**Practical Exam Questions**

**Practical 1**

A. Write a Java program that takes a number as input and prints its multiplication table upto 10

**class** GFG {

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

{

// number n for which we have to print the

// multiplication table.

**int** N = 7;

// looping from 1 to 10 to print the multiplication

// table of the number.

// using for loop

**for** (**int** i = 1; i <= 10; i++) {

// printing the N\*i,ie ith multiple of N.

System.out.println(N + " \* " + i + " = "

+ N \* i);

}

}

}

. B. Write a Java program to display the following pattern.

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public class Star {

public static void main(String[] args) {

int rows = 5;

for(int i = rows; i >= 1; --i) { //For Loop for Row

for(int j = 1; j <= i; ++j) { //For Loop for Col

System.out.print("\* "); //Prints \*

}

System.out.println(); //Get to newline

}

}

}

**Practical 2**

A. Write a Java program to print the area and perimeter of a circle.

import [java](https://itvoyagers.in/programming-languages/java/).util.Scanner;

class Circle

{

public static void main(String[] args)

{

Float r, pi = 3.14f;

Scanner s = new Scanner(System.in);

System.out.println("nPlease enter the radius : ");

//Author -> ITVoyagers, visit -> itvoyagers.in

r = s.nextFloat();

System.out.println("nnArea of Circle = " + pi \* r \* r);

System.out.println("nnPerimeter of Circle = " + 2 \* pi \* r);

System.out.println("nn");

//Author -> ITVoyagers, visit -> itvoyagers.in

}

}

B. Write a Java program to reverse a string

**public** **class** Reverse

{

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

String string = "Dream big";

String reversedStr = "";

**for**(**int** i = string.length()-1; i >= 0; i--){

reversedStr = reversedStr + string.charAt(i);

}

System.out.println("Original string: " + string);

System.out.println("Reverse of given string: " + reversedStr);

}

}

**Practical 3**

A. Write a Java program to add two binary numbers.

import java.util.Scanner;

public class Exercise17 {

public static void main(String[] args)

{

long binary1, binary2;

int i = 0, remainder = 0;

int[] sum = new int[20];

Scanner in = new Scanner(System.in);

System.out.print("Input first binary number: ");

binary1 = in.nextLong();

System.out.print("Input second binary number: ");

binary2 = in.nextLong();

while (binary1 != 0 || binary2 != 0)

{

sum[i++] = (int)((binary1 % 10 + binary2 % 10 + remainder) % 2);

remainder = (int)((binary1 % 10 + binary2 % 10 + remainder) / 2);

binary1 = binary1 / 10;

binary2 = binary2 / 10;

}

if (remainder != 0) {

sum[i++] = remainder;

}

--i;

System.out.print("Sum of two binary numbers: ");

while (i >= 0) {

System.out.print(sum[i--]);

}

System.out.print("\n");

}

}

B. Write a Java program to convert a decimal number to binary number and vice versa

import java.util.\*;

class DectoBin

{

public static void main(String arg[])

{

Scanner sc=new Scanner(System.in);

System.out.println("Enter a decimal number");

int n=sc.nextInt();

int bin[]=new int[100];

int i = 0;

while(n > 0)

{

bin[i++] = n%2;

n = n/2;

}

System.out.print("Binary number is : ");

for(int j = i-1;j >= 0;j--)

{

System.out.print(bin[j]);

}

}

}

**Practical 4**

A. Write a Java program to count the letters, spaces, numbers and other characters of an input string.

import java.util.Scanner;

public class Exercise38 {

public static void main(String[] args) {

String test = "Aa kiu, I swd skieo 236587. GH kiu: sieo?? 25.33";

count(test);

}

public static void count(String x){

char[] ch = x.toCharArray();

int letter = 0;

int space = 0;

int num = 0;

int other = 0;

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

if(Character.isLetter(ch[i])){

letter ++ ;

}

else if(Character.isDigit(ch[i])){

num ++ ;

}

else if(Character.isSpaceChar(ch[i])){

space ++ ;

}

else{

other ++;

}

}

System.out.println("The string is : Aa kiu, I swd skieo 236587. GH kiu: sieo?? 25.33");

System.out.println("letter: " + letter);

System.out.println("space: " + space);

System.out.println("number: " + num);

System.out.println("other: " + other);

}

}

B. Implement a Java function that calculates the sum of digits for a given char array consisting of the digits '0' to '9'. The function should return the digit sum as a long value.

