Sela.

J2EE

Developing Enterprise Applications with J2EE Enterprise Technologies

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Developing Enterprise Applications with J2EE Enterprise Technologies

J2EE - Version: 25

5 days Course

Description:

J2EE is a framework that defines the standard for developing multi-tier enterprise applications. It simplifies enterprise applications by basing them on standardized, modular components, and it provides a complete set of services to those components.
The J2EE technologies can be divided into two main groups, Enterprise and Web technologies. The following specifications construct the J2EE enterprise technologies: JDBC, RMI, JNDI, JMS, EJB.
This course addresses the issues involved with developing enterprise applications using the J2EE technologies.

Intended audience:

Designers/developers and anyone who wishes to know how to develope java enterprise applications.

Prerequisites:

Basic knowledge of the Java programming language
basic knowledge of RMI
Basic knoweledge of JDBC

Objectives:

Build and deploy applications that use JNDI, JMS, EJB 3.0 and JPA
Build and deploy applications that use JNDI, JMS, EJB 3.0 and JPA
Configure and run J2EE application server with the above technologies
Architect a small system using small combination of the J2EE technologies

Topics:

servlet & JSP

- Servlets Basics
  - º Why Use Server Side Programming
  - º Other Technologies
  - º Why Use Servlets
  - º So What Is JSP ?
  - º Application/Applet/Servlet
  - º Web Servers
  - º Web Containers
  - º The Big Picture
  - º A Typical Servlet
  - º How Servlets Work
  - º Servlet's Life Cycle
- J2EE Web Applications
  - º Some Terminology
  - º The J2EE Big Picture
  - º Web Applications
  - º The web.xml Deployment Descriptor
  - º Web.xml – Document Definition
  - º Web.xml – Mapping Servlets
  - º Web.xml – Sending Parameters
  - º Web.xml – Pre-loading Servlets

- The Directory Structure
- Web Application Archive
- Deploying Web Applications

• Java Server Pages
- What is JSP
- But We Already Have Servlets
- Divide and Conquer
- Choose One
- Enjoy the Best of Both World
- How Does it Work

• JSP API
- JSP Basics
- JSP Comments
- Regular Static HTML
- The Page Directive
- Available Packages
- JSP Scripting Elements
- Expressions
- Declarations
- Scriptlets
- Implicit Objects
- The Request Object
- The Out Object
- The Include Directive
- The Include Action
- The Forward Action
- The Param Action
- Cookies
- Handling Errors
- Summary

• Servlet 3.0 Asynch. Support

- º Technical Background
- º Server Side Push Quick Tutorial
- º Server Side Support in Servlet3.0
- º APIs

Introduction to J2EE

- Tiered model architectures – principles and goals
- J2EE definition and characteristics
- J2EE technologies in a multi-tier architecture

Locating objects using JNDI

- Definition and structure of JNDI
- Naming and Directory Services
- Context, initial context and JNDI tree
- Binding and looking up objects

The Java Message Service – JMS

- What are messaging systems?
- Models of messaging:
- The structure of messages

What is and Why Dependency Injection?

- What is and Why CDI (JSR 299)?
- CDI theme – Loose coupling with strong typing
- Bean definition (in the context of CDI)
- Basic dependency injection

- Qualifier
- @Named built-in qualifier
- Stateful objects (scoped objects)
- CDI for Java SE application

Advance topics in J2EE

- Dependency injection
- JTA
- Security
- Exceptions
- Notifications
- Interceptors
- Asynchronous call
- Deployment

EJB & application server

- Persist objects in J2EE using JPA
  - JPA overview
  - JPA architecture
  - ORM
  - using JPA
- Session Beans
  - Stateless Session Bean
  - Statefull Session Bean
- Entity Beans
  - The Persistence Manager and the Abstract Persistence Schema
  - Container Managed Relationships
  - Writing a Home, Remote Primary Key and an Entity Bean class

- º EJB Home methods
- º The EJB Query Language : EJB QL
- º Entity Beans – BMP
- º Entity Beans
  - The Persistence Manager and the Abstract Persistence Schema
  - Container Managed Relationships
  - Writing a Home, Remote Primary Key and an Entity Bean class
  - EJB Home methods
  - The EJB Query Language : EJB QL
  - Entity Beans – BMP

• Message-Driven Beans - MDB
- º Overview – JMS in EJB 2.0 and Message-Driven Beans
- º Developing and deploying MDB an d Clients

• Advance Topics in EJB3.0
- º Transactions in EJB

• JTA & other JEE configurations