



JAVA J2EE
Duration – 4 Months

Core JAVA

Java Fundamental and Programming Concepts

- Introduction to Java,
- Key Features,
- Types of Java Applications,
- Overall Architecture of JVM with JIT and JRE,
- Installation of Java,
- Command and Tools (javac, java),
- IDE (Eclipse/Netbeans).
- Programming Syntax and Rules,
- Keywords and Statements, Identifier, Literals,
- Data Types (Primitive & Non-primitive),
- Variable (Local, Static, Global),
- Type Casting (Wider & Narrow),
- Operators (Arithmetic, Logical, Relational),
- Conditional Statement (If-else, Switch-case),
- Loops (For, While, Do-While),
- Continue & Break Statement,

Object Oriented Programming and Package

- Advantages of OOPS,
- Class and Objects,
- Constructor, Constructor Overloading,
- Inheritance,
- interface
- Aggregation,
- Access Modifier (Public, Private, Protected),
- Polymorphism,
- Encapsulation,
- Abstraction,
- Overloading and Overriding,
- Boxing and Un-boxing,
- Garbage Collection and Finalize
- Concept and Advantages of Package,
- System Packages (lang, util, awt),
- Creating Package and Sub-packages,
- Import Package



String Handling, Regular Expression and Wrapper class

- String Class,
- Mutable and Immutable String,
- StringBuffer and StringBuilder Class,
- String Manipulation,
- Predefined String Functions,
- StringTokenizer Class
- Java Regular Expression- Regex Class,
- Usage of Wrapper Class-Integer, Float, Double,
- Predefined Functions of Each Wrapper Class

Array, Enumeration and Collections

- Array Declaration,
- Single Dimension and Multi Dimension Array,
- Array element sorting and Searching,
- Manipulating Array by predefined Array functions,
- Array pass by reference,
- Array of Objects.
- Concept of Data Structure and Collection Framework,
- Collection Interfaces- List, Queue, Set,

I/O Stream and File Handling

- Stream- Byte Stream and Character Stream,
- Standard Stream,
- Basic Console Input and Output.
- File Stream
- File Reader and Writer
- File Operation- File Write, read, copy, File content search

Thread and Exception Handling

- Concept of Threading and Multi-threading,
- Thread vs. Process,
- Thread Life-cycle and states,
- Thread Declaration- Extend Threads and Implements Runnable,
- Thread Functions- run(), start(),
- Inter-thread Communication-join(), sleep(), wait(), notify(),
- Thread Synchronization and Deadlock.
- Example of Pre-defined Exception, k) Throw vs. Throws,
- Try-Catch-Finally Block, m) Custom Exception.



Advance Java / J2EE

Concept of GUI and Desktop Application [AWT, Applet and Swing]

- Concept of AWT,
- AWT Classes,
- Applet and Advantages of Applet,
- Applet Skeleton,
- appviewer,
- Example of Some small Graphics Programs.
- Swing and JFC,
- UI Elements of Swing
- Event Handling and Listener,
- Swing Adapter,
- Swing Layout,
- Swing Container and Menu.

Fundamentals of Client Side Scripting and Introduce to Java IDE

- Web Page Structuring by HTML Tags,
- Applying CSS Style,
- Concept of Client Side Scripting,
- Web Page validation by JavaScript,
- Advanced UI by jQuery.
- Advantages of Java IDE,
- Introduce with Netbeans/Eclipse environment,
- Code implementation and execution.

Server Side Scripting- JSP and Database Connectivity-JDBC with Oracle

- Advantages of JSP,
- Life cycle of JSP,
- Directory Structure of JSP,
- JSP Scriptlet, Expression and Declaration tag,
- JSP Request and Response,
- JSP directive and action,
- JSP Session and Cookie,
- JSP Application and Page Object
- Concept of DBMS ,
- SQL Query- DDL, DML, DCL,
- Execute query in Oracle,
- Database connectivity by JDBC in JSP.



Web Application-Servlet and JSTL with Custom Tag Library

- Introduce to Servlet,
- Advantages of Servlet,
- Servlet Life cycle,
- ServletRequest and ServletContext,
- Servlet Attribute and Filter,
- HttpSession and Cookie.,
- CRUD operation with Database in Servlet.
- Introduction to JSTL,
- JSP- Standard Tag Library,
- XML Data,
- Java Beans

Advanced Web Application with Servlet and JSP

- File Uploading,
- Email Sending,
- JSON with AJAX,
- Hit count,
- Write data to PDF,
- Display Image.
- Workout a Industry Based Project

Project Implementation: At the end of the training, students will be assigned with a Project Work on J2EE.