

Project Report: Lab 05

Submitted by: Muhammad Abdullah

Source code files for the core project logic.

File: About.aspx

```
■&lt;%@ Page Title="About" Language="VB" MasterPageFile="~/Site.Master" AutoEventWireup="true" CodeBehind="A

&lt;asp:Content ID="BodyContent" ContentPlaceHolderID="MainContent" runat="server"&gt;
  &lt;main aria-labelledby="title"&gt;
    &lt;h2 id="title"&gt;&lt;%: Title %&gt;.&lt;/h2&gt;
    &lt;p&gt;Your app description page.&lt;/p&gt;
    &lt;p&gt;Use this area to provide additional information.&lt;/p&gt;
  &lt;/main&gt;
&lt;/asp:Content&gt;
```

File: About.aspx.vb

```
Public Class About
    Inherits Page

    Protected Sub Page_Load(ByVal sender As Object, ByVal e As EventArgs) Handles Me.Load

    End Sub
End Class
```

File: Admin.aspx

```
<%@ Page Title="Catalog Admin" Language="vb" AutoEventWireup="false" MasterPageFile="~/Site.Master" CodeB

<asp:Content ID="Content1" ContentPlaceHolderID="MainContent" runat="server">
    <div class="mainBody">
        <h3 class="title">Catalog Management</h3>
        <hr />
        <p>Use this form to add new product listings to the catalog.</p>

        <div class="form-group">
            <label>Description (Name):</label>
            <asp:TextBox ID="txtDesc" runat="server"></asp:TextBox>
        </div>

        <div class="form-group">
            <label>Category/Tag:</label>
            <asp:TextBox ID="txtFinish" runat="server"></asp:TextBox>
        </div>

        <div class="form-group">
            <label>Listing Price:</label>
            <asp:TextBox ID="txtPrice" runat="server"></asp:TextBox>
        </div>

        <div style="margin-top: 20px;">
            <asp:Button ID="btnAddProduct" runat="server" Text="Add Product" OnClick="btnAddProduct_Click"
        </div>

        <br />
        <asp:Label ID="lblAdminMsg" runat="server" CssClass="msg-label"></asp:Label>
        <hr />

        <h3 class="title">Update Existing Product</h3>
        <hr />
        <p>Enter a Product ID to fetch and update its details.</p>

        <div class="form-group">
            <label>Product ID:</label>
            <asp:TextBox ID="txtSearchPID" runat="server" Style="width: 100px;"></asp:TextBox>
            <asp:Button ID="btnFetchProduct" runat="server" Text="Fetch" OnClick="btnFetchProduct_Click"
        </div>

        <div class="form-group">
            <label>Description (Name):</label>
            <asp:TextBox ID="txtDescription" runat="server" Enabled="false"></asp:TextBox>
        </div>

        <div class="form-group">
            <label>Category/Tag:</label>
            <asp:TextBox ID="txtUpdFinish" runat="server" Enabled="false"></asp:TextBox>
        </div>

        <div class="form-group">
            <label>Listing Price:</label>
            <asp:TextBox ID="txtUpdPrice" runat="server" Enabled="false"></asp:TextBox>
        </div>

        <div style="margin-top: 20px;">
            <asp:Button ID="btnUpdateCatalog" runat="server" Text="Update Product" OnClick="btnUpdateCata
        </div>
    </div>
</asp:Content>
```

```
<br />
<asp:Label ID="lblCatalogMsg" runat="server" CssClass="msg-label"></asp:Label>
</div>
</asp:Content>
```

File: Admin.aspx.vb

```
Imports System.Data.SqlClient
Imports System.Configuration

Public Class Admin
    Inherits System.Web.UI.Page

    Dim connStr As String = ConfigurationManager.ConnectionStrings("PVFC").ConnectionString

    Protected Sub btnAddProduct_Click(sender As Object, e As EventArgs) Handles btnAddProduct.Click

        Try
            Using con As New SqlConnection(connStr)

                Dim query As String =
                    "INSERT INTO Product_T (PRODUCT_DESCRIPTION, PRODUCT_FINISH, STANDARD_PRICE) VALUES (@Desc"

                Dim cmd As New SqlCommand(query, con)
                cmd.Parameters.AddWithValue("@Desc", txtDesc.Text)
                cmd.Parameters.AddWithValue("@Finish", txtFinish.Text)
                cmd.Parameters.AddWithValue("@Price", CDec(txtPrice.Text))

                con.Open()
                cmd.ExecuteNonQuery()

                lblAdminMsg.Text = "Product listing added successfully to the catalog!"
                lblAdminMsg.ForeColor = System.Drawing.Color.Green

                txtDesc.Text = ""
                txtFinish.Text = ""
                txtPrice.Text = ""

            End Using

            Catch ex As Exception

                lblAdminMsg.Text = "Error: " & ex.Message
                lblAdminMsg.ForeColor = System.Drawing.Color.Red

            End Try

        End Sub

    Protected Sub btnFetchProduct_Click(sender As Object, e As EventArgs) Handles btnFetchProduct.Click

        Try
            Using con As New SqlConnection(connStr)

                Dim cmd As New SqlCommand("SELECT * FROM Product_T WHERE PRODUCT_ID = @pid", con)
                cmd.Parameters.AddWithValue("@pid", txtSearchPID.Text)

                con.Open()
                Dim reader As SqlDataReader = cmd.ExecuteReader()

                If reader.Read() Then
                    txtDescription.Text = reader("PRODUCT_DESCRIPTION").ToString()
                    txtUpdFinish.Text = reader("PRODUCT_FINISH").ToString()
                    txtUpdPrice.Text = reader("STANDARD_PRICE").ToString()

                    txtDescription.Enabled = True
                    txtUpdFinish.Enabled = True
                End If
            End Using
        End Try
    End Sub
End Class
```

```

        txtUpdPrice.Enabled = True
        btnUpdateCatalog.Enabled = True

        lblCatalogMsg.Text = "Product record found. You can now update it."
        lblCatalogMsg.ForeColor = System.Drawing.Color.Blue
    Else
        lblCatalogMsg.Text = "Error: Product ID not found!"
        lblCatalogMsg.ForeColor = System.Drawing.Color.Red
    End If

    reader.Close()

End Using

Catch ex As Exception
    lblCatalogMsg.Text = "Error: " & ex.Message
    lblCatalogMsg.ForeColor = System.Drawing.Color.Red
End Try

End Sub

Protected Sub btnUpdateCatalog_Click(sender As Object, e As EventArgs) Handles btnUpdateCatalog.Click

    Try
        Using con As New SqlConnection(connStr)

            Dim query As String =
                "UPDATE Product_T SET PRODUCT_DESCRIPTION = @Desc, PRODUCT_FINISH = @Finish, STANDARD_PR

            Dim cmd As New SqlCommand(query, con)
            cmd.Parameters.AddWithValue("@Desc", txtDescription.Text)
            cmd.Parameters.AddWithValue("@Finish", txtUpdFinish.Text)
            cmd.Parameters.AddWithValue("@Price", CDec(txtUpdPrice.Text))
            cmd.Parameters.AddWithValue("@pid", txtSearchPID.Text)

            con.Open()
            Dim rowsAffected As Integer = cmd.ExecuteNonQuery()

            If rowsAffected > 0 Then
                lblCatalogMsg.Text = "Product updated successfully!"
                lblCatalogMsg.ForeColor = System.Drawing.Color.Green
            Else
                lblCatalogMsg.Text = "Update failed. No matching product found."
                lblCatalogMsg.ForeColor = System.Drawing.Color.Red
            End If

        End Using

        Catch ex As Exception
            lblCatalogMsg.Text = "Error: " & ex.Message
            lblCatalogMsg.ForeColor = System.Drawing.Color.Red
        End Try

    End Sub

End Class

