

 免费电子书

学习

hibernate

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1: hibernate

SessionFactory beanTransactionManager◦ SessionFactoryDAO◦

Hibernate“”TransactionManagerSesisonFactory◦ @Transactional◦ “”◦ ◦ SessionFactory◦

◦ 5SessionFactory SELECT COUNT(*) 5◦

4.2.0	http://hibernate.org/orm/documentation/4.2/	2013-03-01
4.3.0	http://hibernate.org/orm/documentation/4.3/	2013121
5.0.0	http://hibernate.org/orm/documentation/5.0/	201591

Examples

XML ConfigurationHibernate

database-servlet.xml◦

```
<?xml version="1.0" encoding="UTF-8"?>
<beans xmlns="http://www.springframework.org/schema/beans"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:jdbc="http://www.springframework.org/schema/jdbc"
xmlns:tx="http://www.springframework.org/schema/tx"
xsi:schemaLocation="http://www.springframework.org/schema/beans
http://www.springframework.org/schema/beans/spring-beans-3.2.xsd
http://www.springframework.org/schema/jdbc
http://www.springframework.org/schema/jdbc/spring-jdbc-3.2.xsd
http://www.springframework.org/schema/tx http://www.springframework.org/schema/tx/spring-
tx-3.2.xsd">

</beans>
```

txjdbc Spring◦ ◦

@Transactional◦ SpringHibernateSpring◦

```
<tx:annotation-driven />
```

◦ Hibernate◦ ◦ Hibernate◦

```
<bean id="dataSource"
class="org.springframework.jdbc.datasource.DriverManagerDataSource">
<property name="driverClassName" value="" />
<property name="url" value="" />
<property name="username" value="" />
<property name="password" value="" />
```

```
</bean>
```

bean javax.sql.DataSource ◦ Spring ◦ Apache Commons ◦ org.apache.commons.dbcp.BasicDataSource ◦

- *driverClassName* JDBC ◦ JAR ◦ ◦ OracleOracleDriver ◦ MySQLMySQLDriver ◦ ◦
- *url* URL ◦ jdbc\:oracle\:\thin\:\path\to\your\databasejdbc:mysql://path/to/your/database ◦ ◦
org.hibernate.HibernateException: Connection cannot be null when 'hibernate.dialect' not
setHibernateException org.hibernate.HibernateException: Connection cannot be null when
'hibernate.dialect' not set org.hibernate.HibernateException: Connection cannot be null
when 'hibernate.dialect' not set URL905/5◦
- *username* ◦
- *password* ◦

SessionFactory ◦ Hibernate ◦ ◦

```
<bean id="sessionFactory"  
  class="org.springframework.orm.hibernate4.LocalSessionFactoryBean">  
  <property name="dataSource" ref="dataSource" />  
  <property name="packagesToScan" value="au.com.project" />  
  <property name="hibernateProperties">  
    <props>  
      <prop key="hibernate.use_sql_comments">true</prop>  
      <prop key="hibernate.hbm2ddl.auto">validate</prop>  
    </props>  
  </property>  
</bean>
```

- *dataSource* bean ◦ dataSourceId◦
- *packagesToScan* JPA ◦ POJO@Entity◦ Hibernate ◦
- *annotatedClasses* HibernateHibernate◦ packagesToScanannotatedClasses◦

```
<property name="annotatedClasses">  
  <list>  
    <value>foo.bar.package.model.Person</value>  
    <value>foo.bar.package.model.Thing</value>  
  </list>  
</property>
```

- *hibernateProperties* ◦
- *hibernate.hbm2ddl.auto* Hibernate◦ ◦ validateSQL◦
- *hibernate.show_sql* Boolean flagtrue HibernateSQLstdout ◦
log4j.logger.org.hibernate.type=TRACE log4j.logger.org.hibernate.SQL=DEBUGlog4j ◦
- *hibernate.format_sql* HibernateSQLstdout◦
- *hibernate.dialect* Hibernate◦ Hibernate JDBC◦ 3Oracle5MySQLHibernate◦ Hibernate ◦

bean

```

<bean class="org.springframework.dao.annotation.PersistenceExceptionTranslationPostProcessor"
    id="PersistenceExceptionTranslator" />

<bean id="transactionManager"
    class="org.springframework.orm.hibernate4.HibernateTransactionManager">
    <property name="sessionFactory" ref="sessionFactory" />
</bean>

