Question Based On





100 Java Programs

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1. Simple Java Program

```
class HelloWorld
{
   public static void main(String args[])
   {
      System.out.println("Hello World by Technolamror");
   }
}
```

2. Print Integer in java

```
class Integers {
  public static void main(String[] arguments) {
    int c; //declaring a variable

  /* Using for loop to repeat instruction execution */

  for (c = 1; c <= 10; c++) {
    System.out.println(c);
  }
}
</pre>
```

3. Command Line Argument in java

```
class Arguments {
  public static void main(String[] args) {
    for (String t: args) {
       System.out.println(t);
    }
  }
}
```



4. How to get Using input using Scanner Program in java

```
import java.util.Scanner;
class GetInputFromUser
  public static void main(String args[])
      int a;
      float b;
      String s;
      Scanner in = new Scanner(System.in);
      System.out.println("Enter a string");
      s = in.nextLine();
      System.out.println("You entered string "+s);
      System.out.println("Enter an integer");
      a = in.nextInt();
      System.out.println("You entered integer "+a);
      System.out.println("Enter a float");
     b = in.nextFloat();
      System.out.println("You entered float "+b);
```

5. How to convert Fahrenheit to Celsius Program in java

```
import java.util.*;

class FahrenheitToCelsius {
   public static void main(String[] args) {
      float temperatue;
      Scanner in = new Scanner(System.in);

      System.out.println("Enter temperatue in Fahrenheit");
      temperatue = in.nextInt();

      temperatue = ((temperatue - 32)*5)/9;

      System.out.println("Temperatue in Celsius = " + temperatue);
    }
}
```



6. How to swap 2 no using 3rd variable Program in <u>java</u>

```
import java.util.Scanner;

class SwapNumbers
{
    public static void main(String args[])
    {
        int x, y, temp;
        System.out.println("Enter x and y");
        Scanner in = new Scanner(System.in);

        x = in.nextInt();
        y = in.nextInt();

        System.out.println("Before Swapping\nx = "+x+"\ny = "+y);

        temp = x;
        x = y;
        y = temp;

        System.out.println("After Swapping\nx = "+x+"\ny = "+y);
    }
}
```

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7. How to swap 2 no without using 3rd variable Program in java

```
import java.util.Scanner;

class SwapNumbers
{
   public static void main(String args[])
   {
      int x, y;
      System.out.println("Enter x and y");
      Scanner in = new Scanner(System.in);

      x = in.nextInt();
      y = in.nextInt();

      System.out.println("Before Swapping\nx = "+x+"\ny = "+y);
```



```
x = x + y;
y = x - y;
x = x - y;

System.out.println("After Swapping\nx = "+x+"\ny = "+y);
}
```

8. How to add two number Program in java

```
import java.util.Scanner;
class AddNumbers
  public static void main(String args[])
      int x, y, z;
      System.out.println("Enter two integers to calculate their sum ");
      Scanner in = new Scanner(System.in);
      x = in.nextInt();
      y = in.nextInt();
      z = x + y;
      System.out.println("Sum of entered integers = "+z);
//For Large Number
import java.util.Scanner;
import java.math.BigInteger;
class AddingLargeNumbers {
  public static void main(String[] args) {
    String number1, number2;
    Scanner in = new Scanner(System.in);
    System.out.println("Enter first large number");
    number1 = in.nextLine();
    System.out.println("Enter second large number");
    number2 = in.nextLine();
    BigInteger first = new BigInteger(number1);
    BigInteger second = new BigInteger(number2);
    BigInteger sum;
    sum = first.add(second);
    System.out.println("Result of addition = " + sum);
```



9. Find Largest no in java Program

```
import java.util.Scanner;
class LargestOfThreeNumbers
  public static void main(String args[])
      int x, y, z;
      System.out.println("Enter three integers ");
      Scanner in = new Scanner(System.in);
      x = in.nextInt();
      y = in.nextInt();
      z = in.nextInt();
      if ( x > y && x > z )
         System.out.println("First number is largest.");
      else if (y > x \&\& y > z)
         System.out.println("Second number is largest.");
      else if ( z > x && z > y )
         System.out.println("Third number is largest.");
      else
         System.out.println("Entered numbers are not distinct.");
}
```

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10. If Else clause in java

```
class Condition {
  public static void main(String[] args) {
    boolean learning = true;

  if (learning) {
     System.out.println("Java programmer");
   }
  else {
     System.out.println("What are you doing here?");
  }
  }
}
```



11. If Else clause in java- Program 2

```
// If else in Java code
import java.util.Scanner;

class IfElse {
  public static void main(String[] args) {
    int marksObtained, passingMarks;

    passingMarks = 40;

    Scanner input = new Scanner(System.in);

    System.out.println("Input marks scored by you");

    marksObtained = input.nextInt();

    if (marksObtained >= passingMarks) {
        System.out.println("You passed the exam.");
    }

    else {
        System.out.println("Unfortunately you failed to pass the exam.");
    }
}
```

12. Nested If Else clause in java import java.util.Scanner;



```
else if (marksObtained > 75)
    grade = 'B';
else if (marksObtained > 60)
    grade = 'C';
else
    grade = 'D';

System.out.println("You passed the exam and your grade is " + grade);
}
else {
    grade = 'F';
    System.out.println("You failed and your grade is " + grade);
}
}
```

13. How to check Odd and Even Number in java.

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

```
class OddOrEven
{
   public static void main(String args[])
   {
      int x;
      System.out.println("Enter an integer to check if it is odd or even ");
      Scanner in = new Scanner(System.in);
      x = in.nextInt();

   if ( x % 2 == 0 )
      System.out.println("You entered an even number.");
   else
      System.out.println("You entered an odd number.");
   }
}
```

14. Find factorial for given no Program in <u>Java</u> import java.util.Scanner;

```
class Factorial
{
   public static void main(String args[])
   {
      int n, c, fact = 1;
      System.out.println("Enter an integer to calculate it's factorial");
      Scanner in = new Scanner(System.in);
      n = in.nextInt();
```



```
if ( n < 0 )
         System.out.println("Number should be non-negative.");
      else
         for ( c = 1 ; c <= n ; c++ )
           fact = fact*c;
        System.out.println("Factorial of "+n+" is = "+fact);
   }
}
//Calculate factorial for large No
import java.util.Scanner;
import java.math.BigInteger;
class BigFactorial
 public static void main(String args[])
    int n, c;
    BigInteger inc = new BigInteger("1");
    BigInteger fact = new BigInteger("1");
    Scanner input = new Scanner(System.in);
    System.out.println("Input an integer");
    n = input.nextInt();
    for (c = 1; c <= n; c++) {
      fact = fact.multiply(inc);
      inc = inc.add(BigInteger.ONE);
    System.out.println(n + "! = " + fact);
```

