ADO.NET (ActiveX Data Object)

By: Sayed Hassan Adelyar

- **Data access technology** from **Microsoft .Net Framework**.
- Provides **communication** between **relational** and **non-relational** systems.
- A **set** of computer **software components.**
- Used by **programmers** to **access data**.
- Commonly used by programmers to **access** and **modify data stored** in relational database system.

- The **two key components** of **ADO.NET** are:
  - **Data Providers** and,
  - **DataSet**.
- The .**Net Framework** includes mainly **three Data Providers** for **ADO.NET**:
  - The Microsoft **SQL** Server,
  - **OLEDB** and,
  - **ODBC**.

- The following **four Objects** from the **.Net Framework** provide the **functionality** of **Data Providers** in **ADO.NET**.
  - **Connection Object** : provides **physical connection** to the Data Source.
  - **Command Object** : perform **SQL statement** or stored procedure to be executed at the Data Source.
  - **DataReader Object** : a **stream-based** , **forward-only**, **read-only retrieval** of **query results** from the Data Source, which **do not update** the data.
  - **DataAdapter Object** : **populate** a **Dataset** Object with **results** from a Data Source.

The Connection Object

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- The **first step** is to **create connection**, that is to create a connection object.
- **Properties**
  - **ConnectionString**
  - **ConnectionTimeOut**
    - **Gets** or **sets** the **time** to **wait** while trying to establish a connection before terminating the attempt and generating an **error**.
  - **Database**
  - **DataSource**
  - **State**
    - **Gets** the current **state** of the **connection.**

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- **Methods**
  - **Open**
  - **Close**
  - **BeginTransaction**
  - **ChangeDatabase**
- **Events**
  - **StateChange**

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- **Setting** the **connectionString** property:

```
DIM tableconnection AS STRING = "provider =
    microsoft.jet. oledb.4.0 ;“ & "data source=
    database_path;"
DIM cn AS NEW Oledbconnection()
Cn.connectionstring = tableconnection
Cn.open
```

The Command Object

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- **Properties**
  - **CommandText** → contain **SQL** text
  - **CommandType** → value which specify the **type** of **query** : **Text** or **stored procedure**.
  - **Connection**
  - **CommandTimeOut**
  - **parameters**

- **Methods**
  - **ExecuteReader** → execute the **select query** specified by the **commandText**.
  - **ExecuteNonQuery** → execute the **action query** specified by the **commandText**.

ExecuteReader

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- It is a **method** of the **command** object.
- This method **return** a **DataReader object**, which you can use to read the **resultSet one row** at a **time**.
- **Send** the **SQL statements** to **OleDbConnection Object** and **populate** an **OleDbDataReader Object** based on the **SQL statement**.
- When the **ExecuteReader method execute**, it **instantiate** an **OleDb.OleDbDataReader Object**.
- The **Read() method** in the **OleDbDataReader** is **used** to **read** the **rows** from **OleDbDataReader** and it **always moves forward** to a new **valid row**, if any row exist .

ExecuteNonQuery

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- **Used** for **executing statements** that **do not return result** set.
- **Performs Data Definition tasks** as well as **Data Manipulation** tasks also.
- The **Data Definition** tasks like **creating Stored Procedures** and **Views**. Also **Data Manipulation** tasks like **Insert** , **Update** and **Delete**.

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```
Imports System.Data.OleDb
Public Class Form1
    Dim dataconnect As New OleDbConnection()
    Dim datacmd As OleDbCommand
    Dim dr As OleDbDataReader
    Private Sub Button1_Click(ByVal sender As System.Object, ByVal e
     As System.EventArgs) Handles Button1.Click
        Dim tableconnection As String =
    "provider=microsoft.jet.oledb.4.0;" _
        & "data source=c:\practice.mdb;"
        dataconnect.ConnectionString = tableconnection
        dataconnect.Open()
    End Sub
```

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```
Private Sub Button2_Click(ByVal sender As System.Object,
    ByVal e As System.EventArgs) Handles Button2.Click
        datacmd = New OleDbCommand("SELECT * FROM
    student", dataconnect)
        dr = datacmd.ExecuteReader
        dr.Read()
        TextBox1.Text = dr.Item(“name")
        TextBox2.Text = dr.Item(“address")
        TextBox3.Text = dr.Item(“dateOfBirth")
End Sub
End Class
```

