

Project Report: Lab 07

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Source code files for the core project logic.

File: Admin.aspx

```
<!-- Page Title="Product Catalog" Language="vb" AutoEventWireup="false" MasterPageFile="~/Site.Master"
CodeBehind="Admin.aspx.vb" Inherits="Lab07.Admin" -->

<asp:Content ID="Content1" ContentPlaceHolderID="MainContent" runat="server">
  <div style="font-family: Arial; padding: 20px; max-width: 500px;">
    <h3>Product Catalog Management</h3>
    <hr />
    <p>Use this form to add new products to the inventory.</p>

    <div style="margin-bottom: 10px;">
      <label>Description (Name):</label><br />
      <asp:TextBox ID="txtDesc" runat="server" Style="width: 100%; padding: 5px;"></asp:TextBox>
    </div>

    <div style="margin-bottom: 10px;">
      <label>Finish (e.g., Cherry, Oak):</label><br />
      <asp:TextBox ID="txtFinish" runat="server" Style="width: 100%; padding: 5px;"></asp:TextBox>
    </div>

    <div style="margin-bottom: 10px;">
      <label>Standard Price:</label><br />
      <asp:TextBox ID="txtPrice" runat="server" Style="width: 100%; padding: 5px;"></asp:TextBox>
    </div>

    <div style="margin-top: 20px;">
      <asp:Button ID="btnAddProduct" runat="server" Text="Add Product" OnClick="btnAddProduct_Click"
        Style="padding: 10px; background-color: #f0ad4e; color: black; border: 1px solid #eea236;">
    </div>

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

  <hr />

  <div style="font-family: Arial; padding: 20px; max-width: 500px;">
    <h3>Update Existing Product</h3>
    <hr />
    <p>Select a product from the dropdown to fetch and update its details.</p>

    <div style="margin-bottom: 10px;">
      <label>Select Product:</label><br />
      <asp:DropDownList ID="ddlProducts" runat="server" Style="width: 100%; padding: 5px;"
        AutoPostBack="true" OnSelectedIndexChanged="ddlProducts_SelectedIndexChanged">
      </asp:DropDownList>
    </div>

    <div style="margin-bottom: 10px;">
      <label>Description (Name):</label><br />
      <asp:TextBox ID="txtDescription" runat="server" Style="width: 100%; padding: 5px;" Enabled="true">
      </asp:TextBox>
    </div>

    <div style="margin-bottom: 10px;">
      <label>Finish:</label><br />
      <asp:TextBox ID="txtUpdFinish" runat="server" Style="width: 100%; padding: 5px;" Enabled="true">
      </asp:TextBox>
    </div>

    <div style="margin-bottom: 10px;">
```

```
</label>Standard Price:</label><br />
<asp:TextBox ID="txtUpdPrice" runat="server" Style="width: 100%; padding: 5px;" Enabled="
</asp:TextBox>
</div>

<div style="margin-top: 20px;">
  <asp:Button ID="btnUpdateCatalog" runat="server" Text="Update Product" OnClick="btnUpdate
  Style="padding: 10px; background-color: #5bc0de; color: white; border: none; cursor: poi
  Enabled="false" />
</div>

<br />
  <asp:Label ID="lblCatalogMsg" runat="server"></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 Page_Load(ByVal sender As Object, ByVal e As EventArgs) Handles Me.Load
        ' Role-based access control - Only admin can access this page
        If Session("User_Role") Is Nothing OrElse Session("User_Role") <> "admin" Then
            Response.Redirect("Login.aspx")
        End If

        ' Load product dropdown on first page load
        If Not IsPostBack Then
            LoadProductDropdown()
        End If
    End Sub

    Private Sub LoadProductDropdown()
        Try
            Using con As New SqlConnection(connStr)
                Dim query As String = "SELECT PRODUCT_ID, PRODUCT_DESCRIPTION FROM Product_T ORDER BY PRODUCT_ID"

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

                adapter.Fill(dt)

                ' Bind dropdown
                ddlProducts.DataSource = dt
                ddlProducts.DataTextField = "PRODUCT_DESCRIPTION"
                ddlProducts.DataValueField = "PRODUCT_ID"
                ddlProducts.DataBind()
                ddlProducts.Items.Insert(0, New ListItem("-- Select a Product --", "0"))
            End Using

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

    Protected Sub ddlProducts_SelectedIndexChanged(sender As Object, e As EventArgs) Handles ddlProducts.SelectedIndexChanged
        If ddlProducts.SelectedValue = "0" Then
            ClearUpdateForm()
            lblCatalogMsg.Text = "Please select a product."
            lblCatalogMsg.ForeColor = System.Drawing.Color.Black
            Return
        End If

        Dim productId As Integer = CInt(ddlProducts.SelectedValue)
        LoadProductData(productId)
    End Sub

    Private Sub LoadProductData(productId As Integer)
```

```

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", productId)

        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
            txtUpdPrice.Enabled = True
            btnUpdateCatalog.Enabled = True

            lblCatalogMsg.Text = "Product loaded. Edit and click Update."
            lblCatalogMsg.ForeColor = System.Drawing.Color.Green
        Else
            lblCatalogMsg.Text = "Error: Product 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

Private Sub ClearUpdateForm()
    txtDescription.Text = ""
    txtUpdFinish.Text = ""
    txtUpdPrice.Text = ""

    txtDescription.Enabled = False
    txtUpdFinish.Enabled = False
    txtUpdPrice.Enabled = False
    btnUpdateCatalog.Enabled = False
End Sub

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, @Finish, @Price)"

            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 added successfully to the catalog!"
        End Using
    End Try

```

```

        lblAdminMsg.ForeColor = System.Drawing.Color.Green

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

        ' Refresh dropdown to show new product
        LoadProductDropdown()

    End Using

Catch ex As Exception

    lblAdminMsg.Text = "Error: " & ex.Message
    lblAdminMsg.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", CInt(ddlProducts.SelectedValue))

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

            If rowsAffected > 0 Then
                lblCatalogMsg.Text = "Product updated successfully!"
                lblCatalogMsg.ForeColor = System.Drawing.Color.Green

                ' Refresh dropdown to show updated name (if description changed)
                LoadProductDropdown()
            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: Default.aspx

```
<%@ Page Title="Home Page" Language="VB" MasterPageFile="~/Site.Master" AutoEventWireup="true"
CodeBehind="Default.aspx.vb" Inherits="Lab07._Default" %>

<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 />
          <asp:Panel ID="pnlUpdateCustomer" runat="server">
            <a href="UpdateCustomer.aspx">Update Customer Data</a>
          </asp:Panel>
        </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>
          <asp:Panel ID="pnlAdminSection" runat="server">
            <h3>Admin</h3>
            <a href="Admin.aspx">Update Catalog</a>
          </asp:Panel>
          <asp:Panel ID="pnlSegmentationSection" runat="server">
            <h3>Segmentation</h3>
            <a href="Segmentation.aspx">Customer Segmentation</a>
          </asp:Panel>
        </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
        ' Check if user is logged in
        If Session("User_Name") Is Nothing Then
            ' No user logged in
            pnlUpdateCustomer.Visible = False
            pnlAdminSection.Visible = False
            pnlSegmentationSection.Visible = False
        Else
            ' User is logged in
            pnlUpdateCustomer.Visible = True

            ' Show Admin section only if user is admin
            If Session("User_Role") <> "admin" Then
                pnlAdminSection.Visible = False
                pnlSegmentationSection.Visible = False
            Else
                pnlAdminSection.Visible = True
                pnlSegmentationSection.Visible = True
            End If
        End If
    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.
  Inherits="Lab07.Help" %&gt;