15. How to complete 2 string in Java program

```
import java.util.Scanner;

class CompareStrings
{
   public static void main(String args[])
   {
      String s1, s2;
      Scanner in = new Scanner(System.in);

      System.out.println("Enter the first string");
      s1 = in.nextLine();
```



```
System.out.println("Enter the second string");
s2 = in.nextLine();

if ( s1.compareTo(s2) > 0 )
        System.out.println("First string is greater than second.");
else if ( s1.compareTo(s2) < 0 )
        System.out.println("First string is smaller than second.");
else
        System.out.println("Both strings are equal.");
}</pre>
```

16. Simple For **Loop** Program in Java

```
//Java for loop program
class ForLoop {
  public static void main(String[] args) {
    int c;

    for (c = 1; c <= 10; c++) {
        System.out.println(c);
    }
  }
}</pre>
```

17. Print Star console using Loop

```
class Stars {
  public static void main(String[] args) {
    int row, numberOfStars;

  for (row = 1; row <= 10; row++) {
    for(numberOfStars = 1; numberOfStars <= row; numberOfStars++) {
        System.out.print("*");
    }
    System.out.println(); // Go to next line
    }
}</pre>
```



<terminated> scan [Java Application] C:\Program Files\Java\jre1.8.0_91\bin\javaw.exe (Jan 8, 2017, 2:35:46 PM)

```
Input an integer

You entered 2
Input an integer

You entered 1
Input an integer

You entered 6
Input an integer

You entered 1
Input an integer

Out of loop
```

18. Print Star console using Loop

```
class Stars {
  public static void main(String[] args) {
    int row, numberOfStars;

  for (row = 1; row <= 10; row++) {
     for(numberOfStars = 1; numberOfStars <= row; numberOfStars++) {
        System.out.print("*");
     }
     System.out.println(); // Go to next line
    }
}</pre>
```

19. While loop Program in java import java.util.Scanner;

```
class WhileLoop {
  public static void main(String[] args) {
    int n;

    Scanner input = new Scanner(System.in);
    System.out.println("Input an integer");

  while ((n = input.nextInt()) != 0) {
      System.out.println("You entered " + n);
      System.out.println("Input an integer");
    }

    System.out.println("Out of loop");
}
```



20. Print Reverse number in java program

}

```
class ReverseNumber
{
   public static void main(String args[])
   {
      int n, reverse = 0;
        System.out.println("Enter the number to reverse");
        Scanner in = new Scanner(System.in);
      n = in.nextInt();

      while( n != 0 )
      {
            reverse = reverse * 10;
            reverse = reverse + n%10;
            n = n/10;
      }

        System.out.println("Reverse of entered number is "+reverse);
    }
}
```

21. While loop using break Program in java import java.util.Scanner;

```
class BreakWhileLoop {
  public static void main(String[] args) {
    int n;

    Scanner input = new Scanner(System.in);

  while (true) {
      System.out.println("Input an integer");
      n = input.nextInt();

    if (n == 0) {
      break;
    }
      System.out.println("You entered " + n);
    }
}
```



22. While loop using break and continue Program in java

```
import java.util.Scanner;

class BreakContinueWhileLoop {
   public static void main(String[] args) {
     int n;

     Scanner input = new Scanner(System.in);

     while (true) {
        System.out.println("Input an integer");
        n = input.nextInt();

        if (n != 0) {
            System.out.println("You entered " + n);
            continue;
        }
        else {
            break;
        }
    }
}
```

23. Print all alphabet using for Loop Program in java

```
class Alphabets
{
   public static void main(String args[])
   {
      char ch;

      for( ch = 'a' ; ch <= 'z' ; ch++ )
            System.out.println(ch);
      }
}</pre>
```



24. Enhance loop in java Program

```
class EnhancedForLoop {
  public static void main(String[] args) {
    int primes[] = { 2, 3, 5, 7, 11, 13, 17, 19, 23, 29};

  for (int t: primes) {
      System.out.println(t);
    }
  }
}

//For String
class EnhancedForLoop {
  public static void main(String[] args) {
      String languages[] = { "C", "C++", "Java", "Python", "Ruby"};
    for (String sample: languages) {
      System.out.println(sample);
    }
  }
}
```

25. Print Multiplication table Program in java

```
import java.util.Scanner;
class MultiplicationTable
  public static void main(String args[])
      int n, c;
      System.out.println("Enter an integer to print it's multiplication
table");
      Scanner in = new Scanner(System.in);
      n = in.nextInt();
      System.out.println("Multiplication table of "+n+" is :-");
      for ( c = 1 ; c <= 10 ; c++ )
         System.out.println(n+"*"+c+" = "+(n*c));
   }
}
//For Any Number
import java.util.Scanner;
class Tables
 public static void main(String args[])
    int a, b, c, d;
```



```
System.out.println("Enter range of numbers to print their multiplication
table");
    Scanner in = new Scanner(System.in);

a = in.nextInt();
b = in.nextInt();

for (c = a; c <= b; c++) {
    System.out.println("Multiplication table of "+c);

    for (d = 1; d <= 10; d++) {
        System.out.println(c+"*"+d+" = "+(c*d));
     }
}
</pre>
```

26. Print prime no Program in java

```
import java.util.*;
class PrimeNumbers
   public static void main(String args[])
      int n, status = 1, num = 3;
      Scanner in = new Scanner(System.in);
      System.out.println("Enter the number of prime numbers you want");
      n = in.nextInt();
      if (n >= 1)
         System.out.println("First "+n+" prime numbers are :-");
         System.out.println(2);
      for ( int count = 2 ; count <=n ; )</pre>
         for ( int j = 2 ; j <= Math.sqrt(num) ; j++ )</pre>
            if ( num%j == 0 )
               status = 0;
               break;
         if ( status != 0 )
            System.out.println(num);
            count++;
```



```
status = 1;
num++;
}
}
```

