MARCH 18 - 01. JAVA PROGRAMMING ELEMENTS - LEVEL 1 PROGRAMS

1. Write a program to find the age of Harry if the birth year is 2000. Assume the Current Year is 2024

I/P => NONE

O/P => Harry's age in 2024 is \_\_\_

class Main {

public static void main(String[] args) {

int current\_year = 2024;

int birth\_year = 2000;

int current\_age = current\_year-birth\_year;

System.out.println("Age is " + current\_age);

}

}

1. Sam’s mark in Maths is 94, Physics is 95 and Chemistry is 96 out of 100. Find the average percent mark in PCM

I/P => NONE

O/P => Sam’s average mark in PCM is \_\_\_

class Main {

public static void main(String[] args) {

int maths = 94;

int physics = 95;

int chemistry = 96;

int avg = (maths+physics+chemistry)/3;

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

}

}

1. Create a program to convert the distance of 10.8 kilometers to miles.

Hint: 1 mile = 1.6 kms

I/P => NONE

O/P => The distance \_\_\_ km in miles is \_\_\_

class Main {

public static void main(String[] args) {

double kms = 10.8;

double miles = kms/1.6;

System.out.println(kms + " in Miles is " + miles);

}

}

1. Create a program to calculate the profit and loss in number and percentage based on the cost price of INR 129 and the selling price of INR 191.

**Hint =>**

1. Use a single print statement to display multiline text and variables.
2. Profit = selling price - cost price
3. Profit Percentage = profit / cost price \* 100

**I/P =>** NONE

**O/P =>**

The Cost Price is INR \_\_\_ and Selling Price is INR \_\_\_

The Profit is INR \_\_\_ and the Profit Percentage is \_\_\_

class Main {

public static void main(String[] args) {

double cost\_price = 129;

double selling\_price = 191;

double profit = selling\_price - cost\_price;

double profit\_percent = (profit\*100)/cost\_price;

System.out.println("Selling price is " + selling\_price + " and Cost price is " + cost\_price);

System.out.println("Profit is " + profit + " and Profit percentage is " + profit\_percent);

}

}

1. Suppose you have to divide 14 pens among 3 students equally. Write a program to find how many pens each student will get if the pens must be divided equally. Also, find the remaining non-distributed pens.

**Hint =>**

1. Use Modulus Operator (%) to find the reminder.
2. Use Division Operator to find the Quantity of pens

**I/P =>** NONE

**O/P =>** The Pen Per Student is \_\_\_ and the remaining pen not distributed is \_\_\_

class Main {

public static void main(String[] args) {

int pens = 14;

int students = 3;

int results = pens/students;

int remaining = pens%students;

System.out.println("Pens per student are " + results);

System.out.println("Remaining pens are " + remaining);

}

}

1. The University is charging the student a fee of INR 125000 for the course. The University is willing to offer a discount of 10%. Write a program to find the discounted amount and discounted price the student will pay for the course.

**Hint =>**

1. Create a variable named fee and assign 125000 to it.
2. Create another variable discountPercent and assign 10 to it.
3. Compute discount and assign it to the discount variable.
4. Compute and print the fee you have to pay by subtracting the discount from the fee.

**O/P =>** The discount amount is INR \_\_\_ and final discounted fee is INR \_\_\_

class Main {

public static void main(String[] args) {

double fee = 125000;

double discount\_percent = 10;

double discount\_total = (10\*fee)/100;

double fee\_total = fee - discount\_total;

System.out.println("Discounted Amount is " + discount\_total);

System.out.println("Total Fees to pay is " + fee\_total);

}

}

1. Write a Program to compute the volume of Earth in km^3 and miles^3

**Hint =>** Volume of a Sphere is (4/3) \* pi \* r^3 and radius of earth is 6378 km

**O/P =>** The volume of earth in cubic kilometers is \_\_\_\_ and cubic miles is \_\_\_\_

class Main {

public static void main(String[] args) {

double rad\_in\_kms = 6378;

double rad\_in\_kms\_cube = rad\_in\_kms\*rad\_in\_kms\*rad\_in\_kms;

double rad\_in\_miles = rad\_in\_kms/1.6;

double rad\_in\_miles\_cube = rad\_in\_miles\*rad\_in\_miles\*rad\_in\_miles;

double pi = 3.14;

double volume\_in\_kms = (4\*pi\*rad\_in\_kms\_cube)/3;

double volume\_in\_miles = (4\*pi\*rad\_in\_miles\_cube)/3;

System.out.println("Volume in cubic kms is " + rad\_in\_kms\_cube);

System.out.println("Volume in cubic miles is " + rad\_in\_miles\_cube);

}

}

1. Create a program to convert distance in kilometers to miles.

**Hint =>**

1. Create a variable km and assign type as double as in double km;
2. Create Scanner Object to take user input from Standard Input that is the Keyboard as in Scanner input = new Scanner(System.in);
3. Use Scanner Object to take user input for km as in km = input.nextInt();
4. Use 1 mile = 1.6 km formulae to calculate miles and show the output

**I/P =>** km

**O/P =>** The total miles is \_\_\_ mile for the given \_\_\_ km

import java.util.Scanner;

class Main {

public static void main(String[] args) {

Scanner input = new Scanner(System.in);

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

double kms = input.nextDouble();

System.out.println(kms);

double miles = kms/1.6;

System.out.println("Kms in Miles is " + miles);

}

}

1. Write a new program similar to the program # 6 but take user input for Student Fee and University Discount

**Hint =>**

1. Create a variable named fee and take user input for fee.
2. Create another variable discountPercent and take user input.
3. Compute the discount and assign it to the discount variable.
4. Compute and print the fee you have to pay by subtracting the discount from the fee.

