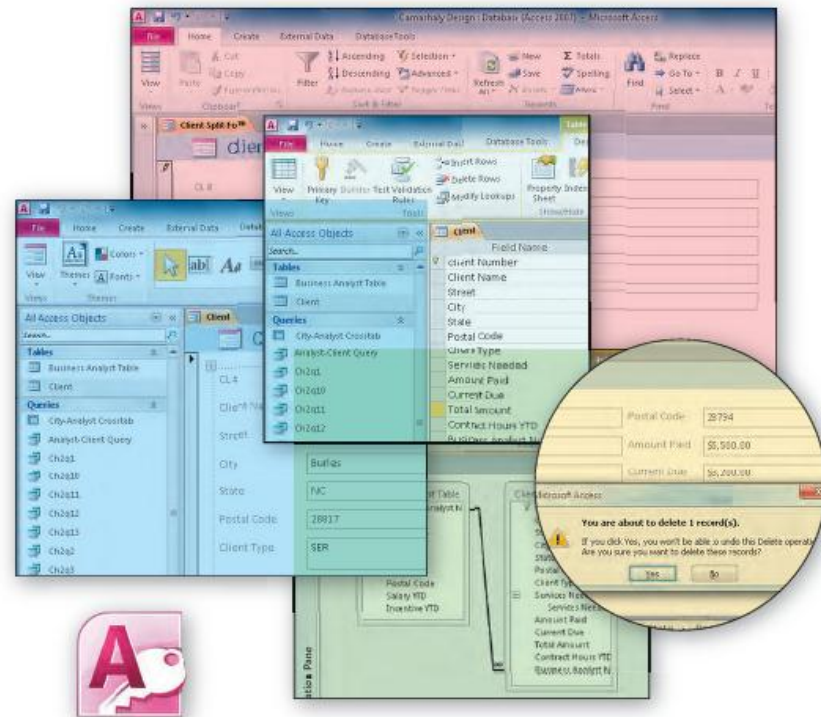


Microsoft Access 2010

Chapter 3

Maintaining a Database



Objectives

- Add, change, and delete records
- Search for records
- Filter records
- Update a table design
- Use action queries to update records
- Use delete queries to delete records
- Specify validation rules, default values, and formats

Objectives

- Create and use single-valued lookup fields
- Create and use multivalued lookup fields
- Add new fields to an existing report
- Format a datasheet
- Specify referential integrity
- Use a subdatasheet
- Sort records

Project – Maintaining a Database



General Project Guidelines

- Determine when it is necessary to add, change, or delete records in a database
- Determine whether you should filter records
- Determine whether additional fields are necessary or whether existing fields should be deleted
- Determine whether validation rules, default values, and formats are necessary
- Determine whether change to the format of a datasheet are desirable
- Identify related tables in order to implement relationships between the tables

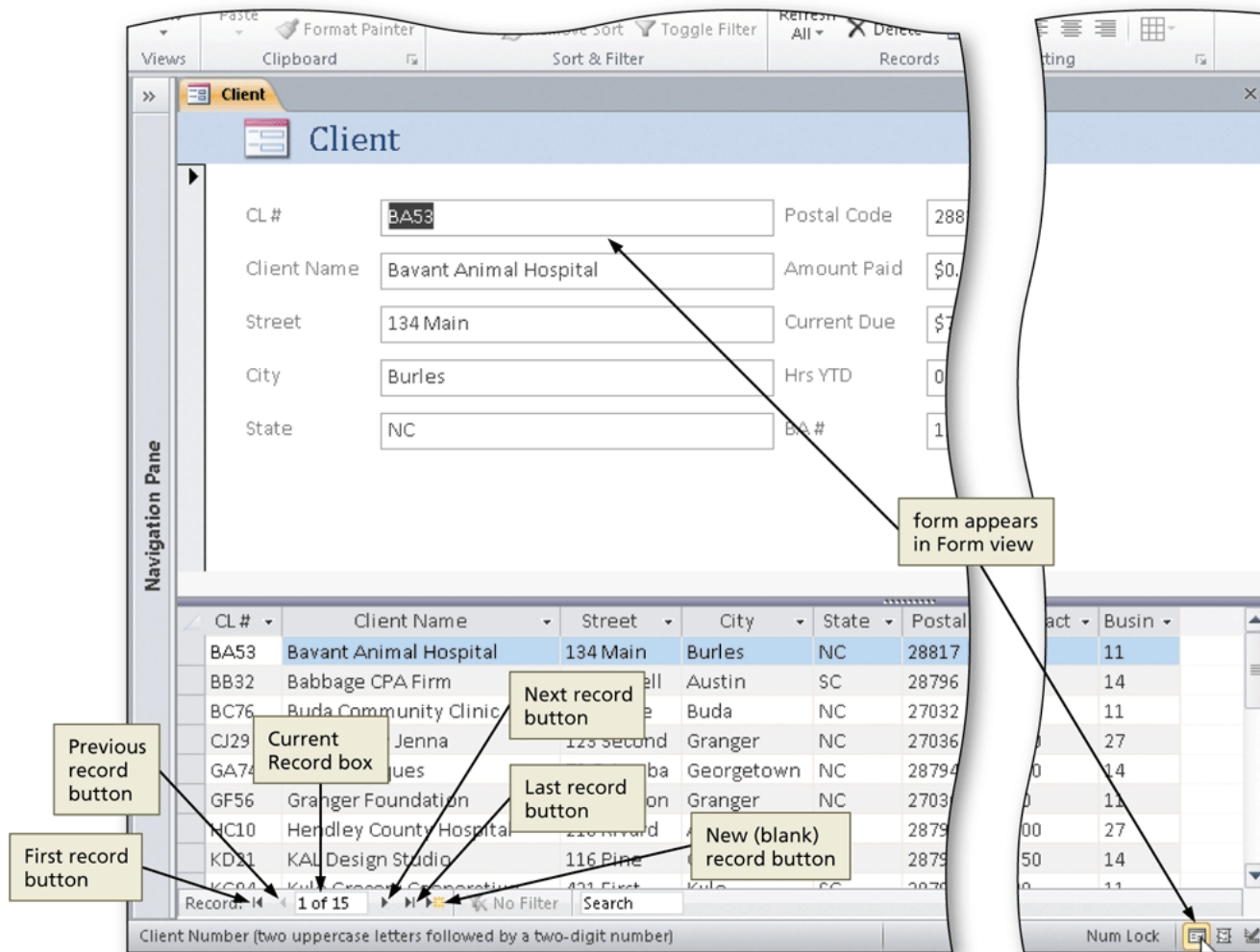
Creating a Split Form

- Open the Navigation Pane
- Select the table in the Navigation Pane you wish to split
- Click Create on the Ribbon to display the Create tab
- Click the More Forms button to display the More Forms menu
- Click Split Form to create a split form
- Close the Navigation Pane

Creating a Split Form

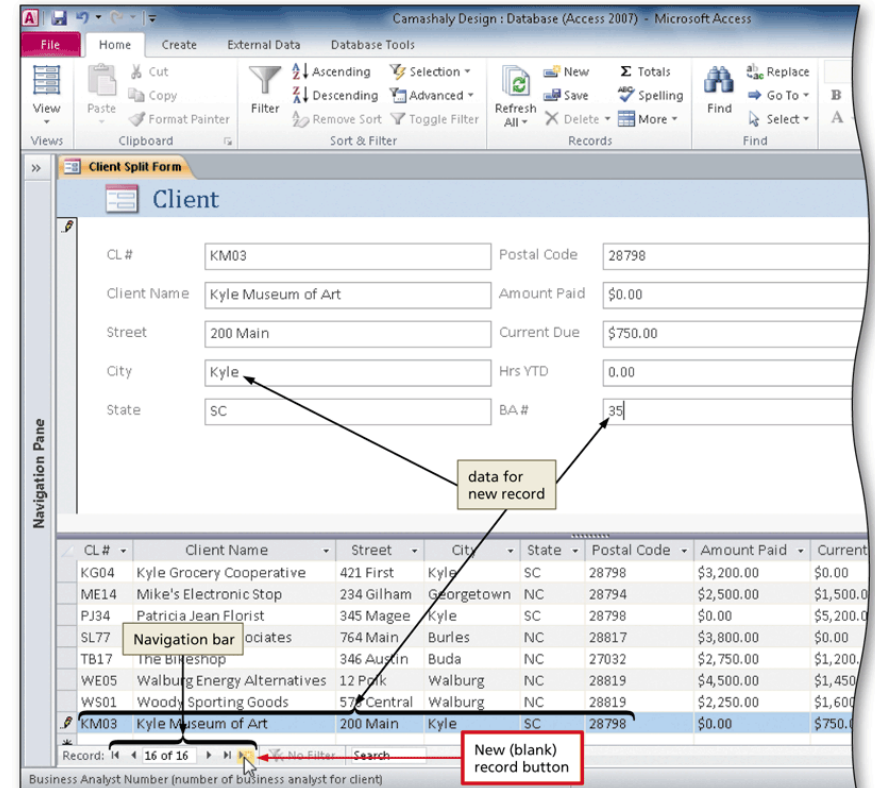
- Click the Form View button on the Access Status bar to display the form in Form view
- Click the Save button on the Quick Access Toolbar to display the Save As dialog box
- Type the desired form name
- Click the OK button

Creating a Split Form



Using a Form to Add Records

- Click the 'New (blank) record' button on the Navigation bar to enter a new record, and then type the data for the new record. Press the TAB key after typing the data in each field



Searching for a Record

- Open the Navigation Pane
- Scroll as necessary and right-click the form to search, and then click Open on the shortcut menu
- Click the Find button on the Home tab to display the Find and Replace dialog box
- Type the desired search text in the Find What text box
- Click the Find Next button
- Click the Find Next button again (as necessary) to locate additional matches
- Click the Cancel button

