**Name: Sarvesh Kaushik Lab: 6**

**Instructor: *Luke Papademas***

**Create a Database File**

Following figure shows the creation of the HigginsHotelSystem Table.

**Graphical user interface, application, Word

Description automatically generated**

**Project One *Purpose* Web Form to a Create Database Table and**

**to allow redirect to a record input screen**

***Database File* HigginsHotelSystems.accdb**

***Web Form* hotel1.aspx**

**Source Code:**

<%@ Page Language = "VB" %>

<%@ Import Namespace = "System.Data.OleDb" %>

<!DOCTYPE html>

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

<head id = "Head1" runat = "server">

<title>Connection</title>

<script runat = "server">

Sub Create\_Click(Src As Object, E As EventArgs)

Try

'Connect to the Database

Dim cnAccess As New OleDbConnection(

"Provider =Microsoft.Jet.OLEDB.4.0;

User Id=admin;Password=;" &

"Data Source = E:\HigginsHotelSystems1.mdb")

Dim sSelectSQL As String = "CREATE TABLE Guests"

sSelectSQL &= "([GuestID] Number, [LName] TEXT(20),"

sSelectSQL &= "[FName] TEXT(20), [ZipCode] Number,"

sSelectSQL &= "[StateID] TEXT(20))"

Dim cmdSelect As New OleDbCommand(sSelectSQL, cnAccess)

cnAccess.Open()

cmdSelect.ExecuteNonQuery()

cnAccess.Close()

msg.Text = "Table Created!"

Catch ex As Exception

msg.Text = ex.Message

' Response.Write("Table Exists or Connection Failed")

End Try

End Sub

Sub GoTo\_Click(Src As Object, E As EventArgs)

Response.Redirect("hotel2.aspx")

End Sub

</script>

</head>

<body style = "font-family:Tahoma;">

<h3>Higgins Hotel Systems</h3>

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

<asp:Button Text = "Create Table" OnClick = "Create\_Click"

runat = "server" ID = "Button1" />

<p><asp:Label id = "msg" runat = "server" /></p>

<br />

<asp:Button Text = "Insert Records" OnClick = "GoTo\_Click"

runat = "server" ID = "Button2" />

</form>

</body>

</html>

**Graphical user interface, text, application, email

Description automatically generated**

**A picture containing graphical user interface

Description automatically generated**

**Project Two *Purpose* Insert Records into a Database Table and**

**to allow redirect to a record search screen**

***Database Table* Guests**

***Web Form* hotel2.aspx**

**Source Code:**

<%@ Page Language = "VB" %>

<%@ Import Namespace = "System.Data.OleDb" %>

<!DOCTYPE html>

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

<head id="Head1" runat = "server">

<title>Connection</title>

<script runat = "server">

Sub Insert\_Click(Src As Object, E As EventArgs)

Try

'Connect to the Database

Dim cnAccess As New OleDbConnection(

"Provider =Microsoft.Jet.OLEDB.4.0;

User Id=admin;Password=;" &

"Data Source = E:\HigginsHotelSystems1.mdb")

cnAccess.Open()

Dim sID, sFName, sLName, sZip, sState, sInsertSQL As String

sID = GuestID.Text

sFName = FName.Text

sLName = LName.Text

sZip = Zip.Text

sState = State.Text

'Construct the insert statement

sInsertSQL = "INSERT INTO Guests(" & \_

"[GuestID], [LName], [FName], [ZipCode], [StateID]) VALUES" & \_

"(" & sID & ",'" & sLName & "','" & sFName & "'," & sZip & ",'" & sState & "');"

'Construct the OleDbCommand object

Dim cmdInsert As New OleDbCommand(sInsertSQL, cnAccess)

'since this is not a query, we do not expect to return data

cmdInsert.ExecuteNonQuery()

Response.Write("Data Recorded!")