```

File: Bundle.config

```
■<?xml version="1.0" encoding="utf-8" ?>
<bundles version="1.0">
  <styleBundle path="~/Content/css">
    <include path="~/Content/bootstrap.css" />
    <include path="~/Content/Site.css" />
  </styleBundle>
</bundles>
```

File: Contact.aspx

```
■<%@ Page Title="Contact" Language="VB" MasterPageFile="~/Site.Master" AutoEventWireup="true" CodeBehind=
<asp:Content ID="BodyContent" ContentPlaceHolderID="MainContent" runat="server">
  <main aria-labelledby="title">
    <h2 id="title"><%: Title %></h2>
    <p>Your contact page.</p>

    <address>
      One Microsoft Way<br />
      Redmond, WA 98052-6399<br />
      <abbr title="Phone">P:</abbr>
      425.555.0100
    </address>

    <address>
      <strong>Support:</strong><a href="mailto:Support@example.com">Support@example.
      <strong>Marketing:</strong><a href="mailto:Marketing@example.com">Marketing@exa
    </address>
  </main>
</asp:Content>
```

File: Contact.aspx.vb

```
Public Class Contact
    Inherits Page

    Protected Sub Page_Load(ByVal sender As Object, ByVal e As EventArgs) Handles Me.Load

    End Sub
End Class
```

File: Default.aspx

```
<%@ Page Title="Home Page" Language="VB" MasterPageFile="~/Site.Master" AutoEventWireup="true" CodeBehind
<asp:Content ID="BodyContent" ContentPlaceHolderID="MainContent" runat="server">
  <div class="content">
    <h1 class="title">Pine Valley Furniture Portal</h1>
    <p>Welcome to the Management System. Please select a task:</p>

    <table align="center" class="catalog-table">
      <tr>
        <td>
          <h3>Customers</h3>
          <a href="Register.aspx">Register New Customer</a><br />
          <a href="UpdateCustomer.aspx">Update Customer Data</a>
        </td>
        <td>
          <h3>Inventory</h3>
          <a href="Search.aspx">Search Products</a>
        </td>
      </tr>
      <tr>
        <td>
          <h3>Orders</h3>
          <a href="Orders.aspx">Place New Order</a>
        </td>
        <td>
          <h3>Admin</h3>
          <a href="Admin.aspx">Update Catalog</a>
        </td>
      </tr>
    </table>
  </div>
</asp:Content>
```

File: Default.aspx.vb

```
Imports System.Data
Imports System.Data.SqlClient
Imports System.Configuration

Public Class _Default
    Inherits Page

    Protected Sub Page_Load(ByVal sender As Object, ByVal e As EventArgs) Handles Me.Load

    End Sub

End Class
```

File: Global.asax.vb

```
■Imports System.Web.Optimization

Public Class Global_asax
    Inherits HttpApplication

    Sub Application_Start(sender As Object, e As EventArgs)
        ' Fires when the application is started
        RouteConfig.RegisterRoutes(RouteTable.Routes)
        BundleConfig.RegisterBundles(BundleTable.Bundles)
    End Sub
End Class
```

File: Help.aspx

```
■&lt;%@ Page Title="" Language="vb" AutoEventWireup="false" MasterPageFile="~/Site.Master" CodeBehind="Help.
&lt;asp:Content ID="Content1" ContentPlaceHolderID="MainContent" runat="server"&gt;
  &lt;div style="font-family: Arial; padding: 20px;"&gt;
    &lt;h2&gt;User Guidance &amp; Help&lt;/h2&gt;
    &lt;hr /&gt;
    &lt;ul&gt;
      &lt;li&gt;&lt;strong&gt;Search Products:&lt;/strong&gt; Enter a name or wood finish (like 'Cherry
      &lt;li&gt;&lt;strong&gt;Registration:&lt;/strong&gt; Used to add new customers to the database.&
      &lt;li&gt;&lt;strong&gt;Place Order:&lt;/strong&gt; Select a customer and a product to record a
      &lt;li&gt;&lt;strong&gt;Update Catalog:&lt;/strong&gt; For administrators to add new furniture i
      &lt;li&gt;&lt;strong&gt;Payment:&lt;/strong&gt; Enter a valid Order ID to process a payment simu
    &lt;/ul&gt;
    &lt;p&gt;For technical issues, contact the system administrator.&lt;/p&gt;
  &lt;/div&gt;
&lt;/asp:Content&gt;
```

File: Help.aspx.vb

```
Public Class Help
    Inherits System.Web.UI.Page

    Protected Sub Page_Load(ByVal sender As Object, ByVal e As System.EventArgs) Handles Me.Load

    End Sub

End Class
```

File: Orders.aspx

```
<%@ Page Title="Place Order" Language="vb" AutoEventWireup="false" MasterPageFile="~/Site.Master" CodeBeh

<asp:Content ID="Content1" ContentPlaceHolderID="MainContent" runat="server">
  <div class="mainBody">
    <h3 class="title">Place New Order</h3>
    <hr />

    <asp:Panel ID="pnlSelectedProducts" runat="server" Visible="false" Style="margin-bottom: 20px; padding: 5px; border: 1px solid #ccc;">
      <strong>Products selected from Search:</strong>
      <asp:BulletedList ID="blSelectedProducts" runat="server" BulletStyle="Disc" Style="margin-top: 5px;">
      </asp:BulletedList>
    </asp:Panel>

    <div class="form-group">
      <label>Select Buyer:</label>
      <asp:DropDownList ID="ddlCustomers" runat="server">
      </asp:DropDownList>
    </div>

    <div class="form-group">
      <label>Select Product:</label>
      <asp:DropDownList ID="ddlProducts" runat="server">
      </asp:DropDownList>
    </div>

    <div class="form-group">
      <label>Ordered Quantity:</label>
      <asp:TextBox ID="txtQty" runat="server" TextMode="Number" Style="width: 100px;">
    </div>

    <div style="margin-top: 20px;">
      <asp:Button ID="btnPlaceOrder" runat="server" Text="Submit Order" OnClick="btnPlaceOrder_Click" />
    </div>

    <br />
    <asp:Label ID="lblOrderMsg" runat="server" CssClass="msg-label">
    </div>
  </asp:Content>
```

