1. Java Code:

**Classes.java**

package entity;

import java.util.List;

import javax.persistence.CascadeType;

import javax.persistence.Column;

import javax.persistence.Entity;

import javax.persistence.GeneratedValue;

import javax.persistence.Id;

import javax.persistence.OneToMany;

import javax.persistence.Table;

@Entity

@Table(name="class\_table")

public class Classes {

@Id

@GeneratedValue

private int class\_id;

@Column(name="Class\_name")

private String name;

@OneToMany(cascade=CascadeType.ALL,mappedBy="classes")

private List<Student> students;

@OneToMany(cascade=CascadeType.ALL,mappedBy="classes")

private List<Subject> subjects;

public int getClass\_id() {

return class\_id;

}

public void setClass\_id(int class\_id) {

this.class\_id = class\_id;

}

public String getName() {

return name;

}

public void setName(String name) {

this.name = name;

}

public List<Student> getStudents() {

return students;

}

public void setStudents(List<Student> students) {

this.students = students;

}

public List<Subject> getSubjects() {

return subjects;

}

public void setSubjects(List<Subject> subjects) {

this.subjects = subjects;

}

}

**Student.java**

package entity;

import javax.persistence.CascadeType;

import javax.persistence.Column;

import javax.persistence.Entity;

import javax.persistence.GeneratedValue;

import javax.persistence.Id;

import javax.persistence.JoinColumn;

import javax.persistence.ManyToOne;

import javax.persistence.Table;

@Entity

@Table(name="student\_table")

public class Student {

@Id

@GeneratedValue

private int student\_id;

@Column(name="name")

private String name;

@Column(name="fname")

private String fname;

@ManyToOne(cascade=CascadeType.ALL)

@JoinColumn(name="class\_id")

private Classes classes;

public int getStudent\_id() {

return student\_id;

}

public void setStudent\_id(int student\_id) {

this.student\_id = student\_id;

}

public String getName() {

return name;

}

public void setName(String name) {

this.name = name;

}

public String getFname() {

return fname;

}

public void setFname(String fname) {

this.fname = fname;

}

public Classes getClasses() {

return classes;

}

public void setClasses(Classes classes) {

this.classes = classes;

}

}

**Subject.java**

package entity;

import javax.persistence.CascadeType;

import javax.persistence.Column;

import javax.persistence.Entity;

import javax.persistence.GeneratedValue;

import javax.persistence.Id;

import javax.persistence.JoinColumn;

import javax.persistence.ManyToOne;

import javax.persistence.Table;

@Entity

@Table(name="subject\_table")

public class Subject {

@Id

@GeneratedValue

private int subject\_id;

@Column(name="subject\_name")

private String name;

@ManyToOne(cascade=CascadeType.ALL)

@JoinColumn(name="teacher\_id")

private Teacher teacher;

@ManyToOne(cascade=CascadeType.ALL)

@JoinColumn(name="class\_id")

private Classes classes;

public int getSubject\_id() {

return subject\_id;

}

public void setSubject\_id(int subject\_id) {

this.subject\_id = subject\_id;

}

public String getName() {

return name;

}

public void setName(String name) {

this.name = name;

}

public Teacher getTeacher() {

return teacher;

}

public void setTeacher(Teacher teacher) {

this.teacher = teacher;

}

public Classes getClasses() {

return classes;

}

public void setClasses(Classes classes) {

this.classes = classes;

}

}

**Teacher.java**

package entity;

import java.util.List;

import javax.persistence.CascadeType;

import javax.persistence.Column;

import javax.persistence.Entity;

import javax.persistence.GeneratedValue;

import javax.persistence.Id;

import javax.persistence.OneToMany;

import javax.persistence.Table;

@Entity

@Table(name="teacher\_table")

public class Teacher {

@Id

@GeneratedValue

private int teacher\_id;

@Column(name="first\_name")

private String name;

@Column(name="last\_name")

private String lname;

@OneToMany(cascade=CascadeType.ALL, mappedBy="teacher")

private List<Subject> subjects;

public int getTeacher\_id() {

return teacher\_id;

}

public void setTeacher\_id(int teacher\_id) {

this.teacher\_id = teacher\_id;

}

public String getName() {

return name;

}

public void setName(String name) {

this.name = name;

}

public String getLname() {

return lname;

}

public void setLname(String lname) {

this.lname = lname;

}

public List<Subject> getSubjects() {

return subjects;

}

public void setSubjects(List<Subject> subjects) {

this.subjects = subjects;

}

}

**AddClass.java**

package servlet;

import java.io.IOException;

import java.io.PrintWriter;

import javax.servlet.RequestDispatcher;

import javax.servlet.ServletException;

import javax.servlet.annotation.WebServlet;

import javax.servlet.http.HttpServlet;

import javax.servlet.http.HttpServletRequest;

import javax.servlet.http.HttpServletResponse;

import org.hibernate.Session;

import org.hibernate.SessionFactory;

import org.hibernate.Transaction;

import entity.Classes;

import entity.Subject;

import util.HibernateUtil;

