**Assignment 1 - OOPS With JAVA**

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1.) Write a program to print hello world. Run and compile it on command prompt

class Test

{

public static void main(String[] args)

{

System.out.print("Hello World");

}

}

2.) Write a program to declare a variable named rollNo of integer type. Assign it a value (let say 100) to it and print the

following statement roll no = 100 .

class Test

{

public static void main(String[] args)

{

int rollNo = 10;

System.out.print("roll no = "+rollNo);

}

}

3.) Find the result of following expressions. You need to determine the primitive data type of the variable by looking

carefully the given expression and initialize variables by any random value.

A. y = x2 + 3x - 7 (print value of y)

B. y = x++ + ++x (print value of x and y)

C. z = x++ - --y - --x + x++ (print value of x ,y and z)

D. z = x && y || !(x || y) (print value of z) [ x, y, z are boolean variables ]

A.

class Test

{

public static void main(String[] args)

{

double x = 3;

double y=(x\*x)+(3\*x)-7;

System.out.print("Value of y = "+y);

}

}

B.

class Test

{

public static void main(String[] args)

{

int x=3;

int y=x++ + ++x;

System.out.println("Value of x= "+x);

System.out.println("Value of y= "+y);

}

}

C.

class Test

{

public static void main(String[] args)

{

int x=2;

int y=3;

int z = x++ - --y - --x + x++;

System.out.println("Value of x= "+x);

System.out.println("Value of y= "+y);

System.out.println("Value of z= "+z);

}

}

D.

class Test

{

public static void main(String[] args)

{

boolean x=false;

boolean y=false;

boolean z = x && y || !(x || y);

System.out.print("Value of z= "+z);

}

}

4.) Write a program that initializes 2 byte type of variables. Add the values of these variables and store in a byte type of variable.

[Note: primitive down casting is required in this program ] .

class Test

{

public static void main(String[] args)

{

byte num\_1=5;

byte num\_2=4;

byte add = (byte)(num\_1+num\_2);

System.out.print("Addition of two byte numbers is "+add);

}

}

5.)Write a program that takes user’s name as command line argument and prints Welcome <entered user name>.

class Test

{

public static void main(String[] args)

{

String name = args[0];

System.out.print("Welcome "+name);

}

}

6.) Write a program that takes radius of a circle as input. Read the entered radius using Scanner class.

Then calculate and print the area and circumference of the circle.

import java.lang.Math.\*;

import java.util.Scanner;

class Test

{

public static void main(String[] args)

{

double radius;

Scanner sc = new Scanner(System.in);

System.out.print("Enter radius of circle:");

radius = sc.nextDouble();

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

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

System.out.println("Circumference of circle = "+circumference );

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

}

}

7.) Write a program to calculate sum of 5 subject’s marks & find percentage. Take the obtained marks from user using Scanner class.

Output should be in this format [ percentage marks = 99 % ]. Use concatenation operator here.

import java.util.Scanner;

class Test

{

public static void main(String[] args)

{

int marks;

int total\_Marks=0;

double percentage;

Scanner sc = new Scanner(System.in);

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

for(int i=1; i<=5;i++)

{

marks = sc.nextInt();

total\_Marks = total\_Marks + marks;

}

percentage = (total\_Marks \*100)/500;

System.out.println("Percentage marks = "+percentage+" %");

}

}

8.) Write a program to find the simple interest. Take the principle amount, rate of interest and time from user using Scanner class

import java.util.Scanner;

class Test

{

public static void main(String[] args)

{

double principal\_Amount;

double rate\_Of\_Interest;

double Time;

double simple\_Interest;

Scanner sc = new Scanner(System.in);

System.out.println("Enter the value of principalAmount:");

principal\_Amount = sc.nextDouble();

System.out.println("Enter the value of Rate:");

rate\_Of\_Interest= sc.nextDouble();

System.out.println("Enter the value of Time:");

Time = sc.nextInt();

simple\_Interest = (principal\_Amount \* rate\_Of\_Interest \* Time)/100;

System.out.println("Simple Interest = "+simple\_Interest);

}

}

9) Write a program to read the days (eg. 670 days) as integer value using Scanner class.

Now convert the entered days into complete years, months and days and print them

import java.util.Scanner;

class Test

{

public static void main(String[] args)

{

int days,year,month;

Scanner sc = new Scanner(System.in);

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

days = sc.nextInt();

year = days / 365;

days = days% 365;

System.out.println("No of years:"+year);

month= days/ 12;

days = days % 12;

System.out.println("No of months:"+month);

System.out.println("No of days:"+days);

}

}

10.) Write a program to convert temperature from Fahrenheit to Celsius.

