Microsoft® Access *for* Beginners

Access '97, 2000, XP, 2003

Step by Step

By Steve White

PCWorkspace

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Author Profile

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OPENING YOUR ACCESS APPLICATION

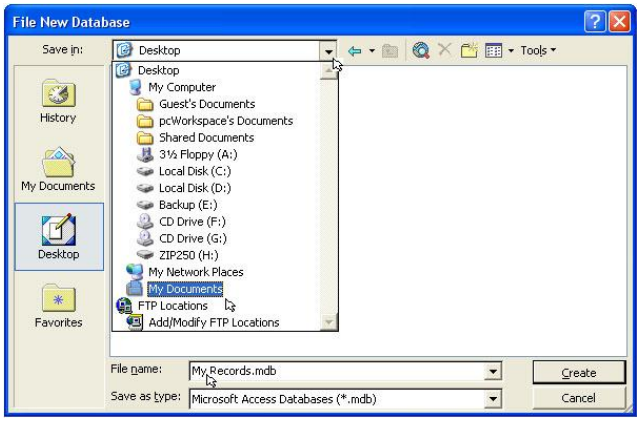
1. Select **Start**, followed by **Programs** and choose **Microsoft Access**.

CREATING A RECORD STRUCTURE / NEW DATABASE

1. From the **Microsoft Access** dialogue, select the **Blank Database** option button. XP: select **Blank Database** from the **New File** menu (**File/New…**); select **OK**.

CREATING A RECORD STRUCTURE (SAVING YOUR DATABASE) *Continued*

2. Where applicable (See 4), ensure a disk is inserted.
3. Click to the right of the **Save in:** section to open a drop-down menu. Locate where to save your file. Choose, for example, **My Documents**, or **3½ Floppy (A:)**. Access will, by default, allocate the name db1, 2, 3 etc. Assign your own database name, e.g. **My Records; Business database etc**. Enter the name in the **File name:** text area to the foot of the dialogue.
4. Select **Create** (This creates, allocates a name to, the database structure).

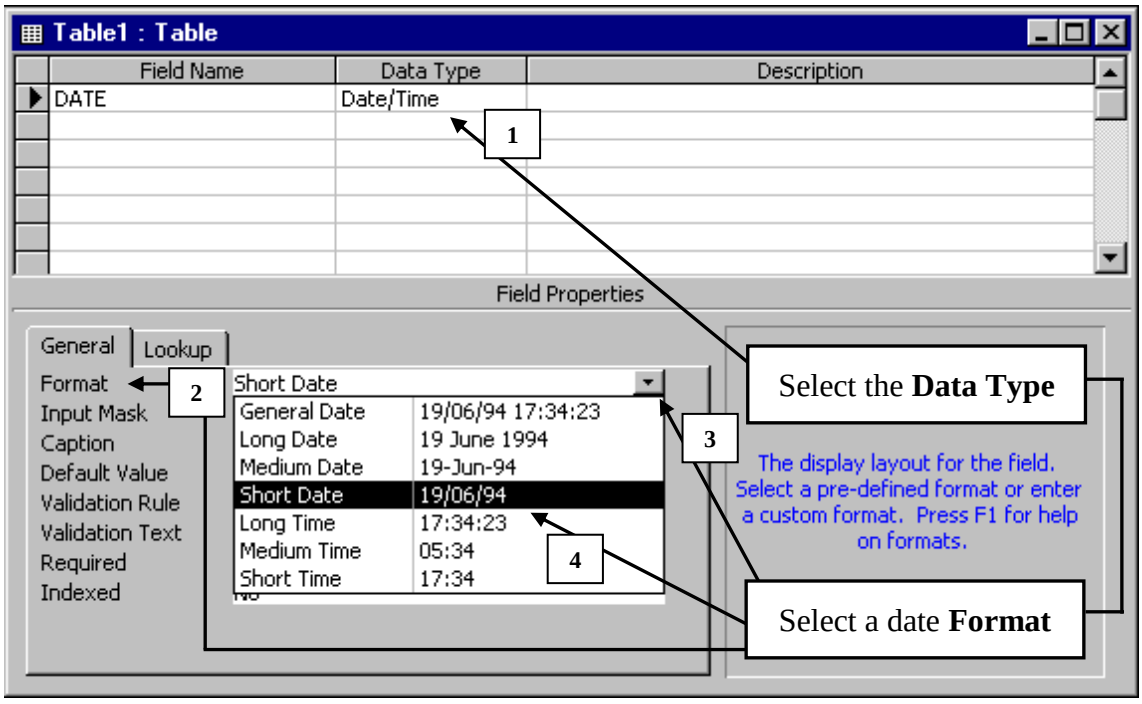


5. Now ensure **Tables** is selected, and click on **New** (Info. database files need not be limited to one table; and need not be related (See **Relationship** page 14)).
6. Choose the **Design View** option, and select **OK**.
7. Enter your first **Field Name** in the first row at the head of the first column (See DATE illustrated on page 4). Perhaps choose something simple for now… If adding books to a database for example, fields could be: Title; Author; Year published; ISBN No. etc. (See also the Glossary and Screen-prints at: http://pcworkspace.co.uk).
8. Press the tab key to move across, open the drop-down menu, and select a **Data Type** (See below).
9. Tab twice; continue to enter all the other field names as required.