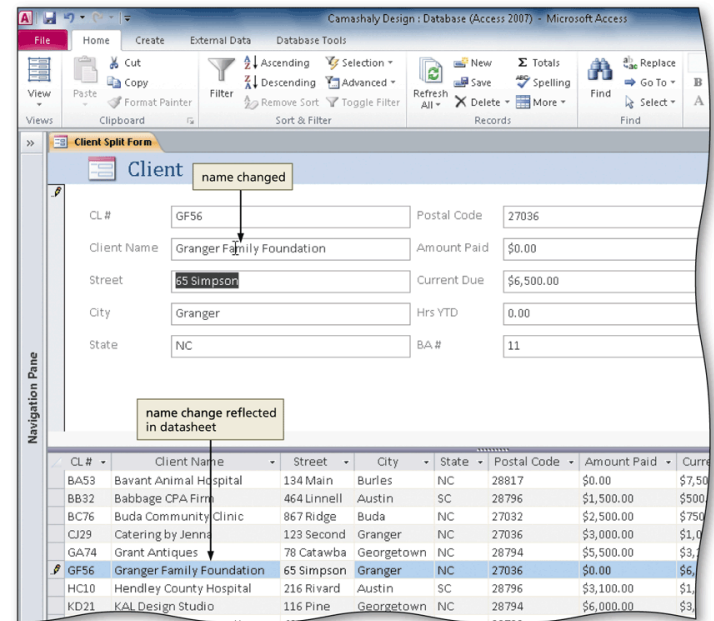
Searching for a Record

The screenshot shows the Microsoft Access interface for a database named 'Camashaly Design : Database (Access 2007)'. The ribbon includes 'Home', 'Create', 'External Data', and 'Database Tools'. The 'Database Tools' group contains the 'Find' button, which is highlighted with a red box and labeled 'Find button'. Below the ribbon, the 'Client Split Form' is displayed, showing a form for 'Client' with fields for CL #, Client Name, Street, City, State, Postal Code, Amount Paid, and Current Due. The 'Find and Replace' dialog box is open, showing the 'Find' tab. The 'Find What' field contains 'GF56', and the 'Look In' dropdown is set to 'Current field'. The 'Match' dropdown is set to 'Whole Field', and the 'Search' dropdown is set to 'All'. The 'Match Case' checkbox is unchecked, and the 'Search Fields As Formatted' checkbox is checked. The 'Find Next' button is highlighted with a red box and labeled 'Find Next button', and the 'Cancel' button is highlighted with a red box and labeled 'Cancel button'. Annotations explain the 'Find and Replace dialog box', 'click Replace tab to change data', 'value for which to search', 'field in which to search (Current field)', 'portion that must match (Whole Field)', 'scope of the search (all records)', and 'Match Case check box unchecked so search will not be case sensitive'. The 'Search Fields As Formatted' checkbox is checked, so formatting will be considered in search.

CL #	Client Name	Postal Code	Amount Paid	Current Due
BA53	Bavant			
BB32	Babbag			
BC76	Buda C			
CJ29	Catering by Jenna			
GA74	123 Second	Granger NC 27036	\$3,000.00	\$1,000.00
GF56	78 Cat	65 Sim 7036	\$5,500.00	\$3,200.00
HC10	216 Riv	8796	\$0.00	\$6,500.00
KD21	116 Pit	8796	\$3,100.00	\$1,200.00
KD21	116 Pit	8794	\$6,000.00	\$3,200.00

Updating the Contents of a Record

- Click the field you wish to update
- Type the updated text
- Press the TAB key to complete the change and move to the next field



Deleting a Record

- With the form displayed, click the record selector in the datasheet next to the field you wish to delete
- Press the DELETE key to delete the record
- Press the Yes button to complete the deletion

Deleting a Record

The screenshot shows a database application window titled "Client Split Form". The window is divided into two main sections: a form at the top and a datasheet at the bottom. A "Navigation Pane" is visible on the left side.

The form section, titled "Client", contains the following fields:

- CL #: GA74
- Client Name: Grant Antiques
- Street: 78 Catawba
- City: Georgetown
- State: NC
- Postal Code: 28794
- Amount Paid: \$5,500.00
- Current Due: \$3,200.00
- Hrs YTD: 34.50
- BA #: 14

The datasheet section displays a table of records. The record with CL# GA74 is highlighted in blue. A red box highlights the "record selector" in the CL# column of this row. A callout box labeled "record to be deleted" points to the highlighted row. Another callout box labeled "record selector on form" points to the CL# field in the form above.

CL #	Client Name	Street	City	State	Postal Code	Amount Paid	Current Due
BA53	Bavant Animal Hospital	134 Main	Burles	NC	28817	\$0.00	\$7,500.00
BB32	Babbage CPA Firm	464 Linnell	Austin	SC	28796	\$1,500.00	\$500.00
BC76	Buda Community Clinic	867 Ridge	Buda	NC	27032	\$2,500.00	\$750.00
CJ29	Catering by Jenna	123 Second	Granger	NC	27036	\$3,000.00	\$1,000.00
GA74	Grant Antiques	78 Catawba	Georgetown	NC	28794	\$5,500.00	\$3,200.00
GF56	Granger Family Foundation	65 Simpson	Granger	NC	27036	\$0.00	\$6,500.00
HCI1	Horry County Hospital	216 Rivard	Austin	SC	28796	\$3,100.00	\$1,200.00
KD21	KD Studio	116 Pine	Georgetown	NC	28794	\$6,000.00	\$3,200.00
KCP1	Kyle Cooperative	421 First	Kyle	SC	29709	\$2,200.00	\$6,000.00

Record: 5 of 16 | No Filter | Search

Client Number (two uppercase letters followed by a two-digit number)

Using Filter By Selection

- Open the table containing the field you wish to filter
- Click the a value in the field you wish to filter
- Click the Selection button on the Home tab to display the Selection menu
- Click the desired selection option to select only the matching records

Using Filter By Selection

The screenshot shows the Microsoft Access 2007 interface with the 'Table Tools' ribbon active. The 'Selection' dropdown menu is open, showing the following options:

- Equals "Burles"
- Does Not Equal "Burles"
- Contains "Burles"
- Does Not Contain "Burles"

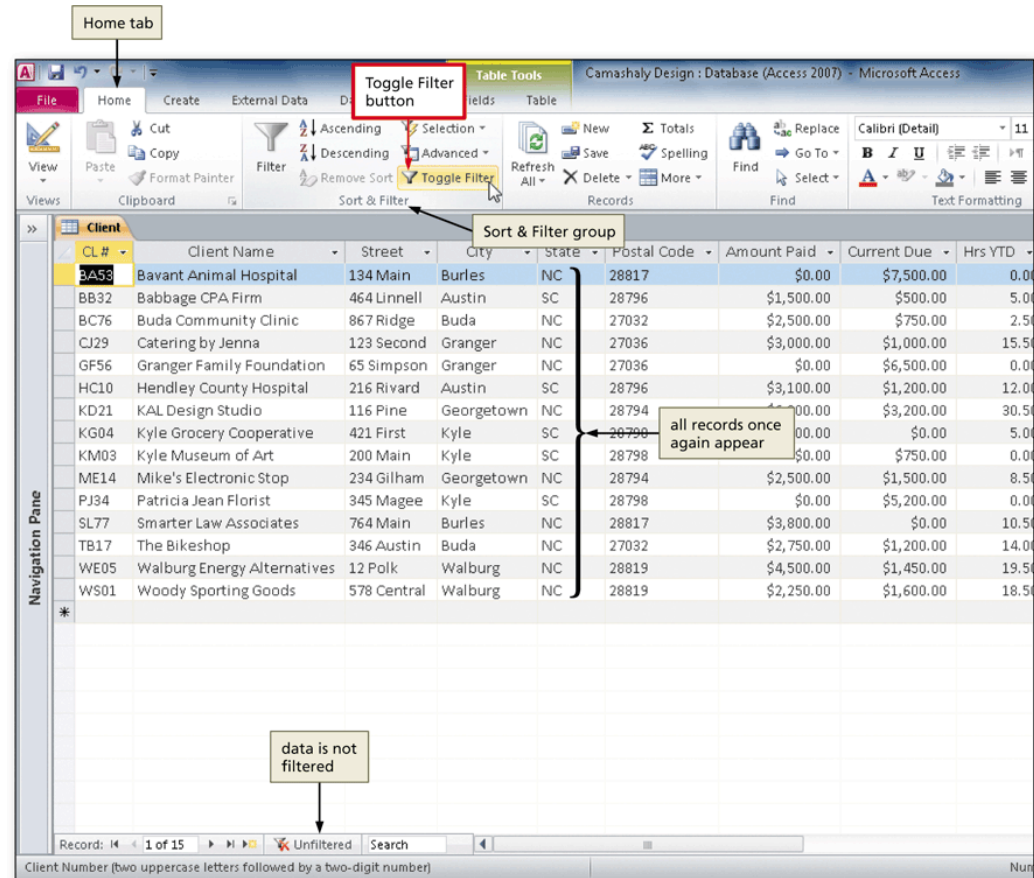
The 'City' column in the 'Client' table is highlighted, and the 'Burles' value is selected. The following callout boxes explain the filter options:

- include only records where the city is equal to Burles** (highlighted in red)
- include only records where the city is not equal to Burles
- include only records where the city contains Burles
- include only records where the city does not contain Burles