Take Fahrenheit as input using Scanner class. [ formula : C= 5\*(f-32)/9 ]

import java.util.Scanner;

class Test

{

public static void main(String[] args)

{

double f, C;

Scanner sc = new Scanner(System.in);

System.out.println("Enter Fahrenheit Value of Temperature:");

f=sc.nextDouble();

C=5\*(f-32)/9;

System.out.println("Temperature in Celcius:"+C);

}

}

11.) Write a program to swap two numbers without using third variable

import java.util.Scanner;

class Test

{

public static void main(String[] args)

{

int num1;

int num2;

Scanner sc = new Scanner(System.in);

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

num1 = sc.nextInt();

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

num2 = sc.nextInt();

System.out.println("Before Swapping num1 and num2 are:"+"num1="+num1+" "+"num2="+num2);

num1 = num1 + num2;

num2 = num1 - num2;

num1 = num1 - num2;

System.out.println("After Swapping num1 and num2 are:"+"num1="+num1+" "+"num2="+num2);

}

}

12.) In a company an employee is paid as under: If his basic salary is less than Rs. 10000, then HRA = 10% of basic salary and DA = 90% of basic salary.

If his salary is either equal to or above Rs. 10000, then HRA = Rs. 2000 and DA = 98% of basic salary.

If the employee's salary is input by the user write a program to find his gross salary. [ formula : GS= Basic + DA + HRA ]

import java.util.Scanner;

class Test

{

public static void main(String[] args)

{

double base\_salary,hra,da,gs;

Scanner sc = new Scanner(System.in);

System.out.println("Enter basic salary:");

base\_salary=sc.nextDouble();

if(base\_salary<10000)

{

hra = (base\_salary \* 10)/100;

da = (90 \* base\_salary)/100;

}

else

{

hra=2000;

da = (base\_salary \* 98)/100;

}

gs = base\_salary+da+hra;

System.out.println("Gross Salary:"+gs);

}

}

13.) Program to find greatest in 3 numbers. [ once using if else statement and then using ternary operator ( logical operator) ]

a) using if else if ladder

import java.util.Scanner;

class Test

{

public static void main(String[] args)

{

int num1,num2,num3;

Scanner sc = new Scanner(System.in);

System.out.println("Enter number 1:");

num1 = sc.nextInt();

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

num2= sc.nextInt();

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

num3 = sc.nextInt();

if(num1>num2 && num1>num3)

{

System.out.println(num1+" "+"is the largest number");

}

else if(num2>num3)

{

System.out.println(num2+" "+"is the largest number");

}

else

{

System.out.println(num3+" "+"is the largest number");

}

}

}

b) using ternary operator

import java.util.Scanner;

class Test

{

public static void main(String[] args)

{

int num1,num2,num3;

Scanner sc = new Scanner(System.in);

System.out.println("Enter number 1:");

num1 = sc.nextInt();

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

num2= sc.nextInt();

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

num3 = sc.nextInt();

int num4 = num3> (num1 >num2 ? num1 : num2) ? num3 : ((num1 > num2) ? num1 : num2);

System.out.println("Largest number:"+num4);

}

}

14.) Program to check that entered year is a leap year or not.

import java.util.Scanner;

class Test

{

public static void main(String[] args)

{

int year;

Scanner sc = new Scanner(System.in);

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

year = sc.nextInt();

if(year%4==0)

{

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

}

else

{

System.out.println("Not a Leap Year");

}

}

}

15.) Accept person’s gender (character m for male and f for female), age (integer), as input and then check whether person is eligible for marriage or not.

import java.util.Scanner;

class Test

{

public static void main(String[] args)

{

char gender;

int age;

Scanner sc = new Scanner(System.in);

System.out.println("Select your Gender M/F");

gender = sc.next().charAt(0);

System.out.println("Enter your Age:");

age = sc.nextInt();

if(age>21 && (gender=='M' || gender=='m'))

{

System.out.println("You are a male and You are eligible for Marriage");

}

else if(age>18 && (gender=='f' || gender=='f'))

{

System.out.println("You are a female and you are eligble for Marriage");

}

else

{

System.out.println("You are not eligble for marraige");

}

}

}