

Name- Rushali Kathode

Sem- 3rd

Branch- CSE

Subject- Software Lab-I

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## Program 1

### Q.1 Introduction of Java?

Ans -

Java was developed by James Gossling at Sun Microsystems - INC in the year 1991, later acquired by Oracle Corporation. It is a simple programming language. Java makes writing, compiling, and debugging programming easy. It helps to create reusable code and modular programs.

Java is a class-based, object-oriented programming language and is designed to have as few implementation dependencies as possible. A general-purpose programming language made for developers to write once run anywhere that is compiled Java code can run on all platforms that support Java. Java applications are compiled to byte code that can run on any Java Virtual Machine. The Syntax of Java is similar to C/C++.

Program 2

Q.2 WAP to print "Hello World"?

Ans -

// Your First Program

class HelloWorld {

    public static void main (String[] args)

        System.out.println ("Hello, World!");

}

Output

Hello, World!

Program 3

Q.3 Write a program to perform all arithmetic operations of 2 numbers taking input from user?

Ans:-

// Take a program to enter two numbers, and perform all arithmetic operations.

import java.util.Scanner;

public class Main  
{

public static void main (String [] args)  
{

Scanner in = new Scanner (System.in);  
System.out.println ("Enter any two positive integers  
numbers: ");

// Reading data using readLine

int p = in.nextInt();

int q = in.nextInt();

int sum, sub, mul, mod;

float div;

Sum = p + q ;

Sub = p - q ;

Mul = p \* q ;

Div = p / q ;

Mod = p % q ;

System.out.println (" \n SUM " + p + " + " + q + " = " +  
Sum );

System.out.println("DIFFERENCE "+p+" - "+q)  
" = " + Sub);

System.out.println("PRODUCT "+p+" \* "+q+" = "+  
Prod);

System.out.println("QUOTIENT "+p+" / "+q+" = "+  
Quot);

System.out.println("MODULUS "+p+" % "+q+" = "+  
mod);

3  
3

Output

Enter any two positive integer numbers:

5

8

$$\text{SUM} \quad 5+8=13$$

$$\text{DIFFERENCE} \quad 5-8=-3$$

$$\text{PRODUCT} \quad 5*8=40$$

$$\text{QUOTIENT} \quad 5/8=0.0$$

$$\text{MODULUS} \quad 5 \% 8=5$$

Program 4  
Wap to perform all arithmetic operation of 2  
numbers?

Ans-

public class Arithmetic.

public static void main(String args [])

```
int a = 10;
int b = 20;
int add = a+b;
int sub = a-b;
int mul = a*b;
int div = a/b;
int mod = a%b;
```

System.out.println("The Addition of a and b is "+add)

System.out.println("The Subtraction of a and b is "+  
"Sub")

System.out.println("The multiplication of a and b is "+  
"mul")

System.out.println("The Division of a and b is "+  
"div")

System.out.println("The Mod of a and b is "+mod)

3  
3

Output

The Addition of a and b is 30

The Subtraction of a and b is -10

The Multiplication of a and b is 200

The division of a and b is 0

The Mod of a and b is 10

2.5  
Ans

### Program-5

Q.S  
Delete a program to find the largest of the three numbers?

Ans

public class LargestNumberExample3

```
public static void main (String [] args)
```

```
int a = 40 , b = 78 , c = 19 ;
```

```
If (a >= b && a >= c)
```

System.out.println ("a+ " is the largest number");

```
else if (b >= a && b >= c)
```

System.out.println ("b+ " is the largest Number");

```
else
```

```
System.out.println ("c+ " is the largest Number");
```

```
}
```

```
}
```

Output

78 is the largest number.

Program 6

Ques -> Write a program to find the largest number of the three numbers using in-build function and taking inputs from user.

Ans -

```
import java.util.Scanner;  
public class LargestNumberExample
```

```
{  
    public static void main (String [] args)  
{
```

```
        int a,b,c, largest, temp;
```

```
        Scanner sc = new Scanner(System.in);
```

```
        System.out.println ("Enter the first number:");  
        a = sc.nextInt();
```

```
        System.out.println ("Enter the second number:");  
        b = sc.nextInt();
```

```
        System.out.println ("Enter the third number:");  
        c = sc.nextInt();
```

```
        temp = a > b ? a : b;
```

```
        largest = c > temp ? c : temp;
```

```
        System.out.println ("The largest number is :" + largest);  
    }
```

Output

Enter the first number:

23

Enter the second number:

11

Enter the third number:

67

Largest Number is : 67

Program +  
Ques - & Wrap up to find the smallest of the three numbers?