/\*\*

\* Servlet implementation class AddClass

\*/

@WebServlet("/addClass")

public class AddClass extends HttpServlet {

private static final long serialVersionUID = 1L;

/\*\*

\* @see HttpServlet#HttpServlet()

\*/

public AddClass() {

super();

// TODO Auto-generated constructor stub

}

/\*\*

\* @see HttpServlet#doGet(HttpServletRequest request, HttpServletResponse response)

\*/

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

// TODO Auto-generated method stub

response.getWriter().append("Served at: ").append(request.getContextPath());

}

/\*\*

\* @see HttpServlet#doPost(HttpServletRequest request, HttpServletResponse response)

\*/

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

response.setContentType("text/html");

PrintWriter out = response.getWriter();

// Step 1: Get details , user has entered

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

// Step2: Create session

SessionFactory sf = HibernateUtil.buildSessionFactory();

Session session = sf.openSession();

// Step 3: Begin Transaction

Transaction tx = session.beginTransaction();

//Step4; Create persistent object and add Teacher

Classes classes = new Classes();

classes.setName(name);

session.save(classes);

// STep5: Commit transaction and close sessoin

tx.commit();

session.close();

RequestDispatcher dispatcher = getServletContext().getRequestDispatcher("/viewClass.jsp");

dispatcher.forward(request, response);

}

}

**AddStudent.java**

package servlet;

import java.io.IOException;

import java.io.PrintWriter;

import javax.servlet.RequestDispatcher;

import javax.servlet.ServletException;

import javax.servlet.annotation.WebServlet;

import javax.servlet.http.HttpServlet;

import javax.servlet.http.HttpServletRequest;

import javax.servlet.http.HttpServletResponse;

import org.hibernate.Session;

import org.hibernate.SessionFactory;

import org.hibernate.Transaction;

import entity.Student;

import util.HibernateUtil;

/\*\*

\* Servlet implementation class AddStudent

\*/

@WebServlet("/addStudent")

public class AddStudent extends HttpServlet {

private static final long serialVersionUID = 1L;

/\*\*

\* @see HttpServlet#HttpServlet()

\*/

public AddStudent() {

super();

// TODO Auto-generated constructor stub

}

/\*\*

\* @see HttpServlet#doGet(HttpServletRequest request, HttpServletResponse response)

\*/

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

// TODO Auto-generated method stub

response.getWriter().append("Served at: ").append(request.getContextPath());

}

/\*\*

\* @see HttpServlet#doPost(HttpServletRequest request, HttpServletResponse response)

\*/

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

response.setContentType("text/html");

PrintWriter out = response.getWriter();

// Step 1: Get details , user has entered

String name = request.getParameter("fname");

String lname = request.getParameter("lname");

// Step2: Create session

SessionFactory sf = HibernateUtil.buildSessionFactory();

Session session = sf.openSession();

// Step 3: Begin Transaction

Transaction tx = session.beginTransaction();

//Step4; Create persistent object and add Teacher

Student student = new Student();

student.setName(name);

student.setFname(lname);

session.save(student);

// STep5: Commit transaction and close sessoin

tx.commit();

session.close();

RequestDispatcher dispatcher = getServletContext().getRequestDispatcher("/viewStudent.jsp");

dispatcher.forward(request, response);

}

}

**AddSubject.java**

package servlet;

import java.io.IOException;

import java.io.PrintWriter;

import javax.servlet.RequestDispatcher;

import javax.servlet.ServletException;

import javax.servlet.annotation.WebServlet;

import javax.servlet.http.HttpServlet;

import javax.servlet.http.HttpServletRequest;

import javax.servlet.http.HttpServletResponse;

import org.hibernate.Session;

import org.hibernate.SessionFactory;

import org.hibernate.Transaction;

import entity.Subject;

import entity.Teacher;

import util.HibernateUtil;

/\*\*

\* Servlet implementation class AddSubject

\*/

@WebServlet("/addSubject")

public class AddSubject extends HttpServlet {

private static final long serialVersionUID = 1L;

/\*\*

\* @see HttpServlet#HttpServlet()

\*/

public AddSubject() {

super();

// TODO Auto-generated constructor stub

}

/\*\*

\* @see HttpServlet#doGet(HttpServletRequest request, HttpServletResponse response)

\*/

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

// TODO Auto-generated method stub

response.getWriter().append("Served at: ").append(request.getContextPath());

}

/\*\*

\* @see HttpServlet#doPost(HttpServletRequest request, HttpServletResponse response)

\*/

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

response.setContentType("text/html");

PrintWriter out = response.getWriter();

// Step 1: Get details , user has entered

String name = request.getParameter("name");

