Hibernate.cfg.xml

<?xml version=*"1.0"* encoding=*"UTF-8"*?>

<!DOCTYPE hibernate-configuration SYSTEM

"http://www.hibernate.org/dtd/hibernate-configuration-3.0.dtd">

<hibernate-configuration>

<session-factory>

<property name=*"format\_sql"*>false</property>

<property name=*"connection.pool\_size"*>2</property>

<property name = *"hibernate.dialect"*>

org.hibernate.dialect.MySQL5Dialect

</property>

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

com.mysql.cj.jdbc.Driver

</property>

<!-- Assume test is the database name -->

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

jdbc:mysql://localhost:3306/practice

</property>

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

root

</property>

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

Connect@123

</property>

<!-- Disable 2nd level cache -->

<property name=*"cache.provider\_class"*>org.hibernate.cache.internal.NoCacheProvider</property>

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

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

<!-- <property name="hbm2ddl.auto">create</property> -->

<mapping class=*"beans.Classes"*/>

<mapping class=*"beans.Subject"*/>

<mapping class=*"beans.Teacher"*/>

<mapping class=*"beans.Student"*/>

</session-factory>

</hibernate-configuration>

Index.jsp

<%@ page language=*"java"* contentType=*"text/html; charset=ISO-8859-1"*

pageEncoding=*"ISO-8859-1"*%>

<!DOCTYPE html>

<html>

<head>

<meta charset=*"ISO-8859-1"*>

<title>Menu</title>

</head>

<body>

<a href=*"view.jsp"* style="color: *blue*;">view class information</a><br>

<a href=*"adminservlet"* style="color: *green*;">Add class</a><br>

</body>

</html>

View.jsp

<%@ page language=*"java"* contentType=*"text/html; charset=ISO-8859-1"*

pageEncoding=*"ISO-8859-1"*%>

<%@ page import=*"java.util.List"*

import=*"org.hibernate.Session"*

import=*"org.hibernate.SessionFactory"*

import=*"org.hibernate.cfg.Configuration"*

import=*"java.util.Iterator"*

import=*"beans.Classes"*

import=*"beans.Subject"*

import=*"beans.Teacher"*

import=*"beans.Student"*

import=*"java.util.Set"*

import=*"javax.persistence.TypedQuery"*%>

<!DOCTYPE html>

<html>

<head>

<meta charset=*"ISO-8859-1"*>

<title>Insert title here</title>

</head>

<body>

<table width=*"400"* border=*"1"*>

<tr><th>Class Id</th><th>Class</th><th>Subjects</th><th>Teachers</th><th>Students</th></tr>

<%

Configuration cf=new Configuration();

SessionFactory sf = cf.configure().buildSessionFactory();

Session session1 =sf.openSession();

//Using from Clause

@SuppressWarnings("unchecked")

List<Classes> list= session1.createQuery("from Classes").list();

for(Classes e : list) {

int id = e.getClassId();

String name =e.getClassName();

Set<Subject> subs =e.getSubjects();

Set<Teacher> teachers =e.getTeachers();

Set<Student> students =e.getStudents();

%>

<tr>

<td><%=id%></td>

<td><%=name%></td>

<td><%

for(Subject s: subs){

out.println(s.getSubjectName()+"<br>");

}

%>

</td>

<td><%

for(Teacher t: teachers){

out.println(t.getTeacherName()+"<br>");

}

%></td>

<td><%

for(Student st: students){

out.println(st.getStudentName()+"<br><br>");

}

%></td>

</tr>

<%

}

session1.close();

%>

</table>

</body>

</html>

Class:classes

package beans;

import java.util.HashSet;

import java.util.Set;

import javax.persistence.CascadeType;

import javax.persistence.Column;

import javax.persistence.Entity;

import javax.persistence.GeneratedValue;

import javax.persistence.GenerationType;

import javax.persistence.Id;

import javax.persistence.JoinColumn;

import javax.persistence.JoinTable;

import javax.persistence.ManyToMany;

import javax.persistence.OneToMany;

import javax.persistence.SequenceGenerator;

import javax.persistence.Table;

