Problem Statement:

Consider the database development project developed during previous semester. A complete database design and development was carried out in previous semester project as detailed in your project report in printed form.

In addition during one of previous labs (see reference below) you were required to develop web interfaces on paper and then develop html prototypes for various functionalities of your database project mentioned as above.

Now the next task is to transform paper based and html based prototype interfaces into full scale working web forms for realization of various functionalities of your project. Ideally you are required to develop all web forms for implementing various project functionalities.

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?

Supplier.aspx:

<%@ Page Language="VB" AutoEventWireup="true" CodeFile="Supplier.aspx.vb" Inherits="Supplier" %>

<!DOCTYPE html>

<html>

<head>

```
Bisma Tahir
                                               IAD
                                                                                             Lab5
  <title>Supplier Entry</title>
  <style>
    body {
       font-family: Arial;
       max-width: 600px;
       margin: auto;
       padding: 20px;
    }
    label, input {
       display: block;
       width: 100%;
       margin-bottom: 10px;
    }
     .btn {
       background: #007bff;
       color: white;
       border: none;
       padding: 10px;
       cursor: pointer;
    }
     .btn:hover {
       background: #0056b3;
    }
  </style>
</head>
<body>
  <form id="form1" runat="server">
    <h2>Supplier Registration</h2>
    <label>Supplier ID</label>
     <asp:TextBox ID="txtSupplierId" runat="server" />
     <label>Supplier Name</label>
     <asp:TextBox ID="txtSupplierName" runat="server" />
```

Bisma Tahir <label>Supplier Contact</label>	IAD	Lab5
<asp:textbox id="txtSupplierContact" re<="" td=""><td>unat="server" /></td><td></td></asp:textbox>	unat="server" />	
<asp:button btnsubmit_click"="" id="btnSubmit" runat="serv
OnClick="></asp:button>	ver" Text="Add Supplier" CssClass="btn"	
<asp:label id="lblMessage" runat="serv</td><td>/er"></asp:label>		

Supplier.aspx.vb:

Imports System.Data.SqlClient

Partial Class Supplier Inherits System.Web.UI.Page

Protected Sub btnSubmit_Click(sender As Object, e As EventArgs) Dim connStr As String = "workstation id=GROCERYSTORE.mssql.somee.com;packet size=4096;user id=bismatahir_SQLLogin_6;pwd=w59dtiucca;data source=GROCERYSTORE.mssql.somee.com;persist security info=False;initial catalog=GROCERYSTORE;TrustServerCertificate=True"

Using con As New SqlConnection(connStr)

Dim cmd As New SqlCommand("INSERT INTO Supplier_T (Supplier_ID, Supplier_Name, Supplier_Contact) VALUES (@SupplierID, @SupplierName, @SupplierContact)", con)

> cmd.Parameters.AddWithValue("@SupplierID", txtSupplierId.Text) cmd.Parameters.AddWithValue("@SupplierName", txtSupplierName.Text) cmd.Parameters.AddWithValue("@SupplierContact", txtSupplierContact.Text)

Try

con.Open() cmd.ExecuteNonQuery() lblMessage.Text = "Supplier added successfully!" Bisma Tahir

Lab5

Catch ex As Exception IbIMessage.Text = "Error: " & ex.Message End Try End Using End Sub End Class

ProductSearch.aspx:

```
<%@ Page Language="VB" AutoEventWireup="true" CodeFile="ProductSearch.aspx.vb"
Inherits="ProductSearch" %>
<!DOCTYPE html>
<html lang="en">
<head>
  <title>Product Search</title>
  <style>
    body {
       font-family: Arial, sans-serif;
       line-height: 1.6;
       max-width: 600px;
       margin: 0 auto;
       padding: 20px;
    }
    h2 { color: #333; text-align: center; margin-bottom: 20px; }
    label { display: block; margin: 10px 0 5px; color: #555; }
    input[type="text"] {
       width: 100%; padding: 8px; border: 1px solid #ddd;
       border-radius: 4px; box-sizing: border-box;
    }
     .btn {
       background: black; color: white; border: none;
       padding: 10px 15px; margin-top: 15px; width: 100%;
       border-radius: 4px; cursor: pointer;
    }
     .btn:hover { background: #0056b3; }
    table {
```

```
Bisma Tahir
                                                                                        Lab5
                                            IAD
       width: 100%; margin-top: 20px; border-collapse: collapse;
    }
    th, td {
       padding: 8px; border: 1px solid #ddd; text-align: left;
    }
    th { background-color: #f2f2f2; }
  </style>
</head>
<body>
  <form id="form1" runat="server">
    <h2>Product Search</h2>
    <label for="txtSearch">Enter Product Name or SKU</label>
    <asp:TextBox ID="txtSearch" runat="server" placeholder="Example: Apple or
SKU123"></asp:TextBox>
    <asp:Button ID="btnSearch" runat="server" Text="Search" CssClass="btn"
OnClick="btnSearch_Click" />
    <asp:GridView ID="gvProducts" runat="server"
AutoGenerateColumns="True"></asp:GridView>
  </form>
</body>
</html>
ProductsSearch.aspx.vb:
Imports System.Data
Imports System.Data.SqlClient
Partial Class ProductSearch
  Inherits System.Web.UI.Page
  Protected Sub btnSearch_Click(sender As Object, e As EventArgs)
    Dim conStr As String = "workstation id=GROCERYSTORE.mssql.somee.com;packet
size=4096;user id=bismatahir_SQLLogin_6;pwd=w59dtiucca;data
```

