

HIBERNATE

1. Introduction to Hibernate

- Issues with Persistence layers and object-Relational Mapping (ORM)
- Hibernate overview and Benefits
- Hibernate architecture overview
- PoJo (Plain old Java object) Based Mapping

2. Getting started with Hibernate quickly

3. Querying

- Inserting and Updating Entities
- HQL - Hibernate Query Language overview
- The Query Interface
- Creating and working with queries
- Named Queries, Projection Queries, Aggregate Queries

4. The Persistence Lifecycle

- Transaction overview and Transactions in Hibernate
- Hibernate Transaction API (in Managed and Non-managed Environments)
- The lifecycle of managed objects
- Persistent, transient, and detached object
- The Persistence (Session) Context (Lifespan, Relation to Managed objects, Propagation)
- Contextual Sessions
- Synchronization to the Database
- The Session as cache

5. optimistic Locking / Versioning

- Detached objects and optimistic Locking
- Versioning overview and Using Versioning
- Locking objects

6. Relationships

- object Relationship overview
- Mapping Collections of Value objects
- Entity Relationships: 1-N, N-1, N-N, 1-1
- Mapping Entity Relationships
- Uni and Bi-directional Relationships
- The Relationship "inverse"
- Cascading over Relationships
- Queries Across Relationships (Lazy and Eager)

7. Inheritance Mapping

- Entity Inheritance with Hibernate
- Table-per-class mapping
- Table per Subclass mapping
- Table per Concrete Class mapping

8. Additional Querying Capabilities

- Projection Queries, Aggregate queries

- Bulk updates and deletes
- Native SQL Queries
- Query Filters

9. The Criteria API

- overview of the Criteria API
- Working Querying with the Criteria API
- Query by Example

10. Hibernate and Java Persistence / EJB 3

- overview of Java Persistence / EJB 3
- Relationship between Java Persistence and Hibernate
- overview of Annotations
- Mapping Entities with Hibernate Annotations
- The EntityManager, Persistence Context and Persistence Unit
- Working with Transactions - EntityTransaction, Managed, and Unmanaged Environments
- Inserts and Updates
- JPQL - Java Persistence Query Language
- Versioning
- Relationships

11. Advanced Topics

- Components and Multi-Table Mapping
- equals() and hashCode()
- Caching and Efficiency
- Design Considerations

12. Conclusion

