

# IAD Lab 11

## Code

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# Cart.aspx

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

```
<!DOCTYPE html>
```

```
<html>
```

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

```
  <title>My Cart</title>
```

```
  <link rel="stylesheet" href="style.css" />
```

```
</head>
```

```
<body>
```

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

```
  <h2>My Cart</h2>
```

```
  <asp:GridView ID="gvCart" runat="server" AutoGenerateColumns="False"
  CssClass="cart-table">
```

```
    <Columns>
```

```
      <asp:BoundField DataField="Product_Description" HeaderText="Product" />
```

```
      <asp:BoundField DataField="Quantity" HeaderText="Quantity" />
```

```
      <asp:BoundField DataField="Price" HeaderText="Price" DataFormatString="{0:C}" />
```

```
      <asp:BoundField DataField="Total" HeaderText="Total" DataFormatString="{0:C}" />
```

```
    </Columns>
```

```
  </asp:GridView>
```

```
  <br />
```

```
  <asp:Label ID="lblGrandTotal" runat="server" Font-Bold="True"></asp:Label>
```

```
  <br /><br />
```

```
  <asp:Button
```

```
    ID="btnCheckout"
```

```
    runat="server"
```

```
    Text="Proceed to Checkout"
```

```
   PostBackUrl="Payment.aspx"
```

```
    CssClass="btn" />
```

```
  <hr />
```

```
  <h3>Reordering Suggestions</h3>
```

```
  <asp:Button
```

```
    ID="btnReorder"
```

```
        runat="server"
        Text="Show Reorder Suggestions"
        CssClass="btn"
        OnClick="btnReorder_Click" />

<br /><br />

<asp:BulletedList
    ID="blReorder"
    runat="server">
</asp:BulletedList>

</form>

</body>
</html>
```

## Cart.[aspx.vb](#)

```
Imports System.Collections.Generic
Imports System.Configuration
Imports System.Data
Imports System.Data.SqlClient
Imports System.Net
Imports Newtonsoft.Json
```

```
Partial Class Cart
```

```
    Inherits System.Web.UI.Page
```

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

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

```
        If Not IsPostBack Then
            LoadCart()
        End If
```

```
    End Sub
```

```
    Private Sub LoadCart()
```

```
If Session("Customer_Id") Is Nothing Then
    Response.Redirect("CustomerLogin.aspx")
    Return
End If
```

```
Dim customerId As Integer = Convert.ToInt32(Session("Customer_Id"))
```

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

```
    Dim query As String = "SELECT p.Product_Description, ol.Ordered_Quantity AS
Quantity, p.Standard_Price AS Price, (ol.Ordered_Quantity * p.Standard_Price) AS Total FROM
ORDER_t o INNER JOIN Order_line_t ol ON o.Order_Id = ol.Order_Id INNER JOIN
PRODUCT_t p ON ol.Product_Id = p.Product_Id WHERE o.Customer_Id = @CustomerId AND
o.Order_Id = (SELECT MAX(Order_Id) FROM ORDER_t WHERE Customer_Id =
@CustomerId)"
```

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

```
        cmd.Parameters.AddWithValue("@CustomerId", customerId)
```

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

```
        Using da As New SqlDataAdapter(cmd)
            da.Fill(dt)
        End Using
```

```
        gvCart.DataSource = dt
        gvCart.DataBind()
```

```
        Dim grandTotal As Decimal = 0
```

```
        For Each row As DataRow In dt.Rows
            grandTotal += Convert.ToDecimal(row("Total"))
        Next
```

```
        lblGrandTotal.Text = "Grand Total: " & grandTotal.ToString("C")
```

```
    End Using
```

```
End Using
```

```
End Sub
```

```
Protected Sub btnReorder_Click(sender As Object, e As EventArgs)
```

```
    If Session("Customer_Id") Is Nothing Then  
        Response.Redirect("CustomerLogin.aspx")  
        Exit Sub  
    End If
```

```
    Dim customerId As Integer = Convert.ToInt32(Session("Customer_Id"))
```

```
    Dim apiUrl As String = "http://Hamna.somee.com/publish/api/reorder/" & customerId
```

```
    Dim client As New WebClient()
```

```
    Dim json As String = client.DownloadString(apiUrl)
```

```
    Dim items As List(Of String) = JsonConvert.DeserializeObject(Of List(Of String))(json)
```

```
    blReorder.DataSource = items  
    blReorder.DataBind()
```

```
End Sub
```

```
End Class
```

