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Class:1003

LEVEL -1 STEP

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 ___

   Code:

```
import java.io.*;
import java.util.Scanner;
class ageofharry {
        public static void main(String[] args) {
                int currentyear = 2024;
                int birthyearofharry = 2000;
                int harryage = currentyear - birthyearofharry;
                System.out.println("Harry's age is "+harryage);
        }
}
```

   Output:

```
C:\Users\rishi\Desktop>java hello.java
Harry's age is 24
```

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

I/P => NONE

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

code:

```
class PCMmarksavg {
        public static void main(String[] args) {
                int Mathmarks = 94;
                int Physicsmarks = 95;
                int Chemistrymarks = 96;
                int samsum = Mathmarks + Physicsmarks + Chemistrymarks;
                int avgmarksam = samsum/3 ;
                System.out.println("Average marks in PCM that Sam has scored " + avgmarksam);
        }
}
```

Output:

```
PS C:\Users\rishi\desktop> javac pcm.java
PS C:\Users\rishi\desktop> java pcm.java
Average marks in PCM that Sam has scored 95
```

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

Hint: 1 km = 1.6 miles

I/P => NONE

O/P => The distance ___ km in miles is ___

code

```
class milescovered {
        public static void main(String[] args) {
                double distancecovered = 10.8 ;
                double valueofkmintomile = 1.6 ;
                double distancecoveredmile= distancecovered*valueofkmintomile;
                System.out.println("The distance"+" "+ distancecovered+"km in miles is"+" "+distancecoveredmile);
        }
}
```

Output:

```
PS C:\Users\rishi\desktop> java miles.java
The distance 10.8km in miles is 17.28
```

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.

Hint =>

Use a single print statement to display multiline text and variables.

Profit = selling price - cost price

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 ___

Code:

```
class profitandloss {
	public static void main(String[] args) {
		int costprice= 129 ;
		int sellingprice= 191;
		double profit= sellingprice-costprice;
		double profitpercentage= (profit/costprice) *100;
		System.out.println("The Cost price is in INR"+" "+costprice+ "and selling price is INR "+sellingprice+"\n The profit is INR "+profit+"and the profit percentage is
"+profitpercentage);
	}
}
```

Output:

```
PS C:\Users\rishi\desktop> java profit.java
The Cost price is in INR 129and selling price is INR 191
 The profit is INR 62.0and the profit percentage is 48.06201550387597
```

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.

Hint =>

a. Use Modulus Operator (%) to find the reminder.
b. 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 ___

Code:

```
public class PenDistribute {
    public static void main(String[] args) {
        int totalPens = 14;
        int students = 3;

        // Calculate pens per student
        int pensPerStudent = totalPens / students;

        // Calculate remaining pens
        int remainingPens = totalPens % students;

        // Display the result
        System.out.println("The Pen Per Student is " + pensPerStudent + " and the remaining pen not distributed is " + remainingPens);
    }
}
```

Output:

```
PS C:\Users\rishi\Desktop> javac PenDistribute.java
PS C:\Users\rishi\Desktop> java PenDistribute
The Pen Per Student is 4 and the remaining pen not distributed is 2
```

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.

Hint =>

a. Create a variable named fee and assign 125000 to it.
b. Create another variable discountPercent and assign 10 to it.
c. Compute discount and assign it to the discount variable.
d. 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 ___

Code:

```
class UniversityFee {
    public static void main(String[] args) {
        int fee = 125000;
        int discountPercent = 10;
        double discount = (fee * discountPercent) / 100.0;
        double finalFee = fee - discount;
        System.out.println("The discount amount is INR " + discount + " and final discounted fee is INR " + finalFee);
    }
}
```

Output:

```
PS C:\Users\rishi\Desktop> javac PenDistribute.java
PS C:\Users\rishi\Desktop> java PenDistribute
The Pen Per Student is 4 and the remaining pen not distributed is 2
PS C:\Users\rishi\Desktop> javac UniversityFee.java
PS C:\Users\rishi\Desktop> java UniversityFee
The discount amount is INR 12500.0 and final discounted fee is INR 112500.0
```

7.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 ____

Code:

```
class EarthVolume {
    public static void main(String[] args) {
        double radiusKm = 6378;
        double volumeKm3 = (4.0 / 3) * Math.PI * Math.pow(radiusKm, 3);
        double volumeMiles3 = volumeKm3 / Math.pow(1.609, 3);
        System.out.println("The volume of earth in cubic kilometers is " + volumeKm3 + " and cubic miles is " + volumeMiles3);
    }
}
```

Output:

```
PS C:\Users\rishi\Desktop> javac EarthVolume.java
PS C:\Users\rishi\Desktop> java EarthVolume
```

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

Hint =>

a. Create a variable km and assign type as double as in `double km;`
b. Create `Scanner` Object to take user input from Standard Input that is the Keyboard as in `Scanner input = new Scanner(System.in);`
c. Use `Scanner` Object to take user input for km as in `km = input.nextInt();`
d. 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

Code:

```java
import java.util.Scanner;
class KmToMiles {
    public static void main(String[] args) {
        Scanner input = new Scanner(System.in);
        System.out.print("Enter distance in kilometers: ");
        double km = input.nextDouble();
        double miles = km / 1.6;
        System.out.println("The total miles is " + miles + " mile for the given " + km + " km");
        input.close();
    }
}
```

Output :

```
S C:\Users\rishi\Desktop> javac KmToMiles.java
S C:\Users\rishi\Desktop> java KmToMiles
nter distance in kilometers: 20
he total miles is 12.5 mile for the given 20.0 km
```

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

Hint =>

a. Create a variable named fee and take user input for fee.
b. Create another variable discountPercent and take user input.
c. Compute the discount and assign it to the discount variable.
d. Compute and print the fee you have to pay by subtracting the discount from the fee.

I/P => fee, discountPrecent
O/P => The discount amount is INR ___ and final discounted fee is INR ___

Code:

```java
import java.util.Scanner;
class UserFeeDiscount {
    public static void main(String[] args) {
        Scanner input = new Scanner(System.in);
        System.out.print("Enter the Student Fee: ");
        double studentFee = input.nextDouble();
        System.out.print("Enter the University Discount Percentage: ");
        double userDiscountPercent = input.nextDouble();
        double userDiscount = (studentFee * userDiscountPercent) / 100.0;
        double userFinalFee = studentFee - userDiscount;
        System.out.println("The discount amount is INR " + userDiscount + " and final discounted fee is INR " + userFinalFee);
        input.close();
    }
}
```

Output:

```
PS C:\Users\rishi\Desktop> javac UserFeeDiscount.java
PS C:\Users\rishi\Desktop> java UserFeeDiscount
Enter the Student Fee: 60000
Enter the University Discount Percentage: 30
The discount amount is INR 18000.0 and final discounted fee is INR 42000.0
```

10. 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 ___

code:

```java
import java.util.Scanner;
class HeightConverter {
    public static void main(String[] args) {
        Scanner input = new Scanner(System.in);
        System.out.print("Enter your height in centimeters: ");
        double heightCm = input.nextDouble();
        double heightInches = heightCm / 2.54;
        int heightFeet = (int) (heightInches / 12);
        double remainingInches = heightInches % 12;
        System.out.println("Your Height in cm is " + heightCm + " while in feet is " + heightFeet + " and inches is " + remainingInches);
        input.close();
    }
}
```

Output:

```
PS C:\Users\rishi\Desktop> javac HeightConverter.java
PS C:\Users\rishi\Desktop> java HeightConverter
Enter your height in centimeters: 175
Your Height in cm is 175.0 while in feet is 5 and inches is 8.897637795275585
```