

Proicere, Inc.

MS Access: Advanced Tables and Queries

Lesson Notes

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Tables

Text Fields

(Default) Text or combinations of text and numbers, as well as numbers that don't require calculations, such as phone numbers. Up to 255 characters or the length set by the **FieldSize** property, whichever is less.

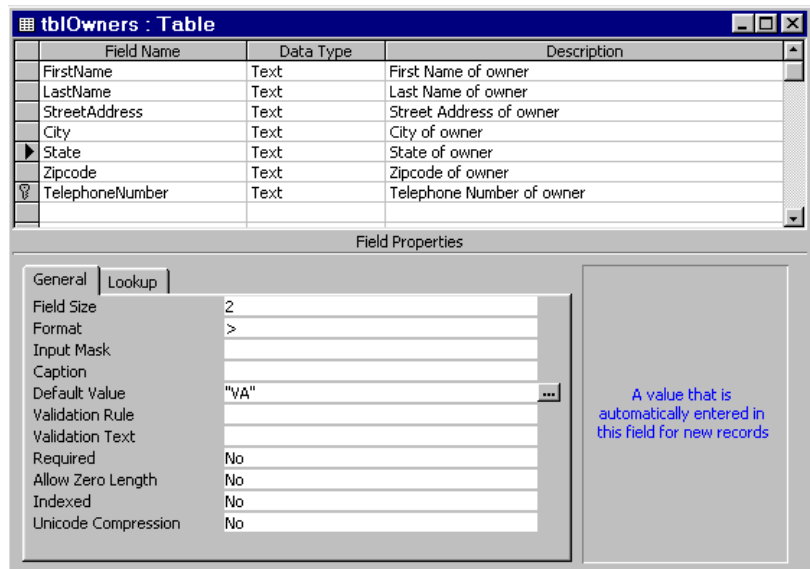
Microsoft Access does not reserve space for unused portions of a text field.

Format can be used to convert, or force operator, to a specific format.

i.e.

< Force all characters to lowercase.

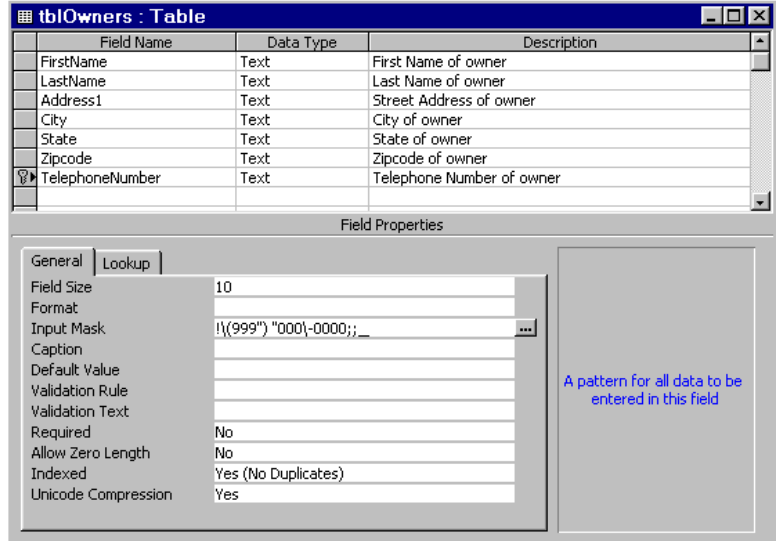
> Force all characters to uppercase.



Masking can be used for ease of data entry.

i.e. Telephone numbers, zip codes, social security numbers, etc.

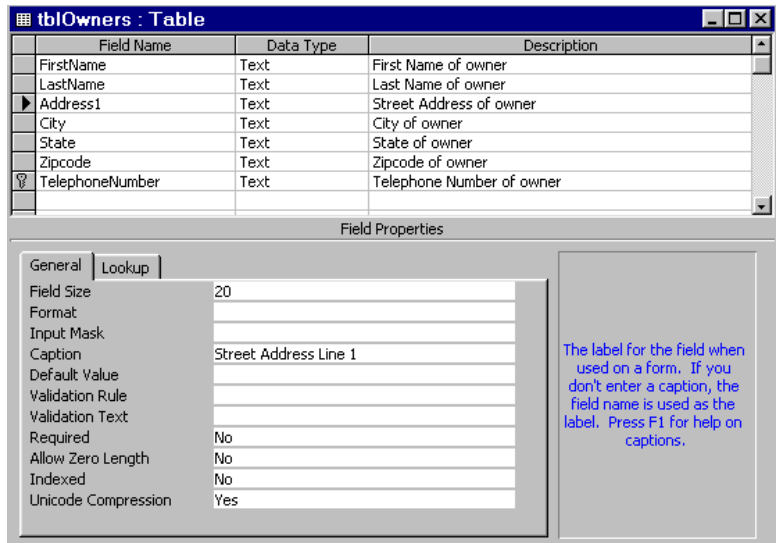
(757) 428-1515
 () -
 (757) 853-1225



Caption changes the name of the field for display purposes.

i.e. Address1 can be changed to read Street Address Line 1 when used.

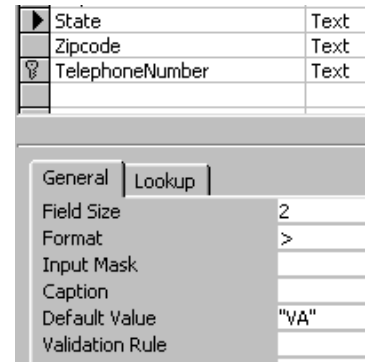
Street Address Line 1
32 Gardina Circle
1000 St. ...



Defaults and Validation

Default Value allows a value to be put into the field at the time the record is created. The Default Value can be overwritten in the record at any time.

i.e. if the state is the same state most of the time, the state can be entered as the Default Value so the operator does not have to key in the state for each record..

