

Servlets and JavaServer Pages

Course No.

9515

Description

Servlets and JavaServer Pages covers the details of developing Web applications that use the server-side capabilities of Java Servlets and JavaServer Pages. Students will learn the architecture of Servlets and JSP, including issues like performance, multithreading, and design guidelines. The labs for the course develop an online store complete with a shopping cart and real data in a database using the Model-View-Controller design.

Audience

Programmers who have a good working knowledge of the Java programming language, as well as a basic understanding of Web technologies and HTML.

Major Topics

- Servlets
- JavaBeans
- JDBC
- JavaServer Pages
- Custom Tags and JSTL

Duration

4 days



Course Contents

1. What is Microsoft .NET?

- Overview of Servlets: Programs that run in a Web server.
- Server-side Development: Options for creating Web applications.
- Advantages of Servlets: Powerful, portable and secure.
- The Servlet API: The javax.servlet and javax.servlet.http packages.
- HTTP: The Hypertext Transfer Protocol.
- Requests: The HTTP Request header.
- Responses: The HTTP Response header.
- HTML Basics: A quick introduction to HTML and its syntax.
- HTTP Servlets: The HttpServlet class.
- The "Hello, World" Servlet: A simple HTTP servlet handling a GET request.
- The Lifecycle of a Servlet: The servlet container.
- A Servlet Counter: A demonstration of the lifecycle of a servlet.
- HttpServletRequest: Encapsulating the HTTP request header of a client request.
- HttpServletResponse: Encapsulating the HTTP response to a client.
- Parameters: Obtaining data from the client request.
- The Request Dispatcher: Including servlets and forwarding requests to other servlets.
- Scope: Understanding the various scopes an object can have within a servlet container.
- Request Scope: Objects associated with a client request
- Application Scope: A containerwide object.
- Session Scope: Creating client sessions.
- Cookies: A sweet session tracker.
- The HttpSession Interface: Container session objects.
- URL Rewriting: Encoding a URL.
- Servlet Threading Models: The SingleThreadModel.
- Connecting to a Database: JDBC within a servlet.
- Server-side Includes: A servlet embedded in an HTML page.

2. JavaBeans

- Overview of JavaBeans: Java software components.
- The Bean Development Kit: The bean specification and Sun's beanbox.
- Properties: Adding properties to a bean.
- Methods: A bean's behavior.
- Events: How beans communicate with each other.

3. JDBC

- Overview of JDBC: An API for communicating with databases.
- JDBC Drivers: Understanding the various types of drivers available for JDBC.
- Connecting to a Database: Loading the appropriate driver and making the connection.
- Statements: Executing SQL statements.
- Prepared Statements: Executing precompiled SQL statements.
- Results: Working with result sets.

4. JavaServer Pages

- Server-side Development: Comparing JSP to other technologies.
- Overview of JavaServer Pages: Java technology for creating dynamic Web content.
- JSP Lifecycle: Translation of JSP into servlets.
- An Introduction to Servlets: Understanding how servlets run on a Web server.
- "Hello, JSPs": A simple JavaServer Page.
- JavaServer Page Tags: The various JSP tags.
- Templating: The include directive.
- Declarations: Declaring variables and methods.
- Expressions: Java statements within a JSP.
- The request Object: The request header information.
- Parameters: Request data passed in to the JSP.
- Scriptlets: Embedding Java code within a JSP.
- Directives: Specifying options for the page.
- Implicit Objects: The implicit objects of a JSP.
- JSP Actions: The action tags of JSP.
- Overview of JavaBeans: Java software components.
- JavaBeans in JSPs: The useBean directive.
- Error Pages: Handling exceptions in JSP.5. ASP.NET and Web Services
- Scope: The four scopes of JSP objects.
- Sessions: Creating sessions within JSP.
- Request Scope: Associating data with the request.
- Application Scope: The implicit application object.
- Session Scope: Creating client sessions.
- The Implicit Session Object: Session tracking made easy.
- Beans with Session Scope



5. Custom Tags and JSTL

- Creating your own JSP tags
- Writing Tag Handler classes
- The Tag Library Definition File
- The JSP Standard Template Library

