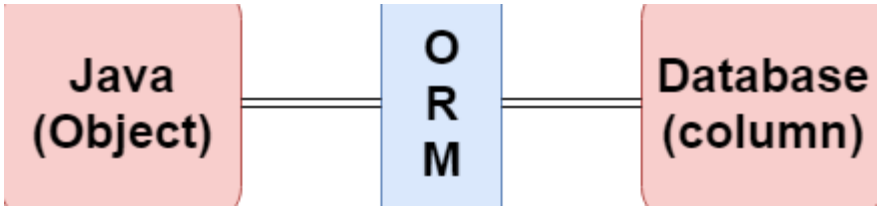
Core Specific- Java Assignment 8

Q1. What is ORM in Hibernate?

Ans:

Object Relational Mapping (ORM) is a functionality which is used to develop and maintain a relationship between an object and relational database by mapping an object state to database column. It is capable to handle various database operations easily such as inserting, updating, deleting etc.



ORM Frameworks

Following are the various frameworks that function on ORM mechanism: -

- Hibernate
- TopLink
- ORMLite
- iBATIS
- JPOX

Q2. What are the advantages of Hibernate over JDBC?

Ans:

The advantages of Hibernate over JDBC are:

- Hibernate code will work well for all databases, for ex: Oracle, MySQL, etc. ...
- No knowledge of SQL is needed because hibernate is a set of objects and a table is treated as an object, where as to work with JDBC, one need to know SQL.
- Query tuning is not required in Hibernate.

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Q3. What are some of the important interfaces of Hibernate framework?

Ans:

The five core interfaces are used in just about every Hibernate application. using these interfaces, you can store and retrieve persistent objects and control transactions.

1. Session interface: This is the primary interface used by hibernate applications. The instance of this interface is lightweight and are inexpensive to create and destroy. Hibernate sessions are not thread-safe.
2. Session Factory interface: This is a factory that delivers the session objects to hibernate applications. Generally, there will be a single SessionFactory for the whole application and it will be shared among the application threads.
3. Configuration interface: This interface is used to configure and bootstrap hibernate. The instance of this interface is used by the application in order to specify the location of hibernate-specific mapping documents.
4. Transaction interface: This is an optional interface but the above three interfaces are mandatory in each and every application. This interface abstracts the code from any kind of transaction implementation such as a JDBC transaction.
5. Query and criteria interface: This interface allows the user to perform queries and also control the flow of the query execution.

Q4. What is a Session in Hibernate?

Ans:

Session is a lightweight object. The session provides physical connectivity between Java application and database. the Session will be established each time the Java application wants to do something with the database. The session object will be provided by the SessionFactory object. All the persistent objects will be saved and retrieved through the Session object. The session object must be destroyed after using it.

The session is used to create, read and delete operations for instances of mapped entity classes. Instances may exist in one of three states:

1. Transient
2. Persistent
3. Detached

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Q5. What is a SessionFactory?

Ans:

sessionFactory is an interface, which contains a session instance from a sessionFactory.there is a single sessionFactory for the whole application created during application initialization.

The sessionFactory caches generate SQL statements and other mapping metadata that Hibernate uses at runtime. It also holds cached data that has been read in one unit of work and maybe reused in a future unit of work.

Syntax:

```
SessionFactory sf=configuration.buildSessionFactory();
```

Q6. What is HQL?

Ans:

HQL stands for a hibernating query language, HQL is an object-oriented language, similar to SQL, but instead of operating on tables and columns, HQL works with persistent objects and their properties

HQL queries are translated by Hibernate into conventional SQL queries.

Q7. What are Many to Many associations?

Ans:

The many-to-many association implies that multiple records of one table are related to multiple records of another table. The joining table will store the primary keys of both related entities. Optionally, this table may contain additional columns.

Q8. What is hibernate caching?

Ans:

Caching in Hibernate refers to the technique of storing frequently accessed data in memory to improve the performance of an application that uses Hibernate as an Object-Relational Mapping (ORM) framework.

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Q9. What is the difference between first level cache and second level cache?

Ans:

First-level cache:

the first level cache is the session cache. It is a mandatory cache through which all requests must pass. The first-level cache in hibernate is enabled by default. we cannot disable the first level.

The first level cache is associated with the Session object. The session object is created from SessionFactory and it is close lost, once the session is closed.it is retrieved from the database and stored in a first-level cache associated with hibernate session.

Second-level cache:

This is an optional Cache that Hibernate provides. Unlike the first-level cache which is accessible only to the session that maintains it, Second-level Cache is accessible to all Sessions. The Second Level cache is by default **disabled**. Hibernate also doesn't provide any caching implementation for that.

Q10. What can you tell about Hibernate Configuration File?

Ans:

Hibernate Configuration File (cfg file) is the file loaded into an hibernate application when working with hibernate. Hibernate uses this file to establish connection to the database server. It is an XML file which is used to define below information. Standard name for this file is hibernate.cfg.