Ans -

public class SmallestInThree

{ public static void main (String[] args)

int a=20;

int b = 10;

int c = 30;

int smallest;

if (a < b)

if (c < a)

smallest = c;

else

{

smallest = a;

{

else

if (b < c)

{

smallest = b;

{

else

{

smallest = c<sub>0</sub>

{}

{}

System.out.println Csmallest + " is the smallest.")

{}

Output

10 is the smallest.

Program 8

Ques - Write a program to find the smallest of the three numbers using in-build function and taking input from user.

Ans -

```
import java.util.Scanner;  
public class SmallestNumberExample  
{  
    public static void main(String[] args)  
    {  
        int a, b, c, smallest, temp;  
    }  
}
```

```
Scanner sc = new Scanner(System.in);
```

```
System.out.println("Enter the first number: ");  
a = sc.nextInt();  
System.out.println("Enter the second number: ");  
b = sc.nextInt();  
System.out.println("Enter the third number: ");  
c = sc.nextInt();  
  
temp = a < b ? a : b;
```

```
smallest = c < temp ? c : temp;
```

```
System.out.println("The smallest number is " + smallest);  
? 
```

Output

Enter the first number:

23

Enter the second number:

11

Enter the third number:

67

The smallest number is: 11

### Programming

Ques-9  
Write to initialize a character and print whether it  
is uppercase, lowercase and special case?

Ans -

using namespace std;

void main()

class GFG

{

    static void check(char ch)

    {

        if (ch >= 'A' && ch <= 'Z')

            System.out.println("'\n" + ch + "'")

            is an Uppercase character");

    else if (ch >= 'a' && ch <= 'z')

        System.out.println("'\n" + ch + "'")

        is a LowerCase character");

    else

        System.out.println("'\n" + ch + "'")

        is not an alphabetic character");

    public static void main(String[] args)

    {

        char ch = 'A';

        check(ch);

        ch = 'a';

        check(ch);

ch = 'O'  
check ch  
3  
3

### Output

- A is an Uppercase character
- a is an Lowercase character
- O is not an alphabetic character

ज्ञान के लिए (दोषमुक्ति) = 0

+ सत्यमूर्ति?

संस्कारण. वात. फूलिंग ("Rash") और "fingertip" + "cold" और "Soreness" = (C - b - Squrt) / (2 \* a)

$$\text{FingerTip} = (C - b + \sqrt{b^2 - 4ac}) / (2 * a)$$

ज्ञान के लिए (दोषमुक्ति) = 0

द्रव्यमाण Squrt = Math. सॉर्ट (दोषमुक्ति)

$$\text{dravyamana} = (C * b) - (4 * a * C)$$

द्रव्यमाण c = 3c. नेप्टोन (C)

संस्कारण. वात. फूलिंग ("Enema") का वाला की c :: 0

द्रव्यमाण b = 3c. नेप्टोन (C)

संस्कारण. वात. फूलिंग ("Enema") का वाला की b :: 0

द्रव्यमाण a = 3c. नेप्टोन (C)

संस्कारण. वात. फूलिंग ("Enema") का वाला की a :: 0

संस्कारण CC = नेप्टोन (System, in)

द्रव्यमाण सत्यमूर्ति = 0, FingerTip = 0

फ़िल्मी सेटिंग वेड मॉड (स्ट्रिंग कॉड) [ ]

फ़िल्मी क्लास रेकॉर्डिंग वॉल एवं फ़िल्मिं  
इम्प्रेसर. जॉन. रही. संस्कारण

प्रोग्राम 10 उपर जो find सेटिंग की काम गिराने वाली अनुदानीक एक फ़िल्म है

पृष्ठ -

पृष्ठ -

System. cut. function ("Roots ::", + (b + sqrt(b<sup>2</sup> - 4\*a\*c)) / (2\*a), {x}])

} }

Output

Enter the value of a :: 15  
Enter the value of b :: 68

Enter the value of c :: 3

Roots are :: -0.6445555555555555 + 2.335 and -4.488777777777777

## Program 11

Ques-11 Write a conversion program decimal to binary taking input from user?

