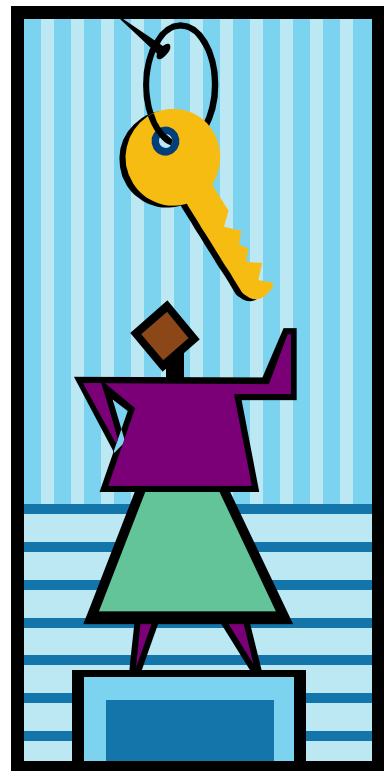


# Access

Getting Started

by

Libby Baker



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## The Database Design Process

Microsoft Access provides a number of tools that you can use to create a relational database even if you don't have much experience with relational design. For example, you can use the Database Wizard to create over 20 different types of databases, from an Asset Tracking database to a Music Collection database.

You will plan and design a database from the ground up.

**Forms** based on the tables are used for user-friendly input or data retrieval.

When you use your data, you then combine and present facts in many different ways. For example, you may print **reports** that combine facts about employees and facts about sales. Charts can demonstrate trends and are often easier to analyse.

**Queries** limit the amount of information displayed in forms or reports.



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Notes:

## Steps in Designing a Database

When you design a database, first break down the information you want to keep as separate subjects, and then you tell Microsoft Access how the subjects are related to each other so that Microsoft Access can bring the right information together when you need it. Here are the steps in the database design process.

**Step One: Determine the purpose of your database.** This will help you decide which facts you want Microsoft Access to store.

**Step Two: Determine the tables you need.** Once you have a clear purpose for your database, you can divide your information into



separate subjects, such as "Employees" or "Orders." Each subject will be a table in your database.

**Step Three: Determine the fields you need.** Decide what information you want to keep in each table. Each category of information in a table is called a *field* and is displayed as a column in the table. For example, one field in an Employees table could be Last Name; another could be Hire Date.

**Step Four: Determine the relationships.** Look at each table and decide how the data in one table is related to the data in other tables. Add fields to tables or create new tables to clarify the relationships, as necessary.

**Step Five: Refine your design.** Analyse your design for errors. Create the tables and add a few records of sample data. See if you can get the results you want from your tables. Make adjustments to the design as needed.

Don't worry if you make mistakes or leave things out of your initial design. Think of it as a rough draft that you can refine later.

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Notes:

## ***Determining the Purpose***

The first step in designing a Microsoft Access database is to determine the purpose of the database and how it's to be used. This tells you what information you want from the database. From that, you can determine what subjects you need to store facts about (the tables) and what facts you need to store about each subject (the fields in the tables).

Talk to the people who will use the database. Brainstorm about the questions you'd like the database to answer. Sketch out the reports you'd like it to produce. Gather the forms you currently use to record your data. You'll use all this information in the remaining steps of the design process.



Start by writing down a list of questions the database should be able to answer.

Next, gather all the forms and reports that contain information the database should be able to produce.

After gathering this information, you're ready for the next step.

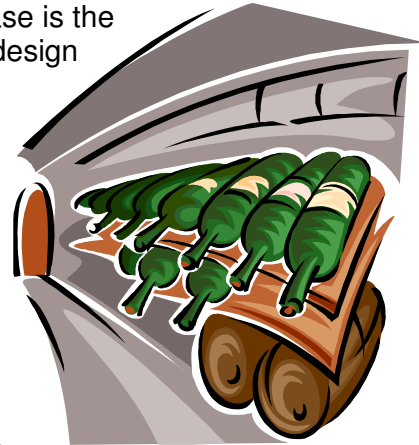
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Notes:

## ***Determining the Tables You Need***

Determining the tables in your database is the most important step in the database design process.

Look at the information you want to get out of your database and divide it into fundamental subjects you want to track, such as customers, employees, products you sell, services you provide, and so on. Each of these subjects is a candidate for a separate table.



From this list, you can come up with a rough draft of the table in the database and some of the fields for it.