  &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 'Cl
        &lt;li&gt;&lt;strong&gt;Registration:&lt;/strong&gt; Used to add new customers to the databa
        &lt;li&gt;&lt;strong&gt;Place Order:&lt;/strong&gt; Select a customer and a product to recor
        &lt;li&gt;&lt;strong&gt;Update Catalog:&lt;/strong&gt; For administrators to add new furnitu
        &lt;li&gt;&lt;strong&gt;Payment:&lt;/strong&gt; Enter a valid Order ID to process a payment
      &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: Login.aspx

```
<%@ Page Title="Login" Language="vb" AutoEventWireup="true" MasterPageFile="~/Site.Master"
    CodeBehind="Login.aspx.vb" Inherits="Lab07.Login" %>

<asp:Content ID="Content1" ContentPlaceHolderID="MainContent" runat="server">
    <div style="font-family: Arial; padding: 20px; max-width: 400px; margin: 50px auto;">
        <h3>Login Page</h3>
        <hr />

        <div style="margin-bottom: 15px;">
            <label>Username:</label><br />
            <asp:TextBox ID="txtUsername" runat="server" Style="width: 100%; padding: 8px; font-size: 14px;" />
        </div>

        <div style="margin-bottom: 15px;">
            <label>Password:</label><br />
            <asp:TextBox ID="txtPassword" runat="server" TextMode="Password" Style="width: 100%; padding: 8px;" />
        </div>

        <div style="margin-top: 20px;">
            <asp:Button ID="btnLogin" runat="server" Text="Login" OnClick="btnLogin_Click"
                Style="padding: 10px; background-color: #007bff; color: white; border: none; cursor: pointer;" />
        </div>

        <br />
        <asp:Label ID="lblLoginMsg" runat="server" ForeColor="Red"></asp:Label>
    </div>
</asp:Content>
```

File: Login.aspx.vb

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

Public Class Login
    Inherits System.Web.UI.Page

    Protected Sub Page_Load(ByVal sender As Object, ByVal e As EventArgs) Handles Me.Load
        ' If user is already logged in, redirect to appropriate dashboard
        If Session("User_Name") IsNot Nothing Then
            If Session("User_Role") = "admin" Then
                Response.Redirect("Admin.aspx")
            Else
                Response.Redirect("Search.aspx")
            End If
        End If
    End Sub

    Protected Sub btnLogin_Click(sender As Object, e As EventArgs) Handles btnLogin.Click

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

        Try
            Using con As New SqlConnection(connStr)

                ' Also select CUSTOMER_ID - this links the logged-in user to their customer record
                Dim query As String =
                    "SELECT UserId, Username, User_Password, User_Role, CUSTOMER_ID " &
                    "FROM USERS WHERE Username = @Username AND User_Password = @Password"

                Dim cmd As New SqlCommand(query, con)
                cmd.Parameters.AddWithValue("@Username", txtUsername.Text.Trim())
                cmd.Parameters.AddWithValue("@Password", txtPassword.Text.Trim())

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

                If reader.Read() Then
                    ' Store identity info in session
                    Session("User_Id") = reader("UserId").ToString()
                    Session("User_Name") = reader("Username").ToString()
                    Session("User_Password") = reader("User_Password").ToString()
                    Session("User_Role") = reader("User_Role").ToString()

                    If Not IsDBNull(reader("CUSTOMER_ID")) Then
                        Session("CUSTOMER_ID") = CInt(reader("CUSTOMER_ID"))
                    End If

                    reader.Close()
                    con.Close()

                    ' Redirect based on role
                    If Session("User_Role").ToString() = "admin" Then
                        Response.Redirect("Admin.aspx")
                    Else
                        Response.Redirect("Search.aspx")
                    End If
                End If
            Else
                reader.Close()
                lblLoginMsg.ForeColor = Drawing.Color.Red
            End Try
        End Try
    End Sub
End Class
```

```
        lblLoginMsg.Text = "Invalid Username or Password!"
    End If

    End Using

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

    End Sub

    End Class
```

File: Orders.aspx

```
<!-- Page Title="Order" Language="vb" AutoEventWireup="false" MasterPageFile="~/Site.Master" CodeBehind="O
Inherits="Lab07.Orders" %>

<asp:Content ID="Content1" ContentPlaceHolderID="MainContent" runat="server">
  <div style="font-family: Arial; padding: 20px; max-width: 500px;">
    <h3>Place New Order</h3>
    <hr />

    <!-- Admin section: Select customer to place order for -->
    <asp:Panel ID="pnlAdminCustomerSelect" runat="server" Visible="false"
      Style="margin-bottom: 20px; padding: 15px; background-color: #fff3cd; border: 1px solid #ffc
      <label style="font-weight: bold; color: #856404;">Admin: Select Customer for Order</
      <asp:DropDownList ID="ddlCustomerSelect" runat="server" Style="width: 100%; padding: 5px;
        AutoPostBack="true" OnSelectedIndexChanged="ddlCustomerSelect_SelectedIndexChanged">
      </asp:DropDownList>
    </asp:Panel>

    <!-- Shows which customer the order is for -->
    <div style="margin-bottom: 15px; padding: 10px; background-color: #d9edf7; border: 1px solid #
      <asp:Label ID="lblCustomerInfo" runat="server" style="color: #31708f;"></asp:Label>
    </div>

    <asp:Panel ID="pnlSelectedProducts" runat="server" Visible="false"
      Style="margin-bottom: 20px; padding: 10px; border: 1px solid #d6e9c6; background-color: #dff
      <strong>Products selected from Search:</strong>
      <asp:BulletedList ID="blSelectedProducts" runat="server" BulletStyle="Disc" Style="margin
      </asp:BulletedList>
    </asp:Panel>

    <div style="margin-bottom: 15px;">
      <label>Select Product:</label><br />
      <asp:DropDownList ID="ddlProducts" runat="server" Style="width: 100%; padding: 5px;">
      </asp:DropDownList>
    </div>

    <div style="margin-bottom: 15px;">
      <label>Ordered Quantity:</label><br />
      <asp:TextBox ID="txtQty" runat="server" TextMode="Number" Style="width: 100px; padding: 5
      </asp:TextBox>
    </div>

    <div style="margin-top: 20px;">
      <asp:Button ID="btnPlaceOrder" runat="server" Text="Submit Order" OnClick="btnPlaceOrder_
      Style="padding: 10px; background-color: #4CAF50; color: white; border: none; cursor: poi
    </div>

    <br />
    <asp:Label ID="lblOrderMsg" runat="server"></asp: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
        ' Session validation - User must be logged in
        If Session("User_Name") Is Nothing Then
            Response.Redirect("Login.aspx")
        End If

        If Not IsPostBack Then
            LoadData()
            LoadSelectedProducts()

            ' Control visibility based on role
            If Session("User_Role") = "admin" Then
                ' ADMIN: Show customer dropdown
                pnlAdminCustomerSelect.Visible = True
                lblCustomerInfo.Visible = False
                LoadCustomerDropdown()
            Else
                ' CUSTOMER: Hide dropdown, show their info
                pnlAdminCustomerSelect.Visible = False
                lblCustomerInfo.Visible = True

                ' Show who is placing the order
                If Session("CUSTOMER_ID") IsNot Nothing Then
                    lblCustomerInfo.Text = "Ordering as: &lt;b&gt;" &amp; Session("User_Name").ToString() &ta
                Else
                    lblCustomerInfo.Text = "&lt;span style='color:red'&gt;Warning: No customer linked to you
                End If
            End If
        End If
    End Sub

    Private Sub LoadCustomerDropdown()
        Try
            Using con As New SqlConnection(connStr)
                Dim query As String = "SELECT CUSTOMER_ID, CUSTOMER_NAME FROM customer_T ORDER BY CUSTOMER_NA

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

                adapter.Fill(dt)

                ' Bind dropdown
                ddlCustomerSelect.DataSource = dt
                ddlCustomerSelect.DataTextField = "CUSTOMER_NAME"
                ddlCustomerSelect.DataValueField = "CUSTOMER_ID"
                ddlCustomerSelect.DataBind()
                ddlCustomerSelect.Items.Insert(0, New ListItem("-- Select a Customer --", "0"))
            End Using
        End Try
    End Sub
End Class
```

```

Catch ex As Exception
    lblOrderMsg.Text = "Error loading customers: " & ex.Message
    lblOrderMsg.ForeColor = System.Drawing.Color.Red
End Try
End Sub

