

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

- a) Syntax [Rules given by the Java programming]
- b) Semantics [Meaning OR Structure]

#### 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:

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