

We first made db for this in which we made following tables:

1. Users
2. Subjects
3. Questions
4. QuestionOptions
5. Quiz
6. QuizQuestions
7. QuizAttempts
8. Answers

There are following 3 types of users:

1. Teacher: They can add question and create quizzes.
2. Student: They can attempt quizzes and view their results and each quiz can only be attempted once.
3. Admin: They can schedule quizzes.

We have controlled access using Session("Role").

Relationships Overview

A User (Teacher) creates multiple Questions and Quizzes

A Subject contains multiple Questions and Quizzes

A Question has multiple Options

A Quiz contains multiple Questions (via QuizQuestions)

A Student (User) attempts a Quiz

Each Attempt contains multiple Answers

Login:

Aspx:

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

```
<!DOCTYPE html>
<html xmlns="http://www.w3.org/1999/xhtml">
<head runat="server">
  <title>Login</title>
  <link rel="stylesheet" type="text/css" href="StyleSheet.css" />
</head>
<body>
  <form id="form1" runat="server">
    <div class="main-container">
      <div class="sidebar">
        <div class="logo">QuizApp</div>
        <div class="nav-item active">Login</div>
      </div>

      <div class="content-area">
        <div class="card">
          <h2>Login</h2>

          <div class="input-group">
            <label>Email:</label>
            <asp:TextBox ID="txtEmail" runat="server" CssClass="form-control"></asp:TextBox>
          </div>

          <div class="input-group">
            <label>Password:</label>
            <asp:TextBox ID="txtPassword" runat="server" TextMode="Password"
            CssClass="form-control"></asp:TextBox>
          </div>

          <asp:Button ID="btnLogin" runat="server" Text="Login" OnClick="btnLogin_Click"
            CssClass="btn-primary" />

          <asp:Label ID="lblMsg" runat="server" CssClass="message"></asp:Label>
        </div>
      </div>
    </form>
  </body>
</html>
```

.vb:

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

```
Imports System.Configuration
```

```
Partial Class Login
```

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

```

Protected Sub btnLogin_Click(sender As Object, e As EventArgs)
    Using con As New SqlConnection(ConfigurationManager.ConnectionStrings("QuizDB").ConnectionString)
        Dim query As String = "SELECT UserID, Role " &
            "FROM Users " &
            "WHERE Email=@e AND Password=@p"

        Using cmd As New SqlCommand(query, con)
            cmd.Parameters.AddWithValue("@e", txtEmail.Text.Trim())
            cmd.Parameters.AddWithValue("@p", txtPassword.Text.Trim())

            con.Open()

            Using dr As SqlDataReader = cmd.ExecuteReader()
                If dr.Read() Then
                    Session("UserID") = dr("UserID")
                    Dim userRole As String = dr("Role").ToString()
                    Session("Role") = userRole

                    Select Case userRole
                        Case "Teacher"
                            Response.Redirect("TeacherDashboard.aspx")
                        Case "Student"
                            Response.Redirect("StudentDashboard.aspx")
                        Case "Admin"
                            Response.Redirect("AdminDashboard.aspx")
                        Case Else
                            lblMsg.Text = "Role not recognized."
                    End Select
                Else
                    lblMsg.Text = "Invalid email or password."
                End If
            End Using
        End Using
    End Using
End Sub
End Class

```

Teacher Dashboard: Aspx:

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

<!DOCTYPE html>
<html xmlns="http://www.w3.org/1999/xhtml">
<head runat="server">
  <title>Teacher Dashboard</title>
  <link rel="stylesheet" type="text/css" href="StyleSheet.css" />
</head>
<body>
  <form id="form1" runat="server">
    <div class="main-container">
      <div class="sidebar">
        <div class="logo">QuizApp</div>
        <div class="nav-item active">Dashboard</div>
      </div>

      <div class="content-area">
        <div class="card">
          <h1>Teacher Dashboard</h1>
          <asp:Label ID="lblWelcome" runat="server" CssClass="welcome-text"></asp:Label>

          <hr />

          <div class="button-group">
            <asp:Button ID="btnAddQuestion" runat="server" Text="Add Questions"
              OnClick="btnAddQuestion_Click" CssClass="btn-primary" />

            <asp:Button ID="btnCreateQuiz" runat="server" Text="Create Quiz"
              OnClick="btnCreateQuiz_Click" CssClass="btn-primary" />

            <asp:Button ID="btnLogout" runat="server" Text="Logout"
              OnClick="btnLogout_Click" CssClass="btn-secondary" />
          </div>
        </div>
      </div>
    </div>
  </form>
</body>
</html>
```

.vb:

```
Partial Class TeacherDashboard
  Inherits System.Web.UI.Page
```

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

```
  If Session("Role") <> "Teacher" Then
    Response.Redirect("Login.aspx")
```

```
End If
```

```
If Not IsPostBack Then
```

```
    lblWelcome.Text = "Welcome Teacher ID: " & Session("UserID")
```

```
End If
```

```
End Sub
```

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

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

```
End Sub
```

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

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

```
End Sub
```

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

```
    Session.Abandon()
```

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

```
End Sub
```

```
End Class
```

Add_Questions:

Aspx:

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

```
<!DOCTYPE html>
```

```
<html>
```

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

```
    <title>Teacher - Add Questions</title>
```

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

```
    <style>
```

```
        .form-group { margin-bottom: 15px; }
```

```
        label { display: inline-block; width: 130px; font-weight: bold; }
```

```
        .success-msg { color: #28a745; font-weight: bold; padding: 10px; background: #e9f7ef; border-radius: 4px;  
display: block; margin-bottom: 15px; }
```