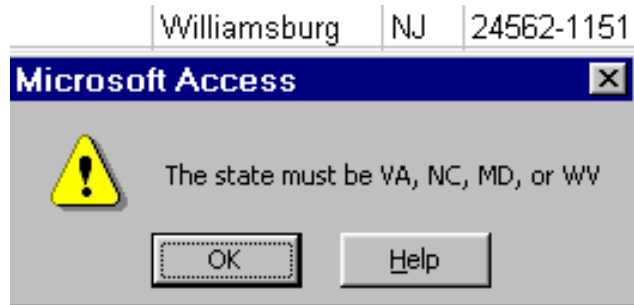
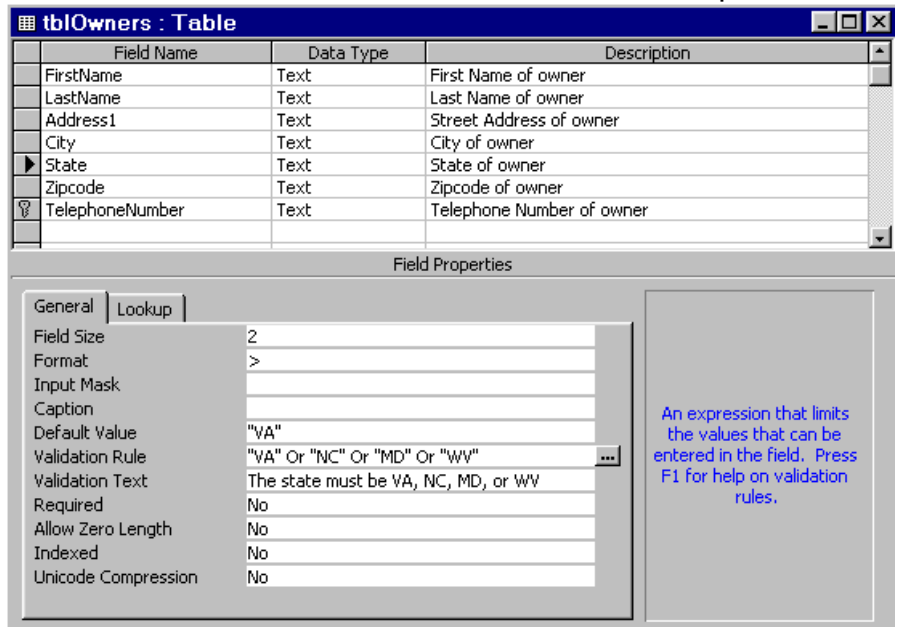


Validation Rule is used to list the valid entries for the field. The default value can be up to 2048 characters.

i.e. the state field may have all the state abbreviations in the Validation Rule so an operator can not enter a state abbreviation that is not valid.

Validation Text is displayed when the data entered does not match the criteria in the Validation Rule. This might be the direction for the operator if their entry does not match the criteria in the validation rule. The validation text can be up to 255 characters.

i.e. if the validation rule has all the state abbreviations, the validation text might inform the operator that their entry is not a valid state abbreviation.

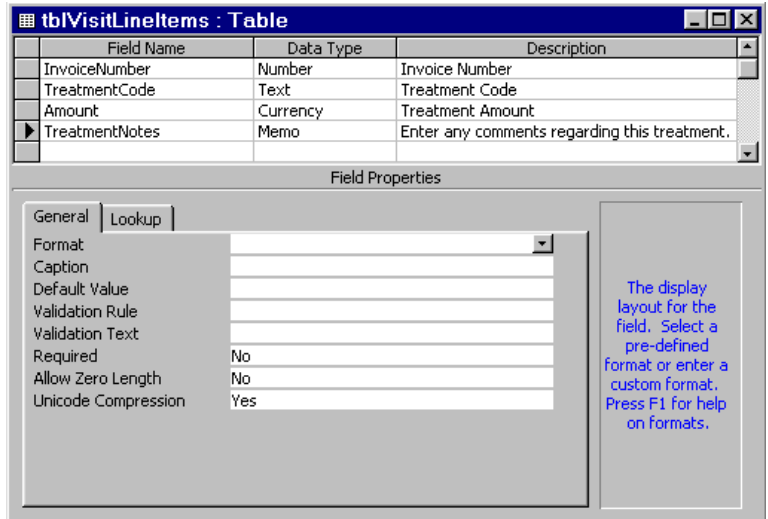


Memo Field

Lengthy text or combinations of text and numbers. Up to 65,535 characters

Memo fields are searchable, but not sort-able.

Format, Caption, Default Value, Validation rule, Validation Text follow the same rules as Text Fields.



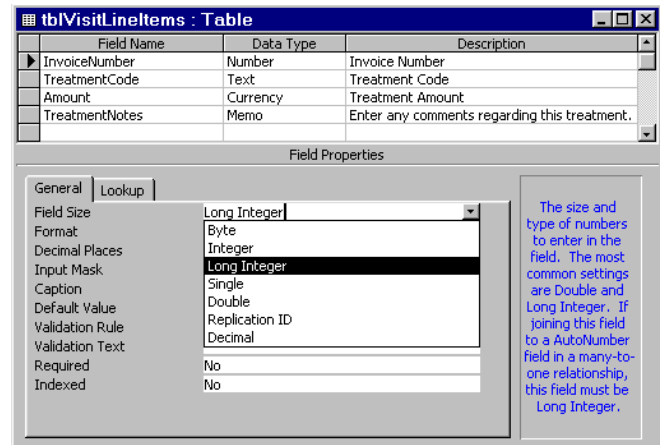
Number

Numeric data used in mathematical calculations.

Field Size

numbers can be:

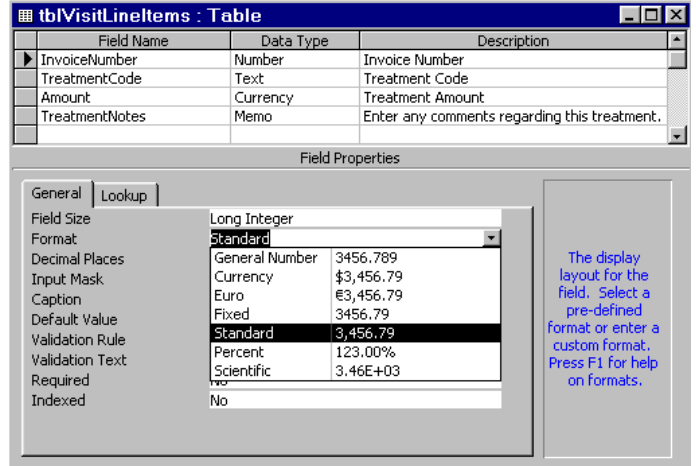
Setting	Stores
Byte	0 to 255 (no fractions)
Integer	-32,768 to 32,767 (no fractions)
Long Integer	-2,147,483,648 to 2,147,483,647 (no fractions) (Default)



Single	-3.402823E38 to -1.401298E-45 for negative values and from 1.401298E-45 to 3.402823E38 for positive values
Double	-1.79769313486231E308 to -4.94065645841247E-324 for negative values and from 1.79769313486231E308 to 4.94065645841247E-324 for positive values
Replication ID	Globally unique identifier (GUID) a unique 16 bit number used as a replication identifier.

Format

Setting	Description
General Number	(Default) Display the number as entered.
Currency	Use the thousand separator; display negative numbers enclosed in parentheses; the default DecimalPlaces property setting is 2.
Fixed	Display at least one digit; the default DecimalPlaces property setting is 2.
Standard	Use the thousand separator; the default DecimalPlaces property setting is 2.
Percent	Multiply the value by 100 and append a percent sign (%); the default DecimalPlaces property setting is 2.
Scientific	Use standard scientific notation.



Custom Formats

Custom number formats can have one to four sections with semicolons (;) as the list separator. Each section contains the format specification for a different type of number.

