



WISDOMTRIBES

ALL IN ONE SOLUTION



Advance JAVA Programming course

- WISDOMTRIBES
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Advanced Java Training Course

Prerequisite

Basic Knowledge of Core Java is required.
An understanding of Web technologies like HTML and HTTP is helpful.

Advanced Java Training Course Content

Overview

Introduction

- About Java Platforms
- Applications of Java
- About API (Application Programming Interface)
- Static Blocks
- Introduction to interfaces
- Runtime Polymorphism

Persistence

- What is Persistence?
- File management system
- Disadvantages of File management system
- Database management system
- Advantages of Database management system

JDBC

- Introduction to JDBC
- Why JDBC? & ODBC Vs JDBC
- Approch-1 Vendor specific library
- Disadvantages
- Approch-2 X/Open standards
- Disadvantages
- Approch-3 ODBC standards
- Approch-4 JDBC standards
- Advantages and Disadvantages

JDBC API and JDBC Drivers

- About JDBC API
- What is a JDBC Driver?
- JDBC architecture
- Types of JDBC Drivers
- JDBC-ODBC bridge driver
- Advantages & Disadvantages
- Native API Partly Java Driver
- Advantages & Disadvantages
- Net-Protocol all/pure java driver
- Advantages & Disadvantages
- Native-Protocol pure java driver

JDBC API

- JDBC Packages
- sql, Javax.sql
- Interfaces and classes in above packages
- Versions of JDBC API
- Steps for developing JDBC application

SQL

- Introduction to SQL
- Types of SQL queries

Establishing Connection to Database

- About DriverManager class
- Methods of DriverManager
- What is registering driver with DriverManager
- Different methods of registering driver with DriverManager
- About getConnection method of DriverManager
- Syntax of URL to communicate with database
- Autoloading of class driver in JDBC 4.0
- Example with Application

Statement interface

- What is Statement? & Need of Statement
- Characteristics of Statement
- How to get Statement object?
- Methods of Statement
- Passing SQL statements to Database
- About execute, executeUpdate, executeQuery, largeExecute Updates methods
- Example with Application

PreparedStatement interface

- What is PreparedStatement?
- Need of PreparedStatement
- Difference between Statement and PreparedStatement
- How to get PreparedStatement object
- Defining parameters
- How to pass values to PreparedStatement object
- What is SQL Injection attack & how to overcome
- Example with Application

ResultSet Interface

- What is ResultSet?,
- Need of ResultSet
- How to get resultset object
- Methods of ResultSet
- Reading data, Various types of ResultSet and Resultset types
- TYPE_SCROLL_SENSITIVE
- TYPE_SCROLL_INSENSITIVE
- TYPE_FORWARD_ONLY
- Resultset modes
- CONCUR_READ_ONLY, CONCUR_UPDATABLE
- Example with Application

SQL 99 Datatypes

- BLOB
- Inserting blob type, Reading blob type
- CLOB
- Inserting clob type, Reading clob type
- Array, Inserting array type
- Reading array type
- Object, Inserting object and Reading object
- Example with Application

Metadata

- ResultSet Metadata
- Need of ResultSetMetaData
- How to get metadata
- DatabaseMetadata
- How to get database metadata
- Parameterizedmetadata
- How to get parameterizedmetadata
- Example with Application

CallableStatement

- About CallableStatement
- Advantage of CallableStatement
- Creating CallableStatement object
- Calling Procedure using CallableStatement
- Calling functions using Callable Statement
- About PL/SQL Programming vs Manual on Batch Queries

Batch updates

- What is batch processing
- Batch updates using Statement object
- Batch updates using PreparedStatement object

Transaction Management

- Transaction Definition
- ACID Properties
- Atomicity, Consistency, Isolation, Durability
- Methods in Transaction Management
- setAutoCommit(), setSavePoint()
- commit(), rollback()
- Example with All Application

Connection Pooling

- What is connection pooling?
- Advantages of connection pooling
- Disadvantage of DriverManager
- About DataSource
- JDBC connection pooling
- Isolation Levels
- Example with Application

RowSet

- What is RowSet?
- What is difference between ResultSet and RowSet
- Types of RowSets
- JdbcRowSet
- CachedRowSet and WebRowSet
- Example with Application

Communicating with difference databases

- Communicating with MYSQL
- Working with CSV files
- Communicating with MS-EXCEL
- Communicating with PostgreSql
- Example with Application