Protected Sub ddlCustomerSelect_SelectedIndexChanged(sender As Object, e As EventArgs) Handles ddlCustomerSelect.SelectedIndexChanged
    If ddlCustomerSelect.SelectedValue = "0" Then
        lblCustomerInfo.Text = "Please select a customer to place order."
        lblCustomerInfo.ForeColor = System.Drawing.Color.Black
        Return
    End If

    Dim selectedCustomerId As Integer = CInt(ddlCustomerSelect.SelectedValue)
    Dim selectedCustomerName As String = ddlCustomerSelect.SelectedItem.Text

    lblCustomerInfo.Text = "Admin placing order for: &lt;b>" & selectedCustomerName & "</b>"
    lblCustomerInfo.ForeColor = System.Drawing.Color.Blue
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("ProductID").ToString() & ")")
            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()

        ' Only load products - customer is now taken from session, not a dropdown
        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
    End Try
End Sub

```

```

        con.Close()
    End Try

End Sub

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

    ' Determine which customer ID to use
    Dim customerIdForOrder As Integer

    If Session("User_Role") = "admin" Then
        ' ADMIN: Must select a customer from dropdown
        If ddlCustomerSelect.SelectedValue = "0" Then
            lblOrderMsg.Text = "Please select a customer first."
            lblOrderMsg.ForeColor = System.Drawing.Color.Red
            Return
        End If
        customerIdForOrder = CInt(ddlCustomerSelect.SelectedValue)
    Else
        ' CUSTOMER: Use their own CUSTOMER_ID from session
        If Session("CUSTOMER_ID") Is Nothing Then
            lblOrderMsg.Text = "Error: Your account is not linked to a customer record. Please contact a"
            lblOrderMsg.ForeColor = System.Drawing.Color.Red
            Return
        End If
        customerIdForOrder = CInt(Session("CUSTOMER_ID"))
    End If

    If ddlProducts.SelectedValue = "0" Then
        lblOrderMsg.Text = "Please select a product."
        lblOrderMsg.ForeColor = System.Drawing.Color.Red
        Return
    End If

    ' Validate quantity
    If txtQty.Text.Trim() = "" OrElse Not IsNumeric(txtQty.Text) Then
        lblOrderMsg.Text = "Please enter a valid quantity."
        lblOrderMsg.ForeColor = System.Drawing.Color.Red
        Return
    End If

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

        ' Insert order with the selected customer ID
        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", customerIdForOrder)
        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, @Product"

        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 Page" Language="vb" AutoEventWireup="false" MasterPageFile="~/Site.Master"
CodeBehind="Payment.aspx.vb" Inherits="Lab07.Payment" -->

<asp:Content ID="Content1" ContentPlaceHolderID="MainContent" runat="server">
  <div style="font-family: Arial; padding: 20px; max-width: 500px;">
    <h3>Payment Provision</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="
      </asp:TextBox>
    </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="
      </asp:TextBox>
    </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: white; border: none; cursor: pointer;" />
    </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
        ' Session validation - User must be logged in
        If Session("User_Name") Is Nothing Then
            Response.Redirect("Login.aspx")
        End If

        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
```

End Sub

End Class

File: Register.aspx

```
<!-- Page Title="Registration Form" Language="vb" AutoEventWireup="false" MasterPageFile="~/Site.Master"
CodeBehind="Register.aspx.vb" Inherits="Lab07.Register" -->

<asp:Content ID="Content1" ContentPlaceHolderID="MainContent" runat="server">
  <div style="font-family: Arial; padding: 20px; max-width: 400px;">
    <h3>New Customer Registration</h3>
    <hr />

    <div style="margin-bottom: 10px;">
      <label>Full Name:</label><br />
      <asp:TextBox ID="txtName" runat="server" Style="width: 100%; padding: 5px;"></asp:TextBox>
    </div>

    <div style="margin-bottom: 10px;">
      <label>Address:</label><br />
      <asp:TextBox ID="txtAddress" runat="server" Style="width: 100%; padding: 5px;"></asp:TextBox>
    </div>

    <div style="margin-bottom: 10px;">
      <label>City:</label><br />
      <asp:TextBox ID="txtCity" runat="server" Style="width: 100%; padding: 5px;"></asp:TextBox>
    </div>

    <div style="margin-bottom: 10px;">
      <label>State (2 Letters):</label><br />
      <asp:TextBox ID="txtState" runat="server" MaxLength="2" Style="width: 50px; padding: 5px;"></asp:TextBox>
    </div>

    <div style="margin-bottom: 10px;">
      <label>Postal Code:</label><br />
      <asp:TextBox ID="txtZip" runat="server" Style="width: 100%; padding: 5px;"></asp:TextBox>
    </div>

    <hr />
    <h4>Create Login Account</h4>

    <div style="margin-bottom: 10px;">
      <label>Username:</label><br />
      <asp:TextBox ID="txtUsername" runat="server" Style="width: 100%; padding: 5px;"></asp:TextBox>
    </div>

    <div style="margin-bottom: 10px;">
      <label>Password:</label><br />
      <asp:TextBox ID="txtPassword" runat="server" TextMode="Password" Style="width: 100%; padding: 5px;"></asp:TextBox>
    </div>

    <div style="margin-top: 20px;">
      <asp:Button ID="btnRegister" runat="server" Text="Register Customer" OnClick="btnRegister_Click"
        Style="padding: 10px; cursor: pointer;" />
    </div>

    <br />
    <asp:Label ID="lblMsg" runat="server"></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 Page_Load(ByVal sender As Object, ByVal e As EventArgs) Handles Me.Load
        ' If user is already logged in, redirect to home
        If Session("User_Name") IsNot Nothing Then
            Response.Redirect("Default.aspx")
        End If
    End Sub

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

        ' Basic validation
        If txtUsername.Text.Trim() = "" OrElse txtPassword.Text.Trim() = "" Then
            lblMsg.ForeColor = Drawing.Color.Red
            lblMsg.Text = "Username and Password are required!"
            Return
        End If

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

        Try
            Using con As New SqlConnection(connStr)
                con.Open()

                ' Use a transaction so both inserts succeed or both fail together
                Dim tran As SqlTransaction = con.BeginTransaction()

                Try
                    ' STEP 1: Insert into customer_T and get back the new CUSTOMER_ID
                    Dim insertCust As String =
                        "INSERT INTO customer_T (CUSTOMER_NAME, CUSTOMER_ADDRESS, CUSTOMER_CITY, CUSTOMER_STATE) " &
                        "VALUES (@Name, @Address, @City, @State, @Zip); " &
                        "SELECT SCOPE_IDENTITY();" ' &lt;!-- returns the new CUSTOMER_ID

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

                    Dim newCustomerId As Integer = Convert.ToInt32(cmdCust.ExecuteScalar())

                    ' STEP 2: Insert into USERS with the same CUSTOMER_ID - this is the link!
                    Dim insertUser As String =
                        "INSERT INTO USERS (Username, User_Password, User_Role, CUSTOMER_ID) " &
                        "VALUES (@Username, @Password, 'customer', @CustId)"

                    Dim cmdUser As New SqlCommand(insertUser, con, tran)
                    cmdUser.Parameters.AddWithValue("@Username", txtUsername.Text.Trim())
                    cmdUser.Parameters.AddWithValue("@Password", txtPassword.Text.Trim())
                    cmdUser.Parameters.AddWithValue("@CustId", newCustomerId)

                    cmdUser.ExecuteNonQuery()

                    ' Both inserts succeeded - commit
```

```
        tran.Commit()

        lblMsg.ForeColor = Drawing.Color.Green
        lblMsg.Text = "Registration successful! You can now <a href='Login.aspx'>Login</a>";

    Catch exInner As Exception
        ' If anything failed, roll back both inserts
        tran.Rollback()
        Throw exInner
    End Try

End Using

Catch ex As Exception
    lblMsg.ForeColor = Drawing.Color.Red
    If ex.Message.Contains("Violation of UNIQUE") OrElse ex.Message.Contains("duplicate") Then
        lblMsg.Text = "Error: That username is already taken. Please choose another."
    Else
        lblMsg.Text = "Error: " & ex.Message
    End If
End Try