File: Orders.aspx.vb

```
Imports System.Data
Imports System.Data.SqlClient
Imports System.Configuration

Public Class Orders
    Inherits System.Web.UI.Page

    Dim connStr As String = ConfigurationManager.ConnectionStrings("PVFC").ConnectionString
    Dim con As SqlConnection

    Protected Sub Page_Load(ByVal sender As Object, ByVal e As System.EventArgs) Handles Me.Load
        If Not IsPostBack Then
            LoadData()
            LoadSelectedProducts()
        End If
    End Sub

    Private Sub LoadSelectedProducts()
        If Session("SelectedProducts") IsNot Nothing Then
            Dim dt As DataTable = CType(Session("SelectedProducts"), DataTable)
            If dt.Rows.Count > 0 Then
                pnlSelectedProducts.Visible = True
                blSelectedProducts.Items.Clear()

                For Each row As DataRow In dt.Rows
                    blSelectedProducts.Items.Add(row("ProductName").ToString() & " (ID: " & row("Pro
                Next

                ' Pre-select the first product in the dropdown
                Dim firstProductId As String = dt.Rows(0)("ProductID").ToString()
                Dim item As ListItem = ddlProducts.Items.FindByValue(firstProductId)
                If item IsNot Nothing Then
                    ddlProducts.SelectedValue = firstProductId
                End If
            End If
        End If
    End Sub

    Private Sub LoadData()
        Try
            con = New SqlConnection(connStr)
            con.Open()

            Dim queryCust As String = "SELECT CUSTOMER_ID, CUSTOMER_NAME FROM customer_T"
            Dim cmdCust As New SqlCommand(queryCust, con)

            ddlCustomers.DataSource = cmdCust.ExecuteReader()
            ddlCustomers.DataTextField = "CUSTOMER_NAME"
            ddlCustomers.DataValueField = "CUSTOMER_ID"
            ddlCustomers.DataBind()
            ddlCustomers.Items.Insert(0, New ListItem("-- Select Buyer --", "0"))

            con.Close()

            con.Open()

            Dim queryProd As String = "SELECT PRODUCT_ID, PRODUCT_DESCRIPTION FROM Product_T"
            Dim cmdProd As New SqlCommand(queryProd, con)
```

```

        ddlProducts.DataSource = cmdProd.ExecuteReader()
        ddlProducts.DataTextField = "PRODUCT_DESCRIPTION"
        ddlProducts.DataValueField = "PRODUCT_ID"
        ddlProducts.DataBind()
        ddlProducts.Items.Insert(0, New ListItem("-- Select Product --", "0"))

        con.Close()

    Catch ex As Exception
        lblOrderMsg.Text = "Error loading data: " & ex.Message
        lblOrderMsg.ForeColor = System.Drawing.Color.Red
        con.Close()
    End Try

End Sub

Protected Sub btnPlaceOrder_Click(sender As Object, e As EventArgs) Handles btnPlaceOrder.Click

    Try
        con = New SqlConnection(connStr)
        con.Open()

        ' ORDER_ID is IDENTITY - let the DB generate it, retrieve with OUTPUT
        Dim queryOrder As String =
            "INSERT INTO Order_T (CUSTOMER_ID, ORDER_DATE) " &
            "OUTPUT INSERTED.ORDER_ID " &
            "VALUES (@CustomerID, @OrderDate)"

        Dim cmdOrder As New SqlCommand(queryOrder, con)
        cmdOrder.Parameters.AddWithValue("@CustomerID", CInt(ddlCustomers.SelectedValue))
        cmdOrder.Parameters.AddWithValue("@OrderDate", DateTime.Today)
        Dim newOrderId As Integer = Convert.ToInt32(cmdOrder.ExecuteScalar())

        Dim queryLine As String =
            "INSERT INTO Order_Line_T (ORDER_ID, PRODUCT_ID, ORDERED_QUANTITY) VALUES (@OrderID, @ProductID, @Qty)"

        Dim cmdLine As New SqlCommand(queryLine, con)
        cmdLine.Parameters.AddWithValue("@OrderID", newOrderId)
        cmdLine.Parameters.AddWithValue("@ProductID", CInt(ddlProducts.SelectedValue))
        cmdLine.Parameters.AddWithValue("@Qty", CInt(txtQty.Text))
        cmdLine.ExecuteNonQuery()

        con.Close()

        lblOrderMsg.Text = "Order #" & newOrderId & " placed successfully!"
        lblOrderMsg.ForeColor = System.Drawing.Color.Green

        Response.Redirect("Payment.aspx?OrderID=" & newOrderId)

    Catch ex As Exception
        lblOrderMsg.Text = "Error: " & ex.Message
        lblOrderMsg.ForeColor = System.Drawing.Color.Red
        con.Close()
    End Try

End Sub

End Class

```

File: Payment.aspx

```
<%@ Page Title="Payment" Language="vb" AutoEventWireup="false" MasterPageFile="~/Site.Master" CodeBehind=
<asp:Content ID="Content1" ContentPlaceHolderID="MainContent" runat="server">
  <div style="font-family: Arial; padding: 20px; max-width: 500px;">
    <h3>Order Payment</h3>
    <hr />
    <p>Please enter your order details to process the payment.</p>

    <div style="margin-bottom: 15px;">
      <label>Order ID to Pay For:</label><br />
      <asp:TextBox ID="txtOrderID" runat="server" Style="width: 100%; padding: 5px;" placeholder="e
    </div>

    <div style="margin-bottom: 15px;">
      <label>Payment Method:</label><br />
      <asp:RadioButtonList ID="rblPaymentMethod" runat="server">
        <asp:ListItem Text="Credit/Debit Card" Value="Card" Selected="True" />
        <asp:ListItem Text="Bank Transfer" Value="Bank" />
      </asp:RadioButtonList>
    </div>

    <div style="margin-bottom: 15px;">
      <label>Card or Account Number:</label><br />
      <asp:TextBox ID="txtCardNumber" runat="server" Style="width: 100%; padding: 5px;" MaxLength="
    </div>

    <div style="margin-top: 20px;">
      <asp:Button ID="btnProcessPayment" runat="server" Text="Process Payment"
        OnClick="btnProcessPayment_Click" Style="padding: 10px; background-color: #007bff; color: wh
    </div>

    <br />
    <asp:Label ID="lblPaymentMsg" runat="server"></asp:Label>

  </div>
</asp:Content>
```