Ans-

import java.util.\*;  
class decimalBinary {  
}

public static void doDecToBinary(int n)  
{  
 int[] binaryNum = new int[1000];  
 int i = 0;

while (n > 0)  
 {  
 binaryNum[i] = n % 2;  
 n = n / 2;  
 i++;  
 }

for (int j = i - 1; j >= 0; j--)  
 System.out.print(binaryNum[j]);  
}

public static void main (String[] args)  
{  
 int n = 17;

System.out.println ("Decimal - " + n);  
 System.out.println ("Binary - " );  
 doDecToBinary (n);  
}

Output

Decimal - 17  
Binary - 10001

### Experiment No - 12

Program - 12  
WAP to conversion from Hexa to binary taking input  
from user?

```
import java.util.Scanner;
class Hexa_Binary
{
    Scanner Scan
    int num;
    void getVal()
    {
        System.out.println("Hexadecimal To Binary");
        Scan = new Scanner(System.in);
        System.out.println("\nEnter the number");
        num = Integer.parseInt(Scan.nextLine());
    }
    void convert()
    {
        String binary = Integer.toBinaryString(num);
        System.out.println("Binary value is." + binary);
    }
}
```

```
class MainClass
{
    public static void main (String args[])
    {
        Hexa_Binary obj = new Hexa_Binary();
        obj.getVal();
        obj.convert();
    }
}
```

Output:-

HexaDecimal to Binary

Enter the number:

20

Binary Value is: 100000

### Experiment No - 13

Program - 13

Ques-3  
WAP to conversion from Octal to binary taking  
Input from user?

import java.util.Scanner;

class OctalBinary

Scanner Scan;

int num;

void getVal()

System.out.println("Octal to Binary") ;

Scan = new Scanner(System.in) ;

System.out.print("Enter the number : ") ;

num = Integer.parseInt(Scan.nextLine()) ;

void convert()

String binary = Integer.toBinaryString(num) ;

String out.println ("Binary Value is : " + binary) ;

}

Class MainClass

public static void main (String args[])

OctalBinary obj = new OctalBinary() ;

obj.getVal() ;

obj.convert() ;

}

Output

Octal To Binary

Enter the number:

10

Binary Value is: 1000

## Experiment No-14

### Program-14

WAP to conversion from binary to decimal taking input from user.

```
import java.util.Scanner;
```

```
class BinaryToDecimal
```

```
{
```

```
    public static void main (String args [])
```

```
{
```

```
    Scanner input = new Scanner (System. in);
```

```
    System.out.print ("Enter a binary number: ");
```

```
    String binaryString = input.nextLine();
```

```
    System.out.println ("Output: " + Integer.parseInt  
        (binaryString, 2));
```

```
}
```

```
}
```

### Output

```
Enter a binary number: 1001
```

```
Output: 13
```

## Experiment No - 15

Program - 15

Ques - 15  
WAP to conversion from Binary to Octal taking Input from User?

```
import java.util.Scanner;  
class Binary_to_Octal  
{  
    Scanner Scan;  
    int num;  
    void getval()  
    {  
        System.out.println("Binary to Octal");  
        Scan = new Scanner(System.in);  
        System.out.print("Enter the number: ");  
        num = Integer.parseInt(Scan.nextLine());  
    }  
    void convert()  
    {  
        String Octal = Integer.toOctalString(num);  
        System.out.println("Octal Value is : " + Octal);  
    }  
}
```

```
Class Main - class  
{  
}
```

```
public static void main (String ... d)  
{  
    Binary_to_Octal Obj = new Binary_to_Octal();  
    Obj.getval();  
    Obj.convert();  
}
```

```
Binary - Octal Obj = new Binary_to_Octal();  
Obj.getval();  
Obj.convert();  
}
```

Output

Binary to Octal

Enter the number:

1010

Octal value is: 12

Program - 18

~~Ques. How to print a static string using class~~  
Ans - WAP to conversion from binary to hex taking input from user?