CL #	Street	City	State	Postal Code	Amount Paid	Currency
BA53	134 Main	Burles	NC	28817		
BB32	464 Linnell	Austin	SC	28796		
BC76	867 Ridge	Buda	NC	27032		
CJ29	123 Second	Granger	NC	27036	\$3,000.00	
GF56	65 Simpson	Granger	NC	27036	\$0.00	
HC10	216 Rivard	Austin	SC	28796	\$3,100.00	
KD21	116 Pine	Georgetown	NC	28794	\$6,000.00	
KG04	421 First	Kyle	SC	28798	\$3,200.00	
KM03	200 Main	Kyle	SC	28798	\$0.00	
ME14	234 Gilham	Georgetown	NC	28794	\$2,500.00	
PJ34	345 Magee	Kyle	SC	28798	\$0.00	
SL77	764 Main	Burles	NC	28817	\$3,800.00	
TB17	346 Austin	Buda	NC	27032	\$2,750.00	
WE05	12 Polk	Walburg	NC	28819	\$4,500.00	
WS01	578 Central	Walburg	NC	28819	\$2,250.00	

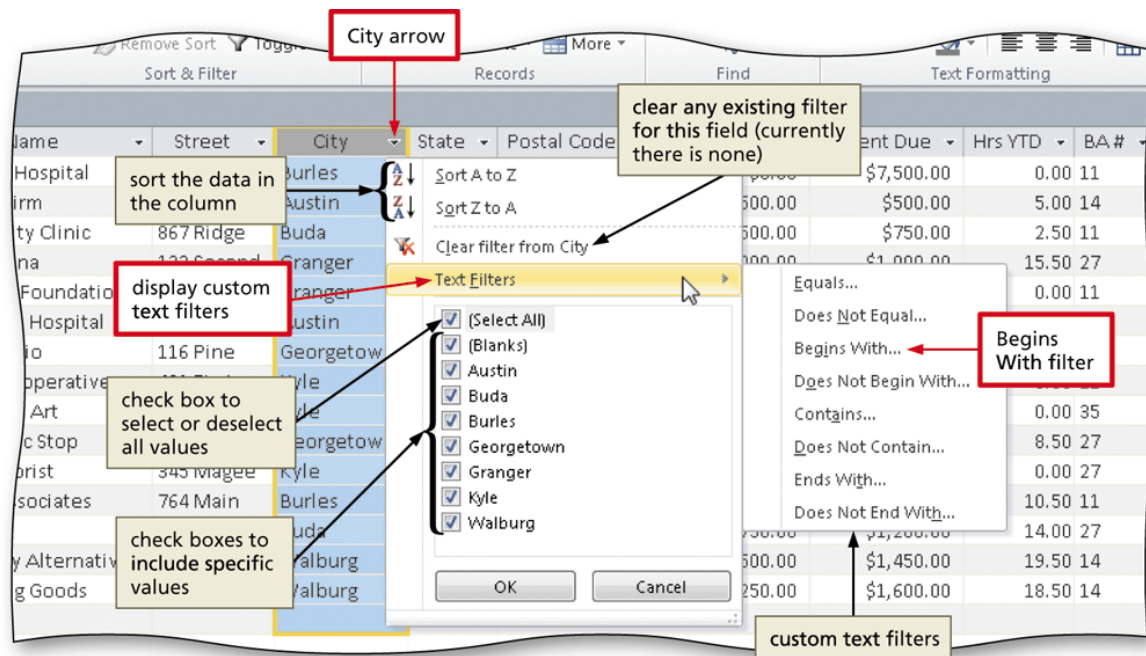
Toggleing a Filter

- Click the Toggle Filter button on the Home tab to toggle the filter



Using a Common Filter

- Click the arrow next to the field name (column heading) to filter
- Click the desired filter



Using Filter By Form

- Click the Advanced button on the Home tab to display the Advanced menu
- Click Clear All Filters on the Advanced menu to clear any existing filters
- Click the Advanced button to display the Advanced menu
- Click Filter By Form on the Advanced menu
- Type the criteria in the blank row for the fields to filter
- Click the Toggle Filter button to apply the filter

Using Filter By Form

value for Postal Code

value for Amount Paid

Amount Paid box arrow

Or tab allows you to enter another criterion to be combined with original criterion using Or

Look for Or

Form View

Num Lock

Using Advanced Filter/Sort

- Clear the existing filters
- Click the Advanced button to display the Advanced menu
- Click Advanced Filter/Sort on the Advanced menu
- If necessary, expand the size of the field list so all the fields appear
- Drag the desired fields to include in the advanced filter/sort, and type the appropriate criteria in the Criteria or 'or' row
- Click the Toggle Filter button on the Home tab to toggle the filter so that only records that satisfy the criteria will appear

Using Advanced Filter/Sort

Client Form tab

Toggle Filter button

Client

Client Number
Client Name
Street
City
State
Postal Code
Amount Paid
Current Due
Contract Hours YTD
Business Analyst N

Client Name field

Postal Code field

Amount Paid field

Field: Client Name Postal Code Amount Paid

Sort: Ascending

Criteria: "27036"

or: > 4000

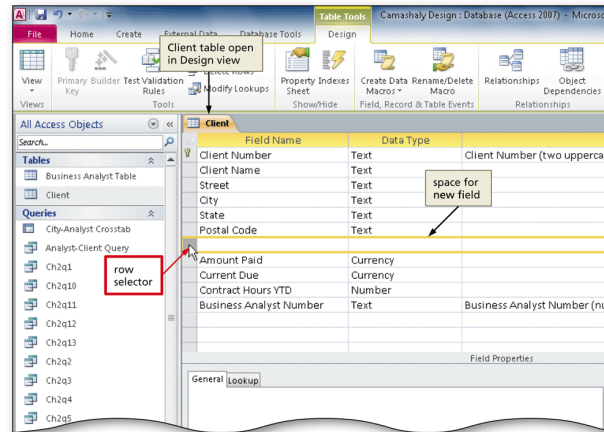
sort order for Client Name field

criterion for Postal Code field

criterion for Amount Paid field

Adding a New Field

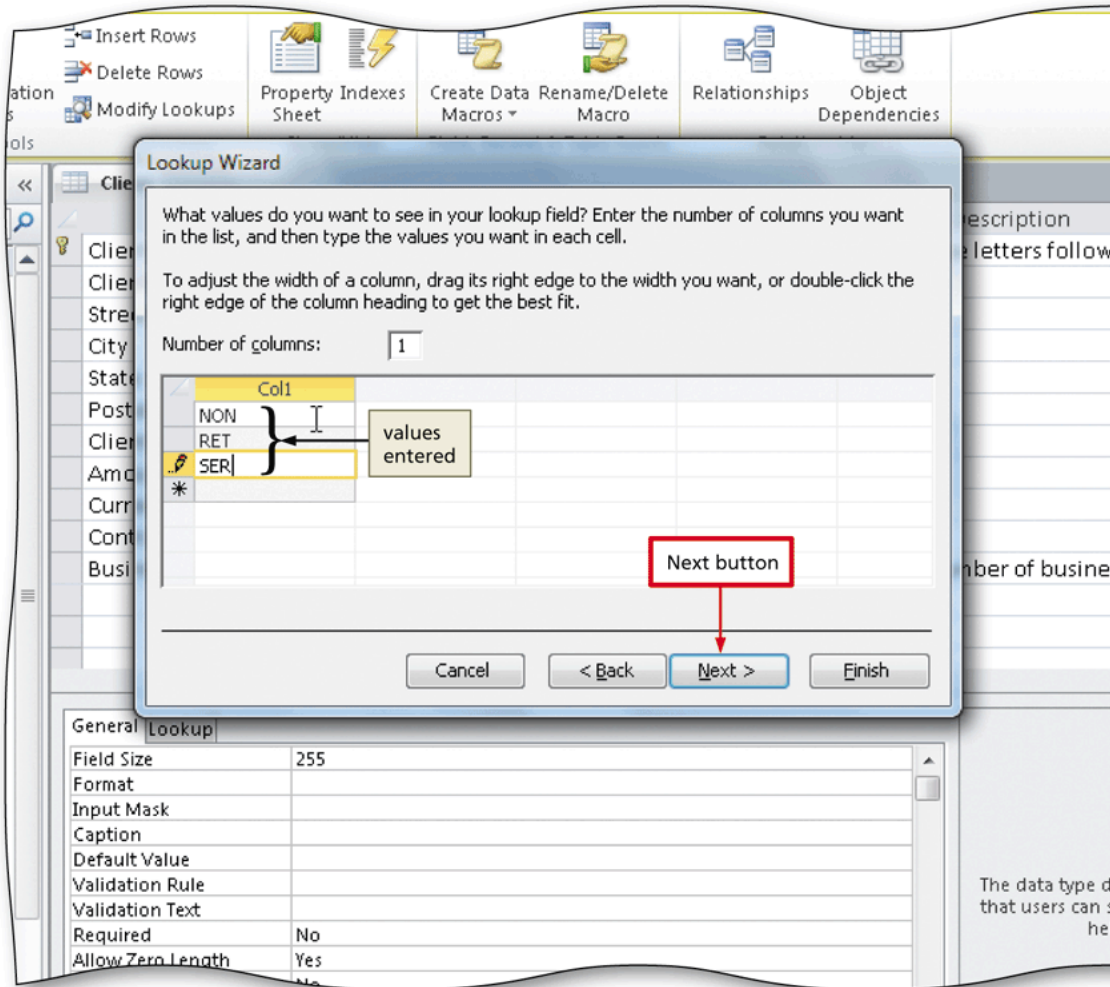
- Open the desired table in Design view
- Click the row selector below where you wish to insert the new field, and press the INSERT key to insert a blank row above the selected field
- Type the desired field name in the Field Name column



