

```

package com.bean;

public class Course {
    private int cid;
    private String courseTitle;
    private int sid;
    private int tid;

    public Course() {
        super();
        // TODO Auto-generated constructor stub
    }

    public Course(int cid, String courseTitle, int sid, int tid) {
        super();
        this.cid = cid;
        this.courseTitle = courseTitle;
        this.sid = sid;
        this.tid = tid;
    }

    @Override
    public String toString() {
        return "Course [cid=" + cid + ", courseTitle=" + courseTitle + ",
sid=" + sid + ", tid=" + tid + "]";
    }

    public int getCid() {
        return cid;
    }

    public void setCid(int cid) {
        this.cid = cid;
    }

    public String getCourseTitle() {
        return courseTitle;
    }

    public void setCourseTitle(String courseTitle) {
        this.courseTitle = courseTitle;
    }

    public int getSid() {
        return sid;
    }

    public void setSid(int sid) {
        this.sid = sid;
    }
}

```

```
public int getTid() {  
    return tid;  
}  
  
public void setTid(int tid) {  
    this.tid = tid;  
}
```

```
}
```

```

package com.controller;

import java.io.IOException;
import java.io.PrintWriter;

import javax.servlet.RequestDispatcher;
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 com.bean.Course;
import com.service.CourseService;

/**
 * Servlet implementation class CourseController
 */
public class CourseController extends HttpServlet {
    private static final long serialVersionUID = 1L;

    /**
     * @see HttpServlet#HttpServlet()
     */
    public CourseController() {
        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());
        doPost(request, response);
    }

    /**
     * @see HttpServlet#doPost(HttpServletRequest request, HttpServletResponse
response)
     */
    protected void doPost(HttpServletRequest request, HttpServletResponse
response) throws ServletException, IOException {
        PrintWriter pw = response.getWriter();
        response.setContentType("text/html");
        HttpSession hs = request.getSession();

```

```

String role = (String)hs.getAttribute("role");

//create the JavaBean class object and save the value
int cid = Integer.parseInt(request.getParameter("cid"));
String courseTitle = request.getParameter("courseTitle");
int sid = Integer.parseInt(request.getParameter("sid"));
int tid = Integer.parseInt(request.getParameter("tid"));
Course course = new Course(cid, courseTitle, sid, tid);

//Service class
CourseService ccs = new CourseService();
String result = ccs.addCourse(course, role);
pw.println(result);

RequestDispatcher rd1 = request.getRequestDispatcher("home.jsp");
rd1.include(request, response);
}
}

```

```

package com.dao;

import java.sql.Connection;
import java.sql.PreparedStatement;
import java.sql.ResultSet;
import java.util.ArrayList;
import java.util.List;

import com.bean.Course;
import com.resource.DbResource;

public class CourseDao {

    public int addCourse(Course cc) {
        try {
            Connection con = DbResource.getDbConnection();
            PreparedStatement pstmt = con.prepareStatement("insert into
classes values(?,?,?,?)");
            pstmt.setInt(1, cc.getCid());
            pstmt.setString(2, cc.getCourseTitle());
            pstmt.setInt(3, cc.getSid());
            pstmt.setInt(4, cc.getTid());
            int res = pstmt.executeUpdate();
            return res;
        }
        catch (Exception e) {
            System.out.println("Something went wrong " +e.getMessage());
            return 0;}
    }

    public List<Course> getCourses() {
        List<Course> cl = new ArrayList<>();
        try {
            Connection con = DbResource.getDbConnection();
            PreparedStatement pstmt = con.prepareStatement("select *
from classes;");
            ResultSet res = pstmt.executeQuery();

            while (res.next()) {
                int cid = res.getInt("cid");
                String courseTitle = res.getString("courseTitle");
                int sid = res.getInt("sid");
                int tid = res.getInt("tid");
                Course course = new Course(cid, courseTitle, sid, tid);
                cl.add(course);
            }
            return cl;
        }
        catch (Exception e) {
            System.out.println("Something went wrong " +e.getMessage());

```

```

        return null;}
    }

    public Course getCourseDetails(int courseId) {
        Course course = new Course();
        try {
            Connection con = DbResource.getDbConnection();
            PreparedStatement pstmt = con.prepareStatement("select *
from classes where cid=?);");
            pstmt.setInt(1, courseId);
            ResultSet res = pstmt.executeQuery();

            if (res.next()) {
                int cid = res.getInt("cid");
                String courseTitle = res.getString("courseTitle");
                int sid = res.getInt("sid");
                int tid = res.getInt("tid");
                course = new Course(cid, courseTitle, sid, tid);
                return course;
            } else {
                return null;}
        }
        catch (Exception e) {
            System.out.println("Something went wrong " +e.getMessage());
            return null;}
    }

}