27. Check no is Armstrong or not in java Program

```
import java.util.Scanner;
class ArmstrongNumber
  public static void main(String args[])
      int n, sum = 0, temp, remainder, digits = 0;
      Scanner in = new Scanner(System.in);
      System.out.println("Input a number to check if it is an Armstrong
number");
      n = in.nextInt();
      temp = n;
      // Count number of digits
      while (temp != 0) {
        digits++;
         temp = temp/10;
      temp = n;
      while (temp != 0) {
        remainder = temp%10;
        sum = sum + power(remainder, digits);
        temp = temp/10;
      }
      if (n == sum)
        System.out.println(n + " is an Armstrong number.");
      else
        System.out.println(n + " is not an Armstrong number.");
   static int power(int n, int r) {
      int c, p = 1;
      for (c = 1; c <= r; c++)
        p = p*n;
      return p;
```



}

28. Print Floyd's Triangle in java Program

29. Find All substring of string in java Program import java.util.Scanner;

```
class SubstringsOfAString
{
   public static void main(String args[])
   {
      String string, sub;
      int i, c, length;
      Scanner in = new Scanner(System.in);
      System.out.println("Enter a string to print it's all substrings");
      string = in.nextLine();
      length = string.length();
```



30. Print reverse string in java Program

```
import java.util.*;
class ReverseString
  public static void main(String args[])
      String original, reverse = "";
      Scanner in = new Scanner(System.in);
      System.out.println("Enter a string to reverse");
      original = in.nextLine();
      int length = original.length();
      for ( int i = length - 1 ; i >= 0 ; i-- )
         reverse = reverse + original.charAt(i);
      System.out.println("Reverse of entered string is: "+reverse);
   }
//Using Internal java Methog
class InvertString
  public static void main(String args[])
      StringBuffer a = new StringBuffer("Java programming is fun");
      System.out.println(a.reverse());
```



31. Check Given No is palindrome or Not in java Program

```
import java.util.*;
class Palindrome
  public static void main(String args[])
      String original, reverse = "";
      Scanner in = new Scanner(System.in);
      System.out.println("Enter a string to check if it is a palindrome");
      original = in.nextLine();
      int length = original.length();
      for ( int i = length - 1; i >= 0; i-- )
        reverse = reverse + original.charAt(i);
      if (original.equals(reverse))
         System.out.println("Entered string is a palindrome.");
      else
         System.out.println("Entered string is not a palindrome.");
//Another Method
import java.util.*;
class Palindrome
 public static void main(String args[])
    String inputString;
    Scanner in = new Scanner(System.in);
    System.out.println("Input a string");
    inputString = in.nextLine();
    int length = inputString.length();
    int i, begin, end, middle;
   begin = 0;
    end = length -1;
   middle = (begin + end)/2;
    for (i = begin; i <= middle; i++) {</pre>
      if (inputString.charAt(begin) == inputString.charAt(end)) {
       begin++;
        end--;
      else {
        break;
```



```
if (i == middle + 1) {
    System.out.println("Palindrome");
}
else {
    System.out.println("Not a palindrome");
}
}
```

32. How to add two matrix in java Program

```
import java.util.Scanner;
class AddTwoMatrix
  public static void main(String args[])
      int m, n, c, d;
      Scanner in = new Scanner(System.in);
      System.out.println("Enter the number of rows and columns of matrix");
     m = in.nextInt();
      n = in.nextInt();
      int first[][] = new int[m][n];
      int second[][] = new int[m][n];
      int sum[][] = new int[m][n];
      System.out.println("Enter the elements of first matrix");
      for (c = 0; c < m; c++)
        for ( d = 0 ; d < n ; d++ )
           first[c][d] = in.nextInt();
      System.out.println("Enter the elements of second matrix");
      for ( c = 0 ; c < m ; c++ )
         for ( d = 0 ; d < n ; d++ )
           second[c][d] = in.nextInt();
      for ( c = 0 ; c < m ; c++ )
        for (d = 0 ; d < n ; d++)
            sum[c][d] = first[c][d] + second[c][d]; //replace '+' with '-'
to subtract matrices
      System.out.println("Sum of entered matrices:-");
      for (c = 0; c < m; c++)
         for ( d = 0 ; d < n ; d++ )
           System.out.print(sum[c][d]+"\t");
         System.out.println();
```



```
}
}
```

33. How to multiply two matrix in java Program

```
import java.util.Scanner;
class MatrixMultiplication
   public static void main(String args[])
      int m, n, p, q, sum = 0, c, d, k;
      Scanner in = new Scanner(System.in);
      System.out.println("Enter the number of rows and columns of first
matrix");
     m = in.nextInt();
      n = in.nextInt();
      int first[][] = new int[m][n];
      System.out.println("Enter the elements of first matrix");
      for (c = 0; c < m; c++)
         for (d = 0; d < n; d++)
            first[c][d] = in.nextInt();
      System.out.println("Enter the number of rows and columns of second
matrix");
     p = in.nextInt();
      q = in.nextInt();
      if ( n != p )
         System.out.println("Matrices with entered orders can't be multiplied
with each other.");
      else
         int second[][] = new int[p][q];
         int multiply[][] = new int[m][q];
         System.out.println("Enter the elements of second matrix");
         for ( c = 0 ; c < p ; c++ )
            for ( d = 0 ; d < q ; d++ )
              second[c][d] = in.nextInt();
         for (c = 0; c < m; c++)
            for (d = 0 ; d < q ; d++)
               for ( k = 0 ; k < p ; k++ )
```



```
sum = sum + first[c][k]*second[k][d];

multiply[c][d] = sum;
sum = 0;
}

System.out.println("Product of entered matrices:-");

for ( c = 0 ; c < m ; c++ )

    for ( d = 0 ; d < q ; d++ )
        System.out.print(multiply[c][d]+"\t");

    System.out.print("\n");
}
</pre>
```

34. How to get transpose of matrix in java Program

```
import java.util.Scanner;
class TransposeAMatrix
  public static void main(String args[])
      int m, n, c, d;
      Scanner in = new Scanner(System.in);
      System.out.println("Enter the number of rows and columns of matrix");
      m = in.nextInt();
      n = in.nextInt();
      int matrix[][] = new int[m][n];
      System.out.println("Enter the elements of matrix");
      for ( c = 0 ; c < m ; c++ )
         for (d = 0 ; d < n ; d++)
            matrix[c][d] = in.nextInt();
      int transpose[][] = new int[n][m];
      for ( c = 0 ; c < m ; c++ )
         for ( d = 0 ; d < n ; d++ )
            transpose[d][c] = matrix[c][d];
```



