

2025, June 25/25

Name of the module : JEE (Java Standard Edition) [Core Java]

Duration : 181 Session (Sunday Online classes 6, 7 classes)

Course Material : Images-CA

Lab : Lab is compulsory

Q & A : In the Lab

What is a Language ?

A language is a communication media through which we can communicate to each other.

A language is a programming language ?

user

Java

A programming language is an intermediate between the user and computer system.

A user is sending the instructions to get the desired output

Characteristics of Programming language :

Every programming language provides the following two types of characteristics :

1) Syntax of the language (Rules given by the programming language)

2) Semantics of the language (Meaning OR the rules given by the programming language)

Syntax of the Language :

I suppose I want to create English Translation so, we need to follow the following syntax

Subject + verb + Object (Sentence)

He is a boy. (True)

We are Java Experts

Every programming language has java, if we write the following code then we will not get any compilation error

int a = 10;

int p = 20;

int m = 30;

But if we write, Our runtime environment will generate some problems because we cannot divide a number by zero

22) Semantics provided by the Programming language :

After successful compilation (Syntax and Rules) completed, the semantic module will verify whether the code is meaningful for the programming language. If meaning for that directly associated and we will get desired output. So the other hand it checks it recognizes then it will generate a Runtime Exception.

80, THE FINAL CONCLUSION IS :

1) java, we have 2 kind of security

2) At compilation time - Java compiler is responsible to verify the Syntax. If we don't follow the Syntax then we will get **Compilation error**

3) At Runtime level - Here we (JVM) runtime (JRE) will verify the semantics is meaning of the code, if meaning for that associated otherwise we will get **RuntimeException**

*** **What is Java ?**

Java is Object Oriented, high level, robust (secure), multithreaded, platform independent programming language.

Java has to depend all the functionalities in the java 2 JVM

8 and 7

JVM

Hardware ==> Java JVM

By using Java language we can develop various applications like :

1) Java-based application for desktop Applications (Software)

2) Java-based application for web-browsers

3) Java-based application for mobile devices

4) Java-based application for embedded systems

5) Java-based application for IoT devices

6) Java-based application for AI and ML

Java was originally developed by "Sun Microsystems" in an organization on 23rd January 1995.

At that time, the first version of Java is Java 1.0 (Java Development Kit 1.0) was released.

Java is an open source language.

On the year 2010, Java was acquired by "Oracle Corporation" and now Java is the product of Oracle Corporation.

History of Java language :

1) Java, we have a family of Java :

2) J2C (Java Standard Edition) (Core Java) ==> Stand-alone Application OR Desktop Application

3) J2E (Java Enterprise Edition) (Extended Java) ==> Web application OR web-based

4) J2ME (Java Micro Edition) (Limited Java) ==> Mobile Applications

5) Java FX (It is used to develop GUI Application, it is outdated now)

Note : The Developing GUI Application we should use HTML, CSS, JS and React

https://classroom.google.com/u/1/c/NzgyODE3NTI3MDkw

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