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```
Public Class Form1
    Private Sub Button1_Click(ByVal sender As System.Object, ByVal e
     As System.EventArgs) Handles Button1.Click
     Do While dr.Read()
        TextBox1.AppendText(dr.Item("stname") & ControlChars.CrLf)
    Loop
End Sub
End Class
```

- مثال ذیل یک سطر را میخواند:

```
Dim sql As String = "SELECT * FROM students WHERE
    stname = 'safi' "
Dim cmd As New OleDbCommand(sql, cn)
Dim dr As OleDbDataReader = cmd.ExecuteReader
    (CommandBehavior.SingleRow)
Dr.Read()
TextBox1.Text = dr("stname")
Dr.Close()
```

- مثال ذیل تعداد ریکورد ها را حساب میکند:

```
Imports System.Data.OleDb
Public Class Form1
    Dim connection As New OleDbConnection
    Dim command As OleDbCommand
    Private Sub Form1_Load(ByVal sender As System.Object, ByVal e As
     System.EventArgs) Handles MyBase.Load
       connection.ConnectionString = "provider=microsoft.jet.oledb.4.0;" & "data
     source=c:\practice.mdb;"
       connection.Open()
       command = New OleDbCommand("SELECT count(qtype) FROM Exam",
     connection)
       Dim reccount As Integer = CInt(command.ExecuteScalar())
       TextBox1.Text = reccount
    End Sub
End Class
```

- اگر خواسته باشيم تا تعداد ريكورد هاي مشخص را معلوم نمائيم:

- command = New OleDbCommand("SELECT count(*) FROM Exam where qtype = 'جغرافيه'", connection)

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- در مثال ذیل نام ولایت از یک Textbox گرفته میشود:

```
Private Sub Button1_Click(ByVal sender As System.Object, ByVal e
    As System.EventArgs) Handles Button1.Click
        connection.ConnectionString = "provider=microsoft.jet.oledb.4.0;"
    & "data source=c:\BCS4.mdb;"
        connection.Open()
        newcommand = New OleDbCommand("SELECT count(fname)
    FROM student where address = '" & TextBox4.Text & "'",
    connection)
        Dim reccount As Integer = CInt(newcommand.ExecuteScalar())
        TextBox3.Text = reccount
        connection.Close()
    End Sub
```

- در مثال ذیل نام ولایت از یک ComboBox گرفته میشود:

```
Private Sub Button1_Click(ByVal sender As System.Object, ByVal e
    As System.EventArgs) Handles Button1.Click
        connection.ConnectionString = "provider=microsoft.jet.oledb.4.0;"
    & "data source=c:\BCS4.mdb;"
        connection.Open()
        newcommand = New OleDbCommand("SELECT count(fname)
    FROM student where address = '" & ComboBox1.Text & "'",
    connection)
        Dim reccount As Integer = CInt(newcommand.ExecuteScalar())
        TextBox3.Text = reccount
        connection.Close()
    End Sub
```

- کود ذیل تعداد ریکورد ها را معلوم میکند:

```
cn.Open()
Dim cmd As OleDbCommand
cmd = New OleDbCommand("SELECT * FROM exam", cn)
Dim dr As OleDbDataReader = cmd.ExecuteReader
Do While dr.Read
        Qnum = Qnum + 1
Loop
cn.Close()
```

ExecuteScalar

- **Used** for **get** a **single value** from Database.
- It **executes SQL statements** or **Stored Procedure** and returned a **scalar value** on **first column** of **first row** in the Result Set.
- If the **Result Set contains** more than **one columns** or **rows**, it takes only the **first column** of **first row**, all other values will ignore.
- It is very **useful** to use with **aggregate functions** like Count(*) or Sum() etc.

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- مثال ذیل استفاده از میتود ExecuteScalar در برگشت دادن یک قیمت Scalar را نشان میدهد:

```
Dim sql As String = "SELECT stname FROM students
    WHERE stid = '1235' "
Dim cmd As New OleDbCommand(sql, cn)
Dim pubname As String = cmd.ExecuteScalar().ToString
```

استفاده دیگر این میتود خواندن نتیجه تابع Aggregate میباشد.