**I/P =>** fee, discountPercent

**O/P =>** The discount amount is INR \_\_\_ and final discounted fee is INR \_\_\_

import java.util.Scanner;

class Main {

public static void main(String[] args) {

Scanner input = new Scanner(System.in);

System.out.println("Enter the amount of fees");

double fees = input.nextDouble();

System.out.println("Enter the amount of discount percent");

double discount\_percent = input.nextDouble();

double discount\_amount = (fees\*discount\_percent)/100;

double total\_fees = fees-discount\_amount;

System.out.println("Total Fees is " + total\_fees);

}

}

1. Write a program that takes your height in centimeters and converts it into feet and inches

**Hint =>** 1 foot = 12 inches and 1 inch = 2.54 cm

**I/P =>** height

**O/P =>** Your Height in cm is \_\_\_ while in feet is \_\_\_ and inches is \_\_\_

import java.util.Scanner;

class Main {

public static void main(String[] args) {

Scanner input = new Scanner(System.in);

System.out.println("Enter height in cms");

double cms = input.nextDouble();

double inch = cms\*0.39;

double foot = inch\*0.08;

System.out.println("Inches are " + inch);

System.out.println("Foot are " + foot);

}

}

1. Write a program to create a basic calculator that can perform addition, subtraction, multiplication, and division. The program should ask for two numbers (floating point) and perform all the operations

**Hint =>**

1. Create a variable number1 and number 2 and take user inputs.
2. Perform Arithmetic Operations of addition, subtraction, multiplication and division and assign the result to a variable and finally print the result

**I/P =>** number1, number2

**O/P =>** The addition, subtraction, multiplication and division value of 2 numbers \_\_\_ and \_\_\_ is \_\_\_, \_\_\_\_, \_\_\_\_, and \_\_\_

import java.util.Scanner;

class Main {

public static void main(String[] args) {

Scanner input = new Scanner(System.in);

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

double num1 = input.nextDouble();

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

double num2 = input.nextDouble();

double addition = num1+num2;

double substraction = num1-num2;

double multiplication = num1\*num2;

double divison = num1/num2;

System.out.println("Addition :" + addition);

System.out.println("Substraction :" + substraction);

System.out.println("Multiplication :" + multiplication);

System.out.println("Divison :" + divison);

}

}

1. Write a program that takes the base and height to find area of a triangle in square inches and square centimeters

**Hint =>** Area of a Triangle is ½ \* base \* height

**I/P =>** base, height

**O/P =>** Your Height in cm is \_\_\_ while in feet is \_\_\_ and inches is \_\_\_

import java.util.Scanner;

class Main {

public static void main(String[] args) {

Scanner input = new Scanner(System.in);

System.out.println("Enter base of triangle");

double base = input.nextDouble();

System.out.println("Enter height of triangle");

double height = input.nextDouble();

double area = (base\*height)/2;

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

}

}

1. Write a program to find the side of the square whose parameter you read from user

**Hint =>** Perimeter of Square is 4 times side

**I/P =>** perimeter

**O/P =>** The length of the side is \_\_\_ whose perimeter is \_\_\_\_

import java.util.Scanner;

class Main {

public static void main(String[] args) {

Scanner input = new Scanner(System.in);

System.out.println("Enter side of square");

double side = input.nextDouble();

double perimeter = 4\*side;

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

}

}

1. Write a program the find the distance in yards and miles for the distance provided by user in feets

**Hint =>** 1 mile = 1760 yards and 1 yard is 3 feet

**I/P =>** distanceInFeet

**O/P =>** Your Height in cm is \_\_\_ while in feet is \_\_\_ and inches is \_\_\_

import java.util.Scanner;

class Main {

public static void main(String[] args) {

Scanner input = new Scanner(System.in);

System.out.println("Enter distance in feet");

double feet = input.nextDouble();

double yards = feet/3;

double miles = yards/1760;

System.out.println("Yards :" + yards);

System.out.println("Miles :" + miles);

}

}

1. Write a program to input the unit price of an item and the quantity to be bought. Then, calculate the total price.

**Hint =>** NA

**I/P =>** unitPrice, quantity

**O/P =>** The total purchase price is INR \_\_\_ if the quantity \_\_\_ and unit price is INR \_\_\_

import java.util.Scanner;

class Main {

public static void main(String[] args) {

Scanner input = new Scanner(System.in);

System.out.println("Enter price of item");

double price = input.nextDouble();

System.out.println("Enter quantity of item");

double quantity = input.nextDouble();

double total = price\*quantity;

System.out.println("Toatl price :" + total);

}

}

1. Create a program to find the maximum number of handshakes among N number of students.

**Hint =>**

1. Get integer input for numberOfStudents variable.
2. Use the combination = (n \* (n - 1)) / 2 formula to calculate the maximum number of possible handshakes.
3. Display the number of possible handshakes.

import java.util.Scanner;

class Main {

public static void main(String[] args) {

Scanner input = new Scanner(System.in);

System.out.println("Enter total number of students");

double students = input.nextDouble();

double handshakes = (students\*(students-1))/2;

System.out.println("Maximum Number of possible handshakes :" + handshakes);

}

}