

Enterprise Java Beans 3 Development

Course Outline

I. Distributed Objects and RMI

- A. Object Serialization/Deserialization Overview
- B. Concept of Remote Objects/Distributed Objects
- C. Remote Method Invocation (RMI) Overview
- D. How to create a Remote Object?
- E. Remote Object Stub and Skeleton
- F. RMI Naming Service – *rmiregistry*
- G. Remote Object Client
- H. CORBA Architecture
- I. IDL Stub and IDL Skeleton
- J. RMI over IIOP

II. J2EE Concepts

- A. J2EE 1.4 Architecture
- B. J2EE Containers
- C. Web Container
- D. EJB container
- E. J2EE Components
- F. Web Components
- G. EJB Components
- H. J2EE Services
- I. JDBC, JMS, JTA, Java Mail, and JCA
- J. Communication Protocols
- K. Web Services Overview
- L. Web Services in J2EE 1.4
- M. Security Services
- N. Management API

III. Java Naming and Director Interface (JNDI)

- A. JNDI Architecture
- B. JNDI API
- C. JNDI Context and JNDI Environment Properties
- D. JNDI name binding in Server
- E. JNDI Client Development

IV. Java Database Connectivity (JDBC)

- A. JDBC Overview
- B. JDBC Drivers
- C. DataSource
- D. Connection Pools
- E. Configuring a DataSource and Connection Pool
- F. JDBC Application Development

V. Enterprise Java Beans Architecture

- A. What is EJB?
- B. Java Beans Vs Enterprise Java Beans
- C. EJB Specification
- D. EJB 2.x Architecture
- E. EJB Servers
- F. EJB Containers
- G. EJB 3.0 Architecture
- H. EJB 3.0 New Features
- I. EJB 3.0 Annotations
- J. Enterprise Beans
- K. Session Beans
- L. Entity Beans
- M. Message Driven Beans
- N. EJB Deployment Descriptor (ejb-jar.xml)
- O. Client – EJB Interaction

VI. POJO and Annotations Overview

- A. Java Annotations
- B. Annotations Processing
- C. Deployment view if Annotation Configuration
- D. POJO Objects
- E. Java Beans Examples
- F. Dependency Pull
- G. Dependency Injection of Resources
- H. Lifecycle Annotations Methods
- I. `@PostConstruct`
- J. `@PreDestroy`
- K. `@Resource`

VII. Session EJB Development

- A. Why do we need them?
- B. Stateful Vs Stateless beans
- C. EJB 3 Meta data Annotations
- D. Creating a Local Business Interface
- E. Creating a Remote Business Interface
- F. Writing a Stateless Session Bean
- G. Writing a Stateful session Bean
- H. `@PostActivate`
- I. `@PrePassivate`
- J. `@Remove`
- K. Interceptors
- L. Using `@AroundInvoke`

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VIII. Java Persistence API -- Entities

- A. Java Persistence API (JPA)
- B. Persistence Mechanisms
- C. EJB Persistence Architecture
- D. Classes in javax.persistence
- E. Entity classes
- F. Embeddable classes
- G. Restrictions on Persistence Classes
- H. Entity Identity
- I. Lifecycle Callback Methods
- J. Class MetaData
- K. Fields and Property Metadata
- L. XML Schema
- M. The persistence.xml
- N. EntityManagerFactory
- O. Persistence Context
- P. Entity Manager
- Q. Entity Lifecycle Management
- R. Transaction types
- S. The Entity Transaction
- T. JPA Query
- U. JPQL Overview
- V. JPQL Examples
- W. Mapping MetaData

IX. JMS Basics

- A. Point-to-Point (PTP) Messaging Model
- B. Publish-Subscribe (Pub/Sub) Messaging Model
- C. JMS Architecture
- D. JMS API and JMS Objects
- E. JMS Objects Configuration in Server
- F. JMS Application Development Overview
- G. PTP Applications Development
- H. Pub/Sub Applications Development
- I. JMS Objects Configuration in Server

X. Message Driven Bean Development

- A. Message Driven Beans
- B. @MessageDriven
- C. Configuring MDB using Annotations
- D. The MessageListener Interface
- E. Creating a Message Driven Bean
- F. Testing a Message Driven Bean
- G. Any other Topics of Client Interests

Java Message Service (JMS)

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