```

```
package com.service;

import com.bean.Course;
import com.dao.CourseDao;

public class CourseService {
    CourseDao cd = new CourseDao();

    public String addCourse(Course cc, String role) {
        int authLevel = Permissions.getPermission(role);
        if (authLevel >= 4) {
            if(cd.addCourse(cc) > 0) {
                return "Course was added";
            } else {
                return "Course could not be added";
            }
        } else {
            return "User is not authorized";
        }
    }
}
```

```
package com.resource;

import java.sql.Connection;
import java.sql.DriverManager;

public class DbResource {

    public static Connection getDbConnection() {
        try {
            Class.forName("com.mysql.cj.jdbc.Driver");
            Connection con =
DriverManager.getConnection("jdbc:mysql://localhost:3306/university_batch", "root",
"Mascon@129");
            return con;

        } catch (Exception e) {
            return null;
        }
    }
}
```



```
package com.bean;

public class Login {
    private String email;
    private String password;
    private String name;
    private String role;

    public Login() {
        super();
        //      this.email = email;
        //      this.password = password;
    }

    public Login(String email, String password, String name, String role) {
        super();
        this.email = email;
        this.password = password;
        this.name = name;
        this.role = role;
    }

    public String getName() {
        return name;
    }

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

    public String getRole() {
        return role;
    }

    public void setRole(String role) {
        this.role = role;
    }

    public String getEmail() {
        return email;
    }

    public void setEmail(String email) {
        this.email = email;
    }
}
```

```
}  
  
public String getPassword() {  
    return password;  
}  
  
public void setPassword(String password) {  
    this.password = password;  
}  
  
}
```

```

package com.controller;

import java.io.IOException;
import java.io.PrintWriter;

import javax.servlet.RequestDispatcher;
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 com.bean.Login;
import com.service.LoginService;

/**
 * Servlet implementation class LoginController
 */
public class LoginController extends HttpServlet {
    private static final long serialVersionUID = 1L;

    /**
     * @see HttpServlet#HttpServlet()
     */
    public LoginController() {
        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
        doPost(request, response);
    }

    /**
     * @see HttpServlet#doPost(HttpServletRequest request, HttpServletResponse
response)
     */
    protected void doPost(HttpServletRequest request, HttpServletResponse
response) throws ServletException, IOException {
        //      PrintWriter pw = response.getWriter();
        //      response.setContentType("text/html");
        //

```

```
//
//      //create the JavaBean class object and save the value
//      Login l1 = new Login();
//      l1.setEmail(request.getParameter("email"));
//      l1.setPassword(request.getParameter("password"));
//
//      //Service class
//      LoginService ls = new LoginService();
//
//      String result = ls.createUser(l1);
//      pw.println(result);
//
//      RequestDispatcher rd1 = request.getRequestDispatcher("index.jsp");
//
//      rd1.include(request, response);
//
//      PrintWriter pw = response.getWriter();
//      response.setContentType("text/html");
//      HttpSession hs = request.getSession();
//
//      //create the JavaBean class object and save the value
//      Login l1 = new Login();
//      l1.setEmail(request.getParameter("email"));
//      l1.setPassword(request.getParameter("password"));
//      l1.setName("");
//      l1.setRole("");
//
//      //Service class
//      LoginService ls = new LoginService();
//
//      Login user = ls.checkUser(l1);
//
//      RequestDispatcher rd1 = request.getRequestDispatcher("home.jsp");
//      RequestDispatcher rd2 = request.getRequestDispatcher("index.jsp");
//
//      if (user != null) {
//          hs.setAttribute("user", user.getName());
//          hs.setAttribute("role", user.getRole());
//          rd1.forward(request, response);
//      } else {
//          pw.println("Invalid username or password");
//          rd2.include(request, response);
//      }
//
//      }
//
//      }
```

```

package com.dao;

import java.sql.Connection;
import java.sql.PreparedStatement;
import java.sql.ResultSet;

import com.bean.Login;
import com.bean.Subject;
import com.resource.DbResource;

public class LoginDao {

    public int createLoginDeatils(Login ll) {
        try {
            Connection con = DbResource.getDbConnection();
            PreparedStatement pstmt = con.prepareStatement("insert into
login values(?,?)");
            pstmt.setString(1, ll.getEmail());
            pstmt.setString(2, ll.getPassword());
            int res = pstmt.executeUpdate();
            return res;
        }
        catch (Exception e) {
            System.out.println("Something went wrong " +e.getMessage());
            return 0;}
    }

    public Login checkLoginDetails(Login ll) {
        try {
            Connection con = DbResource.getDbConnection();
            PreparedStatement pstmt = con.prepareStatement("select *
from login where email = ? and password = ?");
            pstmt.setString(1, ll.getEmail());
            pstmt.setString(2, ll.getPassword());
            ResultSet rs = pstmt.executeQuery();

            if (rs.next()) {
                String email = rs.getString("email");
                String password = "success";
                String name = rs.getString("name");
                String role = rs.getString("role");
                Login user = new Login(email, password, name, role);
                return user;
            } else {
                return null;
            }
        }
        catch (Exception e) {
            System.out.println("Something went wrong " +e.getMessage());

```

```
        return null;}  
    }
```

```
}
```

```
package com.service;

import com.bean.Login;
import com.dao.LoginDao;

public class LoginService {
    LoginDao ld = new LoginDao();

    public Login checkUser(Login login) {
        StringBuffer sb = new StringBuffer(login.getPassword());
        String reversePassword = sb.reverse().toString();
        login.setPassword(reversePassword);

        Login user = ld.checkLoginDetails(login);

        return user;
    }

    public String createUser(Login login) {
        StringBuffer sb = new StringBuffer(login.getPassword());
        String reversePassword = sb.reverse().toString();
        login.setPassword(reversePassword);

        if(ld.createLoginDeatils(login) > 0) {
            return "Account created successfully";
        } else {
            return "Account was not created";
        }
    }
}
```

```
package com.service;

public class Permissions {

    public static int getPermission(String role) {
        if (role.equals("admin")) {
            return 4;
        } else if (role.equals("power_user")) {
            return 3;
        } else if (role.equals("user")) {
            return 2;
        } else{
            return 0;}
    }

}
```



```

package com.bean;

public class Student {
    private int id;
    private String name;
    private int cid;

    public Student() {
        super();
        // TODO Auto-generated constructor stub
    }

    public Student(int id, String name, int cid) {
        super();
        this.id = id;
        this.name = name;
        this.cid = cid;
    }

    @Override
    public String toString() {
        return "Student [id=" + id + ", name=" + name + ", cid=" + cid +
"]";
    }

    public int getId() {
        return id;
    }

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

    public String getName() {
        return name;
    }

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

    public int getCid() {
        return cid;
    }

    public void setCid(int cid) {
        this.cid = cid;
    }
}

```

}

```

package com.controller;

import java.io.IOException;
import java.io.PrintWriter;

import javax.servlet.RequestDispatcher;
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 com.bean.Student;
import com.service.StudentService;

/**
 * Servlet implementation class StudentController
 */
public class StudentController extends HttpServlet {
    private static final long serialVersionUID = 1L;

    /**
     * @see HttpServlet#HttpServlet()
     */
    public StudentController() {
        super();
        // TODO Auto-generated constructor stub
    }

    /**
     * @see HttpServlet#doGet(HttpServletRequest request, HttpServletResponse
response)
     */
    protected void doGet(HttpServletRequest request, HttpServletResponse
response) throws ServletException, IOException {
        doPost(request, response);
    }

    /**
     * @see HttpServlet#doPost(HttpServletRequest request, HttpServletResponse
response)
     */
    protected void doPost(HttpServletRequest request, HttpServletResponse
response) throws ServletException, IOException {
        PrintWriter pw = response.getWriter();
        response.setContentType("text/html");
        HttpSession hs = request.getSession();
        String role = (String)hs.getAttribute("role");

        //create the JavaBean class object and save the value

```

```
int id = Integer.parseInt(request.getParameter("id"));
String name = request.getParameter("name");
int cid = Integer.parseInt(request.getParameter("cid"));
Student student = new Student(id, name, cid);

//Service class
StudentService sts = new StudentService();
String result = sts.addStudent(student, role);
pw.println(result);

RequestDispatcher rd1 = request.getRequestDispatcher("home.jsp");
rd1.include(request, response);;
```

```
}
```

```
}
```

```

package com.dao;

import java.sql.Connection;
import java.sql.PreparedStatement;
import java.sql.ResultSet;
import java.util.ArrayList;
import java.util.List;

import com.bean.Student;
import com.resource.DbResource;

public class StudentDao {

    public int addStudent(Student st) {
        try {
            Connection con = DbResource.getDbConnection();
            PreparedStatement pstmt = con.prepareStatement("insert into
students values(?,?,?)");
            pstmt.setInt(1, st.getId());
            pstmt.setString(2, st.getName());
            pstmt.setInt(3, st.getCid());
            int res = pstmt.executeUpdate();
            return res;
        }
        catch (Exception e) {
            System.out.println("Something went wrong " +e.getMessage());
            return 0;}
    }

    public List<Student> getStudents() {
        List<Student> sl = new ArrayList<>();
        try {
            Connection con = DbResource.getDbConnection();
            PreparedStatement pstmt = con.prepareStatement("select *
from students;");
            ResultSet res = pstmt.executeQuery();

            while (res.next()) {
                int id = res.getInt("id");
                String StudentTitle = res.getString("name");
                int cid = res.getInt("cid");
                Student student = new Student(id, StudentTitle, cid);
                sl.add(student);
            }
            return sl;
        }
        catch (Exception e) {
            System.out.println("Something went wrong " +e.getMessage());
            return null;}
    }
}

```

```

public List<Student> getStudentsCourse(int courseId) {
    List<Student> s1 = new ArrayList<>();
    try {
        Connection con = DbResource.getDbConnection();
        PreparedStatement pstmt = con.prepareStatement("select *
from students where cid=(?);");
        pstmt.setInt(1, courseId);
        ResultSet res = pstmt.executeQuery();

        while (res.next()) {
            int id = res.getInt("id");
            String StudentTitle = res.getString("name");
            int cid = res.getInt("cid");
            Student student = new Student(id, StudentTitle, cid);
            s1.add(student);
        }
        return s1;
    }
    catch (Exception e) {
        System.out.println("Something went wrong " +e.getMessage());
        return null;}
}

}

```

```
package com.service;

import com.bean.Student;
import com.dao.StudentDao;

public class StudentService {
    StudentDao sd = new StudentDao();

    public String addStudent(Student std, String role) {
        int authLevel = Permissions.getPermission(role);
        if (authLevel >= 4) {
            if(sd.addStudent(std) > 0) {
                return "Student was added";
            } else {
                return "Student could not be added";
            }
        } else {
            return "User is not authorized";
        }
    }
}
```

```
package com.bean;

public class Subject {
    private int sid;
    private String subjectName;

    public Subject() {
        super();
        // TODO Auto-generated constructor stub
    }

    public Subject(int sid, String subjectName) {
        super();
        this.sid = sid;
        this.subjectName = subjectName;
    }

    public int getSid() {
        return sid;
    }

    public void setSid(int sid) {
        this.sid = sid;
    }

    public String getSubjectName() {
        return subjectName;
    }

    public void setSubjectName(String subjectName) {
        this.subjectName = subjectName;
    }

    @Override
    public String toString() {
        return "Subject [sid=" + sid + ", subjectName=" + subjectName + "]";
    }

}
```



```

package com.controller;

import java.io.IOException;
import java.io.PrintWriter;

import javax.servlet.RequestDispatcher;
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 com.bean.Subject;
import com.service.SubjectService;

/**
 * Servlet implementation class SubjectServlet
 */
public class SubjectController extends HttpServlet {
    private static final long serialVersionUID = 1L;

    /**
     * @see HttpServlet#HttpServlet()
     */
    public SubjectController() {
        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());
        doPost(request, response);
    }

    /**
     * @see HttpServlet#doPost(HttpServletRequest request, HttpServletResponse
response)
     */
    protected void doPost(HttpServletRequest request, HttpServletResponse
response) throws ServletException, IOException {
        PrintWriter pw = response.getWriter();
        response.setContentType("text/html");
        HttpSession hs = request.getSession();

```

```

String role = (String)hs.getAttribute("role");

//create the JavaBean class object and save the value
Subject sb = new Subject();
int sid = Integer.parseInt(request.getParameter("sid"));
String subjectName = request.getParameter("subjectName");
sb.setSid(sid);
sb.setSubjectName(subjectName);

//Service class
SubjectService sbs = new SubjectService();
String result = sbs.addSubject(sb, role);
pw.println(result);

RequestDispatcher rd1 = request.getRequestDispatcher("home.jsp");
rd1.include(request, response);
}
}

```

```

package com.dao;

import java.sql.Connection;
import java.sql.PreparedStatement;
import java.sql.ResultSet;
import java.util.ArrayList;
import java.util.List;

import com.bean.Subject;
import com.resource.DbResource;

public class SubjectDao {

    public int addSubject(Subject sb) {
        try {
            Connection con = DbResource.getDbConnection();
            PreparedStatement pstmt = con.prepareStatement("insert into
subjects values(?,?)");
            pstmt.setInt(1, sb.getSid());
            pstmt.setString(2, sb.getSubjectName());
            int res = pstmt.executeUpdate();
            return res;
        }
        catch (Exception e) {
            System.out.println("Something went wrong " +e.getMessage());
            return 0;}
    }

    public List<Subject> getSubjects() {
        List<Subject> tl = new ArrayList<>();
        try {
            Connection con = DbResource.getDbConnection();
            PreparedStatement pstmt = con.prepareStatement("select *
from subjects;");
            ResultSet res = pstmt.executeQuery();

            while (res.next()) {
                int sid = res.getInt("sid");
                String subjectName = res.getString("subjectName");
                Subject subject = new Subject(sid, subjectName);
                tl.add(subject);
            }
            return tl;
        }
        catch (Exception e) {
            System.out.println("Something went wrong " +e.getMessage());
            return null;}
    }

    public Subject getSubjectDetails(int subjectId) {

```

```

        try {
            Connection con = DbResource.getDbConnection();
            PreparedStatement pstmt = con.prepareStatement("select *
from subjects where sid=?");
            pstmt.setInt(1, subjectId);
            ResultSet res = pstmt.executeQuery();

            if (res.next()) {
                int sid = res.getInt("sid");
                String subjectTitle = res.getString("subjectName");
                Subject subject = new Subject(sid, subjectTitle);
                return subject;
            } else {
                return null;
            }
        } catch (Exception e) {
            System.out.println("Something went wrong " + e.getMessage());
            return null;
        }
    }
}

```

```
package com.service;

import com.bean.Subject;
import com.dao.SubjectDao;

public class SubjectService {
    SubjectDao sd = new SubjectDao();

    public String addSubject(Subject sb, String role) {
        int authLevel = Permissions.getPermission(role);
        if (authLevel >= 4) {
            if(sd.addSubject(sb) > 0) {
                return "Subject was added";
            } else {
                return "Subject could not be added";
            }
        } else {
            return "User is not authorized";
        }
    }
}
```

```
package com.bean;

public class Teacher {
    private int tid;
    private String teacherName;

    public Teacher() {
        super();
        // TODO Auto-generated constructor stub
    }

    public Teacher(int tid, String teacherName) {
        super();
        this.tid = tid;
        this.teacherName = teacherName;
    }

    @Override
    public String toString() {
        return "Teacher [tid=" + tid + ", teacherName=" + teacherName + "]";
    }

    public int getTid() {
        return tid;
    }

    public void setTid(int tid) {
        this.tid = tid;
    }

    public String getTeacherName() {
        return teacherName;
    }

    public void setTeacherName(String teacherName) {
        this.teacherName = teacherName;
    }
}
```

```

package com.controller;

import java.io.IOException;
import java.io.PrintWriter;

import javax.servlet.RequestDispatcher;
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 com.bean.Teacher;
import com.service.TeacherService;

/**
 * Servlet implementation class TeacherController
 */
public class TeacherController extends HttpServlet {
    private static final long serialVersionUID = 1L;

    /**
     * @see HttpServlet#HttpServlet()
     */
    public TeacherController() {
        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());
        doPost(request, response);
    }

    /**
     * @see HttpServlet#doPost(HttpServletRequest request, HttpServletResponse
response)
     */
    protected void doPost(HttpServletRequest request, HttpServletResponse
response) throws ServletException, IOException {
        PrintWriter pw = response.getWriter();
        response.setContentType("text/html");
        HttpSession hs = request.getSession();

```

```
String role = (String)hs.getAttribute("role");

//create the JavaBean class object and save the value
Teacher tt = new Teacher();
int tid = Integer.parseInt(request.getParameter("tid"));
String TeacherName = request.getParameter("teacherName");
tt.setTid(tid);
tt.setTeacherName(TeacherName);

//Service class
TeacherService sbs = new TeacherService();
String result = sbs.addTeacher(tt, role);
pw.println(result);

RequestDispatcher rd1 = request.getRequestDispatcher("home.jsp");
rd1.include(request, response);
}

}
```



```

package com.dao;

import java.sql.Connection;
import java.sql.PreparedStatement;
import java.sql.ResultSet;
import java.util.ArrayList;
import java.util.List;

import com.bean.Teacher;
import com.resource.DbResource;

public class TeacherDao {

    public int addTeacher(Teacher tt) {
        try {
            Connection con = DbResource.getDbConnection();
            PreparedStatement pstmt = con.prepareStatement("insert into
Teachers values(?,?)");
            pstmt.setInt(1, tt.getTid());
            pstmt.setString(2, tt.getTeacherName());
            int res = pstmt.executeUpdate();
            return res;
        }
        catch (Exception e) {
            System.out.println("Something went wrong " +e.getMessage());
            return 0;}
    }

    public List<Teacher> getTeachers() {
        List<Teacher> tl = new ArrayList<>();
        try {
            Connection con = DbResource.getDbConnection();
            PreparedStatement pstmt = con.prepareStatement("select *
from teachers;");
            ResultSet res = pstmt.executeQuery();

            while (res.next()) {
                int tid = res.getInt("tid");
                String teacherName = res.getString("teacherName");
                Teacher teacher = new Teacher(tid, teacherName);
                tl.add(teacher);
            }
            return tl;
        }
        catch (Exception e) {
            System.out.println("Something went wrong " +e.getMessage());
            return null;}
    }

    public Teacher getTeachertDetails(int teacherId) {

```

```

        try {
            Connection con = DbResource.getDbConnection();
            PreparedStatement pstmt = con.prepareStatement("select *
from teachers where tid=?");
            pstmt.setInt(1, teacherId);
            ResultSet res = pstmt.executeQuery();

            if (res.next()) {
                int tid = res.getInt("tid");
                String teacherName = res.getString("teacherName");
                Teacher teacher = new Teacher(tid, teacherName);
                return teacher;
            } else {
                return null;
            }
        } catch (Exception e) {
            System.out.println("Something went wrong " + e.getMessage());
            return null;
        }
    }
}

```

```
package com.service;

import com.bean.Teacher;
import com.dao.TeacherDao;

public class TeacherService {
    TeacherDao td = new TeacherDao();

    public String addTeacher(Teacher tt, String role) {
        int authLevel = Permissions.getPermission(role);
        if (authLevel >= 4) {
            if(td.addTeacher(tt) > 0) {
                return "Teacher was added";
            } else {
                return "Teacher could not be added";
            }
        } else {
            return "User is not authorized";
        }
    }
}
```

```

<%@page import="com.bean.Subject"%>
<%@page import="com.dao.SubjectDao"%>
<%@page import="com.bean.Teacher"%>
<%@page import="java.util.List"%>
<%@page import="com.dao.TeacherDao"%>
<%@ page language="java" contentType="text/html; charset=ISO-8859-1"
    pageEncoding="ISO-8859-1"%>
<!DOCTYPE html>
<html>
<head>
<meta charset="ISO-8859-1">
<title>Insert title here</title>
</head>
<body>

    <form action="CourseController" method="post">
        <label>Course Id : </label>
        <input type="number" name="cid"/><br/>

        <label>Course Title : </label>
        <input type="text" name="courseTitle"/><br/>

        <label for="subject">Subject Id : </label>
        <select id="subject" name="sid">

            <%
                SubjectDao sd = new SubjectDao();
                List<Subject> sList = sd.getSubjects();

                for (Subject subject: sList){ %>
                    <option value="<%=subject.getSid()%>">
<%=subject.getSubjectName()%></option>
                    <%}%>
                </select>
            <br/>

            <label for="teacher">Teacher Id : </label>
            <select id="teacher" name="tid">
                <%
                    TeacherDao td = new TeacherDao();
                    List<Teacher> tList = td.getTeachers();

                    for (Teacher teacher: tList){ %>
                        <option value="<%=teacher.getTid()%>">
<%=teacher.getTeacherName()%></option>
                        <%}%>
                    </select>
                <br/>

                <input type="submit" value="Add">
                <input type="reset" value="reset">
            </form>

```


</body>

</html>

```

<%@page import="com.bean.Course"%>
<%@page import="com.dao.CourseDao"%>
<%@page import="java.util.List"%>
<%@ page language="java" contentType="text/html; charset=ISO-8859-1"
    pageEncoding="ISO-8859-1"%>
<!DOCTYPE html>
<html>
<head>
<meta charset="ISO-8859-1">
<title>Insert title here</title>
</head>
<body>

    <form action="StudentController" method="post">
        <label>Student Id : </label>
        <input type="number" name="id"/><br/>

        <label>Student Name : </label>
        <input type="text" name="name"/><br/>

        <label for="course">Subject Id : </label>
        <select id="course" name="cid">

            <%
                CourseDao cd = new CourseDao();
                List<Course> cList = cd.getCourses();

                for (Course course: cList){ %>
                    <option value="<%=course.getCid()%>">
<%=course.getCourseTitle()%></option>
                    <%}%>
                </select>
            <br/>

            <input type="submit" value="Add">
            <input type="reset" value="reset">
        </form>
    <br/>

</body>
</html>

```

```
<%@ page language="java" contentType="text/html; charset=ISO-8859-1"
    pageEncoding="ISO-8859-1"%>
<!DOCTYPE html>
<html>
<head>
<meta charset="ISO-8859-1">
<title>Insert title here</title>
</head>
<body>

    <form action="SubjectController" method="post">
        <label>Subject Id : </label>
        <input type="number" name="sid"/><br/>

        <label>Subject Name : </label>
        <input type="text" name="subjectName"/><br/>

        <input type="submit" value="Add">
        <input type="reset" value="reset">

    </form>
    <br/>

</body>
</html>
```

```
<%@ page language="java" contentType="text/html; charset=ISO-8859-1"
    pageEncoding="ISO-8859-1"%>
<!DOCTYPE html>
<html>
<head>
<meta charset="ISO-8859-1">
<title>Insert title here</title>
</head>
<body>

    <form action="TeacherController" method="post">
        <label>Teacher Id : </label>
        <input type="number" name="tid"/><br/>

        <label>Teacher Name : </label>
        <input type="text" name="teacherName"/><br/>

        <input type="submit" value="Add">
        <input type="reset" value="reset">
    </form>
    <br/>

</body>
</html>
```



```

<%@page import="com.bean.Course"%>
<%@page import="java.util.List"%>
<%@page import="com.dao.CourseDao"%>
<%@ page language="java" contentType="text/html; charset=ISO-8859-1"
    pageEncoding="ISO-8859-1"%>
<!DOCTYPE html>
<html>
<head>
<meta charset="ISO-8859-1">
<title>Insert title here</title>
</head>
<body>

<h2>Class Report</h2>

<table border="1">
    <tr>
        <th>Course Id</th>
        <th>Course Title</th>
        <th>Subject Id</th>
        <th>Teacher Id</th>
    </tr>

    <% CourseDao cd = new CourseDao();
        List<Course> cList = cd.getCourses();

        for (Course course: cList){ %>
    <tr>
        <td><a
href="courseDetails.jsp?cid=<%=course.getCid()%>"><%=course.getCid()%></a></td>
        <td><%=course.getCourseTitle() %></td>
        <td><%=course.getSid() %></td>
        <td><%=course.getTid() %></td>
    </tr>
    <%}%>

</table>

</body>
</html>

```

```

<%@page import="com.bean.Student"%>
<%@page import="java.util.List"%>
<%@page import="com.dao.StudentDao"%>
<%@page import="com.bean.Teacher"%>
<%@page import="com.dao.TeacherDao"%>
<%@page import="com.bean.Subject"%>
<%@page import="com.dao.SubjectDao"%>
<%@page import="com.bean.Course"%>
<%@page import="com.dao.CourseDao"%>
<%@ page language="java" contentType="text/html; charset=ISO-8859-1"
    pageEncoding="ISO-8859-1"%>
<!DOCTYPE html>
<html>
<head>
<meta charset="ISO-8859-1">
<title>Course Details</title>
</head>
<body>

<h3>
<%    String courseId = request.getParameter("cid");
    out.println("Course Id\t: " + courseId);

    CourseDao cd = new CourseDao();
    int cid = Integer.parseInt(courseId);
    Course course = cd.getCourseDetails(cid);
    out.println("<br/>Title:\t\t\t" + course.getCourseTitle());

    SubjectDao sd = new SubjectDao();
    int sid = course.getSid();
    Subject sb = sd.getSubjectDetails(sid);
    out.println("<br/>Subject:\t\t" + sb.getSubjectName());

    TeacherDao td = new TeacherDao();
    int tid = course.getTid();
    Teacher tt = td.getTeacherDetails(tid);
    out.println("<br/>Teacher:\t\t" + tt.getTeacherName());
%>
</h3><br>

<h2>Student List</h2> <br>

<table border="1">
    <tr>
        <th>Id</th>
        <th>Student Name</th>
        <th>Course Id</th>
    </tr>

    <% StudentDao std = new StudentDao();

```

```
List<Student> stdList = std.getStudentsCourse(cid);
```

```
for (Student student: stdList){ %>
```

```
<tr>
```

```
<td><%=student.getId()%></td>
```

```
<td><%=student.getName()%></td>
```

```
<td><%=student.getCid() %></td>
```

```
</tr>
```

```
<%}%>
```

```
</table>
```

```
</body>
```

```
</html>
```

```

<%@page import="com.service.Permissions"%>
<%@ page language="java" contentType="text/html; charset=ISO-8859-1"
    pageEncoding="ISO-8859-1"%>
<!DOCTYPE html>
<html>
<head>
    <meta charset="utf-8">
    <meta name="viewport" content="width=device-width, initial-scale=1,
shrink-to-fit=no">

    <!-- Bootstrap CSS -->
    <link rel="stylesheet"
href="https://cdn.jsdelivr.net/npm/bootstrap@4.3.1/dist/css/bootstrap.min.css"
integrity="sha384-ggOyR0iXCbMQv3Xipma34MD+dH/1fQ784/j6cY/iJTQU0hcWr7x9JvoRxT2MZw1T"
crossorigin="anonymous">

<title>Insert title here</title>
</head>
<body>
<h2>

<% String user = (String)session.getAttribute("user");
String role = (String)session.getAttribute("role");
out.println("Welcome to Home Page - " + user + "<br/>");
%>
</h2><br>

<%int authLevel = Permissions.getPermission(role);
    if (authLevel >= 4) {%>
<div class="add">
<h4>Add A Subject</h4>
    <%@include file="addSubject.jsp" %>
</div>

<div class="add">
<h4>Add A Teacher</h4>
    <%@include file="addTeacher.jsp" %>
</div>

<div class="add">
<h4>Add A Class</h4>
    <%@include file="addClass.jsp" %>
</div>

<div class="add">
<h4>Add A Student</h4>
    <%@include file="addStudent.jsp" %>
</div>

<%} else {out.println("Welcome User");} %>