Type of data	Example	Data Type	Example Format / Decimal Places
Numeric data	2	Number	Fixed / 0
Money	£2.00 or 2.00	Currency	Currency or Fixed / 2
Telephone No	01733 123456	Text	NA
Date option	19/06/94	Date/Time	Short Date

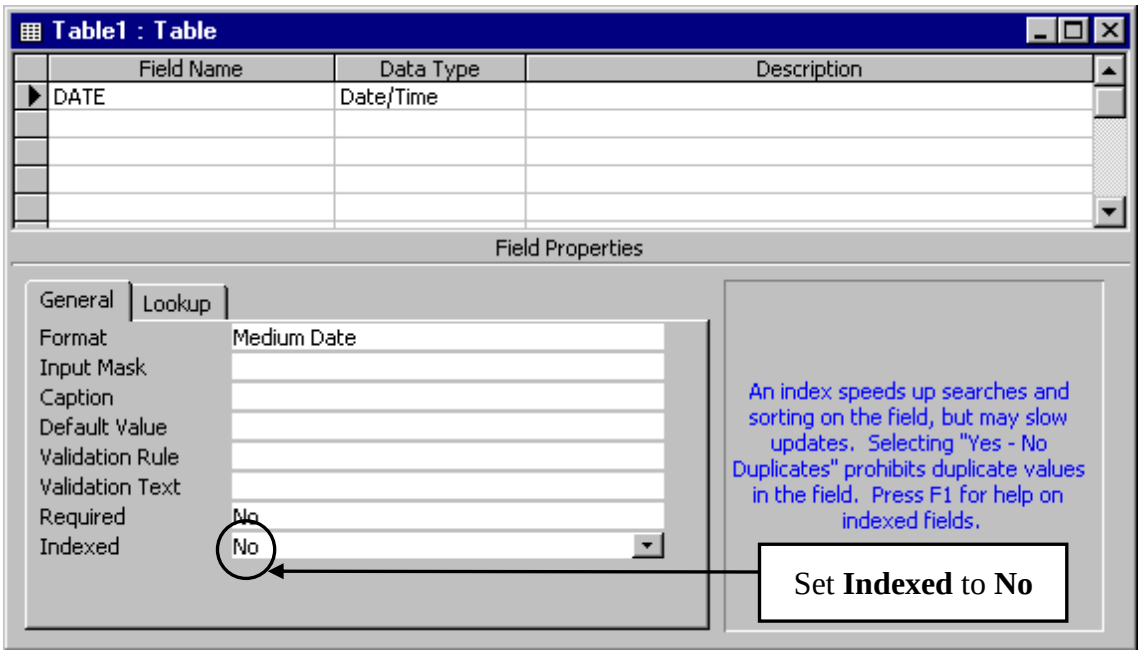
DataType: for combinations of letters and numbers, select Text… perhaps where specific codes are required. See **Field Properties** in the Glossary on page 14. See also: '**About creating input masks to control how data is entered in a field or control**' in Microsoft Access Help.

Selecting a date format



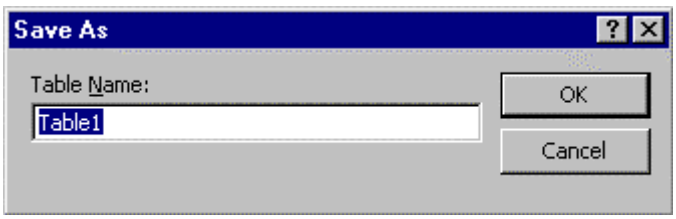
Observe that **Indexed** is set to **No** when entering each field to ensure that Access does not automatically sort the rows when closing the table; important when producing printouts for an assessment or exam. I.e. this ensures data remains as entered, remains in row order entered.

Setting the index



SAVING YOUR TABLE STRUCTURE

1. From the **File** menu, select **Save**.
2. Type the **Table Name:** into the text area.
3. Select **OK**.



4. Prompted **"Do you want to create a primary key now?"** for now, select **No** (See the Glossary on page 14).
5. View the table by clicking on the **Datasheet View** button, found on the left of the toolbar, or select from the **View** menu.

