

Day 12 Assignment

Q1) Define an interface X with:

- one abstract method
- one default method
- one static method

Define an interface Y with:

- one abstract method
- one default method
- one static method

Note: Use your own method name.

Define another interface Z which extends both the interfaces X and Y:
And place another abstract method inside this Z interface.

Create a class ZImpl as the implementation of the Z interface.

From the main method of the Demo class call the methods of interface X, Y, Z.

Note: default method of X should be overridden whereas the default method of Y should not be overridden inside the implementation class.

Q2) Create an interface Hotel with the following 2 methods:

```
void chickenBirryani();  
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;

Q3) Explain the difference between abstract class and interface.

Q4) Given an interface Intr which includes a method display which takes an integer as input .

```
interface Intr{  
    int[] display(int p);  
}
```

Task is to write a class Test which implements interface Intr and overrides the method display which takes an integer as input and returns all the prime numbers between 2 and integer k (including it).

Create a class Main and inside main method call display method and pass the argument by taking input from the user.

```
class Main5{  
  
    public static void main(String[] args) {  
  
        Test t=new Test();  
        int[] arr= t.display(17);//Take this argument from user using the Scanner class  
  
        //Write the logic to print the elements  
    }  
}
```

Output-

2 3 4 5 7 9 11 13 17