35. How to compare 2 string in java Program

```
public class LastIndexOfExample{
public static void main(String args[]){
String s1="hello";
String s2="hello";
String s3="meklo";
String s4="hemlo";
System.out.println(s1.compareTo(s2));
System.out.println(s1.compareTo(s3));
System.out.println(s1.compareTo(s4));
}}
```

36. How to string width with specific char in java Program

```
class StringEndwith{
public static void main(String args[]){
String s1="java by TechnoLamror";
System.out.println(s1.endsWith("r")); //true
System.out.println(s1.endsWith("Lamror")); //true
System.out.println(s1.endsWith("lamror"));//false
}
}
```

37. How to use indesOf() in java Program

```
public class IndexOfExample{
public static void main(String args[]){
String s1="this is index of example";
//passing substring
int index1=s1.indexOf("is");//returns the index of is substring
int index2=s1.indexOf("index");//returns the index of index substring
System.out.println(index1+" "+index2);//2 8
```



```
//passing substring with from index
int index3=s1.indexOf("is",4);//returns the index of is substring after 4th index
System.out.println(index3);//5 i.e. the index of another is

//passing char value
int index4=s1.indexOf('s');//returns the index of s char value
System.out.println(index4);//3
}}
```

38. How to replace string with another string in java Program

```
public class ReplaceAllExample2{
public static void main(String args[]){
String s1="My name is Rajendra. My name is lamror. My name is Technolamror.";
String replaceString=s1.replaceAll("is","was");//replaces all occurrences of "is" to "was"
System.out.println(replaceString);
}}
```

39. How to split string in java Program

```
public class SplitExample{
public static void main(String args[]){
String s1="java string split method by Technolamror";
String[] words=s1.split("\\s");//splits the string based on whitespace
//using java foreach loop to print elements of string array
for(String w:words){
System.out.println(w);
}
}}
```

40. How to remove space in string both end in java Program

```
public class StringTrimExample{
public static void main(String args[]){
String s1=" hello string ";
System.out.println(s1+"Technolamror");//without trim()
System.out.println(s1.trim()+"Technolamror");//with trim()
}}
```

41. How to convert all char in string lower case in java Program

```
public class StringLowerExample{
public static void main(String args[]){
String s1="TECHNOLAMROR by Rajendralamror HELLO stRIng";
String s1lower=s1.toLowerCase();
```

```
System.out.println(s1lower);
}}
```

42. How to create method in java Program

```
class Methods {
  // Constructor method
 Methods() {
  System.out.println("Constructor method is called when an object of it's
class is created");
  // Main method where program execution begins
 public static void main(String[] args) {
   staticMethod();
   Methods object = new Methods();
   object.nonStaticMethod();
 // Static method
  static void staticMethod() {
   System.out.println("Static method can be called without creating
object");
  // Non static method
 void nonStaticMethod() {
    System.out.println("Non static method must be called by creating an
object");
  }
```

43. Find Length, Concatenate and Replace String in <u>Java</u> Program

```
class StringMethods
{
  public static void main(String args[])
  {
    int n;
    String s = "Java programming", t = "", u = "";
    System.out.println(s);
    // Find length of string
```



```
n = s.length();
System.out.println("Number of characters = " + n);

// Replace characters in string

t = s.replace("Java", "C++");
System.out.println(s);
System.out.println(t);

// Concatenating string with another string

u = s.concat(" is fun");
System.out.println(s);
System.out.println(u);
}
```

44. How Static block working in java Program

```
class StaticBlock {
  public static void main(String[] args) {
    System.out.println("Main method is executed.");
  }
  static {
    System.out.println("Static block is executed before main method.");
  }
}
//Static Block Application .... We need to open Program in speciff window class StaticBlock {
  public static void main(String[] args) {
    System.out.println("You are using Windows_NT operating system.");
  }
  static {
    String os = System.getenv("OS");
    if (os.equals("Windows_NT") != true) {
        System.exit(1);
    }
  }
}
```

45. Difference between Static and Instance method working in java Program

```
class Difference {
  public static void main(String[] args) {
    display(); //calling without object
```



```
Difference t = new Difference();
    t.show(); //calling using object
}

static void display() {
    System.out.println("Programming is amazing.");
}

void show() {
    System.out.println("Java is awesome.");
}
```

46. How to create Multiple class in java Program

```
class Computer {
    Computer() {
        System.out.println("Constructor of Computer class.");
    }

    void computer_method() {
        System.out.println("Power gone! Shut down your PC soon...");
    }

    public static void main(String[] args) {
        Computer my = new Computer();
        Laptop your = new Laptop();

        my.computer_method();
        your.laptop_method();
    }
}

class Laptop {
    Laptop() {
        System.out.println("Constructor of Laptop class.");
    }

    void laptop_method() {
        System.out.println("99% Battery available.");
    }
}
```

47. How to create constructor in java Program

```
class Programming {
  //constructor method
  Programming() {
    System.out.println("Constructor method called.");
  }
```



```
public static void main(String[] args) {
    Programming object = new Programming(); //creating object
}
```

48. How to create constructor overloading in java Program

```
class Language {
  String name;
  Language() {
    System.out.println("Constructor method called.");
  Language(String t) {
    name = t;
  public static void main(String[] args) {
    Language cpp = new Language();
    Language java = new Language("Java");
    cpp.setName("C++");
    java.getName();
    cpp.getName();
  void setName(String t) {
    name = t;
  void getName() {
    System.out.println("Language name: " + name);
```

49. Exception Handling java Program

```
class Division {
  public static void main(String[] args) {
  int a, b, result;

  Scanner input = new Scanner(System.in);
  System.out.println("Input two integers");
```



```
a = input.nextInt();
b = input.nextInt();

// try block

try {
    result = a / b;
    System.out.println("Result = " + result);
}

// catch block

catch (ArithmeticException e) {
    System.out.println("Exception caught: Division by zero.");
}
}
```

50. How to throw exception in java Program

```
public class TestThrow1{
    static void validate(int age){
        if(age<18)
            throw new ArithmeticException("not valid");
        else
            System.out.println("welcome to vote on Technolamror");
    }
    public static void main(String args[]){
        validate(13);
        System.out.println("rest of the code...");
    }
}</pre>
```

51. Advantage of Finally in Exception Handling java Program

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

    try {
      long data[] = new long[1000000000];
    }
    catch (Exception e) {
      System.out.println(e);
    }

  finally {
      System.out.println("finally block will execute always.");
    }
}
```



52. How to create Interface in java Program