Section	Description
First	The format for positive numbers.
Second	The format for negative numbers.
Third	The format for zero values.
Fourth	The format for Null values.

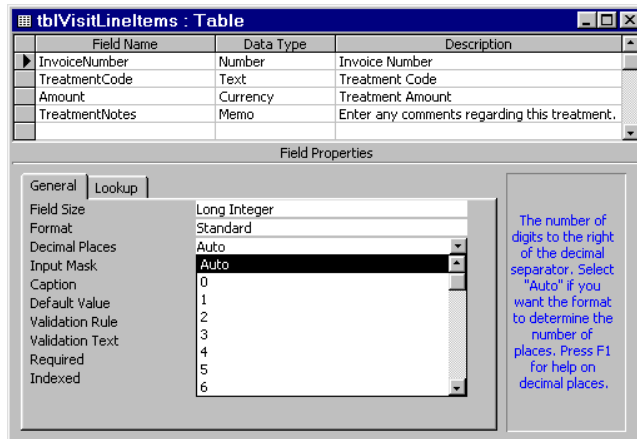
For example, you could use the following custom Currency format:

`$$,##0.00[Green];($,##0.00)[Red];"Zero";"Null"`

Symbol	Description
.	Decimal separator
(period)	
,	Thousand separator.
(comma)	
0	Digit placeholder. Display a digit or 0.
#	Digit placeholder. Display a digit or nothing.
\$	Display the literal character "\$".
%	Percentage. The value is multiplied by 100 and a percent sign is appended.

Decimal Places

Allows the number of decimal places for numbers sizes that allow fractions, it has no effect on other numbers.



Input Mask is not used with numbers.

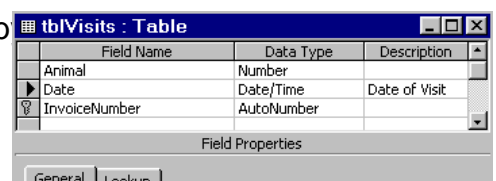


Caption, Default Value, Validation rule, Validation Text follow the same rules as Text Fields, but must meet the criteria of the field size. i.e. text can not be the default value for a number field.

Validation rule – individual numbers may be entered, or a range. i.e. Between 5 and 25 or <100.

Date/Time

Date and time values for the years 100 through 9999. 8 b



Setting	Description
General Date	(Default) If the value is a date only, no time is displayed; if the value is a time only, no date is displayed. This setting is a combination of the Short Date and Long Time settings. Examples: 4/3/93, 05:34:00 PM, and 4/3/93 05:34:00 PM.
Long Date	Day of week, month, day date, year with four digits.
Medium Date	Military date format. Day, month, year
Short Date	Month, day, 2 digit year. Note: MS Access 97 stores four digits for the year. If only two digits are keyed, MS Access 97 has to guess as to the first two digits. The formula it uses is as follows: 30-99 = 1930 – 1999 00-29 = 2000 - 2029 i.e. 11/3/21 = November 3, 2021 1/5/30 = January 5, 1930
Long Time	Hour, minute, second, am or pm
Medium Time	Hour, minute, am or pm
Short Time	Military time (24 hour clock) hour, minute

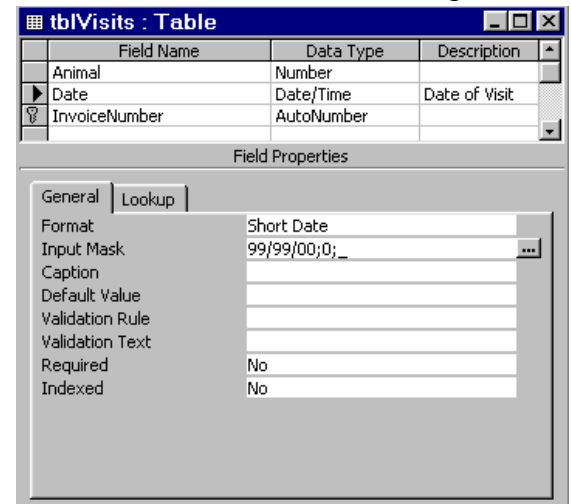
Masking can be used for ease of data entry. An operator can be forced to enter a four digit year by placing four zeros instead of two in the mask.

i.e. 99/99/00;0;_ can be changed to 99/99/0000;0;_

Note: the format does not have to be set to use the masking, but if a format is set, do not set an Input Mask that will conflict with the format.

i.e. do not set format to be long date and the input mask to be short time.

Caption, Default Value, Validation rule, Validation Text follow the same rules as Text Fields, but must meet the criteria of the field size. i.e. text can not be the



default value for a number field.

Default Value can be set to =NOW() to bring in the current date and time.

Currency

Currency values and numeric data used in mathematical calculations involving data with one to four decimal places. Accurate to 15 digits on the left side of the decimal separator and to 4 digits on the right side. 8 bytes.

Follows the same rules as numbers for field properties.

AutoNumber

A unique sequential (incremented by 1) number or random number assigned by Microsoft Access whenever a new record is added to a table.

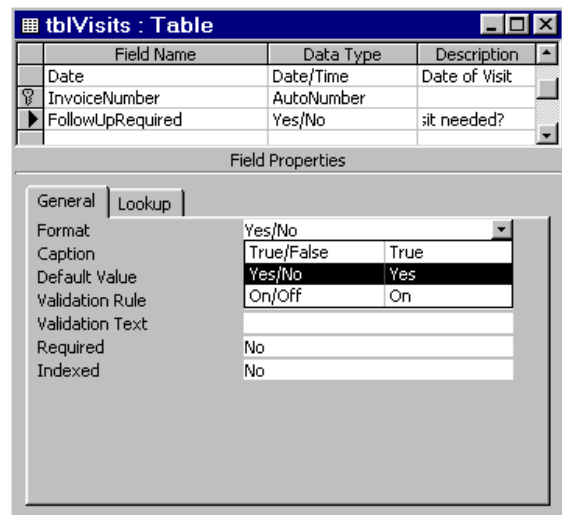
AutoNumber fields can't be updated.

An Auto Number is treated as an integer for purposes of properties and relationships.

Yes/No

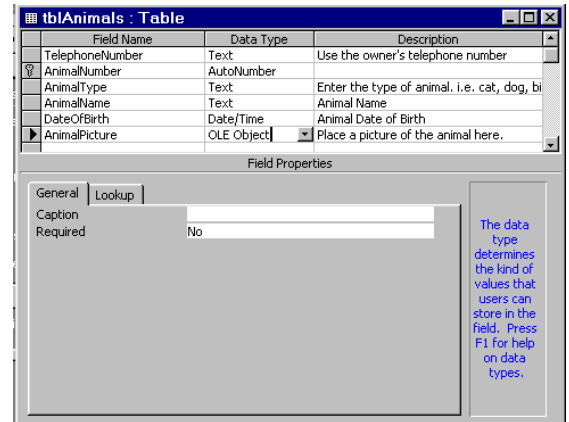
Yes and No values and fields that contain only one of two values (Yes/No, True/False, or On/Off). 1 bit.