@Entity

@Table

public class Classes {

@Id

@GeneratedValue(strategy = GenerationType.SEQUENCE, generator = "cls\_gen")

@SequenceGenerator(name="cls\_gen", sequenceName = "cls\_seq")

private int classId;

@Column(length = 20)

private String className;

@ManyToMany(cascade = CascadeType.ALL)

@JoinTable(name="class\_subject", joinColumns = {@JoinColumn(name = "classId")}, inverseJoinColumns = {@JoinColumn(name = "subjectId")})

Set<Subject> subjects = new HashSet<Subject>();

@ManyToMany(cascade = CascadeType.ALL)

@JoinTable(name="class\_teacher", joinColumns = {@JoinColumn(name = "classId")}, inverseJoinColumns = {@JoinColumn(name = "teacherId")})

Set<Teacher> teachers = new HashSet<Teacher>();

@OneToMany(cascade = CascadeType.ALL)

@JoinTable(name="class\_student", joinColumns = {@JoinColumn(name = "classId")}, inverseJoinColumns = {@JoinColumn(name = "studentId")})

Set<Student> students = new HashSet<Student>();

public Set<Student> getStudents() {

return students;

}

public void setStudents(Set<Student> students) {

this.students = students;

}

public int getClassId() {

return classId;

}

public void setClassId(int classId) {

this.classId = classId;

}

public String getClassName() {

return className;

}

public void setClassName(String className) {

this.className = className;

}

public Set<Subject> getSubjects() {

return subjects;

}

public void setSubjects(Set<Subject> subjects) {

this.subjects = subjects;

}

public Set<Teacher> getTeachers() {

return teachers;

}

public void setTeachers(Set<Teacher> teachers) {

this.teachers = teachers;

}

}

Class:student

package beans;

import javax.persistence.Entity;

import javax.persistence.GeneratedValue;

import javax.persistence.GenerationType;

import javax.persistence.Id;

import javax.persistence.SequenceGenerator;

import javax.persistence.Table;

@Entity

@Table

public class Student {

@Id

@GeneratedValue(strategy = GenerationType.SEQUENCE, generator = "stu\_gen")

@SequenceGenerator(name="stu\_gen", sequenceName = "stu\_seq")

private int studentId;

private String studentName;

public int getStudentId() {

return studentId;

}

public void setStudentId(int studentId) {

this.studentId = studentId;

}

public String getStudentName() {

return studentName;

}

public void setStudentName(String string) {

this.studentName = string;

}

}

Class:teacher

package beans;

import java.util.HashSet;

import java.util.Set;

import javax.persistence.Entity;

import javax.persistence.GeneratedValue;

import javax.persistence.GenerationType;

import javax.persistence.Id;

import javax.persistence.JoinColumn;

import javax.persistence.JoinTable;

import javax.persistence.ManyToMany;

import javax.persistence.OneToMany;

import javax.persistence.SequenceGenerator;

import javax.persistence.Table;

@Entity

@Table

public class Teacher {

@Id

@GeneratedValue(strategy = GenerationType.SEQUENCE, generator = "teach\_gen")

@SequenceGenerator(name="teach\_gen", sequenceName = "teach\_seq")

private int teacherId;

private String teacherName;

@ManyToMany(mappedBy = "teachers")

Set<Classes> classes = new HashSet<Classes>();

@OneToMany

@JoinTable(name="subject\_teacher", joinColumns = {@JoinColumn(name = "teacherId")}, inverseJoinColumns = {@JoinColumn(name = "subjectId")})

Set<Subject> subjects = new HashSet<Subject>();

public int getTeacherId() {

return teacherId;

}

public void setTeacherId(int teacherId) {

this.teacherId = teacherId;

}

public String getTeacherName() {

return teacherName;

}

public void setTeacherName(String teacherName) {

this.teacherName = teacherName;

