

**ITED 511 02E**

**Unit 4 Activity**

**Microsoft Access 2007  
Database Tutorial**

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## Introduction:

This tutorial will assist you in creating a simple database with customized tables, forms, queries, and reports.

The database I created is for keeping track of computers and three types of components installed in them. Note that if this database were to actually be used effectively, it would need to store more components than what is found below. Also note that the data it holds is fairly technical, so it may be most useful for users with a higher understanding of computer hardware. Such users include IT professionals, computer hobbyists, and PC gamers. However, by following this tutorial, you can still create a database that may be more useful for your needs.

## Create a new database:

First, select *Blank Database* after opening Access 2007. Enter your database name in the lower right hand box, and then click *Create*.

## Create tables:

Next, create your tables by first selecting the *Create* tab at the top and then by selecting *Table*. Be sure and save it as a unique name that represents the contents of that table.

Example tables: *Computers, Processors, Memory, Motherboards*

## Specify table fields:

For each table you create, it's easiest to create/modify its fields by switching to *Design View*. In this view, type each field name in the left column entitled *Field Name*, and specify its data type in the right column entitled *Data Type*. Be sure to select a primary key that will uniquely identify each record in the table. For mine, I created a field called *ID* and set it up as an *AutoNumber* data type. For each new record in the table, a new and unique integer will be assigned to as its *ID* number. Below are example table fields.

### Processors

Field Name	Data Type
brand	Text
series	Text
model	Text
clockSpeed	Number
coreCount	Number
...	...

### Motherboards

Field Name	Data Type
brand	Text
model	Text
revision	Text
memorySlotClount	Number
dualChannel	Yes/No
...	...

## **Create forms:**

For each table, a form can be created that will make adding and editing its data much easier. To create a form, first select a table on the left, and then select *Create* and select *Form* in the upper panel. A default form for the selected table will be created. There are alternate ways of creating forms, which can include starting from scratch with the *Form Design* option, or you can allow Access to create one for you (that is still customized for you) by choosing the *Form Wizard*. Once a form is created, you can edit it with *Design View*. For example, in this view, you can hide unwanted fields by setting their *Visible* property to *No* in the *Properties Sheet*. This sheet is accessed by right clicking the form and toggling the *Properties* option. Now, when you click on a form object, its individual properties and settings will be displayed.

Here is an example of editing a form item:

Right click a text field and select *Change To* and change it to a *Combo Box*. A combo box is a type of dropdown list where you can customize the data entry to be from a list of values or from a query. For example, in my *Processor Form*, I changed my *coreCount* input to be a combo box with the listed values of (1, 2, 4). I did this by first changing the text box to a combo box, and then I selected the combo box and viewed its properties in the property sheet. Under the *Data* tab, I changed the *Row Source Type* to be that of *Value List*, and then I manually entered the values in the *Row Source* property with the format “*DDR1;DDR2;DDR3*”. Access automatically interprets this list and populates the combo box with the typed values.

## **Create queries:**

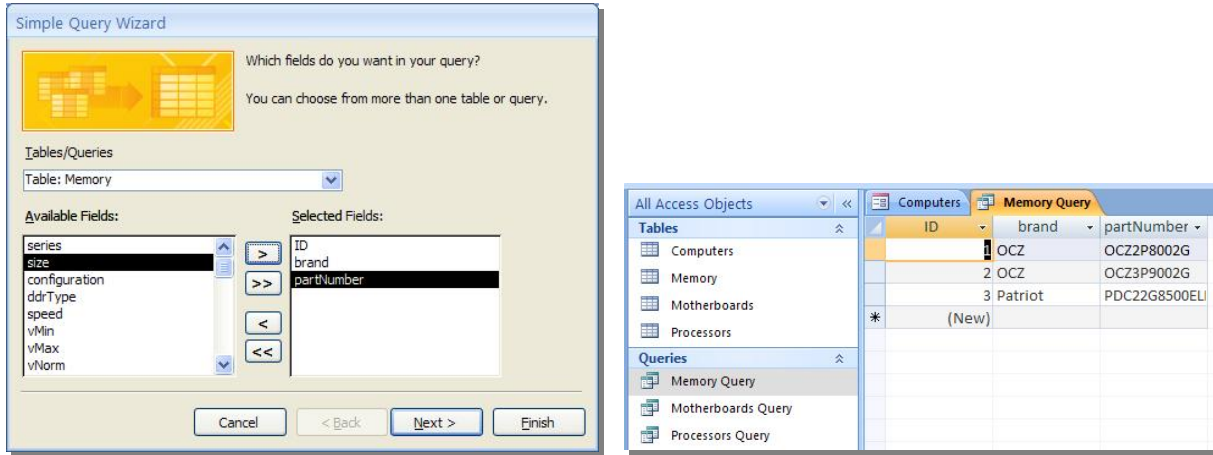
Queries are used to extract data from a database. There are many different types of queries that range from very simple to very advanced. For my database, I am only using simple queries, but if I wanted to expand upon my database and extract more robust and customized data, then more complex queries will be needed.