 **Datasheet View**  **Design View**

ENTERING DATA

1. Enter your information, inputting the data from left to right, pressing the tab key to move to the next column.

Access automatically saves data entered; however changes to layout must be saved, having adjusted column width for example. Where you may need to make some correction to a marked assignment, make copies where there is a clear change in objective, where a printout is required perhaps.

Data can be entered in CAPITALS, Title Case, or Sentence case, however, must be consistent throughout a field. Address files for mail merge might be entered in line with the associated word processing documents, e.g. Title Case, with CAPITALS for the main Town or City, and Post Code. Columns in the database should be wide enough to display all data. Double-click on the column dividing line to the right of your field heading to adjust, re-size to the data.

COPYING TABLES

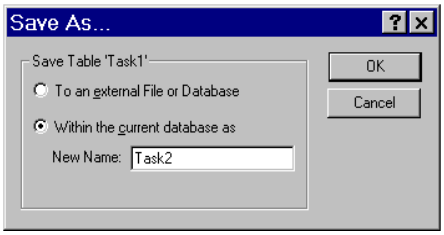
1. Ensure your table is closed.

2i. **Office '97**. From the **File** menu, select **Save As/Export…**

2ii. **Office 2000/XP**. From the **File** menu, select **Save As**.

3i. **Office '97**. Ensure **Within the current database as**, is selected, enter the file name in the **New Name:** text area. Click **OK**.

3ii. **Office 2000/XP**. Enter the file name in the **Save Table** 'Name' **To:** text area. Select **OK**.



'97

'00/XP/'03

Continue working within the original table. Working within the new table would be fine; however, where a form for example, has been linked to the original table created, entering data into such a form will only update the associated table, i.e. the original if that was the table you were working with when the form was created. Perhaps best therefore, when making copies, to set them aside, should you need to look back at them? This regardless whether or not there is more than one table (Not copies of). Clients; Inventory; Staff; etc. etc.

PREVIEWING YOUR DOCUMENT

1. From the **File** menu, select **Print Preview** (Where appropriate, click on the chevrons at the foot of the menu to expand the available options), or select the **Print Preview** button.

Print Preview

2. To exit your preview, select the **Close** button above your document, or press the **Esc** key, top, left of your keyboard.

Close

CHANGING THE PAGE ORIENTATION

1. From the **File** menu, select **Page Setup…**
2. Select the centre tab labelled: **Page**, and choose the required setting.
3. Select **OK**.

See also: Setting Print Properties… in the Addendum on page 15.

PRINTING YOUR DOCUMENT

1. From the **File** menu, select **Print…**
2. Ensure that the correct **Number of Copies** is showing and, where applicable, the correct page range **(Pages From: - To:)**.
3. Select **OK**.

EDITING DATA

1. Double-click on the required cell to select (highlight), and key in the new information.

DELETING A RECORD

1. Click on the grey segment to the left of your table (See triangle symbol).

	MAKE	MODEL	YEAR	REG	COLOUR	NU
	VL	NOVA	1982	J	RED	
	VL	CALIBRA	1990	H	GREY	
	PT	309	1989	F	DARK BLUE	
	FD	FIESTA	1991	J	BEIGE	
	VW	POLO	1989	F	SILVER	
	VL	CARLTON	1987	E	MINK	
	PT	405	1992	J	RED	
	FD	GRANADA	1984	B	BLACK	
▶	FD	ORION	1989	G	METTALIC RED	
	VL	ASTRA	1992	K	WHITE	
	VL	CAVALIER	1991	H	SILVER	

2. From the **Edit** menu, select **Delete Record** (Where appropriate, click on the chevrons at the foot of the menu to expand the available options).
3. Select **Yes** from the dialogue.

ADDING A RECORD

1. Scroll to the foot of your table, select the first available empty row and enter your data.

SORTING RECORDS IN ASCENDING OR DESCENDING ORDER

1. Place the cursor anywhere in the column under the field heading required.
2. From the **Records** menu, select **Sort**.
3. Moving the pointer to the right (sub-menu), click either **Ascending** (A - Z), or **Descending** (Z - A) order.

