**----------------------------------------------**

**\*\*\*\*\*\*\* Java Assignment Section-1 \*\*\*\*\*\*\*\*\***

**---------------------------------------------**

**1. Get yourself acquainted with java environment. Find out "javac" & "java" in your JDK box.**

**2. Understand the system variable : PATH**

**3. Write a Java program to print 'Hello' on screen and then print your name on a separate line**.

class Hello{

public static void main(String arr[]){

System.out.println("Hello");

System.out.println("Subodh");

}}

**4. Write a Java program to print 'Hello' on screen and then print your name on the same line.**

class Hello{

public static void main(String arr[]){

System.out.print("Hello");

System.out.println(" Subodh");

}}

**5. Write a program to take "name" as command line argument and print "Hello "+<name> on the console?**

class Hello{

public static void main(String arr[]){

System.out.println("Hello " + arr[0]);

}}

**6. Write a java program to take three numbers from command line and print the average ?**

class Avg{

public static void main(String[] arr){

int avg = Integer.parseInt(arr[0]) +Integer.parseInt(arr[1]) +Integer.parseInt(arr[2]);

avg = avg/3;

System.out.print("Average = " + avg );

}}

**7. Write a java program to calculate simple interest, get the required inputs from command line ?**

Hint : SimpleInterest = (principal \* rate \* years)/100.0

class Ques7{

public static void main(String arr[]) {

Double a = Double.parseDouble(arr[0]);

Double b = Double.parseDouble(arr[1]);

Double c = Double.parseDouble(arr[2]);

System.out.println("Principal = " + arr[0] + "\nRate = " + arr[1] + "\nTime in Yrs = " + arr[2]);

Double SI = (a\*b\*c)/100;

System.out.println("Simple Interest = " + SI);

}

}

**8. Write a java program to convert temperature from celsius to fahrenheit, get input from command line ?**

**Hint : F = (9\*C/5) + 32**

class Temp{

public static void main(String arr[]){

System.out.println("Celsius = " + arr[0]);

Double F = (((9 \* Double.parseDouble(arr[0]))/5)+32);

System.out.println("Fahrenheit = " + F );

}}

**9. Write a java program to print following face(pattern) on screen -**

**+"""""+**

**[| o o |]**

**| ^ |**

**| '-' |**

**+-----+**

class Face{

public static void main(String arr[]){

System.out.println(" +\"\"\"\"\"+\n"+"[| o o |]\n"+" | ^ |\n"+" | '-' |\n"+" +-----+\n");

}}

**10. Write a Java program to print the sum (addition), multiply, subtract, divide and remainder of two numbers received from command line?**

// double x = Double.parseDouble(args[0]);

class Calc{

public static void main(String arr[]){

System.out.println("2 Numbers are " + arr[0] + " and " + arr[1]);

Double a = Double.parseDouble(arr[0]);

Double b = Double.parseDouble(arr[1]);

System.out.println("Sum = " + (a+b) );

System.out.println("Subtraction = " + (a-b) );

System.out.println("Multiplication = " + (a\*b) );

System.out.println("Division = " + (a/b) );

System.out.println("Remainder = " + (a%b) );

}}

**----------------------------------------------**

**\*\*\*\*\*\*\* Java Assignment Section-2 \*\*\*\*\*\*\*\*\***

**---------------------------------------------**

**1. Write a program to take "name" from user using Scanner and greet as shown below-**

**>> Enter your name : Shakir**

**Hello Shakir , Welcome to Java World.**

package section2;

import java.util.Scanner;

public class Ques1 {

public static void main(String[] args) {

Scanner scan = new Scanner(System.in);

System.out.println("Enter the Name :");

String name = scan.next();

System.out.println("Hello " + name + ", Welcome to Java World");

scan.close();

}

}

**2. Write a java program to take 5 numbers using Scanner and print the average ?**

>> Enter 5 numbers : 1 2 3 4 5

Average = 3

>> Enter 5 numbers : 2 3 5 7 9

Average = 5.2

package section2;

import java.util.Scanner;

public class Ques2 {

public static void main(String[] args) {

Scanner scan = new Scanner(System.in);

System.out.println("Enter 5 numbers :");

Double a = scan.nextDouble();

Double b = scan.nextDouble();

Double c = scan.nextDouble();

Double d = scan.nextDouble();

Double e = scan.nextDouble();

Double avg = (a+b+c+d+e)/5;

System.out.println("Average " + avg);

scan.close();

}

}

**3. Write a java program to calculate simple interest, get the required inputs**

**from Scanner ?**

**Hint : SI = (principal \* rate \* years)/100**

package section2;

import java.util.Scanner;

public class Ques3{

public static void main(String[] args) {

Scanner scan = new Scanner(System.in);

System.out.println("Enter Principal :");

Double P = scan.nextDouble();

System.out.println("Enter Rate :");

Double R = scan.nextDouble();

System.out.println("Enter Years :");

Double N = scan.nextDouble();

Double SI = (P\*N\*R)/100;

System.out.println("Simple Interest = " + SI);

}

}

**4. Write a program to calculate the monthly in hand salary of an employee :**

**take input for basic salary,**

**HRA is 40% of basic salary,**

**PF amount to be deducted is 12% of basic,**

**Medical allowance is Rs 1200 per month,**

**Traveling allowance is Rs 800 per month,**

**Professional tax to be deducted is Rs 300.**

package section2;

import java.util.Scanner;

public class Ques4{

public static void main(String[] args) {

Scanner scan = new Scanner(System.in);

System.out.println("Enter Basic Salary :");

Double S = scan.nextDouble();

Double HRA = 0.4\*S;

System.out.println("HRA(40% of basic) = " + HRA);

Double PF = 0.12\*S;

System.out.println("PF(12% of basic) = " + PF);

Double MA = 1200.0;

Double TA = 800.0;

Double PT = 300.0;

System.out.println("Medical Allowance = " + MA);

System.out.println("Travelling Allowance = " + TA);

System.out.println("Profession Tax = " + PT);

Double inHand = S + HRA - PF + MA + TA - PT ;

System.out.println("Monthly Salary in hand = " + inHand );

scan.close();

}

}

**5. Write a Java program to print the area and perimeter of a rectangle. Take required input using Scanner?**

Hint :

Area = width \* height

Perimeter = 2 \* ( width + height)

package section2;

import java.util.Scanner;

public class Ques5 {

public static void main(String[] args) {

Scanner scan = new Scanner(System.in);

System.out.println("Enter Width of Rectangle :");

Double W = scan.nextDouble();

System.out.println("Enter Height of Rectangle :");

Double H = scan.nextDouble();

System.out.println("Area of Rectangle = " + (W \* H));

System.out.println("Perimeter of Rectangle = " + (2\*(W+H)));

scan.close();

}

}

**6. Write a Java program to print the area and perimeter of a circle. Take required input using Scanner?**

Hint :

Area = Math.PI \* radius \* radius

Perimeter = 2\* Math.PI\* radius

package section2;

import java.util.Scanner;

public class Ques6 {

public static void main(String[] args) {

Scanner scan = new Scanner(System.in);

