Chapter 16: Data Access

Section 16.1: Read field from Database

```vbnet
Public Function GetUserFirstName(UserName As String) As String
    Dim Firstname As String = ""

    'Specify the SQL that you want to use including a Parameter
    Dim SQL As String = "select firstname from users where username=@UserName"

    'Provide a Data Source
    Dim DBDSN As String = "Data Source=server.address;Initial Catalog=DatabaseName;Persist Security
Info=True;User ID=UserName;Password=UserPassword"

    Dim dbConn As New SqlConnection(DBDSN)

    Dim dbCommand As New SqlCommand(SQL, dbConn)

    'Provide one or more Parameters
    dbCommand.Parameters.AddWithValue("@UserName", UserName)

    'An optional Timeout
    dbCommand.CommandTimeout = 600

    Dim reader As SqlDataReader
    Dim previousConnectionState As ConnectionState = dbConn.State
    Try
        If dbConn.State = ConnectionState.Closed Then
            dbConn.Open()
        End If
        reader = dbCommand.ExecuteReader
        Using reader
            With reader
                If .HasRows Then
                    'Read the 1st Record
                    reader.Read()
                    'Read required field/s
                    Firstname = .Item("FirstName").ToString
                End If

            End With

        End Using

    Catch
        'Handle the error here
    Finally
        If previousConnectionState = ConnectionState.Closed Then
            dbConn.Close()
        End If
        dbConn.Dispose()
        dbCommand.Dispose()

    End Try
    'Pass the data back from the function
    Return Firstname

End Function
```

Using the above function is simply:

```
Dim UserFirstName as string=GetUserFirstName(UserName)
```

Section 16.2: Simple Function to read from Database and return as DataTable

This simple function will execute the specified Select SQL command and return the result as data set.

```vb
Public Function ReadFromDatabase(ByVal DBConnectionString As String, ByVal SQL As String) As
DataTable
    Dim dtReturn As New DataTable
    Try
        'Open the connection using the connection string
        Using conn As New SqlClient.SqlConnection(DBConnectionString)
            conn.Open()

            Using cmd As New SqlClient.SqlCommand()
                cmd.Connection = conn
                cmd.CommandText = SQL
                Dim da As New SqlClient.SqlDataAdapter(cmd)
                da.Fill(dtReturn)
            End Using
        End Using
    Catch ex As Exception
        'Handle the exception
    End Try


    'Return the result data set
    Return dtReturn
End Function
```

Now you can execute the above function from below codes

```vb
Private Sub MainFunction()
    Dim dtCustomers As New DataTable
    Dim dtEmployees As New DataTable
    Dim dtSuppliers As New DataTable


    dtCustomers = ReadFromDatabase("Server=MYDEVPC\SQLEXPRESS;Database=MyDatabase;User
Id=sa;Password=pwd22;", "Select * from [Customers]")
    dtEmployees = ReadFromDatabase("Server=MYDEVPC\SQLEXPRESS;Database=MyDatabase;User
Id=sa;Password=pwd22;", "Select * from [Employees]")
    dtSuppliers = ReadFromDatabase("Server=MYDEVPC\SQLEXPRESS;Database=MyDatabase;User
Id=sa;Password=pwd22;", "Select * from [Suppliers]")

End Sub
```

The above example expects that your SQL Express instance "SQLEXPRESS" is currently installed on "MYDEVPC" and your database "MyDatabase" contains "Customers", "Suppliers" and "Employees" tables and the "sa" user password is "pwd22". Please change these values as per your setup to get the desired results.