

Lab 04 Report

SUBMITTED BY:

DANIYA AAMIR

Problem 1: ASP.NET Page Life Cycle

The ASP.NET page processing sequence handles events from the moment a page is requested until it is rendered. The event handlers demonstrate the sequence of execution; Init builds the controls, Load restores their previous data, and Unload (not shown) cleans up memory after HTML is sent to the browser.

pageLifecycle.aspx

```
<%@ Page Language="vb" AutoEventWireup="false" CodeBehind="pageLifecycle.aspx.vb"
Inherits="pvfc_website.pageLifecycle" %>
```

```
<!DOCTYPE html>
```

```
<html xmlns="[http://www.w3.org/1999/xhtml](http://www.w3.org/1999/xhtml)">
```

```
<head runat="server"><title></title></head>
```

```
<body>
```

```
    <form id="form1" runat="server"><div></div></form>
```

```
</body>
```

```
</html>
```

pageLifecycle.aspx.vb

```
Protected Sub Page_PreInit(sender As Object, e As EventArgs) Handles Me.PreInit
```

```
    System.Diagnostics.Debug.WriteLine("1. PreInit: Master pages/themes set.")
```

```
End Sub
```

```
Protected Sub Page_Init(sender As Object, e As EventArgs) Handles Me.Init
```

```
    System.Diagnostics.Debug.WriteLine("2. Init: Controls are instantiated.")
```

```
End Sub
```

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

```
System.Diagnostics.Debug.WriteLine("3. Load: ViewState is restored.")
```

End Sub

Problem 2: Debugging with Breakpoints

Setting breakpoints within lifecycle events allows developers to pause execution and step through code line-by-line.

Key Benefits:

1. You can hover over variables to see their real-time values.
2. Step over & Step Into lets you watch exactly how the logic flows line by line.
3. It helps you find where a calculation goes wrong even if the code doesn't "crash".
4. You can see which methods called the current one, helping you trace the origin of data.

Problem 3: Pine Valley Furniture Company Web Application

The static HTML was converted into ASP.NET Web Forms. The following files incorporate the core functionalities for the web application.

Home Page

Serves as the main landing page with navigation links to all other functionalities.

Default.aspx

```
<%@ Page Language="vb" AutoEventWireup="false" CodeBehind="Default.aspx.vb"
Inherits="pvfc_website._Default" %>
```

```
<!DOCTYPE html>
```

```
<html>
```

```
<head runat="server">
```

```
<title>PVFC Home</title>
```

```
<link rel="stylesheet" href="pvfcstyles.css">
```

```
</head>
<body>
  <form id="form1" runat="server">
    <div class="navbar">
      <a href="Default.aspx">Home</a>
      <a href="register.aspx">Register</a>
      <a href="productSearch.aspx">Products</a>
      <a href="catalog.aspx">Catalog</a>
      <a href="payment.aspx">Payment</a>
    </div>
    <div class="main-content container">
      <h1>Pine Valley Furniture Company</h1>
      <p style="text-align: center;">Welcome to our online store. Please navigate using the
menu above.</p>
    </div>
  </form>
</body>
</html>
```

i) New Customer Registration

A web form to gather new customer data.