```
        .error-msg { color: #dc3545; font-weight: bold; padding: 10px; background: #fdf2f2; border-radius: 4px; display:  
block; margin-bottom: 15px; }
```

```
        fieldset { border: 1px solid #ddd; padding: 15px; border-radius: 8px; margin: 10px 0; }
```

```
    </style>
```

```
</head>
```

```
<body>
```

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

```
        <div class="main-container">
```

```
            <div class="sidebar">
```

```
                <div class="logo">QuizApp</div>
```

```
                <div class="nav-item active">Add Questions</div>
```

```
            </div>
```

```
            <div class="content-area">
```

```
                <div class="card">
```

```

<h2>Create New Question</h2>
<hr />
<asp:Label ID="lblMsg" runat="server" Visible="false"></asp:Label>

<div class="form-group">
  <label>Subject:</label>
  <asp:DropDownList ID="ddlSubject" runat="server"></asp:DropDownList>
</div>

<div class="form-group">
  <label>Question Type:</label>
  <asp:DropDownList ID="ddlType" runat="server" AutoPostBack="true"
OnSelectedIndexChanged="ddlType_SelectedIndexChanged">
    <asp:ListItem Value="MCQ">Multiple Choice (4 Options)</asp:ListItem>
    <asp:ListItem Value="TF">True / False</asp:ListItem>
  </asp:DropDownList>
</div>

<div class="form-group">
  <label>Difficulty:</label>
  <asp:DropDownList ID="ddlDifficulty" runat="server">
    <asp:ListItem Value="1">Easy</asp:ListItem>
    <asp:ListItem Value="2">Medium</asp:ListItem>
    <asp:ListItem Value="3">Hard</asp:ListItem>
  </asp:DropDownList>
</div>

<div class="form-group">
  <label>Question:</label><br />
  <asp:TextBox ID="txtQ" runat="server" TextMode="MultiLine" Rows="3" Width="100%"
placeholder="Enter your question here..."></asp:TextBox>
</div>

<fieldset>
  <legend>Options</legend>
  <div class="form-group">
    <label id="lblA" runat="server">Option A:</label>
    <asp:TextBox ID="txtA" runat="server" Width="300px"></asp:TextBox>
  </div>
  <div class="form-group">
    <label id="lblB" runat="server">Option B:</label>
    <asp:TextBox ID="txtB" runat="server" Width="300px"></asp:TextBox>
  </div>

  <asp:Panel ID="pnlExtraOptions" runat="server">
    <div class="form-group">
      <label>Option C:</label>
      <asp:TextBox ID="txtC" runat="server" Width="300px"></asp:TextBox>
    </div>
    <div class="form-group">
      <label>Option D:</label>
      <asp:TextBox ID="txtD" runat="server" Width="300px"></asp:TextBox>
    </div>
  </asp:Panel>

```

```

    </fieldset>

    <div class="form-group">
        <label>Correct Answer:</label>
        <asp:DropDownList ID="ddlCorrect" runat="server">
            <asp:ListItem Value="A">A</asp:ListItem>
            <asp:ListItem Value="B">B</asp:ListItem>
            <asp:ListItem Value="C" ID="liC">C</asp:ListItem>
            <asp:ListItem Value="D" ID="liD">D</asp:ListItem>
        </asp:DropDownList>
    </div>

    <asp:Button ID="btnAdd" runat="server" Text="Save Question" OnClick="btnAdd_Click"
    CssClass="btn-primary" />
    </div>
</div>
</form>
</body>
</html>

```

Vb:

```

Imports System.Data
Imports System.Data.SqlClient
Imports System.Web.Configuration

```

Partial Class Teacher_AddQuestions

Inherits System.Web.UI.Page

```
Dim connStr As String = WebConfigurationManager.ConnectionStrings("QuizDB").ConnectionString
```

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

```
    If Session("UserID") Is Nothing Then Response.Redirect("Login.aspx")
```

```
    If Not IsPostBack Then
```

```
        LoadSubjects()
```

```
    End If
```

```
End Sub
```

```
Sub LoadSubjects()
```

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

```
        Dim cmd As New SqlCommand("SELECT SubjectID, SubjectName FROM Subjects", con)
```

```
        con.Open()
```

```
        ddlSubject.DataSource = cmd.ExecuteReader()
```

```
        ddlSubject.DataTextField = "SubjectName"
```

```
        ddlSubject.DataValueField = "SubjectID"
```

```
        ddlSubject.DataBind()
```

```
    End Using
```

```
End Sub
```

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

```
    lblMsg.Visible = False
```

```
    If ddlType.SelectedValue = "TF" Then
```

```

pnlExtraOptions.Visible = False
liC.Enabled = False
liD.Enabled = False
txtA.Text = "True"
txtB.Text = "False"
lblA.InnerText = "Option A (True):"
lblB.InnerText = "Option B (False):"
Else
pnlExtraOptions.Visible = True
liC.Enabled = True
liD.Enabled = True
txtA.Text = ""
txtB.Text = ""
lblA.InnerText = "Option A:"
lblB.InnerText = "Option B:"
End If
End Sub

Protected Sub btnAdd_Click(sender As Object, e As EventArgs)
Try
Using con As New SqlConnection(connStr)
con.Open()

Dim sqlQ As String = "INSERT INTO Questions (SubjectID, TeacherID, QuestionText, DifficultyLevel)
VALUES (@sid, @tid, @q, @diff); SELECT SCOPE_IDENTITY();"
Dim qid As Integer

Using cmd As New SqlCommand(sqlQ, con)
cmd.Parameters.AddWithValue("@sid", ddlSubject.SelectedValue)
cmd.Parameters.AddWithValue("@tid", Session("UserID"))
cmd.Parameters.AddWithValue("@q", txtQ.Text.Trim())
cmd.Parameters.AddWithValue("@diff", ddlDifficulty.SelectedValue)
qid = Convert.ToInt32(cmd.ExecuteScalar())
End Using