System.out.println("Enter Radius of Circle :");

Double R = scan.nextDouble();

Double PI = Math.PI;

System.out.println("Area of Circle = " + (PI\*R\*R));

System.out.println("Perimeter of Circle = " + (2\*PI\*R));

scan.close();

}

}

**7. Write a java program to calculate compound interest, get the required inputs**

**using Scanner ?**

package section2;

import java.util.Scanner;

public class Ques7 {

public static void main(String[] args) {

Scanner scan = new Scanner(System.in);

System.out.println("Enter Principal :");

Double P = scan.nextDouble();

System.out.println("Enter Rate :");

Double R = scan.nextDouble();

System.out.println("Enter Years :");

Double T = scan.nextDouble();

Double CI = (P\*(1+(R/100)));

CI = Math.pow(CI, T);

CI = CI - P;

System.out.println("Compound Interest = " + CI);

scan.close();

}

}

**8. Write a java program to read roll no, name and marks of three subjects and calculate the total and percentage.**

**Test Data :**

**Input the Roll Number of the student :784**

**Input the Name of the Student :James**

**Input the marks of Physics, Chemistry and Computer Application : 70 80 90**

**Expected Output :**

**Roll No : 784**

**Name of Student : James**

**Marks in Physics : 70**

**Marks in Chemistry : 80**

**Marks in Computer Application : 90**

**Total Marks = 240**

**Percentage = 80.00**

package section2;

import java.util.Scanner;

public class Ques8 {

public static void main(String[] args) {

Scanner scan = new Scanner(System.in);

System.out.println("Roll Number of Student :");

Integer Number = scan.nextInt();

System.out.println("Enter the Name of Student :");

String name = scan.next();

System.out.println("Enter Marks of Physics, Chem and Comp. Appli. :");

Integer Phy = scan.nextInt();

Integer Chem = scan.nextInt();

Integer CompApp = scan.nextInt();

System.out.println("Roll No = " + Number);

System.out.println("Name of Student = " + name);

System.out.println("Marks in Physics = " + Phy);

System.out.println("Marks in Chemistry = " + Chem);

System.out.println("Marks in Comp. Appli. = " + CompApp);

System.out.println("Total Marks = " + (Phy + Chem + CompApp));

Double per = (Phy + Chem + CompApp)/3.0;

System.out.println("Percentage = " + per);

scan.close();

}

}

**----------------------------------------------**

**\*\*\*\*\*\*\* Java Assignment Section-3 \*\*\*\*\*\*\*\*\***

**---------------------------------------------**

**1. Write a java program to swap two numbers stored in local variables?**

package section3;

import java.util.Scanner;

public class Ques1 {

public static void main(String[] args) {

Scanner scan = new Scanner(System.in);

System.out.println("Enter a Variable :");

Integer a = scan.nextInt();

System.out.println("Enter b Variable :");

Integer b = scan.nextInt();

Integer temp;

temp = a;

a=b;

b=temp;

System.out.println("Value of a and b :" + a + " " + b);

scan.close();

}

}

**2. Write a java program to swap two numbers stored in local variables without using additional variable?**

package section3;

import java.util.Scanner;

public class Ques2 {

public static void main(String[] args) {

Scanner scan = new Scanner(System.in);

System.out.println("Enter a Variable :");

Integer a = scan.nextInt();

System.out.println("Enter b Variable :");

Integer b = scan.nextInt();

a = a+b;

b = a-b;

a = a-b;

System.out.println("Value of a and b :" + a + " " + b);

scan.close();

}

}

**3. Write a java program to accept two integers and check whether they are equal or not?**

>> Enter two integers : 15 15

first and second number are equal.

package section3;

import java.util.Scanner;

public class Ques3 {

public static void main(String[] args) {

Scanner scan = new Scanner(System.in);

System.out.println("Enter 2 Integers :");

Integer a = scan.nextInt();

Integer b = scan.nextInt();

if (a == b) {

System.out.println("Integers are Equal");

} else {

System.out.println("Intergers are not equal");

}

scan.close();

}

}

**4. Write a java program to check whether a given number is positive or negative?**

package section3;

import java.util.Scanner;

public class Ques4 {

public static void main(String[] args) {

Scanner scan = new Scanner(System.in);

System.out.println("Enter Number :");

Integer a = scan.nextInt();

if (a>0) {

System.out.println("Number is Positive");

} else if (a < 0) {

System.out.println("Number is negative");

} else {

System.out.println("Number is Zero");

}

scan.close();

}

}

**5. Write a java program to check whether a given number is even or odd?**

package section3;

import java.util.Scanner;

public class Ques5 {

public static void main(String[] args) {

Scanner scan = new Scanner(System.in);

System.out.println("Enter Number :");

Integer a = scan.nextInt();

if (a%2 == 0) {

System.out.println("Number is Even");

} else {

System.out.println("Number is Odd");

}

scan.close();

}

}

**6. Write a java program to read age of a person, check if he/she is eligible to cast vote or not?**

package section3;

import java.util.Scanner;

public class Ques6 {

public static void main(String[] args) {

Scanner scan = new Scanner(System.in);

System.out.println("Enter Age of Person :");

Integer a = scan.nextInt();

if (a >= 18) {

System.out.println("Eligible for Voting");

} else {

System.out.println("Not Eligible for Voting");

}

scan.close();

}

}

**7. Write a java program to read a number entered by user. Print -1 if this number is negative, 1 if it is positive, 0 if it is neither positive nor negative?**

package section3;

import java.util.Scanner;

public class Ques7 {

public static void main(String[] args) {

Scanner scan = new Scanner(System.in);

System.out.println("Enter Number :");

Integer a = scan.nextInt();

if (a > 0) {

System.out.println("1");

} else if (a < 0) {

System.out.println("-1");

} else {

System.out.println("0");

}

scan.close();

}

}

**8. Write a program to find the largest of two numbers?**

package section3;

import java.util.Scanner;

public class Ques8 {

public static void main(String[] args) {

Scanner scan = new Scanner(System.in);

System.out.println("Enter 2 Numbers :");

Integer a = scan.nextInt();

Integer b = scan.nextInt();

if (a > b) {

System.out.println("Largest Number is : " + a);

} else {

System.out.println("Largest Number is : " + b);

}

scan.close();

}

}

**9. Write a program to find the largest of three numbers?**

package section3;

import java.util.Scanner;

public class Ques9 {

public static void main(String[] args) {

Scanner scan = new Scanner(System.in);

System.out.println("Enter 3 Numbers :");

Integer a = scan.nextInt();

Integer b = scan.nextInt();

Integer c = scan.nextInt();

if (a >= b && a>=c) {

System.out.println("Largest Number is : " + a);

} else if (b>=a && b>=c) {

System.out.println("Largest Number is : " + b);

}else {

System.out.println("Largest Number is : " + c);

}

scan.close();

}

}

**10. Write a program to find the smallest of five numbers?**

package section3;

import java.util.Scanner;

public class Ques10 {

public static void main(String[] args) {

Scanner scan = new Scanner(System.in);

