



LETS LEARN JAVA

COURSE PLAN

Training Plan - Basics

Topics to be covered

Introduction to Java, Difference between Java & C++

Setting up Environment & IDE

First program, Understanding the program, How to compile, How to Run

Understanding the IDE better (copy code, delete line, search for a resource, refactor name of class)

Getting input from console and printing it

What is a Class. Public Classes & File Names – what is the correlation

Components of a class – Variables, Methods

Instances of class – how to create and assign class instances to variables.

How to execute methods of a class through a wrapper class/program

Variables and its types – Local, Instance, Static

Final keyword

Naming Conventions- for class, variables, and functions/methods

Data Types

Programming constructs – conditionals, operators

Adding Comments to avoid confusion

How to debug code

Training Plan - Basics

Topics to be covered

Arrays, Simple Arrays, Arrays as Objects
Looping constructs and Looping through Array
Array functions

Multi dimensional arrays
Let us write an Algorithm using concepts learnt so far

The concept of Object
Relationships between Objects
Has-A relationship – Aggregation
Is-A relationship – Inheritance

Types of Inheritance
Default Constructors. How they are invoked across inheritance levels
super keyword

Training Plan - Basics

Topics to be covered

Parameterized Constructors
Overloading as a concept for methods
Constructor Overloading
Copy Constructor

What is overriding
How Overriding works across inheritance levels
Revise Inheritance concepts

Templatizing designs through abstract methods
Abstract classes, and complete abstraction through Interfaces
Implementation of interfaces using overriding

Explanation of multiple inheritance using interfaces
Default methods in Interfaces (new concept)
Designing a real life example using Inheritance, and Abstraction.

Encapsulation concepts
Concept of Packages
Access Modifiers

Training Plan - Intermediate

Topics to be covered

Strings

Direct assignment versus using new()

Key methods using String

StringBuffer and StringBuilder

Date and Time

Methods related to date and time

Exception Handling

Types of exceptions

Propagation of exceptions

Java I/O and File handling

FileInputStream/FileOutputStream

BufferedStreams for better performance

SequenceStreams for multi file

Pointed Exception Handling in file I/O.

Try with resource

Training Plan – Advanced

Topics to be covered

Collections in Java

How Collections are more flexible than Arrays

ArrayLists & Sets

Maps for storing Key-Value pair

Maps where Value is an object

Read from data CSV, and generate Summary Report in another CSV using concepts learnt so far

Concept of Multitasking and Multithreading

Thread – Its lifecycle

Creation of Threads

Other thread methods

Synchronization Concepts

Java Database Connectivity

Setup MySQL, MySQL Workbench

Establish connectivity. Create a table and fetch data.

Training Plan – Advanced

Topics to be covered

Fetching data from multiple tables and storing data in DB

Accepting data in Beans/DTO

Upgrade the solution we built using Collections and Files to interact with Database

Key principles to keep performance in check

Lambda Expressions

How will we learn

- ❑ Learn by doing – 90% hands on. Theory discussions will only be for fundamentals.
- ❑ Code examples and interactive questions.
- ❑ Understand through examples and real life correlation