InsertOption(con, qid, txtA.Text.Trim(), ddlCorrect.SelectedValue = "A")
InsertOption(con, qid, txtB.Text.Trim(), ddlCorrect.SelectedValue = "B")

If ddlType.SelectedValue = "MCQ" Then
InsertOption(con, qid, txtC.Text.Trim(), ddlCorrect.SelectedValue = "C")
InsertOption(con, qid, txtD.Text.Trim(), ddlCorrect.SelectedValue = "D")
End If
End Using

lblMsg.Text = "Question added successfully!"
lblMsg.CssClass = "success-msg"
lblMsg.Visible = True
ClearFields()

Catch ex As Exception

lblMsg.Text = "Error: " & ex.Message

```

```

        lblMsg.CssClass = "error-msg"
        lblMsg.Visible = True
    End Try
End Sub

Sub InsertOption(con As SqlConnection, qid As Integer, text As String, isCorrect As Boolean)
    Dim sqlOpt As String = "INSERT INTO QuestionOptions (QuestionID, OptionText, IsCorrect) VALUES (@qid,
@text, @correct)"
    Using cmd As New SqlCommand(sqlOpt, con)
        cmd.Parameters.AddWithValue("@qid", qid)
        cmd.Parameters.AddWithValue("@text", text)
        cmd.Parameters.AddWithValue("@correct", If(isCorrect, 1, 0))
        cmd.ExecuteNonQuery()
    End Using
End Sub

Sub ClearFields()
    txtQ.Text = ""
    If ddlType.SelectedValue = "MCQ" Then
        txtA.Text = ""
        txtB.Text = ""
    End If
    txtC.Text = ""
    txtD.Text = ""
End Sub
End Class

```

Teacher_CreateQuiz:

Aspx:

```

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

```

```

<!DOCTYPE html>
<html xmlns="http://www.w3.org/1999/xhtml">
<head runat="server">
    <title>Create Quiz</title>
    <link rel="stylesheet" type="text/css" href="StyleSheet.css" />
</head>
<body>
    <form id="form1" runat="server">
        <div class="main-container">

            <div class="sidebar">
                <div class="logo">QuizApp</div>
                <div class="nav-item active">Create Quiz</div>
            </div>

            <div class="content-area">
                <div class="card">

```

```

<h2>Create Quiz</h2>

<div class="input-group">
  <label>Subject:</label>
  <asp:DropDownList ID="ddlSubject" runat="server" AutoPostBack="true"
    OnSelectedIndexChanged="ddlSubject_SelectedIndexChanged" CssClass="form-control">
  </asp:DropDownList>
</div>

<div class="input-group">
  <label>Title:</label>
  <asp:TextBox ID="txtTitle" runat="server" CssClass="form-control"></asp:TextBox>
</div>

<div class="input-group">
  <label>Time (minutes):</label>
  <asp:TextBox ID="txtTime" runat="server" CssClass="form-control"
  TextMode="Number"></asp:TextBox>
</div>

<div class="question-selection">
  <label>Select Questions:</label>
  <div class="scroll-box">
    <asp:CheckBoxList ID="cbIQuestions" runat="server" CssClass="checkbox-list">
    </asp:CheckBoxList>
  </div>
</div>

<br />
<asp:Button ID="btnCreate" runat="server" Text="Create Quiz"
  OnClick="btnCreate_Click" CssClass="btn-primary" />

<br /><br />
<asp:Label ID="lblMsg" runat="server" CssClass="message"></asp:Label>
</div>
</div>
</form>
</body>
</html>

```

Vb:

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

```
Imports System.Configuration
```

```
Partial Class Teacher_CreateQuiz
```

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

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

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

```
    If Session("UserID") Is Nothing OrElse Session("Role").ToString() <> "Teacher" Then
```

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

```
    End If
```

```
If Not IsPostBack Then
    LoadSubjects()
End If
End Sub
```

```
Sub LoadSubjects()
    Using con As New SqlConnection(connStr)
        Dim cmd As New SqlCommand("SELECT SubjectID, SubjectName FROM Subjects", con)
        con.Open()
        ddlSubject.DataSource = cmd.ExecuteReader()
        ddlSubject.DataTextField = "SubjectName"
        ddlSubject.DataValueField = "SubjectID"
        ddlSubject.DataBind()

        ddlSubject.Items.Insert(0, New ListItem("-- Select Subject --", "0"))
    End Using
End Sub
```

```
Protected Sub ddlSubject_SelectedIndexChanged(sender As Object, e As EventArgs) Handles
ddlSubject.SelectedIndexChanged
    Using con As New SqlConnection(connStr)

        Dim sql As String = "SELECT QuestionID, QuestionText FROM Questions WHERE SubjectID=@sid"
        Dim cmd As New SqlCommand(sql, con)
        cmd.Parameters.AddWithValue("@sid", ddlSubject.SelectedValue)

        con.Open()
        cbIQuestions.DataSource = cmd.ExecuteReader()
        cbIQuestions.DataTextField = "QuestionText"
        cbIQuestions.DataValueField = "QuestionID"
        cbIQuestions.DataBind()
    End Using
End Sub
```

```
Protected Sub btnCreate_Click(sender As Object, e As EventArgs)
    Dim quizId As Integer
    Dim selectedCount As Integer = 0

    For Each item As ListItem In cbIQuestions.Items
        If item.Selected Then selectedCount += 1
    Next

    If selectedCount = 0 Then
        lblMsg.Text = "Please select at least one question."
        lblMsg.ForeColor = Drawing.Color.Red
        Return
    End If

