CORE JAVA SYLLABUS

Introduction to java

Object Oriented Programming

Java Fundamentals

Objects and Classes

Using Java Objects,

Inheritance in Java

Advanced Inheritance and Language Constructs,

Packages,

Exception Handling,

Input/Output Streams,

Core Collection Classes,

Collection Sorting and Tuning,

Inner Classes, Advanced JDBC

Multi Threading

JDBC SQL Programming

RMI Architecture.

J2EE Syllabus

Overview of J2EE Architecture

- Identify the characteristics of different Java Platforms
- Describe J2EE architecture
- Define the role of various J2EE technologies

Introduction Remote Method Invocation

- Identify features of Remote Method Invocation (RMI).
- Identify features of Proxy pattern.
- Identify the entities that participate in the information flow of Remote Method Invocation (RMI).
- Identify the code to set up the server to create a remote object in a Remote Method Invocation (RMI) application.
• Identify the code to set up the client for accessing a remote object in a Remote Method Invocation (RMI) application.
• Identify the method for creation of an activatable remote object application.

Implement server side programming using Servlets
Implement various session management techniques
  • Sessions
  • Creating an Application.cfm Page
  • Cookies
  • Authentication with Session Control

Handle errors and exceptions in Servlets Application
  • basics of Exception Handling
  • exception handling from servlet specification perspective

Implement inter-Servlets Communication
  • Servlet Manipulation
  • Servlet Reuse
  • Servlet Collaboration

Develop JSP Applications
  • Define and implement JSP custom tags
  • Implement JavaBeans in JSP
  • Identify the usage of different design patterns, such as value object, Model view controller, Data Access objects, and Business delegate

Web Application Basics
  • What is a web application?
  • Purpose of Web applications
  • Structure of Web applications

Component Integration and EJB
Database Integration
Web Architecture choices
Connecting servlets to a database
High-level EJB architecture
Roles within Ejb.
Jndi ,
Remote and home interfaces

Struts Architecture
  • MVC and Model 2
  • Command Pattern
  • Jakarta Struts
• More XML, Less Java!
• Action Mappings
• JavaBeans in Struts
• Working with Forms
• Validation
• Presentation Technology
• Tiles

Action Mappings,

• Command Pattern for Web Applications
• ActionServlet
• Action and Action Mappings
• Struts Configuration
• Selecting a Forward
• Global Forwards
• Declarative Exception Handling
• Global Exception Handlers

Forms

• Working with HTML Forms
• Action Forms, a/k/a Form Beans
• Relationship to Input
• Relationship to Actions
• Relationship to the Model
• Relationship to Output
• DynaActionForm and Map-Backed Forms
• Validation
• Coarse-Grained Form Beans

Struts Tag Libraries

• Building View Components
• Struts Tag Libraries
• Attributes and Struts Expressions
• Building Forms
• <html:form>
• <html:text> et. al.
• Forms and Form Beans
• Scope and Duration of Form Data
• Managing Hyperlinks
• Error Messages
• Logic Tags
The JSP Standard Tag Library

- JSTL Overview
- JSP Expression Language
- Core Tags
- Formatting Tags
- SQL Tags
- XML Tags
- Mixing JSTL, EL, Scripts and Actions
- Indexed Properties and Struts HTML Forms

Input Validation

Introduction to Spring

- Java EE: The Good, The Bad, and the Ugly
- Enter the Framework
- Spring Value Proposition
- The Spring Container
- Web Applications
- Persistence Support
- Aspect-Oriented Programming
- The Java EE Module(s)
- Integrating Other Frameworks
- JavaBeans, Reconsidered
- The Factory Pattern
- Inversion of Control
- XML View: Declaring Beans
- Java View: Using Beans
- Singletons and Prototypes

Instantiation and Configuration

- Configuring Through Properties
- Configuration Namespaces
- The p: Notation
- Bean (Configuration) Inheritance
- Configuring Through Constructors
- Bean Post-Processors
- Lifecycle Hooks
- Integrating Existing Factory Code

Introduction to Hibernate

- The Object/Relational Mapping Problem
• JDBC
• The Hibernate Alternative
• Hibernate Architecture and API

Configuring Hibernate

• The Hibernate Distribution
• Required Libraries
• Configuration Files
• hibernate.properties
• hibernate.cfg.xml
• Programmatic Configuration

Hibernate Persistence

• The SessionFactory Interface
• Object States
• The Session Interface
• Transactions
• Session Duration
• The Data Access Object Pattern

Object/Relational Mapping

• O/R Mapping Issues
• The Mapping Vocabulary
• Primary Keys and Identity
• ID Generators
• Mapping Associations
• Unidirectional and Bidirectional Associations
• Managing Cardinality
• Strategies for Mapping Inheritance

The Criteria Query API

• Criteria Queries
• The Criteria Interface
• Using Restrictions
• Windowing Results
• Sorting
• Traversing Associations
• Projections and Aggregates
• Grouping
• Query By Example (QBE)

Hibernate Query Language

• Building HQL Queries
• The Select Clause
• The Where Clause
• Named and Entity Parameters
• Associations and Aggregates
• Bulk Updates and Deletes
• Named Queries
• Using Native SQL

Handling the Client Request: Form Data and HTTP Request Headers
HTTP Status Codes
Session Management in Servlets
Working with Cookies