// Step2: Create session

SessionFactory sf = HibernateUtil.buildSessionFactory();

Session session = sf.openSession();

// Step 3: Begin Transaction

Transaction tx = session.beginTransaction();

//Step4; Create persistent object and add Teacher

Subject subject = new Subject();

subject.setName(name);

session.save(subject);

// STep5: Commit transaction and close sessoin

tx.commit();

session.close();

RequestDispatcher dispatcher = getServletContext().getRequestDispatcher("/viewSubject.jsp");

dispatcher.forward(request, response);

}

}

**AddTeacher.java**

package servlet;

import java.io.IOException;

import java.io.PrintWriter;

import javax.servlet.RequestDispatcher;

import javax.servlet.ServletException;

import javax.servlet.annotation.WebServlet;

import javax.servlet.http.HttpServlet;

import javax.servlet.http.HttpServletRequest;

import javax.servlet.http.HttpServletResponse;

import org.hibernate.Session;

import org.hibernate.SessionFactory;

import org.hibernate.Transaction;

import entity.Teacher;

import util.HibernateUtil;

/\*\*

\* Servlet implementation class AddTeacher

\*/

@WebServlet("/addTeacher")

public class AddTeacher extends HttpServlet {

private static final long serialVersionUID = 1L;

/\*\*

\* @see HttpServlet#HttpServlet()

\*/

public AddTeacher() {

super();

// TODO Auto-generated constructor stub

}

/\*\*

\* @see HttpServlet#doGet(HttpServletRequest request, HttpServletResponse response)

\*/

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

// TODO Auto-generated method stub

response.getWriter().append("Served at: ").append(request.getContextPath());

}

/\*\*

\* @see HttpServlet#doPost(HttpServletRequest request, HttpServletResponse response)

\*/

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

response.setContentType("text/html");

PrintWriter out = response.getWriter();

// Step 1: Get details , user has entered

String name = request.getParameter("name");

String lname = request.getParameter("lname");

// Step2: Create session

SessionFactory sf = HibernateUtil.buildSessionFactory();

Session session = sf.openSession();

// Step 3: Begin Transaction

Transaction tx = session.beginTransaction();

//Step4; Create persistent object and add Teacher

Teacher teacher = new Teacher();

teacher.setName(name);

teacher.setLname(lname);

session.save(teacher);

// STep5: Commit transaction and close sessoin

tx.commit();

session.close();

RequestDispatcher dispatcher = getServletContext().getRequestDispatcher("/viewTeachers.jsp");

dispatcher.forward(request, response);

}

}

**AssignStudent.java**

package servlet;

import java.io.IOException;

import java.io.PrintWriter;

import java.util.List;

import javax.servlet.RequestDispatcher;

import javax.servlet.ServletException;

import javax.servlet.annotation.WebServlet;

import javax.servlet.http.HttpServlet;

import javax.servlet.http.HttpServletRequest;

import javax.servlet.http.HttpServletResponse;

import org.hibernate.query.Query;

import org.hibernate.Session;

import org.hibernate.SessionFactory;

import org.hibernate.Transaction;

import entity.Classes;

import entity.Student;

import util.HibernateUtil;

/\*\*

\* Servlet implementation class AssignStudent

\*/

@WebServlet("/assignStudent")

public class AssignStudent extends HttpServlet {

private static final long serialVersionUID = 1L;

/\*\*

\* @see HttpServlet#HttpServlet()

\*/

public AssignStudent() {

super();

// TODO Auto-generated constructor stub

}

/\*\*

\* @see HttpServlet#doGet(HttpServletRequest request, HttpServletResponse response)

\*/

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

// TODO Auto-generated method stub

response.getWriter().append("Served at: ").append(request.getContextPath());

}

/\*\*

\* @see HttpServlet#doPost(HttpServletRequest request, HttpServletResponse response)

\*/

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

response.setContentType("text/html");

PrintWriter out = response.getWriter();

// Step 1: Get details , user has entered

String name = request.getParameter("name");

String[] nameList = name.split(" ");

//System.out.println("NameList: " + nameList);

String classes = request.getParameter("class");

// Step2: Create session

SessionFactory sf = HibernateUtil.buildSessionFactory();

Session session = sf.openSession();

// Step 3: Begin Transaction

Transaction tx = session.beginTransaction();

String hql\_classes= "from Classes where name='" + classes + "'";

List<Classes> clas = session.createQuery(hql\_classes).list();

String hql\_student = "update Student s set s.classes=:n where s.name=:sn and s.fname=:fn";

Query<Student> query = session.createQuery(hql\_student);

query.setParameter("n", clas.get(0));

query.setParameter("sn", nameList[0]);

query.setParameter("fn", nameList[1]);

query.executeUpdate();

// STep5: Commit transaction and close sessoin

tx.commit();

session.close();

