Hibernate and JPA

**Introduction to ORM**

* What is ORM?
* Problems with JDBC
* Introduction to JPA specification
* Introduction to Hibernate

**Implementing Hibernate and JPA**

* Basic Annotations for mapping
  + @Entity
  + @Table
  + @Column and @Id
* Setting up EntityManager
* Setting up SessionFactory in Hibernate 5
* Hibernate configuration file (hibernate.cfg.xml)

**CRUD operation**

* save() and persist() methods
* get() and load() methods
* merge(), update() and saveOrUpdate() methods
* delete() method
* State of objects in hibernate
  + Transient
  + Persistent
  + Detached
* Practical example

**ID Generators**

* Different types of ID generator
* Creating custom ID generator
* Practical example

**Component Mapping**

* @Embeddable
* @Embedded
* @ElementCollection and @JoinTable
* Practical example

**Inheritance Mapping**

* Types of Inheritance Mapping
  + Single Table
  + Table per subclass
  + Table per concrete class
* Practical example

**Association Mapping**

* Types of associations
  + One-to-one
  + One-to-many
  + Many-to-one
  + Many-to-many
* Practical example

**Hibernate Query Language (HQL)**

* Introduction to HQL
* getResultList() method
* executeUpdate() method
* Positional parameters vs named parameters
* Hibernate named queries =>s @NamedQueries and @NamedQuery
* Practical example

**Criterial API**

* Introduction to Criteria API
* Creating CriteriaQuery using CriteriaBuilder object
* Root object
* getResultList() and getSingleResult()
* Practical example