**Course: Core Java Duration: 80 - 90 hr.’s Trainer : Nagarjuna**

1. **Java Introduction**

1. Java Editions (Java SE, Java EE, Java ME)

2. Java History

3. Java Features

4. Java Installation

5. Difference b/w JDK, JRE, JVM

6. Java Versions

1. **First Java Program Implementation**
   1. Writing first Java program.
   2. Compile a Java File.
   3. Execute the Java program.
   4. Editors.
   5. WORA
2. **Language Fundamentals**
   1. Java Programming Structure
   2. Identifiers.
   3. Reserved words and Keywords.
   4. Data types (Primitive & Referenced).
   5. Literals.
   6. Arrays.
   7. Types of variables.
   8. Var-arg method.
   9. Main method.

10. Command line arguments.

11. Java coding standards.

1. **OOPS Concepts**
   1. Data Hiding.
   2. Class.
   3. Object.
2. Constructor.
3. This Keyword.
4. Super Keyword.
5. Abstract class & Method.
6. Interface.
7. Encapsulation.
8. Polymorphism.
   * static (Over loading, method hiding).
   * dynamic (Overriding).
9. Abstraction.
10. Is-A relationship.
11. Has-A relationship.
12. Type casting.
13. Wrapper classes.
14. Autoboxing and unboxing.
15. Inheritance
    * Single.
    * Multiple.
    * Multi-level.
    * Hybrid.
16. Var-arg method.
17. Inner classes.
18. Enum.
19. **Packages**
    1. Pre-defined package.
    2. User defined package.
    3. Access Specifiers.
20. **String Manipulation**
    1. String.
    2. String Buffer.
    3. String Builder.
    4. String Tokenizer.
21. **Exception Handling**
    1. Introduction.
    2. Runtime stack mechanism.
    3. Default exception handling in java.
    4. Exception hierarchy.
    5. Customized exception handling by try catch.
    6. Control flow in try catch.
    7. Methods to print exception information.
    8. Try with multiple catch blocks.
    9. Finally.
    10. Difference between final, finally, finalize.
    11. Control flow in try catch finally.
    12. Control flow in nested try catch finally.
    13. Various possible combinations of try, catch, finally.
    14. throw keyword.
    15. throws keyword.
    16. Exception handling keywords summary.
    17. Various possible compile time errors in exception handling.
    18. Customized exceptions.
    19. Top-10 exceptions.
22. **IO Streams**
    1. What is a stream.
    2. Types of Streams.
    3. File Input Stream vs. File Output Stream.
    4. File Reader vs. File Writer.
    5. File vs. Random Access File.
    6. Serialization Vs Deserialization.
    7. Externalization.
23. **Collection Framework**
    1. Introduction.
    2. Util Package List, Set and Map.
    3. List interface and its implementation classes.
    4. Set interface and its implementation classes.
    5. Map interface and its implementation classes.
    6. Enumeration.
    7. Iterator.
    8. List Iterator.
    9. Comparator.
    10. Comparable.
    11. Concurrent Collections.
24. **Multithreading**
    1. Java multithreading.
    2. Multithreading life cycle.
    3. Thread scheduler.
    4. Sleeping a thread, starting a thread twice.
    5. Calling run() method.
    6. Joining a thread.
    7. Naming a thread.
    8. Thread priorities.
    9. Daemon thread.
    10. Thread pool.
    11. Thread group.
    12. Shutdown hook.
    13. Java Synchronizations

- synchronized method, synchronized block, static synchronization.

* 1. Deadlock.
  2. Inter-thread Communication.
  3. Interrupting Thread.

1. **Garbage Collection.**
2. **JVM Architecture.**
3. **Annotations.**
4. **Generics.**
5. **Regular Expressions.**
6. **Java 8 Features.**
7. **Java 9 to 21 Features.**
8. **Debugging Fundamentals.**
9. **Interview Questions.**