```
Dim cmd As New OleDbCommand("SELECT COUNT(*)
    FROM students", cn)
Dim reccount As Integer = Cint(cmd.ExecuteScalar())
```

- میتودExecuteScalar همراي هرQuery از نوعSQL کار میکند. و در هر حالت اولین فیلد سطر اول را برگشت میدهد .

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DataSet

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- **Contains** the **copy** of the **data** we requested through the SQL statement.
- We can use **Dataset** in **combination** with **OleDbDataAdapter** class.
- The **OleDbDataAdapter object** allows us to **populate** Data Tables in a **DataSet**. We can use **Fill method** in the **OleDbDataAdapter** for **populating** data in a **Dataset**.
- **DataSet contains DataTableCollection** and their **DataRelationCollection** . It **represents** a **collection** of **data retrieved** from the **Data Source**.

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- The **DataSet object offers** a **disconnected data source architecture**.
- The **Dataset gives** a **better advantage** over DataReader, because the **DataReader** is working only with the **connection oriented Data Sources**.
- The **Dataset contains more than one Table** at a time. We can set up Data Relations between these tables within the DataSet.

- Some **properties of DataSet**:
  - **Datasetname**
  - **Tables**
  - **Relations**
  - **Local**
  - **Prefix**
  - **casesensitive**

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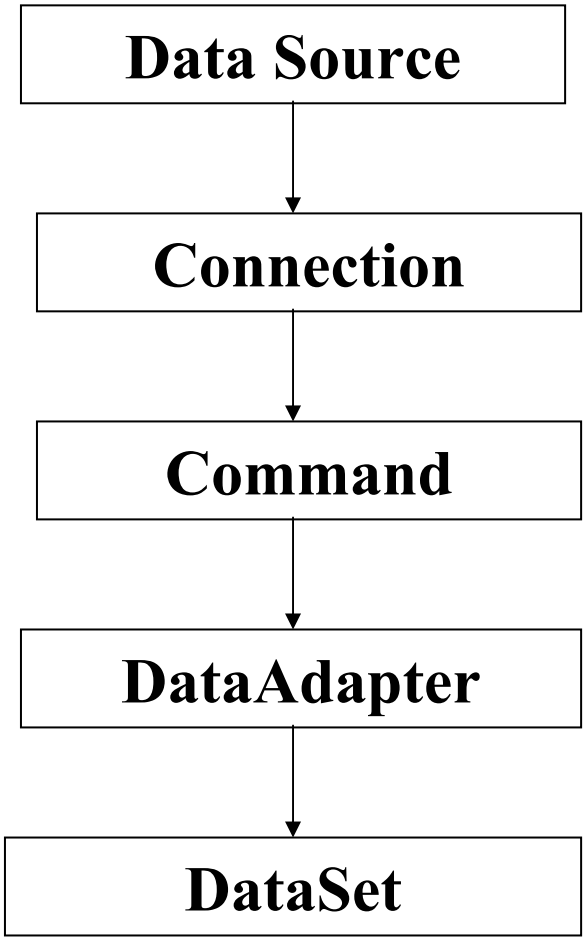
- Some **methods of DataSet**
  - **Acceptchanges**
  - **Rejectchanges**
  - **Haschanges**
  - **Merge**
  - **Clone**
  - **Copy**
  - **clear**


Data Source
Connection
Command
DataAdapter
DataSet

DataAdapter

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- A **part** of the ADO.NET Data provider.
- **Allows** us to **populate DataTables** in a **DataSet**.
- We can use **Fill method** of the **DataAdapter** for populating **data** in a **Dataset**. The **DataSet** can be **filled** either from a **data source** or **dynamically**. A **DataSet** can be **saved** to an **XML file** and then **loaded back into memory** very easily.
- **DataAdapter Provides** the **communication** between the **Dataset** and the **Datasource**.
- We can use the **DataAdapter** in combination with the **DataSet** Object. That is these **two objects** combine to enable both **data access** and **data manipulation** capabilities.

