Use the ADO Control in your Visual Basic 6 projects

Aside from my Database book, I haven't done much writing concerning connection to a Database---and virtually nothing on ADO. In this article, I'd like to show you how you can connect to a Microsoft Database using the ADO Data Control and the ADO Data Grid.

Use the ADO Data Control to create a Connection

The first step in using the ADO Data Control to create a Connection to a database is to find the ADO Data Control. By default, the DAO Data Control is contained in the Visual Basic Toolbox, so you'll need to select Project-Components from the Visual Basic Menu Bar, and select the Microsoft ActiveX Data Control...

Components	×
Controls Designers Insertable Objects	
 □ FPTree 1.0 Type Library □ GridDTC □ icmfilter 1.0 Type Library □ IStudio Active Designer Controls □ LayoutDTC 1.0 Type Library □ Microsoft ActiveMovie Control □ Microsoft ActiveX Layout 1.0 □ Microsoft ActiveX Plugin ✓ Microsoft ADO Data Control 6.0 (SP4) (OLEDB) 	
 Microsoft Agent Control 2.0 Microsoft Calendar Control 8.0 Microsoft Chart Control Microsoft Chart Control 6.0 (SP4) (OLEDB) Microsoft ADO Data Control 6.0 (SP4) (OLEDB) Location: C:\WINNT\System32\MSADODC.OCX 	Browse
ОК	Cancel <u>Apply</u>

If you click on the OK button, the ActiveX Data Control will then appear in the

Visual Basic Toolbox...



At this point, we may as well find the ADO DataGrid as well---we'll be needing it in just a few minutes to display the data retrieved from the Recordset (a virtual database table) that we'll be generating. Find the ADO DataGrid by selecting Project-Components and looking for Microsoft DataGrid Control...

Components		
Controls Designers Insertable Objects		
 Microsoft Chart Control 6.0 (SP4) (OLEDB) Microsoft Comm Control 6.0 Microsoft Common Dialog Control 6.0 (SP3) Microsoft Data Bound Grid Control 5.0 (SP3) Microsoft Data Bound List Controls 6.0 Microsoft DataGrid Control 6.0 (SP4) (OLEDB) Microsoft DataList Controls 6.0 (SP3), OLEDB) Microsoft DataRepeater Control 6.0 (OLEDB) Microsoft DirectAnimation Media Controls 		
 Microsoft DTC Framework Microsoft FlexGrid Control 6.0 (SP3) Microsoft Forms 2.0 Object Library Microsoft Hierarchical FlexGrid Control 6.0 (SP4) Microsoft DataGrid Control 6.0 (SP4) (OLEDB) Location: C:\WINNT\System32\MSDATGRD.OCX 	Browse Selected Items Only	
	Cancel <u>Apply</u>	

If we click on the OK button, the DataGrid will now be added to the Visual Basic Toolbox also...

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Now let's add both the Data Control and the DataGrid to our form...

🚔 Form1	_ 🗆 🗵
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At this point, all we have is an empty DataGrid, and an uninitialized Data

Control. Eventually (in just a few minutes), the Data Control will instantiate a Connection and Recordset, and the records from the Recordset will be 'bound' to the Data Grid. In fact, that's our next step---we need to bind the DataGrid to the Data Control, and we do that by bringing up the Properties Window for the DataGrid, and specifying its DataSource Property as Adodc1--the name of our Data Control...

😭 Properties -	DataGrid1	_ 🗆 ×
DataGrid1 DataGrid		•
Alphabetic Cate	gorized	
AllowUpdate	True	
Appearance	1 - dbg3D	
BackColor	🗌 &H80000005&	
BorderStyle	1 - dbgFixedSingle	
Caption		
CausesValidation	True	
ColumnHeaders	True	
DataMember		
DataSource	Adodc1	•
DefColWidth	Adodc1	
DragIcon	(None)	K
DragMode	0 - vbManual	
Enabled	True	
Font	MS Sans Serif	
ForeColor	&H8000008&	
ha ie a		
DataSource		
Specifies source of grid data		

We still don't have a Connection or a Recordset built--but it won't be long. We need to provide values for the CommandType, the ConnectionString, and the RecordSource Properties of the Data Control. Coming up with values for these off the top of our head is too much trouble---Visual Basic will do it for us. All we need to do is click on the Custom Property of the Data Control...

