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SUBJECT OOP

Q.NO1 What is a class and role of object in a Class, explain in detail with the help of suitable program .

ANS CLASS

A class is an entity that determines how an object will behave and what the object will contain. In other words it is a blueprint or a set of instruction to build a specific of object.

Syntax

Class < class _ name > {

Field ; method ;

}

ROLE OF OBJECT IN CLASS

Entity that has state and behavior is known as an object, it can be physical or logical.an object can be data structure a variable or a function . it has a memory location allocated. The object has designed as class hierarchies. The only necessary thing is the type of message accepted and the type of response returned by the object. From a program point of view an object can be a data structure a variable or a function . it has a memory location allocated . the object is designed as class hriararchies.

SYNTEX FOR OBJECT Class Name Reference Variable = new Class Name ();

EXAMPLE:

```
Public class Cat                //Class Declaration

{

String eating ;                      //  variables  I,e eating ,size , age
and height of a cat

String size ;

int age;

string height ;

public string getinfo ()        // function for string display

{

Return ( " Eating is :" + size is :" +size+ "Age is : " +age+ " height
is :" +height);

}

}

Public static void main (String [] args)        // Main function

{

Elephant maltese = new Cat();                //creating object of Class
Cat
```

Malteste . eating = “ Maltese”;

The properties of cat

Maltese.size = “large”;

Maltese . age = 1;

Maltes. height = “Black”;

System.out.println(maltese . getlnfo ()); //Calling the display the function with class object.

```java
package first;

public class Cat
{
   String eating ;          // instance
variables
   String size ;
   int age;
   String hieght;
   public String getinfo() {
      return ("eating is :" +eating+ "size
is :" +size+ "age is :" +age+ "height is
:" +height);
   }
   public class main
   {
      public static void main(String []
args) {
          Cat maltese = new Cat ();
          maltese.eating = "maltese";
          maltese.size = "large";
          maltese.age = 1;
          maltese.hieght = "Black";

   System.out.println(maltese.getinfo());
      }
   }
```

```
package first;

public class Cat
{
   String eating ;          // instance
variables
   String size ;
   int age;
   String hieght;
   public String getinfo() {
      return ("eating is :" +eating+ "size
is :" +size+ "age is :" +age+ "height is
:" +height);
   }
   public class main
   {
      public static void main(String []
args) {
          Cat maltese = new Cat ();
          maltese.eating = "maltese";
          maltese.size = "large";
          maltese.age = 1;
          maltese.hieght = "Black";

   System.out.println(maltese.getinfo());
      }
   }
```

Q NO 2 write a program about table printing which take input from the user on the basic of oop and explain in detail.

ANS ***PROGRAM:***

```
import java.util.Scanner;
class table                                    //Created class Table
{
```

```
   int d;                                                    //Initalizing integer to count
2-20.
   public table(int x)       //Initializing function table, passed parameter x, value
taken from user.
   {
      System.out.println("Table of " + x);
      for(c=2;c<=20;c++)                                    //Loop to perform table
calculations.
      System.out.println(x + "*" + c + " = " + (x*c));             //Display each line of
table.
   }
}
public class Main{                                                  //Main class
public static void main(String args[])                              // Main function
{
   int n;                                                //Initializing variable to take integer
from user.
   System.out.println("Enter an integer to print table");
   Scanner in = new Scanner(System.in);                          //input from user.
   n = in.nextInt();                                      //assign user given value to
integer n
   table mytab = new table(n);         //created object of the class and called the
table function.
}
}
```

Out put

```
package table;

public class table {

    public static void main(String[] args)
    import java.util.Scanner;
    class table                                                    //Created class Table
    {
        int d;                                                       //Initalizing integer to count 2-20.
        public table(int x)       //Initializing function table, passed parameter x, value taken from user.
        {
            System.out.println("Table of " + x);
            for(c=2;c<=20;c++)                                    //Loop to perform table calculations.
            System.out.println(x + "*" + c + " = " + (x*c));              //Display each line of table.
        }
    }
    public class Main{                                                        //Main class
    public static void main(String args[])                          // Main function
    {
        int n;                                                   //Initializing variable to take integer from user.
        System.out.println("Enter an integer to print table");
        Scanner in = new Scanner(System.in);                      //input from user.
        n = in.nextInt();                                                 //assign user given value to integer n
        table mytab = new table(n);          //created object of the class and called the table function.
    }
    }
```