Catch ex As Exception

Response.Write(ex.Message)

Response.Write("Connection Failed")

End Try

End Sub

Sub GoTo\_Click(Src As Object, E As EventArgs)

Response.Redirect("hotel3.aspx")

End Sub

</script>

</head>

<body style = "font-family:Tahoma;">

<h3>Enter Guest Details</h3>

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

<table>

<tr>

<td>ID</td>

<td><asp:Textbox id = "GuestID" runat="server" /></td>

</tr>

<tr>

<td>Last Name: </td>

<td><asp:Textbox id = "LName" runat = "server" /></td>

</tr>

<tr>

<td>First Name: </td>

<td><asp:Textbox id = "FName" runat = "server" /></td>

</tr>

<tr>

<td>ZipCode: </td>

<td><asp:Textbox id = "Zip" runat = "server" /></td>

</tr>

<tr>

<td>StateID: </td>

<td><asp:Textbox id = "State" runat = "server" /></td>

</tr>

</table>

<br />

<asp:Button Text = "Insert" OnClick = "Insert\_Click"

runat = "server" ID = "Button1" />

<p>

<asp:Label id = "msg" runat = "server" />

</p>

<br />

<asp:Button Text = "Retrieve Records" OnClick = "GoTo\_Click"

runat = "server" ID = "Button2" />

</form>

<div></div>

</body>

</html>

**Graphical user interface, text, application, email

Description automatically generated**

**Graphical user interface, application, Word

Description automatically generated**

**After Populating the Table**

**Graphical user interface, application, table

Description automatically generated**

**Project Three *Purpose* Retrieve Records from a Database Table**

***Database Table* Guests**

***Web Form* hotel3.aspx**

**Source Code:**

<%@ Page Language = "VB" %>

<%@ Import Namespace = "System.Data.OleDb" %>

<!DOCTYPE html>

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

<head id="Head1" runat = "server">

<title>Connection</title>

<script runat = "server">

Sub Search\_Click(Src As Object, E As EventArgs)

Try

'Connect to the Database

Dim cnAccess As New OleDbConnection( "Provider =Microsoft.Jet.OLEDB.4.0;

User Id=admin;Password=;" &

"Data Source = E:\HigginsHotelSystems1.mdb")

cnAccess.Open()

Dim sLName As String

sLName = LName.Text.Trim

'Construct the SELECT statement

Dim sSelectSQL As String

'Create the SQL Select Statement

sSelectSQL = "SELECT \* FROM Guests WHERE ([LName] LIKE '" & sLName & "')"

'Create the OleDbCommand object

Dim cmdSelect As New OleDbCommand(sSelectSQL, cnAccess)

Dim drEmp As OleDbDataReader, sbResults As New StringBuilder()

drEmp = cmdSelect.ExecuteReader()

sbResults.Append("<table>")

Do While drEmp.Read()

sbResults.Append("<tr><td>")

sbResults.Append(drEmp.GetValue(0).ToString)

sbResults.Append("</td><td>")

sbResults.Append(drEmp.GetString(1))

sbResults.Append("</td><td>")

sbResults.Append(drEmp.GetString(2))

sbResults.Append("</td><td>")

sbResults.Append(drEmp.GetValue(3).ToString)

sbResults.Append("</td></tr>")

Loop

sbResults.Append("</table>")

msg.Text = sbResults.ToString()

cnAccess.Close()

cnAccess = Nothing

Response.Write("Data Found!")

Catch ex As Exception

Response.Write(ex.Message)

Response.Write("Connection Failed")

End Try

End Sub

</script>

</head>

<body style = "font-family:Tahoma;">

<h3>Enter Guest Name</h3>

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

<table>

<tr>

<td>Last Name: </td>

<td><asp:Textbox id = "LName" runat = "server" /></td>

</tr>

</table>

<br />

<asp:Button Text = "Search" OnClick = "Search\_Click"

runat = "server" ID = "Button1" />

<p>

<asp:Label id = "msg" runat = "server" />

</p>

</form>

<div></div>

</body>

</html>

**Graphical user interface, application, Word

Description automatically generated**

**Graphical user interface, application, Word

Description automatically generated**

**Project Four *Purpose* Web Form to a Create Database Table**

***Database File* HigginsHotelSystems.accdb**

***Database Table* Staff**

***Web Form* hotel4.aspx**

**Source Code:**

<%@ Page Language = "VB" %>

<%@ Import Namespace = "System.Data.OleDb" %>

<!DOCTYPE html>

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

<head id = "Head1" runat = "server">

<title>Connection</title>

<script runat = "server">

Sub Create\_Click(Src As Object, E As EventArgs)

Try

'Connect to the Database

Dim cnAccess As New OleDbConnection(

"Provider =Microsoft.Jet.OLEDB.4.0;

User Id=admin;Password=;" &

"Data Source = E:\HigginsHotelSystems1.mdb")

Dim sSelectSQL As String = "CREATE TABLE Staff"

sSelectSQL &= "([StaffID] Number, [LName] TEXT(20),"

sSelectSQL &= "[FName] TEXT(20), [Location] Number,[HireDate] Date, [ZipCode] Number,"

sSelectSQL &= "[StaffPic] Memo)"

Dim cmdSelect As New OleDbCommand(sSelectSQL, cnAccess)

cnAccess.Open()

cmdSelect.ExecuteNonQuery()

cnAccess.Close()

msg.Text = "Table Created!"

Catch ex As Exception

msg.Text = ex.Message

' Response.Write("Table Exists or Connection Failed")

End Try

End Sub

Sub GoTo\_Click(Src As Object, E As EventArgs)

Response.Redirect("hotel2.aspx")

End Sub

</script>

</head>

<body style = "font-family:Tahoma;">

<h3>Higgins Hotel Systems</h3>

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

<asp:Button Text = "Create Table" OnClick = "Create\_Click"

runat = "server" ID = "Button1" />

<p><asp:Label id = "msg" runat = "server" /></p>

<br />

<asp:Button Text = "Insert Records" OnClick = "GoTo\_Click"

runat = "server" ID = "Button2" />

</form>

</body>

</html>

**Graphical user interface, text, application

Description automatically generated  
Graphical user interface, application, Word

Description automatically generated**

**Open MS Access and Populate the Staff Table**

Graphical user interface, application, table, Excel

Description automatically generated

**Project Five *Purpose* Web Form to a Display a Staff Member**

***Database File*  HigginsHotelSystems.accdb**

***Database Table* Staff**

***Web Form* hotel5.aspx**

**Source Code:**

<%@ Page Language = "VB" %>

<%@ Import Namespace = "System.Data.OleDb" %>

<%@ Import Namespace = "System.IO" %>

<%@ Import Namespace = "System.Drawing" %>

<!DOCTYPE html>

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

<head id = "Head1" runat = "server">

<title>Connection</title>

<script runat = "server">

Public Class PictureBox

Property Image As Drawing.Bitmap

End Class

Sub Search\_Click(Src As Object, E As EventArgs)

Try

'Connect to the Database

Dim cnAccess As New OleDbConnection(

"Provider =Microsoft.Jet.OLEDB.4.0;

User Id=admin;Password=;" &

"Data Source = E:\HigginsHotelSystems1.mdb")

cnAccess.Open()

Dim sLName As String

sLName = LName.Text.Trim

'Construct the SELECT statement

Dim sSelectSQL As String

'Create the SQL Select Statement

sSelectSQL = "SELECT \* FROM Staff WHERE ([LName] Like '" & sLName & "')"

'Create the OleDbCommand object

Dim cmdSelect As New OleDbCommand(sSelectSQL, cnAccess)

Dim drEmp As OleDbDataReader, sbResults As New StringBuilder()

drEmp = cmdSelect.ExecuteReader()

sbResults.Append("<table>")

Do While drEmp.Read()

sbResults.Append("<table>")

sbResults.Append("<tr><td><b>StaffID: </b>")

sbResults.Append(drEmp.GetValue(0).ToString)

sbResults.Append("</td></tr><tr><td><b> Last Name: </b>")

sbResults.Append(drEmp.GetString(1))

sbResults.Append("</td></tr><tr><td><b> First Name: </b>")

sbResults.Append(drEmp.GetString(2))

sbResults.Append("<tr><td><b>Location: </b>")

sbResults.Append(drEmp.GetValue(3).ToString)

sbResults.Append("</td></tr><tr><td><b> Hire Date: </b>")

sbResults.Append(drEmp.GetValue(4).ToString)

sbResults.Append("<tr><td><b>ZipCode: </b>")

sbResults.Append(drEmp.GetValue(5).ToString)

sbResults.Append("</td></tr><img id='image' width='50' height='50' src=' ")

sbResults.Append(drEmp.GetString(6))

sbResults.Append("' />")

sbResults.Append("</table>")

sbResults.Append("<br></br>")

Loop

sbResults.Append("</table>")

msg.Text = sbResults.ToString()

cnAccess.Close()

cnAccess = Nothing

Response.Write("Data Found!")

Catch ex As Exception

Response.Write(ex.Message)

Response.Write("Connection Failed")

End Try

End Sub

</script>

</head>

<body style = "font-family:Tahoma;">

<h3>Enter Staff Name</h3>

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

<table>

<tr>

<td>Last Name: </td>

<td><asp:Textbox id = "LName" runat = "server" /></td>

</tr>

</table>

<br />

<asp:Button Text = "Search" OnClick = "Search\_Click"

runat = "server" ID = "Button1" />

<p>

<asp:Label id = "msg" runat = "server" />

</p>

</form>

<div></div>w

</body>

</html>

**Graphical user interface, text, application, email

Description automatically generated**

**Graphical user interface, application, Word

Description automatically generated**

**Graphical user interface, application, Word

Description automatically generated**

**Project Six *Purpose* Web Form for Menu**

***Database File* HigginsHotelSystems.accdb**

***Database Table* Guest / Staff**

***Web Form* menu.aspx**

**Source Code:**

<%@ Page Language = "VB" %>

<%@ Import Namespace = "System.Data.OleDb" %>

<%@ Import Namespace = "System.IO" %>

<%@ Import Namespace = "System.Drawing" %>

<!DOCTYPE html>

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

<head id = "Head1" runat = "server">

<title>Connection</title>

<script runat = "server">

Sub Search\_clickCreate(Src As Object, E As EventArgs)

Response.Redirect("hotel1.aspx")

End Sub

Sub Search\_clickInsert(Src As Object, E As EventArgs)

Response.Redirect("hotel2.aspx")

End Sub

Sub Search\_clickRetrive(Src As Object, E As EventArgs)

Response.Redirect("hotel3.aspx")

End Sub

Sub Search\_clickCreateStaff(Src As Object, E As EventArgs)

Response.Redirect("hotel4.aspx")

End Sub

Sub Search\_clickDisplayStaff(Src As Object, E As EventArgs)

Response.Redirect("hotel5.aspx")

End Sub

</script>

</head>

<body>

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

<div>

<asp:Button Text = "Create Table" OnClick = "Search\_clickCreate"

runat = "server" ID = "Button1" />

<asp:Button Text = "Insert Records" OnClick = "Search\_clickInsert"

runat = "server" ID = "Button2" />

<asp:Button Text = "Retrive Records" OnClick = "Search\_clickRetrive"

runat = "server" ID = "Button3" />

<asp:Button Text = "Create Staff Table" OnClick = "Search\_clickCreateStaff"

runat = "server" ID = "Button4" />

<asp:Button Text = "DisplayStaff Members" OnClick = "Search\_clickDisplayStaff"

runat = "server" ID = "Button5" />

</div>

</form>

</body>

</html>

**Graphical user interface, application

Description automatically generated**

Graphical user interface, application, Word

Description automatically generated

1. **Hotel Reservations, as with other business applications, may be accessed through the cloud. Web services such as AWS and Microsoft Azure may be / are used by companies having reservation systems. Contrast AWS and Microsoft Azure as to the web service architecture they offer their clients.**

Sol: Amazon Web Services and Microsoft Azure are two of the cloud service giants. Each having their significant benefits and disadvantages in terms of services offered.

* AWS provides open-source model platform for its user after successful registration. Microsoft Azure is mostly focused on the paid resources with less open-source flexibility.
* AWS could economic solutions as compared to Azure. AWS EC2 solution is pay by hour where Azure solution is Pay by Minute.
* AWS provides faster integration with Big Data for its user. The Azure facing some difficulties For Big Data and want user to opt for the Premium Storage
* Azure is having significant advantage when it comes to the Hybrid cloud, it can integrate the cloud with the instances.
* AWS allows individual machine access. In the Microsoft Azure machines are grouped together as a cloud service and can be accessed through the same domain effectively with only one condition as the operating ports needs to be different.
* AWS provide the more Object Size Limits around 5TB of the storage with the service name S3. Azure Storage Blobs on the other hand provides 4.75 TB of the Object Size.

1. **Data management with reservation systems must be able to accommodate the customer’s requests and requirements. How would you adopt / modify the code for this lab to include a cancellation of a reservation? Place your answer / modified code below this question.**

Sol: In the Data Management and the reservation system to include the cancellation of existing records we can duplicate the hotel3.aspx file. Once we are done with duplication of the code, we will have to make the changes in the SQL query. We can use the text field to get the name of the user that we want to delete from the existing database.

Source Code:

Consider the following snippet of code that we will replace in the existing hotel3.aspx file.

**sSelectSQL = "DELETE FROM Staff WHERE ([LName] Like '" & sLName & "')"**

Moreover, We will make changes to the Button Name as we will delete the records.

1. **Visit the Web site: .Navigate through the Web site and list the various required input to make a reservation at a hotel in a particular location. Take a snapshot of the reservation input text boxes and place it here below your list.**

One of the most important steps while considering the hotel booking would be to enter location, date Room choice and guests.

Graphical user interface, website

Description automatically generated

Once done with it we can simply move on to check availability of the rooms.

Graphical user interface, text, application, chat or text message

Description automatically generated

After this we can simply enter our information and payment details by proceeding with the reservation.

Graphical user interface, application

Description automatically generatedGraphical user interface, text, application, email

Description automatically generated

Once the payment has been made, We will be able to view and download receipt and the copy of the receipt will be sent to our Mail ID.

1. **Reservation systems may also apply to an educational institute’s registration procedures. Similarities exist between both hotel reservation and educational registration systems. List the similar input items, appropriate files to be created and monitored, hardware to store the data, and network architecture. Place your answer below this question number.**

University Registration System will be like the hotel registration systems in many ways as User can be replaced with students. There will be significant differences in term of database architecture, as it does not include guest check-in and check-out information instead of that we will have to focus on student registration and keep students records for the longer time till they graduate and after words for Transcripts Approval Process.

For the Education Registration Systems, we must create different modules as shown below in the Entity Relationship Diagram.

Diagram

Description automatically generated

In Terms of the Hardware Architecture, Oracle Cloud Data Lake would be an optimum solution. Student Information System can be modified by effectively implementing Data Governance, Data Privacy and Data Quality.

We can maximize the overall efficiency of databases by implementing the Effective Normalization and Reduce the overall database redundancy by 12%.

5> **Would you recommend that data for the reservation system be structured or unstructured? Support your answer.**

The Data for Reservation System could be considered as a Structured or Unstructured. If you closely considered the Database Structure with help of NOSQL we can use the unstructured database to Store the info. NoSQL will be faster that SQL and having more scalability. Whereas if you considered the RDBMS then more Data Integrity and Atomicity will be accomplished.