```

PersistenceExceptionTranslatorHibernateExceptionSQLExceptionsSpring。

TransactionManager bean。

SessionFactory beanDAO。

XMLHibernate

```

package com.reborne.SmartHibernateConnector.utils;

import org.hibernate.HibernateException;
import org.hibernate.Session;
import org.hibernate.SessionFactory;
import org.hibernate.cfg.Configuration;

public class LiveHibernateConnector implements IHibernateConnector {

    private String DB_DRIVER_NAME = "";
    private String DB_URL = "jdbc:h2:~/liveDB;MV_STORE=FALSE;MVCC=FALSE";
    private String DB_USERNAME = "sa";
    private String DB_PASSWORD = "";
    private String DIALECT = "org.hibernate.dialect.H2Dialect";
    private String HBM2DDL = "create";
    private String SHOW_SQL = "true";

    private static Configuration config;
    private static SessionFactory sessionFactory;
    private Session session;

    private boolean CLOSE_AFTER_TRANSACTION = false;

    public LiveHibernateConnector() {

        config = new Configuration();

        config.setProperty("hibernate.connector.driver_class", DB_DRIVER_NAME);
        config.setProperty("hibernate.connection.url", DB_URL);
        config.setProperty("hibernate.connection.username", DB_USERNAME);
        config.setProperty("hibernate.connection.password", DB_PASSWORD);
        config.setProperty("hibernate.dialect", DIALECT);
        config.setProperty("hibernate.hbm2ddl.auto", HBM2DDL);
        config.setProperty("hibernate.show_sql", SHOW_SQL);

        /*
         * Config connection pools
         */

        config.setProperty("connection.provider_class",
            "org.hibernate.connection.C3P0ConnectionProvider");
        config.setProperty("hibernate.c3p0.min_size", "5");
    }
}

```



```

config.setProperty("hibernate.c3p0.max_size", "20");
config.setProperty("hibernate.c3p0.timeout", "300");
config.setProperty("hibernate.c3p0.max_statements", "50");
config.setProperty("hibernate.c3p0.idle_test_period", "3000");

/**
 * Resource mapping
 */

//      config.addAnnotatedClass(User.class);
//      config.addAnnotatedClass(User.class);
//      config.addAnnotatedClass(User.class);

    sessionFactory = config.buildSessionFactory();
}

public HibWrapper openSession() throws HibernateException {
    return new HibWrapper(getOrCreateSession(), CLOSE_AFTER_TRANSACTION);
}

public Session getOrCreateSession() throws HibernateException {
    if (session == null) {
        session = sessionFactory.openSession();
    }
    return session;
}

public void reconnect() throws HibernateException {
    this.sessionFactory = config.buildSessionFactory();
}

}

```

Hibernate 5.2

XMLhibernate

XMLhibernate3hibernate.cfg.xmlPOJOEntityName.hbm.xml。 MySQL

hibernate.cfg.xml

```

<?xml version="1.0" encoding="utf-8"?>
<!DOCTYPE hibernate-configuration PUBLIC
"-//Hibernate/Hibernate Configuration DTD 3.0//EN"
"http://hibernate.sourceforge.net/hibernate-configuration-3.0.dtd">

<hibernate-configuration>
  <session-factory>
    <property name="hibernate.dialect">
      org.hibernate.dialect.MySQLDialect
    </property>
    <property name="hibernate.connection.driver_class">
      com.mysql.jdbc.Driver
    </property>

```

```

<property name="hibernate.connection.url">
    jdbc:mysql://localhost/DBSchemaName
</property>
<property name="hibernate.connection.username">
    testUserName
</property>
<property name="hibernate.connection.password">
    testPassword
</property>

<!-- List of XML mapping files -->
<mapping resource="HibernatePractice/Employee.hbm.xml"/>

</session-factory>
</hibernate-configuration>

```

DBSchemaName testUserName testPassword。

Employee.java

```

package HibernatePractice;

public class Employee {
    private int id;
    private String firstName;
    private String middleName;
    private String lastName;

    public Employee() {

    }

    public int getId() {
        return id;
    }

    public void setId(int id) {
        this.id = id;
    }

    public String getFirstName() {
        return firstName;
    }

    public void setFirstName(String firstName) {
        this.firstName = firstName;
    }

    public String getMiddleName() {
        return middleName;
    }

    public void setMiddleName(String middleName) {
        this.middleName = middleName;
    }

    public String getLastName() {
        return lastName;
    }

    public void setLastName(String lastName) {
        this.lastName = lastName;
    }
}

```

Employee.hbm.xml

```
<hibernate-mapping>
  <class name="HibernatePractice.Employee" table="employee">
    <meta attribute="class-description">
      This class contains employee information.
    </meta>
    <id name="id" type="int" column="empolyee_id">
      <generator class="native"/>
    </id>
    <property name="firstName" column="first_name" type="string"/>
    <property name="middleName" column="middle_name" type="string"/>
    <property name="lastName" column="last_name" type="string"/>
  </class>
</hibernate-mapping>
```

packageName.className。

hibernate。

hibernate <https://riptutorial.com/zh-CN/hibernate/topic/907/hibernate>

2: HibernateJPA

Examples

HibernateJPA

HibernateJPA。 Hibernate。

HibernateJPA。 JPA。 Hibernate。

HibernateJPA <https://riptutorial.com/zh-CN/hibernate/topic/6313/hibernatejpa>

3: HQL

HQLHibernateSQLSQL。 /。 。

hqlSQL。

Examples

```
hql = "From EntityName";
```

```
hql = "Select id, name From Employee";
```

Where

```
hql = "From Employee where id = 22";
```

```
hql = "From Author a, Book b Where a.id = book.author";
```