JDBC 4.0 Features

- Auto-loading of JDBC driver class
- Connection management enhancements
- Support for RowIdSQL type
- DataSet implementation of SQL using Annotations
- SQL exception handling enhancements
- SQL XML support
- Example with Application

Working With Properties File

- Working With Date Values
- Procedure To Create Desktop icon (jar file execution)

SERVLET

JEE

- JEE technology
- Components of JEE technology
- What is Enterprises Application
- What is Web Application
- Types of Web Application
- Presentation Oriented Web Application
- Service Oriented Web Application
- About Web Client, About WebServer
- About ApplicationServer
- Diff Between WebServer And Application Server

Introduction

- Server side technologies
- Need of server side technologies
- Client side technologies
- What is Servlet? & Advantages of Servlet
- Difference between CGI and Servlet

Servlet API

- Versions of Servlet API
- Packages of Servlet API
- About Servlet Container
- Responsibilities of Servlet Container

HTTP Protocol

- What is HTTP?
- What is HTTP Request format & Response format

Developing Servlet

- Servlet interface
- Methods of Servlet interface
- Developing servlet by implementing Servlet interface
- Life cycle methods of Servlet
- Webapplication directory structure
- Deployment descriptor file (web.xml)
- What is deployment?
- Types of deployments
- Deployment, Console deployment
- Tool deployment
- Deployment webapplication in tomcat server
- URL patterns

Developing And Deploying Servlet Apps in Diff Servers Like

- Tomcat Server
- JBoss Server / WildFly
- Weblogic Server
- GlassFish

ServletRequest

- Methods of ServletRequest
- About request parameters
- About request headers

ServletResponse

- Methods of ServletResponse
- MIME types
- Generating response

ServletConfig

- What is ServletConfig?
- What is need of ServletConfig
- Methods of ServletConfig
- Different ways of getting ServletConfig object.
- Defining config initial parameters in web.xml

GenericServlet

- What is GenericServlet?
- Methods of GenericServlet
- About init(ServletConfig),init() method

Working with welcome-file

- Configuring welcome-file in web.xml

Methods of loading Servlet

- About load on start up
- When client send first request

ServletContext

- What is ServletContext?, Need of ServletContext
- Methods of ServletContext
- Different ways of getting ServletContext object
- Context init parameters
- Defining Context init parameters in web.xml

HttpServlet

- What is HttpServlet?
- Methods of HttpServlet
- HTTP Request methods
- About public service and protected service methods
- About doXXX() methods
- Difference between GenericServlet and HttpServlet
- Diff Between doGet(-,-) and doPost(-,-) methods

HttpServletRequest

- HttpServletRequest VS ServletRequest
- How to read request parameters of HttpServletRequest
- How to read request headers of HttpServletRequest

HttpServletResponse

- HttpServletResponse VS ServletResponse
- About HttpServletResponse methods
- Response status codes

- **Html To Servlet Communication**
- **Form Validations**
- **Different Types of Form Components**
- **Working With Multiple Hyperlinks**

- **Working With Multiple Submit Buttons**
- **War File Creation**
- **Servlet To DataBase Software Communication**
- **RequestDispatching**
- What is RequestDispatcher?
- What is need of RequestDispatcher?
- RequestDispatching methods
- Include and Forward
- Difference between include and forward methods
- Getting RequestDispatcher
- Using ServletRequest
- UsingServletContext
- Difference between getting RequestDispatcher using ServletRequest and ServletContext
- What is Servlet Collaboration?

Redirecting

- About sendRedirect method
- Difference between sendRedirect and forward methods
- setStatus, response.setHeader methods

Attributes

- What is Attribute
- Difference between parameter and attribute
- Scope of Attributes
- Request scope, Context scope
- Session scope
- Adding, removing and modifying attributes

Thread Safety In Servlet

Programming

State and Session Management

- About connectionless protocol
- About connection oriented protocol
- Stateless protocol
- What is state/session management
- Need of session management
- Session management methods
- URL rewriting, Hidden form fields
- Cookies, HttpSession

URL Rewriting

- What is URL rewriting
- URL rewriting techniques

Hidden form fields

- What is hidden form fields
- Disadvantages of hidden form fields

Cookies

- What is Cookie,
- How to create Cookie
- Methods of Cookie
- Types of Cookies
- Non Persistent Cookie
- Persistent Cookie
- How to add cookie to response
- How to read cookie from request
- Deleting cookie from servlet
- Properties of Cookie
- Disadvantages of Cookies

HttpSession

- What is HttpSession
- Advantage of HttpSession
- How to create HttpSession object
- How to read HttpSession object from request
- Invalidating HttpSession
- Using invalidate method
- Using session config in web.xml
- By setting time
- HttpSession attribute