## Search.aspx

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

```
<!DOCTYPE html>
```

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

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

```
    <title>Search Products - Pine Valley Furniture</title>
```

```
    <link rel="stylesheet" href="style.css" />
```

```
</head>
```

```
<body>
```

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

```
<header>
```

```
    <h1>Search Products</h1>
```

```
</header>
```

```
<nav>
```

```
<ul>
  <li><a href="index.aspx">Home</a></li>
  <li><a href="Cart.aspx">Cart</a></li>
</ul>
</nav>

<div class="container">

  <div style="margin-bottom:20px;">

    <asp:Label Text="Search Product:" runat="server" />

    <asp:TextBox
      ID="txtSearch"
      runat="server"
      style="padding:8px; border-radius:6px; border:1px solid #ccc;">
    </asp:TextBox>

    <asp:Button
      ID="btnSearch"
      runat="server"
      Text="Search"
      CssClass="btn"
      OnClick="btnSearch_Click" />

    <asp:Button
      ID="btnShowAll"
      runat="server"
      Text="Show All"
      CssClass="btn"
      OnClick="btnShowAll_Click" />

  </div>

  <asp:Label ID="lblMessage" runat="server"></asp:Label>

  <br /><br />

  <div class="product-grid">

    <asp:Repeater ID="rptProducts" runat="server"
      OnItemCommand="rptProducts_ItemCommand">

      <ItemTemplate>
```

```

<div class="product-card">

    <div class="image-box"></div>

    <h3><%# Eval("Product_Description") %></h3>

    <p>Finish: <%# Eval("Product_Finish") %></p>

    <p><strong>$ <%# Eval("Standard_Price") %></strong></p>

    <div style="margin-top:10px;">
        Quantity:

        <asp:TextBox
            ID="txtQty"
            runat="server"
            Width="50px"
            style="padding:5px; border-radius:6px; border:1px solid #ccc;">
        </asp:TextBox>
    </div>

    <asp:Button
        ID="btnAdd"
        runat="server"
        Text="Add To Cart"
        CssClass="btn"
        style="margin-top:10px; width:100%;"
        CommandName="AddToCart"
        CommandArgument='<%# Eval("Product_Id") %>' />

    <br /><br />
    <asp:Button
        ID="btnRecommend"
        runat="server"
        Text="Show Recommendations"
        CssClass="btn"
        style="width:100%;"
        CommandName="Recommend"
        CommandArgument='<%# Eval("Product_Id") %>' />

    <br /><br />]

    <asp:BulletedList

```

```
        ID="blRecommendations"
        runat="server">
    </asp:BulletedList>
</div>
</ItemTemplate>
</asp:Repeater>
</div>
</div>

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

## Search.[aspx.vb](#)

```
Imports System.Collections.Generic
Imports System.Configuration
Imports System.Data.SqlClient
Imports System.Net
Imports Newtonsoft.Json
```

```
Partial Class search
```

```
    Inherits System.Web.UI.Page
```

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

```
    Protected Sub btnSearch_Click(sender As Object, e As EventArgs)
```

```
        Dim con As New SqlConnection(connStr)
```

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

```
        Dim cmd As New SqlCommand(query, con)
```

```
        cmd.Parameters.AddWithValue("@search", "%" & txtSearch.Text & "%")
```

