

Advanced and New Features of Hibernate 4 for enhancing performance of application.

Workshop Details:

Duration :	3 Days
Objectives and Take Away :	Working on DAO layer using Hibernate's advanced and new features for improving performance, reliability and scalability. Take away: Smooth implementation of Hibernate with its performance aspect in design of DAO layer.
Participants' Entry Profile :	Participants must have good knowledge of the Object Oriented Programming language Core Java Should have worked Java Database Connectivity JDBC and RDBMS concepts ,SQL-Joins Advisable to have gone through Hibernate Level 1. Skill of following technologies will get added advantage- JPA, Spring JDBC
Training Methodology:	The workshop will follow Synergetics methodology of Concept Visualization Active Experimentation Application Development The workshop will be 100% Hands-On with each participant having access to system during the session

Setup Requirements

Hardware and Software Requirements :	Participant's as well as Trainer's Machine are required to have : Hardware Intel Core i3 2.2 GHz LCD Color Monitor 2 GB RAM LAN Connectivity Software Windows XP or 7 Internet Explorer 10 or above/Chrome/Firefox Java SDK 1.7.x Tomcat 7.0/GlassFish 3.2.x/JBoss 7+ Hibernate 4.3.x All Jar JDBC Driver for Oracle (ojdbc6.jar) Oracle 10g or higher/SQL Server 2008 onwards Eclipse 4.0.x onwards(Must match with bit architecture of machine) Jboss tools from eclipse market place <ul style="list-style-type: none"> • The installable must match in bits of the machine. • A shared disk-space among participants and trainer for trainer to share training stuff with participants. • Internet connection to fetch maven dependencies .
Training Lab Requirements:	Whiteboard 6 feet by 4 feet (minimum) Whiteboard markers – Red, Blue, Green, Black Video Projector (1024 X 768 resolutions)

Pre-requisite for training

A skill-set equivalent to Synergetics-Hibernate 4- An ORM Tool(L1_06_Hiber4)

- JDBC, JDBC Wrapper and ORM tools
- Features and benefits of ORM tool?
- Differences between Hibernate & JPA
- The Hibernate architecture and its configuration
- Service Registry for building session factory
- Using Apache Maven for Resolving Hibernate Dependencies
- Annotations in general and for mapping beans
- The Object lifecycle
- Different Hibernate Inheritance strategies
- Different Hibernate Association strategies
- Querying a database using HQL
- Different types of queries.

Course Content

Day 1	<ul style="list-style-type: none"> ➤ Module 1: Transactions In Hibernate <ul style="list-style-type: none"> ▪ Understanding Database transactions ▪ JDBC & JTA Transactions ▪ Hibernate Transaction API ▪ Using JTA for distributed transactions ▪ Flushing the Session ▪ Isolation Levels ➤ Module 2: Hibernate for querying information <ul style="list-style-type: none"> ▪ Query By example ▪ Native query ▪ Joined queries ➤ Module 3: Pessimistic & Optimistic Locking <ul style="list-style-type: none"> ▪ Using Pessimistic Locking ▪ Optimistic Locking ▪ Using Timestamp ▪ Using Versioning ➤ Module 4: Hibernate Statistical support and Loggers <ul style="list-style-type: none"> ▪ Hibernate interfaces for different statistics ▪ Hibernate Statistic API ▪ Configuring and enabling statistics ▪ Understanding Log4J ▪ Configuring Log 4J ▪ Logging Hibernate messages into Logger
Day 2	<ul style="list-style-type: none"> ➤ Module 5: Caching In Hibernate <ul style="list-style-type: none"> ▪ Hibernate Cache Architecture ▪ First Level Cache ▪ Second Level Cache ▪ Concurrency Strategies ▪ Cache Providers ▪ Configuring second level cache with EHCACHE ➤ Module 6: Batch processing

	<ul style="list-style-type: none">■ Why need batch updates?■ Performance issue with heavy updates in persistent objects■ Executing updates directly in data base <p>➤ Module 7: Data filtering</p> <ul style="list-style-type: none">■ Data filtering for security■ Designing and configuring filter■ Enabling and disabling filters■ Utilizing filtered data at client side <p>➤ Module 8: Multi Tenancy in Hibernate</p> <ul style="list-style-type: none">■ What is Multi-Tenancy■ Multi-Tenancy Strategies■ Strategies available in Hibernate 4
Day 3	<p>➤ Module 9: Interceptors and Listeners/Events</p> <ul style="list-style-type: none">■ Interception overview and scopes of interceptors■ Creating and configuring interceptors■ Why listeners? Listener support in Hibernate■ Creating and configuring custom listeners■ Applications of listeners <p>➤ Module 10: Hibernate support for Data Centric approach</p> <ul style="list-style-type: none">■ Why and when data centric approach?■ Triggers and setting them up■ Configuring and defining stored procedures/functions■ Handling in, out/in-out parameters■ Handling cursor <p>➤ Module 11: Achieving dynamism in Hibernate</p> <ul style="list-style-type: none">■ Using java.util.Map for data handling■ Using XML for data handling■ Hibernate API for altering context