register.aspx

```
<%@ Page Language="vb" AutoEventWireup="false" CodeBehind="register.aspx.vb"
Inherits="pvfc_website.register" %>
```

```
<!DOCTYPE html>
```

```
<html lang="en">
```

```
<head runat="server">
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Registration</title>
  <link rel="stylesheet" href="pvfcstyles.css">
</head>
<body>
  <form id="form1" runat="server" style="box-shadow: none; padding: 0; border: none;
display: block; background-color: transparent;">
  <div class="navbar">
    <a href="Default.aspx">Home</a>
  </div>
  <div class="page-wrapper">
    <div class="login-container">
      <h1>Create Account</h1>
      <p style="color: #666; font-size: 14px; margin-bottom: 20px;">Join PVFC
today</p>
      <div style="margin-bottom: 15px;">
        <asp:Label ID="lblMessage" runat="server" Font-Bold="true"></asp:Label>
      </div>
      <div style="text-align: left;">
        <label>Full Name</label>
        <asp:TextBox ID="txtName" runat="server" required="true" placeholder="Full
Name"></asp:TextBox>
        <label>Email Address</label>
```

```

        <asp:TextBox ID="txtEmail" runat="server" TextMode="Email" required="true"
placeholder="youremail@example.com"></asp:TextBox>

        <label>Password</label>

        <asp:TextBox ID="txtPassword" runat="server" TextMode="Password"
required="true" placeholder="*****"></asp:TextBox>

        <label>Gender</label>

        <asp:DropDownList ID="ddlGender" runat="server" style="margin-bottom:
15px; width: 100%; padding: 10px; border: 1px solid #ccc; border-radius: 5px;">

            <asp:ListItem Value="m">Male</asp:ListItem>

            <asp:ListItem Value="f">Female</asp:ListItem>

            <asp:ListItem Value="o">Other</asp:ListItem>

        </asp:DropDownList>

    </div>

    <asp:Button ID="btnRegister" runat="server" Text="Sign Up" style="width: 100%;"
/>

</div>

</div>

</form>

</body>

</html>

```

ii) Searching of Products

The GridView columns are bound strictly to the PRODUCT_t database table.

productSearch.aspx

```

<%@ Page Language="vb" AutoEventWireup="false" CodeBehind="productSearch.aspx.vb"
Inherits="pvfc_website.productSearch" %>

<!DOCTYPE html>

```

```
<html xmlns="[http://www.w3.org/1999/xhtml](http://www.w3.org/1999/xhtml)">
<head runat="server">
  <title>Product Search</title>
  <link href="~/pvfcstyles.css" rel="stylesheet" type="text/css" runat="server"/>
</head>
<body>
  <form id="form1" runat="server">
    <div class="navbar">
      <a href="Default.aspx">Home</a>
      <a href="payment.aspx">Go to Cart</a>
    </div>
    <div class="container">
      <div style="text-align: center; padding-bottom: 20px; border-bottom: 1px solid #ccc;">
        <label>Search:</label>
        <asp:TextBox ID="txtSearch" runat="server" placeholder="Table, Desk..."></asp:TextBox>
        <asp:Button ID="btnSearch" runat="server" Text="Go" />
        <br /><br />
        <strong>Category:</strong>
        <asp:Button ID="btnAsh" runat="server" Text="Natural Ash" CssClass="btn" />
        <asp:Button ID="btnWalnut" runat="server" Text="Walnut" CssClass="btn" />
        <asp:Button ID="btnCherry" runat="server" Text="Cherry" CssClass="btn" />
      </div>
      <h2>Available Products</h2>
    </div>
  </form>
</body>
</html>
```

```

    <div style="text-align: center; margin-bottom: 15px;">
        <asp:Label ID="lblMessage" runat="server" ForeColor="Red" Font-
Bold="true"></asp:Label>
    </div>

    <asp:GridView ID="gvProducts" runat="server" AutoGenerateColumns="False"
Width="100%">
        <Columns>
            <asp:BoundField DataField="Product_Id" HeaderText="Product ID" />
            <asp:BoundField DataField="Product_Description" HeaderText="Product
Description" />
            <asp:BoundField DataField="Product_Finish" HeaderText="Finish" />
            <asp:BoundField DataField="Standard_Price" HeaderText="Standard Price"
DataFormatString="{0:N2}" />
        </Columns>
    </asp:GridView>
</div>
</form>
</body>
</html>

```

iv) Product Catalog Update

Provides administrators with an interface to interact with and update inventory line items.

catalog.aspx

```

<%@ Page Language="vb" AutoEventWireup="false" CodeBehind="catalog.aspx.vb"
Inherits="pvfc_website.catalog" %>

<!DOCTYPE html>

<html>