System.out.println("Enter 5 Numbers :");

Integer a = scan.nextInt();

Integer b = scan.nextInt();

Integer c = scan.nextInt();

Integer d = scan.nextInt();

Integer e = scan.nextInt();

Integer small = a;

if (small > b)

small = b;

else if (small > c)

small = c;

else if (small > d)

small = d;

else if (small > e)

small = e;

System.out.println("Smallest Number is : " + small);

scan.close();

}

}

**11. Write a java program to read roll no, name and marks of three subjects and calculate the total, percentage and division.**

**Test Data :**

**Input the Roll Number of the student :784**

**Input the Name of the Student :James**

**Input the marks of Physics, Chemistry and Computer Application : 70 80 90**

**Expected Output :**

**Roll No : 784**

**Name of Student : James**

**Marks in Physics : 70**

**Marks in Chemistry : 80**

**Marks in Computer Application : 90**

**Total Marks = 240**

**Percentage = 80.00**

**Division = First**

package section3;

import java.util.Scanner;

public class Ques11 {

public static void main(String[] args) {

Scanner scan = new Scanner(System.in);

System.out.println("Roll Number of Student :");

Integer Number = scan.nextInt();

System.out.println("Enter the Name of Student :");

String name = scan.next();

System.out.println("Enter Marks of Physics, Chem and Comp. Appli. :");

Integer Phy = scan.nextInt();

Integer Chem = scan.nextInt();

Integer CompApp = scan.nextInt();

System.out.println("Roll No = " + Number);

System.out.println("Name of Student = " + name);

System.out.println("Marks in Physics = " + Phy);

System.out.println("Marks in Chemistry = " + Chem);

System.out.println("Marks in Comp. Appli. = " + CompApp);

System.out.println("Total Marks = " + (Phy + Chem + CompApp));

Double per = (Phy + Chem + CompApp)/3.0;

System.out.println("Percentage = " + per);

if (per>=60) {

System.out.println("Division : First");

} else if (per > 45 && per < 60) {

System.out.println("Division : Second");

}else {

System.out.println("Division : Pass");

}

scan.close();

}

}

**12. Write a java program to read temperature in centigrade and display a suitable message according to temperature state below :**

**Temp < 0 then Freezing weather**

**Temp 0-10 then Very Cold weather**

**Temp 10-20 then Cold weather**

**Temp 20-30 then Normal in Temp**

**Temp 30-40 then Its Hot**

**Temp >=40 then Its Very Hot**

**Test Data :**

**42**

**Expected Output :**

**Its very hot.**

package section3;

import java.util.Scanner;

public class Ques12 {

public static void main(String[] args) {

Scanner scan = new Scanner(System.in);

System.out.println("Enter Temperature in Celsius :");

double Temp = scan.nextDouble();

if (Temp >=40)

System.out.println("Its very hot");

else if (Temp<40 && Temp>=30)

System.out.println("Its Hot");

else if (Temp<30 && Temp>=20)

System.out.println("Normal in Temp");

else if (Temp<20 && Temp>=10)

System.out.println("Cold Weather");

else if (Temp<10 && Temp>=0)

System.out.println("Very Cold Weather");

else if (Temp<0)

System.out.println("Freezing Weather");

scan.close();

}

}

**13. Write a Java program to print the ascii value of a given character?**

package section3;

import java.util.Scanner;

public class Ques12 {

public static void main(String[] args) {

Scanner scan = new Scanner(System.in);

System.out.println("Enter Variable :");

char ch = scan.next().charAt(0);

Integer value = (int) ch;

System.out.println("AscII value of " + ch + " is " + value );

scan.close();

}

}

**14. Write a Java program that takes a year from user and print whether that year is a leap year or not.**

**Hint : a leap year is divisible by 4 and (not div by 100 or if div by both 100 &400)**

package section3;

import java.util.Scanner;

public class Ques14 {

public static void main(String[] args) {

Scanner scan = new Scanner(System.in);

System.out.println("Enter Year :");

int year = scan.nextInt();

if(year%4 == 0) {

System.out.println("Leap year" );

}else {

System.out.println("Not a leap year");

}

scan.close();

}

}

**15. Write a java program to check if a given number is divisble by 3 and 5 ?**

package section3;

import java.util.Scanner;

public class Ques15 {

public static void main(String[] args) {

Scanner scan = new Scanner(System.in);

System.out.println("Enter Number :");

int num = scan.nextInt();

if(num%15 == 0) {

System.out.println("Number is divisible by 3 and 5" );

}else {

System.out.println("Not divisible by 3 and 5");

}

scan.close();

}

}

**16. Write a java program to ask user to enter test marks of three subjects such as Phy, Chem, Math. Max marks for each subject is 100. Now calculate average of marks. Display following message based on average marks calculated -**

**avg < 30 : You are failed.**

**avg >= 30 but < 60 : You passed with Second division**

**avg >=60 but < 80 : You passed wirh Fiear division**

**avg>=80 : You passed with First class distinction**

package section3;

import java.util.Scanner;

public class Ques16 {

public static void main(String[] args) {

Scanner scan = new Scanner(System.in);

System.out.println("Enter Marks of Physics :");

Integer Phy = scan.nextInt();

System.out.println("Enter Marks of Chemistry :");

Integer Chem = scan.nextInt();

System.out.println("Enter Marks of Maths :");

Integer Math = scan.nextInt();

Double per = (Phy + Chem + Math) / 3.0;

System.out.println("Average = " + per);

if (per >= 80) {

System.out.println("You passed with First Class Distinction");

} else if (per >= 60 && per < 80) {

System.out.println("You passed with First Division");

} else if (per >= 30 && per < 60) {

System.out.println("You passed with Second Division");

} else if (per<30) {

System.out.println("You are Failed");

}

scan.close();

}

}

**17. Write a java program to ask user to enter a number between 1 and 7, print week day as per below mappings -**

**(1 - Monday, 2-Tuesday, .... 7-Sunday)**

package section3;

import java.util.Scanner;

public class Ques17 {

public static void main(String[] args) {

Scanner scan = new Scanner(System.in);

System.out.println("Enter Number between 1 to 7 :");

int num = scan.nextInt();

switch (num) {

case 1:

System.out.println("Monday");

break;

case 2:

System.out.println("Tuesday");

break;

case 3:

System.out.println("Wednesday");

break;

case 4:

System.out.println("Thursday");

break;

case 5:

System.out.println("Friday");

break;

case 6:

System.out.println("Saturday");

break;

case 7:

System.out.println("Sunday");

break;

default:

System.out.println("Invalid Entry");

break;

}

scan.close();

}

}

**18. Write a Java program to check if character entered by user is a vowel, consonant or other character?**

package section3;

import java.util.Scanner;

public class Ques18 {

public static void main(String[] args) {

Scanner scan = new Scanner(System.in);