Note: Yes/True/On = -1, No/False/Off = 0



OLE Object

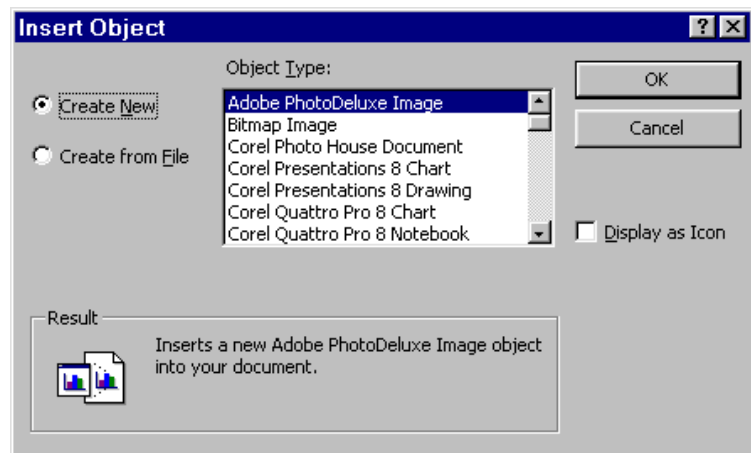
An object (such as a Microsoft Excel spreadsheet, a Microsoft Word document, graphics, sounds, or other binary data) linked to or embedded in a Microsoft Access table. Up to 1 gigabyte (limited by available disk space)



To insert the object into the record, right click on the field. From the menu, choose Insert Object.



In the dialog box that appears, choose the type of file to create, or choose Create from File to pull in a copy of an existing file.



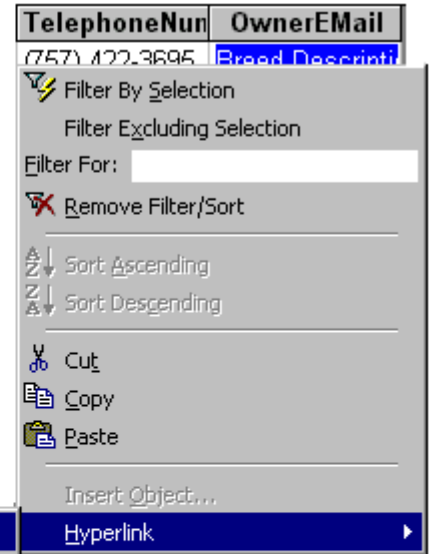
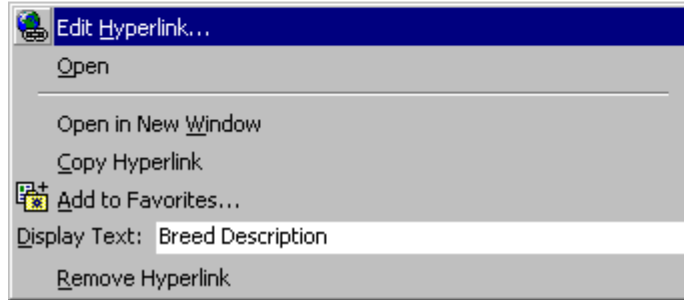
Hyperlink

Text or combinations of text and numbers stored as text and used as a hyperlink address. A hyperlink address can have up to three parts: display text ¾ the text that appears in a field or control address ¾ the path to a file (UNC path) or page (URL).sub address ¾ a location within the file or page. The easiest way to insert a hyperlink address in a field or control is to click Hyperlink on the Insert menu. Each part of the three parts of a Hyperlink data type can contain up to 2048 characters.

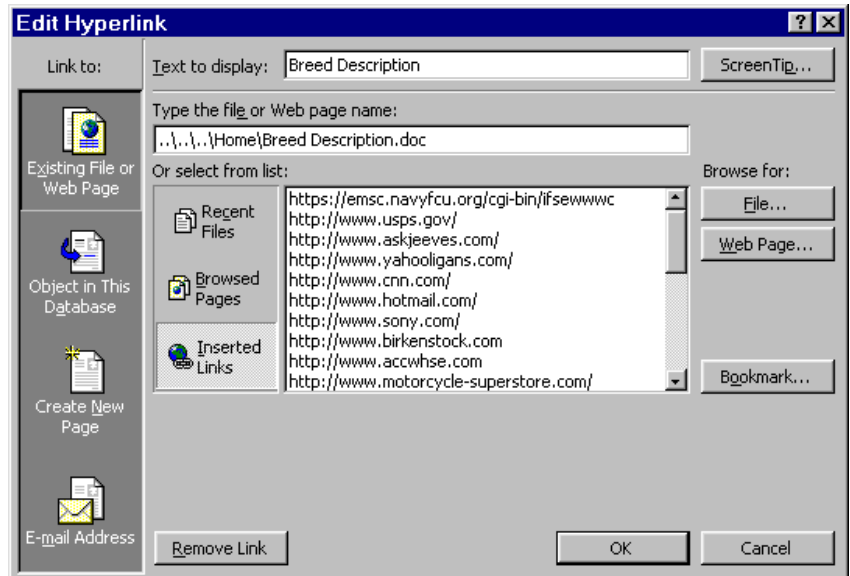
Hyperlinks can be to web address or to files stored on an accessible drive.

To change an entered hyperlink, right click on the hyperlink.

From the menu choose Hyperlink, Edit Hyperlink.



In the dialog box make the desired changes.

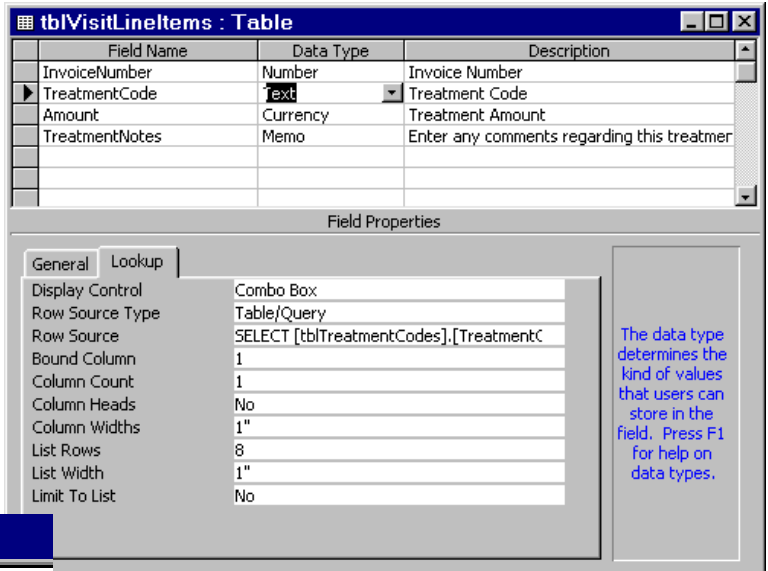


Lookup Wizard

Creates a field that allows you to choose a value from another table or from a list of values by using a list box or combo box.