```
        con.Open()
```

```
        Dim dr As SqlDataReader = cmd.ExecuteReader()
```

```
        rptProducts.DataSource = dr
        rptProducts.DataBind()
```

```
con.Close()
```

```
End Sub
```

```
Protected Sub btnShowAll_Click(sender As Object, e As EventArgs)
```

```
    Dim con As New SqlConnection(connStr)
```

```
    Dim query As String = "SELECT Product_Id, Product_Description, Product_Finish,  
Standard_Price FROM PRODUCT_t"
```

```
    Dim cmd As New SqlCommand(query, con)
```

```
    con.Open()
```

```
    Dim dr As SqlDataReader = cmd.ExecuteReader()
```

```
    rptProducts.DataSource = dr  
    rptProducts.DataBind()
```

```
    con.Close()
```

```
End Sub
```

```
Protected Sub rptProducts_ItemCommand(source As Object, e As  
RepeaterCommandEventArgs)
```

```
    If e.CommandName = "AddToCart" Then
```

```
        If Session("Customer_Id") Is Nothing Then
```

```
            Response.Redirect("CustomerLogin.aspx")
```

```
            Exit Sub
```

```
        End If
```

```
        Dim customerId As Integer = Convert.ToInt32(Session("Customer_Id"))
```

```
        Dim productId As Integer = Convert.ToInt32(e.CommandArgument)
```

```
        Dim txtQty As TextBox = CType(e.Item.FindControl("txtQty"), TextBox)
```

```
        If txtQty.Text = "" Then
```

```

        lblMessage.Text = "Enter quantity."
        Exit Sub

    End If

    Dim quantity As Integer = Convert.ToInt32(txtQty.Text)

    Dim con As New SqlConnection(connStr)

    con.Open()

    Dim orderId As Integer = 0

    Dim checkOrderQuery As String = "SELECT TOP 1 Order_Id FROM ORDER_t WHERE
Customer_Id = @cid AND Order_Date = CAST(GETDATE() AS DATE)"

    Dim cmdCheckOrder As New SqlCommand(checkOrderQuery, con)

    cmdCheckOrder.Parameters.AddWithValue("@cid", customerId)

    Dim result = cmdCheckOrder.ExecuteScalar()

    If result Is Nothing Then

        Dim newIdQuery As String = "SELECT ISNULL(MAX(Order_Id),1000)+1 FROM
ORDER_t"

        Dim cmdNewId As New SqlCommand(newIdQuery, con)

        orderId = Convert.ToInt32(cmdNewId.ExecuteScalar())

        Dim insertOrderQuery As String = "INSERT INTO ORDER_t VALUES (@oid, @cid,
CAST(GETDATE() AS DATE))"

        Dim cmdInsertOrder As New SqlCommand(insertOrderQuery, con)

        cmdInsertOrder.Parameters.AddWithValue("@oid", orderId)
        cmdInsertOrder.Parameters.AddWithValue("@cid", customerId)

        cmdInsertOrder.ExecuteNonQuery()

    Else

```

```

        orderId = Convert.ToInt32(result)

    End If

    Dim checkLineQuery As String = "SELECT Ordered_Quantity FROM Order_line_t
WHERE Order_Id = @oid AND Product_Id = @pid"

    Dim cmdCheckLine As New SqlCommand(checkLineQuery, con)

    cmdCheckLine.Parameters.AddWithValue("@oid", orderId)
    cmdCheckLine.Parameters.AddWithValue("@pid", productId)

    Dim existingQty = cmdCheckLine.ExecuteScalar()

    If existingQty IsNot Nothing Then

        Dim newQty As Integer = Convert.ToInt32(existingQty) + quantity

        Dim updateQuery As String = "UPDATE Order_line_t SET Ordered_Quantity = @qty
WHERE Order_Id = @oid AND Product_Id = @pid"

        Dim cmdUpdate As New SqlCommand(updateQuery, con)

        cmdUpdate.Parameters.AddWithValue("@qty", newQty)
        cmdUpdate.Parameters.AddWithValue("@oid", orderId)
        cmdUpdate.Parameters.AddWithValue("@pid", productId)

        cmdUpdate.ExecuteNonQuery()

    Else

        Dim insertLineQuery As String = "INSERT INTO Order_line_t VALUES (@oid, @pid,
@qty)"

        Dim cmdInsertLine As New SqlCommand(insertLineQuery, con)

        cmdInsertLine.Parameters.AddWithValue("@oid", orderId)
        cmdInsertLine.Parameters.AddWithValue("@pid", productId)
        cmdInsertLine.Parameters.AddWithValue("@qty", quantity)

        cmdInsertLine.ExecuteNonQuery()

    End If

```

```

        con.Close()

        lblMessage.Text = "Product added to YOUR cart!"