SELECTING / SEARCHING RECORDS SPECIFIED BY A SINGLE CRITERION

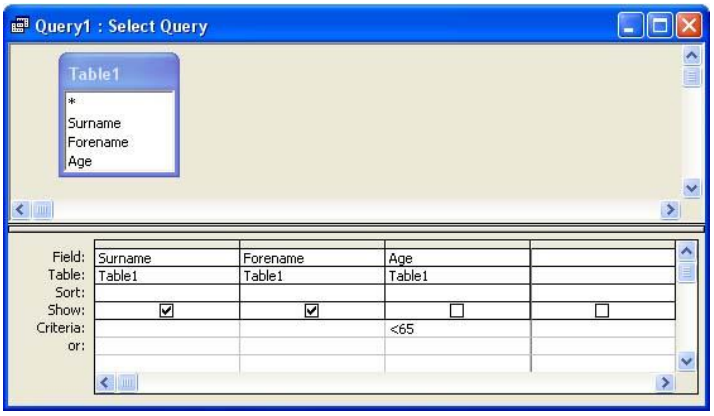
1. Ensure your table is closed; select the **Queries** tab followed by **New**.
2. Select **Design View**, click **OK**.
3. In the **Show Table** dialogue, select (highlight) the appropriate table or query.
4. Select **Add**, followed by **Close**.
5. From the query dialogue, select (highlight) the asterisk *(star) symbol, [1]drag and drop into the first **Field:** column. Ensure [2]**Show:** is checked (See footnotes).
6. Now select each field required, and [1]drag into the second, third column etc.
7. Enter the Criteria Expression in the **Criteria:** row beneath (See the Glossary on page 13).
8. Deselect the tick in the row labelled [2]**Show:** beneath the selected field.

[1]Dragging and dropping the asterisk * into the field row/first column will ensure that your query will show all the field headings. Where this method is used and all field heading are required, only select the [2]check box in the appropriate column, i.e. where the asterisk (wild card representing all fields) has been included in the first column.

If only certain field headings (specified fields) are required, [1]drag and drop the field names individually and ensure to tick the [2]check box below each column where associated data is to be shown. Criteria can be included, but need not be shown in the resulting Table Query…

I.e. where several criteria are required to create the query, but only certain fields are to be displayed, remove the tick from the column [2]check boxes not to be shown. See below.

For example: where data relating to individuals less than 65 years old (<65) is required, albeit age need not be included in the report (printout).



9. **Save** and **View** the query.
10. **Print** and **Close** your query.

SELECTING / SEARCHING RECORDS SPECIFIED BY MORE THAN ONE CRITERION

1. Ensure your table is closed; select the **Queries** tab followed by **New**.
2. Select **Design View**, click **OK**.
3. In the **Show Table** dialogue, select the table or query containing the data needed.
4. Select **Add**, and **Close**.
5. Select (highlight) the asterisk*, drag and drop into the **Field:** row/first column.
6. Now select the first field required, and drag into the column to the right.
7. Enter the **Criteria Expression** (See the Glossary on page 13) in the **Criteria:** row beneath the selected field.
8. Deselect the check box… remove the tick above the criteria in the row labelled **Show:**
9. Select the next field, and drag into the column alongside.
10. Enter the appropriate criteria, and deselect the check box (Here, we have already opted to show all in column one).

PRINTING SPECIFIED FIELDS FROM SELECTED RECORDS

1. Enter (drag and drop) only the fields required, or opt to use the **Simple Query Wizard**.

EXITING YOUR DOCUMENTS AND APPLICATIONS

1. From the **File** menu, select **Close** / **Exit**.

SWITCHING OFF YOUR SYSTEM

1. Ensure all tables and applications are closed.
2. Select **Start**, generally at the lower left hand side of your screen, and select **Shut Down**… (XP: **Turn Off**).
3. Ensure **Shut down the computer?** is selected, and click on **Yes** (XP: **Turn Off**).
4. Wait for your computer to switch off. Otherwise: When the message **"It's now safe to switch off your computer"** appears on your screen, remove any disk there might be, and switch the power off on your system. If your system does not shut down, press in the power button for about four seconds, contact your computer support.