Creating a Lookup Field

- Click the Data Type column for the field you wish to set as a lookup field, and then click the Data Type box arrow to display the menu of available data types
- Click the Lookup Wizard, and then click the 'I will type in the values that I want' option button
- Click the Next button
- Type the list of values (one item per row)
- Click the Net button
- Enter the label for the lookup field, and click the 'Allow Multiple Values' check box if necessary
- Click the Finish button

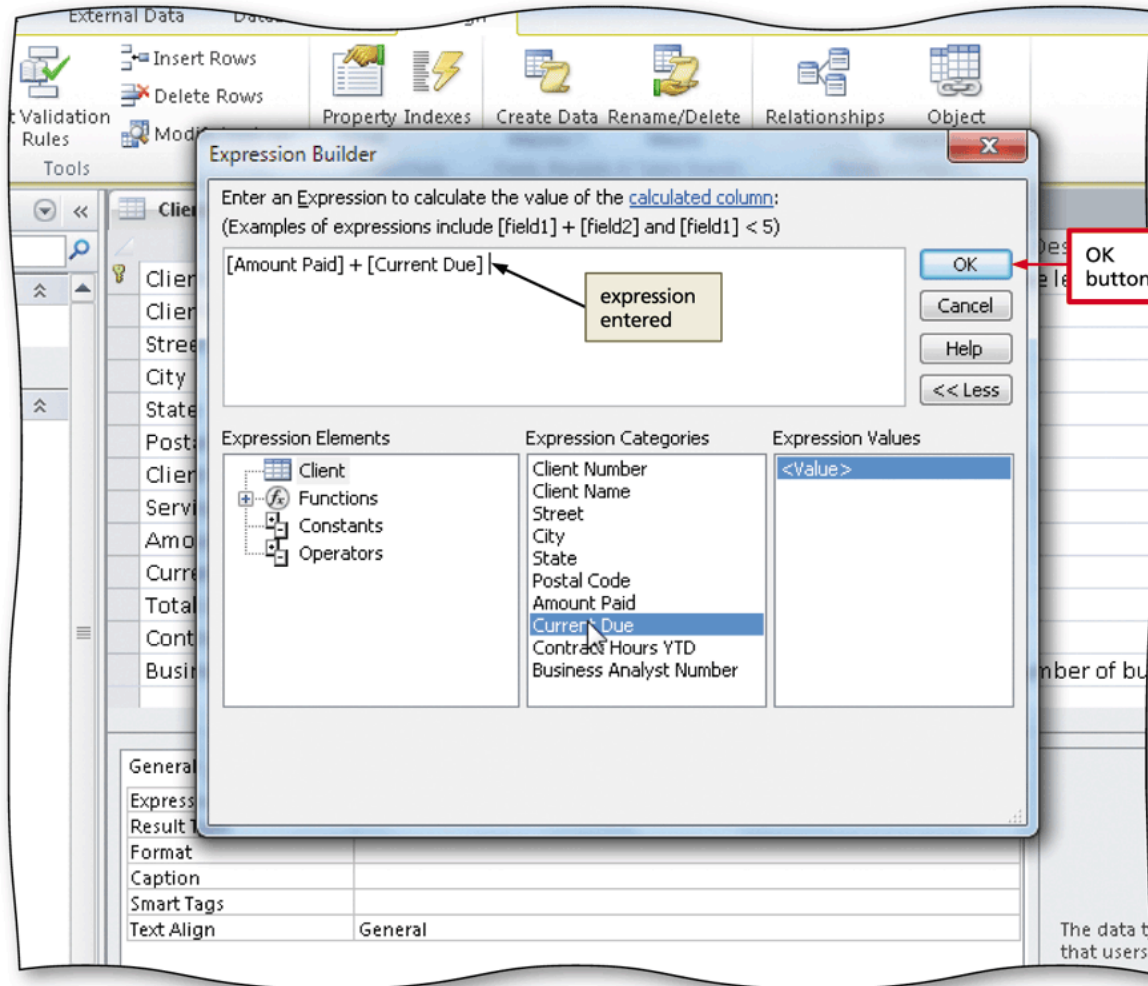
Creating a Lookup Field



Adding a Calculated Field

- Insert a new field, and type the desired field name in the Field Name column
- Click the Data Type box, and then click Calculated to select the Calculated data type and display the Expression Builder dialog box
- Create the desired expression, and then click the OK button

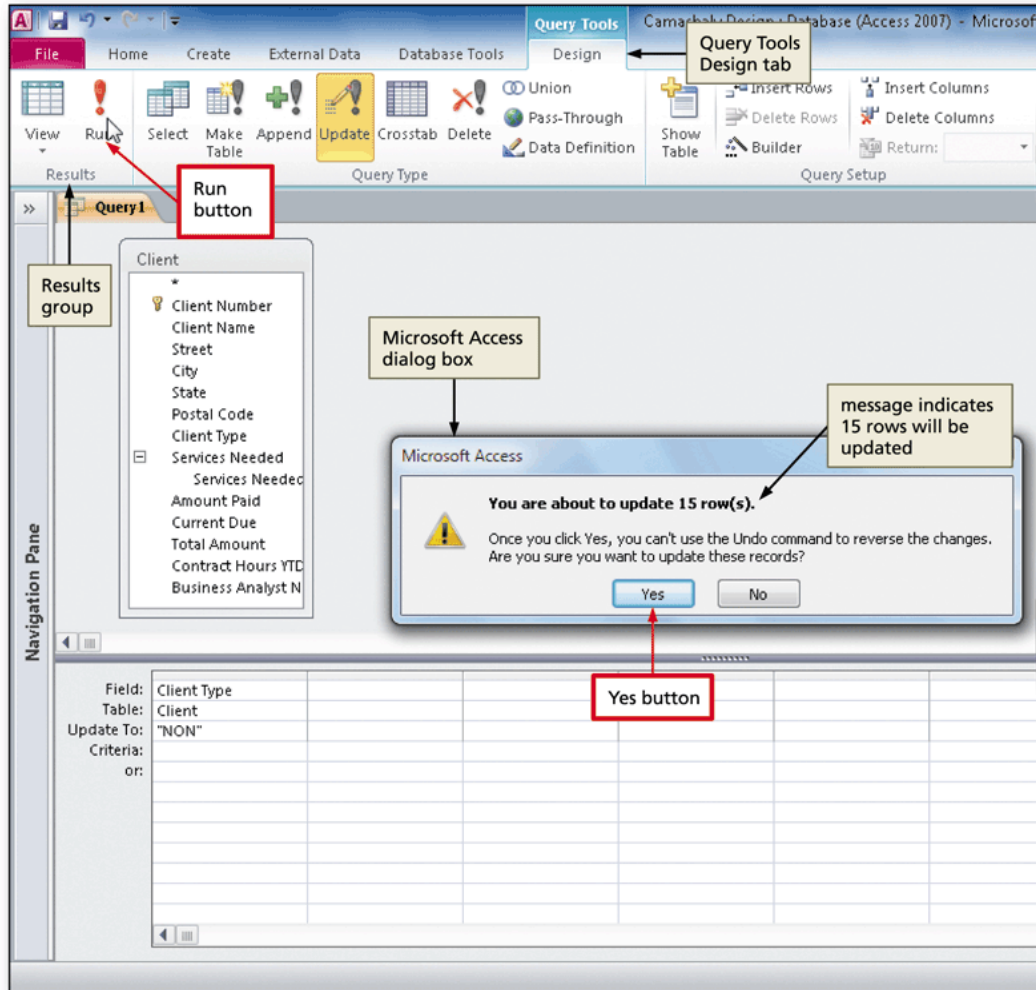
Adding a Calculated Field



Using an Update Query

- Create a new query for the desired table
- Click the Update Query button on the Query Tools Design tab
- Double-click the field to update, and then type the value to update the field to in the Update To row
- Click the Run button to run the query and update the records
- Click the Yes button to make the changes

Using an Update Query



Using a Delete Query

- Create a new query for the desired table
- Click the Delete button on the Query Tools Design tab to make the query a delete query
- Double-click the field containing the criteria for the records to delete
- Click the Criteria row and then type the desired criteria
- Run the query by clicking the Run button
- Click the Yes button to acknowledge the number of records to be deleted

Using a Delete Query

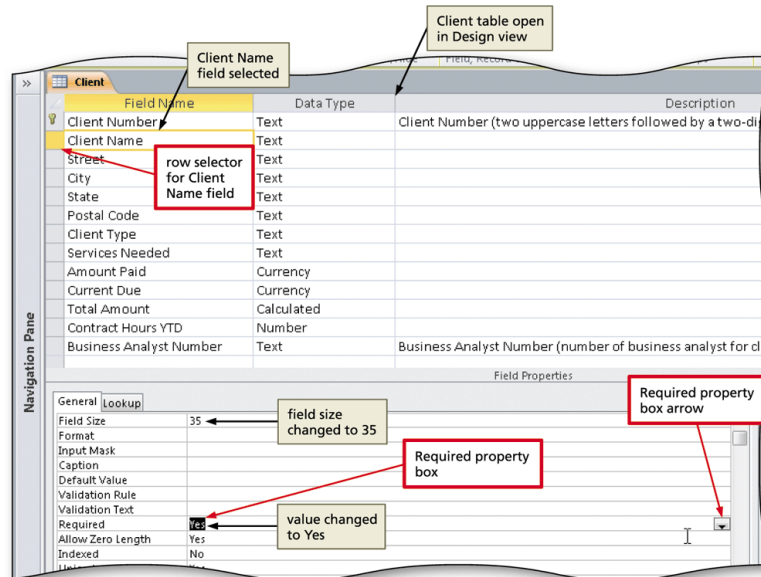
The screenshot shows the Microsoft Access interface in Design view for a delete query named 'Query1'. The ribbon includes 'Query Tools' and 'Design'. The 'Delete' button in the ribbon is highlighted with a red box and labeled 'Delete button'. The 'Run' button is also highlighted with a red box and labeled 'Run button'. The 'Query Type' group is labeled 'Query Type group'. The 'Navigation Pane' on the left shows the 'Client' table with fields: Client Number, Client Name, Street, City, State, Postal Code, Client Type, Services Needed, Amount Paid, Current Due, Total Amount, Contract Hours YTD, and Business Analyst N. The 'Postal Code' field is highlighted with a yellow box and labeled 'Postal Code field added'. The design grid at the bottom shows the following criteria:

Field:	Table:	Delete:	Criteria:	or:
Postal Code	Client	Where	28819	

The criteria '28819' is highlighted with a yellow box and labeled 'postal code must be 28819'. A yellow box labeled 'Delete row added to design grid' points to the 'Delete:' column header.

