CodInClub

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Best Programming Practice

1. All values as variables including Fixed, User Inputs, and Results
2. Avoid Hard Coding of variables wherever possible
3. Proper naming conventions for all variables

```
String name = "Eric";
double height = input.nextDouble();
double totalDistance = distanceFromToVia + distanceViaToFinalCity;
```

4. Proper Program Name and Class Name
5. Follow proper indentation

1. **Sample Program 1 -** Write a program to display Sam with Roll Number 1, Percent Marks 99.99, and the result 'P' indicates Pass('P') or Fail ('F').

   IMP => Follow Good Programming Practice demonstrated below in all Practice Programs

Java

```
// Creating Class with name DisplayResult indicating the purpose is to display
// result. Notice the class name is a Noun.
class DisplayResult {
    public static void main(String[] args) {

        // Create a string variable name and assign value Sam
        String name = "Sam";

        // Create a int variable rollNumber and assign value 1
        int rollNumber = 1;

        // Create a double variable percentMarks and assign value 99.99
        double percentMarks = 99.99;

        // Create a char variable result and assign value 'P' for pass
        char result = 'P';

        // Display the result
        System.out.println("Displaying Result:\n" +name+ " with Roll Number " +
                           rollNumber+ " has Scored " +percentMarks+
                           "% Marks and Result is " +result);
    }
}
```

2. **Sample Program 2 -** Eric Travels from Chennai to Bangalore via Vellore. From Chennai to Vellore distance is 156.6 km and the time taken is 4 Hours 4 Mins and from Vellore to Bangalore is 211.8 km and will take 4 Hours 25 Mins. Compute the total distance and total time from Chennai to Bangalore

Java

```java
// Create TravelComputation Class to compute the Distance and Travel Time
class TravelComputation {

   public static void main(String[] args) {

      // Create a variable name to indicate the person traveling
      String name = "Eric";

      // Create a variable fromCity, viaCity and toCity to indicate the city
      // from city, via city and to city the person is travelling
      String fromCity = "Chennai", viaCity = "Velore", toCity = "Bangalore";

      // Create a variable distanceFromToVia to indicate the distance
      // between the fromCity to viaCity
      double distanceFromToVia = 156.6;

      // Create a variable timeFromToVia to indicate the time taken to
      // travel from fromCity to viaCity in minutes
      int timeFromToVia = 4 * 60 + 4;

      // Create a variable distanceViaToFinalCity to indicate the distance
      // between the viaCity to toCity
      double distanceViaToFinalCity = 211.8;

      // Create a variable timeViaToFinalCity to indicate the time taken to
      // travel from viaCity to toCity in minutes
      int timeViaToFinalCity = 4 * 60 + 25;

      // Create a variable totalDistance to indicate the total distance
      // between the fromCity to toCity
      double totalDistance = distanceFromToVia + distanceViaToFinalCity;

      // Create a variable totalTime to indicate the total time taken to
      // travel from fromCity to toCity in minutes
      int totalTime = timeFromToVia + timeViaToFinalCity;
```

```
        // Print the travel details
        System.out.println("The Total Distance travelled by " + name + " from " +
                           fromCity + " to " + toCity + " via " + viaCity +
                           " is " + totalDistance + " km and " +
                           "the Total Time taken is " + totalTime + " minutes");
    }
}
```

Level 2 Practice Programs

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

   Hint =>
   a. Create a variable number1 and number2 and take user inputs.
   b. Perform Arithmetic Operations of addition, subtraction, multiplication, and division 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 ___

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

   Hint => Area of a Triangle is ½ * base * height and 1 in = 2.54 cm

   I/P => base, height

   O/P => The Area of the triangle in sq in is ___ and sq cm is ___

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

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

   I/P => perimeter

   O/P => The length of the side is ___ whose perimeter is _____

4. Write a program to find the distance in yards and miles for the distance provided by the user in feet

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

   I/P => distanceInFeet

   O/P => The distance in yards is ___ while the distance in miles is ___

5. 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 ___

6. Write a program to take 2 numbers and print their quotient and reminder

   Hint => Use division operator (/) for quotient and moduli operator (%) for reminder

   I/P => number1, number2

   O/P => The Quotient is ___ and Reminder is ___ of two number ___ and ___

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.

   Hint =>

   a. Create variables a, b, and c of int data type.
   b. Take user input for a, b, and c.
   c. Compute 3 integer operations and assign the result to a variable
   d. Finally, print the result and try to understand operator precedence.

   I/P => fee, discountPrecent

   O/P => The results of Int Operations are ___, ___, and ___

8. Similarly, write the ***DoubleOpt*** program by taking double values and doing the same operations.