OPERATORS

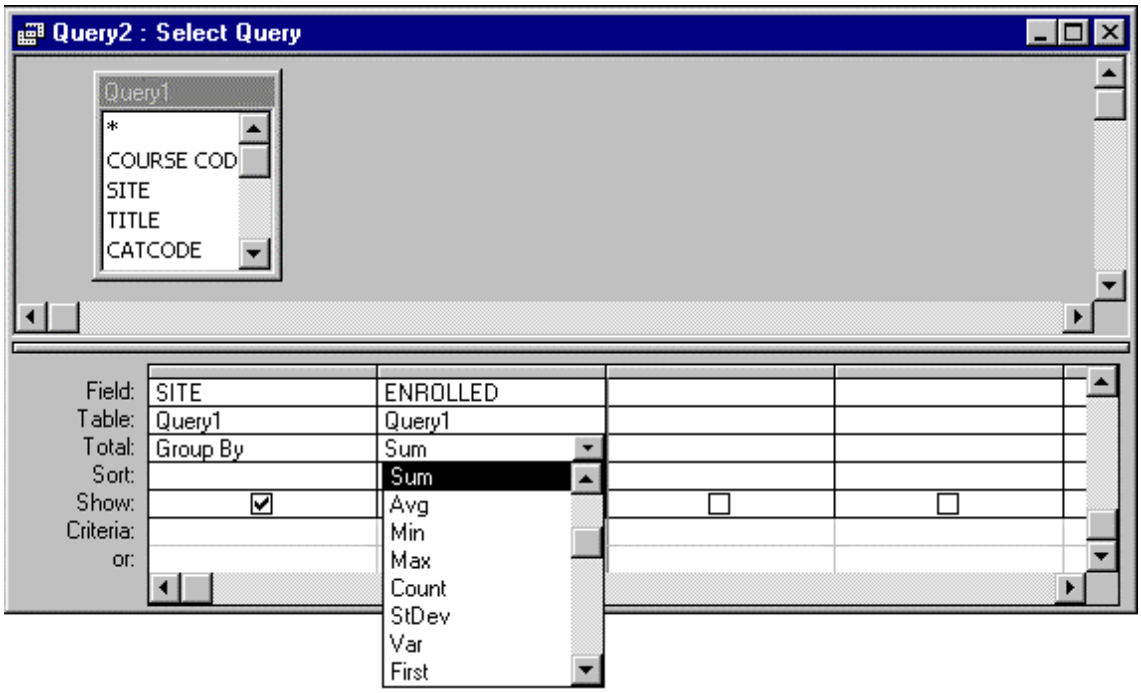
Consult the Glossary on page 14 for further clarification.

Operator	Definition	Operator	Definition
=	**equal to**	<=	**less than or equal to**
<	**less than**	>=	**greater than or equal to**
>	**greater than**	<>	**not equal to**

Between	Use this operator to select data between two values; e.g. between 10 and 20. In this example using the between operator is the same as using the criteria expression >=10 and <=20. Searching for a date for example would be entered as follows: **Between 1/9/95 and 30/9/95**. This would display as follows: **Between #1/9/95# and #30/9/95#**. Here, the criteria expression (**Between** (Operator)) must include the first and last date.
Like *****	Use this operator to compare the values in a table to a specific criterion; e.g. **Like BT**. Use wild cards where data included does not match specific criteria; e.g. A* = A followed by none specified data (any data).
Note that Access automatically enters the like operator when you use certain criterion; e.g. if you enter an asterisk wildcard operator, such as **A***, and then press the Return [Enter] key, Access will display this criterion as: **Like "A*"**.	
Is	Use this operator to determine if the value in a field meets a certain condition; e.g. **is null** determines if a field is empty (**Null** would suffice). **is not null** determines if a field contains a value.

GROUP BY AND CALCULATE TOTALS

1. Select the **Queries** tab.
2. Choose **New**.
3. Select **Design View** and **OK**.
4. Select the **Table** or **Queries** tab.
5. **Add** and **Close** the table or query.
6. Select your heading(s).
7. Select the **Total** (AutoSum) button to enter a **Total:** row. Σ
8. Where a total is required in any given field, select **Sum** from the drop-down menu.



REMOVING HEADERS & FOOTERS FROM TABLES AND QUERIES

1. From **File**, select **Page Setup…**
2. Select the **Margins** tab.
3. Remove the tick from the section labelled: **Print Headings**.
4. Select **OK**.

CREATING A REPORT IN ACCESS AND PUBLISH IT WITH WORD

1. Open your database.
2. Select **Reports**.
3. Choose **New**.
4. Select the **Report Wizard** from the **New Report** dialogue.
5. At the foot of the dialogue, choose the appropriate **Query** or **Table**.
6. Add the field headings in the **Report Wizard** dialogue, and select **Next**, **Next**, **Next**.
7. Choose a design from the **Layout** section, and select **Next**.
8. Select a style, followed by **Next**.
9. Allocate a name, and select **Finish**.
10. Switch to **Design View**.
11. Select and delete the Page (Report) footers.
12. Select all the detail (Hold the shift key, and select each field heading frame, grouping them together). Left align the text.
13. Re-size the field heading sections to ensure all data will be displayed in full.
14. Re-size the heading to ensure this will be displayed in full.
15. From the **Tools** menu, select **Office Links**. Moving the pointer to the right, choose **Publish it with Microsoft Word**.
16. From the **File** menu select **Save As…**
17. Save the file (note that the file saves as **Rich Text Format**).
18. **Close** and **Exit** your database.
19. **Open…** a Word document and import the report, or open into Word.