Clicking this option starts the Lookup Wizard, which creates a Lookup field.

After you complete the wizard, Microsoft Access sets the data type based on the values selected in the wizard. The same size as the primary key field used to perform the lookup, typically 4 byte

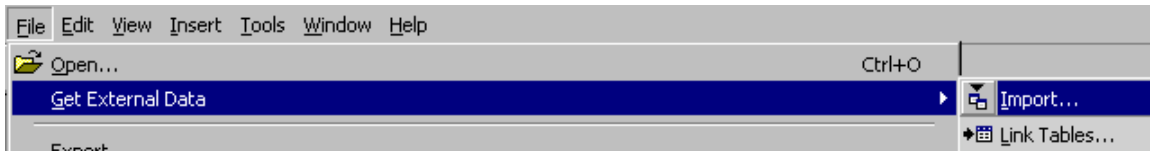


InvoiceNumber	TreatmentCode	Amount
1.00	shot	
1.00	clip	
1.00	exam	
2.00	groom	
3.00	meds	
4.00	shot	
5.00	shots	
6.00	shot	

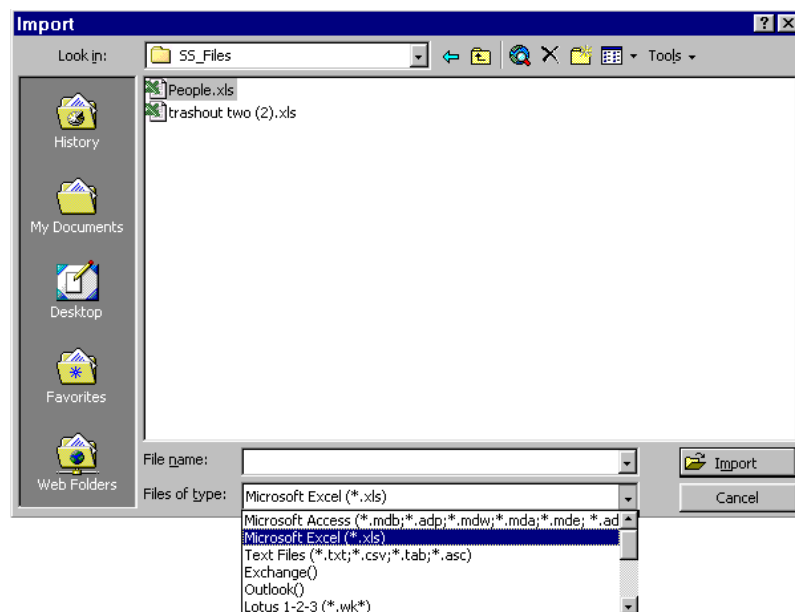
Importing Data

Data that was created in another database, spreadsheet, or text file can be imported into an MS Access database.

To import data, from the menu choose File, Get External Data, Import.



In the dialog box that appears, choose the desired file.



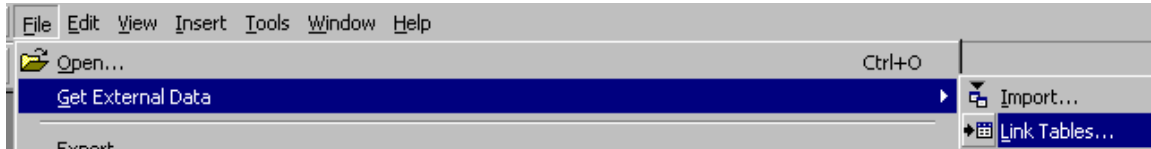
Note: be sure to change the file type to the desired file so that the files will show in the dialog box.

The wizard that appears will have screens appropriate for the type of file chosen to be imported.

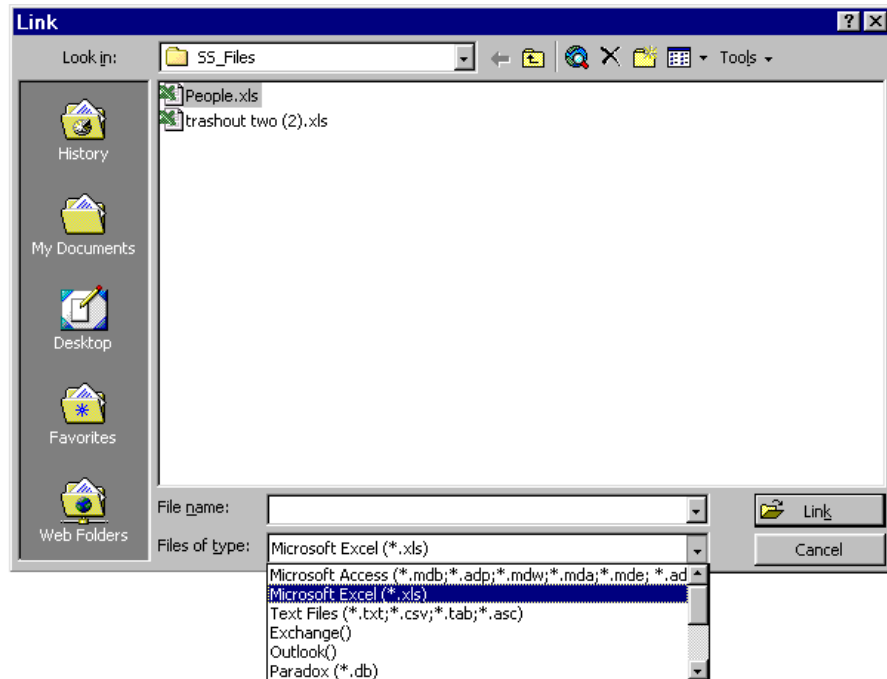
Link Tables

Tables can be linked from one database to another, or from an external file, such as an MS Excel spreadsheet.

To create a linked table, from within the database choose File, Get External Data, Link Tables.



A dialog box will appear. Choose the type of data source to be linked.



Find the file, then choose the Link button. A wizard will appear with the steps to link the data source.

Note: many properties of a linked table can not be changed. Data changed in the linked table will be changed in the data source.

Queries

Calculations

Calculations can be done in a query by creating a new field name in the query.

Note: this field will display only, the information will not be stored back into the table.

Give the field a name followed by a colon.

Put field names in the square brackets.