Specifying a Required Field

- In Design View, click the Required property box in the Field Properties pane next to the desired field to make required
- Click the down arrow that appears, and then click Yes



Specifying a Range

- In Design View, click the desired field for which you want to specify a range, and then click the Validation Rule property box
- Type the desired range
- Type the desired validation text in the Validation Text property box

Specifying a Range

The screenshot displays the Microsoft Access design view for a table. The 'Navigation Pane' on the left lists several fields, with 'Current Due' selected and highlighted in yellow. The 'Field Properties' pane on the right shows the configuration for the 'Current Due' field. Callout boxes highlight specific settings: 'Current Due field selected' points to the field name in the list; 'Access automatically capitalized "and"' points to the 'And' in the validation rule; 'validation rule' points to the entire validation rule text; and 'validation text' points to the validation text description.

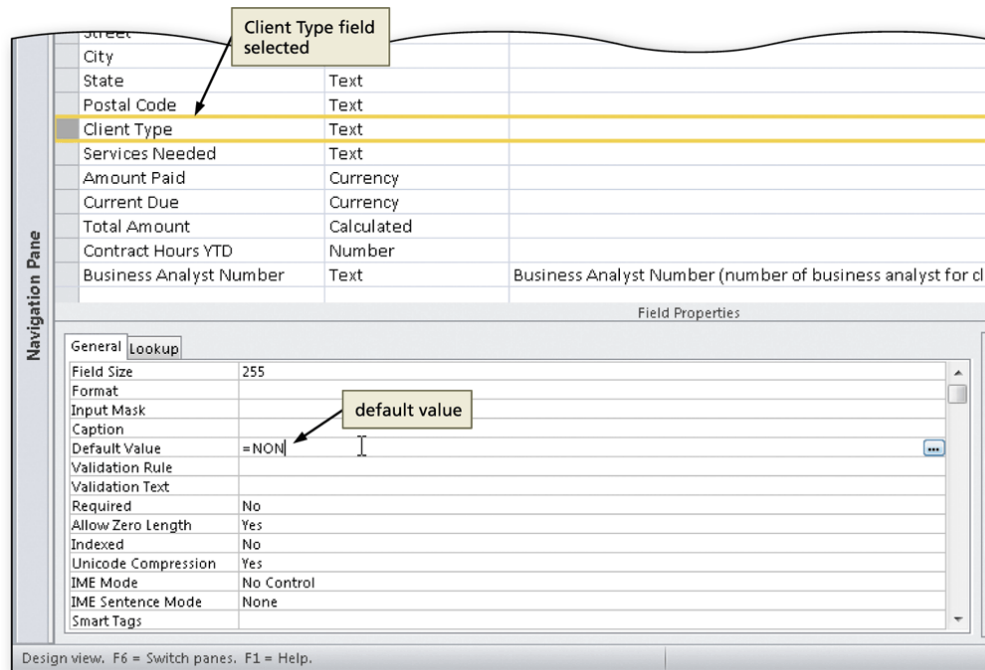
Field Name	Field Type	Field Properties
State		
Postal Code		
Client Type		
Services Needed	Text	
Amount Paid	Currency	
Current Due	Currency	
Total Amount	Calculated	
Contract Hours YTD	Number	
Business Analyst Number	Text	Business Analyst Number (number of business analyst for client)

Property	Value
General	
Format	
Decimal	
Input Mask	
Caption	
Default Value	
Validation Rule	>= 0 And <= 30000
Validation Text	Must be at least \$0.00 and at most \$30,000.00
Required	No
Indexed	No
Smart Tags	
Text Align	General

Design view. F6 = Switch panes. F1 = Help.

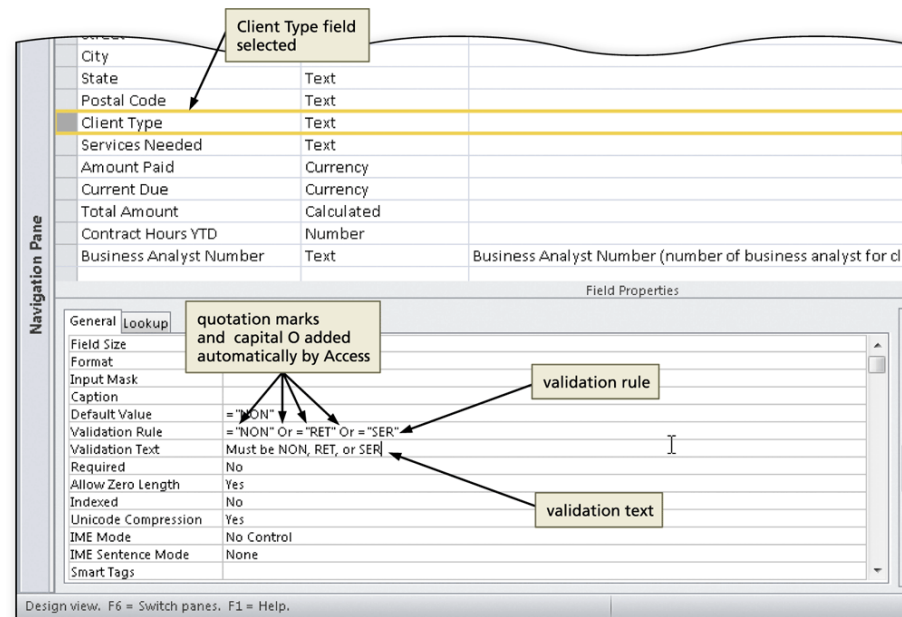
Specifying the Default Value

- With the field selected in Design View, click the Default Value property box and then type the desired default value



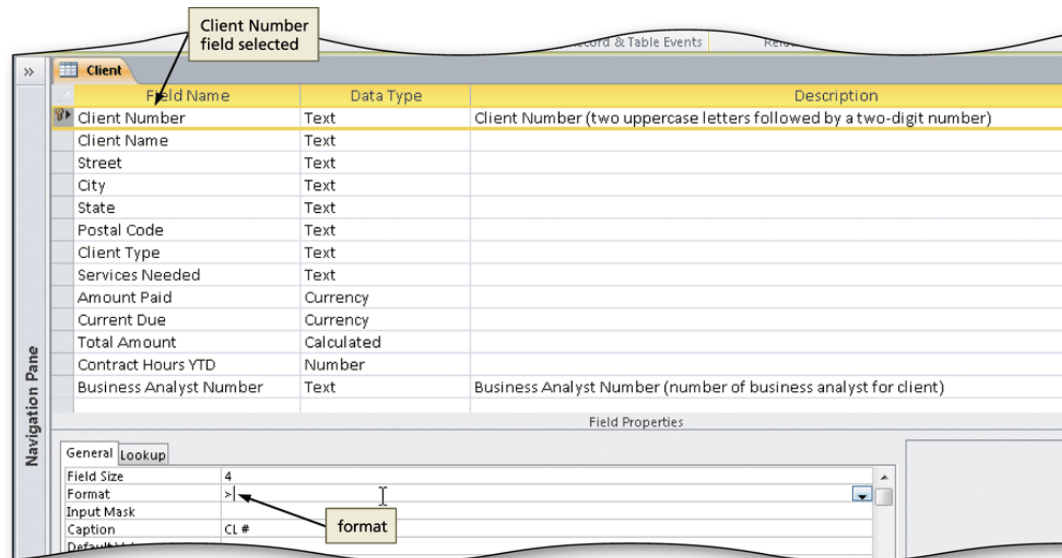
Specifying a Collection of Legal Values

- With the desired field selected in Design view, click the Validation Rule property and type the desired legal values, each preceded by an equal sign
- Type the desired validation text



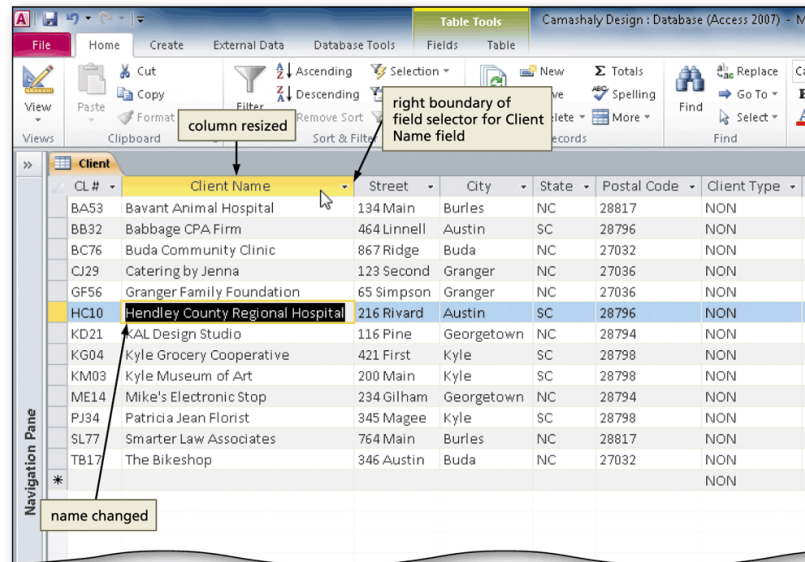
Specifying a Format

- Select the desired field for which you want to specify a format
- Click the Format property box and then type the desired format