System.out.println("Enter Character :");

char ch = scan.next().charAt(0);

if (ch == 'a'|| ch == 'e' || ch == 'i' || ch == 'o' || ch == 'u' || ch == 'A' || ch == 'E' || ch =='I' || ch == 'O' || ch == 'U') {

System.out.println(ch + " is a Vowel");

} else if(ch>'a' &&ch<'z' || ch>'A' &&ch<'Z' ) {

System.out.println(ch + " is a Consonant");

} else {

System.out.println(ch +" is Character");

}

scan.close();

}

}

**19. Write a java program to ask user to enter month number (1-12) , print month name as per below mappings -**

**(1 - January, 2-Feburary ... 12- December)**

package section3;

import java.util.Scanner;

public class Ques19 {

public static void main(String[] args) {

Scanner scan = new Scanner(System.in);

System.out.println("Enter Number between 1 to 12 :");

int num = scan.nextInt();

switch (num) {

case 1:

System.out.println("January");

break;

case 2:

System.out.println("February");

break;

case 3:

System.out.println("March");

break;

case 4:

System.out.println("April");

break;

case 5:

System.out.println("May");

break;

case 6:

System.out.println("June");

break;

case 7:

System.out.println("July");

break;

case 8:

System.out.println("August");

break;

case 9:

System.out.println("September");

break;

case 10:

System.out.println("October");

break;

case 11:

System.out.println("November");

break;

case 12:

System.out.println("December");

break;

default:

System.out.println("Invalid Entry");

break;

}

scan.close();

}

}

**20. Write a program to read 5 numbers from user, print the second highest number?**

**----------------------------------------------**

**\*\*\*\*\*\*\* Java Assignment Section-4 \*\*\*\*\*\*\*\*\***

**---------------------------------------------**

**1. Write a java program to print first 10 natural numbers and their sum?**

package section4;

public class Ques1 {

static int sum =0;

public static void main(String[] args) {

System.out.println("First 10 natural numbers are :");

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

System.out.print(i + " ");

sum=i+sum;

}

System.out.println("");

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

}

}

**2. Write a java program to read 10 numbers from keyboard and find their sum and average?**

package section4;

import java.util.Scanner;

public class Ques2 {

static double sum = 0;

public static void main(String[] args) {

Scanner scan = new Scanner(System.in);

System.out.println("Enter 10 numbers :");

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

int a = scan.nextInt();

sum = a + sum;

}

System.out.println("");

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

System.out.println("Average = " + (sum / 10));

scan.close();

}

}

**3. Write a program in java to display the multiplication table of a given integer?**

**>> Enter the number : 5**

**5 X 1 = 5**

**5 X 2 = 10**

**.**

**.**

**5 X 10 = 50**

package section4;

import java.util.Scanner;

public class Ques3 {

public static void main(String[] args) {

Scanner scan = new Scanner(System.in);

System.out.println("Enter Number :");

int a = scan.nextInt();

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

System.out.println(a + " x " + i + " = " + (a \* i));

}

scan.close();

}

}

**4. Write a program to calculate the factorial of the given number?**

package section4;

import java.util.Scanner;

public class Ques4 {

public static void fact(int num) {

int fact = 1;

for (int i = 1; i <= num; i++) {

fact = i \* fact;

}

System.out.println(fact);

}

public static void main(String[] args) {

Scanner scan = new Scanner(System.in);

System.out.println("Enter Number :");

fact(scan.nextInt());

scan.close();

}

}

**5. Write a program to display the pattern like right angle triangle using an asterisk as shown below:**

**\***

**\*\***

**\*\*\***

**\*\*\*\***

package section4;

import java.util.Scanner;

public class Ques5 {

public static void main(String[] args) {

Scanner scan = new Scanner(System.in);

System.out.println("Number of Rows of Triangle of \* :");

int num = scan.nextInt();

for (int i = 1; i <= num; i++) {

for (int j = 1; j <= i; j++) {

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

}

System.out.println("");

}

scan.close();

}

}

**6. Write a program to display the pattern like right angle triangle with a number as shown below :**

1

12

123

1234

package section4;

import java.util.Scanner;

public class Ques6 {

public static void main(String[] args) {

Scanner scan = new Scanner(System.in);

System.out.println("Number of Rows of Triangle :");

int num = scan.nextInt();

for (int i = 1; i <= num; i++) {

for (int j = 1; j <= i; j++) {

System.out.print(j);

}

System.out.println("");

}

scan.close();

}

}

**7. Write a program to make such a pattern like right angle triangle with a number which will repeat a number in a row, as shown below :**

**1**

**22**

**333**

**4444**

package section4;

import java.util.Scanner;

public class Ques7 {

public static void main(String[] args) {

Scanner scan = new Scanner(System.in);

System.out.println("Number of Rows of Triangle :");

int num = scan.nextInt();

for (int i = 1; i <= num; i++) {

for (int j = 1; j <= i; j++) {

System.out.print(i);

}

System.out.println("");

}

scan.close();

}

}

**8. Write a program to make such a pattern like right angle triangle with number increased by 1 as shown below :**

**1**

**2 3**

**4 5 6**

**7 8 9 10**

package section4;

import java.util.Scanner;

public class Ques8 {

public static int temp = 1;

public static void main(String[] args) {

Scanner scan = new Scanner(System.in);

System.out.println("Number of Rows of Triangle :");

int num = scan.nextInt();

for (int i = 1; i <= num; i++) {

for (int j = 1; j <= i; j++) {

System.out.print(temp + " ");

++temp;

}

System.out.println("");

}

scan.close();

}

}

**9. Write a program to make such a pattern like a pyramid with an asterisk, as show below :**

**\***

**\* \***

**\* \* \***

\* \* \* \*

package section4;

import java.util.Scanner;

public class Ques9 {

public static void main(String[] args) {

Scanner scan = new Scanner(System.in);

System.out.println("Number of Rows of Triangle :");

int num = scan.nextInt();

for (int i = 1; i <= num; i++) {

for (int j = num; j >= i; j--) {

System.out.print(" ");

}

for (int j = 1; j <= i; j++) {

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

}

System.out.println("");

}

scan.close();

}

}

**10. Write a program to make such a pattern like a pyramid with a number which will repeat the number in the same row as shown below :**

**1**

**2 2**

**3 3 3**

**4 4 4 4**

package section4;

import java.util.Scanner;

public class Ques10 {

public static void main(String[] args) {

Scanner scan = new Scanner(System.in);

System.out.println("Number of Rows of Triangle :");

int num = scan.nextInt();

for (int i = 1; i <= num; i++) {

for (int j = num; j >= i; j--) {

System.out.print(" ");

}

for (int j = 1; j <= i; j++) {

System.out.print(i + " ");

}

System.out.println("");

}

scan.close();

}

}

**11. Write a program to check whether a given number is a perfect number or not?**

**Note :**

**Defintion of Perfect Number : sum of all divisor of the number is equal to the number itself.**

**eg. Number = 6 is perfrect because**

**All positive divisor = 1 2 3, their sum=6**

package section4;

import java.util.Scanner;

public class Ques11 {

public static int sum = 0;

public static void main(String[] args) {

Scanner scan = new Scanner(System.in);