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

        Dim sqlQuiz As String = "INSERT INTO Quiz " &
```

```
"(SubjectID, TeacherID, Title, TotalQuestions, TotalTime, RandomizeQuestions, ShuffleOptions) " &  
"VALUES (@sid, @tid, @title, @totalQ, @time, 1, 1); " &  
"SELECT SCOPE_IDENTITY();"
```

```
Dim cmd As New SqlCommand(sqlQuiz, con)  
cmd.Parameters.AddWithValue("@sid", ddlSubject.SelectedValue)  
cmd.Parameters.AddWithValue("@tid", Session("UserID"))  
cmd.Parameters.AddWithValue("@title", txtTitle.Text)  
cmd.Parameters.AddWithValue("@totalQ", selectedCount)  
cmd.Parameters.AddWithValue("@time", txtTime.Text)
```

```
quizId = Convert.ToInt32(cmd.ExecuteScalar())
```

```
Dim order As Integer = 1
```

```
For Each item As ListItem In cblQuestions.Items
```

```
    If item.Selected Then
```

```
        Dim sqlMapping As String = "INSERT INTO QuizQuestions (QuizID, QuestionID, QuestionOrder) " &  
            "VALUES (@qid, @questionId, @ord)"
```

```
        Using qCmd As New SqlCommand(sqlMapping, con)
```

```
            qCmd.Parameters.AddWithValue("@qid", quizId)
```

```
            qCmd.Parameters.AddWithValue("@questionId", item.Value)
```

```
            qCmd.Parameters.AddWithValue("@ord", order)
```

```
            qCmd.ExecuteNonQuery()
```

```
        End Using
```

```
        order += 1
```

```
    End If
```

```
Next
```

```
End Using
```

```
lblMsg.Text = "Quiz Created Successfully!"
```

```
lblMsg.ForeColor = Drawing.Color.Green
```

```
End Sub
```

```
End Class
```

Student Dashboard:

Aspx:

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

```
<!DOCTYPE html>
<html>
<head runat="server">
<title>Student Dashboard</title>
<link rel="stylesheet" href="StyleSheet.css" />
</head>

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

<div class="main-container">

    <div class="sidebar">
        <div class="logo">QuizApp</div>
        <div class="nav-item active">Dashboard</div>
    </div>

    <div class="content-area">

        <div class="card">

            <h1>Student Dashboard</h1>

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

            <hr />

            <h3>Available Subjects</h3>

            <asp:GridView ID="gvSubjects" runat="server" AutoGenerateColumns="False" CssClass="grid-view">
                <Columns>
                    <asp:BoundField DataField="SubjectName" HeaderText="Subject" />
                </Columns>
            </asp:GridView>

            <br />

            <h3>Available Quizzes</h3>

            <asp:Label ID="lblNoQuiz" runat="server" ForeColor="Gray" Font-Italic="True"></asp:Label>

            <asp:GridView ID="gvQuizzes" runat="server" AutoGenerateColumns="False"
                OnRowCommand="gvQuizzes_RowCommand"
                OnRowDataBound="gvQuizzes_RowDataBound"
                CssClass="grid-view">

                <Columns>
```

```

<asp:BoundField DataField="SubjectName" HeaderText="Subject" />
<asp:BoundField DataField="Title" HeaderText="Quiz Title" />
<asp:BoundField DataField="TotalQuestions" HeaderText="Questions" />
<asp:BoundField DataField="TotalTime" HeaderText="Time (min)" />

<asp:TemplateField HeaderText="Schedule">
  <ItemTemplate>

    <b>From:</b>
    <%# If(IsDBNull(Eval("StartTime")), "Not Scheduled",
      Convert.ToDateTime(Eval("StartTime")).ToString("dd MMM hh:mm tt")) %>

    <br />

    <b>To:</b>
    <%# If(IsDBNull(Eval("EndTime")), "Not Scheduled",
      Convert.ToDateTime(Eval("EndTime")).ToString("dd MMM hh:mm tt")) %>

  </ItemTemplate>
</asp:TemplateField>

<asp:TemplateField HeaderText="Status">
  <ItemTemplate>
    <asp:Label ID="lblStatus" runat="server"></asp:Label>
  </ItemTemplate>
</asp:TemplateField>

<asp:TemplateField>
  <ItemTemplate>
    <asp:Button ID="btnAttempt" runat="server"
      Text="Attempt"
      CommandName="AttemptQuiz"
      CommandArgument=<%# Eval("QuizID") %> />
  </ItemTemplate>
</asp:TemplateField>

</Columns>

</asp:GridView>

<br />

<asp:Button ID="btnViewResults" runat="server"
  Text="View My Results"
  OnClick="btnViewResults_Click"
  CssClass="btn-primary" />

<br /><br />

<asp:Button ID="btnLogout" runat="server"
  Text="Logout"
  OnClick="btnLogout_Click"
  CssClass="btn-primary" />

```

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

.vb:

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

Partial Class StudentDashboard
    Inherits System.Web.UI.Page

    Dim con As New SqlConnection(ConfigurationManager.ConnectionStrings("QuizDB").ConnectionString)

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

        If Session("Role") <> "Student" Then
            Response.Redirect("Login.aspx")
        End If

        If Not IsPostBack Then
            lblWelcome.Text = "Welcome Student ID: " & Session("UserID")
            LoadSubjects()
            LoadQuizzes()
        End If

    End Sub

    Private Sub LoadSubjects()

        Dim cmd As New SqlCommand("SELECT SubjectID, SubjectName FROM Subjects", con)
        Dim da As New SqlDataAdapter(cmd)
        Dim dt As New DataTable()

        da.Fill(dt)

        gvSubjects.DataSource = dt
        gvSubjects.DataBind()

    End Sub

    Private Sub LoadQuizzes()

        Dim query As String =
            "SELECT q.QuizID, q.Title, q.TotalQuestions, q.TotalTime, " &
            "q.StartTime, q.EndTime, s.SubjectName " &
```

```
"FROM Quiz q " &  
"INNER JOIN Subjects s ON q.SubjectID = s.SubjectID " &  
"WHERE q.QuizID NOT IN (SELECT QuizID FROM QuizAttempts WHERE StudentID = @SID)"
```

```
Dim cmd As New SqlCommand(query, con)  
cmd.Parameters.AddWithValue("@SID", Session("UserID"))
```

```
Dim da As New SqlDataAdapter(cmd)  
Dim dt As New DataTable()
```

```
da.Fill(dt)
```