File: Payment.aspx.vb

```
Imports System.Data.SqlClient
Imports System.Configuration

Public Class Payment
    Inherits System.Web.UI.Page

    Dim connStr As String = ConfigurationManager.ConnectionStrings("PVFC").ConnectionString
    Dim con As SqlConnection

    Protected Sub Page_Load(ByVal sender As Object, ByVal e As System.EventArgs) Handles Me.Load

        If Not IsPostBack Then
            If Request.QueryString("OrderID") IsNot Nothing Then
                txtOrderID.Text = Request.QueryString("OrderID")
            End If
        End If

    End Sub

    Protected Sub btnProcessPayment_Click(sender As Object, e As EventArgs) Handles btnProcessPayment.Click

        Try
            con = New SqlConnection(connStr)
            con.Open()

            Dim query As String = "SELECT COUNT(*) FROM Order_T WHERE ORDER_ID = @OrderID"

            Dim cmd As New SqlCommand(query, con)
            cmd.Parameters.AddWithValue("@OrderID", CInt(txtOrderID.Text))

            Dim count As Integer
            count = Convert.ToInt32(cmd.ExecuteScalar())

            If count > 0 Then

                lblPaymentMsg.Text = "Payment processed successfully for Order #" & txtOrderID.Text
                lblPaymentMsg.ForeColor = System.Drawing.Color.Green

                txtCardNumber.Text = ""

            Else
                lblPaymentMsg.Text = "Error: Order ID not found."
                lblPaymentMsg.ForeColor = System.Drawing.Color.Red
            End If

            con.Close()

        Catch ex As Exception

            lblPaymentMsg.Text = "Payment Error: " & ex.Message
            lblPaymentMsg.ForeColor = System.Drawing.Color.Red
            con.Close()

        End Try

    End Sub

End Class
```

File: Register.aspx

```
<%@ Page Title="Customer Registration" Language="vb" AutoEventWireup="false" MasterPageFile="~/Site.Master" %>
<asp:Content ID="Content1" ContentPlaceHolderID="MainContent" runat="server">
  <div class="mainBody">
    <h3 class="title">Create Customer Account</h3>
    <hr />

    <div class="form-group">
      <label>Full Name:</label>
      <asp:TextBox ID="txtName" runat="server"></asp:TextBox>
    </div>

    <div class="form-group">
      <label>Address:</label>
      <asp:TextBox ID="txtAddress" runat="server"></asp:TextBox>
    </div>

    <div class="form-group">
      <label>City:</label>
      <asp:TextBox ID="txtCity" runat="server"></asp:TextBox>
    </div>

    <div class="form-group">
      <label>State (2 Letters):</label>
      <asp:TextBox ID="txtState" runat="server" MaxLength="2" Style="width: 50px;"></asp:TextBox>
    </div>

    <div class="form-group">
      <label>Postal Code:</label>
      <asp:TextBox ID="txtZip" runat="server"></asp:TextBox>
    </div>

    <div style="margin-top: 20px;">
      <asp:Button ID="btnRegister" runat="server" Text="Create Account" OnClick="btnRegister_Click" />
    </div>

    <br />
    <asp:Label ID="lblMsg" runat="server" CssClass="msg-label"></asp:Label>
  </div>
</asp:Content>
```

File: Register.aspx.vb

```
Imports System.Configuration
Imports System.Data.SqlClient

Public Class Register
    Inherits System.Web.UI.Page

    Protected Sub btnRegister_Click(sender As Object, e As EventArgs) Handles btnRegister.Click

        Dim connStr As String = ConfigurationManager.ConnectionStrings("PVFC").ConnectionString

        Try
            Using con As New SqlConnection(connStr)

                Dim query As String =
                    "INSERT INTO customer_T (CUSTOMER_NAME, CUSTOMER_ADDRESS, CUSTOMER_CITY, CUSTOMER_STATE,
                    CUSTOMER_PHONE) VALUES (@Name, @Address, @City, @State, @Zip)"

                Dim cmd As New SqlCommand(query, con)
                cmd.Parameters.AddWithValue("@Name", txtName.Text)
                cmd.Parameters.AddWithValue("@Address", txtAddress.Text)
                cmd.Parameters.AddWithValue("@City", txtCity.Text)
                cmd.Parameters.AddWithValue("@State", txtState.Text)
                cmd.Parameters.AddWithValue("@Zip", txtZip.Text)

                con.Open()
                cmd.ExecuteNonQuery()

                lblMsg.ForeColor = Drawing.Color.Green
                lblMsg.Text = "Customer account created successfully!"

            End Using

        Catch ex As Exception

            lblMsg.ForeColor = Drawing.Color.Red
            lblMsg.Text = "Error: " & ex.Message

        End Try

    End Sub

End Class
```

File: Search.aspx

```
<!-- Page Title="Search Products" Language="vb" AutoEventWireup="false" MasterPageFile="~/Site.Master" Code
-->
<asp:Content ID="Content1" ContentPlaceHolderID="MainContent" runat="server">
    <div class="mainBody">
        <h3 class="title">Product Search</h3>
        <hr />

        <div class="form-group">
            <label>Search by Product Name or Keyword:</label>
            <asp:TextBox ID="txtSearch" runat="server"></asp:TextBox>
            <asp:Button ID="btnSearch" runat="server" Text="Search" OnClick="btnSearch_Click" CssClass="p
            </div>

        <div style="width: 100%;">
            <asp:GridView ID="gvProducts" runat="server" CssClass="pvf-grid" AutoGenerateColumns="False"
            <Columns>
                <asp:BoundField DataField="PRODUCT_ID" HeaderText="ID" />
                <asp:BoundField DataField="PRODUCT_DESCRIPTION" HeaderText="Description" />
                <asp:BoundField DataField="PRODUCT_FINISH" HeaderText="Category/Tag" />
                <asp:BoundField DataField="STANDARD_PRICE" HeaderText="Price" DataFormatString="{0:C}>
                <asp:TemplateField HeaderText="Action">
                    <ItemTemplate>
                        <asp:Button ID="btnAddToOrder" runat="server" Text="Add to Order" CommandName=
                    </ItemTemplate>
                </asp:TemplateField>
            </Columns>
            </asp:GridView>
            <br />
            <asp:Label ID="lblSearchMsg" runat="server" CssClass="err-label"></asp:Label>
        </div>

        <div style="margin-top: 20px; padding: 15px; border: 1px solid #e5c97e; background-color: #fffdf5
        <h4>Selected Products for Order</h4>
        <asp:GridView ID="gvSelectedProducts" runat="server" CssClass="pvf-grid" AutoGenerateColumns=
        <Columns>
            <asp:BoundField DataField="ProductID" HeaderText="Product ID" />
            <asp:BoundField DataField="ProductName" HeaderText="Product Name" />
            <asp:TemplateField HeaderText="Remove">
                <ItemTemplate>
                    <asp:Button ID="btnRemove" runat="server" Text="Remove" CommandName="RemoveFr
                </ItemTemplate>
            </asp:TemplateField>
        </Columns>
        </asp:GridView>
        <asp:Label ID="lblCartEmpty" runat="server" Text="No products selected yet." ForeColor="Gray"
        <br /><br />
        <asp:Button ID="btnProceedToOrder" runat="server" Text="Proceed to Order Placement" OnClick="
        </div>
    </div>
</asp:Content>
```

