Level 1 Practice Programs

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

public class HarryAge{

public static void main(String[] args) {

int birthYear = 2000;

int currentYear = 2024;

int age = currentYear - birthYear;

System.out.println("Harry's age in 2024 is " + age);

}

}

// Program 2: Sam’s mark in Maths is 94, Physics is 95 and Chemistry is 96 out of 100. Find the average percent mark in PCM

public class SamAverageMarks{

public static void main(String[] args) {

int maths = 94, physics = 95, chemistry = 96;

double average = (maths + physics + chemistry) / 3.0;

System.out.println("Sam’s average mark in PCM is " + average);

}

}

// Program 3: Create a program to convert the distance of 10.8 kilometers to miles.

public class KmToMilesFixed{

public static void main(String[] args) {

double km = 10.8;

double miles = km / 1.6;

System.out.println("The distance " + km + " km in miles is " + miles);

}

}

Program 4: 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.

public class ProfitCalculator{

public static void main(String[] args) {

double costPrice = 129;

double sellingPrice = 191;

double profit = sellingPrice - costPrice;

double profitPercent = (profit / costPrice) \* 100;

System.out.println("The Cost Price is INR " + costPrice + " and Selling Price is INR " + sellingPrice + "\n" +

"The Profit is INR " + profit + " and the Profit Percentage is " + profitPercent);

}

}

// Program 5: 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.

public class PensDistribution{

public static void main(String[] args){

int totalPens = 14;

int students = 3;

int perStudent = totalPens / students;

int remainder = totalPens % students;

System.out.println("The Pen Per Student is " + perStudent + " and the remaining pen not distributed is " + remainder);

}

}

// Program 6: 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.

public class FeeDiscount{

public static void main(String[] args){

double fee = 125000;

double discountPercent = 10;

double discountAmount = (discountPercent / 100) \* fee;

double finalFee = fee - discountAmount;

System.out.println("The discount amount is INR " + discountAmount + " and final discounted fee is INR " + finalFee);

}

}

// Program 7: Write a Program to compute the volume of Earth in km^3 and miles^3

public class EarthVolume{

public static void main(String[] args){

double radiusKm = 6378;

double volumeKm3 = (4.0 / 3.0) \* Math.PI \* Math.pow(radiusKm, 3);

double volumeMiles3 = volumeKm3 / Math.pow(1.6, 3); // converting cubic km to cubic miles

System.out.println("The volume of earth in cubic kilometers is " + volumeKm3 + " and cubic miles is " + volumeMiles3);

}

}

// Program 8: Create a program to convert distance in kilometers to miles.

import java.util.Scanner;

public class KmToMilesUserInput{

public static void main(String[] args){

Scanner input = new Scanner(System.in);

double km;

System.out.print("Enter distance in kilometers: ");

km = input.nextDouble();

double miles = km / 1.6;

System.out.println("The total miles is " + miles + " mile for the given " + km + " km");

}

}

// Program 9: Write a new program similar to the program # 6 but take user input for Student Fee and University Discount

import java.util.Scanner;

public class DynamicFeeDiscount{

public static void main(String[] args){

Scanner sc = new Scanner(System.in);

System.out.print("Enter student fee: ");

double fee = sc.nextDouble();

System.out.print("Enter discount percent: ");

double discountPercent = sc.nextDouble();

double discount = (discountPercent / 100) \* fee;

double finalFee = fee - discount;

System.out.println("The discount amount is INR " + discount + " and final discounted fee is INR " + finalFee);

}

}

// Program 10: Write a program that takes your height in centimeters and converts it into feet and inches

import java.util.Scanner;

public class HeightConverter{

public static void main(String[] args){

Scanner sc = new Scanner(System.in);

System.out.print("Enter your height in cm: ");

double cm = sc.nextDouble();

double inches = cm / 2.54;

int feet = (int) (inches / 12);

double remainingInches = inches % 12;

System.out.println("Your Height in cm is " + cm + " while in feet is " + feet + " and inches is " + remainingInches);

}

}

// Program 11: 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

import java.util.Scanner;

public class BasicCalculator{

public static void main(String[] args){

Scanner sc = new Scanner(System.in);

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

double number1 = sc.nextDouble();

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

double number2 = sc.nextDouble();

System.out.println("The addition, subtraction, multiplication and division value of 2 numbers " + number1 + " and " + number2 +

" is " + (number1 + number2) + ", " + (number1 - number2) + ", " + (number1 \* number2) + ", and " + (number1 / number2));

}

}

// Program 12: Write a program that takes the base and height to find area of a triangle in square inches and square centimeters

import java.util.Scanner;

public class TriangleArea{

public static void main(String[] args){

Scanner sc = new Scanner(System.in);

System.out.print("Enter base in inches: ");

double base = sc.nextDouble();

System.out.print("Enter height in inches: ");

double height = sc.nextDouble();

double areaInches = 0.5 \* base \* height;

double areaCm = areaInches \* 6.4516;

System.out.println("Area of triangle is " + areaInches + " square inches and " + areaCm + " square centimeters");

}

}

// Program 13: Write a program to find the side of the square whose parameter you read from user

import java.util.Scanner;

public class SideFromPerimeter{

public static void main(String[] args){

Scanner sc = new Scanner(System.in);

System.out.print("Enter the perimeter of the square: ");

double perimeter = sc.nextDouble();

double side = perimeter / 4;

System.out.println("The length of the side is " + side + " whose perimeter is " + perimeter);

}

}

// Program 14: Write a program the find the distance in yards and miles for the distance provided by user in feets

import java.util.Scanner;

public class FeetToYardsAndMiles{

public static void main(String[] args){

Scanner sc = new Scanner(System.in);

