

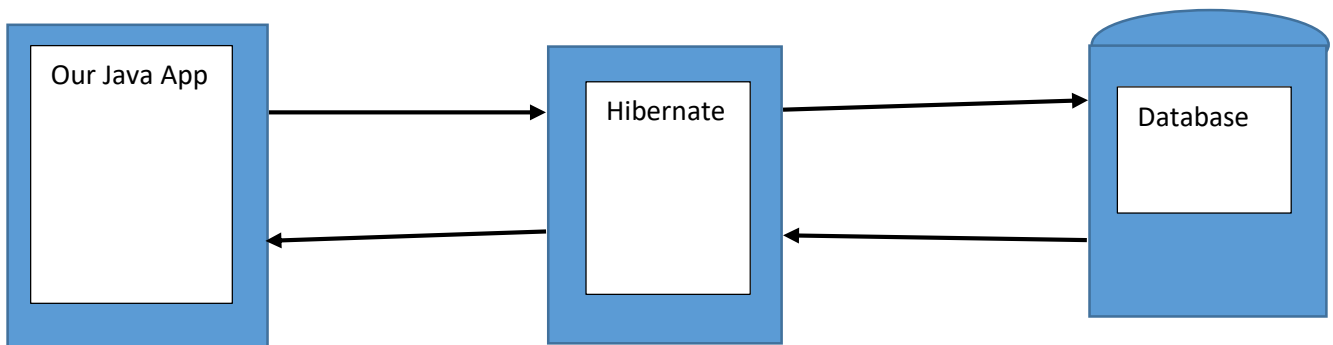
Hibernate/ JPA

Topics:

1. What is Hibernate?
2. Benefits of using hibernate
3. What is JPA?
4. Benefits of JPA
5. Code Snippets

What is Hibernate?

- A framework used for persisting/saving java objects in a database
- We can use it for saving & retrieving data from database.

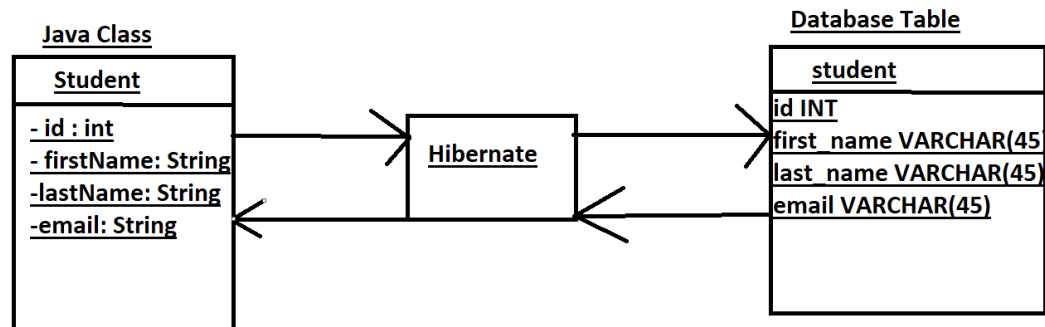


Benefits of Hibernate:

- It handles all of the low-level sql code
- Minimizes the amount of JDBC code we have develop
- Hibernate also provides the Object-to-Relational-Mapping (ORM)

ORM:

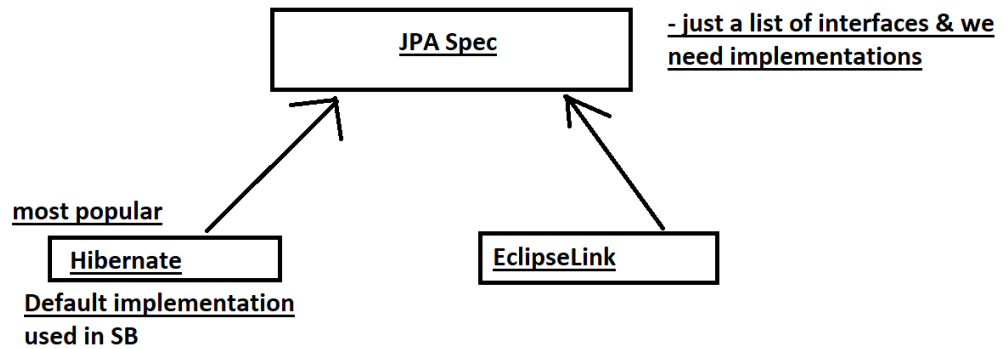
- As a developer all we need to do is tell hibernate how our java class or object maps to the database.



- What we will do is Map this Java class to the given table &
- We set up one-to-one mapping between the fields and actual columns in the database
- You can set up this mapping via configuration file using XML, but we are going to use **Java Annotations**

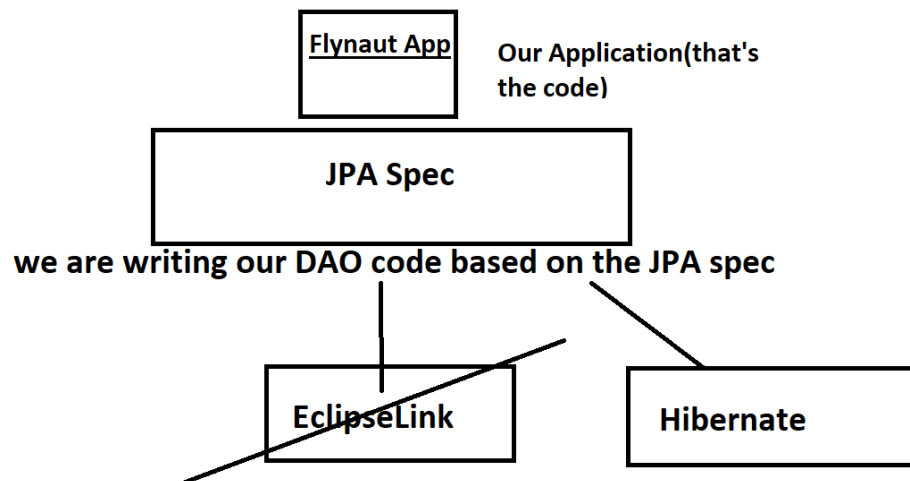
What is JPA?

- Jakarta-Persistence-API previously known as Java Persistence API
- Standard API for Object-to-relational Mapping
- Only a Specification
 - Defines a set of interfaces
 - Requires an implementation to be usable
- JPA-vendor implementations



What are benefits of using JPA?

- By having standard API, we are not locked to vendors implementations.
- Can theoretically switch vendor implementations
-Ex. If Vendor ABC stops supporting their product
We can switch to another vendor
- Example of swapping vendor implementations



- Simply by changing the configuration we can change the vendor.

Terminologies of JPA*

Quick Example:

Saving a java object with JPA

```
// Create a java object
```

```
Student theStudent = new Student( "Krishna", "Jain",  
"k@gmail.com" );
```

```
//save it to db
```

```
entityManager.persist(theStudent);
```

Special JPA helper object

- BTS hibernate is the implementation of JPA
But here JPA with the hibernate does all the work for us in background.
- Retrieving a java object with JPA

```
//create java object  
//save it to db  
//now retrieve from db using primary key  
int theId=1;  
Student myStudent=entityManager.find(Student.class,theId);
```
- JPA/Hibernate CRUD Apps
 - Create objects
 - Read objects
 - Update objects
 - Delete objects
- Relation of Hibernate/JPA and JDBC

How does JPA relate to JDBC?

 - Hibernate/JPA uses JDBC for all the db communications.

Setting Up SB project:

1. `Start.spring.io`
2. Add dependencies (MySQL driver, Spring Data JPA)
3. Generate