File: Search.aspx.vb

```
Imports System.Data
Imports System.Data.SqlClient
Imports System.Configuration

Public Class Search
    Inherits Page

    Dim connStr As String = ConfigurationManager.ConnectionStrings("PVFC").ConnectionString
    Dim con As SqlConnection

    Private Property SelectedProducts As DataTable
        Get
            If Session("SelectedProducts") Is Nothing Then
                Dim dt As New DataTable()
                dt.Columns.Add("ProductID", GetType(String))
                dt.Columns.Add("ProductName", GetType(String))
                Session("SelectedProducts") = dt
            End If
            Return CType(Session("SelectedProducts"), DataTable)
        End Get
        Set(value As DataTable)
            Session("SelectedProducts") = value
        End Set
    End Property

    Protected Sub Page_Load(ByVal sender As Object, ByVal e As EventArgs) Handles Me.Load
        If Not IsPostBack Then
            LoadProducts()
            BindSelectedProducts()
        End If
    End Sub

    Public Sub LoadProducts()

        Try
            con = New SqlConnection(connStr)
            con.Open()

            Dim query As String = "SELECT PRODUCT_ID, PRODUCT_DESCRIPTION, PRODUCT_FINISH, STANDARD_PRICE FROM"

            Dim cmd As New SqlCommand(query, con)
            Dim adapter As New SqlDataAdapter(cmd)
            Dim dt As New DataTable()

            adapter.Fill(dt)

            gvProducts.DataSource = dt
            gvProducts.DataBind()

            con.Close()

        Catch ex As Exception
            lblSearchMsg.Text = "Error loading products: " & ex.Message
            con.Close()
        End Try

    End Sub

    Protected Sub btnSearch_Click(sender As Object, e As EventArgs) Handles btnSearch.Click
```

```

Try
    con = New SqlConnection(connStr)
    con.Open()

    Dim searchText As String = txtSearch.Text.Trim()

    Dim query As String = "SELECT PRODUCT_ID, PRODUCT_DESCRIPTION, PRODUCT_FINISH, STANDARD_PRICE " &
        "FROM Product_T WHERE PRODUCT_DESCRIPTION LIKE @search " &
        "OR PRODUCT_FINISH LIKE @search"

    Dim cmd As New SqlCommand(query, con)
    cmd.Parameters.AddWithValue("@search", "%" & searchText & "%")
    Dim adapter As New SqlDataAdapter(cmd)
    Dim dt As New DataTable()

    adapter.Fill(dt)

    gvProducts.DataSource = dt
    gvProducts.DataBind()

    If dt.Rows.Count = 0 Then
        lblSearchMsg.Text = "No products found."
    Else
        lblSearchMsg.Text = ""
    End If

    con.Close()

Catch ex As Exception
    lblSearchMsg.Text = "Search Error: " & ex.Message
    con.Close()
End Try

End Sub

Protected Sub gvProducts_RowCommand(sender As Object, e As GridViewCommandEventArgs) Handles gvProducts.
    If e.CommandName = "AddToOrder" Then
        Dim args() As String = e.CommandArgument.ToString().Split("|"c)
        Dim productId As String = args(0)
        Dim productName As String = args(1)

        Dim dt As DataTable = SelectedProducts

        ' Check if product already added
        Dim existing = dt.Select("ProductID = '" & productId.Replace("'", "'') & "'" & "'")
        If existing.Length = 0 Then
            Dim row As DataRow = dt.NewRow()
            row("ProductID") = productId
            row("ProductName") = productName
            dt.Rows.Add(row)
            SelectedProducts = dt
        End If

        BindSelectedProducts()
    End If
End Sub

Protected Sub gvSelectedProducts_RowCommand(sender As Object, e As GridViewCommandEventArgs) Handles gvS
    If e.CommandName = "RemoveFromOrder" Then
        Dim productId As String = e.CommandArgument.ToString()
        Dim dt As DataTable = SelectedProducts

        For i As Integer = dt.Rows.Count - 1 To 0 Step -1

```

```
        If dt.Rows(i)("ProductID").ToString() = productId Then
            dt.Rows.RemoveAt(i)
        End If
    Next

    SelectedProducts = dt
    BindSelectedProducts()
End If
End Sub

Private Sub BindSelectedProducts()
    Dim dt As DataTable = SelectedProducts
    gvSelectedProducts.DataSource = dt
    gvSelectedProducts.DataBind()

    lblCartEmpty.Visible = (dt.Rows.Count = 0)
    gvSelectedProducts.Visible = (dt.Rows.Count > 0)
End Sub

Protected Sub btnProceedToOrder_Click(sender As Object, e As EventArgs) Handles btnProceedToOrder.Click
    Response.Redirect("Orders.aspx")
End Sub

End Class
```

File: Site.Master

```
<!-- Master Language="VB" AutoEventWireup="true" CodeBehind="Site.master.vb" Inherits="Lab05_Solution.Site

<!DOCTYPE html>
<html lang="en">
<head runat="server">
    <meta charset="utf-8" />
    <meta name="viewport" content="width=device-width, initial-scale=1.0" />
    <title><%= Page.Title %> - Pine Valley Furniture</title>

    <asp:PlaceHolder runat="server">
        <%= Scripts.Render("~/bundles/modernizr") %>
    </asp:PlaceHolder>

    <link runat="server" rel="stylesheet" type="text/css" href="~/Content/PVF.css" />
    <asp:ContentPlaceHolder ID="HeadContent" runat="server" />
</head>

<body>
    <form runat="server">

        <!-- HEADER -->
        <div class="pvf-header">
            <h1>Pine Valley Furniture</h1>
        </div>

        <!-- NAVBAR -->
        <nav class="pvf-nav">
            <ul>
                <li><a href="Default.aspx">Home</a></li>
                <li><a href="Search.aspx">Search</a></li>
                <li><a href="Register.aspx">Register</a></li>
                <li><a href="UpdateCustomer.aspx">Update Customer</a></li>
                <li><a href="Orders.aspx">Orders</a></li>
                <li><a href="Admin.aspx">Catalog</a></li>
                <li><a href="Payment.aspx">Payment</a></li>
                <li><a href="Help.aspx">Help</a></li>
            </ul>
        </nav>

        <!-- PAGE BODY -->
        <div class="pvf-content">
            <asp:ContentPlaceHolder ID="MainContent" runat="server" />
            <hr />
            <footer class="center">
                <p>&copy; <%= DateTime.Now.Year %> - Pine Valley Furniture</p>
            </footer>
        </div>

    </form>
</body>
</html>
```

File: Site.Master.vb

```
Public Class SiteMaster
    Inherits MasterPage
    Protected Sub Page_Load(ByVal sender As Object, ByVal e As EventArgs) Handles Me.Load

    End Sub
End Class
```

File: Site.Mobile.Master

```
■<!--@ Master Language="VB" AutoEventWireup="false" CodeBehind="Site.Mobile.master.vb" Inherits="Lab05_Solu
<!--@ Register Src="~/ViewSwitcher.ascx" TagPrefix="friendlyUrls" TagName="ViewSwitcher" %>

<!--!DOCTYPE html>
<!--html xmlns="http://www.w3.org/1999/xhtml">
<!--head id="Head1" runat="server">
    <!--meta name="viewport" content="width=device-width" />
    <!--title<!--</title>
    <!--asp:ContentPlaceHolder runat="server" ID="HeadContent" />
<!--/head>
<!--body>
    <!--form id="form1" runat="server">
    <!--div>
        <!--h1<!--Mobile Master Page<!--/h1>
        <!--asp:ContentPlaceHolder runat="server" ID="FeaturedContent" />
        <!--section class="content-wrapper main-content clear-fix">
            <!--asp:ContentPlaceHolder runat="server" ID="MainContent" />
        <!--/section>
        <!--friendlyUrls:ViewSwitcher ID="ViewSwitcher1" runat="server" />
    <!--/div>
    <!--/form>
<!--/body>
<!--/html>
```

