**Java Course Content**

1. Introduction to Java

- History of Java

- Features of Java

- Java Editions (SE, EE, ME)

Java Development Tools

- Introduction to IDEs (Eclipse, IntelliJ IDEA)

2. Java Basics

- Setting up the Java Development Kit (JDK)

- Writing and compiling your first Java program

- Java syntax and structure

3. Data Types and Variables

- Primitive data types (int, char, float, etc.)

- Non-primitive data types (Strings, Arrays, Classes)

- Variable declaration and initialization

4. Control Flow Statements

- Conditional statements (if, switch)

- Looping statements (for, while, do-while)

- Break and continue statements

5. Object-Oriented Programming (OOP) Concepts

- Classes and Objects

- Inheritance

- Polymorphism

- Encapsulation

- Abstraction

- Wrapper Classes

- Introduction to wrapper classes (Integer, Double, etc.)

- Autoboxing and unboxing

- Call by Value vs. Call by Reference

- Explanation of both concepts

- Examples in Java

- Command Line Arguments

- How to accept command line inputs

- Accessing and using command line arguments

6. Java Arrays

- Declaring and initializing arrays

- Multidimensional arrays

7. Exception Handling \*\*\*

- Understanding exceptions

- Try-catch blocks

- Throwing exceptions

- Custom exceptions

8. Java Strings\*\*\*\*

- String class and its methods

- String manipulation techniques

- Immutable nature of Strings

- StringBuilder and String Buffer

9. Java Collections Framework\*\*\*\*

- Overview of collections (List\*\*, Set, Map\*\*)

- Working with Array List, LinkedList, HashSet, etc.

- Iterating over collections

- generics

10. Method Overloading vs. Method Overriding\*\*\*

- Explanation and examples of overloading

- Explanation and examples of overriding

- Key differences between the two concepts

11. Java Input/Output (I/O)

- File handling (reading and writing files)

- Byte and character streams

- Serialization

12. Multithreading\*\*\*

- Introduction to threads

- Creating threads (extending Thread class, implementing Runnable)

- Synchronization

13.Best Practices and Design Patterns\*\*\*

- Code conventions and style

- Introduction to design patterns (Singleton, Factory, etc.)

**14.** Java 8 Features\*\*\*

* Lambda Expressions
  + Introduction to lambda expressions
  + Use cases and syntax
* Streams API
  + Overview of the Streams API
  + Stream operations (filtering, mapping, collecting)
* Functional Interfaces
  + Introduction to functional interfaces
  + Common functional interfaces (Predicate, Function, Consumer)
* Optional Class
  + Introduction to the Optional class
  + Avoiding NullPointer Exceptions
* Default and Static Methods in Interfaces
  + Understanding default methods
  + Static methods in interfaces

15. Final Project

- Java Console based project.

Next…..!!!

Advanced Java Topics

1.JDBC\*\*\*-manual work.

2.Spring Framework\*\*\*\*\*\*configure.

3.Spring Data JPA-hibernate.

4. Building Restful Services with Spring.\*\*\*

5.Spring Security. \*

6.Testing in Spring.local testing-postman.