

1 – What is JPA ?

JPA literally means Java Persistence API. JPA is used to store, find, retrieve, delete and update data. It is a Java ORM specification.

2 - What is the naming convention for finder methods in the Spring data repository interface ?

This is another key feature of Spring Data JPA API which makes writing query method really easy. The finder method should use a special keyword, i.e. "find", followed by the name of the variable. For example, `findByLastName()`.

3 - What is PagingAndSortingRepository ?

`PagingAndSortingRepository` is an extension of `CrudRepository` to provide additional methods to retrieve entities using the pagination and sorting abstraction. It provides two methods :

Page `findAll(Pageable pageable)` : returns a Page of entities meeting the paging restriction provided in the Pageable object.

Iterable `findAll(Sort sort)` : returns all entities sorted by the given options. No paging is applied here.

4 - Differentiate between `findById()` and `findOne()` ?

The `findOne()` method returns the reference of the object of the given id. Invokes the `EntityManager.getReference` method. It doesn't always go to the database. If the Entity is not in the database, it throws `EntityNotFoundException`. On the other hand, `findById()` goes to the database every time it is called. Retrieves the object from the database. Returns null if the object does not exist in the database.

`findOne()` fetches the reference of the target, while `findById` actually fetches the given id. `findOne()` is faster in terms of performance. If `findOne()` does not have an object in Database, `EntityNotFound` is thrown, while `findById()` returns null.

5 - What is @Query used for ?

It is the process used to retrieve information from the database. It also allows us to access all or some of the information in the database. It allows us to use our data more effectively. For example, it has the option to list only 2 features out of 10 tables. It allows us to get the data we want from the database.

6 - What is lazy loading in hibernate ?

For example, the customer entity and the address entities associated with the customer. I want the information of the customer table, but I do not want the address information to come. Or I want to display address information under certain conditions. In this case, the name of the structure we use is lazy loading. In other words, when the actual object is called, the associated object does not come.

7 – What is SQL injection attack ? Is Hibernate open to SQL injection attack ?

SQL injection is also known as SQLi. It is a hacking technique that makes it possible to bypass web page and web application security measures. Those who use this hacking method can pull, change

and delete information in the Sql database. Hibernate is vulnerable to SQL attacks. Hackers can abuse APIs however they want.

8 - What is criteria API in hibernate ?

The Criteria API is used to define queries for entities and their persistent state by creating query-defining objects. Criteria queries are written using Java programming language APIs, are typesafe, and are portable. Such queries work regardless of the underlying data store.

9 - What Is Erlang? Why Is It Required For Rabbitmq ?

The Erlang programming language is a general-purpose, concurrent, and garbage-collected programming language that also serves as a runtime system. RabbitMQ is a fast messaging queue structure that is developed as open-source with Erlang language and can be built on the Open Telecom Platform library, which is increasingly popular for today's server-to-server/app-to-app communication needs.

10 – What is the JPQL ?

A language that the JPA standard defines on querying Entity objects. JPQL is very similar to HQL (Hibernate Query Language). Although these languages are almost similar to SQL (Structured Query Language), the arguments they use are Entity objects instead of database tables. The purpose of using JPQL is to use classes instead of tables and to minimize SQL syntax differences between database management systems.

11 – What are the steps to persist an entity object ?

There is 7 steps to persist an entity object.

- First we are creating an entity manager factory object.
- Then Obtaining an entity manager from factory.
- Initializing an entity manager.
- Persisting a data into relational database.
- closing the transaction.
- Releasing the factory resources.

12 – What are the different types of entity mapping ?

There are three types of entity mapping.

- **One-to-one:** A row of data in one table corresponds to a row of data in another table.
- **One-to-many:** Relationships between tables are also the most common type of relationship. A row of data in one table corresponds to more than one row of data in another table.
- **Many-to-many :** the most complex type of many-to-many relationship. In this type of relationship, two tables have more than one link. It is when one row of data in two tables coincides with more than one row of data mutually.

13 - What are the properties of an entity ?

- **Persistability:** This is how the entity stored in database is called.
- **Persistent Identity:** This identity is equivalent to primary key in database
- **Transactional:** An entity can perform crud operations like create,delete.
- **Granularity:** Entities should not be primitive.

14 - Difference between CrudRepository and JpaRepository in Spring Data JPA?

JpaRepository extends PagingAndSortingRepository which in turn extends CrudRepository. Their main functions are:

- CrudRepository mainly provides CRUD functions.
- PagingAndSortingRepository provides methods to do pagination and sorting records.
- JpaRepository provides some JPA-related methods such as flushing the persistence context and deleting records in a batch.

Because of the inheritance mentioned above, JpaRepository will have all the functions of CrudRepository and PagingAndSortingRepository. So if you don't need the repository to have the functions provided by JpaRepository and PagingAndSortingRepository, use CrudRepository.