System.out.println("Enter the Number :");

int num = scan.nextInt();

for (int i = 1; i < num; i++) {

if (num % i == 0) {

System.out.println("Factor of " + num + " is " + i);

sum = i + sum;

}

}

System.out.println("Sum of Factors = " + sum);

if (sum == num) {

System.out.println(num + " is Perfect Number");

} else {

System.out.println(num + " is not Perfect Number");

}

scan.close();

}

}

**12. Write a program to check whether a given number is an armstrong number or not?**

**Note : When the sum of the cube of the individual digits of a number is equal to that number, the number is called Armstrong number. For Example 153 is an Armstrong number because 153 = 1^3 +5^3 + 3^3.**

package section4;

import java.util.Scanner;

public class Ques12 {

static int count = 0;

static int sum = 0;

public static void CountDigits(int num) {

while (num != 0) {

num = num / 10;

count = count + 1;

}

System.out.println("Number of Digits in Number = " + count);

}

static void FindSum(int num) {

for (int i = 1; i <= count; i++) {

int digit = num % 10;

num = num / 10;

int add = (int) Math.pow(digit, count);

sum = add + sum;

}

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

}

public static void main(String[] args) {

Scanner scan = new Scanner(System.in);

System.out.println("Enter the Number :");

int a = scan.nextInt();

CountDigits(a);

FindSum(a);

if (sum == a) {

System.out.println(a + " is Armstrong Number");

} else {

System.out.println(a + " is not Armstrong Number");

}

scan.close();

}

}

**13. Write a program to determine whether a given number is prime or not?**

package section4;

import java.util.Scanner;

public class Ques13 {

public static void main(String[] args) {

Scanner scan = new Scanner(System.in);

System.out.println("Enter the Number :");

int num = scan.nextInt();

int count = 0;

if (num == 0 || num == 1) {

System.out.println("Neither Prime nor Composite");

} else if (num % 2 != 0 || num == 2) {

for (int i = 2; i < num; i++) {

if ((num % i == 0)) {

count = 1;

break;

}

}

if (count == 1) {

System.out.println(num + " is Composite Number");

}

if (count == 0) {

System.out.println(num + " is Prime Number");

}

} else {

System.out.println(num + " is Composite Number");

}

scan.close();

}

}

**14. Write a program to display the first n terms of Fibonacci series.**

**Fibonacci series 0 1 2 3 5 8 13 .....**

**Test Data :**

**Input number of terms to display : 10**

**Expected Output :**

**Here is the Fibonacci series upto to 10 terms :**

**0 1 1 2 3 5 8 13 21 34**

package section4;

import java.util.Scanner;

public class Ques14 {

public static void main(String[] args) {

Scanner scan = new Scanner(System.in);

System.out.println("Enter Number to diplay Fibonacci Series :");

int num = scan.nextInt();

int n1=0;

int n2=1;

System.out.print(n1 + " " + n2);

int n3;

for (int i = 0; i <(num-2); i++) {

n3=n1+n2;

System.out.print(" " + n3);

n1=n2;

n2=n3;

}

scan.close();

}

}

**15. Write a program to display the number in reverse order.**

package section4;

package section4;

import java.util.Scanner;

public class Ques15 {

public static void main(String[] args) {

Scanner scan = new Scanner(System.in);

System.out.println("Enter Number to Print in Reverse Order :");

int num = scan.nextInt();

int rev = 0;

while(num>0) {

rev = num%10;

num=num/10;

System.out.print(rev);

}

scan.close();

}

}

**16. Write a program to check whether a number is a palindrome or not.**

Note: If reverse of a number is same as that of number , then it is called palindrome. eg. 11, 151, 121,

package section4;

import java.util.Scanner;

public class Ques16 {

public static void main(String[] args) {

Scanner scan = new Scanner(System.in);

System.out.println("Enter Number to Check Number is Palindrome or Not :");

int num = scan.nextInt();

int rev = 0;

int temp= num;

while(num>0) {

int r = num%10;

rev=(rev\*10)+r;

num=num/10;

}

if(rev == temp) {

System.out.println(temp + " is a Palindrome");

}else {

System.out.println(temp + " is not a Palindrome");

}

scan.close();

}

}

**17. Write a program to check whether a given number is a Strong Number or not?**

**Note : If sum of factorial of each digit of a number is equal to that number, then that number is called strong number.**

package section4;

import java.util.Scanner;

public class Ques17 {

public static int fact(int digit) {

int fact = 1;

int i =1;

while (i<=digit) {

fact = fact \*i;

i++;

}

return fact;

}

public static void main(String[] args) {

Scanner scan = new Scanner(System.in);

System.out.println("Enter number to check Strong or Not :");

int num = scan.nextInt();

int temp=num;

int strongsum = 0;

while(num>0) {

int digit = num%10;

num=num/10;

strongsum += fact(digit);

}

System.out.println(strongsum);

if(strongsum == temp) {

System.out.println(temp + " is a Strong Number");

}else {

System.out.println(temp + " is not a Strong Number");

}

scan.close();

}

}

**18. Write a program to find the length of a string without using the library function?**

public class Ques18 {

public static void charNum(String s) {

int length = 0;

try {

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

s.charAt(i);

length++;

}

} catch (Exception e) {

}

System.out.println(length);

}

public static void main(String[] args) {

Scanner scan = new Scanner(System.in);

System.out.println("Enter String");

String s = scan.next();

charNum(s);

}

}

**19. Write a program to print all numbers between 1 & 100 which are divisible by 3 and 5 both?**

package section4;

import java.util.Scanner;

public class Ques19 {

public static void main(String[] args) {

Scanner scan = new Scanner(System.in);

System.out.println("Find numbers divisble by 3 and 5 from 1 to n");

System.out.println("Enter n");

int n = scan.nextInt();

System.out.println("Numbers Divisible by 3 and 5 from 1 to " + n + " are : ");

int i =1;

while(i<n) {

if(i%15==0) {

System.out.print(i + " ");

}

i++;

}

scan.close();

}

}

**----------------------------------------------**

**\*\*\*\*\*\*\* Java Assignment Section-5 \*\*\*\*\*\*\*\*\***

**---------------------------------------------**

**1. Create a class Emp with fields like empId, name,dept,salary,address.**

**Write required constructors for initialization**

**Write a method displayEmpDetails() in the same class.**

**Write another test class , where you have to take emp details from user using Scanner and create object and call methods.**

package Section5;

import java.util.Scanner;

public class Emp {

int empId;

String name;

String dept;

int salary;

String address;

public void EmpDetails(int empId, String name, String dept, int salary, String address) {

this.empId = empId;

this.name = name;

this.dept = dept;

this.salary = salary;

this.address = address;

}

public void displayDetails() {

System.out.println(empId + " " + name + " " + dept + " " + salary + " " + address);

}

public int getEmpId() {

return empId;

}

public void setEmpId(int empId) {

this.empId = empId;

}

public String getName() {

return name;

}

public void setName(String name) {

this.name = name;