End Sub

End Class
```

File: Search.aspx

```
<%@ Page Title="" Language="vb" AutoEventWireup="false" MasterPageFile="~/Site.Master" CodeBehind="Search.aspx" Inherits="Lab07.Search" %>

<asp:Content ID="Content1" ContentPlaceHolderID="MainContent" runat="server">
    <div style="font-family: Arial; padding: 20px;">
        <h3>Product Search</h3>
        <hr />

        <div style="margin-bottom: 20px;">
            <label>Search Name or Category:</label><br />
            <asp:TextBox ID="txtSearch" runat="server" Style="padding: 5px; width: 250px;"></asp:TextBox>
            <asp:Button ID="btnSearch" runat="server" Text="Search" OnClick="btnSearch_Click"
                Style="padding: 5px;" />
        </div>

    </div>

    <asp:GridView ID="gvProducts" runat="server" border="1" CellPadding="10"
        Style="border-collapse: collapse; width: 100%;" AutoGenerateColumns="False"
        DataKeyNames="PRODUCT_ID">
        <HeaderStyle BackColor="#e0e0e0" />
        <Columns>
            <asp:BoundField DataField="PRODUCT_ID" HeaderText="ID" />
            <asp:BoundField DataField="PRODUCT_DESCRIPTION" HeaderText="Description" />
            <asp:BoundField DataField="PRODUCT_FINISH" HeaderText="Finish" />
            <asp:BoundField DataField="STANDARD_PRICE" HeaderText="Price" DataFormatString="{0:###,###.##}" />
            <asp:TemplateField HeaderText="Action">
                <ItemTemplate>
                    <asp:Button ID="btnAddToOrder" runat="server" Text="Add to Order"
                        CommandName="AddToOrder"
                        CommandArgument='&#106; Eval("PRODUCT_ID") &#106; |' &#106; Eval("PRODUCT_DESCRIPTION") &#106;'
                        Style="padding: 5px; background-color: #4CAF50; color: white; border: none;" />
                </ItemTemplate>
            </asp:TemplateField>
        </Columns>
    </asp:GridView>
    <br />
    <asp:Label ID="lblSearchMsg" runat="server" ForeColor="Red"></asp:Label>
</div>

<div style="margin-top: 20px; padding: 15px; border: 1px solid #ddd; background-color: #f9f9f9;"
    id="divCart" runat="server">
    <h4>Selected Products for Order</h4>
    <asp:GridView ID="gvSelectedProducts" runat="server" border="1" CellPadding="8"
        Style="border-collapse: collapse; width: 100%;" AutoGenerateColumns="False">
        <HeaderStyle BackColor="#d9edf7" />
        <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="Remove"
                        CommandArgument='&#106; Eval("ProductID") &#106;'
                        Style="padding: 3px 8px; cursor: pointer;" />
                </ItemTemplate>
            </asp:TemplateField>
        </Columns>
    </asp:GridView>
    <asp:Label ID="lblCartEmpty" runat="server" Text="No products selected yet." ForeColor="Green"></asp:Label>
    <br /><br />
</div>
```

```
        &lt;asp:Button ID="btnProceedToOrder" runat="server" Text="Proceed to Order Placement"
            OnClick="btnProceedToOrder_Click"
            Style="padding: 10px 20px; background-color: #337ab7; color: white; border: none; cursor
        &lt;/div&gt;
    &lt;/div&gt;
&lt;/asp:Content&gt;
```

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: Segmentation.aspx

```
<!-- Page Title="Segmentation Analysis" Language="vb" AutoEventWireup="false" MasterPageFile="~/Site.Master
<asp:Content ID="Content1" ContentPlaceHolderID="MainContent" runat="server">
  <div class="container">
    <h2>Customer Segmentation Analysis</h2>
    <hr />

    <!-- Status Message -->
    <asp:Label ID="lblStatusMsg" runat="server" Font-Bold="true" Visible="false" ForeColor="Green">
    <br />
    <br />

    <!-- Threshold Configuration Section -->
    <fieldset>
      <legend><strong>Threshold Configuration</strong></legend>
      <table style="width: 100%; border-collapse: collapse;">
        <tr>
          <td style="padding: 10px;"><label for="txtPremiumThreshold">Premium Threshold</label>
          <td style="padding: 10px;">
            <asp:TextBox ID="txtPremiumThreshold" runat="server" Width="150px">10000</asp:Text
          </td>
        </tr>
        <tr>
          <td style="padding: 10px;"><label for="txtFrequentThreshold">Frequent Threshold</label>
          <td style="padding: 10px;">
            <asp:TextBox ID="txtFrequentThreshold" runat="server" Width="150px">3</asp:Text
          </td>
        </tr>
        <tr>
          <td style="padding: 10px;"><label for="txtBulkThreshold">Bulk Threshold (Avg
          <td style="padding: 10px;">
            <asp:TextBox ID="txtBulkThreshold" runat="server" Width="150px">1</asp:Text
          </td>
        </tr>
      </table>
      <br />
      <asp:Button ID="btnUpdateThresholds" runat="server" Text="Update Thresholds" CssClass="btn bt
      <asp:Button ID="btnLoadAll" runat="server" Text="Load All Segments" CssClass="btn btn-info" /
    </fieldset>

    <br />
    <br />

    <!-- Analysis Buttons -->
    <fieldset>
      <legend><strong>Quick Analysis</strong></legend>
      <asp:Button ID="btnLoadPremium" runat="server" Text="Load Premium Customers" CssClass="btn bt
      <asp:Button ID="btnLoadFrequent" runat="server" Text="Load Frequent Customers" CssClass="btn l
      <asp:Button ID="btnLoadBulk" runat="server" Text="Load Bulk Buyers" CssClass="btn btn-success
      <asp:Button ID="btnClearResults" runat="server" Text="Clear Results" CssClass="btn btn-danger
    </fieldset>

    <br />
    <br />

    <!-- Results Section -->
    <fieldset>
      <legend><strong>Segmentation Results</strong></legend>

      <!-- Premium Customers Panel -->
```

```

<asp:Panel ID="pnlPremium" runat="server" Visible="false">
    <h4>Premium Customers (Total Spend >= $<asp:Label ID="lblPremiumThresholdDisplay"
    <asp:Label ID="lblPremiumCount" runat="server" Font-Bold="true" ForeColor="Blue"></asp:
    <asp:GridView ID="gvPremiumCustomers" runat="server" CssClass="table table-striped"
        AutoGenerateColumns="false" EmptyDataText="No Premium customers found.">
        <Columns>
            <asp:BoundField DataField="CUSTOMER_ID" HeaderText="ID" />
            <asp:BoundField DataField="CUSTOMER_NAME" HeaderText="Customer Name" />
            <asp:BoundField DataField="Total_Spend" HeaderText="Total Spend" DataFormatString="{0:###,###.##}" />
            <asp:BoundField DataField="Order_Count" HeaderText="Orders" />
            <asp:BoundField DataField="Avg_Quantity" HeaderText="Avg Qty" DataFormatString="{0:###.##}" />
        </Columns>
    </asp:GridView>
    <hr />
</asp:Panel>

<!-- Frequent Customers Panel -->
<asp:Panel ID="pnlFrequent" runat="server" Visible="false">
    <h4>Frequent Customers (Orders >= <asp:Label ID="lblFrequentThresholdDisplay" runat="server"
    <asp:Label ID="lblFrequentCount" runat="server" Font-Bold="true" ForeColor="Blue"></asp:
    <asp:GridView ID="gvFrequentCustomers" runat="server" CssClass="table table-striped"
        AutoGenerateColumns="false" EmptyDataText="No Frequent customers found.">
        <Columns>
            <asp:BoundField DataField="CUSTOMER_ID" HeaderText="ID" />
            <asp:BoundField DataField="CUSTOMER_NAME" HeaderText="Customer Name" />
            <asp:BoundField DataField="Total_Spend" HeaderText="Total Spend" DataFormatString="{0:###,###.##}" />
            <asp:BoundField DataField="Order_Count" HeaderText="Orders" />
            <asp:BoundField DataField="Avg_Quantity" HeaderText="Avg Qty" DataFormatString="{0:###.##}" />
        </Columns>
    </asp:GridView>
    <hr />
</asp:Panel>