**import** java.util.Scanner;

**public** **class** SumOfDigitsExample1

{

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

{

**int** number, digit, sum = 0;

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

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

number = sc.nextInt();

**while**(number > 0)

{

digit = number % 10;

sum = sum + digit;

number = number / 10;

}

System.out.println("Sum of Digits: "+sum);

}

}

**Practical 5**

A. Write a java program to implement single level inheritance.

class Shape {

public void display() {

System.out.println("Inside display");

}

}

class Rectangle extends Shape {

public void area() {

System.out.println("Inside area");

}

}

public class Tester {

public static void main(String[] arguments) {

Rectangle rect = new Rectangle();

rect.display();

rect.area();

}

}

B. Write a java program to implement multiple inheritance.

interface Backend {

// abstract class

public void connectServer();

}

class Frontend {

public void responsive(String str) {

System.out.println(str + " can also be used as frontend.");

}

}

// Language extends Frontend class

// Language implements Backend interface

class Language extends Frontend implements Backend {

String language = "Java";

// implement method of interface

public void connectServer() {

System.out.println(language + " can be used as backend language.");

}

public static void main(String[] args) {

// create object of Language class

Language java = new Language();

java.connectServer();

// call the inherited method of Frontend class

java.responsive(java.language);

}

}

**Practical 6**

A. Create a package, Add the necessary classes and import the package in java class.

**Add.java**

**package** p1;

**import** java.util.\*;

**public** **class** Add

{

**int** s;

**public** **void** sum()

{

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

Scanner scan=**new** Scanner(System.in);

**int** x=scan.nextInt();

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

Scanner scan1=**new** Scanner(System.in);

**int** y=scan1.nextInt();

s=x+y;

System.out.println("sum="+s);

}

}

**Sub.java**

**package** p2;

**import** java.util.\*;

**public** **class** Sub

{

**int** d;

**public** **void** diff()

{

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

Scanner scan=**new** Scanner(System.in);

**int** x=scan.nextInt();

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

Scanner scan1=**new** Scanner(System.in);

**int** y=scan1.nextInt();

d=x-y;

System.out.println("Difference="+d);

}

}

**Mult.java**

**package** p3;

**import** java.util.\*;

**public** **class** Mult

{

**int** m;

**public** **void** pro()

{

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

Scanner scan=**new** Scanner(System.in);

**int** x=scan.nextInt();

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

Scanner scan1=**new** Scanner(System.in);

**int** y=scan1.nextInt();

m=x\*y;

System.out.println("Product="+m);

}

}

**Div.java**

**package** p4;

**import** java.util.\*;

**public** **class** Div

{

**int** q;

**public** **void** divd()

{

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

Scanner scan=**new** Scanner(System.in);

**int** x=scan.nextInt();

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

Scanner scan1=**new** Scanner(System.in);

**int** y=scan1.nextInt();

q=x/y;

System.out.println("Division="+q);

}

}

**package** p5;

//importing pre-defined package

**import** java.util.\*;

//importing user-defined package

**import** p1.Add;

**import** p2.Sub;

**import** p3.Mult;

**import** p4.Div;

**public** **class** Calculator

{

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

{

System.out.print("Enter your choice: ");

Scanner scan=**new** Scanner(System.in);

**int** t=scan.nextInt();

**switch**(t)

{

**case** 1:

Add a=**new** Add();

a.sum();

**break**;

**case** 2:

Sub s=**new** Sub();

s.diff();

**break**;

**case** 3:

Mult m=**new** Mult();

m.pro();

**break**;

**case** 4:

Div d=**new** Div();

d.divd();

**break**;

}

}

}

B. Write a java program to implement the vectors

import java.util.Vector;

class Main {

public static void main(String[] args) {

Vector<String> mammals= new Vector<>();

// Using the add() method

mammals.add("Dog");

mammals.add("Horse");

// Using index number

mammals.add(2, "Cat");

System.out.println("Vector: " + mammals);

// Using addAll()

Vector<String> animals = new Vector<>();

animals.add("Crocodile");

animals.addAll(mammals);

System.out.println("New Vector: " + animals);

}

}

**Practical 7**

A. Write a java program to implement thread life cycle.

B. Write a java program to implement multithreading.

class MultithreadingDemo implements Runnable {

public void run()

{

try {

// Displaying the thread that is running

System.out.println(

"Thread " + Thread.currentThread().getId()

+ " is running");

}

catch (Exception e) {

System.out.println("Exception is caught");

}

}

}

class Multithread {

public static void main(String[] args)

{

int n = 8; // Number of threads

for (int i = 0; i < n; i++) {

Thread object

= new Thread(new MultithreadingDemo());

object.start();

}

}

}