```

```

<head runat="server">
    <title>Admin Panel</title>
    <link rel="stylesheet" href="pvfcstyles.css">
</head>
<body>
    <form id="form1" runat="server">
        <div class="navbar"><a href="Default.aspx">Home</a></div>
        <div class="main-content container">
            <h2>Product Update Catalogue</h2>
            <table style="width: 100%; border-collapse: collapse; text-align: center; margin-
bottom: 20px;">
                <tr style="background-color: #f8f9fa; font-weight: bold; color: #2c3e50; border-
bottom: 2px solid #ddd;">
                    <th style="padding: 10px;">ID</th>
                    <th style="padding: 10px;">Description</th>
                    <th style="padding: 10px;">Finish</th>
                    <th style="padding: 10px;">Standard Price</th>
                    <th style="padding: 10px;">Action</th>
                </tr>
                <tr style="border-bottom: 1px solid #ddd;">
                    <td style="padding: 10px;"><asp:Label ID="lblId1" runat="server"
Text="1"></asp:Label></td>
                    <td style="padding: 10px;"><asp:TextBox ID="txtDesc1" runat="server"
Text="End Table" Width="90%"></asp:TextBox></td>
                    <td style="padding: 10px;"><asp:TextBox ID="txtFinish1" runat="server"
Text="Cherry" Width="90%"></asp:TextBox></td>

```

```

        <td style="padding: 10px;"><asp:TextBox ID="txtPrice1" runat="server"
Text="175.00" Width="80px"></asp:TextBox></td>

        <td style="padding: 10px;">

            <asp:Button ID="btnUpdate1" runat="server" Text="Update"
style="background-color: #3498db; color: white; border: none; padding: 5px 10px; border-
radius: 3px; cursor: pointer; margin-bottom: 5px;" />

        </td>

    </tr>

</table>

    <asp:Button ID="btnSaveChanges" runat="server" Text="Save All Changes"
style="float: right;" />

    <br style="clear: both;">

</div>

</form>

</body>

</html>

```

v) Payment Provision

Web form interface to collect and process user payment details securely.

payment.aspx

```

<%@ Page Language="vb" AutoEventWireup="false" CodeBehind="payment.aspx.vb"
Inherits="pvfc_website.payment" %>

<!DOCTYPE html>

<html>

<head runat="server">

    <title>Payment</title>

    <link rel="stylesheet" href="pvfcstyles.css">

```

```
</head>
<body>
  <form id="form1" runat="server">
    <div class="navbar"><a href="Default.aspx">Home</a></div>
    <div class="main-content container">
      <h2>Payment Provision</h2>
      <div style="border: 1px solid #ccc; padding: 10px; margin-bottom: 20px; text-align:
left;">
        <h3>Order Summary</h3>
        <ul><li>Computer Desk (Cherry) - 25,000</li></ul>
        <p><strong>Total: 25,000 PKR</strong></p>
      </div>
      <div style="text-align: left; display: inline-block; width: 100%; max-width: 400px;
padding: 20px; border: 1px solid #e0e0e0; border-radius: 8px;">
        <label>Payment Method:</label>
        <asp:DropDownList ID="ddlPaymentMethod" runat="server" style="width: 100%;
padding: 10px; border: 1px solid #ccc; border-radius: 5px; margin-bottom: 15px;">
          <asp:ListItem>Visa / Master Card</asp:ListItem>
          <asp:ListItem>Cash on Delivery</asp:ListItem>
        </asp:DropDownList>
        <label>Card Number:</label>
        <asp:TextBox ID="txtCardNum" runat="server" placeholder="xxxx-xxxx-xxxx-xxxx"
style="margin-bottom: 15px;"></asp:TextBox>
        <div style="display: flex; gap: 20px; margin-bottom: 20px;">
          <div style="flex: 1;"><label>Expiry (MM/YY):</label><asp:TextBox
ID="txtExpiry" runat="server" style="width: 100%;"></asp:TextBox</div>
```

```

        <div style="width: 80px;"><label>CVV:</label><asp:TextBox ID="txtCvv"
runat="server" TextMode="Password" style="width: 100%;"></asp:TextBox></div>

        </div>

        <asp:Button ID="btnPayNow" runat="server" Text="PAY NOW" style="width:
100%;" />

        </div>

    </div>

</form>

</body>

</html>