}

public Set<Classes> getClasses() {

return classes;

}

public void setClasses(Set<Classes> classes) {

this.classes = classes;

}

public Set<Subject> getSubjects() {

return subjects;

}

public void setSubjects(Set<Subject> subjects) {

this.subjects = subjects;

}

}

Class :subject

package beans;

import java.util.HashSet;

import java.util.Set;

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.JoinTable;

import javax.persistence.ManyToMany;

import javax.persistence.ManyToOne;

import javax.persistence.OneToMany;

import javax.persistence.SequenceGenerator;

import javax.persistence.Table;

@Entity

@Table

public class Subject {

@Id

@GeneratedValue(strategy = GenerationType.SEQUENCE, generator = "sub\_gen")

@SequenceGenerator(name="sub\_gen", sequenceName = "sub\_seq")

private int subjectId;

private String subjectName;

@ManyToMany(mappedBy = "subjects")

Set<Classes> classes = new HashSet<Classes>();;

public int getSubjectId() {

return subjectId;

}

public void setSubjectId(int subjectId) {

this.subjectId = subjectId;

}

public String getSubjectName() {

return subjectName;

}

public void setSubjectName(String subjectName) {

this.subjectName = subjectName;

}

public Set<Classes> getClasses() {

return classes;

}

public void setClasses(Set<Classes> classes) {

this.classes = classes;

}

}

Servlet :AddclassServlet

package services;

import java.io.IOException;

import java.io.PrintWriter;

import javax.servlet.ServletException;

import javax.servlet.http.HttpServlet;

import javax.servlet.http.HttpServletRequest;

import javax.servlet.http.HttpServletResponse;

import javax.servlet.http.HttpSession;

import org.hibernate.Session;

import org.hibernate.SessionFactory;

import org.hibernate.cfg.Configuration;

import beans.Classes;

import beans.Student;

import beans.Subject;

import beans.Teacher;

/\*\*

\* Servlet implementation class AddClassServlet

\*/

public class AddClassServlet extends HttpServlet {

private static final long serialVersionUID = 1L;

@SuppressWarnings("unchecked")

@Override

protected void service(HttpServletRequest request, HttpServletResponse response) throws ServletException, IOException {

PrintWriter out = response.getWriter();

String className = request.getParameter("class-name");

String subject1 = request.getParameter("sub1-name");

String subject2 = request.getParameter("sub2-name");

String subject3 = request.getParameter("sub3-name");

String sub1\_teacher = request.getParameter("teacher1-name");

String sub2\_teacher = request.getParameter("teacher2-name");

String sub3\_teacher = request.getParameter("teacher3-name");

String std1 = request.getParameter("student1-name");

String std2 = request.getParameter("student2-name");

String std3 = request.getParameter("student3-name");

String std4 = request.getParameter("student4-name");

Classes classObj = new Classes();

classObj.setClassName(className);

Subject s1 = new Subject();

s1.setSubjectName(subject1);

Subject s2 = new Subject();

s2.setSubjectName(subject2);

Subject s3 = new Subject();

s3.setSubjectName(subject3);

Teacher t1 = new Teacher();

t1.setTeacherName(sub1\_teacher);

Teacher t2 = new Teacher();

t2.setTeacherName(sub2\_teacher);

Teacher t3 = new Teacher();

t3.setTeacherName(sub3\_teacher);

//students creation

Student st1 = new Student();

st1.setStudentName(std1);

Student st2 = new Student();

st2.setStudentName(std2);

Student st3 = new Student();

st3.setStudentName(std3);

Student st4 = new Student();

st4.setStudentName(std4);

classObj.getSubjects().add(s1);

classObj.getSubjects().add(s2);

classObj.getSubjects().add(s3);

s1.getClasses().add(classObj);

s2.getClasses().add(classObj);

s3.getClasses().add(classObj);

classObj.getTeachers().add(t1);

classObj.getTeachers().add(t2);

classObj.getTeachers().add(t3);

t1.getClasses().add(classObj);

t2.getClasses().add(classObj);

t3.getClasses().add(classObj);

t1.getSubjects().add(s1);

t2.getSubjects().add(s2);

t3.getSubjects().add(s3);

classObj.getStudents().add(st1);

classObj.getStudents().add(st2);

classObj.getStudents().add(st3);

classObj.getStudents().add(st4);