<b>Wine Cellar</b>
Name
Vineyard
Year
Number of bottles
Date

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Notes:

## ***Determining the Fields You Need***

To determine the fields in a table, decide what you need to know about the people, things, or events recorded in the table. You can think of fields as characteristics of the table. Each record (or row) in the table contains the same set of fields or characteristics. For example, an address field in a customer table contains customers' addresses. Each record in the table contains data about one customer, and the address field contains the address for that customer.

- **Include all the information you need.** It's easy to overlook important information. Return to the information you gathered in the first step of the design process. Look at your paper forms and reports to make sure all the information you have required in the past is included in your Microsoft Access tables or can be derived from them. Think of the questions you will ask Microsoft Access. Can Microsoft Access find all the answers using the information in your tables?
- **Store information in its smallest logical parts.** You may be tempted to have a single field for full names, or for product names along with product descriptions. If you combine more than one kind of information in a field, it's difficult to retrieve individual facts later. Try to break down information into logical parts; for example, create separate fields for first and last name, or for product name, category, and description.

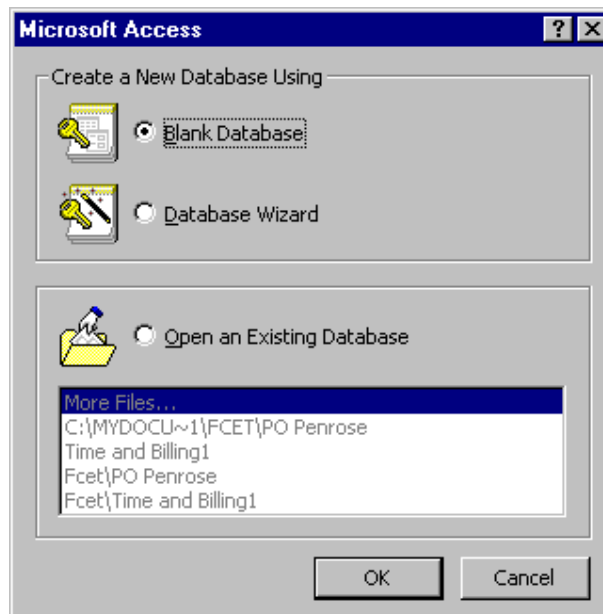
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Notes:

## Creating and Preparing a New Database

The first step in creating a database is opening a new file and giving it a filename.

1. Open MS Access 97



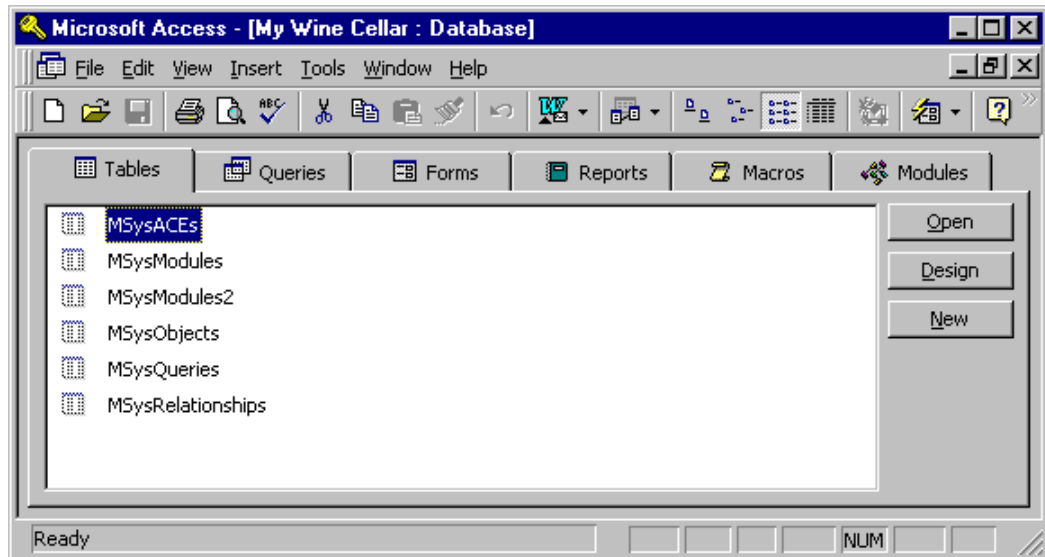
2. Select Blank Database
3. Insert a filename
4. Choose Create

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Notes:

## The Database Window

The Access Database Menu is comprised of Tables, Queries, Forms, Reports, Macros and Modules.



