

Name : Yasir Zaman Khan : ⇒ ID: 16729

Class paper : ORIENTED PROGRAMMING

Question No 1

What is class and Role of Object in a Class ? and program ?

Answer :

Class;

* Object are actual thing which is created from blueprint called class.

* Just like every every car including BMW, Merc and Audi has blue print and follow specification. every object follows structure defined in class.

OR

* we learn another Definition:

A class is a blueprint (it is user defined data types it could be any thing) or prototype from which objects are created. This section defines a class that models the state and behaviour of a real-world object - it intentionally focuses on the basics, showing how even simple

Classes can cleanly model state and behavior.

E.g

```
class Demo {
```

```
public static void main (String args []) {
```

```
System.out.println ("welcome to paper");
```

```
}
```

```
}
```

OBJECT:-

An object is a software bundle of related state and behavior. Software objects are often used to model the real-world objects that you find in everyday life (object is real world Entity to represent a physical instance of a class). A software object maintains its state in variables and implements its behavior with methods.

Role OF OBJECT IN Class;

The object class defines the basic state and behavior that all objects must have, such as the ability to compare one self to another object,

to convert to a String, to wait on a condition variable, to notify other objects that a condition variable has changed, and to return the object's class.

Object	Class
1: Object is an instance of a class	Class is a blueprint which objects are created.
2: Object is a real world entity such as chair, pen, table, laptop etc	Class is a group of similar objects.
3: Object is a physical entity.	Class is a logical entity.
4: Object is created many times as per requirement	Class is declared once
5: Object allocates memory when it is created	Class doesn't allocate memory when it is created.
6: Object is created through new keyword Employee obj = new Employee().	Class is declared using class keyword class Employee {}

There are different ways to create object in java :- New keyword, newInstance () method, clone () method, And deserialization.

There is only one way to define a class, i.e by using class keyword.

Program class & Object;

```

class Human {
    public void walk () {
        System.out.println ("Human walks");
    }
}

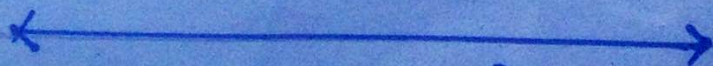
class Boy extends Human {
    public void walk () {
        System.out.println ("Boy walks");
    }
}

public static void main (String args []) {
    // Reference is of parent class and object -
    // of child class
    Human myobj = new Boy ();
    myobj.walk ();
}

```

Output is:

Boy walks



Q1 Finish.

Question No : 2

Table program:

Answer:

```
// Java program to print Multiplication table.  
import java.util.Scanner;  
  
public class MultiplicationTable {  
    public static void main (String[] args) {  
        Integer number, i;  
        Scanner sc = new Scanner (System.in);  
        * System.out.println ("Enter the number  
..... to print multiplication table");  
        number = sc.nextInt();  
        for (i = 1; i <= 10; i++) {  
            * System.out.println (number + "*" + i + "=" +  
                (number * i));  
        }  
    }  
}
```

⇒ New line

● * one line

Output of the table program;

E:\java>java MultiplicationTable

Enter an integer to print its multiplication table

9

Multiplication table of 9 is :-

$$9 * 1 = 9$$

$$9 * 2 = 18$$

$$9 * 3 = 27$$

$$9 * 4 = 36$$

$$9 * 5 = 45$$

$$9 * 6 = 54$$

$$9 * 7 = 63$$

$$9 * 8 = 72$$

$$9 * 9 = 81$$

$$9 * 10 = 90$$

E:\Java > -



Table program;

Explanation:

- 1: first we write a public class Multiplication-Table.
- 2: Second thing is that we write `Scanner s = new Scanner (System.`
- 3: Third work is that we take the value to the user and write, `System.out.print("Enter number:");`
- 4: `int n = s.nextInt();`
- 5: use `for (int i = 1; i <= 10; i++)`
- 6: `System.out.print (n + "*" + i + " = " + n * i);`
- 7: at the End "Enter the value", result on screen.



Question No : 3

Program performance of two cars;

```
public class cars {  
    public static void main (String [] args) {  
        // Todo Auto-generated method stub  
  
        // System.out.println ("Hi");  
  
        ac corolla = new ac ();  
        ac Mehraan = new ac ();  
        corolla.cs = 250 ;  
        corolla.ts = 350 ;  
        corolla.bs = 9.6 ;  
        Mehraan.cs = 280 ;  
        Mehraan.fc = 109 ;  
        Mehraan.bs = 12.4 ;  
  
        System.out.println ("Accelerating Speed = " + corolla.cs + " Km");  
        System.out.println ("Accelerating Speed = " + corolla.ts + " Km");  
        System.out.println ("Accelerating Speed = " + Mehraan.cs + " Km");  
        System.out.println ("Fuel capacity = " + Mehraan.fc + " gallons");  
        System.out.println ("First method");  
        Mehraan.perf ();  
        System.out.println ("2nd method " + corolla.perf ());  
    }  
}
```

Class ac

{

```
int cs ;  
int ts ;  
double fc ;
```



```
double br;  
void perf () {
```

```
double p;
```

```
p = cs / br;
```

```
System.out.println("Performance of the plane=" + p);
```

```
}
```

```
double perf () {
```

```
double p;
```

```
p = cs / br;
```

```
System.out.println("Performance of the plane=" + p);
```

```
return p;
```

```
}
```

```
}
```


Result

output:

→ Corrola.cs = 250 km

→ Corrola.ts = 350 km

→ Mehdan's = 280 km

Fuel capacity = 109 gallons