MAIL MERGE (ACCESS - WORD)

Part One

1. Construct a database address file.
2. **Close** and **Exit** your table and database.
3. Create a **New…** or **Open…** an existing Word document.
4. **Save** as your main document.
5. From the **Tools** menu, select **Mail Merge…**
6. Choose **Create** and select **Form Letters…**
7. Select **Active Window** (Current), or **Change Document Type** (Other).
8. Choose **Get Data**.
9. Select **Open Data Source…**
10. Locate your database file in the **Look in:** section and ensure **Microsoft Access Databases** is selected in the **File of type:** area below. Select **Open**.
11. Select the **Tables** or **Queries** tab, and choose the table or query from the section below. Click **OK**.
12. Select **Edit Main Document**.
13. Position your cursor where you would like your database fields (Data) inserted.
14. Select **Insert Merge Field**, found on the left of the **Mail Merge** toolbar, and choose the required fields.
15. Update (Save) your file to disk.

MAIL MERGE (ACCESS - WORD) *Continued*

Part Two

1. From the **Tools** menu, select **Mail Merge…**
2. Choose **Merge**.
3. Ensure **Merge to: New document** is selected.
4. Select **Merge**.
5. Select **Print Preview**.
6. **Print**… your letters.

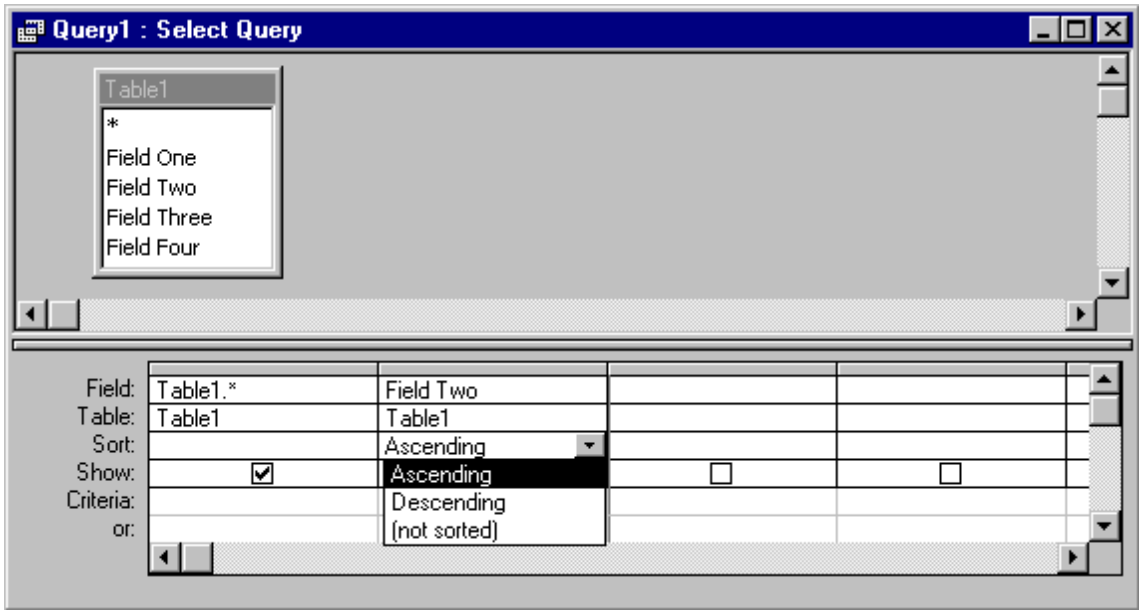
DESIGNING A SIMPLE FORM

1. Ensure your table is closed.
2. Select the **Forms** tab.
3. Select **New**.
4. Choose **Form Wizard**.
5. Choose the table or query, from where the objects data comes, at the foot of the **New Form** dialogue.
6. Select **OK**.
7. Select from the **Available Fields:** section.
8. Select **Next**.
9. Select a layout.
10. Select **Next**.
11. Select a background style.
12. Select **Next**.
13. Allocate a name.
14. Select **Finish**.

15. Enter your data, pressing the tab key to move to the next cell.
16. Press the Return [Enter], or tab key for the next available row/record.

SORTING BY QUERY

1. Create your query.
2. Select the row labelled **Sort:** beneath the field that requires sorting.
3. Open the drop-down menu.
4. Select **Ascending** or **Descending** from the menu.