RequestDispatcher dispatcher = getServletContext().getRequestDispatcher("/viewStudent.jsp");

dispatcher.forward(request, response);

}

}

**AssignSubject.java**

package servlet;

import java.io.IOException;

import java.io.PrintWriter;

import java.util.List;

import javax.servlet.RequestDispatcher;

import javax.servlet.ServletException;

import javax.servlet.annotation.WebServlet;

import javax.servlet.http.HttpServlet;

import javax.servlet.http.HttpServletRequest;

import javax.servlet.http.HttpServletResponse;

import org.hibernate.Session;

import org.hibernate.SessionFactory;

import org.hibernate.Transaction;

import org.hibernate.query.Query;

import entity.Classes;

import entity.Subject;

import entity.Teacher;

import util.HibernateUtil;

/\*\*

\* Servlet implementation class AssignSubject

\*/

@WebServlet("/assignSubject")

public class AssignSubject extends HttpServlet {

private static final long serialVersionUID = 1L;

/\*\*

\* @see HttpServlet#HttpServlet()

\*/

public AssignSubject() {

super();

// TODO Auto-generated constructor stub

}

/\*\*

\* @see HttpServlet#doGet(HttpServletRequest request, HttpServletResponse response)

\*/

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

// TODO Auto-generated method stub

response.getWriter().append("Served at: ").append(request.getContextPath());

}

/\*\*

\* @see HttpServlet#doPost(HttpServletRequest request, HttpServletResponse response)

\*/

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

response.setContentType("text/html");

PrintWriter out = response.getWriter();

// Step 1: Get details , user has entered

String clas = request.getParameter("class");

String subject = request.getParameter("subject");

// Step2: Create session

SessionFactory sf = HibernateUtil.buildSessionFactory();

Session session = sf.openSession();

// Step 3: Begin Transaction

Transaction tx = session.beginTransaction();

String hql\_clas= "from Classes where name='" + clas + "'";

List<Classes> classes = session.createQuery(hql\_clas).list();

String hql\_subject = "update Subject s set s.classes=:n where s.name=:sn";

Query<Subject> query = session.createQuery(hql\_subject);

query.setParameter("n", classes.get(0));

query.setParameter("sn", subject);

query.executeUpdate();

// STep5: Commit transaction and close sessoin

tx.commit();

session.close();

RequestDispatcher dispatcher = getServletContext().getRequestDispatcher("/viewClass.jsp");

dispatcher.forward(request, response);

}

}

**AssignTeacher.java**

package servlet;

import java.io.IOException;

import java.io.PrintWriter;

import java.util.List;

import javax.servlet.RequestDispatcher;

import javax.servlet.ServletException;

import javax.servlet.annotation.WebServlet;

import javax.servlet.http.HttpServlet;

import javax.servlet.http.HttpServletRequest;

import javax.servlet.http.HttpServletResponse;

import org.hibernate.Session;

import org.hibernate.SessionFactory;

import org.hibernate.Transaction;

import org.hibernate.query.Query;

import entity.Classes;

import entity.Student;

import entity.Subject;

import entity.Teacher;

import util.HibernateUtil;

/\*\*

\* Servlet implementation class AssignTeacher

\*/

@WebServlet("/assignTeacher")

public class AssignTeacher extends HttpServlet {

private static final long serialVersionUID = 1L;

/\*\*

\* @see HttpServlet#HttpServlet()

\*/

public AssignTeacher() {

super();

// TODO Auto-generated constructor stub

}

/\*\*

\* @see HttpServlet#doGet(HttpServletRequest request, HttpServletResponse response)

\*/

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

// TODO Auto-generated method stub

response.getWriter().append("Served at: ").append(request.getContextPath());

}

/\*\*

\* @see HttpServlet#doPost(HttpServletRequest request, HttpServletResponse response)

\*/

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

response.setContentType("text/html");

PrintWriter out = response.getWriter();

// Step 1: Get details , user has entered

String name = request.getParameter("name");

String[] nameArray = name.split(" ");

//System.out.println("NameList: " + nameList);

String subject = request.getParameter("subject");

// Step2: Create session

SessionFactory sf = HibernateUtil.buildSessionFactory();

Session session = sf.openSession();

// Step 3: Begin Transaction

Transaction tx = session.beginTransaction();

String hql\_teacher= "from Teacher where name='" + nameArray[0] + "'" + " and lname='" + nameArray[1] + "'";

List<Teacher> teachers = session.createQuery(hql\_teacher).list();

String hql\_subject = "update Subject s set s.teacher=:n where s.name=:sn";

Query<Subject> query = session.createQuery(hql\_subject);

query.setParameter("n", teachers.get(0));

query.setParameter("sn", subject);

query.executeUpdate();

// STep5: Commit transaction and close sessoin

tx.commit();

session.close();

RequestDispatcher dispatcher = getServletContext().getRequestDispatcher("/viewTeachers.jsp");

dispatcher.forward(request, response);

