm – 8:13:51 pm) [pid: 8348]
0,1,1,2,3,5,8,13,21,34,55,89,144,233,377,610,987,1597,2584,4181,
```

## 3. Check if a given number is palindrome or not.

<https://codeshare.io/9OLZ91>

The screenshot shows an IDE interface with a code editor and a terminal window. The code editor contains a Java file named 'palindrome.java' with the following content:

```
1 /* Check if a given number is palindrome or not. */
2
3 package javatraining;
4
5 public class palindrome {
6
7     public static void main(String[] args) {
8         // TODO Auto-generated method stub
9         int num=2021,rev=0,rem,temp;
10        temp=num;
11        while(temp!=0) {
12            rem=temp%10;
13            rev=rev*10+rem;
14            temp/=10;
15        };
16        if(num==rev) {
17            System.out.println(num+" Is Palindrome");
18        }
19        else
20            System.out.println(num+" Not Palindrome");
21    }
22 }
23 }
```

The terminal window below shows the output of the program:

```
<terminated> palindrome [Java Application] C:\Program Files\Java\jdk-19\bin\javaw.exe (27-Feb-2023, 8:15:40 pm – 8:15:40 pm) [pid: 17556]
2021 Not Palindrome
```

#### 4. Write a program to find whether a number is an Armstrong number or not.

<https://codeshare.io/N3pOM4>

The screenshot shows a Java code editor with a file named 'armstrong.java'. The code is as follows:

```
1 /* program to find whether a number is an Armstrong number or not.*/
2
3 package javatraining;
4 import java.util.Scanner;
5
6 public class armstrong {
7
8     public static void main(String[] args) {
9         // TODO Auto-generated method stub
10
11         Scanner scanner = new Scanner(System.in);
12         System.out.print("Enter a number: ");
13         int num = scanner.nextInt();
14         scanner.close();
15
16         int sum = 0;
17         int temp = num;
18
19         while (temp > 0) {
20             int digit = temp % 10;
21             sum += (digit * digit * digit);
22             temp /= 10;
23         }
24
25         if (num == sum) {
26             System.out.println(num + " is an Armstrong number.");
27         }
28     }
29 }
```

Below the code editor is a terminal window titled 'Console' showing the output of the program:

```
<terminated> armstrong [Java Application] C:\Program Files\Java\jdk-19\bin\javaw.exe (27-Feb-2023, 8:17:15 pm – 8:17:22 pm) [pid: 10024]
Enter a number: 153
153 is an Armstrong number.
```

#### 5. Find the GCD of two numbers.

<https://codeshare.io/1Y8v4z>

The screenshot shows a Java code editor with a file named 'GCD.java'. The code is as follows:

```
1 /* Find the GCD of two numbers.*/
2
3 package javatraining;
4
5 public class GCD {
6
7     public static void main(String[] args) {
8         // TODO Auto-generated method stub
9         int n1=200,n2=50;
10        while(n1!=n2) {
11            if(n1>n2)
12                n1-=n2;
13            else
14                n2-=n1;
15        }
16        System.out.println("The GCD of two number is: "+n1);
17    }
18 }
19
20 }
```

Below the code editor is a terminal window titled 'Console' showing the output of the program:

```
<terminated> GCD [Java Application] C:\Program Files\Java\jdk-19\bin\javaw.exe (27-Feb-2023, 8:19:20 pm – 8:19:20 pm) [pid: 2868]
The GCD of two number is: 50
```

## 6. Write a program to find the sum of n natural numbers.

<https://codeshare.io/ZJEjMX>

The screenshot shows an IDE interface with a code editor and a terminal window. The code editor contains a Java file named 'sumofnnatural.java' with the following content:

```
1 /* program to find the sum of n natural numbers.*/
2
3 package javatraining;
4
5 public class sumofnnatural {
6
7     public static void main(String[] args) {
8         // TODO Auto-generated method stub
9         int n=30,sum=0;
10
11        for(int i=1;i<=n;i++) {
12            sum+=i;
13
14        }
15        System.out.print("The sum of n natural number "+n+" is: "+sum);
16
17    }
18
19 }
20
```

The terminal window below shows the output of running the program:

```
<terminated> sumofnnatural [Java Application] C:\Program Files\Java\jdk-19\bin\javaw.exe (27-Feb-2023, 8:22:07 pm – 8:22:08 pm) [pid: 8836]
The sum of n natural number 30 is: 465
```

## 7. Write a program to find the lcm of two numbers.

<https://codeshare.io/EBE3LO>

The screenshot shows an IDE interface with a code editor and a terminal window. The code editor contains a Java file named 'LCM.java' with the following content:

```
1 /*program to find the lcm of two numbers.*/
2
3 package javatraining;
4
5 public class LCM {
6
7     public static void main(String[] args) {
8         // TODO Auto-generated method stub
9         int num1=12,num2=14,hcf=1;
10        for(int i=1;i<=num1||i<=num2;i++) {
11            if(num1%i==0 && num2%i==0)
12                hcf=i;
13        }
14        int lcm=(num1*num2)/hcf;
15        System.out.println("The LCM of "+num1+" and "+num2+" is: "+lcm);
16
17    }
18
19 }
20
```

The terminal window below shows the output of running the program:

```
<terminated> LCM [Java Application] C:\Program Files\Java\jdk-19\bin\javaw.exe (27-Feb-2023, 8:23:56 pm – 8:23:57 pm) [pid: 20692]
The LCM of 12 and 14 is: 84
```

## 8.Calculate the sum of digits of a given number.

<https://codeshare.io/RbvwmJ>

The screenshot shows a Java code editor with the file 'sumofdigits.java' open. The code calculates the sum of digits of a given number. The console tab shows the output: 'Sum of Digits 123456789 is: 45'. The code uses a while loop to extract digits from the number and adds them to a sum variable.

```
1 /*Calculate the sum of digits of a given number.*/
2
3 package javatraining;
4
5 public class sumofdigits {
6
7     public static void main(String[] args) {
8         // TODO Auto-generated method stub
9         int n=123456789, sum=0;
10        int n1=n;
11        while(n1!=0) {
12            sum+=n1%10;
13            n1=n1/10;
14        }
15        System.out.println("Sum of Digits "+n+" is: "+sum);
16    }
17 }
18
19 }
20
```

Console x Problems x Debug Shell  
<terminated> sumofdigits [Java Application] C:\Program Files\Java\jdk-19\bin\javaw.exe (27-Feb-2023, 8:28:45 pm – 8:28:45 pm) [pid: 15328]  
Sum of Digits 123456789 is: 45

## 9.Write a program to reverse a string.

<https://codeshare.io/vwjzqy>

The screenshot shows a Java code editor with the file 'reverseestring.java' open. The code reverses a string named 'vishwas'. The console tab shows the output: 'Before Reverse: vishwas' and 'After Reverse: sawhsiv'. The code uses a StringBuilder to reverse the string.

```
1 /*Write a program to reverse a string.*/
2
3 package javatraining;
4
5 public class reverseestring {
6
7     public static void main(String[] args) {
8         // TODO Auto-generated method stub
9         String name="vishwas";
10        String rev=new StringBuilder(name).reverse().toString();
11        System.out.println("Before Reverse: "+name);
12        System.out.println("After Reverse: "+rev);
13    }
14
15 }
16
```

Console x Problems x Debug Shell  
<terminated> reverseestring [Java Application] C:\Program Files\Java\jdk-19\bin\javaw.exe (27-Feb-2023, 8:30:35 pm – 8:30:37 pm) [pid: 3176]  
Before Reverse: vishwas  
After Reverse: sawhsiv

## 10. Write a code to print all the first n prime numbers where n will be given as input.

<https://codeshare.io/K8E71P>

The screenshot shows a Java development environment with two tabs: 'primenumber.java' and 'Console'.

**primenumber.java:**

```
1 /*to print all the first n prime numbers where n will be given as input.*/
2
3 package javatraining;
4 import java.util.Scanner;
5
6 public class primenumber {
7
8
9     public static boolean isPrime(int num) {
10         /*
11             * Function to check if a number is prime
12             */
13         if (num < 2) {
14             return false;
15         }
16         for (int i = 2; i <= Math.sqrt(num); i++) {
17             if (num % i == 0) {
18                 return false;
19             }
20         }
21         return true;
22     }
23
24     public static void main(String[] args) {
25         Scanner scanner = new Scanner(System.in);
26         System.out.print("Enter the value of n: ");
27     }
28 }
```

**Console:**

```
<terminated> primenumber [Java Application] C:\Program Files\Java\jdk-19\bin\javaw.exe (27-Feb-2023, 8:32:12 pm – 8:32:25 pm) [pid: 12188]
Enter the value of n: 10
2 3 5 7 11 13 17 19 23 29
```