DELETING OR RENAMING TABLES AND QUERIES

1. Ensure your table or query is closed.
2. Ensure the correct tab/option is selected, and click on the appropriate icon using the alternative mouse button (Right button, where configured for a right handed individual).
3. Select **Delete** or **Rename** from the menu.
4. Follow on-screen instructions for **Delete**. For **Rename**, enter a new name and press the Return [Enter] key to confirm.

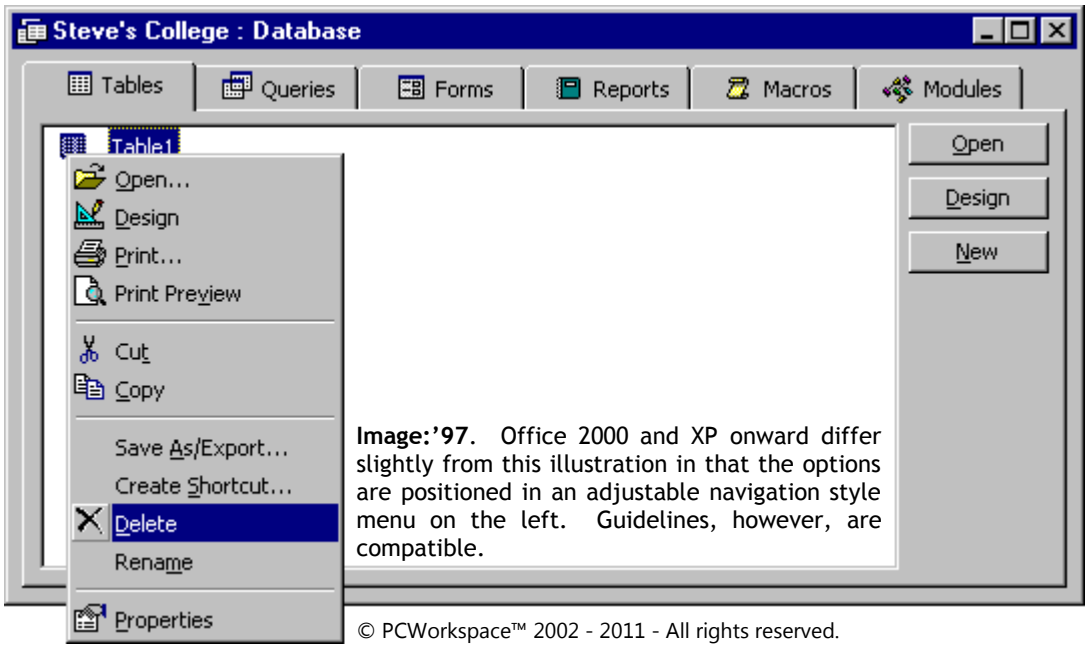
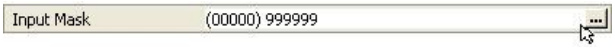


Image:'97. Office 2000 and XP onward differ slightly from this illustration in that the options are positioned in an adjustable navigation style menu on the left. Guidelines, however, are compatible.

ADDENDUM

GLOSSARY

Asterisk	Star symbol/character above the eight on a standard keyboard (See Wild Card).
Attribute	An attribute of an Entity (Table) would be a Field. An attribute of a Record, however, would be Data (See Information).
Batch Processing	Data that is processed periodically, at the end of the day perhaps, not in real time (See Real Time Processing).
Controls	See Data Controls.
Criteria	See Criterion.
Criteria Expression	See Operator.
Criterion	Criteria: a comparison. A query search, for example, must match this (See also: Operator).
Data	Data is a piece of information. Peterborough for example, makes up part of an address (See Record).
Data Controls	A means of implementing and controlling the way in which data is entered. A Post Code for example. See Field Properties. Types of data controls, found in the Field Properties section in Design View, include: Default Value; Validation Rule, and Validation Text.
Data Types	This determines what values can be stored in a field. ▪ Open Access. Select Microsoft Access Help from the Help menu, choose either the Answer Wizard or Index tab, and enter 'DataType Property'. Print the results.
Default	A pre-set action; perhaps where there is no specific command. Example: An application may open a blank (New) document by default, albeit you may opt to close this document, opening an existing (Current) file.
Data Dictionary	An essential part of the database design process is to maintain a data dictionary. Its main function is to store details of all the data items in a database. Such details can be wide ranging, but should include as a minimum: ▪ Field names and tables that hold the data. ▪ Field definitions including field types and lengths. ▪ Additional properties concerning data formats and validation. ▪ Synonyms, where the same field is replicated in more than one table with a different name. Using synonyms, however, is not considered good practice.
Definition	<u>Examples of</u> a) A brief description of what is held in a Field (See Data Dictionary). b) Also: the meaning of, for example, an Operator, e.g. the definition of an Operator.
Entity	A name given to a table within a database file. For example: Doctor; Patients etc.
Expression	See Operator.
Field	<u>Examples of Fields</u> a) Start date; Position; Dept; Salary etc. b) Name; Address1; Address2; Town or City; Post Code etc.

