**Class and Objects-**

Class is the template or blueprint from which object is created and Object is the instance of class.

Class can only be accessed from outside via its instance

Why we write the class?

Because you want to design the something in the class. Class contain the variables and methods.

Note- We rarely used int and float in class, generally we prefer string in java for storing the value of variables.

1. Built in classes in java

Built-in classes in Java are the classes which come bundled within predefined packages in Java. A few of the majorly used built-in classes are:

1. java.lang.String
2. java.lang.System
3. java.lang.Exception
4. java.lang.Object
5. java.lang.Class
6. java.util.Date
7. java.util.HashMap
8. java.util.ArrayList
9. java.util.Iterator
10. java.lang.Thread
11. User defined or custom classes

As the name suggests, a custom or user-defined class is a class that is created by a user. It will contain the class members or variables as defined by the user.

**How to create the class**

Syntax or skeleton of java class

<Access specifier> class <Class name> {

Class body here

}

Java class is generally consists of following elements as

* 1. Variable

They are declared within the body of the class. The general syntax to declare a class variable is given below:

Example-

public class Student {

public int a=10;

}

where public is access specifier

int is data type

a is field or variable name

10 is value

* 1. Methods-

A method in Java is a collection of a statement which determines the behavior of a class object.

* 1. Constructor
  2. Blocks
  3. Nested classes

Class within other class called as Nested class in java.

Rules for class-

1. A Java class must have the class keyword followed by the class name.
2. The class name must start with a capital letter and if you are using more than one word to define a class name, every first letter of the words should be made capital. Example- StudentData
3. There should not be any spaces or special characters used in a class name except the dollar symbol($) and underscore(\_).
4. A Java class can only have public or default access specifier.
5. It can extend only one parent class. By default, all the classes extend java.lang.Object directly or indirectly.
6. A class may optionally implement any number of interfaces separated by commas.
7. The class’s members must be always declared within a set of curly braces {}.
8. Class containing the main() method is known as the Main class as it will act as the entry point to your program.

**What is the object in java?**

An object in Java is the real-world entity which has its own state and behavior. A [Java program](https://www.edureka.co/blog/java-programs/) can have as many objects as required. An object in Java typically contain following things:

1. State: This is represented by the attributes and properties of an object.
2. Behavior: This is defined by the methods of an object, In other words, its functionality.

**For Example**, Mobile is an object. Its name is Samsung; color is black known as its state. It is used for calling, texting message so its behavior.

When we create an object (instance) of class then space is reserved in heap memory.

Let’s understand with the help of an example.

FirstProgram firstProgram = new FirstProgram();

Where firstProgram is the object of FirstProgram class.

Example- Program to display the message on console.

**public** **class** FirstProgram {

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

System.***out***.println("Welcome to Java Programming..");

}

}

Output

Welcome to Java Programming..