    End If

    If e.CommandName = "Recommend" Then

        Dim productId As Integer = Convert.ToInt32(e.CommandArgument)

        Dim apiUrl As String = "http://Hamna.somee.com/publish/api/recommendations/" &
productId

        Dim client As New WebClient()

        Dim json As String = client.DownloadString(apiUrl)

        Dim recommendations As List(Of String) = JsonConvert.DeserializeObject(Of List(Of
String))(json)

        Dim bl As BulletedList = CType(e.Item.FindControl("blRecommendations"), BulletedList)

        bl.DataSource = recommendations
        bl.DataBind()

    End If

End Sub

End Class

```

## employee\_dashboard.aspx

```

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

```

```

<!DOCTYPE html>
<html>
<head runat="server">
    <title>Employee Dashboard</title>
    <link rel="stylesheet" href="style.css" />
</head>
<body>

```

```
<form id="form1" runat="server" defaultbutton="btnForecast">

  <header>
    <h1>Employee Dashboard</h1>
  </header>

  <nav>
    <ul>
      <li>
        <asp:HyperLink ID="hlUpdateCatalog" runat="server"
          NavigateUrl="update_catalog.aspx"
          Text="Update Product Catalog" />
      </li>
      <li>
        <asp:HyperLink ID="hlUpdateCustomer" runat="server"
          NavigateUrl="update_customer.aspx"
          Text="Update Customer" />
      </li>

      <li>
        <asp:HyperLink ID="hlSegmentation" runat="server"
          NavigateUrl="Segmentation.aspx"
          Text="Customer Segmentation" />
      </li>

      <li>
        <asp:Button ID="btnLogout" runat="server"
          Text="Logout"
          CssClass="btn"
          OnClick="btnLogout_Click" />
      </li>
    </ul>
  </nav>

  <div class="container">

    <h2>Welcome, Employee!</h2>

    <p>Select an option from the menu above to proceed.</p>

    <hr />
    <h3>Inventory Forecasting</h3>
  </div>
</form>
```

```

<asp:Label Text="Enter Primary Product ID:" runat="server" />

<asp:TextBox ID="txtProductId" runat="server"></asp:TextBox>

<asp:Button ID="btnForecast"
  runat="server"
  Text="Forecast Demand"
  CssClass="btn"
  OnClick="btnForecast_Click" />

<br /><br />
<asp:GridView ID="gvForecast"
  runat="server"
  CssClass="cart-table">
</asp:GridView>
</div>

</form>

</body>
</html>

```

## employee\_dashboard.[aspx.vb](#)

```

Imports Newtonsoft.Json
Imports System.Net
Imports System.Data

```

```

Partial Class employee_dashboard
  Inherits System.Web.UI.Page

```

```

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

```

```

    If Not IsPostBack Then
      If Session("Role") Is Nothing OrElse Session("Role").ToString() <> "Employee" Then
        Response.Redirect("EmployeeLogin.aspx")
      End If
    End If

```

```

  End Sub

```

```

  Protected Sub btnLogout_Click(sender As Object, e As EventArgs)
    Session.Clear()

```

```
Response.Redirect("LoginChoice.aspx")
End Sub
```

```
Protected Sub btnForecast_Click(sender As Object, e As EventArgs)
```

```
    Dim productId As Integer = Convert.ToInt32(txtProductId.Text)
    Dim apiUrl As String = "http://hamna.somee.com/publish/api/forecast/" & productId
    Dim client As New WebClient()
    Dim json As String = client.DownloadString(apiUrl)
    Dim dt As DataTable = JsonConvert.DeserializeObject(Of DataTable)(json)
    gvForecast.DataSource = dt
    gvForecast.DataBind()
```