```

```
<div class="view">
    <%@include file="classReport.jsp" %>
</div>

    <script src="https://code.jquery.com/jquery-3.3.1.slim.min.js"
integrity="sha384-q8i/X+965Dz00rT7abK41JStQIAqVgRVzpbzo5smXKp4YfRvH+8abtTE1Pi6jizo"
crossorigin="anonymous"></script>
    <script src="https://cdn.jsdelivr.net/npm/popper.js@1.14.7/dist/umd/popper.min.js"
integrity="sha384-U02eT0CpHqdSJQ6hJty5KVphtPhzWj9W01c1HTMga3JDZwrnQq4sF86dIHNDz0W1"
crossorigin="anonymous"></script>
    <script src="https://cdn.jsdelivr.net/npm/bootstrap@4.3.1/dist/js/bootstrap.min.js"
integrity="sha384-JjSmVgyd0p3pXB1rRibZUAYoIIy60rQ6VrjIEaFf/nJGzIxFDsf4x0xIM+B07jRM"
crossorigin="anonymous"></script>
    </body>

</body>
</html>
```

```
<%@ page language="java" contentType="text/html; charset=ISO-8859-1"
    pageEncoding="ISO-8859-1"%>
<!DOCTYPE html>
<html>
<head>
<meta charset="ISO-8859-1">
<title>Home Page</title>
</head>
<body>

    <h2>Welcome to MVC Application</h2>
    <%@include file="signin.jsp" %>

</body>
</html>
```

```
<%@ page language="java" contentType="text/html; charset=ISO-8859-1"
    pageEncoding="ISO-8859-1"%>
<!DOCTYPE html>
<html>
<head>
<meta charset="ISO-8859-1">
<title>Log In</title>
</head>
<body>
    <form action="Login" method="post">
        <label>Email : </label>
        <input type="email" name="email"/><br/>

        <label>Password : </label>
        <input type="password" name="password"/><br/>

        <input type="submit" value="SignIn">
        <input type="reset" value="reset">

    </form>
    <br/>

    <a href=##>Sign Up</a>

</body>
</html>
```

```
<%@ page language="java" contentType="text/html; charset=ISO-8859-1"
    pageEncoding="ISO-8859-1"%>
<!DOCTYPE html>
<html>
<head>
<meta charset="ISO-8859-1">
<title>Insert title here</title>
</head>
<body>

<h2>Sign Up </h2>
<form action="Login" method="post">
    <label>Email : </label>
    <input type="email" name="email"/><br/>

    <label>Password : </label>
    <input type="password" name="password"/><br/>

    <input type="submit" value="SignIn">
    <input type="reset" value="reset">

    </form>

</body>
</html>
```



```
<?xml version="1.0" encoding="UTF-8"?>
<web-app xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns="http://java.sun.com/xml/ns/javaee"
xsi:schemaLocation="http://java.sun.com/xml/ns/javaee
http://java.sun.com/xml/ns/javaee/web-app_2_5.xsd" id="WebApp_ID" version="2.5">
  <display-name>LearnerAcademy</display-name>
  <welcome-file-list>
    <welcome-file>index.html</welcome-file>
    <welcome-file>index.jsp</welcome-file>
    <welcome-file>index.htm</welcome-file>
    <welcome-file>default.html</welcome-file>
    <welcome-file>default.jsp</welcome-file>
    <welcome-file>default.htm</welcome-file>
  </welcome-file-list>
  <servlet>
    <description></description>
    <display-name>LoginController</display-name>
    <servlet-name>LoginController</servlet-name>
    <servlet-class>com.controller.LoginController</servlet-class>
  </servlet>
  <servlet-mapping>
    <servlet-name>LoginController</servlet-name>
    <url-pattern>/Login</url-pattern>
  </servlet-mapping>
  <servlet>
    <description></description>
    <display-name>SubjectServlet</display-name>
    <servlet-name>SubjectServlet</servlet-name>
    <servlet-class>com.controller.SubjectServlet</servlet-class>
  </servlet>
  <servlet-mapping>
    <servlet-name>SubjectServlet</servlet-name>
    <url-pattern>/SubjectServlet</url-pattern>
  </servlet-mapping>
  <servlet>
    <description></description>
    <display-name>TeacherController</display-name>
    <servlet-name>TeacherController</servlet-name>
    <servlet-class>com.controller.TeacherController</servlet-class>
  </servlet>
  <servlet-mapping>
    <servlet-name>TeacherController</servlet-name>
    <url-pattern>/TeacherController</url-pattern>
  </servlet-mapping>
  <servlet>
    <description></description>
    <display-name>CourseController</display-name>
    <servlet-name>CourseController</servlet-name>
    <servlet-class>com.controller.CourseController</servlet-class>
  </servlet>
```

```
<servlet-mapping>
  <servlet-name>CourseController</servlet-name>
  <url-pattern>/CourseController</url-pattern>
</servlet-mapping>
<servlet>
  <description></description>
  <display-name>StudentController</display-name>
  <servlet-name>StudentController</servlet-name>
  <servlet-class>com.controller.StudentController</servlet-class>
</servlet>
<servlet-mapping>
  <servlet-name>StudentController</servlet-name>
  <url-pattern>/StudentController</url-pattern>
</servlet-mapping>
</web-app>
```