<!-- Bulk Buyers Panel -->
<asp:Panel ID="pnlBulk" runat="server" Visible="false">
    <h4>Bulk Buyers (Avg Qty >= <asp:Label ID="lblBulkThresholdDisplay" runat="server"
    <asp:Label ID="lblBulkCount" runat="server" Font-Bold="true" ForeColor="Blue"></asp:
    <asp:GridView ID="gvBulkBuyers" runat="server" CssClass="table table-striped"
        AutoGenerateColumns="false" EmptyDataText="No Bulk buyers found.">
        <Columns>
            <asp:BoundField DataField="CUSTOMER_ID" HeaderText="ID" />
            <asp:BoundField DataField="CUSTOMER_NAME" HeaderText="Customer Name" />
            <asp:BoundField DataField="Total_Spend" HeaderText="Total Spend" DataFormatString="{0:###,###.##}" />
            <asp:BoundField DataField="Order_Count" HeaderText="Orders" />
            <asp:BoundField DataField="Avg_Quantity" HeaderText="Avg Qty" DataFormatString="{0:###.##}" />
        </Columns>
    </asp:GridView>
    <hr />
</asp:Panel>

<!-- All Segments Panel -->
<asp:Panel ID="pnlAll" runat="server" Visible="false">
    <h4>All Customers - Segmentation Summary</h4>
    <asp:Label ID="lblAllCount" runat="server" Font-Bold="true" ForeColor="Blue"></asp:
    <asp:GridView ID="gvAllSegments" runat="server" CssClass="table table-striped"
        AutoGenerateColumns="false" EmptyDataText="No data available.">
        <Columns>
            <asp:BoundField DataField="CUSTOMER_ID" HeaderText="ID" />
            <asp:BoundField DataField="CUSTOMER_NAME" HeaderText="Customer Name" />
            <asp:BoundField DataField="Total_Spend" HeaderText="Total Spend" DataFormatString="{0:###,###.##}" />
            <asp:BoundField DataField="Order_Count" HeaderText="Orders" />
            <asp:BoundField DataField="Avg_Quantity" HeaderText="Avg Qty" DataFormatString="{0:###.##}" />
            <asp:BoundField DataField="Segment_Type" HeaderText="Segment" />
        </Columns>
    </asp:GridView>

```

```
        &lt;/Columns&gt;
        &lt;/asp:GridView&gt;
    &lt;/asp:Panel&gt;

    &lt;/fieldset&gt;

&lt;/div&gt;

&lt;style&gt;
    fieldset {
        border: 1px solid #ddd;
        border-radius: 5px;
        padding: 15px;
        margin-bottom: 20px;
    }

    legend {
        padding: 0 10px;
        background-color: #f5f5f5;
    }

    .btn {
        margin-right: 5px;
        margin-bottom: 10px;
    }

    .table {
        font-size: 12px;
    }

    h4 {
        margin-top: 20px;
        margin-bottom: 5px;
        color: #333;
    }
&lt;/style&gt;
&lt;/asp:Content&gt;
```

File: Segmentation.aspx.vb

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

Public Class Segmentation
    Inherits Page

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

    ' Threshold variables
    Dim premiumThreshold As Decimal
    Dim frequentThreshold As Integer
    Dim bulkThreshold As Decimal

    Protected Sub Page_Load(ByVal sender As Object, ByVal e As EventArgs) Handles Me.Load
        ' ROLE-BASED ACCESS CONTROL: Only admin can access this page
        If Session("User_Role") Is Nothing OrElse Session("User_Role") & "admin" Then
            Response.Redirect("Login.aspx")
        End If

        ' Load thresholds on first page load
        If Not IsPostBack Then
            LoadThresholds()
            UpdateThresholdDisplay()
        End If
    End Sub

    '=== THRESHOLD MANAGEMENT FUNCTIONS ===

    ''' <summary>
    ''' Load thresholds from Session or set defaults
    ''' </summary>
    Private Sub LoadThresholds()
        Try
            ' Try to get thresholds from Session, otherwise use defaults
            If Session("PremiumThreshold") IsNot Nothing Then
                premiumThreshold = CDec(Session("PremiumThreshold"))
                txtPremiumThreshold.Text = premiumThreshold.ToString()
            Else
                premiumThreshold = 10000
                txtPremiumThreshold.Text = "10000"
            End If

            If Session("FrequentThreshold") IsNot Nothing Then
                frequentThreshold = CInt(Session("FrequentThreshold"))
                txtFrequentThreshold.Text = frequentThreshold.ToString()
            Else
                frequentThreshold = 3
                txtFrequentThreshold.Text = "3"
            End If

            If Session("BulkThreshold") IsNot Nothing Then
                bulkThreshold = CDec(Session("BulkThreshold"))
                txtBulkThreshold.Text = bulkThreshold.ToString()
            Else
                bulkThreshold = 1
                txtBulkThreshold.Text = "1"
            End If
        End Try
    End Sub
End Class
```

```

    Catch ex As Exception
        ShowMessage("Error loading thresholds: " & ex.Message, System.Drawing.Color.Red)
    End Try
End Sub

''' <summary>
''' Update the display labels to show current thresholds
''' </summary>
Private Sub UpdateThresholdDisplay()
    Try
        ' Parse current threshold values from textboxes
        If IsNumeric(txtPremiumThreshold.Text) Then
            lblPremiumThresholdDisplay.Text = txtPremiumThreshold.Text
        End If

        If IsNumeric(txtFrequentThreshold.Text) Then
            lblFrequentThresholdDisplay.Text = txtFrequentThreshold.Text
        End If

        If IsNumeric(txtBulkThreshold.Text) Then
            lblBulkThresholdDisplay.Text = txtBulkThreshold.Text
        End If

    Catch ex As Exception
        ShowMessage("Error updating threshold display: " & ex.Message, System.Drawing.Color.Red)
    End Try
End Sub

''' <summary>
''' Validate and save thresholds to Session
''' </summary>
Private Function ValidateAndSaveThresholds() As Boolean
    Try
        ' Validate Premium Threshold
        If Not IsNumeric(txtPremiumThreshold.Text) Then
            ShowMessage("Premium threshold must be a number.", System.Drawing.Color.Red)
            Return False
        End If
        premiumThreshold = CDec(txtPremiumThreshold.Text)

        ' Validate Frequent Threshold
        If Not IsNumeric(txtFrequentThreshold.Text) Then
            ShowMessage("Frequent threshold must be a number.", System.Drawing.Color.Red)
            Return False
        End If
        frequentThreshold = CInt(txtFrequentThreshold.Text)

        ' Validate Bulk Threshold
        If Not IsNumeric(txtBulkThreshold.Text) Then
            ShowMessage("Bulk threshold must be a number.", System.Drawing.Color.Red)
            Return False
        End If
        bulkThreshold = CDec(txtBulkThreshold.Text)

        ' Save to Session
        Session("PremiumThreshold") = premiumThreshold
        Session("FrequentThreshold") = frequentThreshold
        Session("BulkThreshold") = bulkThreshold

        UpdateThresholdDisplay()
        ShowMessage("Thresholds updated successfully!", System.Drawing.Color.Green)
        Return True

    Catch ex As Exception

