2013

Yes-M Systems

Java SE / Java EE Training

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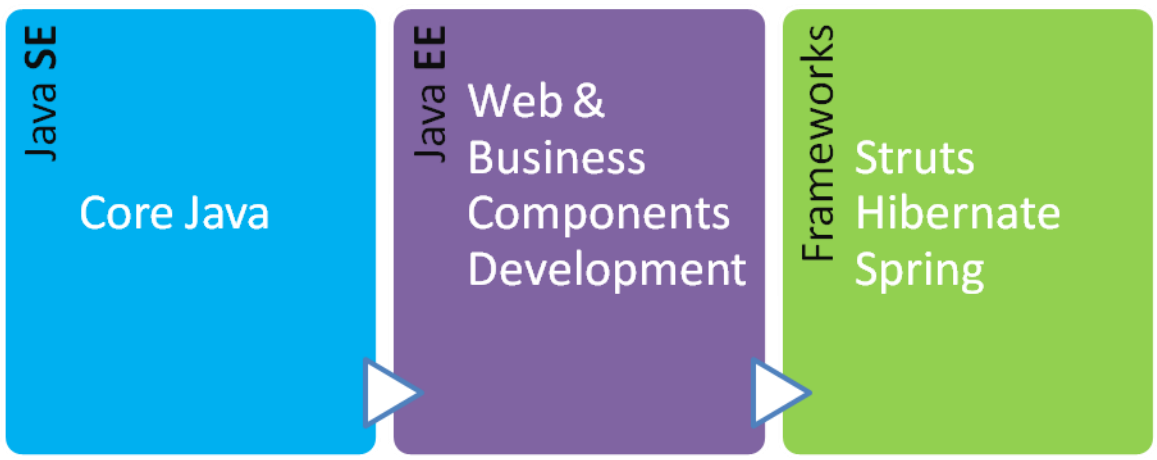
Course developed by SELVARAJ
for **Yes-M Systems**

Training Objectives of Java SE & Java EE

Comprehensive Java SE and Java EE training experience in core Java, Web & Business components development, Java web services and Frameworks which leads aspirants to learn the practical use of Java by creating effective web and enterprise applications.

The full range of Java/J2EE Training, from writing fundamental Java syntax and OO Programming to developing distributed enterprise applications using Object Component Technologies and popular framework technologies.



Java Platform, Standard Edition (Java SE)

- Learning the basics of Java SE Programming
- Learn core Java technologies
  - Understanding Object Oriented Programming Concepts
  - Packages, Thread Programming
  - Collections Framework, I/O Streams.
- Learn how to use IDE for Java application development
  - Use Eclipse Indigo 3.7.1 for Java EE Developers
- Exposure to lots and lots of working examples

Java Platform, Enterprise Edition 5 (Java EE 5)

- Learning Java EE 5 Architecture and Concepts
  - Focused on With Java Web & Business Application Development
- Learning Web Core Technologies: Servlets and JSP
  - Web Application Structure
  - MVC2 (Model-View-Controller) Framework
- Java Data Base Connectivity (JDBC) Architecture
- Web and Business Component Development
- Implementing Struts Validator Framework with MVC2 Architecture
- Object/Relational Mapping with Hibernate
- Understanding Spring Framework Architecture and developing Spring Framework MVC Applications
- Learn how to build and deploy Java Web & Enterprise Applications through hands-on work

Syllabus of Java SE / Java EE

Java Platform, Standard Edition (Java SE)

BASICS OF JAVA

- Introduction to Java Technology
- Java programming Basics
- Introduction to Java Development Tools
- Exploring your Java Class & Compiling and Interpreting Applications

DECLARATIONS & OPERATORS

- Declaring Primitives & Reference Variables
- Java Arrays, Multi-Dimensional Arrays
  Practical (Hands-on Working Examples)
- Using Operators
  Practical (Hands-on Working Examples)

FLOW CONTROL

- Conditional Statements
- Looping Statements
  Practical (Hands-on Working Examples)
- Branching Statements Practical (Hands-on Working Examples)

CLASSES & METHODS

- Declaring Classes
  Practical (Hands-on Working Examples)
- Defining Methods
- Use Static methods, JavaBeans Naming
  Practical (Hands-on Working Examples)
- Develop Constructors
  Practical (Hands-on Working Examples)

OBJECT ORIENTED PROGRAMMING (OOP) CONCEPTS

- Describe Encapsulation, Use Polymorphism & Inheritance
  Practical (Hands-on Working Examples)
- Develop Interfaces, Abstract Classes & Nested Classes
  Practical (Hands-on Working Examples)
- Method Overriding, Overloading & Constructor Overloading
  Practical (Hands-on Examples)

PACKAGES

- Defining and Importing packages
- Access and non-Access Specifiers
  Practical (Hands-on Working Examples)
- Explore java.lang package - Using String & Wrapper classes
  Practical (Hands-on Working Examples)

EXCEPTION HANDLING

- About Java Exception Handling & Exception Hierarchy
- Using try-catch Blocks
  Practical (Hands-on Working Examples)
- "throws" keyword, throwing an Exception & "finally" Statements
  Practical (Hands-on Working Examples)

THREADS

- Introduction to Java Multithread Programming
- Creating a Thread – Implementing Runnable & Extending Thread
  Practical (Hands-on Working Examples)
- Creating Multiple Threads
- Java – Thread Synchronization
  Practical (Hands-on Working Examples)
- Interthread Communication
  Practical (Hands-on Working Examples)

