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**Class**

* Class is a collection of data member and methods
* Class is building block

Employee

Data members

Id

name

Total()

Methods

* Object is an instance of a class once a class is define we can create any number of objects belonging to that class.

**return – keyword**

By using this we can return value from called method to calling method

**this – Keyword**

it is a keyword which represents current objects. If local variable and data members are same then this keyword is used to differentiate.

**Encapsulation**

Wrapping of data and methods in a single unit is called encapsulation. The data is not accessible from outside world directly. Only with the help of methods we can access the data

Example

Employee

int id;

String name;

double salary;

String address;

long mobile;

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**Types of data members in a class:-**

In java data members can be of two types

1. Static data members
2. Non-static data members

* Static data members – static data member are those which are class level variables only one copy of these member will be created and all the objects will share that member
* To access static data member we do not require any object

**Types of methods in java**

In java methods can be of two types:-

1. Static methods
2. Non-static methods

Static methods –

* static methods are those methods which are class level methods and to access static method we do not need any object.
* We can access static methods using class name
* We cannot use non static member inside the static method directly.

**Constructor**

* Constructor is a special method which is used to initialize data member of a class
* Constructor name is same as class name
* Constructor are called automatically when the object are created

**Types of constructor**

There are two types of constructor

1. Default constructor
2. Parameterized constructor
3. Default constructor –

If constructor does not have any parameter than it is called default constructor/Non-parameterized constructor

There are two types of default constructor:-

1. System define default constructor
2. User define default constructor
3. System define default constructor –

If there is no constructor in the class than system will generate one constructor called system define default constructor

1. User define default constructor –

If user is creating constructor without any parameter than it is called user define default constructor

1. Parameterized constructor

* Constructor with parameter is called parameterized constructor
* This constructor receives value while creating the object

NOTE : constructor may or may not be private

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**Object parameterized constructor**

* The constructor which receives object as a parameter is called object parameterized constructor.
* This constructor is used to copy values of one object into another object.

**Polymorphism**

Poly is many and morphism is forms defining one thing in many forms is called polymorphism.

There are two types of polymorphism

1. Compile time polymorphism – Method overloading
2. Runtime polymorphism – Method overriding

**Method overloading**

* Writing methods with same name by changing signature is called method overloading
* Signature means either number of parameter should be different
* Or types of parameter should be different
* Or order of parameter should be different.

**Command line argument**

* Accepting the data dynamically from the command prompt known as command line arguments.
* The number of values passed to the java program from the command prompt known as command line arguments
* All the command line arguments are by default available in the form of array of objects of string class in main method of java

**Inheritance**

The mechanism of getting the data members and method of base class in the derived class is called inheritance

class B extends A{ (base/parent)

**A**

}

(Derived/child)

**B**

In java on class can be extend only one other class means java will not support multiple inheritance

* If we do not want to give the features of base class to the child class then the definition