HQL <https://riptutorial.com/zh-CN/hibernate/topic/9388/hql>

4: Hibernate

@OneToOne	o
@OneToMany	o
@ManyToOne	o
@Entity	o
@Table	o
@JoinColumn	foreign ^o
@JoinTable	o

Examples

```
@Entity
@Table(name="FOO")
public class Foo {
    private UUID fooId;

    @OneToMany(mappedBy = "bar")
    private List<FooBar> bars;
}

@Entity
@Table(name="BAR")
public class Bar {
    private UUID barId;

    @OneToMany(mappedBy = "foo")
    private List<FooBar> foos;
}

@Entity
@Table(name="FOO_BAR")
public class FooBar {
    private UUID fooBarId;

    @ManyToOne
    @JoinColumn(name = "fooId")
    private Foo foo;

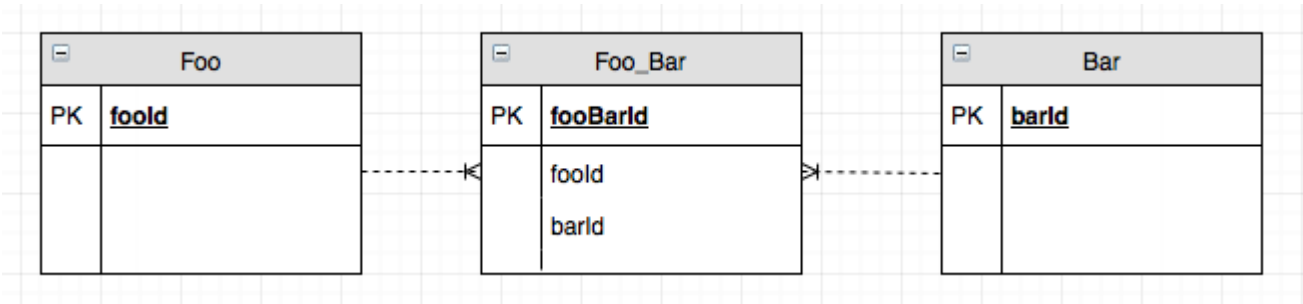
    @ManyToOne
    @JoinColumn(name = "barId")
    private Bar bar;

    //You can store other objects/fields on this table here.
}
```

FooBar°

FooFOO° BarBAR° FooBarFOO_BAR° FooBar°

°



Hibernate

```
@Entity
@Table(name="FOO")
public class Foo {
    private UUID fooId;

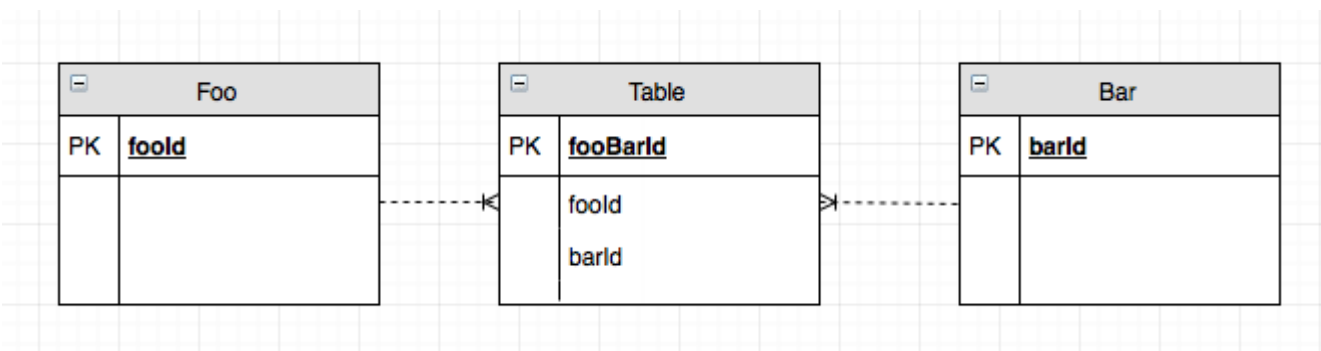
    @OneToMany
    @JoinTable(name="FOO_BAR",
        joinColumns = @JoinColumn(name="fooId"),
        inverseJoinColumns = @JoinColumn(name="barId"))
    private List<Bar> bars;
}

@Entity
@Table(name="BAR")
public class Bar {
    private UUID barId;

    @OneToMany
    @JoinTable(name="FOO_BAR",
        joinColumns = @JoinColumn(name="barId"),
        inverseJoinColumns = @JoinColumn(name="fooId"))
    private List<Foo> foos;
}
```

HibernateFooBar°

FooFOO° BarBAR° FooBarFOO_BAR° FooBar°



```

@Entity
@Table(name="FOO")
public class Foo {
    private UUID fooId;

    @OneToMany(mappedBy = "bar")
    private List<Bar> bars;
}

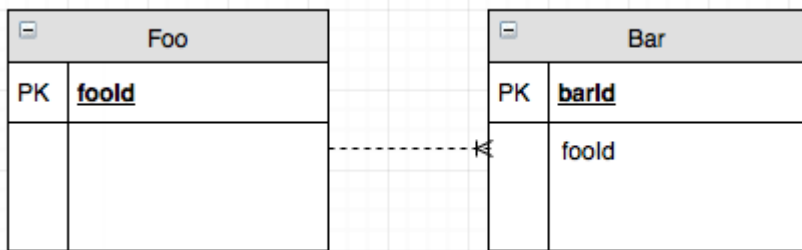
@Entity
@Table(name="BAR")
public class Bar {
    private UUID barId;

    @ManyToOne
    @JoinColumn(name = "fooId")
    private Foo foo;
}