Symbols for math are:

^ = powers

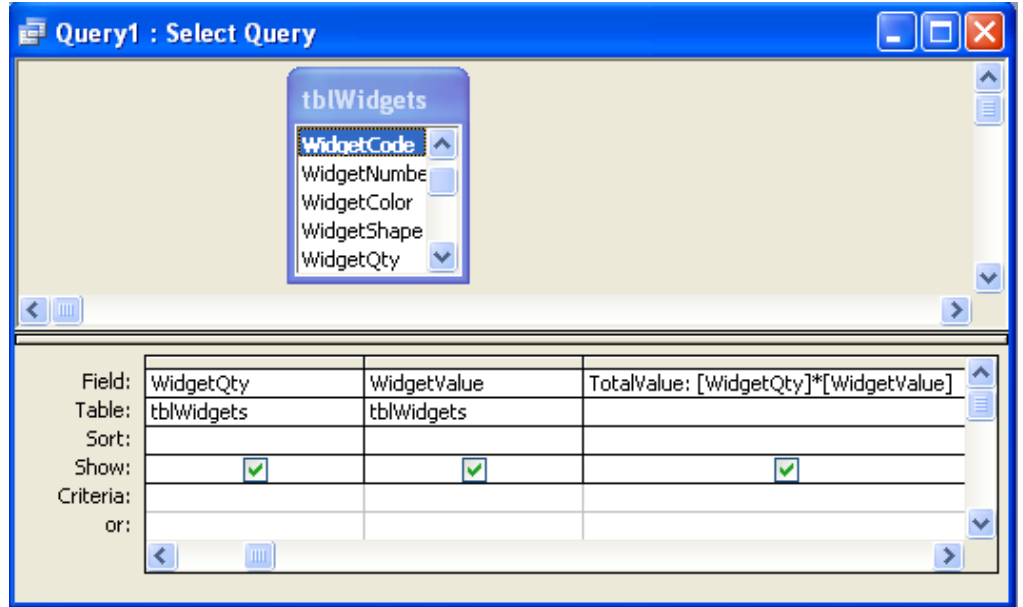
* = multiply

/ = division

+ = additions

- = subtraction

Parenthesis can be used in the equation.



Concatenate Fields

To combine two fields such as first and last name concatenation is need.

To concatenate two fields into one, create a new field in the query.

New field name is followed by a colon.

Each field name to concatenate is put in square brackets.

Use a & to actually concatenate the fields.

Put additional text in quotes. ie the space between first and last name.

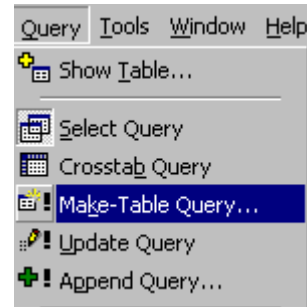
FullName: [FirstName]&" "&[LastName]

Make Table Query

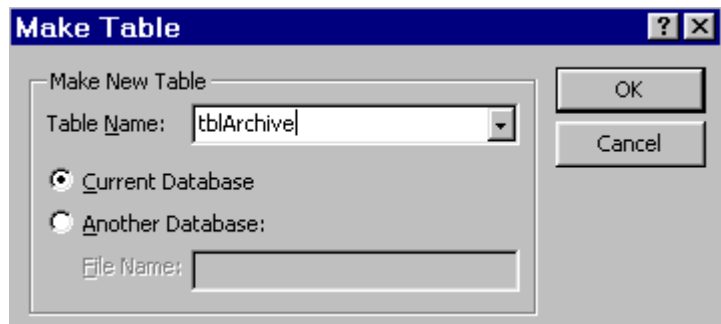
A Make Table Query creates a new table copying data from an existing table based on criteria.

To create an Make Table Query, first create a simple query with the criteria desired. Check the query to verify it is pulling the desired records.

From the menu choose Query, Make Table Query.



A dialog box will appear. Enter the name of the table to be created.



To run the make table query:
from the design view, choose the run button on the toolbar
from a closed query, open the query.

A message will appear indicating that the query will create a new table and the number of rows in the table..

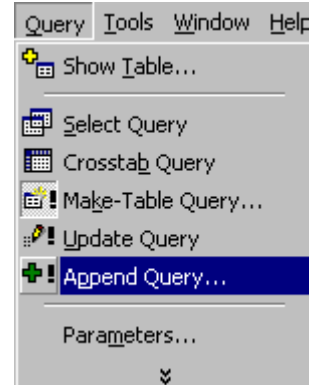


Append Query

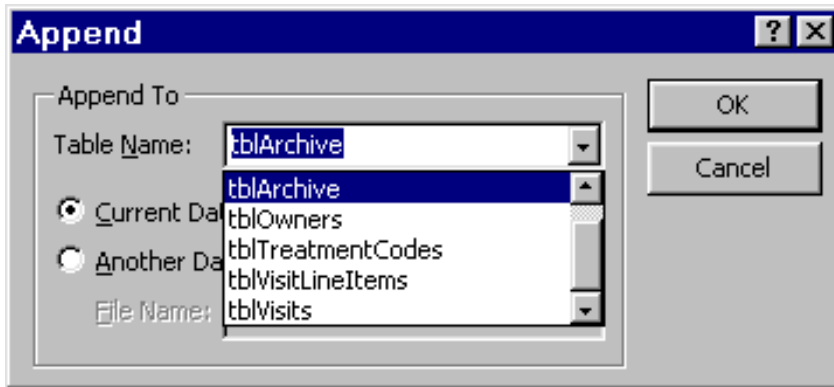
An Append Query adds records to a table copying data from an existing table based on criteria.

To create an Append Query, first create a simple query with the criteria desired. Check the query to verify it is pulling the desired records.

From the menu choose Query, Append Query.



A dialog box will appear. Enter the name of the table to be appended.

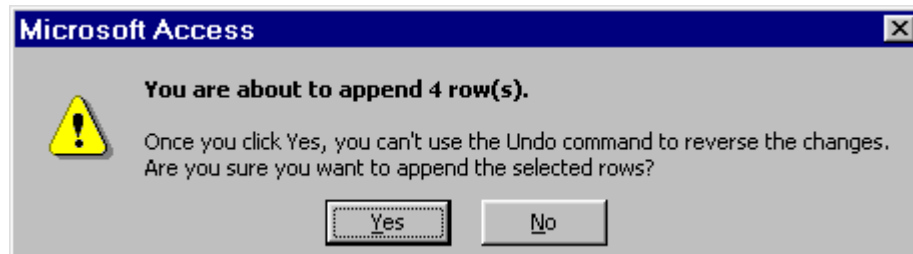


To run the append table

query:
from the design view, choose the run button on the toolbar
from a closed query, open the query.



A message will appear indicating that the query will append rows to a table and the number of rows to be added..