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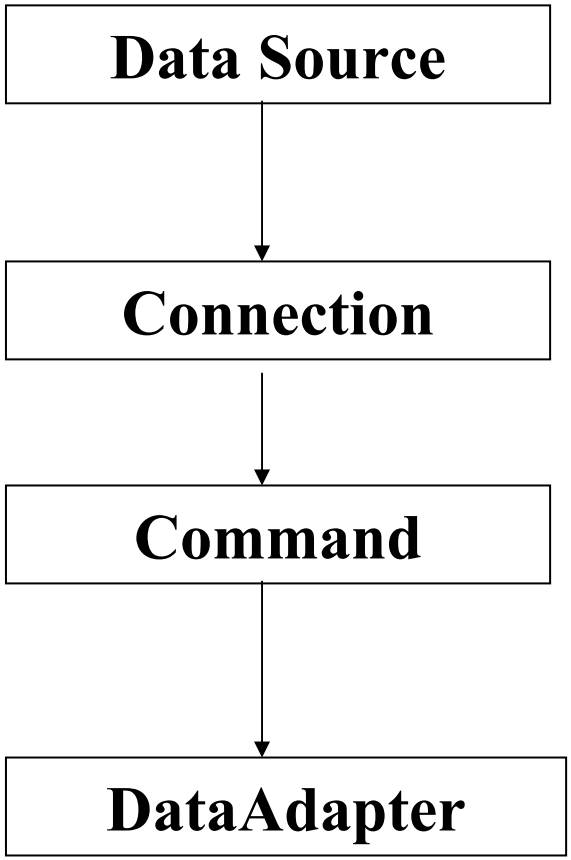
- **In charge** of **filling** one or more **DataTable** objects with data and work in a **completely disconnected mode**
- After the **end user** has performed all the **editing**, the application can **reopen** the **connection** and **reuse** the same **DataAdapter** object to send changes to the databases.
- It can fill a **DataTable** with **data** taken from any **data source**, **SQL server**, **Access**, **text file**, or a **mainframe**, and **process** it with the same **routines** regardless of its origin.
- The **architecture** based on the **DataSet** and **DataAdapter** makes it possible to **read data** from **one source** and **send** updates to **another source**.


Data Source
Connection
Command
DataAdapter

- The **DataAdapter** can perform:
  - **Select**,
  - **Insert**,
  - **Update** and **Delete SQL** operations.
- The **Insert** , **Update** and **Delete** SQL operations , we are using the **continuation** of the **Select command** perform by the **DataAdapter**. That is the **DataAdapter** uses the Select statements to **fill** a **DataSet** and use the other three SQL **commands** (**Insert**, **Update**, **delete**) to **transmit changes back** to the **Database**.

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```
Imports System.Data.OleDb
Public Class Form1
    Private Sub Button1_Click(ByVal sender As System.Object, ByVal e
     As System.EventArgs) Handles Button1.Click
        Dim connetionString As String
        Dim connection As OleDbConnection
        Dim oledbAdapter As OleDbDataAdapter
        Dim ds As New DataSet
        Dim sql As String
        Dim i As Integer
        connetionString = "Provider=Microsoft.Jet.OLEDB.4.0;Data
    Source=Your mdb filename;"
        sql = "Your SQL Statement Here"
```

```
        connection = New OleDbConnection(connetionString)
        Try
            connection.Open()
            oledbAdapter = New OleDbDataAdapter(sql, connection)
            oledbAdapter.Fill(ds)
            oledbAdapter.Dispose()
            connection.Close()
            For i = 0 To ds.Tables(0).Rows.Count - 1
                MsgBox(ds.Tables(0).Rows(i).Item(0) & "  --  " &
    ds.Tables(0).Rows(i).Item(1))
            Next
        Catch ex As Exception
            MsgBox("Can not open connection ! ")
        End Try
    End Sub
End Class
```

