1 - What is JPA ?

JPA is Java Persistence API, a set of concepts which enables created java objects to survive even when the app is shut down. It was intended to be used on SQL databases but can work with NoSQL datastores as well.

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

Default Naming Convention: Use variable and class names directly in database.

RDMS Case-Sensitivity: Table and Column names are case sensitive. If you are using lower case or upper case, you can use " " and it will work as long as both table and column names are used in same case.

Custom Naming Convention: To change lower case varaibles to upper case database tables, you need to either manually use .toUpperCase() or add spring.jpa.hibernate.naming.physical-strategy in application.properties.

3 - What is Paging And Sorting Repository ?

Paging and sorting is mostly required when we are displaying domain data in tabular format in UI. Paging consists page size and page number. Sorting is done on single of multiple fields in the table.

4 - Differentiate between findById() and getOne() ?

Both used to bring an object from a datastorage. getOne() checks reference from repository interface, while findById actually hits the database and return real object mapping.

5 - What is @Query used for ?

The @Query is an annotation that declares finder queries directly on repository methods. While similar @NamedQuery is used on domain classes, Spring Data JPA @Query annotation is used on Repository interface. Domain class becomes free from the persistence specific information.

6 - What is lazy loading in hibernate ?

Lazy Loading is a design pattern that we use to defer initialization of an object as long as it's possible. Hibernate applies lazy loading approach on entities and associations by providing a proxy implementation of classes. Lazy Loading has advantage of smaller initial load time and relatively less memory consumption. But this may lower initialization performance or give errors.

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

SQL injection attack is when the hacker abuses the information entry point of database (this may be a search bar, a browser, a login text box etc), by giving a %100 true contidion to access the database. For example adding OR 1=1 like statements.

There is nothing special about HQL (Hibernates subset of SQL) that makes it any more or less susceptible. Functions such as createQuery(String query) and createSQLQuery(String query) create a Query object that will be executed when the call to commit() is made. If the query string is tainted you have sql injection.

8 - What is criteria API in hibernate ?

The Criteria API allows us to build up a criteria query object programmatically, where we can apply different kinds of filtration rules and logical conditions. Since Hibernate 5.2, the Hibernate Criteria API is deprecated, and new development is focused on the JPA Criteria API

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

Erlang is a functional programming language and a garbage collected runtime systen. RabbitMQ is written in Erlang, the RabbitMQ server is built on the Erlang/Open Telecom Platform framework.

10 - What is the JPQL ?

JPQL is Java Persistence Query Language defined in JPA specification. It is used to create queries against entities to store in a relational database. JPQL is developed based on SQL syntax. But it won't affect the database directly. JPQL syntax is very similar to the syntax of SQL. Having SQL like syntax is an advantage because SQL is a simple structured query language and many developers are using it in applications. SQL works directly against relational database tables, records and fields, whereas JPQL works with Java classes and instances.

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

- Create EntityManagerFactory .
- Create EntityManager using EntityManagerFactory .
- Get Transaction by using EntityManager .
- Call the Transaction's begin();
- Call the EntityManger's persist(Entity);
- Commit the transaction.

12 - What are the different types of entity mapping ?

The One-To-One mapping represents a single-valued association where an instance of one entity is associated with an instance of another entity. In this type of association one instance of source entity can be mapped atmost one instance of target entity.

An order consists of multiple items, but each item belongs to only one order. That is a typical example for a many-to-one association. If you want to model this in your database model, you need to store the primary key of the Order record as a foreign key in the OrderItem table.

Many-to-Many relationships are another often used association type. On the database level, it requires an additional association table which contains the primary key pairs of the associated entities. But as you will see, you don’t need to map this table to an entity.

13 - What are the properties of an entity ?

- Persistability - An object is called persistent if it is stored in the database and can be accessed anytime.

- Persistent Identity - In Java, each entity is unique and represents as an object identity. Similarly, when the object identity is stored in a database then it is represented as persistence identity. This object identity is equivalent to primary key in database.

- Transactionality - Entity can perform various operations such as create, delete, update. Each operation makes some changes in the database. It ensures that whatever changes made in the database either be succeed or failed atomically.

- Granuality - Entities should not be primitives, primitive wrappers or built-in objects with single dimensional state.

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.