}

}

**HibernateUtil.java**

package util;

import org.hibernate.SessionFactory;

import org.hibernate.cfg.Configuration;

import entity.Classes;

import entity.Student;

import entity.Subject;

import entity.Teacher;

public class HibernateUtil {

public static SessionFactory buildSessionFactory() {

SessionFactory sessionFactory = new Configuration().configure("hibernate.cfg.xml")

.addAnnotatedClass(Teacher.class)

.addAnnotatedClass(Subject.class)

.addAnnotatedClass(Classes.class)

.addAnnotatedClass(Student.class)

.buildSessionFactory();

return sessionFactory;

}

}

1. Configure XML code:

**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=*"connection.driver\_class"*>com.mysql.cj.jdbc.Driver</property>

<property name=*"connection.url"*>jdbc:mysql://localhost:3306/LearnerAcademy</property>

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

<property name = *"hibernate.connection.password"*>Nilesh@1991</property>

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

<property name=*"dialect"*>org.hibernate.dialect.MySQL8Dialect</property>

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

</session-factory>

</hibernate-configuration>

1. JSP and HTML Code:

**addClasses.html**

<!DOCTYPE html>

<html>

<head>

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

<title>Insert title here</title>

</head>

<body>

<h1>Add Class</h1>

<form action=*"addClass"* method=*"post"*>

<label for =*"class"*>Class:</label>

<input type=*"text"* id=*"class"* name=*"class"*><br><br>

<input type=*"submit"* value=*"Submit"*>

</form>

</body>

</html>

**addStudent.html**

<!DOCTYPE html>

<html>

<head>

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

<title>Insert title here</title>

</head>

<body>

<h1>Add Student</h1>

<form action=*"addStudent"* method=*"post"*>

<label for=*"fname"* >Name</label><br><br>

<input type=*"text"* id=*"fname"* name=*"fname"* ><br><br>

<label for=*"lname"*>Last Name</label><br><br>

<input type=*"text"* id=*"lname"* name=*"lname"*><br><br>

<input type=*"submit"* value=*"Submit"*>

</form>

</body>

</html>

**addSubject.html**

<!DOCTYPE html>

<html>

<head>

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

<title>Insert title here</title>

</head>

<body>

<h1>Add Subject</h1>

<form action=*"addSubject"* method=*"post"*>

<label for=*"name"* >Subject Name:</label><br><br>

<input type=*"text"* id=*"name"* name=*"name"*><br><br>

<input type=*"submit"* value=*"Submit"*>

</form>

</body>

</html>

**addTeacher.html**

<!DOCTYPE html>

<html>

<head>

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

<title>Insert title here</title>

</head>

<body>

<h1>Add Teacher</h1>

<form action=*"addTeacher"* method=*"post"*>

<label for=*"name"*>Name:</label><br><br>

<input type=*"text"* id=*"name"* name=*"name"*><br><br>

<label for=*"lname"*>Last Name:</label><br><br>

<input type=*"text"* id=*"lname"* name=*"lname"*><br><br>

<input type=*"submit"* value=*"Submit"*>

</form>

</body>

</html>

**assignStudentToClass.jsp**

<%@page import=*"entity.Classes"*%>

<%@page import=*"util.HibernateUtil"*%>

<%@page import=*"org.hibernate.SessionFactory"*%>

<%@page import=*"org.hibernate.Session"*%>

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

<%@page import=*"entity.Student"*%>

<%@ page language=*"java"* contentType=*"text/html; charset=UTF-8"*

pageEncoding=*"UTF-8"*%>

<!DOCTYPE html>

<html>

<head>

<meta charset=*"UTF-8"*>

<title>Insert title here</title>

</head>

<body>

<a href=*"index.html"*>Back to Main Menu</a><br>

<h1>Assign a Student to a Class</h1>

<%

SessionFactory sf = HibernateUtil.buildSessionFactory();

Session hibernateSession = sf.openSession();

List<Student> students = hibernateSession.createQuery("from Student").list();

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

%>

<form action=*"assignStudent"* method=*"post"*>

<table>

<tr>

<th>Student Name </th>

<th>Class Name </th>

</tr>

<tr>

<td>

<select name=*"name"*>

<%

**for** (Student student : students){

out.print("<option>" + student.getName() + " " + student.getFname());

out.print("</option>");

}

%>

</select>

</td>

<td>

<select name=*"class"*>

<%

**for** (Classes clas : classes){

out.print("<option>" + clas.getName());

out.print("</option>");