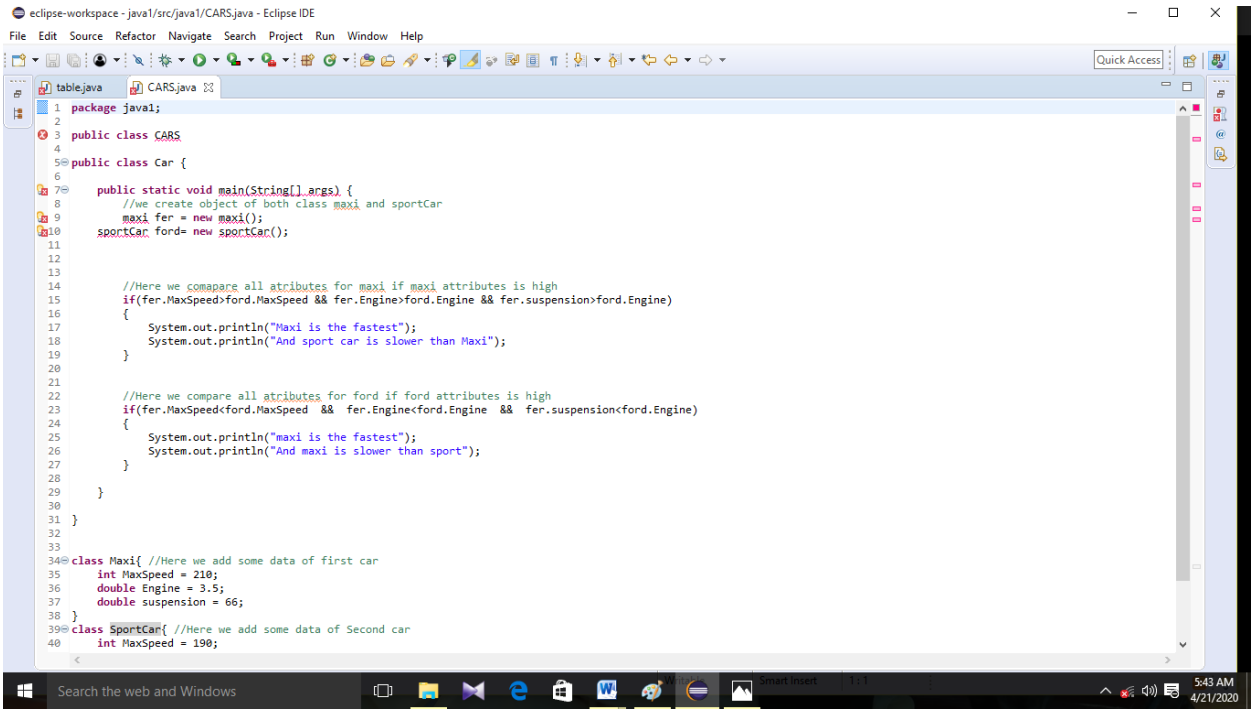
Q NO 3 write a program about any 2 cars which can calculate the performance of both of them and explain in detail .

ANSWER NO 3:

```
public class Car {

	public static void main(String[] args) {
		//we create object of both class maxi and sportCar
		maxi fer = new maxi();
	sportCar ford= new sportCar();



		//Here we comapare all atributes for maxi if maxi attributes is high
		if(fer.MaxSpeed>ford.MaxSpeed && fer.Engine>ford.Engine && fer.suspension>ford.Engine)
		{
			System.out.println("Maxi is the fastest");
```

```
                System.out.println("And sport car is slower than
Maxi");
            }


            //Here we compare all atributes for ford if ford attributes
is high
            if(fer.MaxSpeed<ford.MaxSpeed  &&  fer.Engine<ford.Engine
&&  fer.suspension<ford.Engine)
            {
                System.out.println("maxi is the fastest");
                System.out.println("And maxi is slower than sport");
            }

      }

}


class Maxi{ //Here we add some data of first car
      int MaxSpeed = 210;
      double Engine = 3.5;
      double suspension = 66;
}
class SportCar{ //Here we add some data of Second car
      int MaxSpeed = 190;
      double Engine = 2.8;
      double suspenson = 50;
}
```

OUTPUT


eclipse-workspace - java1/src/java1/CARS.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
Quick Access
table.java
CARS.java
1 package java1;
2
3 public class CARS
4
5 public class Car {
6
7 public static void main(String[] args) {
8 //we create object of both class maxi and sportCar
9 maxi fer = new maxi();
10 sportCar ford= new sportCar();
11
12
13
14 //Here we comapare all atributes for maxi if maxi attributes is high
15 if(fer.MaxSpeed>ford.MaxSpeed && fer.Engine>ford.Engine && fer.suspension>ford.Engine)
16 {
17 System.out.println("Maxi is the fastest");
18 System.out.println("And sport car is slower than Maxi");
19 }
20
21
22 //Here we compare all atributes for ford if ford attributes is high
23 if(fer.MaxSpeed<ford.MaxSpeed && fer.Engine<ford.Engine && fer.suspension<ford.Engine)
24 {
25 System.out.println("maxi is the fastest");
26 System.out.println("And maxi is slower than sport");
27 }
28
29 }
30
31 }
32
33
34 class Maxi{ //Here we add some data of first car
35 int MaxSpeed = 210;
36 double Engine = 3.5;
37 double suspension = 66;
38 }
39 class SportCar{ //Here we add some data of Second car
40 int MaxSpeed = 190;
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