What is Hibernate?

* A framework for persisting/ saving Java objects in a database.

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Database

Hibernate

Java App

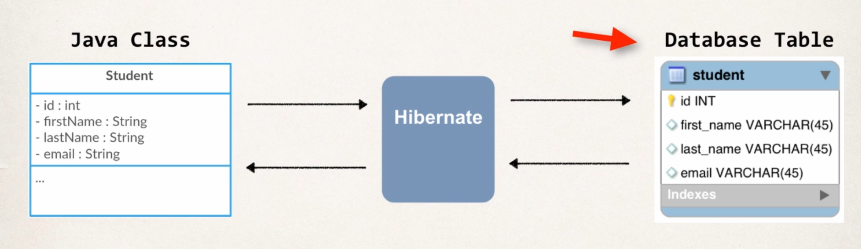
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**Benefits of Hibernate**

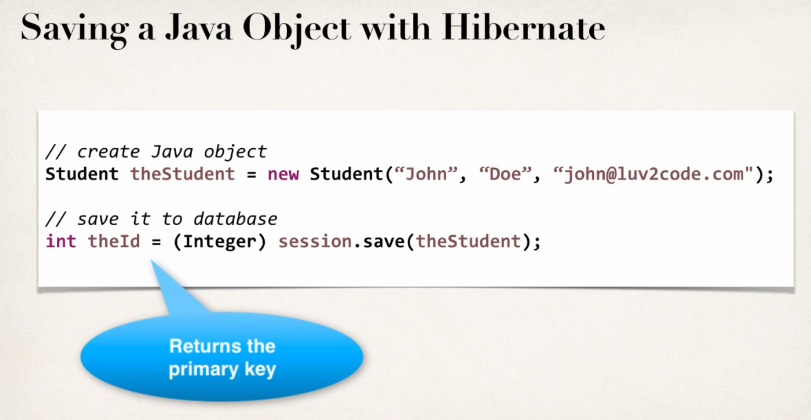
* Hibernate handles all of the low-level SQL
* Minimizes the amount of JDBC code we have to develop
* Hibernate provides the Object-to-Relational Mapping (ORM)

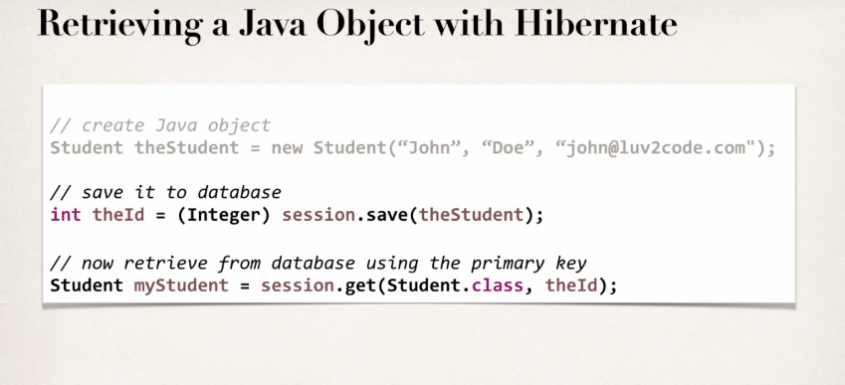
**Object-To-Relational Mapping (ORM)**

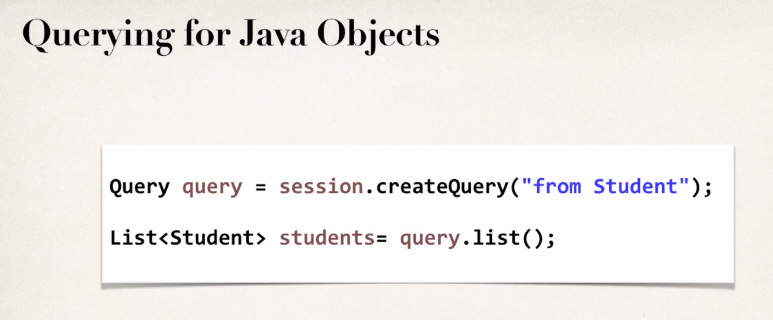
The developer defines mapping between Java class and database table.