}

%>

</select>

</td>

</tr>

</table>

<input type=*"submit"* value=*"Submit"*>

</form>

</body>

</html>

**assignSubjectToClass.jsp**

<%@page import=*"entity.Subject"*%>

<%@page import=*"entity.Classes"*%>

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

<%@page import=*"org.hibernate.Session"*%>

<%@page import=*"util.HibernateUtil"*%>

<%@page import=*"org.hibernate.SessionFactory"*%>

<%@ page language=*"java"* contentType=*"text/html; charset=UTF-8"*

pageEncoding=*"UTF-8"*%>

<!DOCTYPE html>

<html>

<head>

<meta charset=*"UTF-8"*>

<title>Insert title here</title>

</head>

<body>

<a href=*"index.html"*>Back to Main Menu</a><br>

<h1>Assign a Subject to a Class</h1>

<%

SessionFactory sf = HibernateUtil.buildSessionFactory();

Session hibernateSession = sf.openSession();

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

List<Subject> subjects = hibernateSession.createQuery("from Subject").list();

%>

<form action=*"assignSubject"* method=*"post"*>

<table>

<tr>

<th>Class Name </th>

<th>Subject Name </th>

</tr>

<tr>

<td>

<select name=*"class"*>

<%

**for** (Classes clas : classes){

out.print("<option>" + clas.getName());

out.print("</option>");

}

%>

</select>

</td>

<td>

<select name=*"subject"*>

<%

**for** (Subject subject : subjects){

out.print("<option>" + subject.getName());

out.print("</option>");

}

%>

</select>

</td>

</tr>

</table>

<input type=*"submit"* value=*"Submit"*>

</form>

</body>

</html>

**assignTeacherToSubject.jsp**

<%@page import=*"entity.Subject"*%>

<%@page import=*"entity.Teacher"*%>

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

<%@page import=*"org.hibernate.Session"*%>

<%@page import=*"util.HibernateUtil"*%>

<%@page import=*"org.hibernate.SessionFactory"*%>

<%@ page language=*"java"* contentType=*"text/html; charset=UTF-8"*

pageEncoding=*"UTF-8"*%>

<!DOCTYPE html>

<html>

<head>

<meta charset=*"UTF-8"*>

<title>Insert title here</title>

</head>

<body>

<a href=*"index.html"*>Back to Main Menu</a><br>

<h1>Assign a Teacher to a Subject</h1>

<%

SessionFactory sf = HibernateUtil.buildSessionFactory();

Session hibernateSession = sf.openSession();

List<Teacher> teachers = hibernateSession.createQuery("from Teacher").list();

List<Subject> subjects = hibernateSession.createQuery("from Subject").list();

%>

<form action=*"assignTeacher"* method=*"post"*>

<table>

<tr>

<th>Teacher Name </th>

<th>Subject Name </th>

</tr>

<tr>

<td>

<select name=*"name"*>

<%

**for** (Teacher teacher : teachers){

out.print("<option>" + teacher.getName() + " " + teacher.getLname());

out.print("</option>");

}

%>

</select>

</td>

<td>

<select name=*"subject"*>

<%

**for** (Subject subject : subjects){

out.print("<option>" + subject.getName());

out.print("</option>");

}

%>

</select>

</td>

</tr>

</table>

<input type=*"submit"* value=*"Submit"*>

</form>

</body>

</html>

**ChooseClassReport.jsp**

<%@page import=*"entity.Classes"*%>

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

<%@page import=*"org.hibernate.Session"*%>

<%@page import=*"util.HibernateUtil"*%>

<%@page import=*"org.hibernate.SessionFactory"*%>

<%@ page language=*"java"* contentType=*"text/html; charset=UTF-8"*

pageEncoding=*"UTF-8"*%>

<!DOCTYPE html>

<html>

<head>

<meta charset=*"UTF-8"*>

<title>Insert title here</title>

</head>

<body>

<a href=*"index.html"*>Back to Main Menu</a><br>

<h1>Choose a Class for Report Page</h1>

<%

SessionFactory sf = HibernateUtil.buildSessionFactory();

Session hibernateSession = sf.openSession();

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

%>

<form action=*"ClassReport.jsp"* method=*"post"*>

<table>

<tr>

<th>Class Name </th>

</tr>

<tr>

<td>

<select name=*"class"*>

<%

**for** (Classes clas : classes){

out.print("<option>" + clas.getName());

out.print("</option>");

}

%>

</select>

</td>

</tr>

</table>

<input type=*"submit"* value=*"Submit"*>

</form>

</body>

</html>

**ClassReport.jsp**

<%@page import=*"entity.Student"*%>

<%@page import=*"entity.Teacher"*%>

<%@page import=*"entity.Subject"*%>

<%@page import=*"entity.Classes"*%>

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

<%@page import=*"org.hibernate.Session"*%>

<%@page import=*"util.HibernateUtil"*%>

<%@page import=*"org.hibernate.SessionFactory"*%>

<%@ page language=*"java"* contentType=*"text/html; charset=UTF-8"*

pageEncoding=*"UTF-8"*%>

<!DOCTYPE html>

<html>

<head>

<meta charset=*"UTF-8"*>

<title>Insert title here</title>

</head>

<body>

<a href=*"index.html"*>Back to Main Menu</a><br>

<%String clas = request.getParameter("class");%>

<h1>Class Report for <%=clas%></h1>

<%

SessionFactory sf = HibernateUtil.buildSessionFactory();