```

FooBar°

FooFOO° BarBAR° fooIdBAR°



Foo.class

```

@Entity
@Table(name="FOO")
public class Foo {
    private UUID fooId;

    @OneToOne(cascade = CascadeType.ALL)
    @JoinColumn(name = "barId")
    private Bar bar;
}

@Entity
@Table(name="BAR")
public class Bar {
    private UUID barId;

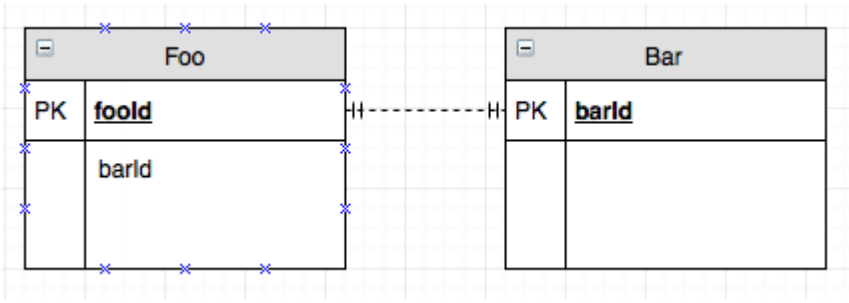
    @OneToOne(mappedBy = "bar")
    private Foo foo;
}

```

FooBar°

FooFOO° BarBAR° barIdFOO°

mappedBy°



```
@Entity
@Table(name="FOO")
public class Foo {
    private UUID fooId;

    @OneToMany
    @JoinTable(name="FOO_BAR",
        joinColumns = @JoinColumn(name="fooId"),
        inverseJoinColumns = @JoinColumn(name="barId", unique=true))
    private List<Bar> bars;
}

@Entity
@Table(name="BAR")
public class Bar {
    private UUID barId;

    //No Mapping specified here.
}

@Entity
@Table(name="FOO_BAR")
public class FooBar {
    private UUID fooBarId;

    @ManyToOne
    @JoinColumn(name = "fooId")
    private Foo foo;

    @ManyToOne
    @JoinColumn(name = "barId", unique = true)
    private Bar bar;

    //You can store other objects/fields on this table here.
}
```

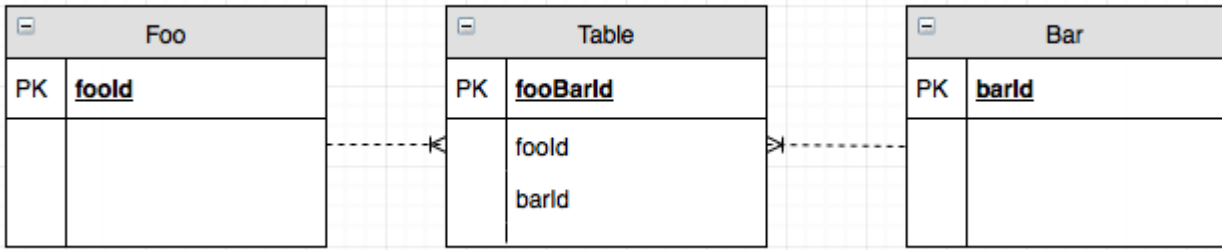
FooBar°

ManyToOneuniqueOneToMany °

FooFOO° BarBAR° FooBarFOO_BAR° FooBar°

BarFoo° BarFoo°

RoleUserSpring Security° Role°



```

@Entity
@Table(name="FOO")
public class Foo {
    private UUID foold;

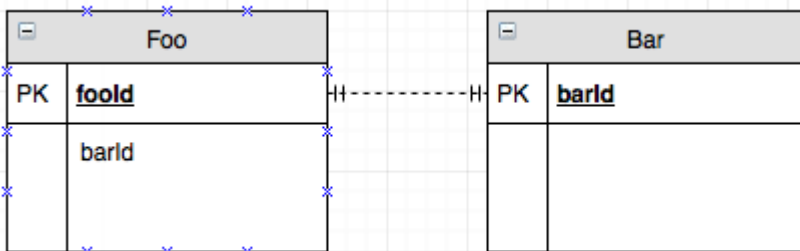
    @OneToOne
    private Bar bar;
}

@Entity
@Table(name="BAR")
public class Bar {
    private UUID barId;
    //No corresponding mapping to Foo.class
}
  
```

FooBar°

FooFOO° BarBAR°

BarFoo° BarFoo°



Hibernate <https://riptutorial.com/zh-CN/hibernate/topic/5742/hibernate>

5: /SQL

Hibernate。 。 。 Hibernate。

Examples

```
# log the sql statement
org.hibernate.SQL=DEBUG
# log the parameters
org.hibernate.type=TRACE
```

。

Log4j

```
log4j.logger.org.hibernate.SQL=DEBUG
log4j.logger.org.hibernate.type=TRACE
```

Spring Boot application.properties

```
logging.level.org.hibernate.SQL=DEBUG
logging.level.org.hibernate.type=TRACE
```

Logback logback.xml

```
<logger name="org.hibernate.SQL" level="DEBUG"/>
<logger name="org.hibernate.type" level="TRACE"/>
```

Hibernate

SQL。

```
<bean id="sessionFactory"
  class="org.springframework.orm.hibernate4.LocalSessionFactoryBean">
  <property name="hibernateProperties">
    <props>
      <!-- show the sql without the parameters -->
      <prop key="hibernate.show_sql">true</prop>
      <!-- format the sql nice -->
      <prop key="hibernate.format_sql">true</prop>
      <!-- show the hql as comment -->
      <prop key="use_sql_comments">true</prop>
    </props>
  </property>
</bean>
```

/SQL

HibernateSQL。 /SQL。

IDE

```
org.apache.log4j.Logger.getLogger("org.hibernate.SQL")  
    .setLevel(org.apache.log4j.Level.DEBUG)
```

```
org.apache.log4j.Logger.getLogger("org.hibernate.SQL")  
    .setLevel(org.apache.log4j.Level.OFF)
```

[/SQL https://riptutorial.com/zh-CN/hibernate/topic/3548/-sql](https://riptutorial.com/zh-CN/hibernate/topic/3548/-sql)

6:

JPAJava Persistence API。 JPAHQLHibernateJPQLJava。 SQLJPA。

Examples

FetchType.LAZY。 。

Employer。 **fetch = FetchType.LAZY**fetch = FetchType.EAGER。 LAZY。

```
@Entity
@Table(name = "employer")
public class Employer
{
    @Id
    @GeneratedValue(strategy = GenerationType.IDENTITY)
    private Long id;

    @Column(name = "name")
    private String Name;

    @OneToMany(mappedBy = "employer", fetch = FetchType.LAZY,
        cascade = { CascadeType.ALL }, orphanRemoval = true)
    private List<Employee> employees;

    public Long getId() {
        return id;
    }

    public void setId(Long id) {
        this.id = id;
    }

    public String getName() {
        return name;
    }

    public void setName(String name) {
        this.name = name;
    }

    public List<Employee> getEmployees() {
        return employees;
    }

    public void setEmployees(List<Employee> employees) {
        this.employees = employees;
    }
}
```

LAZYLazyInitializationException。 HQL / JPQLJOIN FETCHLazyInitializationException。

```
SELECT Employer employer FROM Employer
LEFT JOIN FETCH employer.name
```

```
LEFT JOIN FETCH employer.employee employee  
LEFT JOIN FETCH employee.name  
LEFT JOIN FETCH employer.address
```

<https://riptutorial.com/zh-CN/hibernate/topic/9475/>

7:

Examples

OneToMany

OneToMany2. ◦

CountryEntityCountry. ◦

```
@Entity
@Table(name = "Country")
public class CountryEntity implements Serializable
{
    private static final long serialVersionUID = 1L;

    @Id
    @Column(name = "COUNTRY_ID", unique = true, nullable = false)
    @GeneratedValue(strategy = GenerationType.SEQUENCE)
    private Integer        countryId;

    @Column(name = "COUNTRY_NAME", unique = true, nullable = false, length = 100)
    private String        countryName;

    @OneToMany(mappedBy="country", fetch=FetchType.LAZY)
    private Set<CityEntity> cities = new HashSet<>();

    //Getters and Setters are not shown
}
```

◦

```
@Entity
@Table(name = "City")
public class CityEntity implements Serializable
{
    private static final long serialVersionUID = 1L;

    @Id
    @Column(name = "CITY_ID", unique = true, nullable = false)
    @GeneratedValue(strategy = GenerationType.SEQUENCE)
    private Integer        cityId;

    @Column(name = "CITY_NAME", unique = false, nullable = false, length = 100)
    private String        cityName;

    @ManyToOne(optional=false, fetch=FetchType.EAGER)
    @JoinColumn(name="COUNTRY_ID", nullable=false)
    private CountryEntity country;

    //Getters and Setters are not shown
}
```

XML

XML。。

```
public class Author {
    private int id;
    private String firstName;
    private String lastName;

    public Author(){

    }
    public int getId(){
        return id;
    }
    public void setId(int id){
        this.id = id;
    }
    public String getFirstName(){
        return firstName;
    }
    public void setFirstName(String firstName){
        this.firstName = firstName;
    }
    public String getLastName(){
        return lastName;
    }
    public void setLastName(String lastName){
        this.lastName = lastName;
    }
}
```

```
public class Book {
    private int id;
    private String isbn;
    private String title;
    private Author author;
    private String publisher;

    public Book() {
        super();
    }
    public int getId() {
        return id;
    }
    public void setId(int id) {
        this.id = id;
    }
    public String getIsbn() {
        return isbn;
    }
    public void setIsbn(String isbn) {
        this.isbn = isbn;
    }
    public String getTitle() {
        return title;
    }
    public void setTitle(String title) {
        this.title = title;
    }
}
```



```

}
public Author getAuthor() {
    return author;
}
public void setAuthor(Author author) {
    this.author = author;
}
public String getPublisher() {
    return publisher;
}
public void setPublisher(String publisher) {
    this.publisher = publisher;
}
}

```

Author.hbm.xml

```

<?xml version="1.0"?>
<!DOCTYPE hibernate-mapping PUBLIC
    "-//Hibernate/Hibernate Mapping DTD//EN"
    "http://hibernate.sourceforge.net/hibernate-mapping-3.0.dtd" >

<hibernate-mapping>
    <class name="Author" table="author">
        <meta attribute="class-description">
            This class contains the author's information.
        </meta>
        <id name="id" type="int" column="author_id">
            <generator class="native"/>
        </id>
        <property name="firstName" column="first_name" type="string"/>
        <property name="lastName" column="last_name" type="string"/>
    </class>
</hibernate-mapping>

```

Book.hbm.xml

```

<?xml version="1.0"?>
<!DOCTYPE hibernate-mapping PUBLIC
    "-//Hibernate/Hibernate Mapping DTD//EN"
    "http://hibernate.sourceforge.net/hibernate-mapping-3.0.dtd" >

<hibernate-mapping>
    <class name="Book" table="book_title">
        <meta attribute="class-description">
            This class contains the book information.
        </meta>
        <id name="id" type="int" column="book_id">
            <generator class="native"/>
        </id>
        <property name="isbn" column="isbn" type="string"/>
        <property name="title" column="title" type="string"/>
        <many-to-one name="author" class="Author" cascade="all">
            <column name="author"></column>
        </many-to-one>
        <property name="publisher" column="publisher" type="string"/>
    </class>
</hibernate-mapping>

```

BookAuthorxml<many-to-one>。 cascade/。

<https://riptutorial.com/zh-CN/hibernate/topic/6165/>

8:

Examples

◦

Hibernatepom.xmldependencies

```
<dependency>
  <groupId>org.hibernate</groupId>
  <artifactId>hibernate-core</artifactId>
  <version>5.2.1.Final</version>
</dependency>
```

1.

Eager Loading◦

◦ ◦

2.

XML

```
lazy="true"
```

◦ User

```
public class User implements Serializable {

    private Long userId;
    private String userName;
    private String firstName;
    private String lastName;
    private Set<OrderDetail> orderDetail = new HashSet<>();

    //setters and getters
    //equals and hashCode
}
```

orderDetail◦ **OrderDetail**

```
public class OrderDetail implements Serializable {

    private Long orderId;
    private Date orderDate;
    private String orderDesc;
    private User user;

    //setters and getters
    //equals and hashCode
}
```

```
}
```

UserLazy.hbm.xml

```
<set name="orderDetail" table="USER_ORDER" inverse="true" lazy="true" fetch="select">
  <key>
    <column name="USER_ID" not-null="true" />
  </key>
  <one-to-many class="com.baeldung.hibernate.fetching.model.OrderDetail" />
</set>
```

◦ lazy = "false" ◦ **User.hbm.xml** eager

```
<set name="orderDetail" table="USER_ORDER" inverse="true" lazy="false" fetch="select">
  <key>
    <column name="USER_ID" not-null="true" />
  </key>
  <one-to-many class="com.baeldung.hibernate.fetching.model.OrderDetail" />
</set>
```

SessionFactory ◦ **Session** ◦ **Eager** ◦ / ◦ ◦ **POJO** ◦

```
@Entity
public class User {
    private int userId;
    private String username;
    @OneToMany
    private Set<Page> likedPage;

    // getters and setters here
}

@Entity
public class Page{
    private int pageId;
    private String pageURL;

    // getters and setters here
}

public class LazyTest{
    public static void main(String...s){
        SessionFactory sessionFactory = new SessionFactory();
        Session session = sessionFactory.openSession();
        Transaction transaction = session.beginTransaction();

        User user = session.get(User.class, 1);
        transaction.commit();
        session.close();

        // here comes the lazy fetch issue
        user.getLikedPage();
    }
}
```

[lazyInitializeException](#) ◦ **oneToMany** DB ◦ **preferPageDB** ◦

1. - 。

2. `Hibernate.initialize(user.getLikedPage())` - hibernate

<https://riptutorial.com/zh-CN/hibernate/topic/7249/>

9:

Examples

EAGER

Hibernate `EAGERLAZY` ◦

`EAGERJPA` ◦

PersonAddress

```
@Entity
public class Person {

    @OneToMany(mappedBy="address", fetch=FetchType.EAGER)
    private List<Address> addresses;

}
```

Person PersonAddress ◦

```
@ManyToMany(mappedBy="address", fetch=FetchType.EAGER)
```

```
@ManyToMany(mappedBy="address", fetch=FetchType.LAZY)
```

@OneToOne@ManyToOne ◦ **EAGER** ◦

```
@ManyToOne(fetch=FetchType.LAZY)
```

```
@OneToOne(fetch=FetchType.LAZY)
```

Hibernate ◦ `JOINEDJOIN` ◦

Hibernate ◦

JOINEDBicycleMountainBike

```
@Entity
@Inheritance(strategy = InheritanceType.JOINED)
public abstract class Bicycle {

}
```

```
@Entity
@Inheritance(strategy = InheritanceType.JOINED)
public class MountainBike extends Bicycle {
```

```
}
```

MountainBike JPQL Bicycle SQL

```
select mb.*, b.* from MountainBike mb JOIN Bicycle b ON b.id = mb.id WHERE ...
```

BicycleTransport JOIN

EAGER MountainBike

o

MountainBike bicycle

```
@Entity
public class MountainBike {

    @OneToOne(fetchType = FetchType.LAZY)
    private Bicycle bicycle;

}
```

Bicycle

```
@Entity
public class Bicycle {

}
```

MountainBike

<https://riptutorial.com/zh-CN/hibernate/topic/2326/>

10:

Examples

Hibernate

◦ ◦

Country.java

```
package com.entity;
import javax.persistence.Column;
import javax.persistence.Entity;
import javax.persistence.GeneratedValue;
import javax.persistence.GenerationType;
import javax.persistence.Id;
import javax.persistence.OneToOne;
import javax.persistence.Table;

@Entity
@Table(name = "countries")
public class Country {
    @Id
    @GeneratedValue(strategy = GenerationType.IDENTITY)
    private int id;

    @Column(name = "name")
    private String name;

    @Column(name = "national_language")
    private String nationalLanguage;

    @OneToOne(mappedBy = "country")
    private Capital capital;

    //Constructor

    //getters and setters

}
```

Capital.java

```
package com.entity;

import javax.persistence.CascadeType;
import javax.persistence.Entity;
import javax.persistence.GeneratedValue;
import javax.persistence.GenerationType;
import javax.persistence.Id;
import javax.persistence.JoinColumn;
import javax.persistence.OneToOne;
import javax.persistence.Table;

@Entity
```



```

@Table(name = "capitals")
public class Capital {

    @Id
    @GeneratedValue(strategy = GenerationType.IDENTITY)
    private int id;

    private String name;

    private long population;

    @OneToOne(cascade = CascadeType.ALL)
    @JoinColumn(name = "country_id")
    private Country country;

    //Constructor

    //getters and setters

}

```

HibernateDemo.java

```

package com.entity;
import org.hibernate.Session;
import org.hibernate.SessionFactory;
import org.hibernate.cfg.Configuration;

public class HibernateDemo {

public static void main(String ar[]) {
    SessionFactory sessionFactory = new Configuration().configure().buildSessionFactory();
    Session session = sessionFactory.openSession();
    Country india = new Country();
    Capital delhi = new Capital();
    delhi.setName("Delhi");
    delhi.setPopulation(357828394);
    india.setName("India");
    india.setNationalLanguage("Hindi");
    delhi.setCountry(india);
    session.save(delhi);
    session.close();
}

}

```

<https://riptutorial.com/zh-CN/hibernate/topic/6478/>

11: SQL

Examples

Hibernate Session session

```
List<Object[]> result = session.createNativeQuery("SELECT * FROM some_table").list();
for (Object[] row : result) {
    for (Object col : row) {
        System.out.print(col);
    }
}
```

some_table result

```
Object pollAnswered = getCurrentSession().createSQLQuery(
    "select * from TJ_ANSWERED_ASW where pol_id = "+pollId+" and prf_log = "+logId+"").uniqueResult();
```

o

org.hibernate.NonUniqueResultException

SQL <https://riptutorial.com/zh-CN/hibernate/topic/6978/sql>

12:

Examples

TravelReviewCity“title”

```
Criteria criteria =
    session.createCriteria(TravelReview.class);
List review =
    criteria.add(Restrictions.eq("title", "Mumbai")).list();
System.out.println("Using equals: " + review);
```

```
List reviews = session.createCriteria(TravelReview.class)
    .add(Restrictions.eq("author", "John Jones"))
    .add(Restrictions.between("date", fromDate, toDate))
    .add(Restrictions.ne("title", "New York")).list();
```

Projections.

```
// Selecting all title columns
List review = session.createCriteria(TravelReview.class)
    .setProjection(Projections.property("title"))
    .list();
// Getting row count
review = session.createCriteria(TravelReview.class)
    .setProjection(Projections.rowCount())
    .list();
// Fetching number of titles
review = session.createCriteria(TravelReview.class)
    .setProjection(Projections.count("title"))
    .list();
```

@FilterWHERE

```
@Entity
@Table(name = "Student")
public class Student
{
    /*...*/

    @OneToMany
    @Filter(name = "active", condition = "EXISTS(SELECT * FROM Study s WHERE state = true and
s.id = study_id)")
    Set<StudentStudy> studies;

    /* getters and setters methods */
}
```

```
@Entity
@Table(name = "Study")
@FilterDef(name = "active")
@Filter(name = "active", condition="state = true")
```

```

public class Study
{
    /*...*/

    @OneToMany
    Set<StudentStudy> students;

    @Field
    boolean state;

    /* getters and setters methods */
}

```

StudentStudy

```

@Entity
@Table(name = "StudentStudy")
@Filter(name = "active", condition = "EXISTS(SELECT * FROM Study s WHERE state = true and s.id = study_id)")
public class StudentStudy
{
    /*...*/

    @ManyToOne
    Student student;

    @ManyToOne
    Study study;

    /* getters and setters methods */
}

```

“”

- state = true

- **StudyALL** state = true

-EveryStudentStudy entiy state = true

study_idsql StudentStudy

<https://riptutorial.com/zh-CN/hibernate/topic/3939/>

13:

Examples

ImplicitNamingStrategy

[ImplicitNamingStrategy](#) [Hibernate](#) [Entity](#) ◦

Hibernate

```
FKe6hidh4u0qh8y1ijy59s2ee6m
```

```
FK_asset_tenant
```

[ImplicitNamingStrategy](#) ◦

[ImplicitNamingStrategyJpaCompliantImpl](#) [ImplicitNamingStrategy](#) ◦

```
import org.hibernate.boot.model.naming.Identifier;
import org.hibernate.boot.model.naming.ImplicitForeignKeyNameSource;
import org.hibernate.boot.model.naming.ImplicitNamingStrategyJpaCompliantImpl;

public class CustomNamingStrategy extends ImplicitNamingStrategyJpaCompliantImpl {

    @Override
    public Identifier determineForeignKeyName(ImplicitForeignKeyNameSource source) {
        return toIdentifier("FK_" + source.getTableName().getCanonicalName() + "_" +
source.getReferencedTableName().getCanonicalName(), source.getBuildingContext());
    }

}
```

[Hibernate](#) [ImplicitNamingStrategy](#) [persistence.xml](#) [hibernate.cfg.xml](#)

[hibernate.implicit_naming_strategy](#)

```
<property name="hibernate.implicit_naming_strategy"
value="com.example.foo.bar.CustomNamingStrategy"/>
```

[hibernate.properties](#)

```
hibernate.implicit_naming_strategy=com.example.foo.bar.CustomNamingStrategy
```

[nameCustomNamingStrategy](#) ◦

[@Table](#) ◦ [hibernate](#) [@Table](#) ◦ ◦

```
ApplicationEventLog
```

```
application_event_log
```

camel case snake case ◦ hibernatePhysicalNamingStrategyStandardImpl

```
import org.hibernate.boot.model.naming.Identifier;
import org.hibernate.boot.model.naming.PhysicalNamingStrategyStandardImpl;
import org.hibernate.engine.jdbc.env.spi.JdbcEnvironment;

public class PhysicalNamingStrategyImpl extends PhysicalNamingStrategyStandardImpl {

    private static final long serialVersionUID = 1L;
    public static final PhysicalNamingStrategyImpl INSTANCE = new
PhysicalNamingStrategyImpl();

    @Override
    public Identifier toPhysicalTableName(Identifier name, JdbcEnvironment context) {
        return new Identifier(addUnderscores(name.getText()), name.isQuoted());
    }

    @Override
    public Identifier toPhysicalColumnName(Identifier name, JdbcEnvironment context) {
        return new Identifier(addUnderscores(name.getText()), name.isQuoted());
    }

    protected static String addUnderscores(String name) {
        final StringBuilder buf = new StringBuilder(name);
        for (int i = 1; i < buf.length() - 1; i++) {
            if (Character.isLowerCase(buf.charAt(i - 1)) &&
                Character.isUpperCase(buf.charAt(i)) &&
                Character.isLowerCase(buf.charAt(i + 1))) {
                buf.insert(i++, '_');
            }
        }
        return buf.toString().toLowerCase(Locale.ROOT);
    }
}
```

toPhysicalTableName toPhysicalColumnName db ◦

hibernate.physical_naming_strategy PhysicalNamingStrategyImpl ◦

```
hibernate.physical_naming_strategy=com.example.foo.bar.PhysicalNamingStrategyImpl
```

@Table @Column

```
@Entity
public class ApplicationEventLog {
    private Date startTimestamp;
    private String logUser;
    private Integer eventSuccess;

    @Column(name="finish_dt1")
    private String finishDetails;
}
```

db

```
CREATE TABLE application_event_log (  
  ...  
  start_timestamp timestamp,  
  log_user varchar(255),  
  event_success int(11),  
  finish_dt1 varchar(2000),  
  ...  
)
```

db @Column(name="finish_dt1")

<https://riptutorial.com/zh-CN/hibernate/topic/3051/>

14:

Examples

WildFlyHibernate

WildFlyHibernate persistence.xml

```
<property name="hibernate.cache.use_second_level_cache" value="true"/>
```

```
<property name="hibernate.cache.use_query_cache" value="true"/>
```

HibernateWildFlyInfinispan^o hibernate.cache.provider_class^o

<https://riptutorial.com/zh-CN/hibernate/topic/3462/>

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