File: Site.Mobile.Master.vb

```
Public Class Site_Mobile
    Inherits System.Web.UI.MasterPage

    Protected Sub Page_Load(ByVal sender As Object, ByVal e As System.EventArgs) Handles Me.Load

    End Sub

End Class
```

File: UpdateCustomer.aspx

```
<%@ Page Title="Update Profile" Language="vb" AutoEventWireup="false" MasterPageFile="~/Site.Master" CodeBehind="UpdateCustomer.aspx" Inherits="UpdateCustomer" %>
<asp:Content ID="Content1" ContentPlaceHolderID="MainContent" runat="server">
  <div class="mainBody">
    <h3 class="title">Update Customer Profile</h3>
    <hr />

    <div class="form-group">
      <label>Customer ID:</label>
      <asp:TextBox ID="txtCustomerId" runat="server" Style="width: 100px;"></asp:TextBox>
      <asp:Button ID="btnLoad" runat="server" Text="Load" OnClick="btnLoad_Click" CssClass="pvf-btn"></asp:Button>
    </div>

    <div class="form-group">
      <label>Full Name:</label>
      <asp:TextBox ID="txtName" runat="server" Enabled="false"></asp:TextBox>
    </div>

    <div class="form-group">
      <label>Address:</label>
      <asp:TextBox ID="txtAddress" runat="server" Enabled="false"></asp:TextBox>
    </div>

    <div class="form-group">
      <label>City:</label>
      <asp:TextBox ID="txtCity" runat="server" Enabled="false"></asp:TextBox>
    </div>

    <div class="form-group">
      <label>State (2 Letters):</label>
      <asp:TextBox ID="txtState" runat="server" MaxLength="2" Style="width: 50px;" Enabled="false"></asp:TextBox>
    </div>

    <div class="form-group">
      <label>Postal Code:</label>
      <asp:TextBox ID="txtZip" runat="server" Enabled="false"></asp:TextBox>
    </div>

    <div style="margin-top: 20px;">
      <asp:Button ID="btnUpdate" runat="server" Text="Update Profile" OnClick="btnUpdate_Click" CssClass="pvf-btn"></asp:Button>
    </div>

    <br />
    <asp:Label ID="lblMsg" runat="server" CssClass="msg-label"></asp:Label>
  </div>
</asp:Content>
```

File: UpdateCustomer.aspx.vb

```
Imports System.Configuration
Imports System.Data.SqlClient

Public Class UpdateCustomer
    Inherits System.Web.UI.Page

    Protected Sub btnLoad_Click(sender As Object, e As EventArgs) Handles btnLoad.Click

        Dim connStr As String = ConfigurationManager.ConnectionStrings("PVFC").ConnectionString

        Try
            Using con As New SqlConnection(connStr)

                Dim query As String =
                    "SELECT CUSTOMER_NAME, CUSTOMER_ADDRESS, CUSTOMER_CITY, CUSTOMER_STATE, POSTAL_CODE FROM"

                Dim cmd As New SqlCommand(query, con)
                cmd.Parameters.AddWithValue("@Id", txtCustomerId.Text)

                con.Open()
                Dim reader As SqlDataReader = cmd.ExecuteReader()

                If reader.Read() Then
                    txtName.Text = reader("CUSTOMER_NAME").ToString()
                    txtAddress.Text = reader("CUSTOMER_ADDRESS").ToString()
                    txtCity.Text = reader("CUSTOMER_CITY").ToString()
                    txtState.Text = reader("CUSTOMER_STATE").ToString()
                    txtZip.Text = reader("POSTAL_CODE").ToString()

                    txtName.Enabled = True
                    txtAddress.Enabled = True
                    txtCity.Enabled = True
                    txtState.Enabled = True
                    txtZip.Enabled = True
                    btnUpdate.Enabled = True

                    lblMsg.ForeColor = Drawing.Color.Green
                    lblMsg.Text = "Customer data loaded. Update the fields and click Update Profile."
                Else
                    lblMsg.ForeColor = Drawing.Color.Red
                    lblMsg.Text = "No customer found with that ID."
                End If

                reader.Close()

            End Using

        Catch ex As Exception

            lblMsg.ForeColor = Drawing.Color.Red
            lblMsg.Text = "Error: " & ex.Message

        End Try

    End Sub

    Protected Sub btnUpdate_Click(sender As Object, e As EventArgs) Handles btnUpdate.Click

        Dim connStr As String = ConfigurationManager.ConnectionStrings("PVFC").ConnectionString
```

```

Try
    Using con As New SqlConnection(connStr)

        Dim query As String =
            "UPDATE customer_T SET CUSTOMER_NAME = @Name, CUSTOMER_ADDRESS = @Address, CUSTOMER_CITY

        Dim cmd As New SqlCommand(query, con)
        cmd.Parameters.AddWithValue("@Name", txtName.Text)
        cmd.Parameters.AddWithValue("@Address", txtAddress.Text)
        cmd.Parameters.AddWithValue("@City", txtCity.Text)
        cmd.Parameters.AddWithValue("@State", txtState.Text)
        cmd.Parameters.AddWithValue("@Zip", txtZip.Text)
        cmd.Parameters.AddWithValue("@Id", txtCustomerId.Text)

        con.Open()
        Dim rowsAffected As Integer = cmd.ExecuteNonQuery()

        If rowsAffected > 0 Then
            lblMsg.ForeColor = Drawing.Color.Green
            lblMsg.Text = "Customer profile updated successfully!"
        Else
            lblMsg.ForeColor = Drawing.Color.Red
            lblMsg.Text = "Update failed. No matching customer found."
        End If

    End Using

Catch ex As Exception

    lblMsg.ForeColor = Drawing.Color.Red
    lblMsg.Text = "Error: " & ex.Message

End Try

End Sub

End Class