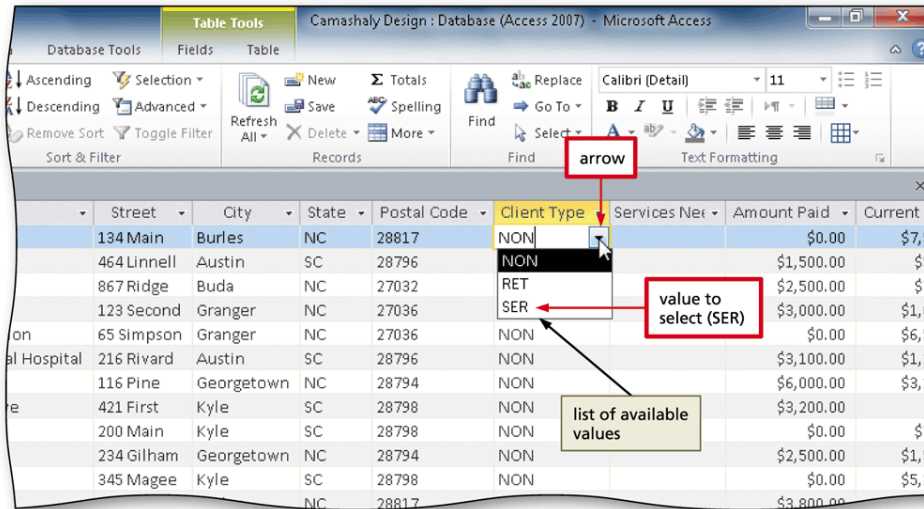
Changing the Contents of a Field

- Open the desired field in Datasheet view
- Click the value for the field you wish to update
- Type the new field contents
- Click the Save button on the Quick Access Toolbar



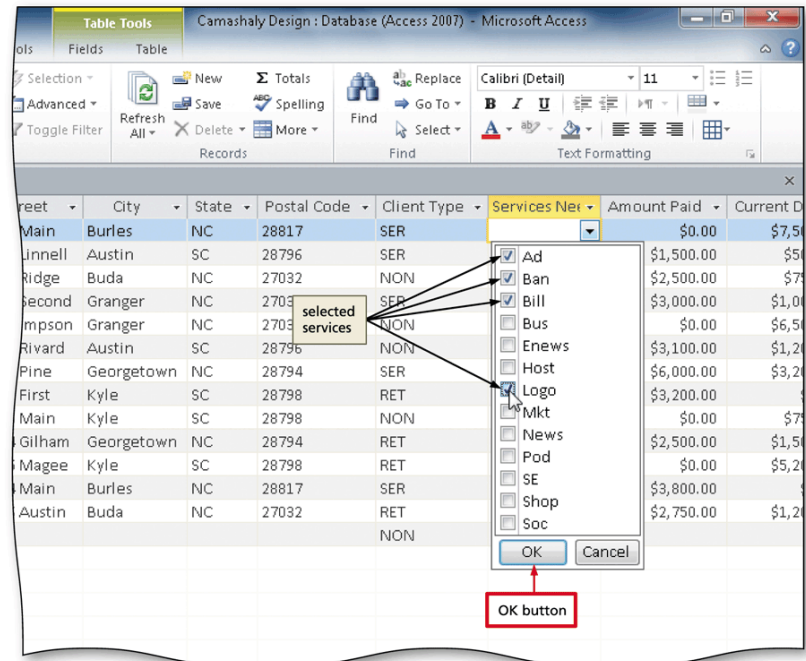
Using a Lookup Field

- Open the table containing the lookup field in Datasheet view
- Click the arrow next to the lookup field to display a list of choices
- Select the desired choice



Using a Multivalued Lookup Field

- Click the arrow next to a multivalued lookup field value to display a list of available options
- Click the desired options
- Click the OK button



Updating a Form to Reflect the Changes in the Table

- Delete the existing form by right-clicking the form in the Navigation Pane, and then clicking Delete on the shortcut menu. Click the Yes button to confirm the deletion
- Click the desired table in the Navigation Pane to select the table
- Click Create on the Ribbon to display the Create tab
- Click the Form button to create a simple form
- Click the Save button on the Quick Access Toolbar, and then type the desired form name
- Close the form

Updating a Form to Reflect the Changes in the Table

newly created form

The screenshot shows a Microsoft Access form titled "Client" with the following fields and values:

Field	Value
CL #	BA53
Client Name	Bavant Animal Hospital
Street	134 Main
City	Burles
State	NC
Postal Code	28817
Client Type	SER
Services Needed	Ad, Ban, Bill, Logo
Amount Paid	\$0.00
Current Due	\$7,500.00
Total Amount	\$7,500.00
Hrs YTD	0.00

Callouts in the image point to the following fields:

- Client Type field
- Services Needed field
- Total Amount field

Updating a Report to Reflect the Changes in the Table

- Open the report you want to modify in Layout View
- Resize columns as necessary by pointing to the right-hand border of the column heading so that the mouse pointer becomes a two-headed arrow , and then drag the pointer to resize the field
- To add fields to the report, click the Add Existing Fields button on the Report Layout Tools Design tab to display a field list
- Point to the field you want to add, press and hold the left mouse button, and then drag the mouse pointer until the line to the left of the mouse pointer is at the location where you want to add the field

Updating a Report to Reflect the Changes in the Table

- Repeat the previous steps as necessary to add additional fields
- To change the orientation of the report to Landscape, click the Landscape button on the Report Layout Tools Page Setup tab

Updating a Report to Reflect the Changes in the Table

Camashaly Design : Database (Access 2007)

Report Layout Tools

File Home Create External Data Database Tools Design Arrange Format Page Setup

Views Themes Grouping & Totals

Controls

Header / Footer Tools

Navigation Pane

Client Financial Report

Client Financial Report

Client Number	Client Name	Amount Paid	Current Due	Contract Hours YTD	Business Analyst Number
BA53	Bavant Animal Hospital	\$0.00			11
BB32	Babbage CPA Firm	\$1,500.00	\$500.00	5.00	14
BC76	Buda Community Clinic	\$2,500.00	\$750.00	2.50	11
CJ29	Catering by Jenna	\$3,000.00	\$1,000.00	15.50	27
GF56	Granger Family Foundation	\$0.00	\$6,500.00		11
HC10	Hendley County Regional Hospital	\$3,100.00	\$1,200.00	12.00	27
KD21	KAL Design Studio	\$6,000.00	\$3,200.00	30.50	14
KG04	Kyle Grocery Cooperative	\$3,200.00	\$0.00	5.00	11
ME14	Mike's Electronic Stop	\$2,500.00	\$1,500.00	8.50	27
PJ34	Patricia Jean Florist	\$0.00	\$5,200.00	0.00	27
SL77	Smarter Law Associates	\$3,800.00	\$0.00	10.50	11
TB17	The Bikeshop	\$2,750.00	\$1,200.00	14.00	27
KM03	Kyle Museum of Art	\$0.00	\$750.00	0.00	35

Field List

Show all tables

Fields available for this view:

- Client Number
- Client Name
- Street
- City
- State
- Postal Code
- Client Type
- Services Needed
- Services Needed.Value
- Amount Paid
- Current Due
- Total Amount
- Contract Hours YTD
- Business Analyst Number

Layout View Num Lock

Including Totals in a Datasheet

- Open the desired table in Datasheet view
- Click the Totals button on the Home tab to include the Total row in the data sheet
- Click the Total row in the desired column
- Click the arrow to display a menu of available calculations
- Click the Desired calculation

Including Totals in a Datasheet

The screenshot shows the Microsoft Access interface with a datasheet view of a table named "Business Analyst Table". The ribbon is set to "Table Tools" > "Fields". A "Totals button" (Σ) is highlighted in the ribbon. The datasheet has a "Total" row at the bottom. A dropdown menu is open over the "Total" row, showing calculation options: None, Sum, Average, Count, Maximum, Minimum, Standard Deviation, and Variance. Callouts explain the "Total row arrow" (the dropdown arrow), "calculate sum" (the Sum option), "Total row for Incentive YTD field" (the Incentive YTD column), and "available calculations" (the list of options).