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- In **some situations** we have to **find how many tables** inside the **Dataset** Object contains . The following VB.NET source code shows how to find the **tables inside** the **Dataset**.


```
Imports System.Data.OleDb
Public Class Form1
    Private Sub Button1_Click(ByVal sender As System.Object, ByVal e
     As System.EventArgs) Handles Button1.Click
        Dim connetionString As String
        Dim connection As OleDbConnection
        Dim oledbAdapter As OleDbDataAdapter
        Dim ds As New DataSet
        Dim sql As String
        Dim i As Integer
        connetionString = "Provider=Microsoft.Jet.OLEDB.4.0;Data
        Source=Your mdb filename;"
        sql = "Your SQL Statement Here"
```


```
connection = New OleDbConnection(connetionString)
        Try
            connection.Open()
            oledbAdapter = New OleDbDataAdapter(sql, connection)
            oledbAdapter.Fill(ds, "OLEDB Temp Table")
            oledbAdapter.Dispose()
            connection.Close()
            For i = 0 To ds.Tables.Count - 1
                MsgBox(ds.Tables(i).TableName)
            Next
        Catch ex As Exception
            MsgBox("Can not open connection ! ")
        End Try
    End Sub
End Class
```

- **Note**: it is important to **close** the **DataReader object** to **release resources** on both the **client** and the **server** and make the **connection available** again for **other commands**. You can't issue any other command on a **connection** while a **DataReader** object is **active** on that **connection**.
- The **following VB.NET source code** shows how to find the **number** of **rows** in a **table** that resides in the Dataset.


```
Imports System.Data.OleDb
Public Class Form1
    Private Sub Button1_Click(ByVal sender As System.Object, ByVal e As
     System.EventArgs) Handles Button1.Click
      Dim connetionString As String
      Dim connection As oledbConnection
      Dim command As oledbCommand
      Dim adapter As New oledbDataAdapter
      Dim ds As New DataSet
      Dim sql As String
      connetionString = "provider=microsoft.jet.oledb.4.0;" _
      & "data source=c:\practice.mdb;"
            sql = "Your SQL Statement Here"
      connection = New oledbConnection(connetionString)
```

```
Try
        connection.Open()
        command = New oledbCommand(sql, connection)
        adapter.SelectCommand = command
        adapter.Fill(ds, "SQL Temp Table")
        adapter.Dispose()
        command.Dispose()
        connection.Close()
        MsgBox("Number of row(s)  -  " & ds.Tables(0).Rows.Count)
    Catch ex As Exception
        MsgBox("Can not open connection ! ")
    End Try
  End Sub
End Class
```

To Create Table

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```
Private Sub Button1_Click(ByVal sender As System.Object,
    ByVal e As System.EventArgs) Handles Button1.Click
        Dim TableCreate As String = "CREATE TABLE
    thistable(" & "stName varchar(20)," & "lastName
    varchar(20)," & "score Byte);"
        newcommand = New OleDbCommand(TableCreate,
    connection)
        connection.Open()
        newcommand.ExecuteNonQuery()
        connection.Close()
    End Sub
```

در مثال ذیل نام Table از یک متحول از نوع آبجکت گرفته شده است:

```
Private Sub Button1_Click(ByVal sender As System.Object, ByVal e As
    System.EventArgs) Handles Button1.Click
        Dim abc As Object
        abc = TextBox3.Text
        Dim TableCreate As String = "CREATE TABLE " & abc & "(" &
    "stName varchar(20)," & _
        "lastName varchar(20)," & "score Byte);"
        newcommand = New OleDbCommand(TableCreate, connection)
        connection.Open()
        newcommand.ExecuteNonQuery()
        connection.Close()
    End Sub
```

- در مثال ذيل نام Table از يک باکس مکالماتي گرفته ميشود:

```
Private Sub Button1_Click(ByVal sender As System.Object, ByVal e As
    System.EventArgs) Handles Button1.Click
        Dim abc As Object
        abc = InputBox("Enter Table Name :")
        Dim TableCreate As String = "CREATE TABLE " & abc & "(" &
    "stName varchar(20)," & _
        "lastName varchar(20)," & "score Byte);"
        newcommand = New OleDbCommand(TableCreate, connection)
        connection.Open()
        newcommand.ExecuteNonQuery()
        connection.Close()
    End Sub
```

To Delete a Table

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```
Private Sub Button3_Click(ByVal sender As System.Object,
    ByVal e As System.EventArgs) Handles Button3.Click
        Dim DeleteTable As String = "DROP TABLE thistable;"
        newcommand = New OleDbCommand(DeleteTable,
    connection)
        connection.Open()
        newcommand.ExecuteNonQuery()
        connection.Close()
    End Sub
```

To Insert data into Table

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```
Private Sub Button4_Click(ByVal sender As System.Object,
    ByVal e As System.EventArgs) Handles Button4.Click
        Dim sql As String = "insert into thistable (stName,
    lastName, score) values ('Wais', 'Habib',95)"
        newcommand = New OleDbCommand(sql, connection)
        connection.Open()
        newcommand.ExecuteNonQuery()
        connection.Close()
    End Sub
```


