

Nutech Computer Training Institute

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Java Web Components Certification and Hands-On Course Outline

1. Introduction to Java Web Components
2. Model-View-Controller Design Pattern
 - a. Code a controller using a servlet
 - b. Code a view using a JSP
 - c. Forward control from a servlet to a JSP
 - d. Understand fundamentals of EL
 - e. Implement a simple MVC system
3. Java Servlet
 - a. Describe web applications, CGI, and the role of Java
 - b. Describe benefits of Java servlet technology
 - c. Create a simple Java Servlet
 - d. Define three-tier architecture
 - e. Define Model-View-Controller (MVC) architecture
4. More Controller facilities
 - a. Understand the servlet lifecycle
 - b. Describe and use more advanced elements of the servlet APIs
 - c. Create filters and use them in web applications
5. JSP (Java Server Page)
 - a. Describe why Servlets are not the whole solution
 - b. Describe essentials of JSPs
 - c. Understand the fundamentals and reasons for MVC architecture
6. More view facilities
 - a. Understand the four data scopes
 - b. Understand and use EL dot and array access operators with Java Beans, arrays, and collections
 - c. Understand and use EL implicit objects
 - d. Create and use arithmetic expressions in EL
 - e. Identify the need for iteration and selection in the view, and use JSTL tags to address those needs
7. The servlet's environment
 - a. Understand more details of the HTTP protocol
 - b. Understand fundamentals of HTML forms
 - c. Understand fundamentals of the HttpServlet and related APIs

- d. Write code that manages client sessions and cookies
- 8. web.xml: Understanding and Configuration
 - a. Understand the purpose and structure of deployment descriptors
 - b. Control context root and servlet mapping
 - c. Create and use context and init parameters
 - d. Use annotations to configure servlets
- 9. Java Beans: Reusable Components
 - a. JavaBeans Advantages
 - b. Serialized JavaBeans
- 10. More options for the Model
 - a. Understand the roles of JDBC and JPA
 - b. Understand the many elements that make up the model
 - c. Understand fundamentals of connecting to a database using JDBC or JPA
- 11. Asynchronous web applications
 - a. Understand the interactions that are essential to asynchronous web pages
 - b. Understand the role of AJAX-style client side programming
 - c. Implement asynchronous servlets using the facilities of Java EE 6
- 12. Web application security
 - a. Understand the role of the container in security
 - b. Describe and implement four authentication models
 - c. Force the use of encryption between a web application and the client browser
 - d. Understand the role of JAAS in pluggable/extensible authentication for web applications

Hands-on Project

- 1. Implementing an MVC Design
 - a. Code a controller using a servlet
 - b. Code a view using a JSP
 - c. Forward control from a servlet to a JSP
 - d. Understand fundamentals of EL
 - e. Implement a simple MVC system
- 2. More options for the Model
 - a. Understand the roles of JDBC and JPA
 - b. Understand the many elements that make up the model
 - c. Understand fundamentals of connecting to a database using JDBC or JPA
- 3. Developing JSP pages
 - a. Understand the origins, benefits, and weaknesses of JSPs
 - b. Describe JSP technology, the conversion of JSPs to servlets, and the lifecycle of JSPs
 - c. Understand JSP scripting elements, declarations and directives
 - d. Use JSP implicit variables

- e. Understand and use jsp: tags
- 4. Developing JSP pages using custom tags
 - a. Relate the JSTL to common job roles in web application development and understand the use of tags in JSP development
 - b. Recognize correct syntax for tags
 - c. Configure a JSP to use tags from the JSTL
 - d. Write JSP code using several standard tags
 - e. List capabilities of JSTL tags/span>