Session hibernateSession = sf.openSession();

List<Classes> classes = hibernateSession.createQuery("from Classes cl where cl.name='" + clas + "'").list();

Classes clasForReport = classes.get(0);

%>

<table>

<tr>

<th>Subject Name </th>

<th>Teacher Name </th>

</tr>

<%

**for**(Subject subject: clasForReport.getSubjects()){

out.print("<tr>");

out.print("<td>" + subject.getName() + "</td>");

out.print("<td>" + getTeacherName(subject) + "</td>");

out.print("</tr>");

}

%>

</table>

<%!

**public** String getTeacherName(Subject subject){

Teacher teacher = subject.getTeacher();

String name;

String lname;

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

name=teacher.getName();

lname = teacher.getLname();

**return** name + " " + lname;

}**else**{

**return** "No Teacher assigned";

}

}

%>

<table>

<br>

<tr>

<th>Listed Students</th>

</tr>

<%

**for**(Student student : clasForReport.getStudents()){

out.print("<tr>");

out.print("<td>" + student.getName() + " " + student.getFname() + "</td>");

out.print("</tr>");

}

%>

</table>

</body>

</html>

**Index.html**

<!DOCTYPE html>

<html>

<head>

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

<title>Learner's Academy</title>

<link rel=*"preconnect"* href=*"https://fonts.googleapis.com"*>

<link rel=*"preconnect"* href=*"https://fonts.gstatic.com"* crossorigin>

<link href=*"https://fonts.googleapis.com/css2?family=Tilt+Warp&display=swap"* rel=*"stylesheet"*>

<style>

**marquee**{

font-size:*50px*;

color:*#86d2c2*;

font-family: *'Tilt Warp', cursive*;

}

</style>

</head>

<body>

<marquee>Welcome to online management system of Learner's Academy</marquee>

<p>What do you want to do?</p>

<table>

<tr>

<th>Add Items</th>

<th>View Items</th>

</tr>

<tr>

<td><a href=*"addClasses.html"*>Add Class</a><br><br></td>

<td><a href=*"viewClass.jsp"*>View Classes</a><br><br></td>

</tr>

<tr>

<td><a href=*"addSubject.html"* >Add Subject</a><br><br></td>

<td><a href=*"viewSubject.jsp"*>View Subject</a><br><br></td>

</tr>

<tr>

<td><a href=*"addTeacher.html"*>Add Teacher</a><br><br></td>

<td><a href=*"viewTeachers.jsp"*>View Teachers</a><br></td>

</tr>

<tr>

<td><a href=*"addStudent.html"*>Add Student</a><br><br></td>

<td><a href=*"viewStudent.jsp"*>View Students</a><br><br></td>

</tr>

</table>

<br>

<br>

<a href=*"assignStudentToClass.jsp"*>Assign Student to Class</a><br><br>

<a href=*"assignTeacherToSubject.jsp"*>Assign Teacher to Subject</a><br><br>

<a href=*"assignSubjectToClass.jsp"*>Assign Subject to Class</a><br><br>

<a href=*"chooseClassReport.jsp"*>Choose Class for report</a><br><br>

</body>

</html>

**viewClass.jsp**

<%@page import=*"entity.Subject"*%>

<%@page import=*"org.hibernate.Session"*%>

<%@page import=*"entity.Classes"*%>

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

<%@page import=*"util.HibernateUtil"*%>

<%@page import=*"org.hibernate.SessionFactory"*%>

<%@ page language=*"java"* contentType=*"text/html; charset=UTF-8"*

pageEncoding=*"UTF-8"*%>

<!DOCTYPE html>

<html>

<head>

<meta charset=*"UTF-8"*>

<title>Insert title here</title>

</head>

<body>

<a href=*"index.html"*>Back to Main Menu</a><br>

<a href=*"addClasses.html"*>Add Class</a><br>

<a href=*"assignSubjectToClass.jsp"*>Assign Subject to Class</a><br>

<h1>The Following Classes are listed</h1>

<%

SessionFactory sf = HibernateUtil.buildSessionFactory();

Session hibernateSession = sf.openSession();

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

%>

<table>

<tr>

<th>Class Name </th>

<th>Subject Name</th>

</tr>

<%

**for**(Classes clas : classes){

out.print("<tr>");

out.print("<td>" + clas.getName() + "</td>");

StringBuffer buf = **new** StringBuffer();

**boolean** first = **true**;

**for** (Subject subject : clas.getSubjects()){

**if**(first== **true**){

buf.append("<td>" + subject.getName() + "</td>");

buf.append("</tr>");

first = **false**;

