

Course Description: This course provides an overview of the basic architecture of the Java Platform Enterprise Edition as well as an in-depth discussion of its primary components. Participants gain an understanding of the purpose of each technology along with exposure to the Java classes and interfaces used by Java EE developers. Participants will configure and run sample applications using an Eclipse-based development tool.

Who Should Attend: Software developers, project leaders, and managers working on integrating Java technology into enterprise applications.

Prerequisites: Familiarity with object-oriented concepts, the Java programming language, and relational databases.

Benefits of Attendance: Upon completion of this course, students will be able to:

- Describe the main Java EE architectural elements.
- Diagram an N-tier solution using Java EE components.
- Explain the benefits of using Java EE technology.
- Identify some of the trade-offs between using Java Servlets vs. JavaServer Pages.
- Describe the use of HTTP sessions within a Web application.
- Explain the use of JNDI in Java EE applications.
- Identify the advantages of using JDBC in an enterprise application.
- Define the role and benefits of Enterprise JavaBeans.
- Explain how JMS is used in Java EE.
- Identify documentation and other resources to stay informed on emerging trends and technologies.

Course Outline:

Overview of Java EE

Java Editions
Characteristics of "Enterprise" Computing
Java EE Technologies
Multi-Tier Architectures
Advantages of Multi-Tier Architectures
Container-Based Approach
Java EE Application Models

Introduction to BEA Workshop

What is BEA Workshop?
Starting BEA Workshop
Configuring the WebLogic Test Environment
Starting and Stopping WebLogic
Administration Console
Setting Preferences in BEA Workshop
Exercise: Creating a Dynamic Web Project

Servlets

A Simple Servlet
Web Applications
Configuring Servlets
Servlet Initialization Parameters
Generating and Validating Forms
Session Management
Invalidating Sessions
Configuring the Session Timeout
Exercise: Running Servlets

JavaServer Pages

JavaServer Pages
A Simple JSP
JSP Syntax
Configuring JavaServer Pages
JSP Directives
JSP Actions
JSP Example with Forwarding
JavaServer Pages and JavaBeans
JSP with JavaBean Example
Exercise: Running JavaServer Pages

Java Naming and Directory Interface

What is JNDI?
Benefits of JNDI
Naming Services
Directory Services
Using JNDI
Context Operations
JNDI Utility Class
JNDI Example
Naming Exceptions
Exercise: Running the JNDI Example

Database Access Using JDBC

A Simple JDBC Program
JDBC Driver Types
Connection Pools
JDBC Data Sources
Data Source Example
Using JDBC in a Servlet
Using JDBC in a JSP
Exercise: Configuring JDBC Data Sources
Exercise: Running the JDBC Examples

Enterprise JavaBeans

Enterprise JavaBeans Component Model
Parties Involved in EJB Deployment
EJB Server and EJB Container
Types of Enterprise Beans
EJB Wrapper Interfaces
Deployment Descriptors
Context and Environment Objects
Summary of EJB Environment
The Remote Interface
The Home Interface
The Enterprise Bean Class
The Client Code
The ejb-jar.xml File
The weblogic-ejb-jar.xml File
Exercise: Deploying and Testing an EJB

Java Message Service

Introduction
JMS and the J2EE Platform
Basic JMS Concepts
The JMS Programming Model
Point-to-Point Example - Sender
Point-to-Point Example - Receiver
Publish/Subscribe Example - Publisher
Publish/Subscribe Example - Subscriber
Exercise: Configuring JMS Destinations
Exercise: Running the JMS Examples

Appendix A: Web Resources

Java Technology
WebLogic

Appendix B: HTML Reference

Introduction
A Simple HTML Document
Basic Tags
Formatting Tags
Links
Forms

Appendix C: Web Accessibility

What is Accessibility and Why It is Important?
What is Section 508?

Accessibility Initiatives and Related Legislation
General Coding Practices

Appendix D: Sample Application

Model-View-Controller Architecture
J2EE Design Patterns
Running the Demo Application