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

```
lblNoQuiz.Text = If(dt.Rows.Count = 0, "No quizzes available.", "")
```

```
End Sub
```

```
Protected Sub gvQuizzes_RowDataBound(sender As Object, e As GridViewRowEventArgs) Handles  
gvQuizzes.RowDataBound
```

```
If e.Row.RowType = DataControlRowType.DataRow Then
```

```
Dim btn As Button = CType(e.Row.FindControl("btnAttempt"), Button)  
Dim lbl As Label = CType(e.Row.FindControl("lblStatus"), Label)
```

```
Dim startObj = DataBinder.Eval(e.Row.DataItem, "StartTime")  
Dim endObj = DataBinder.Eval(e.Row.DataItem, "EndTime")
```

```
If IsDBNull(startObj) Or IsDBNull(endObj) Then
```

```
    btn.Enabled = False  
    btn.Text = "Not Scheduled"  
    lbl.Text = "Pending"  
    Return
```

```
End If
```

```
Dim startTime As DateTime = Convert.ToDateTime(startObj)  
Dim endTime As DateTime = Convert.ToDateTime(endObj)
```

```
If DateTime.Now < startTime Then
```

```
    btn.Enabled = False  
    btn.Text = "Starts Soon"  
    lbl.Text = "Upcoming"
```

```
Elseif DateTime.Now > endTime Then
```

```
    btn.Enabled = False  
    btn.Text = "Expired"  
    lbl.Text = "Closed"
```

```
Else
```

```
    btn.Enabled = True  
    btn.Text = "Attempt"  
    lbl.Text = "Active"
```

```

        End If

    End If

End Sub

Protected Sub gvQuizzes_RowCommand(sender As Object, e As GridViewCommandEventArgs)

    If e.CommandName = "AttemptQuiz" Then

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

        Session("QuizID") = quizID

        Response.Redirect("Student_TakeQuiz.aspx?QuizID=" & quizID)

    End If

End Sub

Protected Sub btnViewResults_Click(sender As Object, e As EventArgs)
    Response.Redirect("Student_Results.aspx")
End Sub

Protected Sub btnLogout_Click(sender As Object, e As EventArgs)
    Session.Abandon()
    Response.Redirect("Login.aspx")
End Sub

End Class

```

Student_TakeQuiz:

Aspx:

```

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

```

```

<!DOCTYPE html>
<html>
<head runat="server">
    <title>Take Quiz</title>
    <link rel="stylesheet" href="StyleSheet.css" />
</head>

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

<div class="main-container">

    <div class="sidebar">
        <div class="logo">QuizApp</div>
        <div class="nav-item active">Take Quiz</div>

```

```

</div>

<div class="content-area">
  <div class="card">

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

    <br /><br />

    <asp:RadioButtonList ID="rblOptions" runat="server"></asp:RadioButtonList>

    <br />

    <asp:Button ID="btnNext" runat="server" Text="Next"
      OnClick="btnNext_Click" CssClass="btn-primary" />

    <asp:Button ID="btnSubmit" runat="server" Text="Submit Quiz"
      OnClick="btnSubmit_Click" CssClass="btn-primary" />

  </div>
</div>

</div>

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

```

Vb:

Imports System.Data

Imports System.Data.SqlClient

Imports System.Configuration

Partial Class Student_TakeQuiz

Inherits System.Web.UI.Page

Dim con As New SqlConnection(ConfigurationManager.ConnectionStrings("QuizDB").ConnectionString)

Private Property QuestionIndex As Integer

Get

If Session("qIndex") Is Nothing Then Return 0

Return Convert.ToInt32(Session("qIndex"))

End Get

Set(value As Integer)

Session("qIndex") = value

End Set

End Property

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

If Session("Role") Is Nothing OrElse Session("Role").ToString() <> "Student" Then
 Response.Redirect("Login.aspx")

```
Return  
End If
```

```
If Not IsPostBack Then
```

```
    If Request.QueryString("QuizID") Is Nothing Then  
        Response.Redirect("StudentDashboard.aspx")  
        Return  
    End If
```

```
    Session("QuizID") = Convert.ToInt32(Request.QueryString("QuizID"))
```

```
    If AlreadyAttempted() Then  
        Response.Redirect("StudentDashboard.aspx")  
        Return  
    End If
```

```
    Dim existingAttemptID As Integer = GetStartedAttemptID()
```

```
    If existingAttemptID > 0 Then  
        Session("AttemptID") = existingAttemptID  
        Session("ShuffledQuestions") = GetAnsweredAndRemainingQuestions(existingAttemptID)  
        QuestionIndex = GetAnsweredCount(existingAttemptID)  
    Else  
        QuestionIndex = 0  
        CreateAttempt()  
        Session("ShuffledQuestions") = GetShuffledQuestions()  
    End If
```

```
    LoadQuestion()  
End If
```

```
End Sub
```

```
Private Sub LoadQuestion()
```

```
    If Session("ShuffledQuestions") Is Nothing Then  
        Response.Redirect("StudentDashboard.aspx")  
        Return  
    End If
```

```
    Dim questions = CType(Session("ShuffledQuestions"), List(Of Integer))
```

```
    If questions.Count = 0 Then  
        SubmitQuiz()  
        Return  
    End If
```

```
    If QuestionIndex >= questions.Count Then  
        SubmitQuiz()  
        Return  
    End If
```

```
    Dim qID As Integer = questions(QuestionIndex)
```

```
Dim cmd As New SqlCommand(  
    "SELECT QuestionText FROM Questions WHERE QuestionID=@Q", con)
```

```
cmd.Parameters.AddWithValue("@Q", qID)
```

```
con.Open()  
lblQuestion.Text = Convert.ToString(cmd.ExecuteScalar())  
con.Close()
```

```
Session("CurrentQID") = qID
```

```
LoadOptions(qID)
```

```
End Sub
```

