Internet Application Development
Lab 05A

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Problem statement:

Reference: Lab 3 Q1) Consider the project database designed and implemented during previous semester i.e. Fall 2024.

Its implementation was done using structured query language during previous semester. Try to recall major relations in your project database. You already have its report in printed form.

There is a need to implement a web based solution for above mentioned database. The web based solution must incorporate various functionalities of your project.

    (1) Registration of Student/Patient/Passenger/Customer, or whatever is applicable in your project.
    (2) Search facilities including partial matches
    (3) Any other project specific functionalities
    (4) Role based access control
    (5) Payment system (if required)

As a first step design above mentioned (i) to (v) user interfaces using paper and pencil.
Next write appropriate html for creating (i) to (v) user interface prototypes.
Create links for navigation among above pages.
Design a menu using list and styles.
Add help pages for user guidance.
Either use table for layout or may opt for flow based layout.
Test user interface prototypes in browser.
Experiment with style sheets.

You are strictly advised to refrain from using any AI tool during lab work. (0 score will be given for any such effort). Just follow codes as listed in book or as demonstrated in class from time to time.

Q1) Write code (*code behind only*) for any two of the interfaces below?

Q2) Draw corresponding graphical user interface as rendered in browser?

Code implementation report

Problem 1:

Frontend

```
<%@ Page Language="VB" AutoEventWireup="false" CodeFile="Register.aspx.vb" Inherits="Register" %>
```

```html
<!DOCTYPE html>
<html xmlns="http://www.w3.org/1999/xhtml">
<head runat="server">
    <title>Course Registration</title>
</head>
<body>
    <form id="form1" runat="server">
        <h2>Register for a Course</h2>

        <asp:Label ID="lblStudent" runat="server" Text="Student Name: "></asp:Label>
        <asp:TextBox ID="txtStudent" runat="server" Placeholder="Enter Student
Name"></asp:TextBox>
        <br /><br />

        <asp:Label ID="lblCourse" runat="server" Text="Course Name: "></asp:Label>
        <asp:TextBox ID="txtCourse" runat="server" Placeholder="Enter Course
Name"></asp:TextBox>
        <br /><br />

        <asp:Button ID="btnRegister" runat="server" Text="Register"
OnClick="btnRegister_Click" />
        <br /><br />

        <asp:Button ID="btnSearch" runat="server" Text="Go to Search Page"
PostBackUrl="~/Search.aspx" />
        <br /><br />


        <asp:Label ID="lblMessage" runat="server" ForeColor="Green"></asp:Label>
    </form>
</body>
</html>
```

Code behind

```vbnet
Partial Class Register
    Inherits System.Web.UI.Page

    Protected Sub btnRegister_Click(sender As Object, e As EventArgs)
        Dim studentName As String = txtStudent.Text.Trim()
        Dim courseName As String = txtCourse.Text.Trim()

        If String.IsNullOrEmpty(studentName) OrElse String.IsNullOrEmpty(courseName) Then
            lblMessage.ForeColor = Drawing.Color.Red
            lblMessage.Text = "Please enter both student and course names."
            Return
        End If

        ' Dictionary: key = student, value = course
        Dim registrations As Dictionary(Of String, String) = TryCast(Session("Registrations"),
Dictionary(Of String, String))
        If registrations Is Nothing Then
            registrations = New Dictionary(Of String, String)()
        End If

        registrations(studentName) = courseName
        Session("Registrations") = registrations

        lblMessage.ForeColor = Drawing.Color.Green
        lblMessage.Text = "Student '" & Server.HtmlEncode(studentName) & "' registered for
course '" & Server.HtmlEncode(courseName) & "' (not saved to database)."
```

```
    End Sub

End Class
```

Output:

Interface 2

frontend

```
<%@ Page Language="VB" AutoEventWireup="false" CodeFile="Search.aspx.vb" Inherits="Search" %>

<!DOCTYPE html>
<html xmlns="http://www.w3.org/1999/xhtml">
<head runat="server">
    <title>Search Registration</title>
</head>
<body>
    <form id="form1" runat="server">
        <h2>Search Student's Course</h2>

        <asp:Label ID="lblSearch" runat="server" Text="Student Name: "></asp:Label>
        <asp:TextBox ID="txtSearch" runat="server"></asp:TextBox>
        <asp:Button ID="btnSearch" runat="server" Text="Search" OnClick="btnSearch_Click" />

        <br /><br />
```

```
        <asp:Label ID="lblResult" runat="server" Font-Bold="true"></asp:Label>
    </form>
</body>
</html>
```

Backend

```vbnet
Partial Class Search
    Inherits System.Web.UI.Page

    Protected Sub btnSearch_Click(sender As Object, e As EventArgs)
        Dim studentName As String = txtSearch.Text.Trim()

        If String.IsNullOrEmpty(studentName) Then
            lblResult.ForeColor = Drawing.Color.Red
            lblResult.Text = "Please enter a student name to search."
            Return
        End If

        Dim registrations As Dictionary(Of String, String) = TryCast(Session("Registrations"),
Dictionary(Of String, String))

        If registrations IsNot Nothing AndAlso registrations.ContainsKey(studentName) Then
            Dim course = registrations(studentName)
            lblResult.ForeColor = Drawing.Color.Green
            lblResult.Text = "Student '" & studentName & "' is registered for course: '" &
course & "'."

        Else
            lblResult.ForeColor = Drawing.Color.Red
            lblResult.Text = String.Format("No course found for student '{0}'.", studentName)
        End If
    End Sub
End Class
```

Output

localhost:62977/Search.aspx

Search Student's Course

Student Name: jalal [Search]

Student 'jalal' is registered for course: 'iad'.