```
interface Info {
   static final String language = "Java";
   public void display();
}

class Simple implements Info {
   public static void main(String []args) {
      Simple obj = new Simple();
      obj.display();
   }

   // Defining method declared in interface

   public void display() {
      System.out.println(language + " is awesome");
   }
}
```

53. How to print date and time in java Program

```
public class SQLDateExample {
   public static void main(String[] args) {
       long millis=System.currentTimeMillis();
       java.sql.Date date=new java.sql.Date(millis);
       System.out.println(date);
   }
}
/// Another Way
import java.util.*;
class GetCurrentDateAndTime
   public static void main(String args[])
      int day, month, year;
      int second, minute, hour;
      GregorianCalendar date = new GregorianCalendar();
      day = date.get(Calendar.DAY OF MONTH);
      month = date.get(Calendar.MONTH);
      year = date.get(Calendar.YEAR);
      second = date.get(Calendar.SECOND);
      minute = date.get(Calendar.MINUTE);
      hour = date.get(Calendar.HOUR);
```



```
System.out.println("Current date is "+day+"/"+(month+1)+"/"+year);
System.out.println("Current time is "+hour+" : "+minute+" : "+second);
}
```

54. How to SQL Date in java Program

```
import java.sql.Date;
public class StringToSQLDateExample {
  public static void main(String[] args) {
    String str="2015-03-31";
    Date date=Date.valueOf(str);//converting string into sql date
    System.out.println(date);
}
```

55. How to Date format in java Program

```
import java.text.ParseException;
import java.text.SimpleDateFormat;
import java.util.Date;
import java.util.Locale;
public class SimpleDateFormatExample2 {
public static void main(String[] args) {
    Date date = new Date();
    System.out.println("Date formate chnage by Technolamror ");
    SimpleDateFormat formatter = new SimpleDateFormat("MM/dd/yyyy");
    String strDate = formatter.format(date);
    System.out.println("Date Format with MM/dd/yyyy : "+strDate);
    formatter = new SimpleDateFormat("dd-M-yyyy hh:mm:ss");
    strDate = formatter.format(date);
    System.out.println("Date Format with dd-M-yyyy hh:mm:ss : "+strDate);
    formatter = new SimpleDateFormat("dd MMMM yyyy");
    strDate = formatter.format(date);
    System.out.println("Date Format with dd MMMM yyyy : "+strDate);
    formatter = new SimpleDateFormat("dd MMMM yyyy zzzz");
    strDate = formatter.format(date);
    System.out.println("Date Format with dd MMMM yyyy zzzz : "+strDate);
    formatter = new SimpleDateFormat("E, dd MMM yyyy HH:mm:ss z");
    strDate = formatter.format(date);
    System.out.println("Date Format with E, dd MMM yyyy HH:mm:ss z : "+strDate);
}
}
```



56. How to Generate random number in java Program

```
import java.util.*;

class RandomNumbers {
  public static void main(String[] args) {
    int c;
    Random t = new Random();

    // random integers in [0, 100]

  for (c = 1; c <= 10; c++) {
      System.out.println(t.nextInt(100));
    }
  }
}</pre>
```

57. How perform garbage collection in java Program

```
import java.util.*;

class GarbageCollection
{
    public static void main(String s[]) throws Exception
    {
        Runtime rs = Runtime.getRuntime();
        System.out.println("Free memory in JVM before Garbage Collection =
"+rs.freeMemory());
        rs.gc();
        System.out.println("Free memory in JVM after Garbage Collection =
"+rs.freeMemory());
    }
}
```

58. How to get own IP Address in java Program

```
class IPAddress
{
   public static void main(String args[]) throws Exception
   {
      System.out.println(InetAddress.getLocalHost());
   }
}
```

import java.net.InetAddress;



59. How to open notepad in java Program

```
import java.util.*;
import java.io.*;

class Notepad {
   public static void main(String[] args) {
      Runtime rs = Runtime.getRuntime();

      try {
       rs.exec("notepad");
    }
      catch (IOException e) {
        System.out.println(e);
    }
   }
}
```

60. Leaner search Program in java

```
import java.util.Scanner;
class LinearSearch
  public static void main(String args[])
    int c, n, search, array[];
    Scanner in = new Scanner(System.in);
    System.out.println("Enter number of elements");
    n = in.nextInt();
    array = new int[n];
    System.out.println("Enter " + n + " integers");
    for (c = 0; c < n; c++)
      array[c] = in.nextInt();
    System.out.println("Enter value to find");
    search = in.nextInt();
    for (c = 0; c < n; c++)
      if (array[c] == search)
                                 /* Searching element is present */
         System.out.println(search + " is present at location " + (c + 1) +
".");
          break;
```



```
if (c == n) /* Searching element is absent */
    System.out.println(search + " is not present in array.");
}
```

61. Binary search Program in java

```
import java.util.Scanner;
class BinarySearch
 public static void main(String args[])
    int c, first, last, middle, n, search, array[];
    Scanner in = new Scanner(System.in);
    System.out.println("Enter number of elements");
    n = in.nextInt();
    array = new int[n];
    System.out.println("Enter " + n + " integers");
    for (c = 0; c < n; c++)
     array[c] = in.nextInt();
    System.out.println("Enter value to find");
    search = in.nextInt();
    first = 0;
    last = n - 1;
    middle = (first + last)/2;
    while( first <= last )</pre>
      if ( array[middle] < search )</pre>
       first = middle + 1;
      else if ( array[middle] == search )
        System.out.println(search + " found at location " + (middle + 1) +
".");
        break;
      else
        last = middle - 1;
     middle = (first + last)/2;
   if ( first > last )
      System.out.println(search + " is not present in the list.\n");
  }
```



62. Bubble sort Program in java

```
import java.util.Scanner;
class BubbleSort {
  public static void main(String []args) {
    int n, c, d, swap;
    Scanner in = new Scanner(System.in);
    System.out.println("Input number of integers to sort");
    n = in.nextInt();
    int array[] = new int[n];
    System.out.println("Enter " + n + " integers");
    for (c = 0; c < n; c++)
      array[c] = in.nextInt();
    for (c = 0; c < (n - 1); c++) {
      for (d = 0; d < n - c - 1; d++) {
        if (array[d] > array[d+1]) /* For descending order use < */</pre>
          swap
                    = array[d];
          array[d] = array[d+1];
          array[d+1] = swap;
      }
    }
    System.out.println("Sorted list of numbers");
    for (c = 0; c < n; c++)
      System.out.println(array[c]);
```

63. How to connect Database using java Program