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

```
SaveAnswer()
```

```
QuestionIndex += 1  
LoadQuestion()
```

```
End Sub
```

```
Private Sub SaveAnswer()
```

```
If Session("AttemptID") Is Nothing Then Exit Sub  
If Session("CurrentQID") Is Nothing Then Exit Sub  
If rblOptions.SelectedValue = "" Then Exit Sub
```

```
Dim query As String =  
    "IF EXISTS (SELECT 1 FROM Answers WHERE AttemptID=@A AND QuestionID=@Q) " &  
    "UPDATE Answers SET OptionID=@O WHERE AttemptID=@A AND QuestionID=@Q " &  
    "ELSE INSERT INTO Answers (AttemptID, QuestionID, OptionID) VALUES (@A,@Q,@O)"
```

```
Using cmd As New SqlCommand(query, con)  
    cmd.Parameters.AddWithValue("@A", Session("AttemptID"))  
    cmd.Parameters.AddWithValue("@Q", Session("CurrentQID"))  
    cmd.Parameters.AddWithValue("@O", rblOptions.SelectedValue)
```

```
con.Open()  
cmd.ExecuteNonQuery()  
con.Close()
```

```
End Using
```

```
End Sub
```

```
Private Sub CreateAttempt()
```

```
Dim query As String =  
    "INSERT INTO QuizAttempts (QuizID, StudentID, StartTime, Status) " &  
    "VALUES (@Q, @S, GETDATE(), 'Started'); SELECT SCOPE_IDENTITY();" 
```

```
Dim cmd As New SqlCommand(query, con)
cmd.Parameters.AddWithValue("@Q", Session("QuizID"))
cmd.Parameters.AddWithValue("@S", Session("UserID"))

con.Open()
Dim attemptID As Integer = Convert.ToInt32(cmd.ExecuteScalar())
con.Close()

Session("AttemptID") = attemptID
```

End Sub

Private Function GetStartedAttemptID() As Integer

```
Dim query As String =
    "SELECT AttemptID FROM QuizAttempts " &
    "WHERE QuizID=@Q AND StudentID=@S AND Status='Started'"

Dim cmd As New SqlCommand(query, con)
cmd.Parameters.AddWithValue("@Q", Session("QuizID"))
cmd.Parameters.AddWithValue("@S", Session("UserID"))

con.Open()
Dim result = cmd.ExecuteScalar()
con.Close()

If result Is Nothing Then Return 0
Return Convert.ToInt32(result)
```

End Function

Private Function AlreadyAttempted() As Boolean

```
Dim query As String =
    "SELECT AttemptID FROM QuizAttempts " &
    "WHERE QuizID=@Q AND StudentID=@S AND Status='Completed'"

Dim cmd As New SqlCommand(query, con)
cmd.Parameters.AddWithValue("@Q", Session("QuizID"))
cmd.Parameters.AddWithValue("@S", Session("UserID"))

con.Open()
Dim result = cmd.ExecuteScalar()
con.Close()

Return result IsNot Nothing
```

End Function

Private Function GetAnsweredCount(attemptID As Integer) As Integer

```
Dim cmd As New SqlCommand(
    "SELECT COUNT(*) FROM Answers WHERE AttemptID=@A", con)
```

```

cmd.Parameters.AddWithValue("@A", attemptID)

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

```

```
Return count
```

```
End Function
```

```
Private Function GetAnsweredAndRemainingQuestions(attemptID As Integer) As List(Of Integer)
```

```
Dim list As New List(Of Integer)
```

```
Dim cmd1 As New SqlCommand(
    "SELECT QuestionID FROM Answers WHERE AttemptID=@A", con)
```

```
cmd1.Parameters.AddWithValue("@A", attemptID)
```

```
con.Open()
Dim r1 = cmd1.ExecuteReader()
While r1.Read()
    list.Add(Convert.ToInt32(r1("QuestionID")))
End While
con.Close()
```

```
Dim cmd2 As New SqlCommand(
    "SELECT QuestionID FROM QuizQuestions WHERE QuizID=@Q", con)
```

```
cmd2.Parameters.AddWithValue("@Q", Session("QuizID"))
```

```
Dim remaining As New List(Of Integer)
```

```
con.Open()
Dim r2 = cmd2.ExecuteReader()
While r2.Read()
    Dim id = Convert.ToInt32(r2("QuestionID"))
    If Not list.Contains(id) Then
        remaining.Add(id)
    End If
End While
con.Close()
```

```
Dim rnd As New Random()
For i = remaining.Count - 1 To 1 Step -1
    Dim j = rnd.Next(0, i + 1)
    Dim tmp = remaining(i)
    remaining(i) = remaining(j)
    remaining(j) = tmp
Next
```

```
list.AddRange(remaining)
Return list
```