```

Problem 4: Search Mechanism & Database Connection

The code securely retrieves the connection string, executes a parameterized SQL query, and binds the resulting DataTable directly to the GridView.

productSearch.aspx.vb

Imports System.Data

Imports System.Data.SqlClient

Imports System.Configuration

Public Class productSearch

 Inherits System.Web.UI.Page

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

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

 Dim connString As String =
 ConfigurationManager.ConnectionStrings("PVFCConnString").ConnectionString

```
Using conn As New SqlConnection(connString)
```

```
Dim query As String = "SELECT Product_ID, Product_Description, Product_Finish,  
Standard_Price FROM PRODUCT_t WHERE Product_Description LIKE @SearchText"
```

```
Using cmd As New SqlCommand(query, conn)
```

```
cmd.Parameters.AddWithValue("@SearchText", "%" & searchText & "%")
```

```
Using sda As New SqlDataAdapter(cmd)
```

```
Dim dt As New DataTable()
```

```
sda.Fill(dt)
```

```
If dt.Rows.Count > 0 Then
```

```
gvProducts.DataSource = dt
```

```
gvProducts.DataBind()
```

```
lblMessage.Text = ""
```

```
Else
```

```
gvProducts.DataSource = Nothing
```

```
gvProducts.DataBind()
```

```
lblMessage.Text = "No products found."
```

```
End If
```

```
End Using
```

```
End Using
```

```
End Using
```

```
End Sub
```

```
Private Sub FilterByFinish(finish As String)

    Dim connString As String =
ConfigurationManager.ConnectionStrings("PVFCConnString").ConnectionString

    Using conn As New SqlConnection(connString)

        Dim query As String = "SELECT Product_Id, Product_Description, Product_Finish,
Standard_Price FROM PRODUCT_t WHERE Product_Finish = @Finish"

        Using cmd As New SqlCommand(query, conn)

            cmd.Parameters.AddWithValue("@Finish", finish)

            Using sda As New SqlDataAdapter(cmd)

                Dim dt As New DataTable()

                sda.Fill(dt)

                If dt.Rows.Count > 0 Then

                    gvProducts.DataSource = dt

                    gvProducts.DataBind()

                    lblMessage.Text = ""

                Else

                    gvProducts.DataSource = Nothing

                    gvProducts.DataBind()

                    lblMessage.Text = "No Products Found in " & finish

                End If

            End Using

        End Using

    End Using

End Sub
```

Protected Sub btnAsh_Click(sender As Object, e As EventArgs) Handles btnAsh.Click

 FilterByFinish("Natural Ash")

End Sub

Protected Sub btnWalnut_Click(sender As Object, e As EventArgs) Handles btnWalnut.Click

 FilterByFinish("Walnut")

End Sub

Protected Sub btnCherry_Click(sender As Object, e As EventArgs) Handles btnCherry.Click

 FilterByFinish("Cherry")

End Sub

End Class

Problem 5: System Test Cases

The following test cases verify the database search functionality against the actual Pine Valley Furniture dataset.

Test Case	Description	Input Data	Output
1	Exact Match	"Computer Desk"	GridView displays "Computer Desk"
2	Partial Match	"Desk"	Displays "Computer Desk", "Writers Desk", and "8-Drawer Desk"
3	Finish Category	Click "Walnut" Button	Displays "Computer Desk" (Walnut)
4	Invalid Product	"wood"	Label displays "No Products Found"; GridView is empty

5	Empty Search	Left Blank	GridView shows all products
---	--------------	------------	-----------------------------