

In this lab we had to add customer segmentation analysis

We chose 6 categories:

- **Premium:** Customers who generate the highest total spending.
- **Frequent:** Customers who place orders very often (more than 3 orders).
- **Bulk:** Customers who purchase products in large quantities per order (over 15 units).
- **At risk:** Customers who have not placed an order for a long time (over 1 year).
- **New Customers:** Customers who just placed their first order.
- **Product Loyal :** Customers who repeatedly buy same product in multiple orders.

Only employee dashboard page changed and the rest pages were same as lab 06.

EmployeeDashboard:

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">

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

```

        </ul>
</nav>

    <div class="container">
        <h2>Welcome, Employee!</h2>
        <p>Select an option from the menu above to proceed.</p>
    </div>

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

```

.vb:

```

Imports System
Imports System.Web.UI

```

```

Partial Class employee_dashboard
    Inherits System.Web.UI.Page

```

```

    Protected Sub Page_Load(sender As Object, e As EventArgs) Handles Me.Load
        If Session("Role") Is Nothing OrElse Session("Role").ToString() <> "Employee" Then
            Response.Redirect("EmployeeLogin.aspx")
        End If
    End Sub

```

```

    Protected Sub btnLogout_Click(sender As Object, e As EventArgs)
        Session.Clear()
        Response.Redirect("LoginChoice.aspx")
    End Sub
End Class

```

Segmentation

Aspx

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

```

<!DOCTYPE html>
<html>
<head runat="server">
    <title>Customer Segmentation</title>
    <link rel="stylesheet" href="style.css" />
</head>
<body>
<form id="form1" runat="server">
<div class="segment-box">

    <h2>Customer Segmentation Analysis</h2>

```

```

<asp:DropDownList ID="ddlSegment" runat="server" CssClass="segment-dropdown">
  <asp:ListItem Text="Select Segment" Value="" />
  <asp:ListItem Text="Premium Customers" Value="premium" />
  <asp:ListItem Text="Frequent Customers" Value="frequent" />
  <asp:ListItem Text="Bulk Buyers" Value="bulk" />
  <asp:ListItem Text="At-Risk Customers" Value="atrisk" />
  <asp:ListItem Text="Loyal Customers" Value="loyal" />
  <asp:ListItem Text="New Customers" Value="new" />
  <asp:ListItem Text="Show All Segments" Value="all" />
</asp:DropDownList>

<asp:Button ID="btnShow" runat="server" Text="Show Segment"
  CssClass="segment-btn" OnClick="btnShow_Click" />

<br /><br />

<asp:Label ID="lblMsg" runat="server" ForeColor="Red" />

<asp:Panel ID="pnlSingleGrid" runat="server">
  <asp:GridView ID="GridView1" runat="server"
    CssClass="segment-grid" AutoGenerateColumns="True" />
</asp:Panel>

<asp:Panel ID="pnlAllSegments" runat="server" Visible="False" CssClass="all-segments-grid" />

</div>
</form>
</body>
</html>

```

.vb:

Imports System.Data

Imports System.Data.SqlClient

Imports System.Configuration

Partial Class Segmentation

Inherits System.Web.UI.Page

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

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

If Session("Role") Is Nothing OrElse Session("Role").ToString() <> "Employee" Then

Response.Redirect("EmployeeLogin.aspx")

End If

End Sub

Private Function GetSegmentQuery(segment As String) As String

Select Case segment

Case "premium"

Return "SELECT TOP 5 C.Customer_Id, C.Customer_Name, " &

"SUM(OL.Ordered_Quantity * P.Standard_Price) AS TotalSpent " &

"FROM CUSTOMER_t C " &

```
"JOIN ORDER_t O ON C.Customer_Id = O.Customer_Id " &
"JOIN Order_line_t OL ON O.Order_Id = OL.Order_Id " &
"JOIN PRODUCT_t P ON P.Product_Id = OL.Product_Id " &
"GROUP BY C.Customer_Id, C.Customer_Name ORDER BY TotalSpent DESC"
```

Case "frequent"

```
Return "SELECT TOP 5 C.Customer_Id, C.Customer_Name, " &
"COUNT(O.Order_Id) AS TotalOrders " &
"FROM CUSTOMER_t C " &
"JOIN ORDER_t O ON C.Customer_Id = O.Customer_Id " &
"GROUP BY C.Customer_Id, C.Customer_Name " &
"HAVING COUNT(O.Order_Id) > 3 ORDER BY TotalOrders DESC"
```

Case "bulk"

```
Return "SELECT TOP 5 C.Customer_Id, C.Customer_Name, " &
"SUM(OL.Ordered_Quantity) AS TotalUnits " &
"FROM CUSTOMER_t C " &
"JOIN ORDER_t O ON C.Customer_Id = O.Customer_Id " &
"JOIN Order_line_t OL ON O.Order_Id = OL.Order_Id " &
"GROUP BY C.Customer_Id, C.Customer_Name " &
"HAVING SUM(OL.Ordered_Quantity) > 15 ORDER BY TotalUnits DESC"
```

