

915- Fundamentals of Web Services Using J2EE

Introduction to Integrating JavaServer Pages and XML

- Goals of the Course
- Software Used for the Course
- Server Setup

XSLT

- Example; Transforming XML via the Jakarta xtags Tag Library
- Apache's Jakarta xtags and dom4J
- Exercise: Using the Jakarta xtags Tag Library to Transform XML to HTML
- If you are done early
- A Possible Solution to the Exercise
- Example: Using the Java Transformer
- Exercise: Using Xalan to Transform XML to HTML
- If you are done early
- A Possible Solution to the Exercise
- Example: Generating XSLT Output to a File
- Exercise: Saving XSLT Output to a File
- If you are done early
- A Possible Solution to the Exercise
- Example: XSL Parameters
- Exercise: XSLT with an XSL Parameter
- If you are done early
- A Possible Solution to Exercise 4

Working with DOM (Document Object Module)

- What is the DOM?
- What Role Do Parsers Play with the DOM?
- Example: Building a DOM Tree and Outputting It as HTML
- Finding the XML File to Read
- Creating the DOMParser
- The DOM Document Class
- Getting a Reference to the Root Node
- The NodeTree(Node currentnode) method
- Methods of the Node Class
- Processing Text Nodes
- Processing Standard Nodes and their Child Nodes
- Returning Output
- Disadvantages of the DOM
- Exercise: Generating HTML Output from a DOM Tree
- If you are done early
- A Possible Solution to the Exercise

Generating HTML Tables from DOM Data

- Retrieving Tags by Name
- Generating the Column Headers
- Generating the Table Rows

Searching the DOM Tree

- Example: Searching using Regular Expressions
- Example Searching Using XPath
- Exercise: Searching an XML File Containing Course Data
- If you are done early
- A Possible Solution to the Exercise

Modifying XML Documents via the DOM

- Example: Adding a Menu Item
- Creating a New Element and Adding it to the Tree
- Saving XML Data to File
- Exercise: Modifying a DOM Tree and Saving It to File
- If you are done early
- A Possible Solution to the Exercise

Using the DOM and JDBC to Import XML Data into a Database

- Example: Validating and Entering (Generating SQL) XML Into a Database
com.westlake.courses.jsx.DbUtils.clearTable(String dsn, String tablename)
insertXMLToDB(String dsn, String tablename, String dir)
insertFood(String name, String price, String description, String calories, String dsn, String table)
com.westlake.courses.jsx.DbUtils.showRecords(String dsn, String table)
- Exercise: Saving XML Data to a Database
- If you are done early
- A Possible Solution to the Exercise:

Creating XML from Database Data

- Example: Building an XML Document from Scratch with Database Data
- Building a DOM Document from Scratch
 - Saving DOM Nodes to a File
 - Changing Output Properties
- Exercise: Converting Database Data to an XML File
- If you are done early
- A Possible Solution to Exercise 10

Introducing SAX

- What is SAX ?
- Example: Parsing a Document Using SAX
- Using SAX to Parse XML
 - Creating a File URL
 - Getting a Parser
 - Specifying a ContentHandler
 - Specifying an ErrorHandler

- Parsing the Document
- Displaying Output and Errors
- A SAX ContentHandler
 - Creating a ContentHandler: Implement or Extend
- The Five Most Important ContentHandler Methods
- Other Methods Specified by ContentHandler
- Examining an Implementation of ErrorHandler
 - A Word about Creating Classes in a JSP
- Exercise: Parsing an XML Document and Generating HTML Output with SAX
- If you are done early
- A Possible Solution to the Exercise

Importing XML Data into a Database via SAX and JDBC

- Example: Inserting Rows Using SAX
- InsertDemoContentHandler
 - startDocument()
 - endDocument()
 - characters()
 - endElement()
- Exercise: Inserting XML into a Database
- If you are done early
- A Possible Solution to the Exercise

Searching with SAX

- Example: Searching a Document Using SAX
- Exercise: Searching with SAX
 - If you are done early
- A Possible Solution to the Exercise

Examining an Existing Web Service

- References
 - Articles
 - See Also:
- Example: Calling the Google Search Web Service
- Exercise: Call Google Spell Suggest Web Service
 - If you are done early
- A Possible Solution to the Exercise

Creating a Web Service

- References
- Example: Creating a Sample Web Service
 - Review the Services WSDL File
 - Review the Service Schema File
- Example: A Currency Converter Web Service
 - Annotations: Changing the Namespace and Parameter Names
- Exercise: Creating a Body Mass Index Calculator Web Service

- If you are done early
- A Possible Solution to the Exercise

Consuming the Web Service

- References
- Example: Consuming the Sample Web Service
 - Calling the Service
- Example: Consuming the Currency Converter in Web Application
 - Updating the Reference
- Debugging
- Exercise: Consuming the Body Mass Index Calculator Service
 - If you are done early
- A Possible Solution to the Exercise

SOAP Data Types in Java

- References
- Example: Data types returned
- Example: Data Types from .NET

XML Documents for Data

- Web Service, or a Service on the Web?
 - Example: Yahoo's Weather "Service"
- Example: XML Over HTTP
- Exercise: Searching Client Data
 - If you are done early
- A Possible Solution to the Exercise
- Example: A Simple Hello Using JAX-WS and REST
 - Articles
- Exercise: Searching Client Data II
 - If you are done early
- A Possible Solution to the Exercise
- Final Note: XML-Over-HTTP, REST vs. SOAP

XML Data on the Client

- Example: Outputting Data from the Hello REST Service
- Exercise: An Interface on our Client Data Search
 - If you are done early
- A Possible Solution to the Exercise

Http URL Connection to Exchange More Data

- Example: Posting Data
- Example: Sending XML Data in the Request to a Servlet
- Example: Sending XML Data in the Request to a Provider
- Exercise: Updating Client Info With XML Data
 - If you are done early
- A Possible Solution to the Exercise