```

```

        ShowMessage("Error validating thresholds: " & ex.Message, System.Drawing.Color.Red)
        Return False
    End Try
End Function

'=== BUTTON EVENT HANDLERS ===

Protected Sub btnUpdateThresholds_Click(sender As Object, e As EventArgs) Handles btnUpdateThresholds.Click
    ValidateAndSaveThresholds()
End Sub

Protected Sub btnLoadPremium_Click(sender As Object, e As EventArgs) Handles btnLoadPremium.Click
    If Not ValidateAndSaveThresholds() Then Return
    HideAllResults()
    LoadPremiumCustomers()
End Sub

Protected Sub btnLoadFrequent_Click(sender As Object, e As EventArgs) Handles btnLoadFrequent.Click
    If Not ValidateAndSaveThresholds() Then Return
    HideAllResults()
    LoadFrequentCustomers()
End Sub

Protected Sub btnLoadBulk_Click(sender As Object, e As EventArgs) Handles btnLoadBulk.Click
    If Not ValidateAndSaveThresholds() Then Return
    HideAllResults()
    LoadBulkBuyers()
End Sub

Protected Sub btnLoadAll_Click(sender As Object, e As EventArgs) Handles btnLoadAll.Click
    If Not ValidateAndSaveThresholds() Then Return
    HideAllResults()
    LoadAllSegments()
End Sub

Protected Sub btnClearResults_Click(sender As Object, e As EventArgs) Handles btnClearResults.Click
    HideAllResults()
    lblStatusMsg.Visible = False
End Sub

Private Sub HideAllResults()
    pnlPremium.Visible = False
    pnlFrequent.Visible = False
    pnlBulk.Visible = False
    pnlAll.Visible = False
End Sub

'=== SEGMENTATION QUERY FUNCTIONS (TO BE IMPLEMENTED) ===

''' <summary>
''' Load and display Premium Customers (Total Spend > Premium Threshold)
''' </summary>
Private Sub LoadPremiumCustomers()
    Try
        Using con As New SqlConnection(connStr)
            Dim query As String =
                "SELECT " &
                "C.CUSTOMER_ID, " &
                "C.CUSTOMER_NAME, " &
                "SUM(P.STANDARD_PRICE * OL.ORDERED_QUANTITY) AS Total_Spend, " &
                "COUNT(DISTINCT O.ORDER_ID) AS Order_Count, " &
                "AVG(OL.ORDERED_QUANTITY) AS Avg_Quantity " &
                "FROM customer_T C " &

```

```

        "LEFT JOIN Order_T O ON C.CUSTOMER_ID = O.CUSTOMER_ID " &
        "LEFT JOIN Order_Line_T OL ON O.ORDER_ID = OL.ORDER_ID " &
        "LEFT JOIN Product_T P ON OL.PRODUCT_ID = P.PRODUCT_ID " &
        "GROUP BY C.CUSTOMER_ID, C.CUSTOMER_NAME " &
        "HAVING SUM(P.STANDARD_PRICE * OL.ORDERED_QUANTITY) > @PremiumThreshold " &
        "ORDER BY Total_Spend DESC"

Dim cmd As New SqlCommand(query, con)
cmd.Parameters.AddWithValue("@PremiumThreshold", premiumThreshold)

Dim adapter As New SqlDataAdapter(cmd)
Dim dt As New DataTable()

adapter.Fill(dt)

gvPremiumCustomers.DataSource = dt
gvPremiumCustomers.DataBind()

If dt.Rows.Count > 0 Then
    pnlPremium.Visible = True
    lblPremiumCount.Text = "Found " & dt.Rows.Count & " Premium Customer(s)"
    lblPremiumCount.ForeColor = System.Drawing.Color.Green
Else
    pnlPremium.Visible = True ' Show panel even if empty to show the "No customers found" message
    lblPremiumCount.Text = "No Premium customers found with threshold > $" & premiumThreshold
    lblPremiumCount.ForeColor = System.Drawing.Color.Red
End If

ShowMessage("Premium customers loaded successfully!", System.Drawing.Color.Green)

End Using

Catch ex As Exception
    lblPremiumCount.Text = "Error loading Premium customers"
    lblPremiumCount.ForeColor = System.Drawing.Color.Red
    gvPremiumCustomers.Visible = False
    ShowMessage("Error: " & ex.Message, System.Drawing.Color.Red)
End Try
End Sub

''' <summary>
''' Load and display Frequent Customers (Order Count >= Frequent Threshold)
''' </summary>
Private Sub LoadFrequentCustomers()
    Try
        Using con As New SqlConnection(connStr)
            Dim query As String =
                "SELECT " &
                "C.CUSTOMER_ID, " &
                "C.CUSTOMER_NAME, " &
                "SUM(P.STANDARD_PRICE * OL.ORDERED_QUANTITY) AS Total_Spend, " &
                "COUNT(DISTINCT O.ORDER_ID) AS Order_Count, " &
                "AVG(OL.ORDERED_QUANTITY) AS Avg_Quantity " &
                "FROM customer_T C " &
                "LEFT JOIN Order_T O ON C.CUSTOMER_ID = O.CUSTOMER_ID " &
                "LEFT JOIN Order_Line_T OL ON O.ORDER_ID = OL.ORDER_ID " &
                "LEFT JOIN Product_T P ON OL.PRODUCT_ID = P.PRODUCT_ID " &
                "GROUP BY C.CUSTOMER_ID, C.CUSTOMER_NAME " &
                "HAVING COUNT(DISTINCT O.ORDER_ID) >= @FrequentThreshold " &
                "ORDER BY Order_Count DESC"

            Dim cmd As New SqlCommand(query, con)
            cmd.Parameters.AddWithValue("@FrequentThreshold", frequentThreshold)

```

```

Dim adapter As New SqlDataAdapter(cmd)
Dim dt As New DataTable()

adapter.Fill(dt)

gvFrequentCustomers.DataSource = dt
gvFrequentCustomers.DataBind()

If dt.Rows.Count > 0 Then
    pnlFrequent.Visible = True
    lblFrequentCount.Text = "Found " & dt.Rows.Count & " Frequent Customer(s)"
    lblFrequentCount.ForeColor = System.Drawing.Color.Green
Else
    pnlFrequent.Visible = True
    lblFrequentCount.Text = "No Frequent customers found with " & frequentThreshold &
    lblFrequentCount.ForeColor = System.Drawing.Color.Red
End If

ShowMessage("Frequent customers loaded successfully!", System.Drawing.Color.Green)

End Using

Catch ex As Exception
    lblFrequentCount.Text = "Error loading Frequent customers"
    lblFrequentCount.ForeColor = System.Drawing.Color.Red
    gvFrequentCustomers.Visible = False
    ShowMessage("Error: " & ex.Message, System.Drawing.Color.Red)
End Try
End Sub

''' <summary>
''' Load and display Bulk Buyers (Avg Quantity >= Bulk Threshold)
''' </summary>
Private Sub LoadBulkBuyers()
    Try
        Using con As New SqlConnection(connStr)
            Dim query As String =
                "SELECT " &
                "C.CUSTOMER_ID, " &
                "C.CUSTOMER_NAME, " &
                "SUM(P.STANDARD_PRICE * OL.ORDERED_QUANTITY) AS Total_Spend, " &
                "COUNT(DISTINCT O.ORDER_ID) AS Order_Count, " &
                "AVG(OL.ORDERED_QUANTITY) AS Avg_Quantity " &
                "FROM customer_T C " &
                "LEFT JOIN Order_T O ON C.CUSTOMER_ID = O.CUSTOMER_ID " &
                "LEFT JOIN Order_Line_T OL ON O.ORDER_ID = OL.ORDER_ID " &
                "LEFT JOIN Product_T P ON OL.PRODUCT_ID = P.PRODUCT_ID " &
                "GROUP BY C.CUSTOMER_ID, C.CUSTOMER_NAME " &
                "HAVING AVG(OL.ORDERED_QUANTITY) >= @BulkThreshold " &
                "ORDER BY Avg_Quantity DESC"

            Dim cmd As New SqlCommand(query, con)
            cmd.Parameters.AddWithValue("@BulkThreshold", bulkThreshold)

            Dim adapter As New SqlDataAdapter(cmd)
            Dim dt As New DataTable()

            adapter.Fill(dt)

            gvBulkBuyers.DataSource = dt
            gvBulkBuyers.DataBind()

            If dt.Rows.Count > 0 Then

```

```

        pnlBulk.Visible = True
        lblBulkCount.Text = "Found " & dt.Rows.Count & " Bulk Buyer(s)"
        lblBulkCount.ForeColor = System.Drawing.Color.Green
    Else
        pnlBulk.Visible = True
        lblBulkCount.Text = "No Bulk buyers found with average quantity >= " & bulkThreshold
        lblBulkCount.ForeColor = System.Drawing.Color.Red
    End If

    ShowMessage("Bulk buyers loaded successfully!", System.Drawing.Color.Green)

End Using

Catch ex As Exception
    lblBulkCount.Text = "Error loading Bulk buyers"
    lblBulkCount.ForeColor = System.Drawing.Color.Red
    gvBulkBuyers.Visible = False
    ShowMessage("Error: " & ex.Message, System.Drawing.Color.Red)
End Try
End Sub

''' <summary>
''' Load and display All Customers with Segment Classification
''' </summary>
Private Sub LoadAllSegments()
    Try
        Using con As New SqlConnection(connStr)
            Dim query As String =
                "SELECT " &
                "C.CUSTOMER_ID, " &
                "C.CUSTOMER_NAME, " &
                "SUM(P.STANDARD_PRICE * OL.ORDERED_QUANTITY) AS Total_Spend, " &
                "COUNT(DISTINCT O.ORDER_ID) AS Order_Count, " &
                "AVG(OL.ORDERED_QUANTITY) AS Avg_Quantity, " &
                "CASE " &
                "WHEN SUM(P.STANDARD_PRICE * OL.ORDERED_QUANTITY) > @PremiumThreshold THEN 'Premium' " &
                "WHEN COUNT(DISTINCT O.ORDER_ID) >= @FrequentThreshold THEN 'Frequent' " &
                "WHEN AVG(OL.ORDERED_QUANTITY) >= @BulkThreshold THEN 'Bulk' " &
                "ELSE 'Standard' " &
                "END AS Segment_Type " &
                "FROM customer_T C " &
                "LEFT JOIN Order_T O ON C.CUSTOMER_ID = O.CUSTOMER_ID " &
                "LEFT JOIN Order_Line_T OL ON O.ORDER_ID = OL.ORDER_ID " &
                "LEFT JOIN Product_T P ON OL.PRODUCT_ID = P.PRODUCT_ID " &
                "GROUP BY C.CUSTOMER_ID, C.CUSTOMER_NAME " &
                "ORDER BY Segment_Type DESC, Total_Spend DESC"

            Dim cmd As New SqlCommand(query, con)
            cmd.Parameters.AddWithValue("@PremiumThreshold", premiumThreshold)
            cmd.Parameters.AddWithValue("@FrequentThreshold", frequentThreshold)
            cmd.Parameters.AddWithValue("@BulkThreshold", bulkThreshold)

            Dim adapter As New SqlDataAdapter(cmd)
            Dim dt As New DataTable()

            adapter.Fill(dt)

            gvAllSegments.DataSource = dt
            gvAllSegments.DataBind()

            If dt.Rows.Count > 0 Then
                pnlAll.Visible = True
                lblAllCount.Text = "Total Customers: " & dt.Rows.Count & " | Premium: " &

```

```

        dt.Select("Segment_Type = 'Premium'").Length & " | Frequent: " &
        dt.Select("Segment_Type = 'Frequent'").Length & " | Bulk: " &
        dt.Select("Segment_Type = 'Bulk'").Length & " | Standard: " &
        dt.Select("Segment_Type = 'Standard'").Length
        lblAllCount.ForeColor = System.Drawing.Color.Green
    Else
        pnlAll.Visible = True
        lblAllCount.Text = "No customers found in the database"
        lblAllCount.ForeColor = System.Drawing.Color.Red
    End If

    ShowMessage("All segments loaded successfully!", System.Drawing.Color.Green)

End Using

Catch ex As Exception
    lblAllCount.Text = "Error loading segments"
    lblAllCount.ForeColor = System.Drawing.Color.Red
    gvAllSegments.Visible = False
    ShowMessage("Error: " & ex.Message, System.Drawing.Color.Red)
End Try
End Sub

'=== UTILITY FUNCTIONS ===

''' <summary>
''' Display status message in the label
''' </summary>
Private Sub ShowMessage(message As String, color As System.Drawing.Color)
    lblStatusMsg.Text = message
    lblStatusMsg.ForeColor = color
    lblStatusMsg.Visible = True
End Sub

''' <summary>
''' Check if a string is numeric
''' </summary>
Private Function IsNumeric(value As String) As Boolean
    Dim result As Decimal
    Return Decimal.TryParse(value, result)
End Function

End Class

```

File: Site.Master

```
<!-- Master Language="VB" AutoEventWireup="true" CodeBehind="Site.master.vb" Inherits="Lab07.SiteMaster" -->
<!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>
                    <asp:Panel ID="pnlRegisterLink" runat="server" style="display:inline;">
                        <a href="Register.aspx">Register</a>
                    </asp:Panel>
                </li>
                <li>
                    <asp:Panel ID="pnlProtectedLinks" runat="server" style="display:contents;">
                        <a href="UpdateCustomer.aspx">Update Customer</a></li>
                        <a href="Orders.aspx">Orders</a></li>
                        <a href="Payment.aspx">Payment</a></li>
                    </asp:Panel>
                </li>
                <li>
                    <asp:Panel ID="pnlSegmentation" runat="server" style="display:inline;">
                        <a href="Segmentation.aspx">Segmentation</a>
                    </asp:Panel>
                </li>
                <li><asp:HyperLink ID="pnlCatalog" runat="server" NavigateUrl="Admin.aspx">Catalog</a></li>
                <li><a href="Help.aspx">Help</a></li>
                <li style="margin-left: auto; display: flex; align-items: center;">
                    <asp:Label ID="lblUserInfo" runat="server" style="padding: 0 15px; font-weight: bold;">
                    <asp:HyperLink ID="lnkLogin" runat="server" NavigateUrl="Login.aspx">Login</a>
                    <asp:LinkButton ID="lnkLogout" runat="server" OnClick="lnkLogout_Click">Logout</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
        ' Check if user is logged in
        If Session("User_Name") Is Nothing Then
            ' No user logged in - Show guest navbar
            pnlRegisterLink.Visible = True
            pnlProtectedLinks.Visible = False
            pnlCatalog.Visible = False
            pnlSegmentation.Visible = False
            lnkLogin.Visible = True
            lnkLogout.Visible = False
            lblUserInfo.Text = ""
        Else
            ' User is logged in - Hide Register, show protected links
            pnlRegisterLink.Visible = False
            pnlProtectedLinks.Visible = True
            lnkLogin.Visible = False
            lnkLogout.Visible = True

            ' Show Catalog and Segmentation links only if user is admin
            If Session("User_Role") <> "admin" Then
                pnlCatalog.Visible = False
                pnlSegmentation.Visible = False
            Else
                pnlCatalog.Visible = True
                pnlSegmentation.Visible = True
            End If

            ' Show user info
            Dim userName As String = Session("User_Name").ToString()
            Dim userRole As String = Session("User_Role").ToString()
            lblUserInfo.Text = "Welcome " & userRole.ToUpper() & ": " & userName
        End If
    End Sub

    Protected Sub lnkLogout_Click(sender As Object, e As EventArgs) Handles lnkLogout.Click
        ' Clear all session variables
        Session.Clear()
        Session.Abandon()

        ' Redirect to login page
        Response.Redirect("Login.aspx")
    End Sub
End Class
```