All this mapping can be set up via a configuration file using XML or Java Annotations

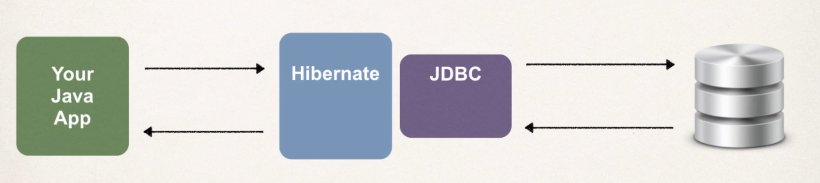






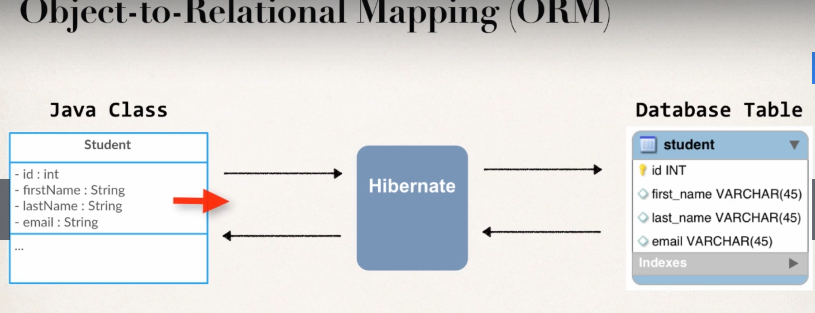
Hibernate and JDBC

Hibernate uses JDBC for all database communications. Hibernate uses JDBC in the background.



**Entity Class**

Java class that is mapped to a database table. Basically, a plain old java class with getters and setters, constructors. With annotations to help in mapping to the database.



**Java Annotations**

1. Map class to db table
2. Map fields to db columns.

**Hibernate Dev Process**

1. Add Hibernate Configuration file – XML Config file (legacy)
2. Annotate Java Class – Java Annotations (modern and preferred)
3. Develop Java Code to perform database operations.

**Two key players**

|  |  |
| --- | --- |
| Class | Description |
| SessionFactory | Reads the hibernate config file  Creates Session objects  Heavy -weight object  Only create once in the app |
| Session | Wraps a JDBC Connection  Main object used to save/retrieve objects  Short-lived object  Retrieved from SessionFactory |

1. **Hibernate Configuration File (hibernate.cfg.xml)**



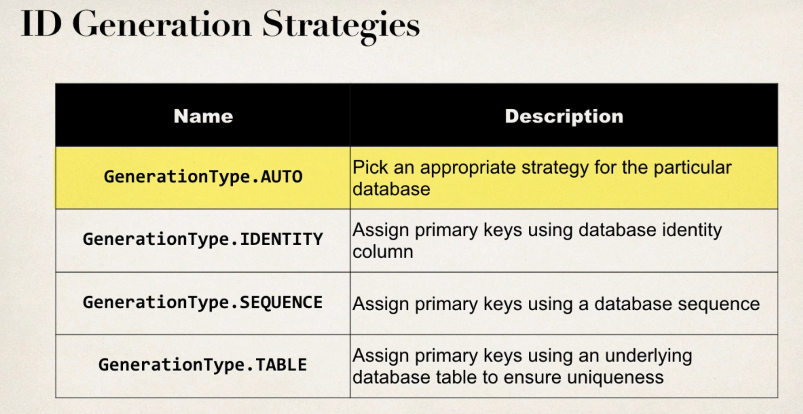
1. Adding annotations to Entity Class



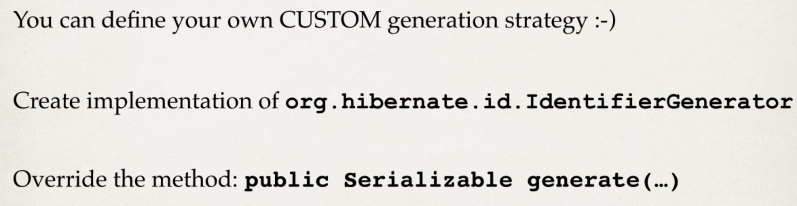


1. **Java Code to perform database operations**





@GeneratedValue(strategy=GenerationType.”Name” 🡪 way of telling hibernate to the way of handling the particular Id explicitly.



Adding custom business logic in ***public Serializable generate(…)*** and always generate unique value, work in high-volume, multi-threaded environment, if using server clusters, always generate unique value.