

## Course Curriculum

Introduction
Installation
Programming Elements
First Application
Data Types
Operators
Control Statements
Access Modifiers
Wrapper Classes
Packages

<b>OOPS</b>
<b>Object Casting</b>
<b>Exception Handling</b>
<b>Multi Threading</b>
<b>Garbage Collection</b>
<b>Inner Classes</b>
<b>Java I/O</b>
<b>File Handling</b>
<b>String Handling</b>
<b>Reflection API</b>
<b>Arrays</b>
<b>Collection Framework</b>
<b>Map Interface</b>
<b>JDK 8 features</b>
<b>JDK 10, 11 features</b>

## Course Curriculum

### Introduction

- Introduction
- History
- Platform dependency
- Independency

### Installation

- Download and Install
- Path Settings
- Manual Execution
- IDEs

### Programming Elements

- Introduction to Variables and methods

### First Application

- Classes, Objects, Contexts (Static and Instance)
- Naming Conventions
- API Documentation
- Main Method – Object Class Methods to be Discussed Later on

## Data Types

- Primitive Types
- Reference Types
- Limits
- Type Casting
- ASCII and UNICODE

## Operators

- Arithmetic
- Assignment
- Relational
- Logical
- Conditional
- Shift
- Bitwise and Compound Assignment

## Control Statements

- Conditional Control Statements with Flowcharts and Programs
- Loop Control Statements with Flowcharts and Programs
- Branching Statements

## Access Modifiers

- Private
- Package
- Protected and Public

## Wrapper Classes

- String Conversions
- Boxing, Unboxing, Auto Boxing, Auto Unboxing
- Fields of Wrapper Classes

## Packages

- Introduction
- Pre-defined packages
- Custom Package Creation
- Manual Compilation of Package File
- Util Package (Random Class, Scanner Class)
- Sub Packages (Custom Sub Package Creation, Class Loader Sub System, Fully Qualified Name, Duplicate Classes)

## OOPS

- Introduction to OOPs
- Inheritance
- Super
- Final
- Abstraction
- Interfaces
- Polymorphism

## Object Casting

- Object Upcasting
- Downcasting
- InstanceOf
- Has-A Relation
- Composition
- Aggregation

## Exception Handling

- Introduction
- Hierarchy
- Errors and Exceptions
- Handling Eexception
- Try, Catch, Multi Catch
- Throw, Throws, Custom Exceptions

## Multi Threading

- Introduction
- Thread class
- Runnable Interface
- Start() Method
- Join()
- Threads Synchronization
- Wait, Notify, NotifyAll, Deadlocks

## **Garbage Collection**

- Daemon Threads
- System.gc()
- Runtime Class
- Factory Class
- Singleton Class
- Runtime.gc()

## **Inner Classes**

- Introduction
- Static Inner Class
- Non Static Inner Class
- Local Inner Classes
- Anonymous Inner Classes

## **Java I/O**

- Introduction
- Byte Streams
- Character Streams
- Buffered Streams
- Data Streams
- Serialization and De-serialization
- Array Streams

## **File Handling**

- Introduction
- Create File
- Create Directory
- Create Sub Directory
- File Permissions

## **String Handling**

- Introduction
- Mutability
- Immutability
- String Methods
- String Buffer
- String Builder
- String Tokenizer

## **Reflection API**

- `Class.forName()`
- Dynamic Loading
- Class Information
- Methods Information...



## Arrays

- Introduction
- One Dimensional Arrays
- Arrays Class
- Two Dimensional Arrays
- Multi Dimensional Arrays

## Collection Framework

- List Interface
- Queue Interface
- Set Interface

## Map Interface

- HashMap
- LinkedHashMap and TreeMap
- Comparator

## JDK 8 features

- For Each Method
- Default and Static Methods in Interface
- Lambda Expressions
- Time API
- Stream API

## JDK 10, 11 features

- Jshell
- Private Methods in Interfaces
- Factory Methods for Collection Classes