Error Handling in Servlet

- Configuring in web.xml
- Programmatically

Filters

- What is Filter?
- Need of Filter & Lifecycle of Filter
- Filter mapping in web.xml
- About FilterConfig
- Defining config parameters in web.xml
- About FilterChain interface
- Methods of FilterChain
- What is Filter chaining?
- Working with filter chaining

Listeners

- What is Listener?
- Usage of Listener
- About Event Delegation Model Architecture
- Types of Listeners
- RequestListener
- ServletContextListener
- HttpSessionListener

- Types of Attribute Listener
- Request AttributeListener
- HttpSessionAttributeListener
- ServletContextAttributeListener
- About Event classes

Authentication and Authorization(Security In Servlet Programming)

- Understanding Authentication Mechanism
 - HTTP basic authentication
 - HTTP Digest authentication
 - HTTPS Client authentication
 - HTTP form based authentication
- ## **Working Connection Pooling**
- Connection pooling in difference servers
 - Tomcat, Weblogic, Glassfish
 - JBoss Server / WildFly
 - Developing servlet using serverside connection pooling

Working with domains

- Creating domain in weblogic server
- Deploying webapplication using console
- Creating domain in glassfish server
- Deploying webapplication using console

Working with Servlet 2.5/3.0/3.1 features

- Async Servlet
- File Uploading and Downloading
- Non-blocking I/O
- HTTP protocol upgrade mechanism
- Different Types Of URL Patterns
- Dynamic Registration Of Servlet (Developing Servlet Program Without web.xml)

Annotations in Servlet Programming

- Introduction to Annotations
- Types of Annotations
- Annotations Vs web.xml

JSP

Introduction

- What is JSP?
- Advantages of JSP & Applications of JSP
- Difference between JSP & Servlet

JSP Basics

- JSP Life cycle, JSP Lifecycle methods
- jspInit, _jspService
- jspDestroy, Saving jsp file as a,
- Public resource, Private resource
- JSP tags

JSP Tags

- three categories of tags
- scripting elements, directives
- standard actions

Scripting Elements

- What is scripting elements
- Types of scripting elements
- Declaration tag
- Expression tag
- Scriptlet

JSP implicit object

- What is jsp implicit objects
- Need of jsp implicit objects
- Implicit objects of jsp
- Request, Response, Page
- pageContext, out, session
- exception, application, config

Directives

- What is directive?
- Types of directives
- Page directive, Include directive
- Taglib directive

Directives

- What is directive?
- Types of directives

- Page directive, Include directive

- Taglib directive

Standard Actions

- What is standard action
- Standard actions
- <jsp:include>
- <jsp:forward>
- <jsp:param>
- <jsp:useBean>
- <jsp:setProperty>
- <jsp:getProperty>
- Working with <jsp:include>
- Difference between <jsp:include> and <%@include> directive
- Working with <jsp:forward>

Java Bean

- What is java bean?
- Usage of bean
- Properties of bean

Using Java Bean in JSP

- About <jsp:useBean>
- Attributes of <jsp:useBean>
- Working with scope of bean object
- Using bean with <jsp:include> and <jsp:forward>
- Assigning values to bean using <jsp:setProperty>
- Reading values from bean using <jsp:getProperty>

Expression Language

- What is Expression Language
- Advantage of Expression Language
- Syntax of defining expression
- Basic Operators in EL
- Implicit objects In EL
- pageScope, requestScope
- sessionScope, applicationScope

- param, paramValues, header
- headerValues, initParam, cookie
- pageContext, Defining functions

Working JSTL

- What is JSTL?, Version of JSTL
- Classification of JSTL tags
- Core tags, Formatting tags
- SQL Tags, XML tags
- JSTL Functions
- How to use JSTL in webapplication
- Working with Core tags, Formatting tags & SQL tags
- Working JSTL functions

Custom Tags

- What is tag?, Java based tag
- Components of tag library
- The Tag Handler Class
- The Tag Library Descriptor File
- Imports a tag library (referencing URL of descriptor file)
- Defines tag prefix

Uses tags About tag handler

- Tag interface, SimpleTag
- TagSupport, BodyTagSupport
- SimpleTagSupport
- Developing tag using SimpleTagSupport class
- Lifecycle of custom tag
- Tag handler class with attributes
- Developing tag with body

MVC Architecture

- MVC Design pattern
- MVC-1 Page Centric
- Advantages & Disadvantages
- MVC-2