```
import java.sql.*;
class OracleCon{
public static void main(String args[]){
  try{
   //step1 load the driver class
  Class.forName("oracle.jdbc.driver.OracleDriver");
   //step2 create the connection object
```



```
Connection
con=DriverManager.getConnection("jdbc:oracle:thin:@localhost:1521:xe","system","oracl
e");
//step3 create the statement object
Statement stmt=con.createStatement();
//step4 execute query
ResultSet rs=stmt.executeQuery("select * from emp");
while(rs.next())
System.out.println(rs.getInt(1)+" "+rs.getString(2)+" "+rs.getString(3));
//step5 close the connection object
con.close();
}catch(Exception e){ System.out.println(e);}
}
```

64. How to insert data in table using JDBC in java Program

```
import java.sql.*;
class InsertPrepared{
public static void main(String args[]){
Class.forName("oracle.jdbc.driver.OracleDriver");
Connection
con=DriverManager.qetConnection("jdbc:oracle:thin:@localhost:1521:xe","system","oracl
e");
PreparedStatement stmt=con.prepareStatement("insert into Emp values(?,?)");
stmt.setInt(1,101);//1 specifies the first parameter in the query
stmt.setString(2, "Ratan");
int i=stmt.executeUpdate();
System.out.println(i+" records inserted");
con.close();
}catch(Exception e){ System.out.println(e);}
}
}
```

65. How to insert image using JDBC in java Program

```
import java.sql.*;
import java.io.*;
public class InsertImage {
public static void main(String[] args) {
  try{
  Class.forName("oracle.jdbc.driver.OracleDriver");
  Connection con=DriverManager.getConnection(
  "jdbc:oracle:thin:@localhost:1521:xe", "system", "oracle");
  PreparedStatement ps=con.prepareStatement("insert into imgtable values(?,?)");
```



```
ps.setString(1,"Technolamror");
FileInputStream fin=new FileInputStream("d:\\g.jpg");
ps.setBinaryStream(2,fin,fin.available());
int i=ps.executeUpdate();
System.out.println(i+" records affected");
con.close();
}catch (Exception e) {e.printStackTrace();}
}
```

66. How to execute Procedure in JDBC in java Program

```
import java.sql.*;
public class Proc {
public static void main(String[] args) throws Exception{
Class.forName("oracle.jdbc.driver.OracleDriver");
Connection
con=DriverManager.getConnection("jdbc:oracle:thin:@localhost:1521:xe","system","oracle");
CallableStatement stmt=con.prepareCall("{call insertR(?,?)}");
stmt.setInt(1,1011);
stmt.setString(2, "Amit");
stmt.execute();
System.out.println("success");
}
}
```

67. How to check Regular expression in java Program

```
import java.util.regex.*;
public class RegexExample1{
public static void main(String args[]){
    //1st way
Pattern p = Pattern.compile(".s");//. represents single character
Matcher m = p.matcher("as");
boolean b = m.matches();
    //2nd way
boolean b2=Pattern.compile(".s").matcher("as").matches();
    //3rd way
boolean b3 = Pattern.matches(".s", "as");
System.out.println(b+" "+b2+" "+b3);
}}
```

68. How to create Multithreading program in java

```
class Multi extends Thread{
public void run(){
System.out.println("thread is running...");
}
```



```
public static void main(String args[]){
Multi t1=new Multi();
t1.start();
}
}
```

69. How to join thread in java program

```
class TestJoinMethod1 extends Thread{
 public void run(){
  for(int i=1;i<=5;i++){</pre>
  try{
    Thread.sleep(500);
   }catch(Exception e){System.out.println(e);}
  System.out.println(i);
public static void main(String args[]){
 TestJoinMethod1 t1=new TestJoinMethod1();
 TestJoinMethod1 t2=new TestJoinMethod1();
 TestJoinMethod1 t3=new TestJoinMethod1();
 t1.start();
 try{
  t1.join();
 }catch(Exception e){System.out.println(e);}
 t2.start();
 t3.start();
 }
}
```

70. How to write data in text file using java program

```
import java.io.FileOutputStream;
public class FileOutputStreamExample {
    public static void main(String args[]){
        try{
            FileOutputStream fout=new FileOutputStream("D:\\testout.txt");
            fout.write(65);
            fout.close();
            System.out.println("success.. by Technolamror.");
            }catch(Exception e){System.out.println(e);}
        }
}
```

71. How to read data from text file using java program

```
import java.io.FileInputStream;
public class DataStreamExample {
```



```
public static void main(String args[]){
    try{
        FileInputStream fin=new FileInputStream("D:\\Technolamror.txt");
        int i=fin.read();
        System.out.print((char)i);

        fin.close();
    }catch(Exception e){System.out.println(e);}
}
```

72. How to get URL of site using java Programs

```
import java.io.*;
import java.net.*;
public class URLDemo{
public static void main(String[] args){
  try{
  URL url=new URL("http://www.technolamror.com/java");
  System.out.println("Protocol: "+url.getProtocol());
  System.out.println("Host Name: "+url.getHost());
  System.out.println("Port Number: "+url.getPort());
  System.out.println("File Name: "+url.getFile());
}
}catch(Exception e){System.out.println(e);}
}
```

73. How to get IP address from site URL using java program

```
import java.io.*;
import java.net.*;
public class InetDemo{
public static void main(String[] args){
try{
InetAddress ip=InetAddress.getByName("www.Technolamror.com");
System.out.println("Host Name: "+ip.getHostName());
System.out.println("IP Address: "+ip.getHostAddress());
}catch(Exception e){System.out.println(e);}
}
```

74. How to create AWT program in java

```
import java.awt.*;
class First extends Frame{
First(){
Button b=new Button("click me");
b.setBounds(30,100,80,30);// setting button position
```



```
add(b);//adding button into frame
setSize(300,300);//frame size 300 width and 300 height
setLayout(null);//no layout manager
setVisible(true);//now frame will be visible, by default not visible
}
public static void main(String args[]){
First f=new First();
}}
```

75. How to add lable in AWT program in java

