# JDBC\_JPA\_Hibernat PREP

Q - What is JPA ?

Ans - Java Persistence API. Aim to simplyfy DB operations for Java developers using ORM (Object Relational mapping).

a. Its POJO based b. XML Configuration or annotation based configuration c. Built around patterns and best practices d. JPA removes lots of boilerplate code e. Spring handles the configuration part

We are following Spring and Hibernate course on pluralsight.com and name of application we are building is Scaffold appli cation.

This particular application is using Java 7 and Tomcat 7

JPA is an abstraction layer for database.

persistence.xml file - this is the file where we define datasource, also define allowed transactions, caching etc. This file is used in the non-spring projects. In spring based project also we will use this file, however it will be empty. Location of this file will be, src/main/resources/META-INF/persistence.xml. we use persistence.xml file in "Spring JPA with Hibernate" project, we just mention "persistence-unit" in the persistence.xml. Below is the example of sample entry in the persistence.xml file.

<persistence-unit name=*"punit"*>

</persistence-unit>

When We will use jpaContext.xml instead. whatever we usually put in persistence.xml will go in the jpaContext.xml file.

Entity Manager Factory - LocalContainerEntityManagerFactoryBean. Very important point to note that "ORM was invented to bridge the gap between object oriented programming language like java and relational databases like oracle, mysql for example.

A very important question or say discussion

Hibernate directly or JPA using Hibernate ??? ..ok so JPA using Hibernate is more safe or say better approach...as this gives option to switch JPA vender if needed. Below are some important annotations used @PersistenceContext, @Service, @Repository, @Transactional. Essentially there are 4 type of joins

@OneToOne, @OneToMany, @ManyToOne, @ManyToMany. These can be used in various configurations. Thease are Unidirectional, Bidirectional and Cascade. Remember that there are 2 types of fetch types, FetchType.LAZY and FetchType.EAGER. Lazy -Queries the database when that property is called. EAGER - Queries the database when Object is created. Do you know full form of JPQL - JPQL stands for "Java Persistence Query Language". This is one of the touughest concept of while learning Hibernate.

Tanay pronouncing JPA as "japa" is the most funniest part

Q - Write about jpaContext.xml file.

Ans - Below are some important points on jpaContext.xml file,

* Used in place of persistence.xml
* Doesn't have to be named as jpaContext.xml, rather its an industry standard now.
* jpaContext.xml file is loaded from classpath
* Location of this file is "src/main/resources/jpaContext.xml"
* Important things that it contains are,
  + EntityManagerFactory
    - Jpa Vendor
    - Jpa Properties
  + Transaction Manager
  + Annotation configuration
  + Datasource configuration / lookup

One thing to note that if we are using spring STS then we should create new file (jpaContext.xml) in this case from STS (option - File - New - Spring Defenition file). This way we get option of adding required namespaces very easily in the jpaContext.xml file.

Q - What is meaning of below xml definition in jpaContext.xml ?

Ans - <context:annotation-config></context:annotation-config>

Above annotation means that we want to configure rest of our spring configuration using annotations.

Q - What is use of "*org.springframework.orm.jpa.support.PersistenceAnnotationBeanPostProcessor" bean, which is typically defined in the jpaContext.xml file ?*

*Ans- By defining this bean we tell spring that please use @PersistentContext annotation.*

*Q - What is entity manager factory ?*

*Q - What is a JPA ?*

*Ans - JPA is a just an specification. This is thought of as an Object Relational Mapping Tool (ORM). JPA is a specification for accessing,persisting and managing data between Java objects and classes and a relational database. Few additional important points are,*

* JPA is not SQL
  + It uses JPQL instead. JPQL means "Java Persistence Query Language"
* There is heave focus on POJO

Q - What are different possible values of *hibernate.hbm2ddl.auto ?*

*Ans - Different possible values of hibernate.hbm2ddl.auto are,*

* create
* create-drop
* update
* validate
* none

Just important to note that there is something called HQL also. HQL stands for "Hibernate Query Language".

Hibernate is just an another layer of abstraction on top of JDBC. So basically internally hibernate uses JDBC only. So in the background its JDBC api which is getting called.

Q. Write down steps for setting up Hibernate in Eclipse ?

Ans - Below are the steps which needs to be done,

* Create Eclipse project
* Download Hibernate files
* Download MySQL JDBC Driver
* Add JAR files to the Eclipse project ...i.e Build Path

ok so we have completed above steps successfully.

Q. What are steps for Hibernate Development Process Overview ?

Ans - Below are the steps on high level,

* Add Hibernate configuration file
* Annotate Java class
* Develop Java code to perform database operations

Below are the two key players in JPA/Hibernate programming,

* SessionFactory
* Session