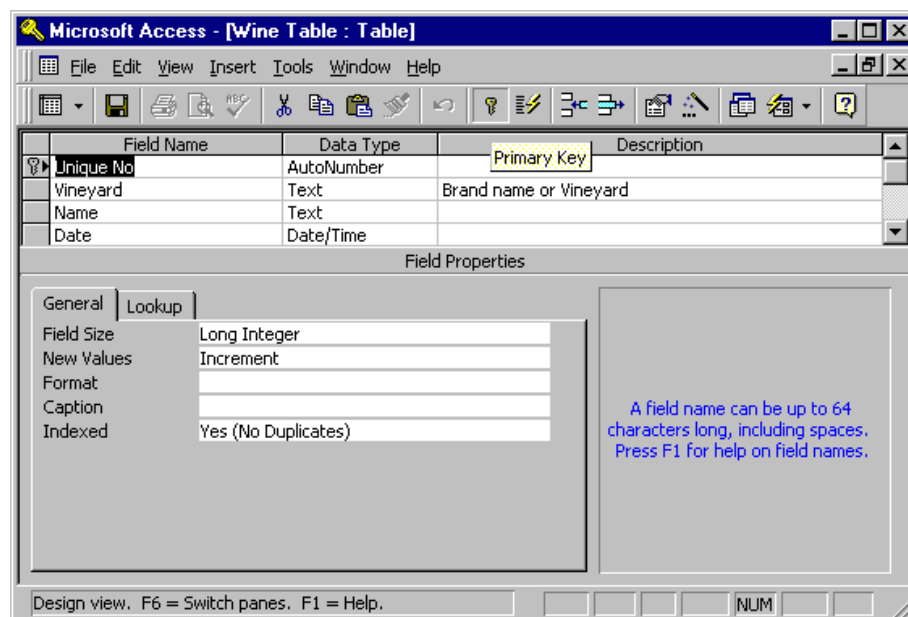
Notes:

## Creating Tables

- 1 If you haven't already done so, switch to the Database window. You can press F11 to switch to the Database window from any other window.
- 2 Click the Tables tab, and then click New.
- 3 Double-click Design View.



- 4 Define each of the fields in your table..



## Notes:

## **Primary Key**



The power in a relational database management system such as Microsoft Access comes from its ability to quickly find and bring together information stored in separate tables. In order for Microsoft Access to work most efficiently, each table in your database should include a field or set of fields that uniquely identifies each individual record stored in the table. This is often a unique identification number, such as an employee ID number or a serial number.

In database terminology, this information is called the *primary key* of the table. Microsoft Access uses primary key fields to quickly associate data from multiple tables and bring the data together for you.

If you already have a unique identifier for a table, such as a set of product numbers you've developed to identify the items in your stock, you can use that identifier as the table's primary key. But make sure the values in this field will always be different for each record -- Microsoft Access doesn't allow duplicate values in a primary key field. For example, don't use people's names as a primary key, because names aren't unique.

If you don't already have a unique identifier in mind for a table, you can use a field that simply numbers the records consecutively. Microsoft Access can even set up a primary key like that for you. For more information, search for "AutoNumber" in Microsoft Access Help.

When choosing primary key fields, keep these points in mind:

- Microsoft Access doesn't allow duplicate or null values in a primary key field.
- You may use the value in the primary key field to look up records, so it shouldn't be too long to remember or type. You may want it to have a certain number of letters or digits, or be in a certain range.

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Notes:

## ***Datasheet View***



Switch to Datasheet View. You will be prompted to save and name your table.

In this view you may enter records. Press Enter or the Tab key to move to the next field. (Shift Tab steps back a field)

All data is automatically saved when it is entered. If you may press Esc to change your mind.

*Save is used for creating or revisions of design not for data.*

## ***Design View***



Create your tables and enter a few records of data in each table. Switch to Design View to add fields, rename them or change the properties.

File Close and Save any design changes you have made. You should be back to the Database Window.

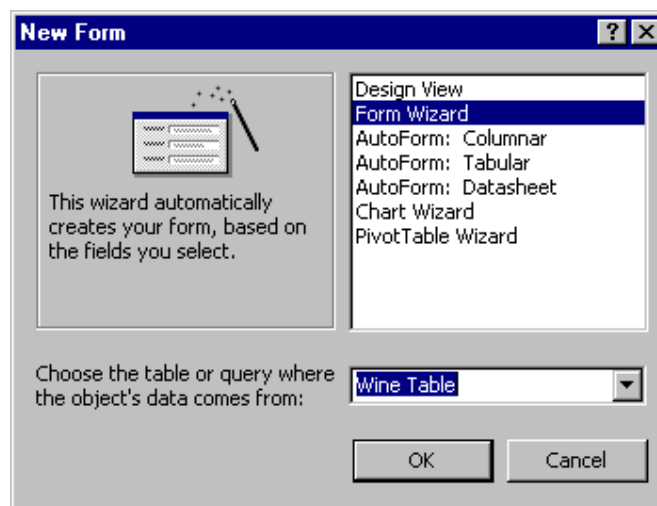
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Note:

## Using Forms

**Forms** based on the tables are used for user-friendly input or data retrieval.

1. From the Database Window click on the Forms Tab.
2. Select New, Form Wizard and select your table. Ok.



3. Select the fields you would like to include in your form and choose Next.
4. Select a layout ie Columnar, Next.
5. Select a style ie Clouds, Next.
6. Give a name that includes the word form and relates to the table the form is based on. Choose Finish.

Use the form to input records.

## Form Design

Switch to design view. If your toolbars are not turned on select View Toolbars, Form Design and Formatting (Form/Report)



To view the properties of each part of your form turn on the properties button. A dialog window will appear on top of your window. As you select each part of the form the properties will be displayed.



Property	Value
Name	Unique No
Control Source	Unique No
Format	
Decimal Places	Auto
Input Mask	
Default Value	
Validation Rule	
Validation Text	
Status Bar Text	
Enter Key Behavior	Default
Allow AutoCorrect	Yes
Visible	Yes
Display When	Always
Enabled	Yes
Locked	No
Filter Lookup	Database Default

Switch to the Form View to see your modifications. File Close and save any changes.



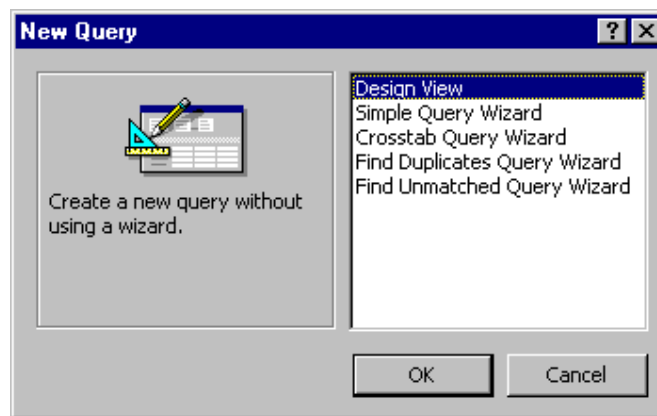
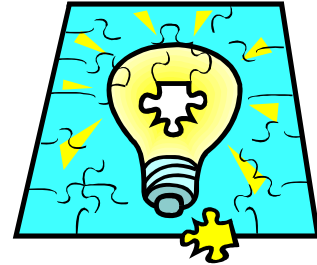

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Notes:

## Using Queries

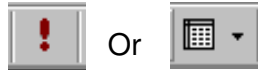
**Queries** limit the amount of information displayed in forms or reports.

In the Database Window select Queries, New, Design View.



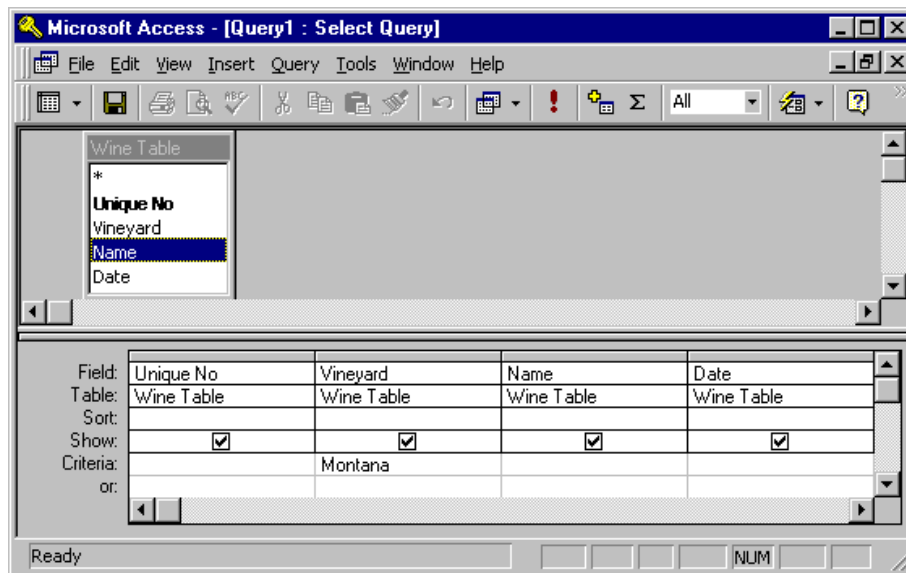
Select and Add the Table to query and then Close.

