

Hibernate Course Overview:

Object Persistence

- Object/Relational Paradigms
- O/R Mismatch
- Object Relational Mapping (ORM)
- Java ORM/Persistent Frameworks

Hibernate Architecture

- Hibernate Architecture and API
- Hibernate Installation/Setup
- Configuration
- Configuration Properties
- Mapping Files

Persistent Classes

- POJOs
- JavaBeans
- Basic Mapping
- Class to Table Mappings
- Property Mapping
- Identifiers
- Generators
- Natural Keys
- Identifier Exposure
- Quoting SQL Tables and Columns

Working with Persistent Objects

- Entity Lifecycle
- Transient State
- Persistent State
- Persistent Object Updates and Automatic Dirty Checking
- Detached State
- Deleted
- Object Identifiers Revisited
- Merge

Components

- Domain Model
- Entities and Values
- Components

Associations

- Many-to-one
- Bidirectional Many-to-one
- Other Collections
- Many-to-one List
- Many-to-one Map
- Many-to-one Bag
- Many-to-one Array

Other Associations

- One-to-one
- Bidirectional One-to-one
- Many-to-many
- Bidirectional Many-to-many
- Many-to-many Identifier Bag

Value Type Collections

- Collections of Value Types
- Collections of Components
- Sorting Collections

Inheritance

- Inheritance Mapping Strategies
- Table per concrete class
- Table per subclass
- Table per hierarchy
- Inheritance Mapping Pros/Cons
- Polymorphism
- Table per concrete class with unions
- Choosing an Inheritance Strategy

Transitive Persistence

- Lazy Loading
- Proxies
- Eager Loading
- What's a Proxy?
- Detached Objects and Proxies
- Polymorphic Associations Revisited

Custom Mapping

- Custom Mapping Types
- UserType
- Enumerations

HQL

- Hibernate Object Fetching Options
- Hibernate Query
- HQL Parameters
- Named Queries
- Native SQL

Criteria

- Restrictions
- Query By Example
- Scrolling
- Pagination
- Query Hints
- Query Option Pros/Cons

Transactions and Concurrency

- The Java Transaction
- Hibernate Transaction Configuration
- Hibernate Transaction API
- Concurrency
- Isolation Levels
- Optimistic Locking
- Versioning
- Optimistic Locking without Versioning
- Pessimistic Locking

Appendix A – Fetching Strategies

- N+1 Selects
- Join Fetching
- Subselect Fetching
- Batch Fetching
- Queries and Fetching Strategies
- Cartesian Product Problem

Appendix B – Cache

- The promise of Cache
- Hibernate Caching Architecture
- First Level Cache
- Second Level Cache
- Cache Concurrency
- Configuring Second Level Cache
- Cache Regions
- Eviction

Appendix C – Annotations

- Metadata
- Annotations Pros/Cons
- Configuring Hibernate Annotations
- EJB3/JPA Annotations
- Entity Annotations
- Embedded Object (Component) Annotation
- Inheritance Annotations
- One-to-one Association Annotations
- Many-to-one Association Annotation
- Many-to-many Association Annotation
- Query Annotations
- Hibernate Annotations