



LETS LEARN JAVA

COURSE PLAN

Training Plan - Basics

Topics to be covered

First program, Understanding the program, How to compile, How to Execute
Methods. Parameters and Arguments

Creating Method in same Class

Moving the method to another utility class and invoking the method

String Formatting and String Printing

Usage of JShell

What are variables. Naming conventions.

What are the data types

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

Variables and its types – Local, Instance, Static

Final keyword

Programming constructs – conditionals, operators

Adding Comments to avoid confusion

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() >> Immutability of Strings

Key methods using String

StringBuilders

Date and Time

Methods related to date and time

Exception Handling

Types of exceptions

Java I/O and File handling

FileInputStream/FileOutputStream

Paths and Files

BufferedStreams for better performance

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

Training Plan – Advanced Concepts

(Not needed for Selenium – Will not be covered)

Topics to be covered

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.

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