**HIBERNATE**

* Create a normal java Project.
* Add External Jars provided by the Trainer (To have the hibernate framework).
* Create package (**com.hexa.entity**)
* Create normal java class **Student.java** in the above package. (Domain Object)
* Copy the xml file sent by trainer under src folder and change the dialect,uname,pwd,etc…
* In src create package (**com.hexa.demos**)
* Create a class file with main function (InsertEmployee.class) in demos package

**Hiberberbate.cfg.xml**

<?xml version=*'1.0'* encoding=*'utf-8'*?>

<!DOCTYPE hibernate-configuration PUBLIC

"-//Hibernate/Hibernate Configuration DTD//EN"

"http://hibernate.sourceforge.net/hibernate-configuration-3.0.dtd">

<hibernate-configuration>

<session-factory>

<property name=*"hibernate.connection.driver\_class"*>

oracle.mysql.jdbc.Driverr</property>

<property name=*"hibernate.connection.url"*>

jdbc:mysql://localhost:3306/test</property>

<property name=*"hibernate.connection.username"*>root</property>

<property name=*"hibernate.connection.password"*>root</property>

<property name=*"hibernate.connection.pool\_size"*>5</property>

<property name=*"hibernate.show\_sql"*>true</property>

<property name=*"hibernate.format\_sql"*>true</property>

<property name=*"hibernate.dialect"*>org.hibernate.dialect.MySQLDialect</property>

<property name=*"hibernate.hbm2ddl.auto"*>update</property>

<!-- <mapping resource="product.hbm.xml" /> -->

<mapping class=*"com.hexa.entity.Student"*/>

</session-factory>

</hibernate-configuration>

**Student.java**

**package** com.hexa.entity;

**import** java.util.Date;

**import** javax.persistence.Column;

**import** javax.persistence.Entity;

**import** javax.persistence.Id;

**import** javax.persistence.Table;

@Entity

@Table(name = "student")

**public** **class** Student {

@Id

@Column(name = "stu\_id")

**private** **int** stuId;

@Column(name = "stu\_name", length = 45)

**private** String stuName;

@Column(name = "dept", length = 20)

**private** String dept;

@Column(name = "stu\_dob")

**private** Date dob;

@Column(name = "stu\_marks")

**private** **int** marks;

**public** **int** getStuId() {

**return** stuId;

}

**public** **void** setStuId(**int** stuId) {

**this**.stuId = stuId;

}

**public** String getStuName() {

**return** stuName;

}

**public** **void** setStuName(String stuName) {

**this**.stuName = stuName;

}

**public** String getDept() {

**return** dept;

}

**public** **void** setDept(String dept) {

**this**.dept = dept;

}

**public** Date getDob() {

**return** dob;

}

**public** **void** setDob(Date dob) {

**this**.dob = dob;

}

**public** **int** getMarks() {

**return** marks;

}

**public** **void** setMarks(**int** marks) {

**this**.marks = marks;

}

@Override

**public** String toString() {

**return** stuId + " " + stuName + " " + marks + " " + dept + " " + dob;

}

}

**InsertEmployee.java**

**package** com.hexa.demos;

**import** org.hibernate.SessionFactory;

**import** org.hibernate.cfg.AnnotationConfiguration;

**import** org.hibernate.cfg.Configuration;

**public** **class** InsertEmployee {

**public** **static** **void** main(String[] args) {

// **TODO** Auto-generated method stub

Configuration cfg = **new** AnnotationConfiguration();

cfg.configure(); // loads the hibernate.cfg.xml

SessionFactory sfac = cfg.buildSessionFactory();

System.***out***.println("Table Created ..");

}

}

* In the above project create package com.hexa.dao
* Create interface Idao
* Create a java class DaoImpl

**IDao Interface :**

**package** com.hexa.dao;

**import** com.hexa.entity.Student;

**public** **interface** IDao {

**public** **int** addStudent(Student student);

**public** Student getStudent(**int** sid);

**public** **int** updateStudent(**int** sid, **int** marks);

**public** **int** updateStudent(Student student);

**public** **int** deletStudent(**int** sid);

}

**DaoImpl.java**

**package** com.hexa.dao;

**import** org.hibernate.HibernateException;

**import** org.hibernate.Session;

**import** org.hibernate.SessionFactory;

**import** org.hibernate.Transaction;

**import** org.hibernate.cfg.AnnotationConfiguration;

**import** org.hibernate.cfg.Configuration;

**import** com.hexa.entity.Student;

**public** **class** DaoImpl **implements** IDao{

**private** **static** SessionFactory *sfac*;

**static** {

Configuration cfg = **new** AnnotationConfiguration();

cfg.configure();