}**else**{

buf.append("<tr><td></td>");

buf.append("<td>" + subject.getName() + "</td>");

buf.append("</tr>");

}

}

out.print(buf.toString());

}

%>

</table>

</body>

</html>

**viewStudent.jsp**

<%@page import=*"entity.Student"*%>

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

<%@page import=*"org.hibernate.Session"*%>

<%@page import=*"util.HibernateUtil"*%>

<%@page import=*"org.hibernate.SessionFactory"*%>

<%@ page language=*"java"* contentType=*"text/html; charset=UTF-8"*

pageEncoding=*"UTF-8"*%>

<!DOCTYPE html>

<html>

<head>

<meta charset=*"UTF-8"*>

<title>Insert title here</title>

</head>

<body>

<a href=*"index.html"*>Back to Main Menu</a><br>

<a href=*"addStudent.html"*>Add Student</a><br>

<a href=*"assignStudentToClass.jsp"*>Assign Student</a>

<h1>The Following Students are listed</h1>

<%

SessionFactory sf = HibernateUtil.buildSessionFactory();

Session hibernateSession = sf.openSession();

List<Student> students = hibernateSession.createQuery("from Student").list();

%>

<table>

<tr>

<th>Name </th>

<th>Last Name </th>

<th>Assigned Class </th>

</tr>

<%

**for**(Student student : students){

out.print("<tr>");

out.print("<td>" + student.getName() + "</td>");

out.print("<td>" + student.getFname() + "</td>");

out.print("<td>" + getClassName(student) + "</td>");

out.print("</tr>");

}

%>

</table>

<%!

**public** String getClassName(Student student){

**if** (student.getClasses() == **null**){

**return** "no class assigned";

}

**else**{

**return** student.getClasses().getName();

}

}

%>

</body>

</html>

**viewSubject.jsp**

<%@page import=*"entity.Subject"*%>

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

<%@page import=*"org.hibernate.Session"*%>

<%@page import=*"util.HibernateUtil"*%>

<%@page import=*"org.hibernate.SessionFactory"*%>

<%@ page language=*"java"* contentType=*"text/html; charset=UTF-8"*

pageEncoding=*"UTF-8"*%>

<!DOCTYPE html>

<html>

<head>

<meta charset=*"UTF-8"*>

<title>Insert title here</title>

</head>

<body>

<a href=*"index.html"*>Back to Main Menu</a><br>

<a href=*"addSubject.html"*>Add Subject</a><br>

<h1>The Following Subjects are listed</h1>

<%

SessionFactory sf = HibernateUtil.buildSessionFactory();

Session hibernateSession = sf.openSession();

List<Subject> subjects = hibernateSession.createQuery("from Subject").list();

%>

<table>

<tr>

<th>Subject Name </th>

</tr>

<%

**for**(Subject subject : subjects){

out.print("<tr>");

out.print("<td>" + subject.getName() + "</td>");

out.print("</tr>");

}

%>

</table>

</body>

</html>

**viewTeacher.jsp**

<%@page import=*"entity.Subject"*%>

<%@page import=*"entity.Teacher"*%>

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

<%@page import=*"org.hibernate.Session"*%>

<%@page import=*"util.HibernateUtil"*%>

<%@page import=*"org.hibernate.SessionFactory"*%>

<%@ page language=*"java"* contentType=*"text/html; charset=UTF-8"*

pageEncoding=*"UTF-8"*%>

<!DOCTYPE html>

<html>

<head>

<meta charset=*"UTF-8"*>

<title>Insert title here</title>

</head>

<body>

<a href=*"index.html"*>Back to Main Menu</a><br>

<a href=*"addTeacher.html"*>Add Teacher</a><br>

<a href=*"assignTeacherToSubject.jsp"*>Assign Teacher to Subject</a><br>

<h1>The Following Teachers are listed</h1>

<%

SessionFactory sf = HibernateUtil.buildSessionFactory();

Session hibernateSession = sf.openSession();

List<Teacher> teachers = hibernateSession.createQuery("from Teacher").list();

%>

<table>

<tr>

<th>First Name </th>

<th>Last Name </th>

<th>Assigned Subject</th>

</tr>

<%

**for**(Teacher teacher : teachers){

out.print("<tr>");

out.print("<td>" + teacher.getName() + "</td>");

out.print("<td>" + teacher.getLname() + "</td>");

StringBuffer buf = **new** StringBuffer();

**boolean** first = **true**;

**for** (Subject subject : teacher.getSubjects()){

**if**(first== **true**){

buf.append("<td>" + subject.getName() + "</td>");

buf.append("</tr>");

first = **false**;

}**else**{

buf.append("<tr><td></td><td></td>");

buf.append("<td>" + subject.getName() + "</td>");

buf.append("</tr>");

}

}

out.print(buf.toString());

}

%>

</table>

</body>

</html>