Term Project Description

# 🎓 Term Project Title: Smart Campus Portal – A Web-based System for University Automation

You are required to design and develop a Smart Campus Portal, a comprehensive web-based application that simulates various administrative and student services of a university. The system should allow different types of users (students, faculty, and administrators) to interact with the portal based on their roles. The aim is to create a centralized platform that handles core campus services and enhances communication and transparency between students and university staff.  
  
This project will test your ability to design a multi-page, responsive web application using HTML, CSS, JavaScript, jQuery, and ASP.NET (Web Forms ) for backend processing, database interaction, and user authentication.

## Project Features and Requirements:

### 1. User Authentication & Role Management

- Students, faculty, and admin users should log in using unique credentials.  
- Implement session management and role-based access control using ASP.NET.

### 2. Student Portal:

- View personal profile and academic record.  
- Register for courses (simulate course catalog with prerequisites).  
- Submit assignments and view grades.  
- View fee details and payment status.

### 3. Faculty Portal:

- Upload course content and assignments.  
- Grade students' submissions.  
- Send announcements to students.  
- View attendance reports.

### 4. Admin Panel:

- Add/remove students and faculty.  
- Manage course offerings.  
- Generate reports (e.g., fee reports, course registration stats).

### 5. Front-end Requirements:

- Fully responsive design using HTML/CSS and Bootstrap.  
- Use JavaScript/jQuery for dynamic behavior (e.g., live form validation, AJAX-based content loading).  
- Navigation bar and dashboard interface.

### 6. Backend & Database:

- Use ASP.NET with Linq to SQL database  
- Implement CRUD operations using Linq to SQL database  
- Store data like users, courses, assignments, submissions, and grades.

## Technical Requirements:

- Application must follow secure coding practices (e.g., no SQL Injection, input validation).  
- Submit a written Project Report documenting design, architecture, and key challenges.

## Deliverables:

1. Functional Web Application hosted locally or on Azure/IIS.  
2. Project Report (PDF): includes problem description, architecture, tools used, screenshots, challenges faced, and future scope.  
3. Presentation Slides (PowerPoint): summarizing your solution and demonstrating working features.  
4. Code Repository link (GitHub or any version control).

## Deadline:

Week 14 of the semester

ManageCourseOfferings.aspx

<%@ Page Language="C#" AutoEventWireup="true" CodeBehind="ManageCourseOfferings.aspx.cs" Inherits="BULMS.ManageCourseOfferings" %>

<!DOCTYPE html>

<html xmlns="http://www.w3.org/1999/xhtml">

<head runat="server">

<title>Manage Course Offerings - BULMS</title>

<link href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.0/dist/css/bootstrap.min.css" rel="stylesheet" />

</head>

<body>

<form id="form1" runat="server" class="container mt-5">

<div class="card">

<div class="card-header bg-primary text-white">

<h3>Manage Course Offerings</h3>

</div>

<div class="card-body">

<asp:Label ID="lblMessage" runat="server" CssClass="text-danger" />

<div class="row mb-3">

<div class="col-md-4">

<asp:Label ID="lblSemester" runat="server" Text="Semester:" CssClass="form-label" />

<asp:DropDownList ID="ddlSemesters" runat="server" CssClass="form-select" />

</div>

<div class="col-md-4">

<asp:Label ID="lblCourse" runat="server" Text="Course:" CssClass="form-label" />

<asp:DropDownList ID="ddlCourses" runat="server" CssClass="form-select" />

</div>

<div class="col-md-4">

<asp:Label ID="lblFaculty" runat="server" Text="Faculty:" CssClass="form-label" />

<asp:DropDownList ID="ddlFaculty" runat="server" CssClass="form-select" />

</div>

</div>

<asp:Button ID="btnAddOffering" runat="server" Text="Add Offering" CssClass="btn btn-primary" OnClick="btnAddOffering\_Click" />