BA #	Last Name	First Name	Street	City	State	Postal Code	Sale	Incentive YTD
11	Kerry	Cordelia	251 Painter	Georgetown	NC	28794	\$3,200.00	\$3,450.00
14	Martinez	Manuel	3125 Steel	Kyle	SC	28797	\$3,100.00	\$2,430.00
27	Liu	Jan	265 Marble	Byron	NC	28795	\$3,000.00	\$2,280.00
35	Scott	Jeff	1925 Pine	Georgetown	NC	28794	\$500.00	\$0.00
Total								

Changing Gridlines

- Open the table in Datasheet view
- Click the box in the upper-left corner of the Datasheet selector to select the entire datasheet
- Click the Gridlines button on the Home tab to display the Gridlines gallery
- Click the desired command in the Gridlines gallery

Changing Gridlines

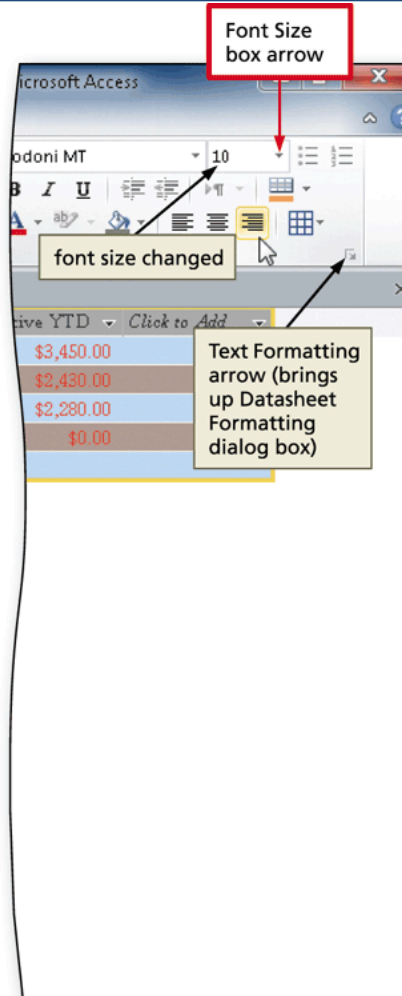
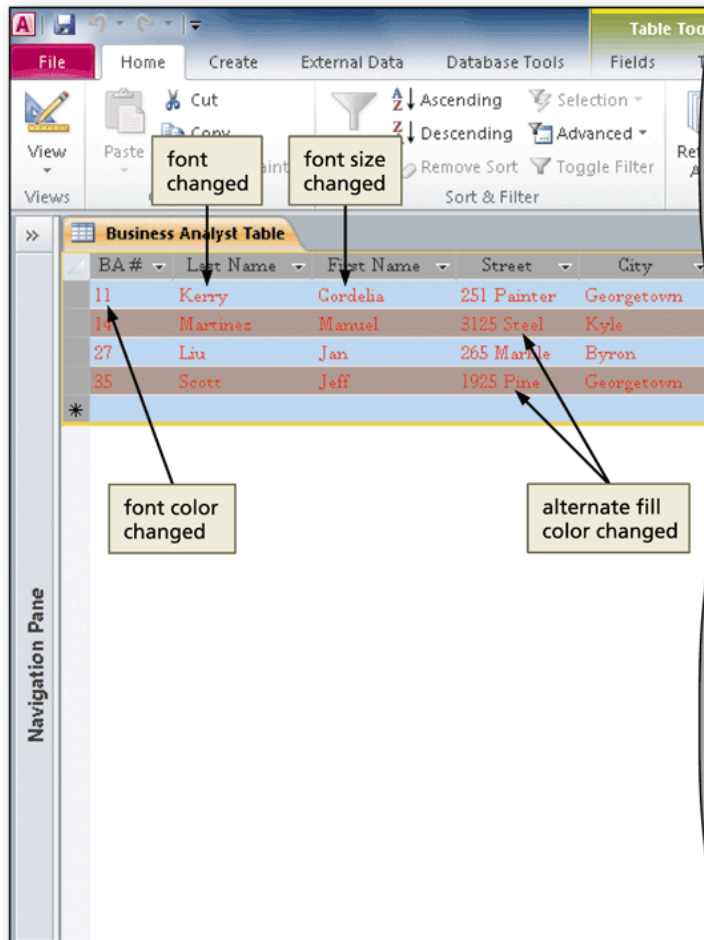
The screenshot shows the Microsoft Access interface with the Table Tools ribbon active. The Gridlines gallery is open, showing four options: Gridlines: Both, Gridlines: Horizontal, Gridlines: Vertical, and Gridlines: None. A red box highlights the Gridlines button on the ribbon. A yellow box highlights the Text Formatting group. A red box highlights the Horizontal command (only horizontal gridlines) in the gallery. A yellow box highlights the Gridlines gallery. The data table below shows the following information:

Name	Street	City	State	Postal Code	Sale	YTD	YTD
ia	251 Painter	Georgetown	NC	28794	\$3,200.00	\$3,450.00	
el	3125 Steel	Kyle	SC	28797	\$3,100.00	\$2,430.00	
	265 Marble	Byron	SC	28795	\$3,400.00	\$2,280.00	
	1925 Pine	Georgetown	NC	28794	\$500.00	\$0.00	

Changing the Colors and Font in a Datasheet

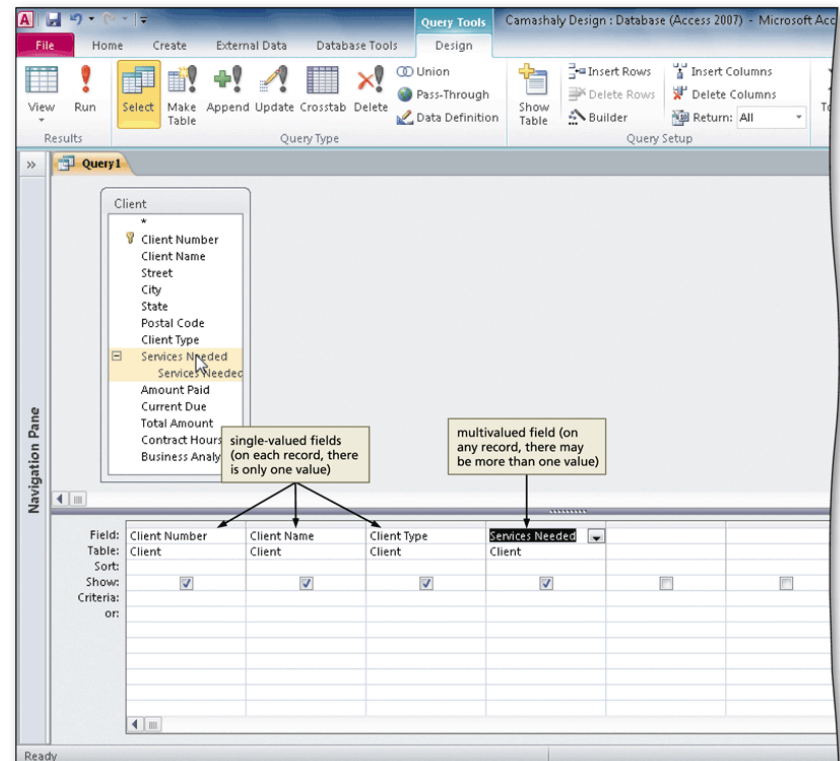
- With the datasheet selected, click the Alternate Row Color button arrow on the Home tab to display the color palette
- Click the desired color
- Click the Font Color button arrow, and then click the desired font color
- Click the Font box arrow, and then scroll and click the desired font
- Click the Font Size box arrow, and click the desired font size

Changing the Colors and Font in a Datasheet



Querying a Multivalued Field Showing Multiple Values on a Single Row

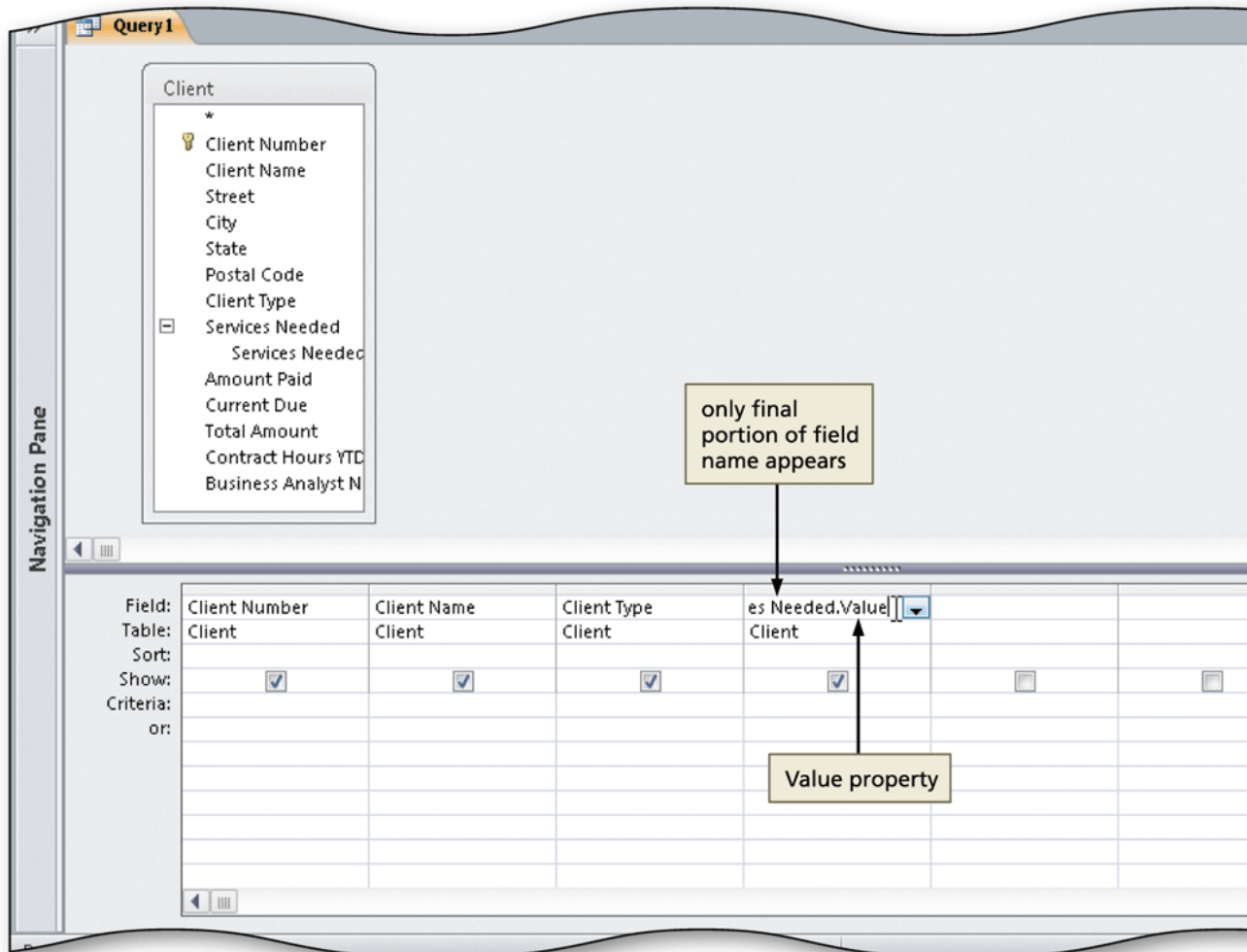
- Create a query for the desired table
- Include fields you want in the query, including a multivalued field