```
Private Sub Button4_Click(ByVal sender As System.Object,
    ByVal e As System.EventArgs) Handles Button4.Click
        Dim sql As String = "insert into thistable (stName,
    lastName, score) values ('" & TextBox1.Text & "', '" &
    TextBox2.Text & "',95)"
        newcommand = New OleDbCommand(sql, connection)
        connection.Open()
        newcommand.ExecuteNonQuery()
        connection.Close()
    End Sub
```

- در مثال ذیل نام ولایت از یک ComboBox گرفته میشود:

```
Private Sub Button1_Click(ByVal sender As System.Object, ByVal e
    As System.EventArgs) Handles Button1.Click
        connection.ConnectionString = "provider=microsoft.jet.oledb.4.0;"
    & "data source=c:\BCS4.mdb;"
        connection.Open()
        newcommand = New OleDbCommand("SELECT count(fname)
    FROM student where address = '" & ComboBox1.Text & "'",
    connection)
        Dim reccount As Integer = CInt(newcommand.ExecuteScalar())
        TextBox3.Text = reccount
        connection.Close()
    End Sub
```

- در مثال ذیل نام ولایت از یک Textbox گرفته میشود:

```
Private Sub Button1_Click(ByVal sender As System.Object, ByVal e
    As System.EventArgs) Handles Button1.Click
        connection.ConnectionString = "provider=microsoft.jet.oledb.4.0;"
    & "data source=c:\BCS4.mdb;"
        connection.Open()
        newcommand = New OleDbCommand("SELECT count(fname)
    FROM student where address = '" & TextBox4.Text & "'",
    connection)
        Dim reccount As Integer = CInt(newcommand.ExecuteScalar())
        TextBox3.Text = reccount
        connection.Close()
    End Sub
```

کنترول DataGridView

- این کنترول از طریق خاصیت **BindingSource** به یک جدول وصل میگردد. این خاصیت داراي معلومات مفید بعد از وصل شدن ارتباط میباشد. ارتباط به کمک **Data Source** برقرار میشود. بعد از **Bound** شدن کنترول به یک Data Source ویژول بسیک این کنترول را به شکل اتومات به کمک میتود **Fill** پر مینماید.
- به مثال ذیل توجه نمائید:

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```
Imports System.Data.OleDb
Public Class Form1
    Private bindingSource1 As New BindingSource()
    Private Sub Button3_Click(ByVal sender As System.Object, ByVal e
     As System.EventArgs) Handles Button3.Click
        dgv1.Dock = DockStyle.Fill
        dgv1.AutoGenerateColumns = True
        bindingSource1.DataSource = GetData("Select * From exam")
        dgv1.DataSource = bindingSource1
        dgv1.AutoSizeRowsMode =
     DataGridViewAutoSizeRowsMode.DisplayedCellsExceptHeaders
        dgv1.BorderStyle = BorderStyle.Fixed3D
        dgv1.EditMode = DataGridViewEditMode.EditOnEnter
    End Sub
```

```
Private Shared Function GetData(ByVal sqlCommand As String) As DataTable
    Dim connectionString As String = "provider=microsoft.jet.oledb.4.0;" & "data
  source= c:\practice.mdb;"
    Dim northwindConnection As OleDbConnection = New
  OleDbConnection(connectionString)
    Dim command As New OleDbCommand(sqlCommand, northwindConnection)
    Dim adapter As OleDbDataAdapter = New OleDbDataAdapter()
    adapter.SelectCommand = command
    Dim table As New DataTable
    table.Locale = System.Globalization.CultureInfo.InvariantCulture
    adapter.Fill(table)
    Return table
  End Function
End Class
```