}

public String getDept() {

return dept;

}

public void setDept(String dept) {

this.dept = dept;

}

public int getSalary() {

return salary;

}

public void setSalary(int salary) {

this.salary = salary;

}

public String getAddress() {

return address;

}

public void setAddress(String address) {

this.address = address;

}

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

Emp e = new Emp();

System.out.println("Enter Employee Details :");

System.out.println("Enter Id : ");

int id = sc.nextInt();

System.out.println("Enter Name : ");

String n = sc.next();

System.out.println("Enter Department : ");

String d = sc.next();

System.out.println("Enter Salary : ");

int s = sc.nextInt();

System.out.println("Enter City : ");

String a = sc.next();

e.EmpDetails(id, n, d,s, a);

e.displayDetails();

sc.close();

}

}

**2. Create a class Circle, it will have only one constructor which accepts radius as an argument. Write two methods in the class - calcuateArea(), calculatePermiter().**

**Write test class to test method calls.**

**class Circle{**

**int rad;**

**Circle(int r){this.rad = r;}**

**double calArea(){}**

**double calPerimeter(){}**

**}**

package Section5;

import java.util.Scanner;

public class Circle {

double rad;

public Circle(double radius) {

this.rad = radius;

}

static void CalArea(double radius) {

double area = Math.PI \* radius \* radius;

System.out.println("Area = " + area);

}

static void CalPerimeter(double radius) {

double perimeter = 2 \* Math.PI \* radius;

System.out.println("Perimeter = " + perimeter);

}

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

System.out.println("Enter Radius :");

double r = sc.nextDouble();

CalArea(r);

CalPerimeter(r);

sc.close();

}

}

**----------------------------------------------**

**\*\*\*\*\*\*\* Java Assignment Section-6 \*\*\*\*\*\*\*\*\***

**---------------------------------------------**

**1. Install Eclipse with help of lab faculty, write and run some java programs.**

**Set it up for java 8.**

**2. Practice whatever is tought in the classroom - final, access modifier, constructors**

**3. Write a menu driven billing system for a Snacks center, items available are Tea(Rs. 10), Samosa (Rs. 20), Sandwitch(Rs. 50), Green Tea (Rs. 15) etc. as follows -**

**\*\*\*\*Welcome to Snack Center \*\*\*\*\*\*\*\*\***

**1. Tea (Rs. 10)**

**2. Green Tea (Rs. 15)**

**3. Samosa (Rs. 20)**

**4. Sandwitch (Rs. 50)**

**5. Generate Bill & Exit**

**Enter your choice : 1**

**Enter quantity : 2**

**1. Tea (Rs. 10)**

**2. Green Tea (Rs. 15)**

**3. Samosa (Rs. 20)**

**4. Sandwitch (Rs. 50)**

**5. Generate Bill & Exit**

**Enter your choice : 3**

**Enter quantity : 3**

**1. Tea (Rs. 10)**

**2. Green Tea (Rs. 15)**

**3. Samosa (Rs. 20)**

**4. Sandwitch (Rs. 50)**

**5. Generate Bill & Exit**

**Enter your choice : 5**

**\*\*\*\*\*BILL\*\*\*\***

**Tea 2 20**

**Samosa 3 60**

**------------**

**Total = 80**

package Section6;

import java.util.Scanner;

public class HotelMenu {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

boolean Con = true;

int teaqty=0 ; int greenteaq=0 ; int sandwichqty=0 ; int samosaqty=0;

System.out.println("\*\*\*\*\*\*Welcome to Snack Center\*\*\*\*\*\*");

do {

System.out.println("1. Tea");

System.out.println("2. Green Tea");

System.out.println("3. Samosa");

System.out.println("4. Sandwich");

System.out.println("5.Generate Bill and Exit");

System.out.print("Enter Choice : ");

int a = sc.nextInt();

switch (a) {

case 1:

System.out.print("Enter Quantity : ");

teaqty += sc.nextInt();

break;

case 2:

System.out.print("Enter Quantity : ");

greenteaq += sc.nextInt();

break;

case 3:

System.out.print("Enter Quantity : ");

samosaqty += sc.nextInt();

break;

case 4:

System.out.print("Enter Quantity : ");

sandwichqty += sc.nextInt();

break;

case 5:

System.out.println();

System.out.println("\t\*\*\*\*\*\*\*\*BILL\*\*\*\*\*\*\*\*");

System.out.println("--------------------------------------");

System.out.println("ITEM\t\t" + "Quantity\t" + "Amount");

System.out.println("--------------------------------------");

if(teaqty>0)System.out.println("Tea\t\t" + teaqty +"\t\t"+ teaqty\*10);

if(greenteaq>0)System.out.println("Green Tea\t" + greenteaq +"\t\t"+ greenteaq\*15);

if(samosaqty>0)System.out.println("Samosa\t\t" + samosaqty +"\t\t"+ samosaqty\*20);

if(sandwichqty>0)System.out.println("Sandwich\t" + sandwichqty +"\t\t"+ sandwichqty\*50);

int sum = teaqty \*10 + greenteaq \* 15 + samosaqty \* 20 + sandwichqty\*50;

System.out.println("--------------------------------------");

System.out.println("Total(in Rs)\t\t\t" + sum);

Con = false;

System.exit(0);

break;

default:

break;

}

} while (Con);

}

}

**----------------------------------------------**

**\*\*\*\*\*\*\* Java Assignment Section-7 \*\*\*\*\*\*\*\*\***

**---------------------------------------------**

**1. Write a java class named as NumUtil with following static methods to -**

**double getPower(double x, int n)**

**long getFactorial(int num);**

**boolean isPrime(int num);**

**boolean isEven(int num);**

**boolean isOdd(int num);**

**1.1) Write test class named as NumUtilMain to test all these methods.**

**1.2) Extends question 2.1 to make it menu driven, based on the user choice , read relevant data from user and call static methods.**

package Section7;

import java.util.Scanner;

public class NumUtil {

public static double getPower(double x, int n) {

double num = Math.pow(x, n);

return num;

}

public static long getFactorial(int num) {

long fact = 1;

while (num > 1) {

fact = fact \* num;

num--;

}

return fact;

}

public static boolean isPrime(int num) {

int notprime = 0;

int i = 2;

while (i < num) {

if (num % i == 0) {

notprime = 1;

break;

}

i++;

}

if (notprime == 1) {

return false;

} else {

return true;

}

}

public static boolean isEven(int num) {

if (num % 2 == 0) {

return true;

} else {

return false;

}

}

public static boolean isOdd(int num) {

if (num % 2 != 0) {

return true;

} else {

return false;

}

}

public static void main(String[] args) {

do {

Scanner sc = new Scanner(System.in);

boolean Stop = false;

System.out.println(

" 1. getPower \n 2. getFactorial \n 3. Check Prime \n 4. Check Even \n 5. Check Odd \n 6.Exit");

System.out.println("Enter Choice :");

int a = sc.nextInt();

switch (a) {

case 1:

