

Day 10 JA111 Assignment

Question1:

Create an interface Hotel with the following 2 methods:

```
void chickenBiryani();  
void masalaDosa();
```

Create following 2 concrete implemented classes of the above Hotel interface

1. TajHotel
2. RoadSideHotel

Inside the TajHotel class define one another specific method :

```
public void welcomeDrink(){  
    System.out.println("Welcome Drink from the TajHotel");  
}
```

Create a Demo class and inside the Demo class define a method as follows:

```
public Hotel provideFood(int amount)
```

Implement the above method as follows:

```
//write the logic if the supplied amount is more than 1000  
//then return the object of TajHotel class  
//if the supplied amount is greater than 200 and less than 1000  
//then return the object of RoadSideHotel class
```

From the main method of the Demo class, call the provideFood method by taking input from the user using Scanner class.

If the user supplies the valid amount then call all the methods of the respected classes otherwise print the message: Please Enter a valid amount;

Q2) Create a Abstract class Student that has:

Instance Variables:

name: String,
address: String

Abstract Method:

getPercentage() :

Constructors: Initialize name and address

Create a class ScienceStudent that inherits from Student

Instance Variables:

physicsMarks,
chemistryMarks,
mathsMarks

Method

getPercentage Computes and returns the percentage of marks (Max marks for a subject :100)

Create a class HistoryStudent that inherits from Student

Instance Variables:

historyMarks,
civicsMarks

Method

getPercentage Computes and returns the percentage of marks (Max marks for a subject :100)

Note: take all 3 marks of students, name and address should be taken from the user.

Create a general class AllStudents with main method. In this class, create object of history and science students and assign all the fields.

Show the percentage of marks for each student.

Q3) Explain abstract class and interface with an example.

Q4) We have to calculate the area of a rectangle, a square and a circle.

Create an abstract class 'Shape' with three **abstract methods**

```
public int rectangleArea(int length, int breadth);
```

```
public int squareArea(int side);
```

```
public int circleArea(int radius);
```

Now create another class 'Area' which extends this Shape class and contains all the three methods 'RectangleArea', 'SquareArea' and 'CircleArea' for printing the area of rectangle, square and circle respectively.

Inside main method of Mian class create an object of class 'Area' and call all the three methods.