HttpSession httpSession = request.getSession();

SessionFactory sf = new Configuration().configure().buildSessionFactory();

Session session = sf.openSession();

session.beginTransaction();

session.saveOrUpdate(classObj);

session.getTransaction().commit();

}

}

Servlet:adminservlet

package services;

import java.io.IOException;

import java.io.PrintWriter;

import java.util.HashSet;

import java.util.Set;

import javax.servlet.ServletException;

import javax.servlet.http.HttpServlet;

import javax.servlet.http.HttpServletRequest;

import javax.servlet.http.HttpServletResponse;

import javax.servlet.http.HttpSession;

import org.hibernate.Query;

import org.hibernate.Session;

import org.hibernate.SessionFactory;

import org.hibernate.cfg.Configuration;

import beans.Classes;

import beans.Student;

import beans.Subject;

import beans.Teacher;

/\*\*

\* Servlet implementation class AdminServlet

\*/

public class AdminServlet extends HttpServlet {

private static final long serialVersionUID = 1L;

@SuppressWarnings("null")

@Override

protected void service(HttpServletRequest request, HttpServletResponse response) throws ServletException, IOException {

// response.setContentType("text/html");

PrintWriter out = response.getWriter();

//Common for all classes

Set<Classes> classes = new HashSet<Classes>();

//11th sets

Set<Subject> subjects = new HashSet<Subject>();

Set<Teacher> teachers = new HashSet<Teacher>();

Set<Student> students = new HashSet<Student>();

//12th sets

Set<Subject> twelth\_subjects = new HashSet<Subject>();

Set<Teacher> twelth\_teachers = new HashSet<Teacher>();

Set<Student> twelth\_students = new HashSet<Student>();

//10th

Set<Subject> tenth\_subjects = new HashSet<Subject>();

Set<Teacher> tenth\_teachers = new HashSet<Teacher>();

Set<Student> tenth\_students = new HashSet<Student>();

//11th subs

Subject maths = new Subject();

maths.setSubjectName("11th Mathematics");

Subject chemistry = new Subject();

chemistry.setSubjectName("11th Chemistry");

Subject physics = new Subject();

physics.setSubjectName("11th Physics");

//12th subs

Subject twelth\_maths = new Subject();

twelth\_maths.setSubjectName("12th Mathematics");

Subject twelth\_chemistry = new Subject();

twelth\_chemistry.setSubjectName("12th Chemistry");

Subject twelth\_physics = new Subject();

twelth\_physics.setSubjectName("12th Physics");

//10th subs

Subject tenth\_science = new Subject();

tenth\_science.setSubjectName("10th Science");

Subject tenth\_maths = new Subject();

tenth\_maths.setSubjectName("10th Mathematics");

Subject tenth\_tamil = new Subject();

tenth\_tamil.setSubjectName("10th Tamil");

//teachers

Teacher t1 = new Teacher();

t1.setTeacherName("Malar");

Teacher t2 = new Teacher();

t2.setTeacherName("Ashok");

Teacher t3 = new Teacher();

t3.setTeacherName("sekar");

//10th students

Student s1 = new Student();

s1.setStudentName("Nandha");

Student s2 = new Student();

s2.setStudentName("Kumar");

Student s3 = new Student();

s3.setStudentName("Velu");

Student s4 = new Student();

s4.setStudentName("Harish");

//11th students

Student s5 = new Student();

s5.setStudentName("Nikil");

Student s6 = new Student();

s6.setStudentName("Nalini");

Student s7 = new Student();

s7.setStudentName("Seetha");

//12th students

Student s8 = new Student();

s8.setStudentName("Swetha");