- یا عین عملیه را به شکل ذیل نیز اجرا کرده میتوانیم:

```
Imports System.Data.OleDb
Public Class Form1
    Private connectionString As String =
     "provider=microsoft.jet.oledb.4.0;" & "data source= c:\practice.mdb;"
    Private newconnection As OleDbConnection = New
     OleDbConnection(connectionString)
    Private newcommand As New OleDbCommand
    Private adapter As OleDbDataAdapter = New OleDbDataAdapter()
    Private bindingSource1 As New BindingSource()
    Private newtable As New DataTable
```

```
Private Sub Button3_Click(ByVal sender As System.Object, ByVal e As
    System.EventArgs) Handles Button3.Click
      dgv1.Dock = DockStyle.Fill
      dgv1.AutoGenerateColumns = True
      newcommand = New OleDbCommand("select * from exam", newconnection)
      Dim adapter As OleDbDataAdapter = New OleDbDataAdapter()
      adapter.SelectCommand = newcommand
      adapter.Fill(newtable)
      bindingSource1.DataSource = newtable
      dgv1.DataSource = bindingSource1
      dgv1.AutoSizeRowsMode =
   DataGridViewAutoSizeRowsMode.DisplayedCellsExceptHeaders
      dgv1.BorderStyle = BorderStyle.Fixed3D
      dgv1.EditMode = DataGridViewEditMode.EditOnEnter
   End Sub
End Class
```

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- **Reading Data**
- There **are 3 ways** to read data from a **table**:
  - Using the **ExecuteReader** Method
  - Using **DataReader** Object
  - Using **ExecuteScalar** Method
  - Using **ExecuteXmlReader** method
  - Using **XmlReader** object

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- **DataReaders**
- A DataReader is a lightweight object that provides read-only, forward-only data in a very fast and efficient way. Using a DataReader is efficient than using a DataAdapter but it is limited. Data access with DataReader is
read-only, meaning, we cannot make any changes (update) to data and forward-only, which means we cannot go back to the previous record which was accessed. A DataReader requires the exclusive use of an active connection for the entire time it is in existence. We instantiate a DataReader by making a call to a Command object's ExecuteReader command. When the DataReader is first returned it is positioned before the first record of the result set. To make the first record available we need to call the Read method. If a record is available, the Read method moves the DataReader to next record and returns True. If a record is not available the Read method returns False. We use a While Loop to iterate through the records with the Read method.

Creating a Data Table

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```
Imports System.Data.OleDb
Public Class Form1
    Dim ds As New DataSet("mydataset")
    Private Sub Button1_Click(ByVal sender As System.Object, ByVal e As
     System.EventArgs) Handles Button1.Click
        Dim dtemp As New DataTable("Employee")
        dtemp.MinimumCapacity = 100
        dtemp.CaseSensitive = False
        Dim dcfname As New DataColumn("firstname", GetType(String))
        dtemp.Columns.Add(dcfname)
        Dim dclname As New DataColumn("lastname", GetType(String))
        dtemp.Columns.Add(dclname)
        ds.Tables.Add(dtemp)
    End Sub
End Class
```

Adding Rows to data Table

By: Sayed Hassan Adelyar

```
Private Sub Button2_Click(ByVal sender As System.Object,
    ByVal e As System.EventArgs) Handles Button2.Click
        Dim dtemp As DataTable = ds.Tables("employee")
        Dim dr As DataRow = dtemp.NewRow()
        dr("firstname") = "Adelyar"
        dr("lastname") = "Hassan"
        dtemp.Rows.Add(dr)
        TextBox1.Text = dr("firstname")
    End Sub
```

Adding Rows From a File

By: Sayed Hassan Adelyar

```
Private Sub Button3_Click(ByVal sender As System.Object, ByVal e As System.EventArgs)
    Handles Button3.Click
      Dim dtemp As DataTable = ds.Tables("employee")
      Dim sr As New System.IO.StreamReader("C:\employee.dat")
      Dim filetext As String = sr.ReadToEnd
      sr.Close()
      Dim re As New
    System.Text.RegularExpressions.Regex("""(?<fname>[^""]+)"";""(?<lname>[^""]+)""")
      Dim ma As System.Text.RegularExpressions.Match
      dtemp.BeginLoadData()
      For Each ma In re.Matches(filetext)
         Dim values() As Object = {ma.Groups("fname").Value, ma.Groups("lname").Value}
         dtemp.LoadDataRow(values, True)
      Next
      dtemp.EndLoadData()
      Dim dr As DataRow = dtemp.Rows(1)
      TextBox1.Text = dr("firstname")
  End Sub
```

Updating & Deleting Rows

By: Sayed Hassan Adelyar

```
Dim I as integer
For I = 0 to 9
    Dim dr as DataRow = dtemp.Rows(i)
    Dr("firstname") = dr("firstname").ToString.ToUpper
    Dr("lastname") = dr("lastname").ToString.ToUpper
    Next
```