System.out.println("Enter Base Number :");

double x = sc.nextInt();

System.out.println("Enter Power");

int n = sc.nextInt();

System.out.println(getPower(x, n));

break;

case 2:

System.out.println("Enter Number :");

int b = sc.nextInt();

System.out.println(getFactorial(b));

break;

case 3:

System.out.println("Enter Number :");

int c = sc.nextInt();

if (!isPrime(c) == false) {

System.out.println(c + " is Prime Number");

} else {

System.out.println(c + " is not a Prime Number");

}

break;

case 4:

System.out.println("Enter Number :");

int d = sc.nextInt();

if (isEven(d) == true) {

System.out.println(d + " is Even Number");

} else {

System.out.println(d + " is not a Even Number");

}

break;

case 5:

System.out.println("Enter Number :");

int e = sc.nextInt();

if (isOdd(e) == true) {

System.out.println(e + " is Odd Number");

} else {

System.out.println(e + " is not a Odd Number");

}

break;

case 6:

System.out.println("");

System.exit(0);

break;

default:

break;

}

} while (true);

}

}

**----------------------------------------------**

**\*\*\*\*\*\*\* Java Assignment Section-8 \*\*\*\*\*\*\*\*\***

**---------------------------------------------**

**1. Write a program to calculate average of numbers stored in an array?**

package Section8;

import java.util.Arrays;

import java.util.Scanner;

public class Ques1 {

public static void main(String[] args) {

double sum = 0;

Scanner sc = new Scanner(System.in);

System.out.println("Enter Array Size :");

int n = sc.nextInt();

int[] arr= new int[n];

System.out.println("Enter " + n + " Numbers :");

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

arr[i] = sc.nextInt();

sum +=arr[i];

}

double avg = sum/n;

System.out.println("Array : " + Arrays.toString(arr));

System.out.println("Average = " + avg);

}

}

**2. Write a program to reverse an array of elements?**

package Section8

import java.util.Arrays;

import java.util.Scanner;

public class Ques2 {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

System.out.println("Enter Length of Array : ");

int n = sc.nextInt();

int[] arr1 = new int[n];

int[] arr2 = new int[n];

System.out.println("Enter " + n + " numbers :");

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

arr1[i]=sc.nextInt();

}

for (int j = 0; j < arr1.length; j++) {

arr2[j]=arr1[--n];

}

System.out.println("Original Array : "+ Arrays.toString(arr1));

System.out.println("Reverse Array : " + Arrays.toString(arr2));

}

}

**3. Write a program to find out highest and second highest number in an array?**

package Section8;

import java.util.Arrays;

import java.util.Scanner;

public class Ques3 {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

System.out.println("Enter Length of Array : ");

int n = sc.nextInt();

int[] arr1 = new int[n];

System.out.println("Enter " + n + " numbers :");

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

arr1[i]=sc.nextInt();

}

System.out.println("Array : "+ Arrays.toString(arr1));

Arrays.sort(arr1);

System.out.println("Sorted Array : "+ Arrays.toString(arr1));

System.out.println("Largest Number = " + arr1[arr1.length-1]);

System.out.println("2nd Largest Number = " + arr1[arr1.length-2]);

}

}

**4. Write a Java program to copy an array to another by iterating the array?**

package Section8;

import java.util.Arrays;

import java.util.Scanner;

public class Ques4 {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

System.out.println("Enter Length of Array : ");

int n = sc.nextInt();

int[] arr1 = new int[n];

int[] arr2 = new int[n];

System.out.println("Enter " + n + " numbers :");

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

arr1[i]=sc.nextInt();

}

System.out.println("Original Array : "+ Arrays.toString(arr1));

for (int j = 0; j < arr1.length; j++) {

arr2[j]=arr1[j];

System.out.println("Reverse Array : " + Arrays.toString(arr2));

}

}

}

**5. Write a program to concatenate two arrays (merge two array to new one)?**

a[] = {1,2,3}

b[] = {4,5}

c[] = {1,2,3,4,5}

package Section8;

import java.util.Arrays;

public class Ques5 {

public static void main(String[] args) {

int[] a = {1,2};

int[] b = {3,4,5};

int[] c = new int[a.length + b.length];

System.arraycopy(a, 0, c, 0, a.length);

System.arraycopy(b, 0, c, a.length, b.length);

System.out.println(Arrays.toString(c));

}

}

**6. Write a Java program to test if an array contains a specific value?**

package Section8;

import java.util.Arrays;

import java.util.Scanner;

public class Ques6 {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

System.out.println("Enter Length of Array : ");

int n = sc.nextInt();

int[] arr1 = new int[n];

System.out.println("Enter " + n + " numbers :");

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

arr1[i] = sc.nextInt();

}

int flag = 0;

System.out.println("Array : " + Arrays.toString(arr1));

System.out.println("Enter Number to Find :");

int num = sc.nextInt();

for (int j = 0; j < arr1.length; j++) {

if (arr1[j] == num) {

flag = 1;

break;

}

}

if (flag == 1) {

System.out.println(num + " is Present");

} else {

System.out.println(num + " is not Present");

}

}

}

**7. Write a Java program to find the index of an array element?**

package Section8;

import java.util.Arrays;

import java.util.Scanner;

public class Ques7 {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

System.out.println("Enter Length of Array : ");

int n = sc.nextInt();

int[] arr1 = new int[n];

System.out.println("Enter " + n + " numbers :");

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

arr1[i] = sc.nextInt();

}

int flag = 0;

System.out.println("Array : " + Arrays.toString(arr1));

System.out.println("Enter Number to Find :");

int num = sc.nextInt();

for (int j = 0; j < arr1.length; j++) {

if (arr1[j] == num) {

System.out.println(num + " is present at index " + j);

flag = 1;

}

}

if (flag == 0) {

System.out.println(num + " is not Present");

}

}

}

**8. Write a Java program to find the duplicate values of an array of integer values?**

package Section8;

import java.util.Arrays;

import java.util.Scanner;

public class Ques8 {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

System.out.println("Enter Length of Array : ");

int n = sc.nextInt();

int[] arr1 = new int[n];

System.out.println("Enter " + n + " numbers :");

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

arr1[i] = sc.nextInt();

}

Arrays.sort(arr1);

int flag = 0;

System.out.println("Array : " + Arrays.toString(arr1));

for (int j = 0; j < arr1.length -1; j++) {

if (arr1[j] == arr1[j+1]) {

System.out.println(arr1[j] + " has duplicate Entry");

flag = 1;

}

}

if (flag == 0) {

System.out.println("No Duplicate Entry");

}

}

}

**9. Write a Java program to find the common elements between two arrays of integers?**

package Section8;

import java.util.Arrays;

import java.util.Scanner;

public class Ques9 {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

System.out.println("Enter Length of Array 1: ");

int n = sc.nextInt();

int[] arr1 = new int[n];

System.out.println("Enter " + n + " numbers :");

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

arr1[i] = sc.nextInt();

}

System.out.println("Enter Length of Array 2: ");

int m = sc.nextInt();

int[] arr2 = new int[m];