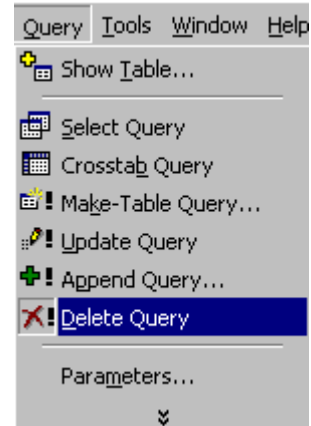


Delete Query

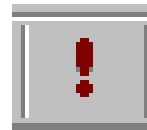
A Delete Query removes records from a table based on criteria.

To create a Delete Query, first create a simple query with the criteria desired. Check the query to verify it is pulling the desired records.

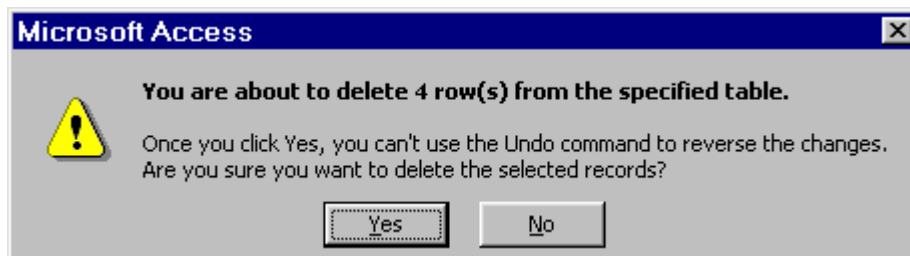
From the menu choose Query, Delete Query.



To run the delete query:
from the design view, choose the run button on the toolbar
from a closed query, open the query.



A message will appear indicating that the query will delete rows in the table and the number of rows to be deleted.

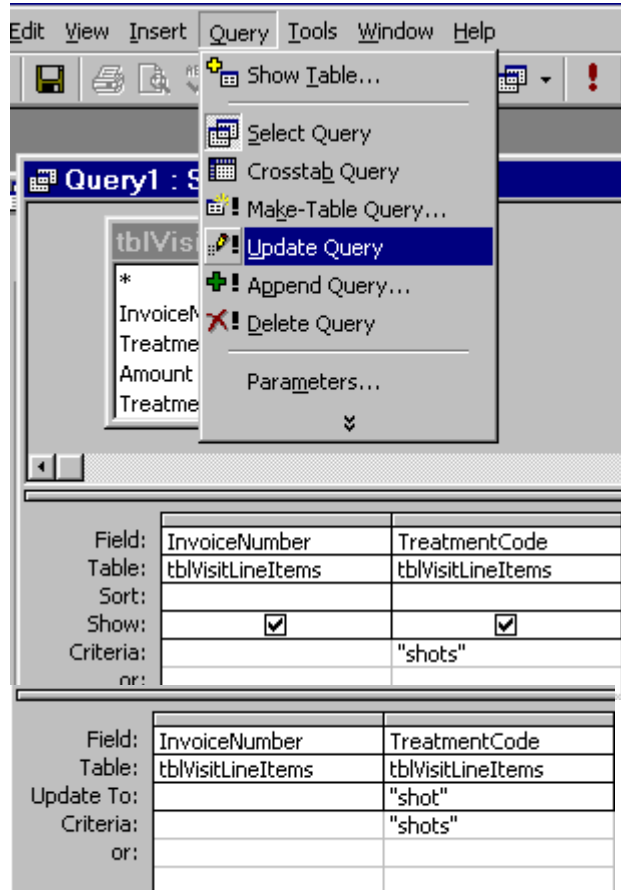


Update Query

An Update Query allows information to be changed throughout a table based on criteria.

To create an Update Query, first create a simple query with the criteria desired. Check the query to verify it is pulling the desired records.

From the menu choose Query, Update Query.



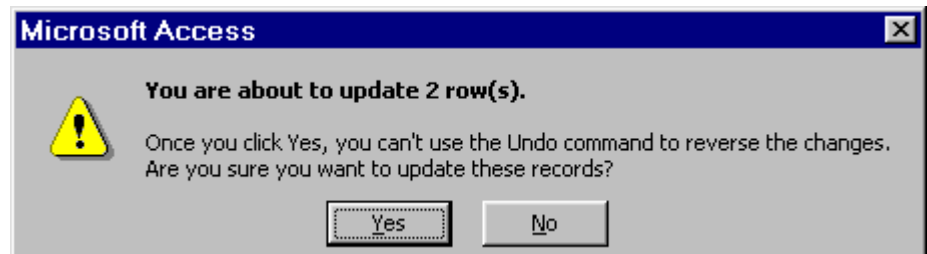
The Update To line will appear in the design grid. Enter the update value.

Note: When the query is switched to the datasheet view, only the field to be updated will appear.

To run the update query:
from the design view, choose the run button on the toolbar
from a closed query, open the query.



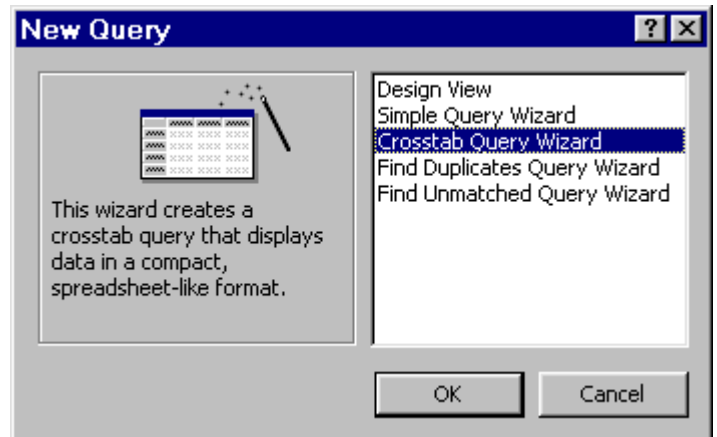
A message will appear indicating that the query will update the table.



Crosstab Query

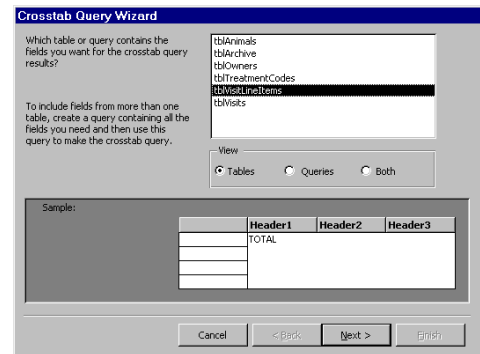
A Crosstab Query is used to create a view of data in a compact form.

To create a Crosstab Query, create a new query using the Crosstab Query Wizard.