```
import java.awt.*;
class LabelExample{
public static void main(String args[]){
    Frame f= new Frame("Label Example by Technolamror");
    Label 11,12;
    11=new Label("First Label.");
    11.setBounds(50,100, 100,30);
    12=new Label("Second Label.");
    12.setBounds(50,150, 100,30);
    f.add(11); f.add(12);
    f.setSize(400,400);
    f.setLayout(null);
    f.setVisible(true);
}
```

76. How to add text area program in java

```
import java.awt.*;
public class TextAreaExample
{
    TextAreaExample(){
        Frame f= new Frame();
            TextArea area=new TextArea("Welcome to Technolamror");
        area.setBounds(10,30, 300,300);
        f.add(area);
        f.setSize(400,400);
        f.setLayout(null);
        f.setVisible(true);
    }
public static void main(String args[])
{
    new TextAreaExample();
}
```

77. How to dropdown in AWT program in java



```
Frame f= new Frame();
   Choice c=new Choice();
   c.setBounds(100,100, 75,75);
   c.add("Item 1 by Rajendra");
   c.add("Item 2 by Lamror");
   c.add("Item 3 by Technolamror");
   c.add("Item 4");
   c.add("Item 5");
   f.add(c);
   f.setSize(400,400);
   f.setLayout(null);
   f.setVisible(true);
}
public static void main(String args[]) {
   new ChoiceExample();
}
```

78. How to create Swing program in java

```
import javax.swing.*;
public class FirstSwingExample {
  public static void main(String[] args) {
    JFrame f=new JFrame();//creating instance of JFrame
    JButton b=new JButton("click");//creating instance of JButton
    b.setBounds(130,100,100, 40);//x axis, y axis, width, height
    f.add(b);//adding button in JFrame
    f.setSize(400,500);//400 width and 500 height
    f.setLayout(null);//using no layout managers
    f.setVisible(true);//making the frame visible
}
```

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79. How to add checkbox in Swing program in

<u>java</u>

```
import javax.swing.*;
public class CheckBoxExample
{
    CheckBoxExample(){
        JFrame f= new JFrame("CheckBox Example by Technolamror");
        JCheckBox checkBox1 = new JCheckBox("C++");
        checkBox1.setBounds(100,100, 50,50);
        JCheckBox checkBox2 = new JCheckBox("Java", true);
        checkBox2.setBounds(100,150, 50,50);
        f.add(checkBox1);
        f.add(checkBox2);
        f.setSize(400,400);
        f.setLayout(null);
        f.setVisible(true);
    }
public static void main(String args[])
```



```
{
new CheckBoxExample();
}}
```

80. How to convert string to integer in java program

```
public class StringToIntExample{
public static void main(String args[]){
String s="200";
int i=Integer.parseInt(s);
System.out.println(s+100);//200100 because + is string concatenation operator
System.out.println(i+100);//300 because + is binary plus operator
}}
```

81. How to convert integer to string in java program

```
public class IntToStringExample1{
public static void main(String args[]){
int i=200;
String s=String.valueOf(i);
System.out.println(i+100);//300 because + is binary plus operator
System.out.println(s+100);//200100 because + is string concatenation operator
}}
```

82. How to convert string to long in java

```
public class StringToLongExample{
public static void main(String args[]){
String s="9990449935";
long l=Long.parseLong(s);
System.out.println(l);
}}
```

83. How to convert string to float in java

```
public class StringToFloatExample{
public static void main(String args[]){
String s="23.6";
float f=Float.parseFloat("23.6");
System.out.println(f);
}}
```

84. How to convert string to double in java program

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



```
String s="23.6";
double d=Double.parseDouble("23.6");
System.out.println(d);
}}
```

85. How to convert string to date in java program

```
import java.text.SimpleDateFormat;
import java.util.Date;
public class StringToDateExample1 {
public static void main(String[] args)throws Exception {
    String sDate1="31/12/1998";
    String sDate2 = "31-Dec-1998";
    String sDate3 = "12 31, 1998";
    String sDate4 = "Thu, Dec 31 1998";
    String sDate5 = "Thu, Dec 31 1998 23:37:50";
    String sDate6 = "31-Dec-1998 23:37:50";
    SimpleDateFormat formatter1=new SimpleDateFormat("dd/MM/yyyy");
    SimpleDateFormat formatter2=new SimpleDateFormat("dd-MMM-yyyy");
    SimpleDateFormat formatter3=new SimpleDateFormat("MM dd, yyyy");
    SimpleDateFormat formatter4=new SimpleDateFormat("E, MMM dd yyyy");
    SimpleDateFormat formatter5=new SimpleDateFormat("E, MMM dd yyyy HH:mm:ss");
    SimpleDateFormat formatter6=new SimpleDateFormat("dd-MMM-yyyy HH:mm:ss");
    Date date1=formatter1.parse(sDate1);
    Date date2=formatter2.parse(sDate2);
    Date date3=formatter3.parse(sDate3);
    Date date4=formatter4.parse(sDate4);
    Date date5=formatter5.parse(sDate5);
    Date date6=formatter6.parse(sDate6);
    System.out.println("String to Date converter by technolamror");
    System.out.println(sDate1+"\t"+date1);
    System.out.println(sDate2+"\t"+date2);
    System.out.println(sDate3+"\t"+date3);
    System.out.println(sDate4+"\t"+date4);
    System.out.println(sDate5+"\t"+date5);
    System.out.println(sDate6+"\t"+date6);
}
}
```

86. Create ArrayList program in java

```
import java.util.*;
class Arrylist_Technolamror{
public static void main(String args[]){
   ArrayList<String> list=new ArrayList<String>();//Creating arraylist
   list.add("Rajendra");//Adding object in arraylist
   list.add("Mahendra");
   list.add("Raja");
   list.add("Technolamror");
```



```
//Traversing list through Iterator
    Iterator itr=list.iterator();
    while(itr.hasNext()){
    System.out.println(itr.next());
    }
}
```

87. How to create LinkedList program in java

```
import java.util.*;
public class LinkedList technolamror{
  public static void main(String args[]){

   Linkedal<String> al=new Linkedal<String>();

   al.add("Rajendra");//Adding object in LinkedList al.add("Mahendra");
   al.add("Raja");
   al.add("Technolamror");

Iterator<String> itr=al.iterator();
   while(itr.hasNext()){
   System.out.println(itr.next());
   }
}
```

88. How to ArrayList using list interface program in java