System.out.println("Enter " + m + " numbers :");

for (int j = 0; j < m; j++) {

arr2[j] = sc.nextInt();

}

int flag = 0;

for (int k = 0; k < arr1.length; k++) {

for (int l = 0; l < arr2.length; l++) {

if (arr1[k] == arr2[l]) {

System.out.println(arr1[k] + " is common in both the Array");

flag = 1;

}

}

}

if (flag == 0) {

System.out.println("No Common Data");

}

}

}

**10. Write a program to add two matrix of numbers?**

package Section8;

import java.util.Arrays;

import java.util.Scanner;

public class Ques10 {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

System.out.println("Enter Dimension of Matrix 1: ");

int n = sc.nextInt();

int m = sc.nextInt();

int[][] arr1 = new int[n][m];

System.out.println("Enter Matrix : ");

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

for (int j = 0; j < m; j++) {

arr1[i][j] = sc.nextInt();

}

}

System.out.println(Arrays.deepToString(arr1));

System.out.println("Enter Dimension of Matrix 2: ");

int a = sc.nextInt();

int b = sc.nextInt();

int[][] arr2 = new int[a][b];

System.out.println("Enter Matrix : ");

for (int k = 0; k < a; k++) {

for (int l = 0; l < b; l++) {

arr2[k][l] = sc.nextInt();

}

}

System.out.println(Arrays.deepToString(arr2));

int[][] arr3 = new int[3][3];

for (int i = 0; i < arr1.length; i++) {

for (int j = 0; j < arr2.length; j++) {

arr3[i][j] = arr1[i][j]+arr2[i][j];

}

}

System.out.println(Arrays.deepToString(arr3));

}

}

**11. Write a program to Sort an array in ascending order? [Notes : Arrays.sort()]**

**12. Write a program to Sort strings in alphabetical order?**

package Section8;

import java.util.Scanner;

public class Ques12 {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

System.out.println("Enter the number of strings you want to sort");

int n = sc.nextInt();

String[] str = new String[n];

System.out.println("Enter the strings");

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

str[i] = sc.next();

}

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

for (int j = i + 1; j < n; j++) {

if (str[i].compareTo(str[j]) > 0) {

String temp = str[i];

str[i] = str[j];

str[j] = temp;

}

}

}

System.out.println("Sorted strings are");

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

System.out.println(str[i]);

}

}

}

**----------------------------------------------**

**\*\*\*\*\*\*\* Java Assignment Section-9 \*\*\*\*\*\*\*\*\***

**---------------------------------------------**

**1. Write a java program to print first 10 natural number using recursion?**

package Section9;

import java.util.Scanner;

public class Ques1 {

public static void main(String[] args) {

Scanner scan=new Scanner(System.in);

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

int n=scan.nextInt();

printNaturalNumber(n);

}

public static void printNaturalNumber(int n) {

if (n == 0)

return;

System.out.println(n);

printNaturalNumber(n - 1);

}

}

**2. Write a java program to calculate the sum of numbers from 1 to N using recursion?**

package Section9;

import java.util.Scanner;

public class Ques2 {

public static void main(String[] args) {

Scanner scan=new Scanner(System.in);

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

int n=scan.nextInt();

int sum=0;

sum=sum+sum(n);

System.out.println("The sum of numbers from 1 to "+n+" is "+sum);

}

public static int sum(int n){

if(n==1){

return 1;

}

else{

return n+sum(n-1);

}

}

}

**3. Write a program to calculate the product of two integers using recursion? (Multiplication & Division operators are not allowed)**

package Section9;

import java.util.Scanner;

public class Ques3 {

public static void main(String[] args) {

Scanner scan=new Scanner(System.in);

System.out.println("Enter the first number");

int a=scan.nextInt();

System.out.println("Enter the second number");

int b=scan.nextInt();

System.out.println("The product of "+a+" and "+b+" is "+product(a,b));

}

static int product(int a,int b){

if(b==0)

return 0;

else

return a+product(a,b-1);

}

}

**4. Write a program to calculate the power of any number using recursion?**

package Section9;

import java.util.Scanner;

public class Ques4 {

public static void main(String[] args) {

Scanner scan=new Scanner(System.in);

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

int n=scan.nextInt();

System.out.println("Enter the power");

int p=scan.nextInt();

System.out.println("The result is "+power(n,p));

}

public static int power(int n,int p){

if(p==0)

return 1;

else

return n\*power(n,p-1);

}

}

**5. Write a recursive program to print Fibonacci Series for given number of terms?**

Input number of terms for the Series (< 20) : 10

The Series are :

1 1 2 3 5 8 13 21 34 55

package Section9;

import java.util.Scanner;

public class Ques5 {

static int a = 1;

static int b = 1;

static int c = 0;

public static void main(String[] args) {

Scanner scan = new Scanner(System.in);

System.out.println("Enter the number of terms for the Series (< 20) : ");

int n = scan.nextInt();

if(n<20){

System.out.println("The Series are : ");

if(n==1){

System.out.println("1");

}

if(n>2)

{

System.out.println("1 ");

System.out.println("1 ");

fibonacci(n-2);

}

}else{

System.out.println("Please enter a number less than 20");

}

}

static void fibonacci(int n) {

if(n==0){

return;

}else

c=a+b;

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

a=b;

b=c;

fibonacci(n - 1);

}

}

**6. Write a program to find the sum of digits of a number using recursion?**

package Section9;

import java.util.Scanner;

public class Ques6 {

public static void main(String[] args) {

Scanner scan=new Scanner(System.in);

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

int n=scan.nextInt();

int sum=0;

sum=sumDigit(n,sum);

System.out.println("Sum of digits of "+n+" is "+sum);

}

static int sumDigit(int n,int sum){

if(n==0){

return sum;

}else if(n<9){

return sum+n;

} else{

sum=sum+n%10;

return sumDigit(n/10,sum);

}

}

}

**7. Write a program to find the Factorial of a number using recursion?**

package Section9;

import java.util.Scanner;

public class Ques7 {

public static void main(String[] args) {

Scanner s = new Scanner(System.in);

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

int n = s.nextInt();

int fact=1;

fact = factorial(n,fact);

System.out.println("Factorial of " + n + " is " + fact);

}

static int factorial(int n,int fact) {

if (n == 0) {

return fact;

}else {

fact = fact \* n;

n--;

return factorial(n,fact);

}

}

}

**8. Write a program to get the largest element of an array using recursion?**

package Section9;

import java.util.Scanner;

public class Ques8 {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

System.out.println("Enter the size of the array");

int n = sc.nextInt();

int[] arr = new int[n];

System.out.println("Enter the elements of the array");

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

{

arr[i] = sc.nextInt();

}

System.out.println("The largest element is "+largest(arr,1,arr[0],arr.length));

}

public static int largest(int[] arr,int i,int max,int length)

{

if(i==length)

{

return max;

}

else

{

if(arr[i]>max)

{

max = arr[i];

}

return largest(arr,i+1,max,length);

}

}

}

Total : 71+8 = 79