

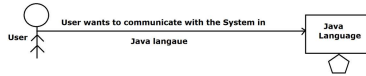
Name of the module : Java Standard Edition (JSE)
 Starting Date : 06th Nov 25
 Sessions : 95 sessions
 Batch 53 : Java 25 new features (16th SEP 2025)
 Notes : Google Class room
 FAQ : (435 IQ)
LAB is compulsory
 javaravishanker@gmail.com

What is a language ?

A language is a medium of communication through which we can express our thoughts and ideas and communicate with each others.

Example: English, Telugu, Hindi, French, etc.

What is Programming Language ?



A programming language is a medium of communication between a programmer and a computer.

It allows programmers to write instructions that a computer can understand and execute.

Example: C, C++, Java, Python.

Characteristics of Java programming language :

* Java has provided two characteristics :

- Syntax [Rules given by the java programming]
- Semantics [Meaning OR Structured]

Syntax :

English translation :

Subject + Verb + Object

He is a boy. //Valid

He is a box. //Invalid

From Java point of view :

```
int x = 10;
int y = 0;
int z = x/y;
```

From Java compiler point of view, the above statements are perfectly valid because we are following the syntax but Runtime, we will get Runtime error (Exception)

* In Java programming language, We have 2 level of code security :

a) At compilation level :

Here our compiler will verify whether the given code is syntactically valid OR not ? If not then it will generate syntax error.

a) At execution level :

Here our Runtime environment (JVM) will verify whether the given code is meaningful OR meaningless , If meaningless then it will generate exception (Runtime Error)

What is Java ?

* Java is a Object Oriented, high level, robust (Strong), multithreaded, platform independent (WORA) and secure programming language.

Applications of Java:

Java is used to develop various types of applications:

- Desktop/Stand-alone Applications (e.g., IDEs, tools)
- Web Applications
- Mobile Applications (Android)
- Enterprise Applications (banking, ERP, etc.)
- Gaming Applications
- Cloud-based and AI/ML Applications
- Distributed Applications