<hr />

<asp:GridView ID="gvOfferings" runat="server" AutoGenerateColumns="False" CssClass="table table-bordered mt-3" DataKeyNames="OfferingID" OnRowDeleting="gvOfferings\_RowDeleting">

<Columns>

<asp:BoundField DataField="SemesterName" HeaderText="Semester" />

<asp:BoundField DataField="CourseName" HeaderText="Course" />

<asp:BoundField DataField="FacultyName" HeaderText="Faculty" />

<asp:CommandField ShowDeleteButton="True" />

</Columns>

</asp:GridView>

<a href="AdminDashboard.aspx" class="btn btn-secondary mt-3">Back to Dashboard</a>

</div>

</div>

</form>

</body>

</html>

ManageCourseOfferings.aspx.cs

using System;

using System.Configuration;

using System.Linq;

using System.Web.UI.WebControls;

namespace BULMS

{

public partial class ManageCourseOfferings : System.Web.UI.Page

{

protected void Page\_Load(object sender, EventArgs e)

{

if (Session["UserID"] == null || Session["RoleID"] == null || Session["RoleID"].ToString() != "3")

{

Response.Redirect("Login.aspx");

return;

}

if (!IsPostBack)

{

LoadSemesters();

LoadCourses();

LoadFaculty();

LoadOfferings();

}

}

private void LoadSemesters()

{

string connStr = ConfigurationManager.ConnectionStrings["BULMSConnectionString"].ConnectionString;

using (BULMSDataClassesDataContext db = new BULMSDataClassesDataContext(connStr))

{

var semesters = db.Semesters.ToList();

ddlSemesters.DataSource = semesters;

ddlSemesters.DataTextField = "SemesterName";

ddlSemesters.DataValueField = "SemesterID";

ddlSemesters.DataBind();

ddlSemesters.Items.Insert(0, new ListItem("Select Semester", ""));

}

}

private void LoadCourses()

{

string connStr = ConfigurationManager.ConnectionStrings["BULMSConnectionString"].ConnectionString;

using (BULMSDataClassesDataContext db = new BULMSDataClassesDataContext(connStr))

{

var courses = db.Courses.ToList();

ddlCourses.DataSource = courses;

ddlCourses.DataTextField = "CourseName";

ddlCourses.DataValueField = "CourseID";

ddlCourses.DataBind();

ddlCourses.Items.Insert(0, new ListItem("Select Course", ""));

}

}

private void LoadFaculty()

{

string connStr = ConfigurationManager.ConnectionStrings["BULMSConnectionString"].ConnectionString;

using (BULMSDataClassesDataContext db = new BULMSDataClassesDataContext(connStr))

{

var faculty = db.Users.Where(u => u.RoleID == 2).ToList();

ddlFaculty.DataSource = faculty;

ddlFaculty.DataTextField = "FullName";

ddlFaculty.DataValueField = "UserID";

ddlFaculty.DataBind();

ddlFaculty.Items.Insert(0, new ListItem("Select Faculty", ""));

}

}

private void LoadOfferings()

{

string connStr = ConfigurationManager.ConnectionStrings["BULMSConnectionString"].ConnectionString;

using (BULMSDataClassesDataContext db = new BULMSDataClassesDataContext(connStr))

{

var offerings = from o in db.CourseOfferings

join s in db.Semesters on o.SemesterID equals s.SemesterID

join c in db.Courses on o.CourseID equals c.CourseID

join f in db.Users on o.FacultyID equals f.UserID into facultyJoin

from f in facultyJoin.DefaultIfEmpty()

select new

{

o.OfferingID,

SemesterName = s.SemesterName,

CourseName = c.CourseName,

FacultyName = f != null ? f.FullName : "Not Assigned"

};

gvOfferings.DataSource = offerings.ToList();

gvOfferings.DataBind();

}

}

protected void btnAddOffering\_Click(object sender, EventArgs e)

{

lblMessage.Text = "";

if (ddlSemesters.SelectedIndex == 0 || ddlCourses.SelectedIndex == 0 || ddlFaculty.SelectedIndex == 0)