File: Site.Mobile.Master

```
■<!--@ Master Language="VB" AutoEventWireup="false" CodeBehind="Site.Mobile.master.vb" Inherits="Lab07.Site
<!--@ 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 Customer" Language="vb" AutoEventWireup="false" MasterPageFile="~/Site.Master"
CodeBehind="UpdateCustomer.aspx.vb" Inherits="Lab07.UpdateCustomer" -->

<asp:Content ID="Content1" ContentPlaceHolderID="MainContent" runat="server">
  <div style="font-family: Arial; padding: 20px; max-width: 400px;">
    <h3>Update Customer Data</h3>
    <hr />

    <!-- Admin-only section: Search customer by dropdown -->
    <asp:Panel ID="pnlAdminSearch" runat="server" style="margin-bottom: 20px; padding: 10px; backg
      <div style="margin-bottom: 10px;">
        <label><b>Admin: Select a Customer</b></label><br />
        <asp:DropDownList ID="ddlCustomers" runat="server" Style="width: 100%; padding: 5px;"
          AutoPostBack="true" OnSelectedIndexChanged="ddlCustomers_SelectedIndexChanged">
        </asp:DropDownList>
      </div>
    </asp:Panel>

    <div style="margin-bottom: 10px;">
      <label>Full Name:</label><br />
      <asp:TextBox ID="txtName" runat="server" Style="width: 100%; padding: 5px;" Enabled="false"
      </asp:TextBox>
    </div>

    <div style="margin-bottom: 10px;">
      <label>Address:</label><br />
      <asp:TextBox ID="txtAddress" runat="server" Style="width: 100%; padding: 5px;" Enabled="f
      </asp:TextBox>
    </div>

    <div style="margin-bottom: 10px;">
      <label>City:</label><br />
      <asp:TextBox ID="txtCity" runat="server" Style="width: 100%; padding: 5px;" Enabled="false"
      </asp:TextBox>
    </div>

    <div style="margin-bottom: 10px;">
      <label>State (2 Letters):</label><br />
      <asp:TextBox ID="txtState" runat="server" MaxLength="2" Style="width: 50px; padding: 5px;"
        Enabled="false">
      </asp:TextBox>
    </div>

    <div style="margin-bottom: 10px;">
      <label>Postal Code:</label><br />
      <asp:TextBox ID="txtZip" runat="server" Style="width: 100%; padding: 5px;" Enabled="false"
      </asp:TextBox>
    </div>

    <div style="margin-top: 20px;">
      <asp:Button ID="btnUpdate" runat="server" Text="Update Customer" OnClick="btnUpdate_Click"
        Style="padding: 10px; cursor: pointer;" Enabled="false" />
    </div>

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

File: UpdateCustomer.aspx.vb

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

Public Class UpdateCustomer
    Inherits System.Web.UI.Page

    Protected Sub Page_Load(ByVal sender As Object, ByVal e As EventArgs) Handles Me.Load
        ' Session validation - User must be logged in
        If Session("User_Name") Is Nothing Then
            Response.Redirect("Login.aspx")
        End If

        ' Control visibility and load data based on role
        If Session("User_Role") = "admin" Then
            ' ADMIN: Show dropdown with all customers
            pnlAdminSearch.Visible = True

            ' Load customer dropdown only on first page load
            If Not IsPostBack Then
                LoadCustomerDropdown()
            End If
        Else
            ' CUSTOMER: Hide dropdown, auto-load their profile
            pnlAdminSearch.Visible = False

            If Not IsPostBack AndAlso Session("CUSTOMER_ID") IsNot Nothing Then
                LoadCustomerFromSession()
            End If
        End If
    End Sub

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

        Try
            Using con As New SqlConnection(connStr)
                Dim query As String = "SELECT CUSTOMER_ID, CUSTOMER_NAME FROM customer_T ORDER BY CUSTOMER_NAME"

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

                adapter.Fill(dt)

                ' Bind dropdown with format: "Customer Name (ID: 1)"
                ddlCustomers.DataSource = dt
                ddlCustomers.DataTextField = "CUSTOMER_NAME"
                ddlCustomers.DataValueField = "CUSTOMER_ID"
                ddlCustomers.DataBind()
                ddlCustomers.Items.Insert(0, New ListItem("-- Select a Customer --", "0"))
            End Using

            Catch ex As Exception
                lblMsg.ForeColor = Drawing.Color.Red
                lblMsg.Text = "Error loading customers: " & ex.Message
            End Try
        End Sub

    Protected Sub ddlCustomers_SelectedIndexChanged(sender As Object, e As EventArgs) Handles ddlCustomers.S
```

```

    If ddlCustomers.SelectedValue = "0" Then
        ClearForm()
        lblMsg.Text = "Please select a customer."
        lblMsg.ForeColor = Drawing.Color.Black
        Return
    End If

    Dim customerId As Integer = CInt(ddlCustomers.SelectedValue)
    LoadCustomerData(customerId)
End Sub

Private Sub LoadCustomerData(customerId As Integer)
    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 " & a
                "FROM customer_T WHERE CUSTOMER_ID = @Id"

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

            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 loaded. Edit the fields and click Update."
            End If

            reader.Close()
        End Using

        Catch ex As Exception
            lblMsg.ForeColor = Drawing.Color.Red
            lblMsg.Text = "Error loading customer: " & ex.Message
        End Try
    End Sub

Private Sub LoadCustomerFromSession()
    Dim connStr As String = ConfigurationManager.ConnectionStrings("PVFC").ConnectionString
    Dim customerId As Integer = CInt(Session("CUSTOMER_ID"))

    Try
        Using con As New SqlConnection(connStr)
            Dim query As String =
                "SELECT CUSTOMER_NAME, CUSTOMER_ADDRESS, CUSTOMER_CITY, CUSTOMER_STATE, POSTAL_CODE " & a
                "FROM customer_T WHERE CUSTOMER_ID = @Id"

            Dim cmd As New SqlCommand(query, con)

```

```

cmd.Parameters.AddWithValue("@Id", customerId)

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 = "Your profile is loaded. Edit the fields and click Update."
End If

    reader.Close()
End Using

Catch ex As Exception
    lblMsg.ForeColor = Drawing.Color.Red
    lblMsg.Text = "Error loading your profile: " & ex.Message
End Try
End Sub

Private Sub ClearForm()
    txtName.Text = ""
    txtAddress.Text = ""
    txtCity.Text = ""
    txtState.Text = ""
    txtZip.Text = ""

    txtName.Enabled = False
    txtAddress.Enabled = False
    txtCity.Enabled = False
    txtState.Enabled = False
    txtZip.Enabled = False
    btnUpdate.Enabled = False
End Sub

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

    ' Session validation
    If Session("User_Name") Is Nothing Then
        lblMsg.ForeColor = Drawing.Color.Red
        lblMsg.Text = "Session expired. Please log in again."
        Response.Redirect("Login.aspx")
        Return
    End If

    ' Determine which Customer ID to update
    Dim customerIdToUpdate As Integer

    If Session("User_Role") = "admin" Then
        ' ADMIN: Can update any customer (use the one selected in dropdown)
        If ddlCustomers.SelectedValue = "0" Then

```

```

        lblMsg.ForeColor = Drawing.Color.Red
        lblMsg.Text = "Please select a customer first."
        Return
    End If
    customerIdToUpdate = CInt(ddlCustomers.SelectedValue)
Else
    ' CUSTOMER: Can ONLY update their own profile (from session)
    If Session("CUSTOMER_ID") Is Nothing Then
        lblMsg.ForeColor = Drawing.Color.Red
        lblMsg.Text = "Error: Your customer ID is not linked. Please contact admin."
        Return
    End If
    customerIdToUpdate = CInt(Session("CUSTOMER_ID"))
End If

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", customerIdToUpdate)

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

        If rowsAffected > 0 Then
            lblMsg.ForeColor = Drawing.Color.Green
            lblMsg.Text = "Profile updated successfully!"
        Else
            lblMsg.ForeColor = Drawing.Color.Red
            lblMsg.Text = "Update failed. Please try again."
        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=SSPI;" />
  </connectionStrings>
  <system.web>
    <compilation strict="false" explicit="true" targetFramework="4.8" debug="true" />
    <httpRuntime targetFramework="4.8" />
    <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>
</configuration>
<!--ProjectGuid: CD8E53D2-B177-494B-AE08-1CEE98E43D7-->
```

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=

<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: 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("Lab07")>>
```

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

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

```
<<Assembly: AssemblyProduct("Lab07")>>
```

```
<<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("3dff748d-a2fa-4378-9575-9b4a6f5e7182")>>
```

```
' 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
```