COLLECTIONS FRAMEWORK

- Introduction to Collection classes & Interfaces
- Core Collections Interfaces: List, Set & Map
- Collection Classes – Lists, Sets, Maps & Using an Iterator
  Practical (Hands-on Working Examples)
- Storing User-defined classes in Collections
- Legacy Classes & Interfaces: Enumeration, Vector & Hashtable
  Practical (Hands-on Working Examples)

I/O STREAMS

- An overview of the java.io package
- Byte Stream Classes - Byte Arrays, File I /O & Buffering
  Practical (Hands-on Working Examples)
- Character Stream - Char Arrays, File I /O & Buffering
  Practical (Hands-on Working Examples)
- Serialization using the java.io package
  Practical (Hands-on Working Examples)

Java Platform, Enterprise Edition 5 (Java EE 5)

Core Java EE

Java EE OVERVIEW

- Java EE 5 Platform Overview
- Java EE Platform - Distributed Multi tiered Applications
- Java EE – Web & Business Components
- Java EE Containers – services & types
- Java EE Application Assembly & Deployment - Packaging Applications, Java EE modules
- Getting Started with Web Applications
- Model View Controller (MVC)2 Architecture & Packaging EJB Module

APPLICATION DEPLOYMENT

- Web application development and deployment Steps
- Configuring Web application – Web application deployment descriptor (web.xml file)
- Web Application Archive (*.WAR file) – *.WAR directory structure
- Building & Deploying Applications, Ant build tool

Advanced Java EE - Web & Business Components Development

SERVLETS

- Servlet Overview
- Life cycle of Servlet
- Handling Client HTTP Request & Server HTTP Response
  Practical (Hands-on Working Examples)
- Initializing Parameters & ServletContext
  - Initializing a Servlet
  - ServletContext initialization Parameters
  - ServletContext Attributes (Context binder)

Practical (Hands-on Working Examples)
- Session Management, Request Dispatcher & Redirecting
  Practical (Hands-on Working Examples)

JSP

- Overview of JSP
- JSP Architecture & life cycle
- Components of Java Server Pages
  Practical (Hands-on Examples)
- Implicit Objects & Standard JSP Tags
  Practical (Hands-on Working Examples)
- Scope of JSP objects
  Practical (Hands-on Working Examples)

JDBC

- JDBC Overview & Architecture
- Step By Step Usage of JDBC API
- Connecting to Oracle 10g XE Database in Java
  Practical (Hands-on Working Examples)
- Prepared Statement & JDBC Transactions
  Practical (Hands-on Working Examples)

Developing Web Application with Oracle 10g XE /MySQL Database by implementing Java Beans, DAO's & MVC2 Architecture

Enterprise Java Beans (EJB 3.0)

- EJB 3.0 overview & Architecture
- Features of EJB 3.0
- About Session Beans
- EJB 3.0 Persistence Programming Model
- Java EE Application Assembly and Deployment - Anatomy of EJB Module & Packaging
- Java Persistence API
- Designing a Java Enterprise Application

Developing EJB3 Module using Stateless, Stateful Session Beans & Entity Beans. And creating an Enterprise Application Project using Eclipse Indigo 3.7.1 + JBOSS 7.1.0 + MySQL 5.5

Frameworks

STRUTS2 FRAMEWORK

- Struts2 Basics & Architecture
- Struts Request Handling Life Cycle
- Struts2 Configuration, Struts2 Actions, Struts2 Interceptors, Struts2 Results, Struts2 Value Stack/OGNL
- Practical (Building Struts2 Framework Application)

- Struts2 Tag Libraries
- Struts2 XML Based Validations
  Practical (Building Struts2 XML based Validation Application)
- Struts2 Database Access

HIBERNATE

- Introduction to Hibernate, ORM Overview, Hibernate Environment
- Hibernate Architecture & API, Hibernate Configuration, Hibernate Sessions, Persistent Class & Mapping Files

- Building Hibernate application, Hibernate Query Language (HQL)
- Hibernate O/R Mappings – Collection & Association Mappings

- Many-to-One
- One-to-One
- One-to-Many
- Many-to-Many

Implementing Hibernate in Java Web Applications using Eclipse Indigo 3.7.1 + JBOSS v7.1.0 with MySQL 5.5

- Hibernate Annotations

SPRING

- Introduction to Spring Framework Architecture
- Bean Definition, Bean Scopes & Bean Definition Inheritance
- Spring IoC Containers, Understanding inversion of control (IoC) - *Dependency Injection (DI)*

- Spring Setter Injection**,** Spring Constructor Injection
- Ioc in Action

- Architecture of Spring Web MVC Framework
- Spring MVC Getting Started – constructing web MVC application using Spring Framework, AbstractController in Spring MVC
- Spring MVC Controllers hierarchy
- SimpleFormController, Spring DAO design pattern

Building Spring MVC Framework Applications by using Eclipse Indigo 3.7.1 + JBOSS v7.1.0

Software Tools

Platform & Standards:

- Java Platform, Standard Edition (Java SE) 7 version
- Java Platform, Enterprise Edition (Java EE) 5 version

- **JDK:** Java SE Development Kit (JDK) 7 Update 09 including private JRE 7 update 09 for Windows / JDK 7.0

- **Developer Tool or IDE:** Eclipse Indigo IDE for Java EE Developers (3.7.1)

- **Application Server:** JBOSS Application Server 7.1.0 Final / WASCE 3.0.0.2

- **Database Server:** MySQL Server 5.5 / Oracle 10g Express Edition

Training Process