Student s9 = new Student();

s9.setStudentName("Nandhini");

Student s10 = new Student();

s10.setStudentName("Kishore");

Student s11 = new Student();

s11.setStudentName("Rahul");

//classes

Classes eleventh = new Classes();

eleventh.setClassName("Eleventh standard");

Classes tenth = new Classes();

tenth.setClassName("Tenth standard");

Classes twelth = new Classes();

twelth.setClassName("Twelth standard");

subjects.add(maths);

subjects.add(physics);

subjects.add(chemistry);

twelth\_subjects.add(twelth\_physics);

twelth\_subjects.add(twelth\_maths);

twelth\_subjects.add(twelth\_chemistry);

tenth\_subjects.add(tenth\_tamil);

tenth\_subjects.add(tenth\_science);

tenth\_subjects.add(tenth\_maths);

// t1.setSubjects(subjects);

// t2.setSubjects(subjects);

// t3.setSubjects(subjects);

teachers.add(t1);

teachers.add(t2);

teachers.add(t3);

twelth\_teachers.add(t1);

twelth\_teachers.add(t2);

twelth\_teachers.add(t3);

tenth\_teachers.add(t1);

tenth\_teachers.add(t2);

tenth\_teachers.add(t3);

classes.add(eleventh);

classes.add(tenth);

classes.add(twelth);

t1.setClasses(classes);

t2.setClasses(classes);

t3.setClasses(classes);

maths.setClasses(classes);

physics.setClasses(classes);

chemistry.setClasses(classes);

twelth\_maths.setClasses(classes);

twelth\_physics.setClasses(classes);

twelth\_chemistry.setClasses(classes);

tenth\_maths.setClasses(classes);

tenth\_science.setClasses(classes);

tenth\_tamil.setClasses(classes);

eleventh.setTeachers(teachers);

eleventh.setSubjects(subjects);

tenth.setTeachers(tenth\_teachers);

tenth.setSubjects(tenth\_subjects);

twelth.setTeachers(twelth\_teachers);

twelth.setSubjects(twelth\_subjects);

tenth\_students.add(s1);

tenth\_students.add(s2);

tenth\_students.add(s3);

tenth\_students.add(s4);

students.add(s5);

students.add(s6);

students.add(s7);

twelth\_students.add(s8);

twelth\_students.add(s9);

twelth\_students.add(s10);

twelth\_students.add(s10);

eleventh.setStudents(students);

twelth.setStudents(twelth\_students);

tenth.setStudents(tenth\_students);

for(Teacher t: eleventh.getTeachers()) {

if(t.getTeacherName().equals("Malar")) {

t.getSubjects().add(physics);

}else if(t.getTeacherName().equals("Ashok")) {

t.getSubjects().add(maths);

}else {

t.getSubjects().add(chemistry);

}

}

for(Teacher t: twelth.getTeachers()) {

if(t.getTeacherName().equalsIgnoreCase("malar")) {

t.getSubjects().add(twelth\_maths);

}else if(t.getTeacherName().equals("Ashok")) {

t.getSubjects().add(twelth\_physics);

}else {

t.getSubjects().add(twelth\_chemistry);

}

}

for(Teacher t: tenth.getTeachers()) {

if(t.getTeacherName().equalsIgnoreCase("malar")) {

t.getSubjects().add(tenth\_maths);

}else if(t.getTeacherName().equals("Ashok")) {

t.getSubjects().add(tenth\_science);

}else {

t.getSubjects().add(tenth\_tamil);

}

}

HttpSession httpSession = request.getSession();

httpSession.setAttribute("classes", classes);

SessionFactory sf = new Configuration().configure().buildSessionFactory();

Session session = sf.openSession();

session.beginTransaction();

int i =0;

for(Classes cl: classes) {

i= (Integer)session.save(cl);

}

session.getTransaction().commit();

if(i>0) {

out.print("Record inserted");

}else {

out.print("Record insertion failed");

}

}

}