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Subject	OOP
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Q1. What is Class and role of object in a Class, explain in detail with the help of a
    suitable program ?
ANSWER

Class

A class is a user defined blueprint or prototype from which objects are created. It
represents the set of properties or methods that are common to all objects of one
type. In general, class declarations can include these components, in order:
   Modifiers : A class can be public or has default access (Refer this for details).
   Class name: The name should begin with a initial letter (capitalized by
convention).
   Superclass(if any): The name of the class's parent (superclass), if any, preceded
by the keyword extends. A class can only extend (subclass) one parent.
   Interfaces(if any): A comma-separated list of interfaces implemented by the
class, if any, preceded by the keyword implements. A class can implement more
than one interface.
   Body: The class body surrounded by braces, { }.

Object

It is a basic unit of Object Oriented Programming and represents the real life
entities. A typical Java program creates many objects, which as you know,
interact by invoking methods. An object consists of :

   State : It is represented by attributes of an object. It also reflects the properties
of an object.
   Behavior : It is represented by methods of an object. It also reflects the
response of an object with other objects.
   Identity : It gives a unique name to an object and enables one object to interact
with other object.

```java
import java.util.Scanner;

//creating first class
public class ClassObject {

    public static void main(String[] args) {

        int Value;
```

```java
//creating new object for second class
            Second object = new Second();

// output of calling object
            System.out.println(object.m);


        }


}

//creating second class for calling object
class Second{

//define a Value for output
        int m=38;
}
```

```java
 1  import java.util.Scanner;
 2
 3  //creating first class
 4  public class ClassObject {
 5
 6⊖     public static void main(String[] args) {
 7
 8          int Value;
 9  //creating new object for second class
10          Second object = new Second();
11
12  // output of calling object
13          System.out.println(object.m);
14
15      }
16
17  }
18
19  //creating second class for calling object
20  class Second{
21
22  //define a Value for output
23      int m=38;
24  }
```

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Q2. Write a program about table printing which takes input from the user on the basis of OOP and explain in detail.

Answer

```java
import java.util.Scanner;

public class TablePrinting {

    public static void main(String[] args) {
        //Here we create an object of class
        Scanner obj = new Scanner(System.in);
        //Here we print the output of taking user input
        System.out.println("Enter the Value =");

        int x = obj.nextInt(); //Read the User input

        for(int y=1;y<=10;y++)
        {
            //Table printing of entered user
            System.out.println(x*y);
        }
    }
}
```

```java
1  import java.util.Scanner;
2
3  public class TablePrinting {
4
5      public static void main(String[] args) {
6          //Here we create an object of class
7          Scanner obj = new Scanner(System.in);
8          //Here we print the output of taking user input
9          System.out.println("Enter the Value =");
10
11         int x = obj.nextInt(); //Read the User input
12
13         for(int y=1;y<=10;y++)
14         {
15             //Table printing of entered user
16             System.out.println(x*y);
17         }
18     }
19 }
```

Problems @ Javadoc Declaration Console ⊠

<terminated> TablePrinting [Java Application] C:\Program Files\Java\jdk-13.0.2\bin\javaw.exe (Apr 26, 2020,
Enter the Value =
6
6
12
18
24
30
36
42
48
54
60

Q3. Write a program about any 2 cars which can calculate the performance of
both of them and explain in detail.

Answer

```java
public class Car {

    public static void main(String[] args) {
        //we create object of both class audi and bmwCar
        Audi audi = new Audi();
        BmwCar bmw= new BmwCar();



        //Here we comapare all atributes for audi if audi attributes
is high
        if(audi.MaxSpeed>bmw.MaxSpeed && audi.Engine>bmw.Engine &&
audi.suspension>bmw.Engine)
        {
            System.out.println("Audi is the fastest");
            System.out.println("And Bmw is slower than Audi");
        }


        //Here we comapare all atributes for bmw if bmw attributes
is high
        if(audi.MaxSpeed<bmw.MaxSpeed  &&  audi.Engine<bmw.Engine
&&  audi.suspension<bmw.Engine)
        {
            System.out.println("Bmw is the fastest");
            System.out.println("And Audi is slower than Bmw");
        }

    }

}

class Audi{ //Here we add some data of first car
    int MaxSpeed = 230;
    double Engine = 2.4;
    double suspension = 54;
}
class BmwCar{ //Here we add some data of Second car
    int MaxSpeed = 220;
    double Engine = 2.2;
    double suspenson = 52.1;
}
```

```java
1 public class Car {
2
3⊖    public static void main(String[] args) {
4        //we create object of both class audi and bmwCar
5        Audi audi = new Audi();
6        BmwCar bmw= new BmwCar();
7
8
9
10        //Here we comapare all atributes for audi if audi attributes is high
11        if(audi.MaxSpeed>bmw.MaxSpeed && audi.Engine>bmw.Engine && audi.suspension>bmw.Engine)
12        {
13            System.out.println("Audi is the fastest");
14            System.out.println("And Bmw is slower than Audi");
15        }
16
17
18        //Here we comapare all atributes for bmw if bmw attributes is high
19        if(audi.MaxSpeed<bmw.MaxSpeed  &&  audi.Engine<bmw.Engine  &&  audi.suspension<bmw.Engine)
20        {
21            System.out.println("Bmw is the fastest");
22            System.out.println("And Audi is slower than Bmw");
23        }
24
25    }
26
27 }
```

```
Audi is the fastest
And Bmw is slower than Audi
```