

Mid Term Summer 2020

NAME: FAIZULLAH KHAN

ID: 14840

SUBJECT: JAVA ORENTED PROGRAM

DEPARTMENT: BS(SE)

SUMMITTED TO: M AYUB KHAN

DATED:26/08/2020.

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

Answer:

Class:

Classes and Objects are basic concepts of Object-Oriented Programming which revolve around the real-life entities.

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.

Role of an Object in a Class:

When an object of a class is created, the class is said to be instantiated. All the instances share the attributes and the behavior of the class. But the values of those attributes, i.e. the state are unique for each object. A single class may have any number of instances.

Example:

// Class Declaration

public class Dog

```
{
    // Instance Variables
    String name;
    String breed;
    int age;
    String color;
    // Constructor Declaration of Class
    public Dog(String name, String breed,
               int age, String color)
    {
        this.name = name;
        this.breed = breed;
        this.age = age;
        this.color = color;
    }

    // method 1
    public String getName()
    {
        return name;
    }

    // method 2
```

```

public String getBreed()
{
    return breed;
}

// method 3
public int getAge()
{
    return age;
}
// method 4
public String getColor()
{
    return color;
}

@Override
public String toString()
{
    return("Hi my name is "+ this.getName()+
        ".\nMy breed,age and color are " +
        this.getBreed()+"," + this.getAge()+
        ","+ this.getColor());
}

public static void main(String[] args)
{
    Dog tuffy = new Dog("tuffy","papillon", 5, "white");
    System.out.println(tuffy.toString());
}
}

```

Output:

Hi my name is tuffy.

My breed,age and color are papillon,5,white

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

Answer:

```
import java.util.Scanner;
```

```
public class Main {
```

```

public static void main(String[] args) {
    Scanner in = new Scanner(System.in);
    System.out.println("Input the Number: ");
    int n = in .nextInt();
    for (int i = 1; i <= 10; i++) {
        System.out.println(n + "*" + i + " = " + (n * i));
    }
}
}
}

```

Sample Output:

Input the Number:

```

6
6*1 = 6
6*2 = 12
6*3 = 18
6*4 = 24
6*5 = 30
6*6 = 36
6*7 = 42
6*8 = 48
6*9 = 54
6*10 = 60

```

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

Answer:

```
import java.util.Scanner;
```

```
public class Exercise12 {
```

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

```
        Scanner in = new Scanner(System.in);
```

```
        System.out.print("Input Speed(KM/H) of first Car: ");
```

```
        int car1 = in.nextInt();
```

```
        System.out.print("Input Speed(KM/H) of second Car: ");
```

```
        int car2 = in.nextInt();
```

```
        System.out.println("Performance of tow Cars is: " +
            (car1 + car2) / 2);
```

```
    }
}
```

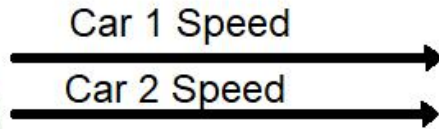
Sample Output:

Input Speed(KM/H) of first Car: 100

Input Speed(KM/H) of second Car: 80

Average of five numbers is: 90

Practical Explanation



$$\text{Performance} = \frac{\text{sum of the numbers}}{\text{number of numbers}}$$

THE END