Adodc1 Adodc	
Alphabetic Categorized	
(About)	
(Custom)	R
(Name)	Adodc1 が
Align	0 - vbAlignNone
Appearance	1 - ad3DBevel
BackColor	8H80000005&
BOFAction	0 - adDoMoveFirst
CacheSize	50
Caption	Adodc1
CommandTimeout	30
CommandType	8 - adCmdUnknown
ConnectionString	
ConnectionTimeout	15
CursorLocation	3 - adUseClient
CursorType	3 - adOpenStatic 📃 📕
(Custom)	

... and a Wizard to build the ConnectionString and the RecordSource Properties will appear...

Property Pages 🔀
General Authentication RecordSource Color Font
Source of Connection
🔿 Use Data <u>L</u> ink File
Browse
C Use ODBC <u>D</u> ata Source Name
✓ Ne <u>w</u>
Use Connection String
B <u>u</u> ild
Other <u>A</u> ttributes:
OK Cancel Apply Help

Click on the Build Button next to 'Use Connection String', and this window will appear...

🖶 Data Link Properties 🛛 🔀
Provider Connection Advanced All
Provider Connection Advanced All Select the data you want to connect to: OLE DB Provider(s) Microsoft Jet 3.51 OLE DB Provider Microsoft Jet 4.0 OLE DB Provider Microsoft OLE DB Provider for Internet Publishing Microsoft OLE DB Provider for ODBC Drivers Microsoft OLE DB Provider for OLAP Services Microsoft OLE DB Provider for SQL Server Microsoft OLE DB Simple Provider MS Remote MSDataShape OLE DB Provider for Microsoft Directory Services
<u>N</u> ext >>
OK Cancel Help

The names in this window may appear to be gibberish--but in order to connect to a Microsoft Access Database, we'll select Microsoft Jet 4.0 OLE DB Provider as our provider, and then click on the Next button. If we were connecting to an Oracle or a SQL Server database, we would select that type of Provider here. After clicking on the Next button, this window appear...

🖏 Data Link Properties 🛛 🔀
Provider Connection Advanced All
Specify the following to connect to Access data:
1. Select or enter a <u>d</u> atabase name:
2. Enter information to log on to the database:
User <u>n</u> ame: Admin
Password:
Blank password Allow saving password
Test Connection
OK Cancel Help

We'll need to specify a database name in this window, and we're going to select a sample database that Microsoft ships with both Access and Visual Basic called BIBLIO.MDB (it contains data about books, authors, publishers and titles). For Access Databases, the User Name is 'Admin' by default, and there is no password. If we had selected an Oracle or SQL Server Provider, this window would look somewhat different, but the idea is the same. For now, let's find and select the BIBLIO.Mdb database using this window...

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Select Acces	s Database 🔗 🏹
Look jn:	🔁 Vb98 💽 🖻 🛅
📃 Template	
Wizards	
Nwind.mdb	
L	
File <u>n</u> ame:	Biblio.mdb
Files of <u>type</u> :	Microsoft Access Databases (*.mdb)

then click on the Open button...

🖏 Data Link Properties 🛛 🗙
Provider Connection Advanced All
Specify the following to connect to Access data:
1. Select or enter a <u>d</u> atabase name:
C:\Program Files\Microsoft Visual Studio\VB98\Biblio.
2. Enter information to log on to the database:
User <u>n</u> ame: Admin
Password:
Blank password Allow saving password
Test Connection
OK Cancel Help

As you can see, the name of the Database now appears on the Connection Tab. At this point, we've established the parameters for the Connection. It's a good idea to click on the Test Connection button to ensure that the parameters are correct, and that the Database can be opened. A few seconds later, this window should appear...



After clicking on this Message Box, you'll be back at this window....

평 Data Link Properties 🛛 🔀
Provider Connection Advanced All
Specify the following to connect to Access data:
1. Select or enter a <u>d</u> atabase name:
Program Files\Microsoft Visual Studio\VB98\Biblio.mdb
2. Enter information to log on to the database:
User <u>n</u> ame: Admin
Password:
Blank password Allow saving password
Test Connection
OK Cancel Help

Click on the OK button, and you'll be back here...