End Function

Private Function GetShuffledQuestions() As List(Of Integer)

Dim list As New List(Of Integer)

Dim cmd As New SqlCommand(
"SELECT QuestionID FROM QuizQuestions WHERE QuizID=@Q", con)

cmd.Parameters.AddWithValue("@Q", Session("QuizID"))

con.Open()

Dim reader = cmd.ExecuteReader()

While reader.Read()

list.Add(Convert.ToInt32(reader("QuestionID")))

End While

con.Close()

Dim rnd As New Random()

For i = list.Count - 1 To 1 Step -1

Dim j = rnd.Next(0, i + 1)

Dim tmp = list(i)

list(i) = list(j)

list(j) = tmp

Next

Return list

End Function

Private Sub LoadOptions(questionID As Integer)

Dim cmd As New SqlCommand(
"SELECT OptionID, OptionText FROM QuestionOptions WHERE QuestionID=@Q ORDER BY NEWID()",
con)

cmd.Parameters.AddWithValue("@Q", questionID)

Dim dt As New DataTable()

Dim da As New SqlDataAdapter(cmd)

da.Fill(dt)

rblOptions.DataSource = dt

rblOptions.DataTextField = "OptionText"

rblOptions.DataValueField = "OptionID"

rblOptions.DataBind()

End Sub

Protected Sub btnSubmit_Click(sender As Object, e As EventArgs)

SubmitQuiz()

End Sub

Private Sub SubmitQuiz()

SaveAnswer()

Dim query As String =

```
"UPDATE QuizAttempts SET EndTime=GETDATE(), Status='Completed', " &  
"Score=(SELECT COUNT(*) FROM Answers a INNER JOIN QuestionOptions o " &  
"ON a.OptionID=o.OptionID WHERE a.AttemptID=@A AND o.IsCorrect=1) " &  
"WHERE AttemptID=@A"
```

Dim cmd As New SqlCommand(query, con)

cmd.Parameters.AddWithValue("@A", Session("AttemptID"))

con.Open()

cmd.ExecuteNonQuery()

con.Close()

Dim attemptID As Integer = Convert.ToInt32(Session("AttemptID"))

Session.Remove("QuizID")

Session.Remove("AttemptID")

Session.Remove("ShuffledQuestions")

Session.Remove("CurrentQID")

Session.Remove("qIndex")

Response.Redirect("Student_Results.aspx?AttemptID=" & attemptID)

End Sub

End Class

Student Results:

Aspx:

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

```
<!DOCTYPE html>
```

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

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

```
  <title>My Results</title>
```

```
  <link rel="stylesheet" type="text/css" href="StyleSheet.css" />
```

```
</head>
```

```
<body>
```

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

```
    <div class="main-container">
```

```
      <div class="sidebar">
```

```
        <div class="logo">QuizApp</div>
```

```
        <div class="nav-item">Dashboard</div>
```

```
        <div class="nav-item active">My Results</div>
```

```
      </div>
```

```

<div class="content-area">
  <div class="card result-card">
    <h2>My Quiz Results</h2>
    <hr />

    <asp:GridView ID="gvResults" runat="server"
      AutoGenerateColumns="False"
      CssClass="grid-view">
      <Columns>
        <asp:BoundField DataField="QuizTitle" HeaderText="Quiz Name" />
        <asp:BoundField DataField="Subject" HeaderText="Subject" />
        <asp:BoundField DataField="Score" HeaderText="Score" />
        <asp:BoundField DataField="TotalMarks" HeaderText="Total" />
        <asp:BoundField DataField="ResultDate" HeaderText="Date Taken"
          DataFormatString="{0:dd MMM yyyy}" />

        <asp:TemplateField HeaderText="Status">
          <ItemTemplate>
            <asp:Label ID="lblStatus" runat="server"
              Text="<%# If(Eval("Score") >= (Eval("TotalMarks") * 0.5), "Pass", "Fail") %>"
              CssClass="<%# If(Eval("Score") >= (Eval("TotalMarks") * 0.5), "status-pass", "status-fail")
%>" />
            </asp:Label>
          </ItemTemplate>
        </asp:TemplateField>
      </Columns>
    </asp:GridView>

    <br />
    <asp:Button ID="btnBack" runat="server" Text="Back to Dashboard"
     PostBackUrl="~/StudentDashboard.aspx" CssClass="btn-secondary" />
  </div>
</div>
</div>
</form>
</body>
</html>

```

Vb:

```
Imports System.Data
```

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

```
Imports System.Configuration
```

```
Partial Class Student_Results
```

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

```
Dim con As New SqlConnection(ConfigurationManager.ConnectionStrings("QuizDB").ConnectionString)
```

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

```

    If Session("UserID") Is Nothing OrElse Session("Role") Is Nothing OrElse Session("Role").ToString() <>
"Student" Then
        Response.Redirect("Login.aspx")
    End If

    If Not IsPostBack Then
        LoadResults()
    End If
End Sub

Private Sub LoadResults()
    Dim query As String = "SELECT " &
        "q.Title AS QuizTitle, " &
        "s.SubjectName AS Subject, " &
        "qa.Score, " &
        "q.TotalQuestions AS TotalMarks, " &
        "qa.StartTime AS ResultDate " &
        "FROM QuizAttempts qa " &
        "INNER JOIN Quiz q ON qa.QuizID = q.QuizID " &
        "INNER JOIN Subjects s ON q.SubjectID = s.SubjectID " &
        "WHERE qa.StudentID = @SID " &
        "ORDER BY qa.StartTime DESC"

    Dim cmd As New SqlCommand(query, con)
    cmd.Parameters.AddWithValue("@SID", Session("UserID"))

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

    da.Fill(dt)

    gvResults.DataSource = dt
    gvResults.DataBind()

End Sub
End Class