Field Properties	Examples of ▪ Field Size: up to 255 characters. ▪ Input Mask: a pattern controlling the data entered into a field, e.g. Telephone No: (01733) 123456. This would be entered in zeros or nines (excluding the inverted comma) as '(00000) 999999' in the Input Mask area. However, here we must set the **DataType** to **Text**. A Wizard facility is optional by clicking to the right of the Input Mask text area.  ▪ Default Value: a value that is entered into the table automatically, e.g. a date: Date(). ▪ Validation Rule: a rule to ensure data entered complies with, otherwise will not be accepted. ▪ Validation Text: your error message associated with the Validation Rule, which is displayed if criteria do not match this rule.
Formulae$^{(pl)}$	Formula: a mathematical expression (See also: Function).
Function	As for Formulae, functions are prevalent to more advanced operators (users), or Access programmers perhaps. However, some might be referring to Criteria Expressions, or Operators when using this term (See Operator).
Information	Any number of data items collectively making up information (A record) in a table (See also: Data, Field, and Record).
Iterative	To do again, as in re-iterate. As users get used to a new system, they will perhaps think of more features that they can use, such as an additional data entry form, a special query, or a calculated field. Important therefore as part of a design process, to periodically look back at each stage of development to ensure it functions as intended (See Database Design Process on page 15).
Operator	Equal to, for example, is the definition of = (the Operator (Comparison)). Others: < (Less than); > (Greater than). When coupled with Criteria, this is referred to as a Criteria Expression, e.g. =£100.00.
Primary Key	Relevant to a unique field. Where there are two or more related tables (See Relationship), the unique field must have a Primary Key to ensure values are not duplicated.
Real Time Processing	Data that is processed immediately, at point of contact (See Batch Processing).
Record	A collection or string of data make up information (A record) in a table; an address perhaps. Fields are required to make up a record (See also: Data, Field, and Information).
Relationship	A relational database system encompasses more than one table with related information. Tables must have a unique field (Primary Key). Example: A personnel table need not include staff contact details. This information can be maintained in a separate table, therefore only a **relationship** with the Personnel table exists. There may be any number of reasons why you might want to do this. You might like to retain contact details of employees who are no longer in the personnel table for example. More importantly perhaps, not to replicate data/batch processing.
String	In this context, a collection of words, as for information.

User	The individual, or operator; the person who uses the computer. Not operator as in Criteria Expression.
Wild Card	An asterisk with criteria would be used to return any result. For example: 'Like Smyth' would only return the name 'Smyth'. However: 'Like Sm*' would also return 'Smith' and 'Smiley' perhaps.
Wizard	A facility to take the user through any given function, step by step, simplifying process. See Input Mask in Field Properties.

DATABASE DESIGN PROCESS

Before creating a database, the first thing we need to do is plan; to take a look at the design process. This begins with an analysis of the tasks that will be required of the database.

Consider or establish exactly why you or prospective users require a database. What will be its function?

Discuss with users to get a thorough description of expectations. Keep in mind also, that the design process is an iterative one (See the Glossary). Important, none the less, to stop the design process at some point in order to progress. Late requirements (preferences) can be included in an upgraded version perhaps.

Familiarise the user with form and report capability by demonstrating some data entry forms showing examples of printed reports.

The database design process can be broken down into the following steps:

1. Determine what the users want from the database and what data is needed to provide the output.

   What do the users want to get from it? What kind of reports? How do they want the information arranged? Consider existing formats for data collection; perhaps use them as patterns for Access forms. Look at other 'similar' database designs.
2. Plan the data distribution.
3. Identify the fields for each table.
4. Assign a unique field for each table that will ensure that no two records are the same.
5. Determine how the tables are related to one another.
6. Review design and step through procedures with users.
7. Create tables and enter data.
8. Analyse and optimise database performance.

While numbering steps in a process implies one step is completed before the next begins, in reality the design is more fluid, each step merging into the next.

SETTING PRINT PROPERTIES TO SAVE / OPEN ACCESS TABLES IN LANDSCAPE (PRINTERS MAY DIFFER)

1. Start.
2. Settings.
3. Printers.
4. Open Default Printer.
5. Printer Menu.
6. Properties.
7. Paper tab (Epson/printers may differ).
8. Set to Landscape in Orientation section (this should not affect the orientation of other Microsoft Office applications that default to Portrait).

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