*sfac* = cfg.buildSessionFactory();

}

@Override

**public** **int** addStudent(Student student) {

Session sess = **null**;

Transaction tx = **null**;

**try** {

sess = *sfac*.openSession();

tx = sess.beginTransaction();

sess.save(student);

tx.commit();

**return** 1;

} **catch** (HibernateException e) {

System.***out***.println(e.getMessage());

**if**(tx != **null**) {

tx.rollback();

}

} **finally** {

**if**(sess!=**null**) {

sess.close();

}

}

**return** 0;

}

}

**InsertEmployee.java**

**package** com.hexa.demos;

**import** java.text.ParseException;

**import** java.text.SimpleDateFormat;

**import** java.util.Date;

**import** org.hibernate.SessionFactory;

**import** org.hibernate.cfg.AnnotationConfiguration;

**import** org.hibernate.cfg.Configuration;

**import** com.hexa.dao.DaoImpl;

**import** com.hexa.dao.IDao;

**import** com.hexa.entity.Student;

**public** **class** InsertEmployee {

**private** **static** IDao *dao* = **new** DaoImpl();

**public** **static** **void** main(String[] args) **throws** ParseException{

Student stu = **new** Student();

stu.setStuId(1001);

stu.setStuName("Abhi");

stu.setMarks(86);

stu.setDept("Hexavarsity");

SimpleDateFormat sdf = **new** SimpleDateFormat("dd/MM/yyyy");

Date dt = sdf.parse("12/10/1995");

stu.setDob(dt);

System.***out***.println("Table Created ..");

**int** res = *dao*.addStudent(stu);

System.***out***.println("Inserted : "+ res + " rows");

}

}

O/P:

Table Created ..

Hibernate:

insert

into

student

(dept, stu\_dob, stu\_marks, stu\_name, stu\_id)

values

(?, ?, ?, ?, ?)

Inserted : 1 rows

Create a normal java under Demo Package GetVsLoadDemo.java with main class

**package** com.hexa.demos;

**import** org.hibernate.Session;

**import** org.hibernate.SessionFactory;

**import** org.hibernate.cfg.AnnotationConfiguration;

**import** org.hibernate.cfg.Configuration;

**import** com.hexa.entity.Student;

**public** **class** GetVsLoadDemo {

**public** **static** **void** main(String[] args) {

Configuration cfg = **new** AnnotationConfiguration();

cfg.configure(); // loads the hibernate.cfg.xml

SessionFactory sfac = cfg.buildSessionFactory();

Session sess = sfac.openSession();

Student stu = (Student) sess.get(Student.**class**,1003);

//Student stu = (Student) sess.load(Student.class,1003);

**if**(stu != **null**) {

System.***out***.println(stu);

} **else** {

System.***out***.println("Not Found");

}

sess.close();

**if**(stu != **null**) {

System.***out***.println(stu);

} **else** {

System.***out***.println("Not Found");

}

}

}

**O/P:**

Hibernate:

select

student0\_.stu\_id as stu1\_0\_0\_,

student0\_.dept as dept0\_0\_,

student0\_.stu\_dob as stu3\_0\_0\_,

student0\_.stu\_marks as stu4\_0\_0\_,

student0\_.stu\_name as stu5\_0\_0\_

from

student student0\_

where

student0\_.stu\_id=?

1003 Edward 89 EEE 1995-05-19 00:00:00.0

1003 Edward 89 EEE 1995-05-19 00:00:00.0

First Level Caching

**package** com.hexa.demos;

**import** org.hibernate.Session;

**import** org.hibernate.SessionFactory;

**import** org.hibernate.cfg.AnnotationConfiguration;

**import** org.hibernate.cfg.Configuration;

**import** com.hexa.entity.Student;

**public** **class** GetVsLoadDemo {

**public** **static** **void** main(String[] args) {

Configuration cfg = **new** AnnotationConfiguration();

cfg.configure(); // loads the hibernate.cfg.xml

SessionFactory sfac = cfg.buildSessionFactory();

Session sess = sfac.openSession();

Student stu = (Student) sess.get(Student.**class**,1003);

//Student stu = (Student) sess.load(Student.class,1003);

**if**(stu != **null**) {

System.***out***.println(stu);

} **else** {

System.***out***.println("Not Found");

}

System.***out***.println("Second Time Demanding same data");

Student stu2 = (Student) sess.get(Student.**class**,1003);

**if**(stu2 != **null**) {

System.***out***.println(stu);

} **else** {

System.***out***.println("Not Found");

}

sess.close();

**if**(stu != **null**) {

System.***out***.println(stu);

} **else** {

System.***out***.println("Not Found");

}

}

}

O/P:

Hibernate:

select

student0\_.stu\_id as stu1\_0\_0\_,

student0\_.dept as dept0\_0\_,

student0\_.stu\_dob as stu3\_0\_0\_,

student0\_.stu\_marks as stu4\_0\_0\_,

student0\_.stu\_name as stu5\_0\_0\_

from

student student0\_

where

student0\_.stu\_id=?

1003 Edward 89 EEE 1995-05-19 00:00:00.0

Second Time Demanding same data

1003 Edward 89 EEE 1995-05-19 00:00:00.0

1003 Edward 89 EEE 1995-05-19 00:00:00.0

Evict Example:

**package** com.hexa.demos;

**import** org.hibernate.Session;

**import** org.hibernate.SessionFactory;

**import** org.hibernate.cfg.AnnotationConfiguration;

**import** org.hibernate.cfg.Configuration;

**import** com.hexa.entity.Student;

**public** **class** GetVsLoadDemo {

**public** **static** **void** main(String[] args) {

Configuration cfg = **new** AnnotationConfiguration();

cfg.configure(); // loads the hibernate.cfg.xml

SessionFactory sfac = cfg.buildSessionFactory();

Session sess = sfac.openSession();

Student stu = (Student) sess.get(Student.**class**,1003);

//Student stu = (Student) sess.load(Student.class,1003);

**if**(stu != **null**) {

System.***out***.println(stu);

} **else** {

System.***out***.println("Not Found");

}

sess.evict(stu);

System.***out***.println("Second Time Demanding same data");

Student stu2 = (Student) sess.get(Student.**class**,1003);

**if**(stu2 != **null**) {

System.***out***.println(stu);

} **else** {

System.***out***.println("Not Found");

}

sess.close();

**if**(stu != **null**) {

System.***out***.println(stu);

} **else** {

System.***out***.println("Not Found");

}

}

}

O/P:

Hibernate:

select

student0\_.stu\_id as stu1\_0\_0\_,

student0\_.dept as dept0\_0\_,

student0\_.stu\_dob as stu3\_0\_0\_,

student0\_.stu\_marks as stu4\_0\_0\_,

student0\_.stu\_name as stu5\_0\_0\_

from

student student0\_

where

student0\_.stu\_id=?

1003 Edward 89 EEE 1995-05-19 00:00:00.0

Second Time Demanding same data

Hibernate:

select

student0\_.stu\_id as stu1\_0\_0\_,

student0\_.dept as dept0\_0\_,

student0\_.stu\_dob as stu3\_0\_0\_,

student0\_.stu\_marks as stu4\_0\_0\_,

student0\_.stu\_name as stu5\_0\_0\_

from

student student0\_

where

student0\_.stu\_id=?

1003 Edward 89 EEE 1995-05-19 00:00:00.0

1003 Edward 89 EEE 1995-05-19 00:00:00.0

Get Student Method added in Interface

Create class viewEmployee.java with main method

**package** com.hexa.dao;

**import** org.hibernate.HibernateException;

**import** org.hibernate.Session;

**import** org.hibernate.SessionFactory;

**import** org.hibernate.Transaction;

**import** org.hibernate.cfg.AnnotationConfiguration;

**import** org.hibernate.cfg.Configuration;

**import** com.hexa.entity.Student;

**public** **class** DaoImpl **implements** IDao{

**private** **static** SessionFactory *sfac*;

**static** {

Configuration cfg = **new** AnnotationConfiguration();

cfg.configure();

*sfac* = cfg.buildSessionFactory();

}

@Override

**public** **int** addStudent(Student student) {

Session sess = **null**;

Transaction tx = **null**;

**try** {

sess = *sfac*.openSession();

tx = sess.beginTransaction();

sess.save(student);

tx.commit();

**return** 1;

} **catch** (HibernateException e) {

System.***out***.println(e.getMessage());

**if**(tx != **null**) {

tx.rollback();

}

} **finally** {

**if**(sess!=**null**) {

sess.close();

}

}

**return** 0;

}

@Override

**public** Student getStudent(**int** sid) {

Session sess = *sfac*.openSession();

Student stu = (Student) sess.get(Student.**class**, sid);

sess.close();

**return** stu;

}

}

**package** com.hexa.dao;

**import** com.hexa.entity.Student;

**public** **interface** IDao {

**public** **int** addStudent(Student student);

**public** Student getStudent(**int** sid);

// public int updateStudent(int sid, int marks);

// public int updateStudent(Student student);

// public int deletStudent(int sid);

}

**package** com.hexa.demos;

**import** com.hexa.dao.DaoImpl;

**import** com.hexa.dao.IDao;

**import** com.hexa.entity.Student;

**public** **class** ViewEmployee {

**public** **static** **void** main(String[] args) {

IDao dao = **new** DaoImpl();

Student stu = dao.getStudent(1002);

**if**(stu != **null**) {

System.***out***.println(stu);

} **else** {

System.***out***.println("Not Found");

}

}

}

O/P:

Hibernate:

select

student0\_.stu\_id as stu1\_0\_0\_,

student0\_.dept as dept0\_0\_,

student0\_.stu\_dob as stu3\_0\_0\_,

student0\_.stu\_marks as stu4\_0\_0\_,

student0\_.stu\_name as stu5\_0\_0\_

from

student student0\_

where

student0\_.stu\_id=?

1002 Benny 86 ECE 1995-10-19 00:00:00.0

**Update**

DaoImpl.java

Add the following method

@Override

**public** **int** updateStudent(**int** sid, **int** marks) {

Session sess = *sfac*.openSession();

Student stu = (Student) sess.get(Student.**class**, sid);

Transaction tx = sess.beginTransaction();

stu.setMarks(marks);

tx.commit();

**return** 1;

}

**package** com.hexa.dao;

**import** com.hexa.entity.Student;

**public** **interface** IDao {

**public** **int** addStudent(Student student);

**public** Student getStudent(**int** sid);

**public** **int** updateStudent(**int** sid, **int** marks);

// public int updateStudent(Student student);

// public int deletStudent(int sid);

}

Create UpdateMarks.java with main method

**package** com.hexa.demos;

**import** com.hexa.dao.DaoImpl;

**import** com.hexa.dao.IDao;

**import** com.hexa.entity.Student;

**public** **class** UpdateMarks {

**public** **static** **void** main(String[] args) {

IDao dao = **new** DaoImpl();

**int** res = dao.updateStudent(1003, 99);

System.***out***.println("Updated : ");

}

}

O/P:

Hibernate:

select

student0\_.stu\_id as stu1\_0\_0\_,

student0\_.dept as dept0\_0\_,

student0\_.stu\_dob as stu3\_0\_0\_,

student0\_.stu\_marks as stu4\_0\_0\_,

student0\_.stu\_name as stu5\_0\_0\_

from

student student0\_

where

student0\_.stu\_id=?

Hibernate:

update

student

set

dept=?,

stu\_dob=?,

stu\_marks=?,

stu\_name=?

where

stu\_id=?

Updated :

The red Highlighted causes performance issue, n such case add in domain object class add Dynamic updates annotation

**Dirty Checking**

Run the above code again

Hibernate:

select

student0\_.stu\_id as stu1\_0\_0\_,

student0\_.dept as dept0\_0\_,

student0\_.stu\_dob as stu3\_0\_0\_,

student0\_.stu\_marks as stu4\_0\_0\_,

student0\_.stu\_name as stu5\_0\_0\_

from

student student0\_

where

student0\_.stu\_id=?

Updated :

The update query is not executed.

Deletion Code :

@Override

**public** **int** deletStudent(**int** sid) {

Session sess = *sfac*.openSession();

Student stu = (Student) sess.get(Student.**class**, sid);

Transaction tx = sess.beginTransaction();

**try** {

sess.delete(stu);

tx.commit();

sess.close();

**return** 1;

} **catch** (HibernateException e) {

System.***out***.println(e.getMessage());

}

**return** 0;

}

Interface

**package** com.hexa.dao;

**import** com.hexa.entity.Student;

**public** **interface** IDao {

**public** **int** addStudent(Student student);

**public** Student getStudent(**int** sid);

**public** **int** updateStudent(**int** sid, **int** marks);

// public int updateStudent(Student student);

**public** **int** deletStudent(**int** sid);

}

Create class Deleterow with main method

**package** com.hexa.demos;

**import** com.hexa.dao.DaoImpl;

**import** com.hexa.dao.IDao;

**import** com.hexa.entity.Student;

**public** **class** DeleteRow {

**public** **static** **void** main(String[] args) {

IDao dao = **new** DaoImpl();

**int** delResult = dao.deletStudent(1006);

**if**(delResult > 0) {

System.***out***.println("Deletion Success");

} **else** {

System.***out***.println("Deletion error");

}

}

}

O/P:

Hibernate:

select

student0\_.stu\_id as stu1\_0\_0\_,

student0\_.dept as dept0\_0\_,

student0\_.stu\_dob as stu3\_0\_0\_,

student0\_.stu\_marks as stu4\_0\_0\_,

student0\_.stu\_name as stu5\_0\_0\_

from

student student0\_

where

student0\_.stu\_id=?

Hibernate:

delete

from

student

where

stu\_id=?

Deletion Success

**Detached State example**

Create new class DetachedDemo.java with main Method in Demos package

package com.hexa.demos;

import org.hibernate.SessionFactory;

import org.hibernate.Transaction;

import org.hibernate.cfg.AnnotationConfiguration;

import org.hibernate.cfg.Configuration;

import org.hibernate.classic.Session;

import com.hexa.entity.Student;

public class DetachedDemo {

private static SessionFactory sfac;

static {

Configuration cfg = new AnnotationConfiguration();

cfg.configure(); // loads the hibernate.cfg.xml

sfac = cfg.buildSessionFactory();

}

public static void main(String[] args) {

Student stu = getStudent(1003);

Session sess = sfac.openSession();

Transaction tx = sess.beginTransaction();

stu.setMarks(100);

tx.commit();

sess.close();

System.out.println("Done");

}

public static Student getStudent(int sid) {

Session sess = sfac.openSession();

Student stu = (Student) sess.get(Student.class, sid);

sess.close();

return stu;

}

}

O/P:

Hibernate:

select

student0\_.stu\_id as stu1\_0\_0\_,

student0\_.dept as dept0\_0\_,

student0\_.stu\_dob as stu3\_0\_0\_,

student0\_.stu\_marks as stu4\_0\_0\_,

student0\_.stu\_name as stu5\_0\_0\_

from

student student0\_

where

student0\_.stu\_id=?

Done

The above program does not update in the database . Therefore the code is changed as

**public** **static** **void** main(String[] args) {

Student stu = *getStudent*(1003);

Session sess = *sfac*.openSession();

Transaction tx = sess.beginTransaction();

stu.setMarks(88);

//sess.update(stu);

sess.saveOrUpdate(stu);

tx.commit();

sess.close();

System.***out***.println("Done");

}

Now it gets updated in database

Add a method in interface

**package** com.hexa.dao;

**import** com.hexa.entity.Student;

**public** **interface** IDao {

**public** **int** addStudent(Student student);

**public** Student getStudent(**int** sid);

**public** **int** updateStudent(**int** sid, **int** marks);

**public** **int** updateStudent(Student student);

**public** **int** deletStudent(**int** sid);

}

Implement the method defined

@Override

**public** **int** updateStudent(Student student) {

Student stu = getStudent(student.getStuId());

Session sess = *sfac*.openSession();

Transaction tx = sess.beginTransaction();

sess.saveOrUpdate(stu);

tx.commit();

sess.close();

**return** 0;

}

Create a class in demos with mainmethod

**package** com.hexa.demos;

**import** org.hibernate.Transaction;

**import** org.hibernate.classic.Session;

**import** com.hexa.dao.DaoImpl;

**import** com.hexa.dao.IDao;

**import** com.hexa.entity.Student;

**public** **class** UpdateMarks2 {

**public** **static** **void** main(String[] args) {

IDao dao = **new** DaoImpl();

Student stu = dao.getStudent(1002);

stu.setMarks(97);

dao.updateStudent(stu);

System.***out***.println("Updated");

}

}

O/P:

Hibernate:

select

student0\_.stu\_id as stu1\_0\_0\_,

student0\_.dept as dept0\_0\_,

student0\_.stu\_dob as stu3\_0\_0\_,

student0\_.stu\_marks as stu4\_0\_0\_,

student0\_.stu\_name as stu5\_0\_0\_

from

student student0\_

where

student0\_.stu\_id=?

Hibernate:

select

student0\_.stu\_id as stu1\_0\_0\_,

student0\_.dept as dept0\_0\_,

student0\_.stu\_dob as stu3\_0\_0\_,

student0\_.stu\_marks as stu4\_0\_0\_,

student0\_.stu\_name as stu5\_0\_0\_

from

student student0\_

where

student0\_.stu\_id=?

Hibernate:

select

student\_.stu\_id,

student\_.dept as dept0\_,

student\_.stu\_dob as stu3\_0\_,

student\_.stu\_marks as stu4\_0\_,

student\_.stu\_name as stu5\_0\_

from

student student\_

where

student\_.stu\_id=?

Updated