```

Admin Dashboard:

Aspx:

```

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

```

```

<!DOCTYPE html>
<html xmlns="http://www.w3.org/1999/xhtml">
<head runat="server">
    <title>Admin Dashboard</title>
    <link rel="stylesheet" type="text/css" href="StyleSheet.css" />
</head>
<body>
    <form id="form1" runat="server">

```

```

<div class="main-container">

    <div class="sidebar">
        <div class="logo">QuizApp</div>
        <div class="nav-item active">Dashboard</div>
        <!-- Future nav items can go here -->
    </div>

    <div class="content-area">
        <div class="card">
            <h1>Admin Dashboard</h1>

            <asp:Label ID="lblWelcome" runat="server" CssClass="welcome-text"></asp:Label>
            <hr />

            <div class="action-buttons">
                <asp:Button ID="btnScheduleQuiz" runat="server"
                    Text="Schedule Quiz"
                    OnClick="btnScheduleQuiz_Click"
                    CssClass="btn-primary" />

                <br /><br />

                <asp:Button ID="btnLogout" runat="server"
                    Text="Logout"
                    OnClick="btnLogout_Click"
                    CssClass="btn-primary" />
            </div>
        </div>
    </div>

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

```

Vb:

Partial Class AdminDashboard

Inherits System.Web.UI.Page

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

```

    If Session("Role") <> "Admin" Then
        Response.Redirect("Login.aspx")
    End If

```

```

    If Not IsPostBack Then
        lblWelcome.Text = "Welcome Admin"
    End If

```

End Sub

```
Protected Sub btnScheduleQuiz_Click(sender As Object, e As EventArgs)
    Response.Redirect("ScheduleQuiz.aspx")
End Sub
```

```
Protected Sub btnLogout_Click(sender As Object, e As EventArgs)
    Session.Abandon()
    Response.Redirect("Login.aspx")
End Sub
```

```
End Class
```

ScheduleQuiz

Aspx:

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

```
<!DOCTYPE html>
<html xmlns="http://www.w3.org/1999/xhtml">
<head runat="server">
    <title>Schedule Quiz</title>
    <link rel="stylesheet" type="text/css" href="StyleSheet.css" />
</head>
<body>
    <form id="form1" runat="server">
        <div class="main-container">

            <div class="sidebar">
                <div class="logo">QuizApp</div>
                <div class="nav-item active">Schedule Quiz</div>
            </div>

            <div class="content-area">
                <div class="card">
                    <h2>Schedule Quiz</h2>

                    <div class="input-group">
                        <label>Select Quiz:</label>
                        <asp:DropDownList ID="ddlQuiz" runat="server" CssClass="form-control">
                        </asp:DropDownList>
                    </div>

                    <div class="input-group">
                        <label>Start Time:</label>
                        <asp:TextBox ID="txtStart" runat="server" CssClass="form-control"
TextMode="DateTimeLocal"></asp:TextBox>
                    </div>

                    <div class="input-group">
                        <label>End Time:</label>
                        <asp:TextBox ID="txtEnd" runat="server" CssClass="form-control"
TextMode="DateTimeLocal"></asp:TextBox>
                </div>
            </div>
        </div>
    </form>
</body>
</html>
```

```

        </div>

        <asp:Button ID="btnSchedule" runat="server" Text="Schedule Quiz"
            OnClick="btnSchedule_Click" CssClass="btn-primary" />

        <br /><br />
        <asp:Label ID="lblMsg" runat="server" CssClass="message"></asp:Label>
    </div>
</div>
</div>
</form>
</body>
</html>

```

Vb:

```

Imports System.Data.SqlClient
Imports System.Configuration

```

```

Partial Class ScheduleQuiz
    Inherits System.Web.UI.Page

```

```

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

```

```

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

```

```

        If Session("UserID") Is Nothing OrElse Session("Role").ToString() <> "Admin" Then
            Response.Redirect("Login.aspx")
        End If

```

```

        If Not IsPostBack Then
            LoadQuizzes()
        End If
    End Sub

```

```

    Sub LoadQuizzes()
        Using con As New SqlConnection(connStr)
            Dim cmd As New SqlCommand("SELECT QuizID, Title FROM Quiz", con)
            con.Open()

            ddlQuiz.DataSource = cmd.ExecuteReader()
            ddlQuiz.DataTextField = "Title"
            ddlQuiz.DataValueField = "QuizID"
            ddlQuiz.DataBind()

            ddlQuiz.Items.Insert(0, New ListItem("-- Select Quiz --", "0"))
        End Using
    End Sub

```

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

    If ddlQuiz.SelectedValue = "0" Then
        lblMsg.Text = "Please select a quiz first."
        lblMsg.ForeColor = Drawing.Color.Red
        Return
    End If

    Using con As New SqlConnection(connStr)

        Dim sql As String = "UPDATE Quiz SET StartTime=@s, EndTime=@e WHERE QuizID=@id"

        Dim cmd As New SqlCommand(sql, con)

        cmd.Parameters.AddWithValue("@s", DateTime.Parse(txtStart.Text))
        cmd.Parameters.AddWithValue("@e", DateTime.Parse(txtEnd.Text))
        cmd.Parameters.AddWithValue("@id", ddlQuiz.SelectedValue)

        con.Open()
        cmd.ExecuteNonQuery()
    End Using

    lblMsg.Text = "Quiz Scheduled Successfully!"
    lblMsg.ForeColor = Drawing.Color.Green
End Sub
End Class
```