**ASSIGNMENT DAY 2**

**LEVEL 1 PRACTICE 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 \_\_\_**

public class Question1 {  
 public static void main(String[] args) {  
 int currentYear = 2024, birthYear = 2000;  
 int currentAge = currentYear - birthYear;  
 System.*out*.print("Harry's age in 2024 is " + currentAge);  
 }  
}

**OUTPUT:**

Harry's age in 2024 is 24

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 \_\_\_**

public class Question2 {  
 public static void main(String[] Args) {  
 int maths = 94, physics = 95, chemistry = 96;  
 float average = (float)(maths + physics + chemistry) / 3;  
 System.*out*.println("Sam’s average mark in PCM is " + average);  
 }  
}

**OUTPUT:**

Sam’s average mark in PCM is 95.0

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

1. **Hint: 1 km = 1.6 miles**
2. **I/P => NONE**
3. **O/P => The distance  \_\_\_ km in miles is \_\_\_**

public class Question3 {  
 public static void main(String[] args) {  
 float km = 10.8F;  
 float miles = (float) (km \* 0.621371);  
 System.*out*.println(km + " km is equal to " + miles + " miles");  
 }  
}

**OUTPUT:**

10.8 km is equal to 6.710807 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 =>**

**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 \_\_\_**

public class Question4 {  
 public static void main(String[] args) {  
 int cp = 129, sp = 191;  
 int profit = sp - cp;  
 float pp = (float) profit /cp \* 100;  
 System.*out*.println("The Cost Price is INR " + cp + " and Selling Price in INR " + sp);  
 System.*out*.println("The profit is INR " + profit + " and the Profit Percentage is " + pp);  
 }  
}

**OUTPUT:**

The Cost Price is INR 129 and Selling Price in INR 191

The profit is INR 62 and the Profit Percentage is 48.062016

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 =>**

**Use Modulus Operator (%) to find the reminder.**

**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 \_\_\_**

public class Question5 {  
 public static void main(String[] args) {  
 int pens = 14, students = 3;  
 int qop = pens / students;  
 int rem = pens % students;  
 System.*out*.println("The pen per student is " + qop + " and the remaining pen not distributed is " + rem);  
 }  
}

**OUTPUT:**

The pen per student is 4 and the remaining pen not distributed is 2

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 =>**

**Create a variable named fee and assign 125000 to it.**

**Create another variable discountPercent and assign 10 to it.**

**Compute discount and assign it to the discount variable.**

**Compute and print the fee you have to pay by subtracting the discount from the fee.**

public class Question6 {  
 public static void main(String[] args) {  
 int fee = 125000;  
 int discount = 10;  
 int discountAmt = fee / discount;  
 int actualFee = fee - discountAmt;  
 System.*out*.println("The discount amount is INR " + discountAmt + " and final discounted fee is INR " + actualFee);  
 }  
}

**OUTPUT:**

The discount amount is INR 12500 and final discounted fee is INR 112500

**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 \_\_\_\_**

public class Question7 {  
 public static void main(String[] args) {  
 double radiusKm = 6378.0;  
 double radiusMiles = radiusKm \* 0.621371;  
 double volumeKm3 = (4.0 / 3.0) \* Math.*PI* \* Math.*pow*(radiusKm, 3);  
 double volumeMiles3 = (4.0 / 3.0) \* Math.*PI* \* Math.*pow*(radiusMiles, 3);  
 System.*out*.printf("The volume of Earth in cubic kilometers is %.2f km³ and in cubic miles is %.2f mi³.%n", volumeKm3, volumeMiles3);  
 }  
}

**OUTPUT:**

The volume of Earth in cubic kilometers is 1086781292542.89 km³ and in cubic miles is 260732455872.69 mi³.

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

**Hint => Create a variable km and assign type as double as in double km;**

**Create Scanner Object to take user input from Standard Input that is the Keyboard as in Scanner input = new Scanner(System.in);**

**Use Scanner Object to take user input for km as in km = input.nextInt();**

**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;  
public class Question8 {  
 public static void main(String[] Args) {  
 Scanner scanner = new Scanner(System.*in*);  
 double km;  
 System.*out*.print("Enter the kilometer: ");  
 km = scanner.nextDouble();  
 double miles = (double) (km \* 0.621371);  
 System.*out*.println("The total miles is " + miles + " mile for the given " + km + " km.");  
 }  
}

**OUTPUT:**

The total miles is 86.99194 mile for the given 140.0 km.

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

**Hint =>**

**Create a variable named fee and take user input for fee.**

**Create another variable discountPercent and take user input.**

**Compute the discount and assign it to the discount variable.**

**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 \_\_\_**

import java.util.Scanner;  
public class Question9 {  
 public static void main(String[] args) {  
 Scanner scanner = new Scanner(System.*in*);  
 int fee, discountPercentage;  
 System.*out*.print("Enter the fee amount: ");  
 fee = scanner.nextInt();  
 System.*out*.print("Enter the discount percentage: ");  
 discountPercentage = scanner.nextInt();  
 int discountAmt = fee / discountPercentage;  
 int actualFee = fee - discountAmt;  
 System.*out*.println("The discount amount is INR " + discountAmt + " and final discounted fee is INR " + actualFee);  
 }  
}

**OUTPUT:**

Enter the fee amount: 100000

Enter the discount percentage: 10

The discount amount is INR 10000 and final discounted fee is INR 90000.