Case "atrisk"

```
Return "SELECT TOP 5 C.Customer_Id, C.Customer_Name, " &
"MAX(O.Order_Date) AS LastOrderDate " &
"FROM CUSTOMER_t C " &
"JOIN ORDER_t O ON C.Customer_Id = O.Customer_Id " &
"GROUP BY C.Customer_Id, C.Customer_Name " &
"HAVING MAX(O.Order_Date) < DATEADD(YEAR, -1, GETDATE())"
```

Case "loyal"

```
Return "SELECT TOP 5 C.Customer_Id, C.Customer_Name, " &
"COUNT(DISTINCT O.Order_Id) AS OrderCount " &
"FROM CUSTOMER_t C " &
"JOIN ORDER_t O ON C.Customer_Id = O.Customer_Id " &
"GROUP BY C.Customer_Id, C.Customer_Name " &
"HAVING COUNT(DISTINCT O.Order_Id) >= 2 ORDER BY OrderCount DESC"
```

Case "new"

```
Return "SELECT TOP 5 C.Customer_Id, C.Customer_Name, " &
"COUNT(O.Order_Id) AS TotalOrders " &
"FROM CUSTOMER_t C " &
"JOIN ORDER_t O ON C.Customer_Id = O.Customer_Id " &
"GROUP BY C.Customer_Id, C.Customer_Name " &
"HAVING MIN(O.Order_Date) >= DATEADD(DAY, -60, GETDATE())"
```

End Select

Return ""

End Function

Private Function GetSegmentLabel(segment As String) As String

Select Case segment

Case "premium" : Return "Premium Customers"

Case "frequent" : Return "Frequent Customers"

Case "bulk" : Return "Bulk Buyers"

```

        Case "atrisk" : Return "At-Risk Customers"
        Case "loyal" : Return "Loyal Customers"
        Case "new" : Return "New Customers"
    End Select
    Return segment
End Function

```

```

Private Function GetSegmentCssClass(segment As String) As String
    Select Case segment
        Case "premium" : Return "seg-premium"
        Case "frequent" : Return "seg-frequent"
        Case "bulk" : Return "seg-bulk"
        Case "atrisk" : Return "seg-atrisk"
        Case "loyal" : Return "seg-loyal"
        Case "new" : Return "seg-new"
    End Select
    Return ""
End Function

```

```

Protected Sub btnShow_Click(sender As Object, e As EventArgs) Handles btnShow.Click

```

```

    Dim selected As String = ddlSegment.SelectedValue
    lblMsg.Text = ""
    pnlAllSegments.Visible = False
    GridView1.DataSource = Nothing
    GridView1.DataBind()

```

```

    If selected = "" Then Exit Sub

```

```

    If selected = "all" Then
        pnlAllSegments.Visible = True
        pnlSingleGrid.Visible = False
        pnlAllSegments.Controls.Clear()
    End If

```

```

    Dim segments() As String = {"premium", "frequent", "bulk", "atrisk", "loyal", "new"}

```

```

    Using con As New SqlConnection(connStr)
        con.Open()
        For Each seg In segments
            Dim query As String = GetSegmentQuery(seg)
            If query = "" Then Continue For

            Dim dt As New DataTable()
            Using cmd As New SqlCommand(query, con)
                Dim da As New SqlDataAdapter(cmd)
                da.Fill(dt)
            End Using

```

```

            Dim openCard As New Literal()
            openCard.Text = "<div class='seg-card ' & GetSegmentCssClass(seg) & '>"
            pnlAllSegments.Controls.Add(openCard)

```

```

            Dim lbl As New Label()
            lbl.CssClass = "segment-section-title"

```

```

lbl.Text = GetSegmentLabel(seg)
pnlAllSegments.Controls.Add(lbl)

If dt.Rows.Count = 0 Then
    Dim noData As New Label()
    noData.CssClass = "segment-no-data"
    noData.Text = "No customers found in this segment."
    pnlAllSegments.Controls.Add(noData)
Else
    Dim gv As New GridView()
    gv.CssClass = "segment-grid"
    gv.AutoGenerateColumns = True
    gv.DataSource = dt
    gv.DataBind()
    pnlAllSegments.Controls.Add(gv)
End If

Dim closeCard As New Literal()
closeCard.Text = "</div>"
pnlAllSegments.Controls.Add(closeCard)

Next
End Using

Return
End If

pnlSingleGrid.Visible = True

Dim singleQuery As String = GetSegmentQuery(selected)
If singleQuery = "" Then Exit Sub

Using con As New SqlConnection(connStr)
    Using cmd As New SqlCommand(singleQuery, con)
        Dim da As New SqlDataAdapter(cmd)
        Dim dt As New DataTable()
        da.Fill(dt)

        If dt.Rows.Count = 0 Then
            GridView1.DataSource = Nothing
            GridView1.DataBind()
            lblMsg.Text = "No customers found in this segment."
            Return
        End If

        GridView1.DataSource = dt
        GridView1.DataBind()
    End Using
End Using

End Sub

End Class

```

