Developing Applications with Java EE

Duration: 5 Days   Course Code: JEE   Delivery Method: Virtual Learning

Overview:

The Developing Applications with Java EE course introduces delegates to the Java Enterprise Edition API,up to version 7. It explains the core JEE technologies and how they can be used to build large scale web based applications. It also includes an overview of Enterprise Java Beans,the Java Persistence API and JEE security.
Delegates will learn how to develop Java systems that create front end web pages using tools such as Servlets,Java Server Pages and WebSocket,and develop back-end components using EJB,CDI and Bean Validation. In addition,we will show how technologies such as JSON,JMS and Restful Web Services can be integrated into the overall solution.
Exercises and examples are used throughout the course to give practical hands-on experience with the techniques covered.

Virtual Learning

This interactive training can be taken from any location, your office or home and is delivered by a trainer. This training does not have any delegates in the class with the instructor, since all delegates are virtually connected. Virtual delegates do not travel to this course, Global Knowledge will send you all the information needed before the start of the course and you can test the logins.

Target Audience:

The Developing Applications with Java EE course is aimed at those who need to develop robust,flexible,extendable and maintainable software using the Java enterprise architecture. Roles include programmers,designers,architects,testers and anyone who needs a good understanding of the Java Enterprise Edition solution.

Objectives:

- This course aims to provide the delegate with the knowledge to be able to produce secure,scalable and maintainable enterprise solutions using Java code within the Java Enterprise Edition environment. This incorporates web-based technologies such as Servlets,JSP and WebSocket,via linking solutions like JSON and CDI,to back end architectures using EJB,JMS and JPA.

Prerequisites:

Delegates attending this course should have experience programming with Java. This knowledge can be obtained by attendance on the pre-requisite Java Programming 1 course.

Follow-on-Courses:
- Java Programming 2 (JAVA2)
- Java Web Services (JWS)
- Unit Testing using JUnit (JUNIT)
- Core Spring (SPRINGC)

Content:

Developing Applications with Java EE Training Course   Course Contents - DAY 1

Course Introduction

- Administration and Course Materials
- Course Structure and Agenda
- Delegate and Trainer Introductions

Session 1: OVERVIEW

- The JEE Environment
- System Architecture
- Putting It All Together

Session 2: INTRODUCTION TO JAVA WEB TECHNOLOGY

- Web Applications,CGI and the Role of Java
- 3-tier Architecture
- Understand Model-View-Controller (MVC) Architecture
- Why Use Servlets and JSP
- Web Application Structures

Session 3: SERVLETS

- Servlets and HTTP Requests
- The HTTP Servlet Model
- Writing an HTTP Servlet
- Executing an HTTP Servlet
- Request Parameters

Session 4: SERVLET PARAMETERS

- Servlet Initialization Parameters
- Servlet Context Parameters
- Web Application State Using Servlets
- Session Management   Developing Applications with Java EE Training Course Course Contents - DAY 2

Session 5: CONTROLLER FACILITIES

- The HTTP Servlet Lifecycle
- Servlet Filters
- Servlet Listeners

Session 6: SERVLET ISSUES

- Threading Issues
- Exception Handling
- Error pages
- Using Annotations to Configure Servlets

Session 7: JAVA SERVER PAGES - JSP

- How Java Server Pages Work
- Creating a Java Server Page
- JSP / XML Elements
- Servlet To JSP Request Dispatching
- Action Elements
- Implicit Objects
- Error Pages

Session 8: JSP TAG LIBRARIES

- Custom Tags and Tag Libraries
- Commercially available tag libraries
- Write JSP Using Standard Tags
  Developing Applications with Java EE Training Course   Course Contents - DAY 3

Session 9: JSP EXPRESSION LANGUAGE

- JSP Expression Language
- EL expressions
- Variables
- Functions

Session 10: USING JSON

- The Java API for JSON Processing
- The Streaming API
- The Object Model API

Session 11: WEBSOCKET

- Why use WebSocket?
- Annotated and Programmatic Endpoints
- Client and Server Endpoints
- Encoders and Decoders

Session 12: ENTERPRISE JAVA BEANS - EJB

- Why EJBs?
- The EJB Architecture
- The EJB Container
- Session Beans   Developing Applications with Java EE Training Course   Course Contents - DAY 4

Session 13: CONTEXTS AND DEPENDENCY INJECTION

- Bean Discovery Modules
- Life Cycle Callbacks
- Qualifiers
- Producers and Disposers
- Interception
- Decoration
- Events

Session 14: BEAN VALIDATION

- Built in Constraints

Session 15: JDBC

- Connecting to Databases
- Statements
- Result Sets
- Prepared Statement Objects
- Stored Procedures

Session 16: JAVA PERSISTENCE API

- Java Persistence Specification
- Object Relational Mapping
- Creating an Entity Class
- Controlling the JPA Life Cycle
- Deploying Entity Classes
  Developing Applications with Java EE Training Course   Course Contents - DAY 5

Session 17: JAVA MESSAGING SERVICE

- Message Domains
- Asynchronous Message Consumption
- Transactions
- Creating Message-Driven Beans
- Utilising Life Cycle Events

Session 18: JAX-RS RESTFUL WEB SERVICES

- Adding JAX-RS Annotations
- Using HTTP Request Headers
- Mapping URLs to Java

Session 19: JAX-WS SOAP WEB SERVICES

- The Web Services Protocol Stack
- SOAP,WSDL and UDDI
- Web Services with JAX-WS

Session 20: JEE SECURITY

- Container Managed Security
- Authentication Methods
- Defining Roles
- Security Users and Groups

- Custom Constraints
- Method Constraints
- Validation Groups

Further Information:

For More information, or to book your course, please call us on Head Office 01189 123456 / Northern Office 0113 242 5931

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