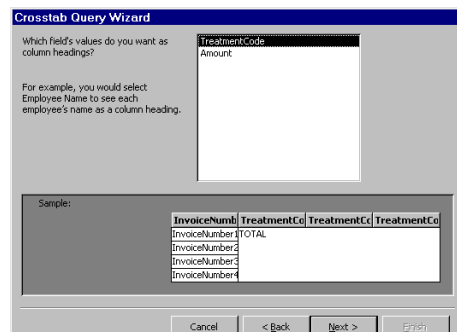
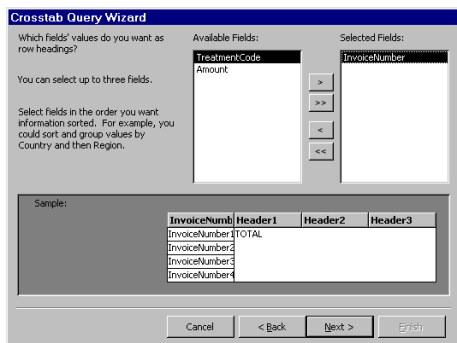


The wizard will start prompting for the information needed to create the query.

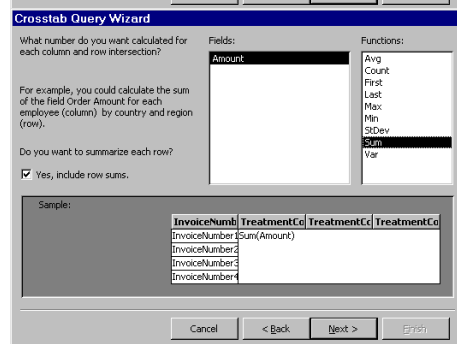
Choose the table or query upon which the query is to be based.



Choose the fields to be used for the row headings, then choose the fields for the column headings.



Choose the field for the calculation, and the type of calculation.



Find Unmatched Query

A Find Unmatched Query checks the records of one table/query against another looking for unmatched records.

To create a Find Unmatched Query, create a new query using the Find Unmatched Query Wizard.

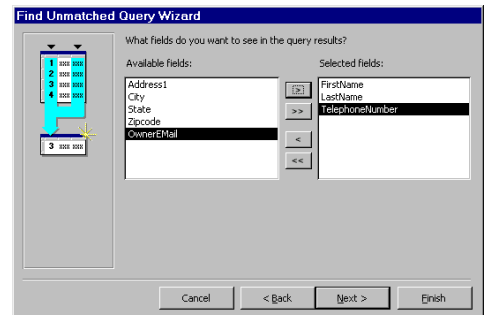
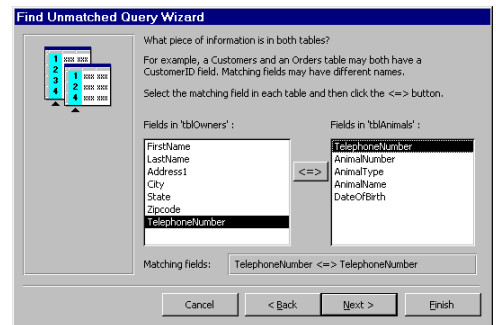
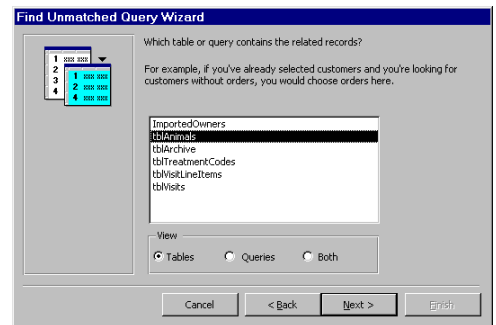
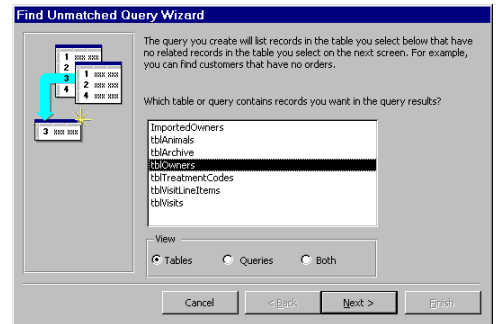
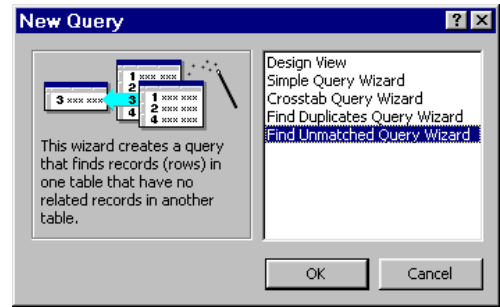
The wizard will start prompting for the information needed to create the query.

Choose the table or query that has the records that may not have matches in the next table or query selected.

Choose the table or query that has the records that the first table should be matching.

Choose the field(s) that should match.

Choose the field(s) that are to display if an unmatched is found.



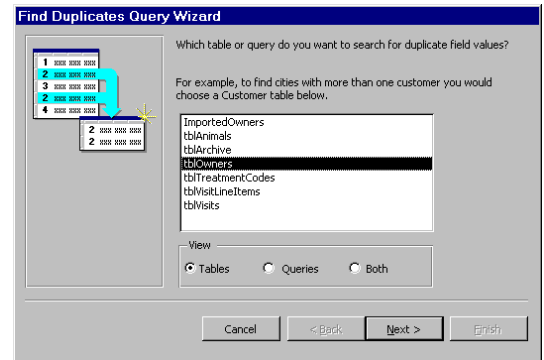
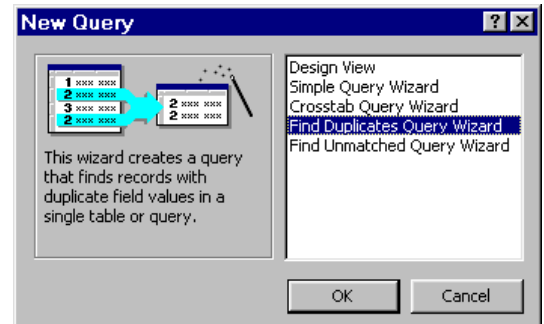
Find Duplicate Query

A Find Duplicate Query checks the records of one table/query against another looking for duplicate records.

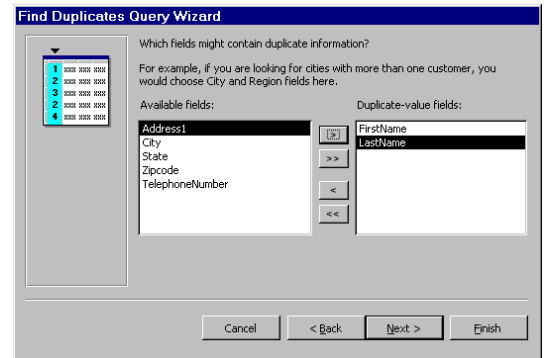
To create a Find Duplicate Query, create a new query using the Find Duplicate Query Wizard.

The wizard will start prompting for the information needed to create the query.

Choose the table or query that may have duplicates.



Choose the fields that are to be checked for duplicates.



Choose the fields to display if a duplicate is found.