Property Pages 🔀
General Authentication RecordSource Color Font
Source of Connection
🔘 Use Data Link File
Browse
C Use ODBC <u>D</u> ata Source Name
▼ Ne <u>w</u>
Use Connection String Provider=Microsoft.Jet.OLEDB.4.0;Data Source=C: Build
Other <u>A</u> ttributes:
OK Cancel Apply Help

Notice how the Connection String has been built for you. Beginners at this point make the mistake of clicking on the OK button here, but we're not done--we need to specify a RecordSource, which we can do by selecting the RecordSource Tab at the top...

Property Pages	×
General Authentication RecordSource Color Font	
RecordSource Command Type	
8 - adCmdUnknown	
Table or Stored Procedure Name	
Command Text (SQL)	
OK Cancel <u>Apply</u>	Help

The RecordSource tab looks pretty imposing--but it's really a piece of cake. Just click on the Command Type drop-down ListBox, and select cmdTable as the Command Type...

Selecting a Table type recordset is the easiest way to connect to a database and create a recordset. We could have selected adCmdText, but then we would have to specify a SQL (Structured Query Language) statement in the Command Text box. That may be the topic of a future article.

Property Pages	2
General Authentication	RecordSource Color Font
RecordSource	
Command Type	
2 - adCmdTable	
8 - adCmdUnknown 1 - adCmdText	
2 - adCmdTable 4 - adCmdStoredProc	
	·
Command Text (SQL)	
	<u> </u>
	T
OK	. Cancel <u>A</u> pply Help

Once you've selected a table type Command Type, you'll see a list of the tables in the BIBLIO database displayed in the Table or Stored Procedure drop-down ListBox. Let's select Authors...

Property Pages	×
General Authentication RecordSource Color Font	
RecordSource Command Type	
2 - adCmdTable	
Table or Stored Procedure Name	
Authors Publishers Title Author Titles	
OK Cancel <u>Apply</u> Help	

and then click on the Apply button. This will close the wizard, and you should see the Properties Window for the Data Control appear with the ConnectionString, Command Type and RecordSource Properties filled in

😭 Properties - Ac	iodc1 _ 🗆 🗙
Adodc1 Adodc	•
Alphabetic Catego	prized
(About)	
(Custom)	
(Name)	Adodc1
Align	0 - vbAlignNone
Appearance	1 - ad3DBevel
BackColor	8H80000005&
BOFAction	0 - adDoMoveFirst
CacheSize	50
Caption	Adodc1
CommandTimeout	30
CommandType	2 - adCmdTable
ConnectionString	Provider=Microsoft.Jet.OLEDB.4.0;Data Sol
ConnectionTimeout	15
CursorLocation	3 - adUseClient
CursorType	3 - adOpenStatic
<u>ln</u>	
RecordSource	
Source of recordset 'syntax', adComman	(adCommandText = SQL or other command dTable = table name

Having provided values for these properties, and 'bound' the DataGrid to our Data Control, pure magic will occur if we run this program. The DataGrid will be populated with values from the Authors table of the BIBLIO Database---without having written a single line of code!

Þ		Jacobs, Russell	Teal DUIN	
í	2	Metzger, Philip W.		
	3	Boddie, John		
4	4	Sydow, Dan Parks		
ł	6	Lloyd, John		
1	3	Thiel, James R.		
-	10	Ingham, Kenneth		
	12	Wellin, Paul		
	13	Kamin, Sam		
	14	Gaylord, Richard		
	15	Curry, Dave		
!·	17	LGardner Juanita Merca	au	

---if you don't (and this can sometimes happen if you forget to click on the Apply button) just start the process again by clicking on the Custom Property of the Data Control.

With a connection to the database established, you can use the Grid to add new records, and update and delete existing records---provided the AllowAddNew, AllowDelete and AllowUpdate properties of the Data Grid are set to true.

JacaGridi Data	
Alphabetic Cate	gorized
(About)	L
(Custom)	
(Name)	DataGrid1
Align	0 - vbAlignNone
AllowAddNew	False 🔹
AllowArrows	True
AllowDelete	False
AllowUpdate	True
Appearance	1 - dbg3D
BackColor	8H80000005&
BorderStyle	1 - dbgFixedSingle
Caption	
CausesValidation	True
ColumnHeaders	True
DataMember	
n	
llowAddNew	

Summary

I hope you enjoyed this article on using the ADO Data Control.