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Class BS Software Engineering

Section (B)

Subject Object Oriented Programming

Semester 2nd

Date April 22nd, 2020

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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 NO 1:

class

DEFINITION:

Collection of objects is called class. It is a logical entity.

A class can also be defined as a blueprint from which you can create an individual object. Class doesn't consume any space.

OBJECT:

DEFINITION:

Any entity that has state and behavior is known as an object. For example, a chair, pen, table, keyboard, bike, etc. It can be physical or logical.

ROLE OF OBJECT IN CLASS:

An Object can be defined as an instance of a class. An object contains an address and takes up some space in memory. Objects can communicate without knowing the details of each other's data or code. The only necessary thing is the type of message accepted and the type of response returned by the objects.

EXAMPLE:

A dog is an object because it has states like color, name, breed, etc. as well as behaviors like wagging the tail, barking, eating, etc.

PROGRAM:

```
class irfan  
  
{
```

```
public static void main (String args[])
{
    phone price=new phone ();
    System.out.println("Total price of samsung" + price.samsung);
    System.out.println("fuel price of huawei=" + price.huawei);
    System.out.println("Total price of iphone=" + price.iphone);
}
}
class mobile
{
    int samsung=32000;
    int huawei=20000;
    int iphone=75000;
}
```

EXPLANATION:

In this program I create two class one is main function class and other is parent class. In main class I create one object which name is price to store the data of the variable and create the space in memory.

After this I write system.out.println to print the given value on the screen.

In second class which name is mobile in this I write variable and their values these value store in the object.

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

ANSWER NO 2:

```
package tabler;
import java.util.*;

public class tabler {

    public static void main(String[] args) {
        // TODO Auto-generated method stub

        int num;
        Scanner table=new Scanner(System.in);
        System.out.println("Enter the number to print
table=");
        num=table.nextInt();
        for (int i=0;i<=10;i++)
        {
            System.out.println(num+"x"+i+"="+num*i);
        }
    }
}
```

EXPLANATION:

In the above I create one class which name is tabler. In this class I write the main function without main

function we can not run any program. In this program I write `import java.util.*;` it is for import those data which help in getting data from the user without this we can not get the data from the user. After the main function I write local variable which name is `num`. after this I create one object which name is `table` and `scanner` for getting data from the user. when the user type the value its store in the object this object will perform the method. After this I write one for loop to increment da number. And in last I write `system.out.println` to print the table on screen.

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

ANSWER NO 3:

```
package cars;
```

```
public class cars {
```

```
    public static void main(String[] args) {  
        // TODO Auto-generated method stub
```

```
        cp Honda=new cp();  
        cp toyota=new cp();  
        Honda.totalsp=150;  
        Honda.acceleratings=70;
```

```

        Honda.fuelcap=30;
        Honda.fuelconsump=2.5;
        toyota.totalsp=300;
        toyota.acceleratings=250;
        toyota.fuelcap=70;
        toyota.fuelconsump=25.5;
        System.out.println("Total speed of mehran=" +
Honda.totalsp +"KM/h");
        System.out.println("Accelerating speed of
Honda =" + Honda.acceleratings +"KM/h");
        System.out.println("Total speed of toyota="
+toyota.totalsp +"KM/h");
        System.out.println("Accelerating speed of
toyota=" +toyota.acceleratings +"KM/h");
        System.out.println("Honda car performance");
        Honda.perfo();
        System.out.println("Ferrari car
performance");
        toyota.perfo();
    }
}

```

```

package cars;

```

```

public class cp {

```

```

    int totalsp;
    int acceleratings;
    double fuelcap;
    double fuelconsump;
    void perfo()
    {
        double p;
        p=acceleratings/fuelconsump;
    }
}

```

```
        System.out.println("performance=" + p);  
    }  
  
}
```

EXPLANATION:

In this program I create two class one is main function class which name is cars and other is parent class which name is cp means car performance. I main function class I create two objects one is **Honda** and other is Toyota which store all the data of the parent class. In this class I assign the values to the variable which store in the object and print on the screen.

In second class I declare variable and create one method means one function in c++ we call function in java we call method in this method simple perform the operation which give the performance of the car.

In the main class we call this method to perform.