{

lblMessage.Text = "Please select semester, course, and faculty.";

return;

}

int semesterId = Convert.ToInt32(ddlSemesters.SelectedValue);

int courseId = Convert.ToInt32(ddlCourses.SelectedValue);

int facultyId = Convert.ToInt32(ddlFaculty.SelectedValue);

string connStr = ConfigurationManager.ConnectionStrings["BULMSConnectionString"].ConnectionString;

using (BULMSDataClassesDataContext db = new BULMSDataClassesDataContext(connStr))

{

bool exists = db.CourseOfferings.Any(o => o.SemesterID == semesterId && o.CourseID == courseId);

if (exists)

{

lblMessage.Text = "This course is already offered in the selected semester.";

return;

}

CourseOffering offering = new CourseOffering

{

SemesterID = semesterId,

CourseID = courseId,

FacultyID = facultyId

};

db.CourseOfferings.InsertOnSubmit(offering);

db.SubmitChanges();

lblMessage.Text = "Course offering added!";

LoadOfferings();

}

}

protected void gvOfferings\_RowDeleting(object sender, GridViewDeleteEventArgs e)

{

int offeringId = Convert.ToInt32(gvOfferings.DataKeys[e.RowIndex].Value);

string connStr = ConfigurationManager.ConnectionStrings["BULMSConnectionString"].ConnectionString;

using (BULMSDataClassesDataContext db = new BULMSDataClassesDataContext(connStr))

{

var offering = db.CourseOfferings.FirstOrDefault(o => o.OfferingID == offeringId);

if (offering != null)

{

db.CourseOfferings.DeleteOnSubmit(offering);

db.SubmitChanges();

}

LoadOfferings();

}

}

}

}

CourseRegistration.aspx

<%@ Page Language="C#" AutoEventWireup="true" CodeBehind="CourseRegistration.aspx.cs" Inherits="BULMS.CourseRegistration" %>

<!DOCTYPE html>

<html xmlns="http://www.w3.org/1999/xhtml">

<head runat="server">

<title>Course Registration - BULMS</title>

<link href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.0/dist/css/bootstrap.min.css" rel="stylesheet" />

</head>

<body>

<form id="form1" runat="server" class="container mt-5">

<div class="card">

<div class="card-header bg-success text-white">

<h3>Course Registration</h3>

</div>

<div class="card-body">

<asp:Label ID="lblMessage" runat="server" CssClass="text-danger" />

<div class="mb-3">

<asp:Label ID="lblSemester" runat="server" Text="Select Semester:" CssClass="form-label" />

<asp:DropDownList ID="ddlSemesters" runat="server" CssClass="form-select" />

</div>

<asp:GridView ID="gvCourses" runat="server" AutoGenerateColumns="False" CssClass="table table-bordered mt-3" OnRowCommand="gvCourses\_RowCommand" DataKeyNames="CourseID">

<Columns>

<asp:BoundField DataField="CourseID" HeaderText="Course ID" />

<asp:BoundField DataField="CourseName" HeaderText="Course Name" />

<asp:BoundField DataField="PrerequisiteName" HeaderText="Prerequisite" />

<asp:BoundField DataField="FacultyName" HeaderText="Faculty" />

<asp:ButtonField ButtonType="Button" Text="Register" CommandName="Register" />

</Columns>

</asp:GridView>

<a href="StudentDashboard.aspx" class="btn btn-secondary mt-3">Back to Dashboard</a>

</div>

</div>

</form>

</body>

</html>

CourseRegistration.aspx.cs

using System;

using System.Configuration;

using System.Linq;

namespace BULMS

{

public partial class CourseRegistration : System.Web.UI.Page

{

protected void Page\_Load(object sender, EventArgs e)

{

// Only allow logged-in students

if (Session["UserID"] == null || Session["RoleID"] == null || Session["RoleID"].ToString() != "1")

{

Response.Redirect("Login.aspx");

return;

