

Course Outline



Tel: +44 (0) 118 979 4000

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Email: training@ptr.co.uk

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Developing Applications with Java EE

Course Description:

The Developing Applications with Java EE course introduces delegates to version 6 of the Java Enterprise Edition API. It explains the JEE technologies and how they can be used to build large scale web based applications.

Delegates will learn how to develop Java systems that generate front end web pages using tools such as Servlets, Java Server Pages and Java Server Faces and will also create business components using EJB versions 3.0 and 3.1. In addition, we will develop programs to access remote databases and show how technologies such as JNDI, JMS and Web Services can be integrated into the overall solution.

This course is aimed at programmers who need to understand and program in the Java enterprise architecture.

Pre-requisites:

The pre-requisite requirements for the Developing Applications with Java EE course is attendance on the Java Programming course or relevant experience with Java.

Course Content:

- **OVERVIEW**
 - The JEE Environment
 - System Architecture
 - Putting It All Together
- **REMOTE METHOD INVOCATION**
 - The Distributed Computing Model
 - Designing the Remote Interface
 - Building a Remote Object
 - Dynamically Downloading Classes
 - The RMI Registry

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- **JNDI**
 - Similarities with JDBC
 - Features of naming services
 - The Initial Context
 - Naming Example
 - Directory Services
 - JNDI and J2EE
 - Object Storage
- **DATABASE CONNECTIVITY - JDBC**
 - Connecting to Databases
 - Statements
 - Result Sets
 - Releasing Database Resources
 - Metadata
 - Prepared Statement Objects
 - Stored Procedures
 - Pooled Connections
 - Transactions
 - Transaction Isolation and Data Locking
- **SERVLETS**
 - Servlets and HTTP Requests
 - The HTTP Servlet Model
 - The MVC Architecture
 - The HTTP Servlet Lifecycle
- **SERVLET USAGE**
 - Writing an HTTP Servlet
 - Executing an HTTP Servlet
 - Request Parameters
- **SERVLET PARAMETERS**
 - Servlet Initialization Parameters
 - Servlet Context Parameters
 - Web Application State Using Servlets
 - Session Management

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- **SERVLET ISSUES**
 - Threading Issues
 - Exception Handling
 - Error pages
- **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
- **JSP TAG LIBRARIES**
 - Custom Tags and Tag Libraries
 - Commercially available tag libraries
 - JSP Expression Language
 - EL expressions
 - Variables
 - Functions
- **JAVA SERVER FACES - JSF**
 - Introducing JSF
 - JSF tag libraries
 - The Faces Servlet
 - Page navigation
 - Managed beans
 - Event handling
 - Validation
- **ENTERPRISE JAVA BEANS - EJB**
 - Why EJBs?
 - The EJB Architecture
 - The EJB Container
 - EJB Lite
 - EJB 3.1 Embeddable Containers

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- **EJB COMPONENTS**
 - EJB Component types
 - EJB Interfaces
 - Local and Client views
 - Session Beans
 - Message Driven Beans
- **EJB SESSION BEANS**
 - Creating a Session Bean
 - Calling EJBs from Servlets
 - The Singleton Session Bean
 - Asynchronous Session Beans
 - Packaging and deploying Session Beans
- **JAVA PERSISTENCE API**
 - Java Persistence Specification
 - Object Relational Mapping
 - Creating an Entity Class
 - Controlling the JPA Life Cycle
 - The Entity Manager API
 - Deploying Entity Classes
- **JAVA TRANSACTION API**
 - Transaction Scoping
 - Creating Programmatic Transactions
 - Creating Declarative Transactions
 - Locking and Performance
 - Handling Exceptions
- **JAVA MESSAGING SERVICE**
 - Messaging scenario
 - Message Domains
 - Configuring a JMS Application
 - Messaging Activity
 - Asynchronous Message Consumption
 - Transactions

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- **MESSAGE-DRIVEN BEANS**
 - Characteristics of Message-Driven Beans
 - Creating Message-Driven Beans
 - Utilising Life Cycle Events
- **WEB SERVICES**
 - Examples of Web Services
 - Reasons to Use Web Services
 - The Web Services Protocol Stack
 - SOAP, WSDL and UDDI
 - Web Services with JAX-WS
 - Restful Web Services with JAX-RS
- **JEE SECURITY**
 - Container Managed Security
 - Authentication Methods
 - Defining Roles
 - Security Users and Groups

Course Duration:

5 Days

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