Ans -

```
import java.util.Scanner;
```

```
class Binary_Hex
```

```
{
```

```
    Scanner Scan;
```

```
    int num;
```

```
    void getval()
```

```
{
```

```
        System.out.println("Binary to HexaDecimal");
```

```
        Scan = new Scanner(System.in);
```

```
        System.out.println("Enter the number : ");
```

```
        num = Integer.parseInt(Scan.nextLine());
```

```
{
```

```
    void convert()
```

```
{
```

```
        String hex = Integer.toHexString(num);
```

```
        System.out.println("HexaDecimal value is : " + hex);
```

```
}
```

```
class Main_class
```

```
{
```

```
    public static void main (String ...)
```

```
{
```

```
        Binary_Hex Obj = new Binary_Hex();
```

```
        Obj.getvalue();
```

```
        Obj.convert();
```

```
}
```

Ques. No. 2  
Ques. No. 3

Date: \_\_\_\_\_  
Page No.: 20

HP

Date: \_\_\_\_\_  
Page No.: 31

### Output

### Binary to HexaDecimal

Enter the number:

1010

HexaDecimal Value is: a

bit  
byte  
memory  
calculator

## Experiment No-17

## Program - 17

Ques-17 WAP to print a table taking input from user?

⇒

```
import java.util.Scanner;
public class Multiplication_Table
```

```
    {
        public static void main(String[] args)
```

```
            Scanner S = new Scanner(System.in);
```

```
            System.out.println("Enter number:");
```

```
            int n = S.nextInt();
```

```
            for (int i = 1; i <= 10; i++)
```

```
                System.out.println(n + " * " + i + " = " + n * i);
```

Output

Enter number : 7

$7 * 1 = 7$

$7 * 2 = 14$

$7 * 3 = 21$

$7 * 4 = 28$

$7 * 5 = 35$

$7 * 6 = 42$

$7 * 7 = 49$

$7 * 8 = 56$

$7 * 9 = 63$

$7 * 10 = 70$

### Program-18

Ques-8 WAP to find Square root taking input from user

→ import java.util.Scanner;

public class FindSquareRootExample {

{

    public static void main (String [] args)

{

        System.out.print ("Enter a number: ") ;

        Scanner sc = new Scanner (System.in) ;

        int n = sc.nextInt () ;

        System.out.println ("The square root of " + n + " is : " +

            + SquareRoot (n)) ;

}

    public static double SquareRoot (int num)

{

        double t ;

        double Sqrroot = num / 2 ;

        do

        {

            t = Sqrroot ;

            Sqrroot = (t + (num / t)) / 2 ;

}

while ((t - Sqroot) != 0);  
return Sqroot;  
}  
}

### Output

Enter a number: 12

The square root of 12 is: 3.4641016151377544

## Program - 19

Wap to find Square root using inbuild function taking input from user?

Package MyPackage;

```
import java.util.Scanner;
```

```
public class SquareRoot
```

```
{
```

```
    public static void main (String [] args)
```

```
{
```

```
    Double num;
```

```
    Scanner sc = new Scanner (System.in);
```

```
    System.out.print ("Enter a number: ");
```

```
    num = sc.nextDouble();
```

```
    Double SquareRoot = Math.sqrt (num, 0.5);
```

```
    System.out.println ("The Square of a Given Number");
```

```
    +num + " = " + SquareRoot);
```

```
}
```

```
}
```

Output

Enter a number: 81

The Square of a Given Number 81.0 = 9.0

## Program-20

Que-20

Wap to generating Fibonacci Series taking input from user?

Aus

```
import java.util.Scanner;  
public class Fibonacci
```

{

```
    public static void main (String [] args)
```

```
        int n, a = 0, b = 0, c = 1;
```

```
        Scanner S = new Scanner (System. in);
```

```
        System.out.print ("Enter value of n : ");
```

```
        n = S.nextInt();
```

```
        System.out.print ("Fibonacci Series : ");
```

```
        for (int i = 1; i <= n; i++)
```

{

```
            a = b;
```

```
            b = c;
```

```
            c = a + b;
```

```
            System.out.print (a + " ");
```

}

Output

Enter value of n : 5

Fibonacci Series : 0 1 1 2 3