

Developing Architectures for Enterprise Java Applications (SL-425)

Course Description

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.

Who Can Benefit

Students who can benefit from this course are those who are responsible for the overall software architecture and design of Java EE technology-based enterprise software systems. These students would also require insight into the role of the enterprise architect and want to use Java EE technologies in n-tier enterprise systems. Existing architects can also benefit from an understanding of how to use Java EE technologies to improve quality of service in their enterprise systems.

Prerequisites

To succeed in this course, student must already be able to:

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

Skills Gained

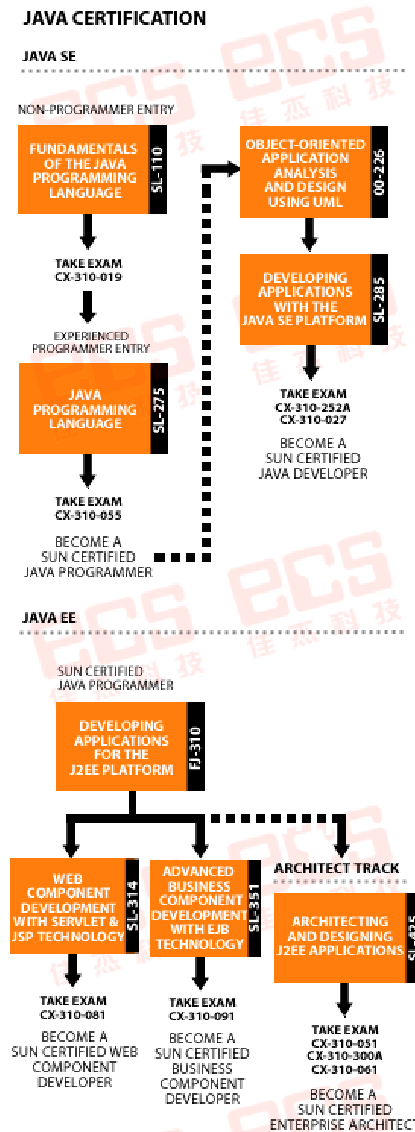
After successful completion of this course, the student will be able to:

- 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 Patterns catalog
- 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

Related Courses

- Developing Applications for the Java EE Platform (FJ-310-EE5)
- Web Component Development with Servlet and JSP Technologies (SL-314-EE5)
- Business Component Development with Enterprise JavaBeans Technology (SL-351-EE5)

Roadmap



Certification Alignment

- Sun Certified Enterprise Architect, SCEA

Difficulty Level : Java Java Java Java Java

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- Address the concerns of scaling web applications

Course Content

Module 1 - Introducing Fundamental Architectural Concepts

- Understand the challenges of enterprise applications
- Define software architecture
- Understand the need for software architecture
- Understand an architect'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

Module 2 - 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

Module 3 - 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

Module 4 - 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

Module 5 - 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

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Module 6 - 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

Module 7 - 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

Module 8 - 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

Module 9 - Evaluating the Software Architecture

- Describe architecture evaluation guidelines
- Evaluate Java EE technologies and their applicability
- Create system prototypes
- Understand application server selection criteria