```

File: ViewSwitcher.ascx.vb

■Imports Microsoft.AspNet.FriendlyUrls.Resolvers

```
Public Class ViewSwitcher
    Inherits System.Web.UI.UserControl

    Protected Property CurrentView() As String
        Get
            Return m_CurrentView
        End Get
        Private Set(value As String)
            m_CurrentView = value
        End Set
    End Property
    Private m_CurrentView As String

    Protected Property AlternateView() As String
        Get
            Return m_AlternateView
        End Get
        Private Set(value As String)
            m_AlternateView = value
        End Set
    End Property
    Private m_AlternateView As String

    Protected Property SwitchUrl() As String
        Get
            Return m_SwitchUrl
        End Get
        Private Set(value As String)
            m_SwitchUrl = value
        End Set
    End Property
    Private m_SwitchUrl As String

    Protected Sub Page_Load(sender As Object, e As EventArgs)
        ' Determine current view
        Dim isMobile = WebFormsFriendlyUrlResolver.IsMobileView(New HttpContextWrapper(Context))
        CurrentView = If(isMobile, "Mobile", "Desktop")

        ' Determine alternate view
        AlternateView = If(isMobile, "Desktop", "Mobile")

        ' Create switch URL from the route, e.g. ~/__FriendlyUrls_SwitchView/Mobile?ReturnUrl=/Page
        Dim url = GetRouteUrl("AspNet.FriendlyUrls.SwitchView", New With { _
            Key .view = AlternateView _
        })
        url += "?ReturnUrl=" & HttpUtility.UrlEncode(Request.RawUrl)
        SwitchUrl = url
    End Sub

End Class
```

File: Web.config

```
<?xml version="1.0" encoding="utf-8"?>
<!--
  For more information on how to configure your ASP.NET application, please visit
  https://go.microsoft.com/fwlink/?LinkId=169433
-->
<configuration>
  <connectionStrings>
    <add name="PVFC"
        connectionString="Server=DESKTOP-F87EIKT\SQLEXPRESS;Database=PVFC;Integrated Security=True;TrustServerCertificate=True"
        providerName="System.Data.SqlClient" />
  </connectionStrings>
  <system.web>
    <compilation debug="true" strict="false" explicit="true" targetFramework="4.7.2" />
    <httpRuntime targetFramework="4.7.2" />
    <pages>
      <namespaces>
        <add namespace="System.Web.Optimization" />
      </namespaces>
      <controls>
        <add assembly="Microsoft.AspNet.Web.Optimization.WebForms" namespace="Microsoft.AspNet.Web.Optimization.WebForms" />
      </controls>
    </pages>
  </system.web>
  <runtime>
    <assemblyBinding xmlns="urn:schemas-microsoft-com:asm.v1">
      <dependentAssembly>
        <assemblyIdentity name="Antlr3.Runtime" publicKeyToken="eb42632606e9261f" />
        <bindingRedirect oldVersion="0.0.0.0-3.5.0.2" newVersion="3.5.0.2" />
      </dependentAssembly>
      <dependentAssembly>
        <assemblyIdentity name="Microsoft.Web.Infrastructure" publicKeyToken="31bf3856ad364e35" />
        <bindingRedirect oldVersion="0.0.0.0-2.0.0.0" newVersion="2.0.0.0" />
      </dependentAssembly>
      <dependentAssembly>
        <assemblyIdentity name="Newtonsoft.Json" publicKeyToken="30ad4fe6b2a6aeed" />
        <bindingRedirect oldVersion="0.0.0.0-13.0.0.0" newVersion="13.0.0.0" />
      </dependentAssembly>
      <dependentAssembly>
        <assemblyIdentity name="WebGrease" publicKeyToken="31bf3856ad364e35" />
        <bindingRedirect oldVersion="0.0.0.0-1.6.5135.21930" newVersion="1.6.5135.21930" />
      </dependentAssembly>
    </assemblyBinding>
  </runtime>
  <system.codedom>
    <compilers>
      <compiler language="c#;cs;csharp" extension=".cs" type="Microsoft.CodeDom.Providers.DotNetCompilerPlatform" />
      <compiler language="vb;vbs;visualbasic;vbscript" extension=".vb" type="Microsoft.CodeDom.Providers.VbCodeDom" />
    </compilers>
  </system.codedom>
</configuration>
```

File: Web.Debug.config

```
<?xml version="1.0" encoding="utf-8"?>

<!-- For more information on using web.config transformation visit https://go.microsoft.com/fwlink/?LinkId=

<configuration xmlns:xdt="http://schemas.microsoft.com/XML-Document-Transform">
  <!--
    In the example below, the "SetAttributes" transform will change the value of
    "connectionString" to use "ReleaseSqlServer" only when the "Match" locator
    finds an attribute "name" that has a value of "MyDB".

    <connectionStrings>
      <add name="MyDB"
          connectionString="Data Source=ReleaseSqlServer;Initial Catalog=MyReleaseDB;Integrated Security=True"
          xdt:Transform="SetAttributes" xdt:Locator="Match(name)"/>
    </connectionStrings>
  -->
  <system.web>
    <!--
      In the example below, the "Replace" transform will replace the entire
      <customErrors> section of your web.config file.
      Note that because there is only one customErrors section under the
      <system.web> node, there is no need to use the "xdt:Locator" attribute.

      <customErrors defaultRedirect="GenericError.htm"
          mode="RemoteOnly" xdt:Transform="Replace">
        <error statusCode="500" redirect="InternalError.htm"/>
      </customErrors>
    -->
  </system.web>
</configuration>
```

File: Web.Release.config

```
<?xml version="1.0" encoding="utf-8"?>

<!-- For more information on using web.config transformation visit https://go.microsoft.com/fwlink/?LinkID=88520 -->

<configuration xmlns:xdt="http://schemas.microsoft.com/XML-Document-Transform">
  <!--
    In the example below, the "SetAttributes" transform will change the value of
    "connectionString" to use "ReleaseSQLServer" only when the "Match" locator
    finds an attribute "name" that has a value of "MyDB".

    <connectionStrings>
      <add name="MyDB"
        connectionString="Data Source=ReleaseSQLServer;Initial Catalog=MyReleaseDB;Integrated Security=True"
        xdt:Transform="SetAttributes" xdt:Locator="Match(name)"/>
    </connectionStrings>
  -->
  <system.web>
    <compilation xdt:Transform="RemoveAttributes(debug)" />
    <!--
      In the example below, the "Replace" transform will replace the entire
      <customErrors> section of your web.config file.
      Note that because there is only one customErrors section under the
      <system.web> node, there is no need to use the "xdt:Locator" attribute.

      <customErrors defaultRedirect="GenericError.htm"
        mode="RemoteOnly" xdt:Transform="Replace">
        <error statusCode="500" redirect="InternalError.htm"/>
      </customErrors>
    -->
  </system.web>
</configuration>
```