```
import java.util.*;
class Book {
int id;
String name, author, publisher;
int quantity;
public Book(int id, String name, String author, String publisher, int quantity) {
    this.id = id;
    this.name = name;
    this.author = author;
    this.publisher = publisher;
    this.quantity = quantity;
}
public class ListIteratorExample {
public static void main(String[] args) {
    //Creating list of Books
    List<Book> list=new ArrayList<Book>();
    //Creating Books
    Book b1=new Book(101,"Let us C","Yashwant Kanetkar","BPB",8);
    Book b2=new Book(102, "Java Program Questation", "Rajendra", "Technolamror", 4);
    Book b3=new Book(103, "Operating System", "Galvin", "Wiley", 6);
    //Adding Books to list
```



```
list.add(b1);
list.add(b2);
list.add(b3);
System.out.println("Original content of list is: ");
//Traversing list
for(Book b:list){
System.out.println(b.id+" "+b.name+" "+b.author+" "+b.publisher+" "+b.quantity);
}
ListIterator<Book> itr=list.listIterator();
System.out.println("Modified content of list in backward is: ");
while(itr.hasNext()){
    Book st=(Book)itr.next();
    System.out.println(st.quantity+" "+st.publisher+" "+st.author+" "+st.name+"
"+st.id);
}
}
}
```

89. How to create Hashset program in java

```
import java.util.*;
class TestCollection9{
public static void main(String args[]){
    //Creating HashSet and adding elements
    HashSet<String> set=new HashSet<String>();
    set.add("Rajendra");
    set.add("Raja");
    set.add("Ravi");
    set.add("Technolamror");
    //Traversing elements
    Iterator<String> itr=set.iterator();
    while(itr.hasNext()){
        System.out.println(itr.next());
    }
}
```

90. How to create LinkedHashSet program in

<u>java</u>

```
import java.util.*;
class LinkedHashSet_Technolamror{
  public static void main(String args[]){
        LinkedHashSet<String> al=new LinkedHashSet<String>();
        al.add("Rajendra");
        al.add("Raja");
        al.add("Ravi");
        al.add("Technolamror");

Iterator<String> itr=al.iterator();
    while(itr.hasNext()){
        out itr
```



} } }

91. How to create TreeSet program in java

92. How to create PriorityQueue program in java

```
import java.util.*;
class PriorityQueue_Technolamror{
public static void main(String args[]){
PriorityQueue<String> queue=new PriorityQueue<String>();
queue.add("Rajendra");
queue.add("Mahendra");
queue.add("Raja");
queue.add("Technolamror");
queue.add("Rahul");
System.out.println("head:"+queue.element());
System.out.println("head:"+queue.peek());
System.out.println("iterating the queue elements:");
Iterator itr=queue.iterator();
while(itr.hasNext()){
System.out.println(itr.next());
queue.remove();
queue.poll();
System.out.println("after removing two elements:");
Iterator<String> itr2=queue.iterator();
while(itr2.hasNext()){
System.out.println(itr2.next());
}
}
```



93. How to create HashMap using map interface program in <u>java</u>

```
import java.util.*;
class MapInterfaceExample{
  public static void main(String args[]){
    Map<Integer,String> map=new HashMap<Integer,String>();
    map.put(100, "Rajendra");
    map.put(101, "Lamror");
    map.put(102, "Technolamror");
    for(Map.Entry m:map.entrySet()){
        System.out.println(m.getKey()+" "+m.getValue());
    }
}
```

94. How to create LinkedHashMap program in java

```
import java.util.*;
class LinkedHashMap_Technolmaror{
  public static void main(String args[]){

  LinkedHashMap<Integer,String> hm=new LinkedHashMap<Integer,String>();

  hm.put(100, "Rajendra");
  hm.put(101, "Vijay");
  hm.put(102, "Technolamror");

for(Map.Entry m:hm.entrySet()){
   System.out.println(m.getKey()+" "+m.getValue());
  }
}
```

95. How to create TreeMap program in java

```
import java.util.*;
class TreeMap_Technolamror{
  public static void main(String args[]){
    TreeMap<Integer,String> hm=new TreeMap<Integer,String>();
    hm.put(100, "Amit");
    hm.put(102, "Ravi");
    hm.put(101, "Vijay");
    hm.put(103, "Technolamror");
    for(Map.Entry m:hm.entrySet()){
        System.out.println(m.getKey()+" "+m.getValue());
    }
    }
}
```



96. How to create Hashtable program in java

```
import java.util.*;
class Hashtable_Technolamror{
  public static void main(String args[]){
    Hashtable<Integer,String> hm=new Hashtable<Integer,String>();

  hm.put(100, "Rajendra");
  hm.put(102, "Praveen");
  hm.put(101, "Bipin");
  hm.put(103, "Pankaj");

  for(Map.Entry m:hm.entrySet()){
    System.out.println(m.getKey()+" "+m.getValue());
  }
}
```

97. How to create Array program in java

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

int a[]=new int[5];//declaration and instantiation
a[0]=10;//initialization
a[1]=20;
a[2]=70;
a[3]=40;
a[4]=50;

//printing array
for(int i=0;i<a.length;i++)//length is the property of array
System.out.println(a[i]);
}}</pre>
```

98. How to create Multidimensional array program in java

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

//declaring and initializing 2D array
int arr[][]={{1,2,3},{2,4,5},{4,4,5}};

//printing 2D array
for(int i=0;i<3;i++){
    for(int j=0;j<3;j++){
        System.out.print(arr[i][j]+" ");
    }
    System.out.println();
}</pre>
```



99. How to create Find Factorial No using Recursion Program in <u>java</u>

```
public class Recursion Technolamror {
    static int factorial(int n){
        if (n == 1)
            return 1;
        else
            return(n * factorial(n-1));
    }

public static void main(String[] args) {
System.out.println("Factorial of 5 is: "+factorial(5));
}
```

100. How to create Method Overriding program in java

```
class Bank{
int getRateOfInterest(){return 0;}
class SBI extends Bank{
int getRateOfInterest(){return 8;}
}
class ICICI extends Bank{
int getRateOfInterest(){return 7;}
class AXIS extends Bank{
int getRateOfInterest(){return 9;}
class Test2{
public static void main(String args[]){
SBI s=new SBI();
ICICI i=new ICICI();
AXIS a=new AXIS();
System.out.println("SBI Rate of Interest: "+s.getRateOfInterest());
System.out.println("ICICI Rate of Interest: "+i.getRateOfInterest());
System.out.println("AXIS Rate of Interest: "+a.getRateOfInterest());
} }
```