Developing Architectures for Enterprise Java Applications

Duration: 4 Days

What you will learn

The Developing Architectures for Enterprise Java Applications course provides students with knowledge needed to develop robust architectures for enterprise Java applications using the Java Platform, Enterprise Edition (Java EE) technology. The Enterprise Java applications developed using the architecture as a guideline can accommodate rapid change and growth. By taking this course, participants gain an understanding of the technical context of the Java EE and relevant technologies, and strategies needed to create application blueprints that work well when implementing Java EE technologies. These strategies include effective decision making through the use of systemic qualities (such as scalability and flexibility), Java EE technology blueprints and design patterns.
Students who can benefit from this course:Developers responsible for the overall software architecture and design of Java EE technology-based enterprise software systems.Developers who require insight into the role of the enterprise architect and want to use Java EE technologies in n-tier enterprise systems.Existing architects who want to understand how to use Java EE technologies to improve quality of service in their enterprise systems.Developers or Architects interested in training that will help them prepare for the Sun Certified Enterprise Architect exam.

This course counts towards the Hands-on course requirement for the Java EE 5 Enterprise Architect Certification. Only instructor-led inclass or instructor-led online formats of this course will meet the Certification Hands-on Requirement. Self Study CD-Rom and Knowledge Center courses DO NOT meet the Hands-on Requirement.

Prerequisites

Required Prerequisites

Describe distributed computing and communication concepts
Describe, in outline form, all Java EE technologies, including Enterprise JavaBeans, servlets, JavaServer Pages, and Jav
Perform analysis and design of object-oriented software systems
Use UML notation for modeling object-oriented systems
Developing Applications for the Java EE 5 Platform

Suggested Prerequisites
Business Component Development with EJB Technology, Java EE 5
Java EE 5 Patterns
Web Component Development with Servlets & JSPs, Java EE 5

Course Objectives

Make good use of Java EE component technologies to solve typical problems in system architecture
Derive software systems using techniques outlined in the Java EE Blueprint and solutions defined in the Java EE Pattern
Address quality-of-service requirements in a cost-effective manner using engineering trade-off techniques
Describe the role of the architect and the products an architect delivers
List and describe typical problems associated with large-scale enterprise systems

Course Topics

Introducing Fundamental Architectural Concepts

Understand the challenges of enterprise applications
Define software architecture
Understand the need for software architecture
Understand an architect6's roles, responsibilities, and deliverables
Understand architecture modeling using the Unified Modeling Language (UML)
Understand the differences and similarities between architecture and design
Describe the SunTone(SM) Architecture Methodology

Understanding Systemic Qualities

Describe the systemic qualities of an enterprise application
Describe common practices for improving systemic qualities
Prioritize quality-of-service (QoS) requirements
Inspect for trade-off opportunities

Examining System Architecture Development Heuristics and Guidelines

Identify key risk factors in distributed enterprise systems
Design a flexible object model
Understand the guidelines of creating a network model
Justify the use of transactions
Plan system capacity

Developing an Architecture for the Client Tier

Describe the roles involved in client-tier development
Understand Information Architecture client-tier concerns
Understand how to select a user interface device that will fit your application requirements
Describe how reuse can apply to the client tier
Understand strategies for deploying Java desktop-based applications
Be familiar with the security concerns of the client tier

Developing an Architecture for the Web Tier

Describe the roles involved with the development of the web tier
Understand the Separation of Concerns
Describe the strategies for implementing the presentation concerns of the web tier
Describe the strategies for implementing the data concerns of the web tier
Describe the strategies for managing the presentation, data, and logic-related concerns of the web tier
Understand the advantages and disadvantages of request- and component-oriented web-tier frameworks
Describe strategies for implementing authentication and authorization in the web tier
Address the concerns of scaling web applications

Developing an Architecture for the Business Tier

Understand the value in using enterprise application container services
Describe the architectural options for implementing domain model services
Describe the architectural options for implementing domain model entities
Distribute domain model components
Understand the best practices for exception handling and logging

Developing an Architecture for the Integration and Resource Tiers

Describe the challenges in Enterprise Information System (EIS) integration
Describe the roles of the integration tier

Describe the EIS resource tier
Review Java integration technologies and best practices
Apply integration-tier patterns
Understand how Service-Oriented Architecture (SOA) facilitates system integration
Describe SOA best practices

Developing a Security Architecture
Analyze the impact of security in distributed computing
Understand the security services in Java EE technology
Understand security requirements for web services

Evaluating the Software Architecture
Describe architecture evaluation guidelines
Evaluate Java EE technologies and their applicability
Create system prototypes
Understand application server selection criteria