



A.D.COMPUTER TRAINING CENTER

An ISO 9001:2015 Certified Organization

Enrolled With Ministry of Micro, Small, and Medium Enterprises (MSME)

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Java Programming Syllabus

1. Object-Oriented Design Concepts

- Introduction to object-oriented programming (OOP) principles.
- Major and minor elements of OOP.
- Understanding objects, classes, and relationships among objects.
- Concepts of aggregation, links, associations, and meta-classes.

2. Object-Oriented Concepts

- Differences between OOP and procedural programming.
- Advantages and disadvantages of OOP.
- Core OOP concepts: class, object, message passing, inheritance, encapsulation, polymorphism.

3. Basic Concepts of Java Programming

- Advantages of Java, byte-code, and Java Virtual Machine (JVM).
- Data types, access specifiers, operators.
- Control statements and loops.
- Arrays and their usage.

4. Class & Object Properties

- Creating classes and objects.
- Constructors, finalize method, and garbage collection.
- Method overloading, use of 'this' keyword.
- Passing objects as parameters, methods returning objects.
- Call by value and call by reference.
- Static variables and methods.
- Nested and inner classes.
- Basic string handling and command-line arguments.
- Basics of I/O operations using BufferedReader and Scanner classes.

5. Reusability Properties

- Inheritance and its types.
- Method overriding.
- Abstract classes and interfaces.
- Packages and access protection.
- Exception handling mechanisms.

6. Practical Lab Topics

- Basic programming structures.
- Class and object implementation.
- Constructors and method overloading.
- Inheritance and method overriding.
- Exception handling.
- Applets.
- Java Database Connectivity (JDBC).
- Mini project development.

