Advanced Java Syllabus

Overview:

Java is platform independent language and Object oriented Programming language. Using advanced Java programming language we can learn how to design dynamic web applications using Java Server Pages and Java Servlet and how to connect to data base drivers. Advanced java course consist JDBC, HTML, Servlet, JSP and JSTL. Using JDBC concept you can learn database concepts in depth and perform all CRUD operations easily. Using HTML you can develop static web pages. Using Servlet and JSP you can develop dynamic web pages.

Course Objectives:

- ❖ To become familiar with the advanced features of Java Language.
- ❖ To develop Web Applications using Servlets / JSP and deploy in popular servers like Tomcat.
- ❖ To understand Java Servlets and their life cycle
- ❖ To understand Java Web application directory structure
- ❖ To develop Server side components in a Java Web application
- ❖ To understand Java server Pages (JSP) technology
- ❖ To develop reusable components using JavaBeans.
- ❖ To develop JSP pages using which use JavaBeans
- ❖ To develop JSP Custom tags and use them in JSP pages
- ❖ Writing Event Listeners in Java Web application
- ❖ Handling File uploads in Java Web application
- ❖ To discover how to write Java applications this can communicate with Relational Databases.

Pre-requisite / Target Audience:

This course is designed to meet the needs of those who want to be professional Java developers. This will also help the audience to get though the Java Certification called Web Component Developer.

Students should be familiar with Java programming techniques and should be comfortable with concepts such as Classes, Objects, Inheritance, Interfaces I/O Streams, Threading and Networking. Certificate like Sun Certified Java Programmer will be an added advantage.

Module 1: Java Database Connectivity (JDBC)

We know the data stored in a file can't be a permanent. So we use to store data from now onwards in database, In this module we will learn how to connect/store data of standalone/web application in database or to retrieve the data from it.

- ❖ Overview of RDBMS
- ❖ Introduction to Call Level Interface(CLI)
- ❖ Introduction to JDBC

- ❖ JDBC Architecture
- ❖ Types of JDBC Drivers
- ❖ Establishing a JDBC Connection
- ❖ Using Statement
- ❖ Using Prepared Statement
- ❖ Using Callable Statement
- ❖ Scrollable and Updatable Result Set
- ❖ Inserting & Fetching from BLOB Columns
- ❖ Managing Transactions in JDBC
- ❖ New Features introduced in JDBC 3.0
- ❖ Auto Increment Columns

Module 3:- Common Gateway Interface

This is the first gateway interface where user programs can run on web server which will invoke the client browser to make the user interface between client and web server.

- ❖ Introduction to CGI
- ❖ Understanding Environment Variables
- ❖ Disadvantages and Limitations of CGI

Module 4: Java Servlets

In this module we will learn how the client request is generated and how to track the user and how to make client application more secure. Don't worry if you don't get it by learning this concept you will get it.

Servlet as J2EE Web Component
Servlet as an improved CG

- ❖ Servlet Fundamentals / API
- ❖ What is a Web-Container
- ❖ Servlet Life Cycle / Architecture
- ❖ HTTP GET and POST Request Methods
- ❖ Processing Html Forms
- ❖ What is Name-Value pair
- ❖ Content Types and MIME
- ❖ Configuration of Web Application
- ❖ Understanding the Deployment Descriptor (DD) / web.xml
- ❖ Specifying the Welcome file list
- ❖ Servlet URL Pattern Mapping
- ❖ Init Parameters
- ❖ State Management
- ❖ Using HTTP Session

- ❖ Using Cookies
- ❖ Using Application

Module 5: Java Server Pages (JSP)

In this module we can able to differentiate the model, view, server logic so that lot's of client side code processing is reduced on server which is not done in servlets concept.

- ❖ JSP Architecture
- ❖ JSP Standard / Implicit Objects
- ❖ Request
- ❖ Response
- ❖ Out
- ❖ config
- ❖ Application
- ❖ Session
- ❖ Page
- ❖ Page Context
- ❖ exception
- ❖ JSP Page Implementation Class
- ❖ JSP Basics & Syntax
- ❖ JSP Directive Tags
- ❖ Page Directive
- ❖ Include Directive
- ❖ Taglib Directive
- ❖ JSP Action Tags
- ❖ Forward Action Tag
- ❖ Include Action Tag
- ❖ JSP Script related Tags
- ❖ Scriptlet Tag
- ❖ Expression Tag
- ❖ Declaration Tag
- ❖ Using Java Beans from JSP
- ❖ UseBean Tag
- ❖ setProperty Tag
- ❖ getProperty Tag
- ❖ JSP Custom Tag Library
- ❖ JSP 2.0 Tag Files
- ❖ JSP 2.0 Simple Tag
- ❖ Empty Tag

❖ Tag with Body Content

❖ (JSP Fragment)

Module 6: JavaBeans

Each time whenever either storing or retrieving the data from a database we need to a variable, instead of it, in here we will create a property class which will reuse so many times as we want.

❖ JavaBean Architecture

❖ JavaBean Characteristics

❖ Providing Properties & Methods

Module 7: Collection

In this module we will learn to avoid the expression tag of java code from the client side.

❖ Syntax

❖ Using different scope objects

❖ Calling Functions from Collection

Module 8: JSP Standard Tag Library (JSTL)

In this module we will completely avoiding the java code from the client side, so that the processing time will be reduced.

❖ General Purpose ActionsConditional Actions
❖ Iterator Actions

Module 9: Netwoking

Filters are used to authenticate the user and navigate the user to his particular page and not only that it is also helpful to filtering the user given operations.

❖ Filter Basics

❖ Filter Lifecycle

❖ Filter Chaining

❖ Filter Example

Module 10: Multithreding

How the Client request is navigated to server, and it will check the user is valid or not from the model and how the response is generated by the server to the client. We will learn here.

Project

Create One Desktop applicaton wth documentation,abstract.