To create a simple query, first select the *Create* tab, and then select the *Query Wizard*. You will see multiple query types, but we will only use the *Simple Query Wizard* type. Next you will see a dropdown of your tables and previously created queries. Select a table such as *Memory*, and add the *Available Fields* you want to return in your query to the *Selected Fields* box. Next you can either open the query to view its information or choose to modify the query in *Design View*. Opening the query will simply display the data returned from the query, but you can alternately edit the query or add/remove additional fields via drag and drop from within the query’s *Design View*. You can also toggle which fields to show or even add criteria to certain fields.

Here is an example query:

Table: *Memory*

Fields: *ID, brand, partNumber*



I created similar queries for my *Motherboard* and *Processors* tables. I then used these queries in my *Computers* form as input for combo boxes. This process is described in the next section.

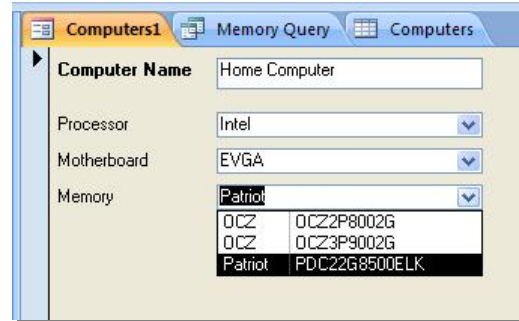
### Use query results in Combo Box:

While this level of complexity may not be 100% needed, I wanted to have some fun with my database and make it easy to select computer components for each computer once the individual components were entered into their corresponding tables. To do so, I made an additional table called *Computers* that has the following fields:

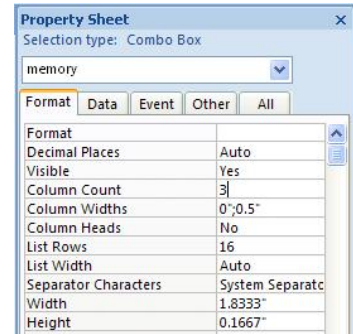
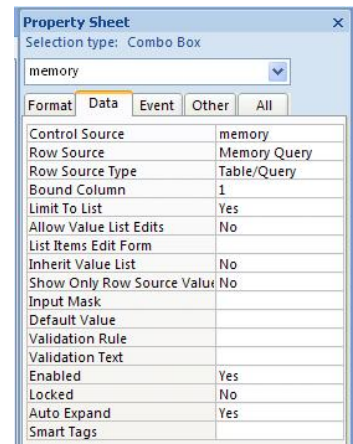
### Computers

Field Name	Data Type
ID	AutoNumber
compName	Text
processor	Number
memory	Number
motherboard	Number

By doing this, a processor or memory component can be assigned to a computer with only a Number value. This reduces data redundancy in that a component only needs to be entered once, and multiple computers can reference it from within the *Computers* table. In fact, the only data the user needs to manually enter for each computer is its *compName*, or Computer Name. (Note the example image to the right.)



With that said, I created a form for my *Computers* table and changed the text boxes to be combo boxes for the fields *processor*, *memory*, and *motherboard* in *Design View*. Next, I selected each combo box and edited its properties in the property sheet. For the *memory* combo box, I changed the *Row Source Type* (in the *Data* tab) to be *Table/Query*. Then, I changed the *Row Source* to be the *Memory Query*, which was created in the above step entitled “Create queries.” I then ensured that the property *Bound Column* was set to 1. I do this because the first column in my query contains the value I want to store from the combo box selection. Next, under the *Format* tab in the properties, make sure the *Column Count* is 3 and the *Column Widths* is “0”;”. (without the outermost quotations) I want all of the columns from the query to be used in the combo box, which in this case is 3, and I only want the last two columns from the query to appear in the combo box, which in this case are *brand* and *partNumber*. I don’t want the first column, which is *ID*, to appear because it isn’t useful or relevant to the user while selecting the specific component. For this reason, I set the first column width to be that of zero inches (0”). This effectively hides the column from view while still allowing it to be used as the *Bound Column*. The format for setting column widths in the *Column Widths* property is as follows:

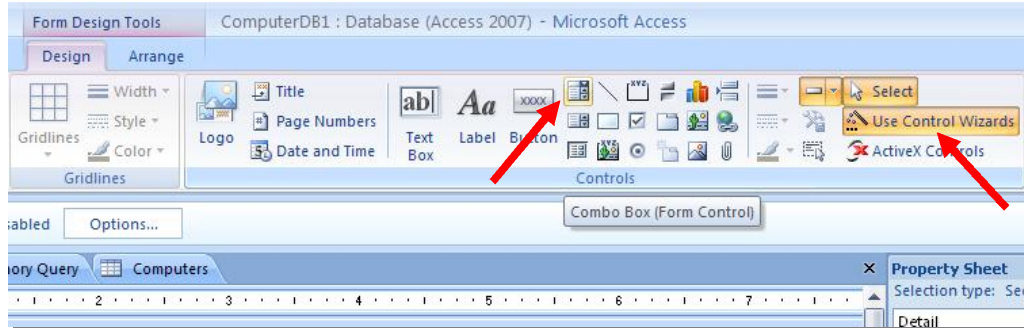


<column1width>;<column2width>;<column3width>;<etc>

Note the use of the semicolons. These are what separate one width from another. If you only specify the first width, then the remaining widths will default to one inch (1”). You may want to customize these widths as well if the data doesn’t fully display in a one inch width. Note that I specified my second width to be half an inch (0.5”).

This complete process can also be performed by using a combo box wizard. To accomplish this, first ensure you are in the form’s *Design View*. Next, select the combo

box icon (see picture below), and ensure *Use Controls Wizard* is enabled. Now, when you draw a combo box on the form, a wizard will appear and it will walk you through the complete process of selecting where the combo box gets its data as well as which fields it displays and which field it will use for the stored data.



I first introduced you to the manual way of using combo boxes because this is how I first figured it out, and also because it allows you to later edit a combo box you may have used the wizard to create. Note the many additional properties of combo boxes in the different tabs of the property sheet. I recommend that you spend some time experimenting with them to further learn about the many ways to customize a combo box as well as other types of controls. You may find it useful to know that when you click on a property, a short description of what it does will be displayed in the status bar on the bottom of the window.

### Create reports:

Access allows you to create customized reports, which are formatted outputs of data in the database that are easy to read. Reports can be designed to only show certain fields. This can also be useful when you frequently find yourself checking on the values of certain items in your database. Executives and managers often times prefer this type of summarized view of the data.

To create a report, first select *Create* and then select the *Report Wizard*. Next, select a table or query that you want to display fields from. Add each field from the table or query to the *Selected Fields* box. Note that you can add fields from multiple tables before you click *Next*.

The next step is to choose how you want your data to be organized or split up. For my report, I chose to view my data *by Computers*, which is what I personally find



to be a useful report. Next, choose any groupings and sorting information you want in your report. I didn't choose any for mine. Finally, choose the layout and look of the report. I chose *Columnar* and left the default *Office* style because I found this combination to be the most appealing way of displaying my data. This, of course, is more of a personal preference. Try creating multiple reports with different layouts to find the one you like the most.

Once your report is created, you can edit it in *Design View* by rearranging items or by formatting certain output fields. You can also rename the field labels to be something more useful than the database field names.

Notice my example report on the right.

The screenshot shows a report titled "Computers" with two data entries. The first entry is "Home Computer" and the second is "Work Computer". Both entries have the same hardware specifications: Intel Core 2 Duo E6600 CPU, EVGA 680i motherboard (revision A1), Patriot Extreme Performance DDR2 memory (2GB), and OCZ Vista Ready Platinum memory.

Field	Home Computer	Work Computer
Computer Name	Home Computer	Work Computer
CPU Brand	Intel	Intel
CPU Series	Core 2 Duo	Core 2 Duo
CPU Model	E6600	E6600
Motherboard Brand	EVGA	EVGA
Motherboard Model	680i	680i
Motherboard Revision	A1	A1
Memory Brand	Patriot	OCZ
Memory Series	Extreme Performance	Vista Ready Platinum
Memory DDR Type	DDR2	DDR2
Memory Size	2	2