File: App_Start\BundleConfig.vb

```
Imports System.Collections.Generic
Imports System.Linq
Imports System.Web
Imports System.Web.Optimization

Public Class BundleConfig
    ' For more information on Bundling, visit https://go.microsoft.com/fwlink/?LinkID=303951
    Public Shared Sub RegisterBundles(ByVal bundles As BundleCollection)
        RegisterjQueryScriptManager()

        bundles.Add(New ScriptBundle("~/bundles/WebFormsJs").Include(
            "~/Scripts/WebForms/WebForms.js",
            "~/Scripts/WebForms/WebUIValidation.js",
            "~/Scripts/WebForms/MenuStandards.js",
            "~/Scripts/WebForms/Focus.js",
            "~/Scripts/WebForms/GridView.js",
            "~/Scripts/WebForms/DetailsView.js",
            "~/Scripts/WebForms/TreeView.js",
            "~/Scripts/WebForms/WebParts.js"))

        ' Order is very important for these files to work, they have explicit dependencies
        bundles.Add(New ScriptBundle("~/bundles/MsAjaxJs").Include(
            "~/Scripts/WebForms/MsAjax/MicrosoftAjax.js",
            "~/Scripts/WebForms/MsAjax/MicrosoftAjaxApplicationServices.js",
            "~/Scripts/WebForms/MsAjax/MicrosoftAjaxTimer.js",
            "~/Scripts/WebForms/MsAjax/MicrosoftAjaxWebForms.js"))

        ' Use the Development version of Modernizr to develop with and learn from. Then, when you're
        ' ready for production, use the build tool at https://modernizr.com to pick only the tests you need
        bundles.Add(New ScriptBundle("~/bundles/modernizr").Include(
            "~/Scripts/modernizr-*"))
    End Sub

    Public Shared Sub RegisterjQueryScriptManager()
        Dim jQueryScriptResourceDefinition As New ScriptResourceDefinition
        With jQueryScriptResourceDefinition
            .Path = "~/scripts/jquery-3.7.0.min.js"
            .DebugPath = "~/scripts/jquery-3.7.0.js"
            .CdnPath = "http://ajax.aspnetcdn.com/ajax/jquery/jquery-3.7.0.min.js"
            .CdnDebugPath = "http://ajax.aspnetcdn.com/ajax/jquery/jquery-3.7.0.js"
        End With

        ScriptManager.ScriptResourceMapping.AddDefinition("jquery", jQueryScriptResourceDefinition)
    End Sub
End Class
```

File: App_Start\RouteConfig.vb

```
Imports System.Web.Routing
Imports Microsoft.AspNet.FriendlyUrls

Public Module RouteConfig
    Sub RegisterRoutes(ByVal routes As RouteCollection)
        Dim settings As FriendlyUrlSettings = New FriendlyUrlSettings() With {
            .AutoRedirectMode = RedirectMode.Permanent
        }
        routes.EnableFriendlyUrls(settings)
    End Sub
End Module
```

File: My Project\AssemblyInfo.vb

■ Imports System

```
Imports System.Reflection
```

```
Imports System.Runtime.InteropServices
```

```
' General Information about an assembly is controlled through the following  
' set of attributes. Change these attribute values to modify the information  
' associated with an assembly.
```

```
' Review the values of the assembly attributes
```

```
<Assembly: AssemblyTitle("Lab05_Solution")>
```

```
<Assembly: AssemblyDescription("")>
```

```
<Assembly: AssemblyCompany("")>
```

```
<Assembly: AssemblyProduct("Lab05_Solution")>
```

```
<Assembly: AssemblyCopyright("Copyright © 2026")>
```

```
<Assembly: AssemblyTrademark("")>
```

```
<Assembly: ComVisible(False)>
```

```
'The following GUID is for the ID of the typelib if this project is exposed to COM
```

```
<Assembly: Guid("363894aa-37b0-4709-848a-04db199570a7")>
```

```
' Version information for an assembly consists of the following four values:
```

```
,
```

```
' Major Version
```

```
' Minor Version
```

```
' Build Number
```

```
' Revision
```

```
,
```

```
<Assembly: AssemblyVersion("1.0.0.0")>
```

```
<Assembly: AssemblyFileVersion("1.0.0.0")>
```

File: My Project\MyExtensions\MyWebExtension.vb

```
■#If _MyType &lt;&gt; "Empty" Then

Namespace My
    ''' &lt;summary&gt;
    ''' Module used to define the properties that are available in the My Namespace for Web projects.
    ''' &lt;/summary&gt;
    ''' &lt;remarks&gt;&lt;/remarks&gt;
    &lt;Global.Microsoft.VisualBasic.HideModuleName()&gt; _
    Module MyWebExtension
        Private ReadOnly s_Computer As New ThreadSafeObjectProvider(Of Global.Microsoft.VisualBasic.Devices.ServerComputer)
        Private ReadOnly s_User As New ThreadSafeObjectProvider(Of Global.Microsoft.VisualBasic.ApplicationServices.WebUser)
        Private ReadOnly s_Log As New ThreadSafeObjectProvider(Of Global.Microsoft.VisualBasic.Logging.AsyncLog)
        ''' &lt;summary&gt;
        ''' Returns information about the host computer.
        ''' &lt;/summary&gt;
        &lt;Global.System.Diagnostics.CodeAnalysis.SuppressMessageAttribute("Microsoft.Performance", "CA1811")&gt;
        Friend ReadOnly Property Computer() As Global.Microsoft.VisualBasic.Devices.ServerComputer
            Get
                Return s_Computer.GetInstance()
            End Get
        End Property
        ''' &lt;summary&gt;
        ''' Returns information for the current Web user.
        ''' &lt;/summary&gt;
        &lt;Global.System.Diagnostics.CodeAnalysis.SuppressMessageAttribute("Microsoft.Performance", "CA1811")&gt;
        Friend ReadOnly Property User() As Global.Microsoft.VisualBasic.ApplicationServices.WebUser
            Get
                Return s_User.GetInstance()
            End Get
        End Property
        ''' &lt;summary&gt;
        ''' Returns Request object.
        ''' &lt;/summary&gt;
        &lt;Global.System.Diagnostics.CodeAnalysis.SuppressMessageAttribute("Microsoft.Performance", "CA1811")&gt;
        &lt;Global.System.ComponentModel.Design.HelpKeyword("My.Request")&gt; _
        Friend ReadOnly Property Request() As Global.System.Web.HttpRequest
            &lt;Global.System.Diagnostics.DebuggerHidden()&gt; _
            Get
                Dim CurrentContext As Global.System.Web.HttpContext = Global.System.Web.HttpContext.Current
                If CurrentContext IsNot Nothing Then
                    Return CurrentContext.Request
                End If
                Return Nothing
            End Get
        End Property
        ''' &lt;summary&gt;
        ''' Returns Response object.
        ''' &lt;/summary&gt;
        &lt;Global.System.Diagnostics.CodeAnalysis.SuppressMessageAttribute("Microsoft.Performance", "CA1811")&gt;
        &lt;Global.System.ComponentModel.Design.HelpKeyword("My.Response")&gt; _
        Friend ReadOnly Property Response() As Global.System.Web.HttpResponse
            &lt;Global.System.Diagnostics.DebuggerHidden()&gt; _
            Get
                Dim CurrentContext As Global.System.Web.HttpContext = Global.System.Web.HttpContext.Current
                If CurrentContext IsNot Nothing Then
                    Return CurrentContext.Response
                End If
                Return Nothing
            End Get
        End Property
    End Module
End Namespace
```

```
''' <summary>
''' Returns the Asp log object.
''' </summary>
<Global.System.Diagnostics.CodeAnalysis.SuppressMessageAttribute("Microsoft.Performance", "CA1811
Friend ReadOnly Property Log() As Global.Microsoft.VisualBasic.Logging.AspLog
    Get
        Return s_Log.GetInstance()
    End Get
End Property
End Module
End Namespace

#End If
```