



Syllabus: Core and Advance Java

Basics of Java

- ✓ Java - What, Where and Why?
- ✓ History and Features of Java
- ✓ Internals of Java Program
- ✓ Difference between JDK, JRE and JVM
- ✓ Variable and Data Type
- ✓ Naming Convention

OOPS Concepts

- ✓ Object and Class
- ✓ Method Overloading
- ✓ Constructor
- ✓ static variable, method and block
- ✓ this keyword
- ✓ Inheritance (IS-A)
- ✓ Method Overriding
- ✓ super keyword
- ✓ final keyword
- ✓ Runtime Polymorphism
- ✓ static and Dynamic binding
- ✓ Abstract class and Interface
- ✓ Downcasting with instanceof operator
- ✓ Package and Access Modifiers
- ✓ Encapsulation
- ✓ Object class
- ✓ Object Cloning
- ✓ Java Array
- ✓ Call By Value and Call By Reference

String Handling

- ✓ String : What and Why?
- ✓ Immutable String
- ✓ String Comparison
- ✓ String Concatenation
- ✓ Substring
- ✓ Methods of String class
- ✓ StringBuffer class
- ✓ StringBuilder class
- ✓ Creating Immutable class
- ✓ toString method
- ✓ StringTokenizer class

Exception Handling

- ✓ Exception Handling : What and Why?
- ✓ try, catch and finally block
- ✓ throw, throws keyword
- ✓ Exception Handling with Method Overriding
- ✓ Custom Exception

Serialization

- ✓ Serialization & Deserialization
- ✓ Serialization with IS-A and Has-A
- ✓ transient keyword

Input and output

- ✓ FileOutputStream and FileInputStream
- ✓ ByteArrayOutputStream
- ✓ SequenceInputStream
- ✓ BufferedOutputStream & BufferedInputStream
- ✓ FileWriter & FileReader
- ✓ Input from keyboard by InputStreamReader, Console and Scanner
- ✓ PrintWriter class
- ✓ DataInputStream and DataOutputStream
- ✓ StreamTokenizer class

Collection

- ✓ Collection Framework
- ✓ ArrayList class
- ✓ LinkedList class
- ✓ ListIterator interface
- ✓ HashSet class
- ✓ LinkedHashSet class
- ✓ TreeSet class
- ✓ PriorityQueue class
- ✓ ArrayDeque class
- ✓ Map interface
- ✓ HashMap class
- ✓ LinkedHashMap class
- ✓ TreeMap class
- ✓ Hashtable class
- ✓ Comparable and Comparator
- ✓ Properties class

JDBC

- ✓ JDBC Drivers
- ✓ Steps to connect to the database
- ✓ Connectivity with MySQL
- ✓ DriverManager
- ✓ Connection interface
- ✓ Statement interface
- ✓ ResultSet interface
- ✓ PreparedStatement
- ✓ ResultSetMetaData
- ✓ DatabaseMetaData
- ✓ Storing image
- ✓ Retrieving image
- ✓ Storing file
- ✓ Retrieving file
- ✓ Transaction Management

Basics of Servlet

- ✓ Servlet: What and Why?
- ✓ Basics of Web
- ✓ Servlet API
- ✓ GenericServlet
- ✓ HttpServlet
- ✓ Servlet Life Cycle
- ✓ Working with Apache Tomcat Server
- ✓ Steps to create a servlet in Tomcat
- ✓ How servlet works?

ServletRequest

- ✓ ServletRequest methods
- ✓ Registration example with DB

Servlet Collaboration

- ✓ RequestDispatcher
- ✓ sendRedirect

ServletConfig

- ✓ ServletConfig methods
- ✓ ServletConfig example

ServletContext

- ✓ ServletContext methods
- ✓ ServletContext example

Attribute

- ✓ How to set, get and remove example?

Session Tracking

- ✓ Cookies
- ✓ Hidden Form Field
- ✓ URL Rewriting
- ✓ HttpSession

Event and Listener

Basics of JSP

- ✓ Life cycle of JSP
- ✓ JSP API
- ✓ JSP in Eclipse and other IDE's

Scripting elements

- ✓ scriptlet tag
- ✓ expression tag
- ✓ declaration tag

9 Implicit Objects

- ✓ out
- ✓ request
- ✓ response
- ✓ config
- ✓ application
- ✓ session
- ✓ pageContext
- ✓ page
- ✓ exception

Directive Elements

- ✓ page directive
- ✓ include directive
- ✓ taglib directive

Exception Handling

Action Elements

- ✓ jsp:forward
- ✓ jsp:include

- ✓ Bean class
- ✓ `jsp:useBean`
- ✓ `jsp:setProperty` & `jsp:getProperty`
- ✓ Displaying applet in JSP

Project Development in JSP