System.out.print("Enter distance in feet: ");

double feet = sc.nextDouble();

double yards = feet / 3;

double miles = yards / 1760;

System.out.println("The distance " + feet + " feet is " + yards + " yards and " + miles + " miles");

}

}

// Program 15: Write a program to input the unit price of an item and the quantity to be bought. Then, calculate the total price.

import java.util.Scanner;

public class TotalPurchasePrice{

public static void main(String[] args){

Scanner sc = new Scanner(System.in);

System.out.print("Enter unit price: ");

double unitPrice = sc.nextDouble();

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

int quantity = sc.nextInt();

double total = unitPrice \* quantity;

System.out.println("The total purchase price is INR " + total + " if the quantity " + quantity + " and unit price is INR " + unitPrice);

}

}

// Program 16: Create a program to find the maximum number of handshakes among N number of students.

import java.util.Scanner;

public class MaxHandshakes{

public static void main(String[] args){

Scanner sc = new Scanner(System.in);

System.out.print("Enter number of students: ");

int n = sc.nextInt();

int handshakes = (n \* (n - 1)) / 2;

System.out.println("Maximum number of possible handshakes is " + handshakes);

}

}

**Level 2 Practice Programs**

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

**import java.util.Scanner;**

**public class BasicCalculator{**

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

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

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

**double number1 = sc.nextDouble();**

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

**double number2 = sc.nextDouble();**

**double addition = number1 + number2;**

**double subtraction = number1 - number2;**

**double multiplication = number1 \* number2;**

**double division = number1 / number2;**

**System.out.println("The addition, subtraction, multiplication, and division value of 2 numbers "**

**+ number1 + " and " + number2 + " is "**

**+ addition + ", " + subtraction + ", " + multiplication + ", and " + division);**

**}**

**}**

**// Program 2: Write a program that takes the base and height in cm to find the area of a triangle in square inches and square centimeters**

**import java.util.Scanner;**

**public class TriangleArea{**

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

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

**System.out.print("Enter base in cm: ");**

**double base = sc.nextDouble();**

**System.out.print("Enter height in cm: ");**

**double height = sc.nextDouble();**

**double areaSqCm = 0.5 \* base \* height;**

**double areaSqIn = areaSqCm / (2.54 \* 2.54);**

**System.out.println("The Area of the triangle in sq in is " + areaSqIn + " and sq cm is " + areaSqCm);**

**}**

**}**

**// Program 3: Write a program to find the side of the square whose parameter you read from the user**

**import java.util.Scanner;**

**public class SquareSide{**

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

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

**System.out.print("Enter the perimeter of the square: ");**

**double perimeter = sc.nextDouble();**

**double side = perimeter / 4;**

**System.out.println("The length of the side is " + side + " whose perimeter is " + perimeter);**

**}**

**}**

**// Program 4: Write a program to find the distance in yards and miles for the distance provided by the user in feet**

**import java.util.Scanner;**

**public class DistanceConverter {**

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

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

**System.out.print("Enter distance in feet: ");**

**double feet = sc.nextDouble();**

**double yards = feet / 3;**

**double miles = yards / 1760;**

**System.out.println("The distance in yards is " + yards + " while the distance in miles is " + miles);**

**}**

**}**

**// Program 5: Write a program to input the unit price of an item and the quantity to be bought. Then, calculate the total price.**

**import java.util.Scanner;**

**public class TotalPurchase {**

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

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

**System.out.print("Enter unit price: ");**

**double unitPrice = sc.nextDouble();**

**System.out.print("Enter quantity: ");**

**int quantity = sc.nextInt();**

**double totalPrice = unitPrice \* quantity;**

**System.out.println("The total purchase price is INR " + totalPrice + " if the quantity " + quantity + " and unit price is INR " + unitPrice);**

**}**

**}**

**// Program 6: Write a program to take 2 numbers and print their quotient and reminder**

**import java.util.Scanner;**

**public class QuotientRemainder {**

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

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

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

**int number1 = sc.nextInt();**

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

**int number2 = sc.nextInt();**

**int quotient = number1 / number2;**

**int remainder = number1 % number2;**

**System.out.println("The Quotient is " + quotient + " and Reminder is " + remainder + " of two numbers " + number1 + " and " + number2);**

**}**

**}**

**// Program 7: Write an *IntOperation* program by taking a, b, and c as input values and print the following integer operations a + b \*c, a \* b + c, c + a / b, and a % b + c. Please also understand the precedence of the operators.**

**import java.util.Scanner;**

**public class IntOperation {**

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

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

**System.out.print("Enter integer a: ");**

**int a = sc.nextInt();**

**System.out.print("Enter integer b: ");**

**int b = sc.nextInt();**

**System.out.print("Enter integer c: ");**

**int c = sc.nextInt();**

**int result1 = a + b \* c;**

**int result2 = a \* b + c;**

**int result3 = c + a / b;**

**int result4 = a % b + c;**

**System.out.println("The results of Int Operations are " + result1 + ", " + result2 + ", " + result3 + ", and " + result4);**

**}**

**}**

**// Program 8: write the *DoubleOpt* program by taking double values and doing the same operations.**

**import java.util.Scanner;**

**public class DoubleOperation {**

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

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

**System.out.print("Enter double a: ");**

**double a = sc.nextDouble();**

**System.out.print("Enter double b: ");**

**double b = sc.nextDouble();**

**System.out.print("Enter double c: ");**

**double c = sc.nextDouble();**

**double result1 = a + b \* c;**

**double result2 = a \* b + c;**

**double result3 = c + a / b;**

**double result4 = a % b + c;**

**System.out.println("The results of Double Operations are " + result1 + ", " + result2 + ", " + result3 + ", and " + result4);**

**}**

**}**