}

if (!IsPostBack)

{

LoadSemesters();

gvCourses.DataSource = null;

gvCourses.DataBind();

lblMessage.Text = "Please select a semester.";

}

}

private void LoadSemesters()

{

string connStr = ConfigurationManager.ConnectionStrings["BULMSConnectionString"].ConnectionString;

using (BULMSDataClassesDataContext db = new BULMSDataClassesDataContext(connStr))

{

var semesters = db.Semesters.ToList();

ddlSemesters.DataSource = semesters;

ddlSemesters.DataTextField = "SemesterName";

ddlSemesters.DataValueField = "SemesterID";

ddlSemesters.DataBind();

ddlSemesters.Items.Insert(0, new System.Web.UI.WebControls.ListItem("--Select Semester--", ""));

}

}

protected void ddlSemesters\_SelectedIndexChanged(object sender, EventArgs e)

{

LoadCourses();

}

private void LoadCourses()

{

lblMessage.Text = "";

if (ddlSemesters.SelectedIndex == 0)

{

gvCourses.DataSource = null;

gvCourses.DataBind();

lblMessage.Text = "Please select a semester.";

return;

}

int selectedSemesterId = Convert.ToInt32(ddlSemesters.SelectedValue);

string connStr = ConfigurationManager.ConnectionStrings["BULMSConnectionString"].ConnectionString;

using (BULMSDataClassesDataContext db = new BULMSDataClassesDataContext(connStr))

{

var courses = from co in db.CourseOfferings

join c in db.Courses on co.CourseID equals c.CourseID

where co.SemesterID == selectedSemesterId

select new

{

c.CourseID,

c.CourseName,

PrerequisiteName = c.PrerequisiteID != null

? db.Courses.FirstOrDefault(p => p.CourseID == c.PrerequisiteID).CourseName

: "None",

FacultyName = c.FacultyID != null

? db.Users.FirstOrDefault(f => f.UserID == c.FacultyID).FullName

: "Not Assigned"

};

gvCourses.DataSource = courses.Distinct().ToList();

gvCourses.DataBind();

}

}

protected void gvCourses\_RowCommand(object sender, System.Web.UI.WebControls.GridViewCommandEventArgs e)

{

if (e.CommandName == "Register")

{

int rowIndex = Convert.ToInt32(e.CommandArgument);

int courseId = Convert.ToInt32(gvCourses.DataKeys[rowIndex].Value);

int userId = Convert.ToInt32(Session["UserID"]);

if (ddlSemesters.SelectedIndex == 0)

{

lblMessage.Text = "Please select a semester.";

return;

}

int semesterId = Convert.ToInt32(ddlSemesters.SelectedValue);

string connStr = ConfigurationManager.ConnectionStrings["BULMSConnectionString"].ConnectionString;

using (BULMSDataClassesDataContext db = new BULMSDataClassesDataContext(connStr))

{

// Check if already registered for this course in this semester

bool alreadyRegistered = db.CourseRegistrations.Any(r => r.UserID == userId && r.CourseID == courseId && r.SemesterID == semesterId);

if (alreadyRegistered)

{

lblMessage.Text = "You are already registered for this course in the selected semester.";

return;

}

// Check prerequisites

var course = db.Courses.FirstOrDefault(c => c.CourseID == courseId);

if (course != null && course.PrerequisiteID != null)

{

bool hasPrerequisite = db.CourseRegistrations.Any(r => r.UserID == userId && r.CourseID == course.PrerequisiteID);

if (!hasPrerequisite)

{

lblMessage.Text = "You must complete the prerequisite course before registering.";

return;

}

}

// Register the student

CourseRegistration reg = new CourseRegistration

{

UserID = userId,

CourseID = courseId,

SemesterID = semesterId

};

db.CourseRegistrations.InsertOnSubmit(reg);

db.SubmitChanges();

lblMessage.Text = "Registration successful!";

}

// Refresh courses after registration

LoadCourses();

}

}

}

}