

# UNIT - 1 :

- Introduction to Java :
  - History
  - Advantages
  - OOP vs POP
  - Features
  - JDK, JVM, JRE
- Keywords in Java :
  - Definition
  - Categories
- Variables in Java :
  - Definition, Syntax
  - Types - Local, Instance, Static
- Data Types in Java :
  - Definition
  - Classification : Primitive, Non-Primitive
- Wrapper Classes
- Boxing and Unboxing : Auto-boxing and Auto-unboxing
- Type Casting in Java : Implicit and Explicit
- Operators in Java : Definition, Syntax,
  - Types : Arithmetic, Unary, Relational, Logical, Bitwise, Shift, Assignment, Ternary, instanceof
- Structure of a simple Java program : 8 Sections
- Java Packages :
  - java.lang
  - java.util
- Java I/O Stream :
  - What ?
  - Types
  - Scanner Class : Object and methods
- Control statements :
  - Conditional :
    - if
    - if-else
    - switch
  - Iterative :
    - for
    - while
    - do-while
  - Transfer :
    - break
    - continue
    - return

## UNIT - 2 :

- Object Oriented Programming :
  - What ?
  - OOP vs POP
  - Advantages
  - 4 Pillars (only definitions here) :
    - Encapsulation
    - Inheritance
    - Abstraction
    - Polymorphism
- Classes and Objects
- Methods : Access Specifiers : default, public, private, protected
- Constructors
  - Definition, Syntax
  - Types
- Inheritance :
  - Types :
    - Single Level
    - Multi-level
    - Multiple
    - Hybrid
  - super keyword
  - interface keyword
- Polymorphism :
  - Types :
    - Compile-time
    - Run-time
- Method Overloading vs Method Overriding
- Coupling
- Exception Handling :
  - Types : checked and unchecked
  - Keywords
  - finally block
  - throw vs throws
  - Custom Exception
- Threads :
  - Thread and multithreading
  - Types
  - Creating threads