```
End Sub
```

```
End Class
```

## Program.cs

```
using Microsoft.Data.SqlClient;
```

```
var builder = WebApplication.CreateBuilder(args);
```

```
builder.Services.AddCors(options =>
{
    options.AddDefaultPolicy(policy =>
    {
        policy.AllowAnyOrigin()
            .AllowAnyHeader()
            .AllowAnyMethod();
    });
});
```

```
var app = builder.Build();
```

```
app.UseCors();
app.UseHttpsRedirection();
```

```
app.MapGet("/api/recommendations/{productId}", (int productId, IConfiguration config) =>
{
    List<string> results = new List<string>();
    string connStr = config.GetConnectionString("PVFC")!;
```

```

using (SqlConnection con = new SqlConnection(connStr))
{
    con.Open();
    string query = @"SELECT DISTINCT p2.Product_Description
                    FROM Order_line_t ol1
                    JOIN Order_line_t ol2 ON ol1.Order_Id = ol2.Order_Id
                    JOIN PRODUCT_t p1 ON ol1.Product_Id = p1.Product_Id
                    JOIN PRODUCT_t p2 ON ol2.Product_Id = p2.Product_Id
                    WHERE ol1.Product_Id = @pid AND ol2.Product_Id <> @pid";

    SqlCommand cmd = new SqlCommand(query, con);
    cmd.Parameters.AddWithValue("@pid", productId);
    SqlDataReader reader = cmd.ExecuteReader();

    while (reader.Read())
    {
        results.Add(reader["Product_Description"]?.ToString() ?? "");
    }
}
return results;
});

app.MapGet("/api/reorder/{customerId}", (int customerId, IConfiguration config) =>
{
    List<string> result = new List<string>();
    string connStr = config.GetConnectionString("PVFC")!;

    using (SqlConnection con = new SqlConnection(connStr))
    {
        con.Open();
        string query = @"SELECT DISTINCT P.Product_Description
                        FROM ORDER_t O
                        JOIN Order_line_t OL ON O.Order_Id = OL.Order_Id
                        JOIN PRODUCT_t P ON P.Product_Id = OL.Product_Id
                        WHERE O.Customer_Id = @cid";

        SqlCommand cmd = new SqlCommand(query, con);
        cmd.Parameters.AddWithValue("@cid", customerId);
        SqlDataReader dr = cmd.ExecuteReader();

        while (dr.Read())
        {
            result.Add(dr["Product_Description"]?.ToString() ?? "");
        }
    }
}

```

```

    }
}
return result;
});

app.MapGet("/api/forecast/{productId}", (int productId, IConfiguration config) =>
{
    List<object> result = new List<object>();
    string connStr = config.GetConnectionString("PVFC");

    using (SqlConnection con = new SqlConnection(connStr))
    {
        con.Open();
        string query = @"SELECT TOP 5 p2.Product_Description, COUNT(*) AS Frequency
            FROM Order_line_t ol1
            JOIN Order_line_t ol2 ON ol1.Order_Id = ol2.Order_Id
            JOIN PRODUCT_t p1 ON ol1.Product_Id = p1.Product_Id
            JOIN PRODUCT_t p2 ON ol2.Product_Id = p2.Product_Id
            WHERE ol1.Product_Id = @pid AND ol2.Product_Id <> @pid
            GROUP BY p2.Product_Description
            ORDER BY Frequency DESC";

        SqlCommand cmd = new SqlCommand(query, con);
        cmd.Parameters.AddWithValue("@pid", productId);
        SqlDataReader dr = cmd.ExecuteReader();

        while (dr.Read())
        {
            result.Add(new
            {
                Product = dr["Product_Description"]?.ToString() ?? "",
                DemandScore = dr["Frequency"].ToString()
            });
        }
    }
    return result;
});

app.Run();

```