**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 \_\_\_**

import java.util.Scanner;  
public class Question10 {  
 public static void main(String[] args) {  
 Scanner scanner = new Scanner(System.*in*);  
 double height;  
 System.*out*.print("Enter the your height: ");  
 height = scanner.nextDouble();  
 double inch = (height / 2.54);  
 double feet = (inch / 12);  
 System.*out*.printf("Your height in cm is %.2f while in feet is %.2f and inches is %.2f.", height, feet, inch);  
 }  
}

**OUTPUT:**

Your height in cm is 165.50 while in feet is 5.43 and inches is 65.16.

**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**

**Hint =>**

**Create a variable number1 and number 2 and take user inputs.**

**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;  
public class Question11 {  
 public static void main(String[] Args ){  
 Scanner scanner = new Scanner(System.*in*);  
 int var1, var2;  
 System.*out*.print("Enter the variable 1: ");  
 var1 = scanner.nextInt();  
 System.*out*.print("Enter the variable 2: ");  
 var2 = scanner.nextInt();  
 float add = var1 + var2;  
 float sub = var1 - var2;  
 float mul = var1 \* var2;  
 float div = (float) var1 / var2;  
 System.*out*.println("Addition: " + add);  
 System.*out*.println("Subtraction: " + sub);  
 System.*out*.println("Multiplication: " + mul);  
 System.*out*.println("Division: " + div);  
 }  
}

**OUTPUT:**

Enter the variable 1: 10

Enter the variable 2: 7

Addition: 17.0

Subtraction: 3.0

Multiplication: 70.0

Division: 1.4285715

**12. 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;  
public class Question12 {  
 public static void main(String[] args) {  
 Scanner scanner = new Scanner(System.*in*);  
 int base, height;  
 System.*out*.print("Enter the base: ");  
 base = scanner.nextInt();  
 System.*out*.print("Enter the height: ");  
 height = scanner.nextInt();  
 float area = (float) (0.5 \* base \* height);  
 System.*out*.printf("The area of the triangle is %.2f", area);  
 }  
}

**OUTPUT:**

Enter the base: 10

Enter the height: 15

The area of the triangle is 75.00

**13. 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;  
public class Question13 {  
 public static void main(String[] Args ){  
 Scanner scanner = new Scanner(System.*in*);  
 float side;  
 System.*out*.print("Enter the side: ");  
 side = scanner.nextFloat();  
 float perimeter = (float) (4 \* side);  
 System.*out*.printf("The length of the side is %.2f whose perimeter is %.2f.", side, perimeter);  
 }  
}

**OUTPUT:**

The length of the side is 25.00 whose perimeter is 100.00.

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;  
public class Question14 {  
 public static void main(String[] Args ){  
 Scanner scanner = new Scanner(System.*in*);  
 float distanceInFeet;  
 System.*out*.print("Enter the distance in feet: ");  
 distanceInFeet = scanner.nextFloat();  
 float yard = (float) (distanceInFeet / 3);  
 float mile = (float) (yard / 1760);  
 System.*out*.printf("The total distance in feet is %.2f while in yard is %.2f and in mile is %.2f.",distanceInFeet , yard, mile);  
 }  
}

**OUTPUT:**

Enter the distance in feet: 1713

The total distance in feet is 1713.00 while in yard is 571.00 and in mile is 0.32.

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;  
public class Question15 {  
 public static void main(String[] Args ){  
 Scanner scanner = new Scanner(System.*in*);  
 float unitPrice, quantity;  
 System.*out*.print("Enter the unit Price: ");  
 unitPrice = scanner.nextFloat();  
 System.*out*.print("Enter the Quantity: ");  
 quantity = scanner.nextFloat();  
 float totalPrice = unitPrice \* quantity;  
 System.*out*.printf("The total purchase price in INR %.2f, if the quantity %.2f and unit price is INR %.2f.", totalPrice, quantity, unitPrice);  
 }  
}

**OUTPUT:**

Enter the unit Price: 17

Enter the Quantity: 100

The total purchase price in INR 1700.00, if the quantity 100.00 and unit price is INR 17.00.

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

**Hint => Get integer input for numberOfStudents variable.**

**Use the combination = (n \* (n - 1)) / 2 formula to calculate the maximum number of possible handshakes. Display the number of possible handshakes.**

import java.util.Scanner;  
public class Question16 {  
 public static void main(String[] Args ){  
 Scanner scanner = new Scanner(System.*in*);  
 int students;  
 System.*out*.print("Enter the number of students: ");  
 students = scanner.nextInt();  
 int handShakes = (students \* (students - 1)) / 2;  
 System.*out*.println("The total possible handshakes are " + handShakes);  
 }  
}

**OUTPUT:**

Enter the number of students: 25

The total possible handshakes are 300