



Yashveer
@yashveerSholiya

Java Notes

What is JAVA

- JAVA is a class based high Level Object Oriented programming Language
- JAVA is developed by James Gosling & his friends in year 1991.
- The first Version of JAVA (JDK 1.0) was released on 23rd Jan, in 1996 by Sun Microsoft
- It is Designed for Easy web/internet Application

Purpose :-

- 1 Write once and run anywhere
- 2 It is platform independent

CHARACTERISTICS / FEATURES OF JAVA

1. Object Oriented : without objects & class u cannot run any program
2. Platform independent : program can run on different OS
3. Simple Language
4. Secure : members are private by Default
5. Portable : by the use of Compiler generate byte Code from Source Code
6. Compiled & interpreter
7. Robust : inbuild exception handling method [automatic Garbage Collector]
8. Multithreads
9. Performance : byte Code execute quickly
10. Dynamic : add anything during runtime

[OOPS]- OBJECT ORIENTED PROGRAMMING [CONCEPTS]

There are some concepts of OOPs

- Object
- Classes
- Object reference
- Abstraction
- Encapsulation
- Inheritance
- Polymorphism (Compile time / Run Time)

Object

- Objects are the run-time Entities in this System
- They hold Some data which can be user defined also such List or Table

classes

classes can be defined in many ways:

- Firstly class is a collection of Objects
- It is also defined as the blueprint by using we can Create the objects
- Class defines the field or Attribute and methods where the real functionality lies in it
- These attributes and methods are Called members
- Example: If name of the class is Colours so its object can be red, blue or green.

Syntax to declare the object of class :-

Class name Object name = new Class name();

Example: Colour red = new Colour();
User s1 = new User();

Object Reference

A Reference is an address that indicates where an object's variables & methods are stored

- We can assign value of reference variable to another reference variable
- Reference Variable is used to store the address of the variable

Abstraction

Abstraction refers to the way of representing essential or important details without showing any background details

- It helps to reduce programming complexity & effort.
- Abstraction is accomplished [Complete] using Abstract classes & interface
- It is one of the most Important Concept of OOPs.

Encapsulation

Wrapping up of data into a single unit is referred as Data Encapsulation

- In Java, data & methods are wrapped into a single unit that is class
- Due to this feature, It is also known as Data hiding

Inheritance

Inheritance is property which helps to acquire the properties of object of one class into the object of another class

- It provides the facility of reusability
- It saves a lot of time & MEMORY
- The motive behind the Inheritance is to use the existing class
- * • The class that inherits from Another class is known as sub class.

Polymorphism

Polymorphism is derived from 2 Greek words: Poly & Morphes

"Poly" means → Many

"Morphes" means → forms

Polymorphism one of the OOP's feature that allows us to perform a single action in different ways

There are 2 Type of Polymorphism In Java

- 1 Compile-time Polymorphism
- 2 Runtime polymorphism

We can Perform Polymorphism in Java by method overloading and method overriding

- 1 Overloading Method
- 2 Overriding Method

INTRODUCTION OF ECLIPSE

[IDE] Developing
Programs
IN JAVA

- **ECLIPSE**
- Eclipse is an integrated development Environment [IDE] for developing applications
- It Can also Perform Languages Like: C/C++, Python, PERL, RUBY etc.

JDK

The Java Development tools [JDK] Project provides a plug-in that allows Eclipse to be used as a Java IDE

o— Definition — o

LANGUAGE- CONSTRUCTS

• VARIABLE

- Variables are containers for storing DATA value
- It is also name of Memory Location
- It is a combination of "Var" + able" that means its value can be changed

Defination

A Variable in Java is a Container which stores Some value or data in it during the Execution of the Java Program

Rules:- of Declaring Variable

- A Variable name Can Consist of Capital Letter A-Z, LowerCase, Letter, digits 0-9, and two special characters Such as Underscore & Dollar Sign (\$)
- The first character must be a Letter.
- Blank Space Cannot be used in Variable names.
- Java keywords Cannot be used as variables names
- Variables names are Case-Sensitive.

VARIABLE TYPES

Type of VARIABLE

LOCAL

instance

class

A Variable that is declared inside the method is called Local Variable

A Variable that is declared inside the class but outside the method is called instance Variable

It is not declared as static

A Variable that is declared as static is called Static/Class Variable
It Cannot be Local

LOCAL VARIABLE

- A Variable declared inside the body of the Method is called Local Variable
- You can use in variable only within the method & the method in the class aren't even aware that the variable exists
- A Local Variable Cannot be defined with "static" keyword.
- Example : int data = 50;

variable - sign

How To Declare A VARIABLE