Querying a Multivalued Field Showing Multiple Values on Multiple Rows

- Create a query in Design view containing a multivalued field containing multiple values
- Click the multivalued field name in the design grid, position the insertion point at the end, and then type `.value` to use the Value property
- View the results

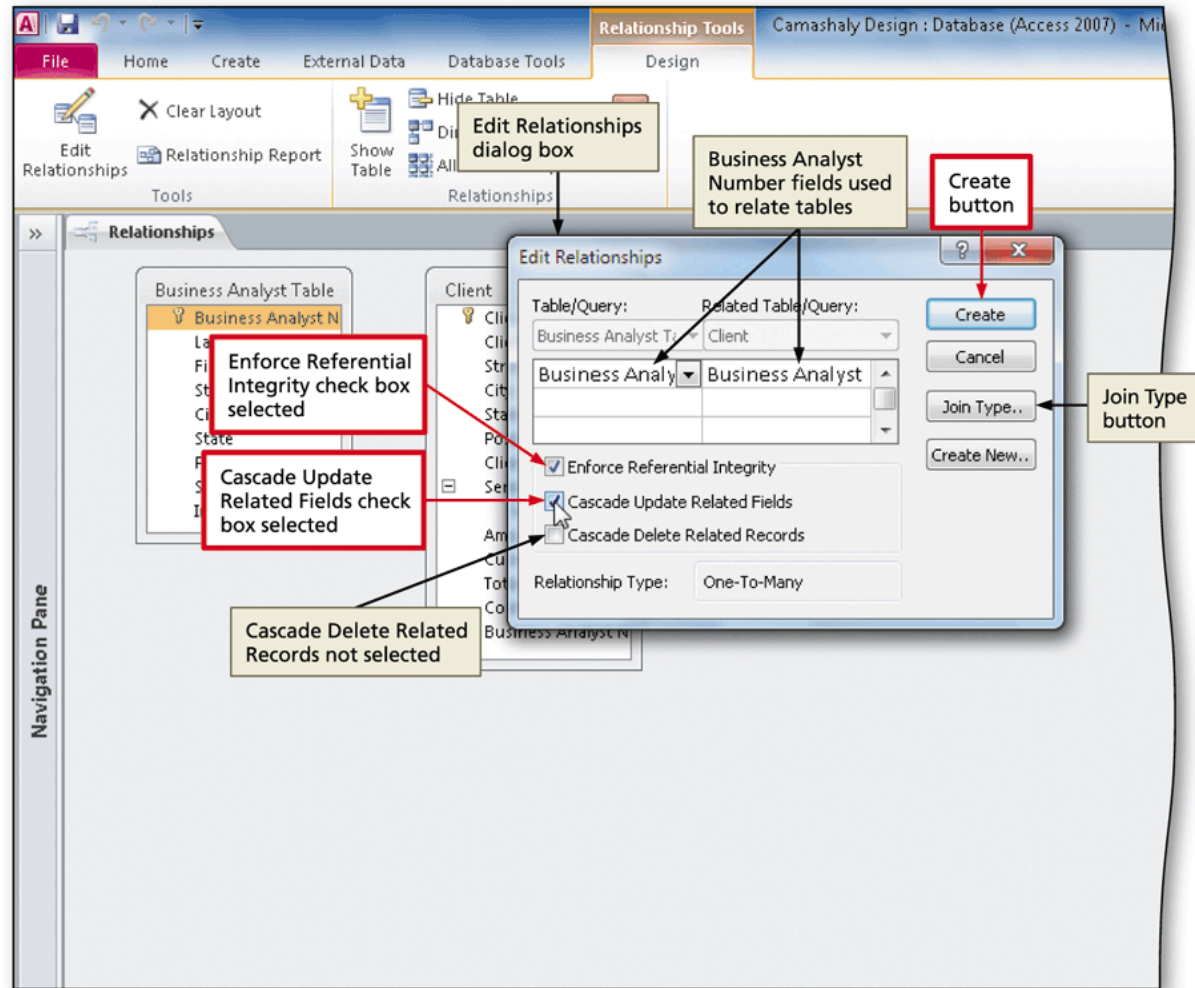
Querying a Multivalued Field Showing Multiple Values on Multiple Rows



Specifying Referential Integrity

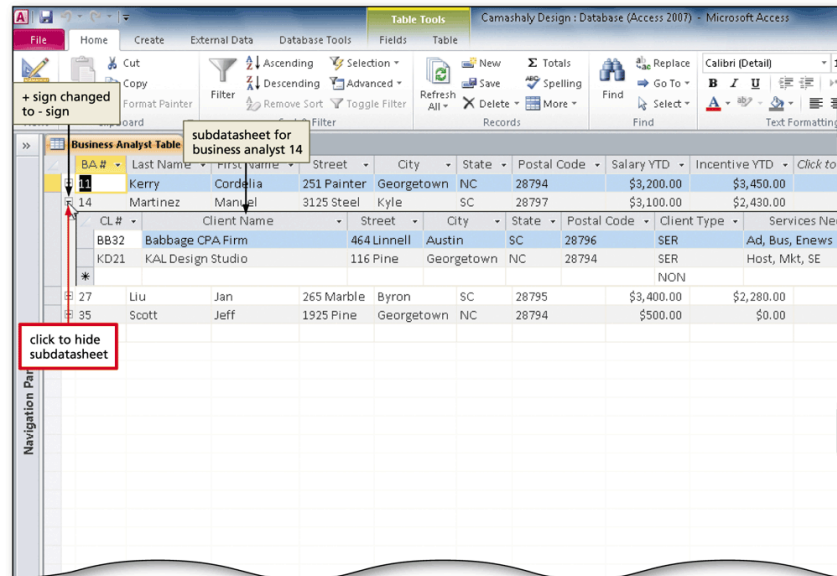
- Click Database Tools on the Ribbon to display the Database Tools tab
- Click the Relationships button to open the Relationships window and display the Show Table dialog box
- Add the tables with associated primary and foreign keys
- Drag the primary key from the first table to the foreign key in the second table to display the Edit Relationships dialog box to create a relationship
- Click the Enforce Referential Integrity check box
- Click the Cascade Update Related Fields check box
- Click the Create button to complete the creation of the relationship

Specifying Referential Integrity



Using a Subdatasheet

- Open the table related another table in Datasheet view
- Click the plus sign in front of the row for a record to display the subdatasheet



Using the Ascending Button to Order Records

- Open the desired table in Datasheet view
- Click in the first record on the field to sort
- Click the Ascending button on the Home tab to sort the records in ascending order

Using the Ascending Button to Order Records

The screenshot shows the Microsoft Access interface with the 'Table Tools' ribbon active. The 'Sort & Filter' group contains the 'Ascending' button, which is highlighted with a red box and labeled 'Ascending button'. A callout box points to the 'City' column header in the 'Client' table, stating 'records sorted alphabetically by city'. Another callout points to the 'Descending' button, labeled 'Descending button'.

CL #	Client Name	Street	City	State	Postal Code	Client Type	
HC10	Hendley County Regional Hospital	216 Rivard	Austin	SC	28796	NON	Eny
BB32	Babbage CPA Firm	464 Linnell	Austin	SC	28796	SER	Ad, B
TB17	The Bikeshop	346 Austin	Buda	NC	27032	RET	Ad, S
BC76	Buda Community Clinic	867 Ridge	Buda	NC	27032	NON	Ban,
SL77	Smarter Law Associates	764 Main	Burles	NC	28817	SER	Enew
BA53	Bavant Animal Hospital	134 Main	Burles	NC	28817	SER	Ad, B
ME14	Mike's Electronic Stop	234 Gilham	Georgetown	NC	28794	RET	Ad, B
KD21	KAL Design Studio	116 Pine	Georgetown	NC	28794	SER	Host
GF56	Granger Family Foundation	65 Simpson	Granger	NC	27036	NON	Hos
CJ29	Catering by Jenna	123 Second	Granger	NC	27036	SER	Bus
KM03	Kyle Museum of Art	200 Main	Kyle	SC	28798	NON	Eny
PJ34	Patricia Jean Florist	345 Magee	Kyle	SC	28798	RET	Bus
KG04	Kyle Grocery Cooperative	421 First	Kyle	SC	28798	RET	Ad,
*						NON	

Chapter Summary

- Add, change, and delete records
- Search for records
- Filter records
- Update a table design
- Use action queries to update records
- Use delete queries to delete records
- Specify validation rules, default values, and formats

Chapter Summary

- Create and use single-valued lookup fields
- Create and use multivalued lookup fields
- Add new fields to an existing report
- Format a datasheet
- Specify referential integrity
- Use a subdatasheet
- Sort records

Microsoft Access 2010

Chapter 3 Complete