Double click on the fields you would like to view.  
Use known data for your first criteria test.



Or

Use Run or Datasheet view to see your results.



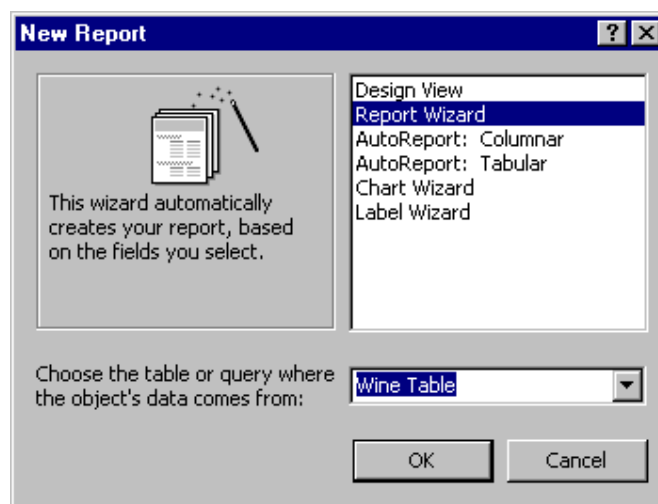
File close and Save your query with a name related to the table upon which it is based.

Notes:

## Reports

Reports are based on tables or queries. They are used to print or e-mail results

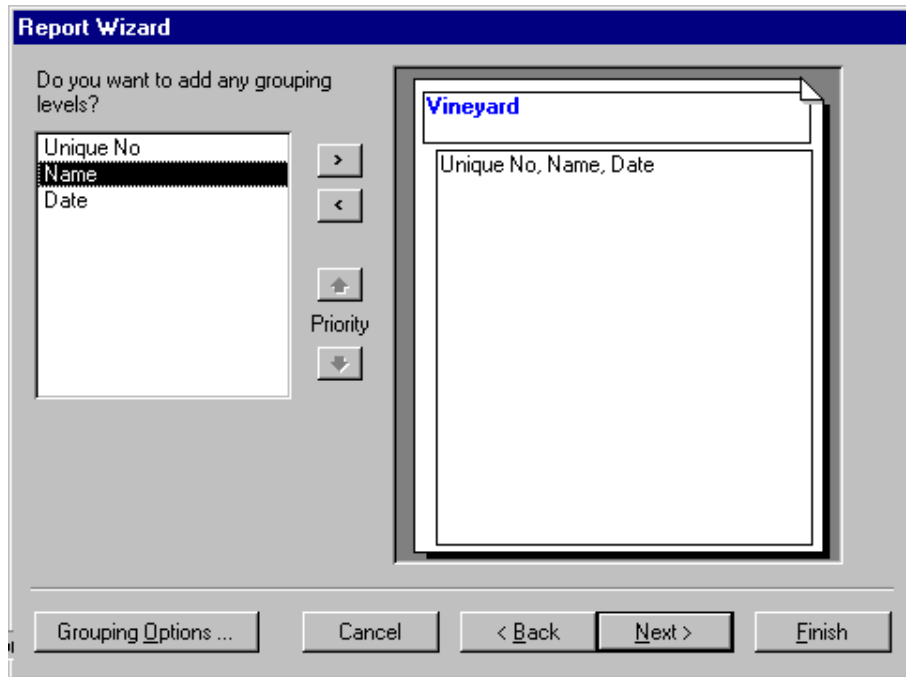
Switch to the Database Window and choose Reports, New, Report Wizard. Select a table or query name from the drop-down list.



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Notes:

1. Select the fields required, Next.
2. Select a field to group by (optional) Next.



3. Decide on Sorting, Layout, Orientation and Style
4. Give your Report an appropriate name and Preview to Finish.

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Notes:

## **Report Modifications**



Choose Design View to make any changes. Print Preview to view the report with data. Finally print the report to see if you have the desired output.



Experiment with sample data and prototypes of your forms and reports.

With Microsoft Access, it's easy to change the design of your database as you're creating it. **However, it becomes much more difficult to make changes to tables after they're filled with data and after you've built forms and reports. For this reason, make sure that you have a sound design before pushing too far ahead.**

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Notes: