Day2 Basics of JAVA

Day1 Revisit

1. What is JAVA – Platform Independent, OOP based, General/Multi-purpose, Multi-threaded, Fast, Secure Programming Lang.
2. JDK – Java Development Kit, JRE – Java Runtime Environment
3. General Structure of a Simple JAVA program
4. Downloading and Installing JDK.
5. Dealing with Multiple versions of JDK – Environment Variable. (JAVA\_HOME) –
6. Update Path env variable with this entry “%JAVA\_HOME%\bin” [java.exe, javac.exe, etc.,]
7. Simple HelloWorld JAVA Program.
8. Compiled & Executed.
9. Java compiles the source code and interprets it in the JVM.
10. JAVA is platform independent where as JDK, JRE, JVM are all platform dependent.

Agenda

Setting UP the IDE. (Eclipse & Intellij ) – VS code

Creating a Java Project in IDE.

Basics of JAVA

1. Variables & it’s Types
2. Statements &/ Expressions
3. Operators & types
4. OOP concepts.

Eclipse EE IDE, Intelli J community Edition. <https://www.eclipse.org/downloads/download.php?file=/technology/epp/downloads/release/2025-06/R/eclipse-jee-2025-06-R-win32-x86_64.zip>

<https://www.jetbrains.com/idea/>

IDE – Integrated Development Environment

Package names convention.

Good Coding practice..

Package name – Reverse of the company url (com.google) – It should be in lower case.

Package is grouping of similar kind of classes.

1. Tokens (A-Z, a-z, 0-9, +,-, \*, /, %, ==, =, +=, -=, @, ::, ;, ,.)
2. Keywords (8 types of primitives – boolean, byte, char, short, int, float, double, long) [if, else, switch, for, while, do] { private, package/default/protected, public}, <static, abstract, volatile, transient, final> class, void, enum, extends, implements etc.,
3. Statements & Expression [Variables, constants, Operators] – combination of variables, operators and assignments. y=mx+c [ Normal, Conditional, Repetitive/Looping]
4. All Capital Letters is used to represent CONSTANT in JAVA.
5. Programs & Project

Types of Variables

1. Primitive – In-built Data type (System Data type) – Java is not a pure OOP lang.
2. Custom/Derived data type [ Array, enum, class]

Wrapper class – Boolean, Byte, Character, Short, Integer, Float, Double, Long

Types of Classes

1. Built-in/ System Defined (pre-defined) Class
2. Custom or User-Defined Class
3. Bean Class
4. Entity Bean Class
5. Static Class
6. Final Class
7. Base/ Parent/Super Class
8. Derived/Sub/Child Class
9. Inner Class – Anonymous Inner Class
10. Wrapper Class
11. Thread Class

Package – Is a way of grouping similar classes together.

Operators (unary ++,--, ! , binary (two operands) & ternary (3 sections))

1. Arithmetic (+,-, \*,/, %)
2. Assignment (=)
3. Short Hand Operators (+=,-= etc.,)
4. Comparison <,>,==, !=, <=, >=,
5. Bitwise &, |, ^
6. Logical &&, ||, !
7. Unary ++, --
8. Ternary (expr)? {true block} :{false block}; -- inline/single line if else.

Custom or derived data types.

1. Array -- Fixed Size Set/Group of similar data in a continuous memory location.
2. Enum
3. Class / Interface

String is a special Type in JAVA.

1. It supports both primitive and object declaration style.

OOP – Object Oriented Programming concepts.

Class – Blue-print for Object. (Reusable component)

Object – Instance of a class