

Java Programming Language Notes



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1. Basic of Programming Language

What is Programming?

Just like we use English, Hindi or other languages to communicate with each other, we use the programming language to communicate with the computer. A programming language is an artificial language designed to express computations that can be performed by a machine, particularly by a computer. It can be used to create programs that control the behavior of a machine, to express algorithms precisely, or as a mode of human communication.

Programming language is the way of communication between the user and a computer. Examples of programming language are C, C++, Java, Python e.t.c

Types of Programming Language

There are three types of Programming languages:-

Low-Level Programming Language

- Machine Language
- Assembly Languages or Symbolic Languages

Middle-level Programming language

- C Programming Language

High-level Programming language

- Java, Python, etc..

Read More:- [Basic of Programming Language](#)

2. Introduction to Java Programming

Java is a simple, secured, high level, platform-independent, multithread, Object-oriented programming language. Java has its own software-based platform called JVM (Java virtual machine) to execute the programs.

Java was developed by SUN microsystems, Inc. (Sun for short) for developing internet-based, high performance, distributed, dynamically extensible applications. Oracle Corporation acquired Sun microsystems on January 27, 2010; Now, Java is owned by Oracle Corporation.

Java was invented by James Gosling. He, with his team of 11 members, invented the Java language in SUN microsystems.

Features of Java

Java came into the market with the main 10 following features.

1. Simple
2. Secure
3. Robust
4. Portable
5. Architectural natural
6. OOP
7. Multithread
8. High performance
9. Distributed
10. Dynamic natural

Applications of Java

- Desktop applications. Example:- Calculator, Trader Console
- Web servers and applications servers
- Enterprise applications. Example:- bank applications.
- Interoperable applications. Example:- Facebook
- Mobile applications. Example:- Android apps
- Gaming applications
- Robotics application
- Database connections like Oracle database e.t.c.

Read more:- [Introduction to Java Programming](#)

JDK vs JRE vs JVM vs JIT

JDK provides an environment to develop and run Java applications.

JRE provides an environment just to run Java applications.

JVM is responsible to run the Java program line by line.

JIT helps interpreters for executing Java byte code fastly.

Read more:- [JDK JRE JVM JIT in Java](#)

How Java Works?

Java is compiled into the bytecode and then it is interpreted to machine code.

Java (Oracle JDK) Installation in Windows:-

Step1:- To Run Java programs in windows, Download the latest version of JDK from the Oracle website. Download .exe or .zip file.

Step2:- Install the downloaded .exe file. Or, for .zip file just extract it.

Step3:- Go to the Advanced system setting.

Step4:- Click on Environment variables.

Step5:- In this Window, in the User variables section or System variables section, we must create a Path.

Step6:- Add, Variable name = "path"

Step7:- Now, check if the installation is done correctly or not. Open, Command prompt (cmd) and type java -version.

Read More:- [How to run a Java program](#)

Basic Structure of Java Program

```
public class Main {
    public static void main(String[] args) {
        System.out.println("Hello, World!");
    }
}
```

Essential statements of Java program:-

- **Class block:-** Only class allows us to define the method with logic.
- **The main method:-** It is the initial point of class logic execution.

- **Print statement:-** All kinds of data are printed using this statement.

Simple Hello World Program in Java

```
// FirstProgram.java
public class FirstProgram {
    public static void main(String[] args) {
        System.out.println("Hello, World!");
    }
}
```

Output:-

Hello, World!

Read More:-

- [Java Hello World Program](#)
 - [Different ways to set the Java path](#)
 - [Set classpath environment variables](#)
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