

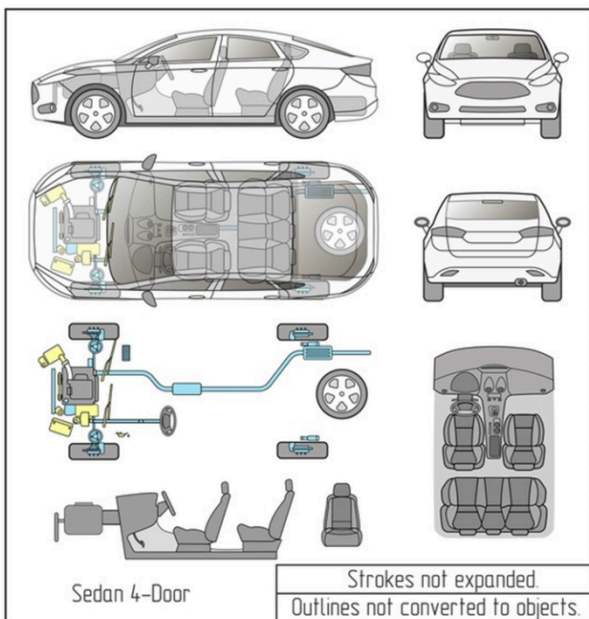
MODULE 3

1. Class

A class is a blueprint from which you can create an individual object. A class defines

- how data can be stored
- how it can be accessed
- how data can be manipulated

2. Class vs. Objects



3. Object

An object is an instance of a class, which means an object is the executable version of the codes in a class. An object has three characteristics:

- **State:** represents the data (values) of an object.
- **Behavior:** represents the behavior (functionality) of an object such as deposit, withdraw, etc.
- **Identity:** An object identity is typically implemented via a unique ID. The value of the ID is not visible to the external user. However, it is used internally by the JVM to identify each object uniquely.

4. Here's an example of a Java program that has a class, an object, a void function, a double function:

```
//File Name: Calc_1.java
```

```

public class Calc_1 {

    // Fields
    private double result;

    // A void method that prints a greeting message
    public void greet() {
        System.out.println("Welcome to the Calculator!");
    }

    // A method that performs addition and returns the result as a double
    public double add(double num1, double num2) {
        result = num1 + num2;
        return result;
    }

    // Main method to run the program
    public static void main(String[] args) {

        double sum;

        // Create an object of the Calc_1 class
        Calc_1 obj1 = new Calc_1();

        // Call the void method (greet)
        obj1.greet();

        // Call the double function to add two numbers and print the result
        sum = obj1.add(5.5, 3.2);
        System.out.println("Sum: " + sum);
    }
}

```

5. Here's an example of a Java program that has a constructor:

```

//File Name: Calc_2.java

public class Calc_2 {

    // Fields

```

```
private double result;

// Constructor
public Calc_2(int val) {
    result = val;
}

public void message() {
    System.out.println("The value of result is: " + result);
}

// Main method to run the program
public static void main(String[] args) {

    // Create an object of the Calculator class
    Calc_2 obj1 = new Calc_2(6);

    //PLEASE UNCOMMENT ONE BY ONE
    obj1.message();

    Calc_2 obj2 = new Calc_2(45);
    obj2.message();
}
}
```