Bisma Tal source=C catalog=C	nir IAD GROCERYSTORE.mssql.somee.com;persist security info=False;initial GROCERYSTORE;TrustServerCertificate=True"	Lab5
Dim	query As String = "SELECT Product_ID, SKU, Product_Description, Stock FROM	
Product_	T WHERE SKU LIKE @search OR Product_Description LIKE @search"	
Usir	ng con As New SqlConnection(conStr)	
U	sing cmd As New SqlCommand(query, con)	
	cmd.Parameters.AddWithValue("@search", "%" & txtSearch.Text & "%")	
	Dim adapter As New SqlDataAdapter(cmd)	
	Dim table As New DataTable()	
	adapter.Fill(table)	
	gvProducts.DataSource = table	
	gvProducts.DataBind()	
E	nd Using	
End	Using	
End St	du	
End Clas	S	

Code Snippets:

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Graphical Interface as rendered in the browser:

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Product Search	ch x Create Order x Dupplier Entry x +
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	Supplier Contact
	Add Supplier
	Supplier added successfully!
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S. D B Make a	Enter Product Name or SKU Example: Apple or SKU123 Sarch
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● □ ● Make ● □ ● ▲	Enter Product Name or SKU Example: Apple or SKU123 Search Search Terr Product Search x + Iocalhost:59818/ProductSearch.aspx

Q3) Write a few test cases for testing user interfaces?

Test Cases for ProductSearch Interface

Test Case 1: Successful Product Search by Name

- 1. Navigate to the Product Search page (ProductSearch.aspx).
- 2. Enter Apple into the search field.
- 3. Click the "Search" button.

Expected Result:

- The search results should display a list of products, including "Apple", with relevant details such as Product ID, Product Description, and Stock Quantity.
- The page should display the products from the Product_T table where the Product_Description contains "Apple".

Test Case 2: No Products Found for Search Term

- 1. Navigate to the Product Search page (ProductSearch.aspx).
- 2. Enter NonExistingProduct into the search field.
- 3. Click the "Search" button.

Expected Result:

• The page should not display any products.

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\leftarrow	C (i localhost:59818/Produc	tSearch.aspx				
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Test Case 1: Valid Supplier Entry

Input

Supplier_ID: 201 Supplier_Name: "Metro Traders" Supplier_Contact: "metro@traders.com"

Expected Output

"Supplier added successfully!" label message Record is inserted into the database

🌐 P	Product Search	$\times \oplus$	Create Order		×	Supplier Entry		×	+
рх									
	Supplier F	Registr	ation						
	Supplier ID						1		
	Supplier Name						1		
	Supplier Contac	t]		
	metro@traders.co	n	Add Su	ipplier					
	Supplier added	successfu	lly!						

Test Case 2: Duplicate Supplier_ID

Input

Supplier_ID: 201

Supplier_Name: "New Metro"

Supplier_Contact: "contact@newmetro.com"

Expected Output

SQL Error: Violation of PRIMARY KEY constraint 'Supplier_PK'

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Product Search	🗙 🛛 🌐 Create Order	× 🕀 Supplier Entry	× +	
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	Add Supplier			

Error: Violation of PRIMARY KEY constraint 'PK_Supplier_83918D98932116BE'. Cannot insert duplicate key in object 'dbo.Supplier_T'. The duplicate key value is (201). The statement has been terminated.