

# Access 2016 Module 2

## Building and Using Queries





# Module Objectives

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- Use the Query Wizard
- Work with data in a query
- Use Query Design View
- Sort and find data
- Filter data
- Apply AND criteria
- Apply OR criteria
- Format a datasheet



## Use the Query Wizard (Slide 1 of 2)

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- A **query** allows you to select a subset of fields and records from one or more tables and then present the selected data as a single datasheet
- Because a query doesn't physically store the data, a query datasheet is sometimes called a **logical view** of the data
- A query stores a set of **SQL (Structured Query Language)** commands
  - Query Design View is an Access tool for writing queries without using SQL



# Use the Query Wizard (Slide 2 of 2)

## Simple Query Wizard

Simple Query Wizard

Which fields do you want in your query?

You can choose from more than one table or query.

Tables/Queries

Table: Customers

Available Fields:

- CustNo
- Street
- City
- State
- Zip
- Phone
- FirstContact

Selected Fields:

- TripName
- City
- Category
- Price
- FName
- LName

Buttons: Cancel, < Back, Next >, Finish



# Work with Data in a Query (Slide 1 of 2)

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- You enter and edit data in a query datasheet the same way you do in a table datasheet
- Any edits you make in a query datasheet are permanently stored in the underlying tables, and are automatically updated in all views of the data in other queries, forms, and reports



# Work with Data in a Query (Slide 2 of 2)

## Working with data in a query datasheet

Updating Stanley to Captiva in one record updates all records

TripCustomerList						
TripName	City	Category	Price	FName	LName	
Captiva Bay Cleanup	Captiva	Eco	\$750	Ralph	Stewart	
Captiva Bay Cleanup	Captiva	Eco	\$750	Lisa	Gomez	
Breckenridge Reconstruction	Breckenridge	Eco	\$850	Kristen	Collins	
Captiva Bay Cleanup	Captiva	Eco	\$750	Kris	Shaw	
Captiva Bay Cleanup	Captiva	Eco	\$750	Lois	Gordon	
Captiva Bay Cleanup	Captiva	Eco	\$750	Naresh	Blackwell	
Coastal Shore Cleanup	Captiva	Family	\$1,000	Julia	Bouchart	
Breckenridge Reconstruction	Breckenridge	Eco	\$850	Tom	Camel	
Golden Hands Venture	Orlando	Family	\$900	Shirley	Cruz	
Golden Hands Venture	Orlando	Family	\$900	Zohra	Bell	
Golden Hands Venture	Orlando	Family	\$900	Kathryn	Hall	
Golden Hands Venture	Orlando	Family	\$900	Jose	Edwards	
Red Reef Cleanup	Islamadora	Eco	\$1,500	Jane	Taylor	
Captiva Bay Cleanup	Captiva	Eco	\$750	Kori	James	
American Heritage Tour	Philadelphia	Educational	\$1,200	Sharol	Wood	



# Use Query Design View (Slide 1 of 2)

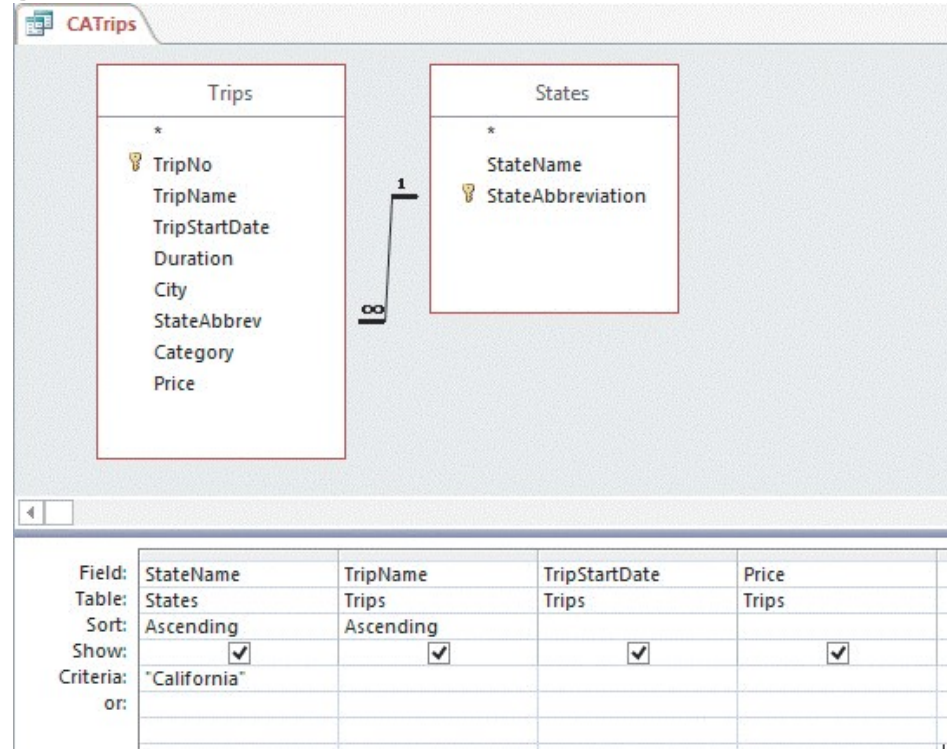
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- Use **Query Design View** to:
  - Add, delete, or move the fields in an existing query, to specify sort orders, or to add **criteria** to limit the number of records shown in the resulting datasheet
  - Create a new query from scratch
- Query Design View presents the fields you can use for that query in small windows called **field lists**
- If you use the fields of two or more related tables in the query, the relationship between two tables is displayed with a **join** or **link line** identifying which fields are used to establish the relationship



# Use Query Design View (Slide 2 of 2)

## Query in Design View







# Sort and Find Data (Slide 1 of 4)

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- The Access sort and find features are tools that help you quickly organize and find data in a table or query datasheet.
- Data can be sorted by clicking the list arrow on a datasheet's column heading, then click a sorting option



# Sort and Find Data (Slide 2 of 4)

## Changing sort orders for a query

**TripsByCategory**

Trips

- \*
  - TripNo
  - TripName
  - TripStartDate
  - Duration
  - City
  - StateAbbrev
  - Category
  - Price

Field:	Category	TripName	TripStartDate	Price	Duration
Table:	Trips	Trips	Trips	Trips	Trips
Sort:	Ascending			Descending	
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:					
or:					



# Sort and Find Data (Slide 3 of 4)

## Find and Replace dialog box

The screenshot shows the 'Find and Replace' dialog box with the 'Find' tab selected. The 'Find What' field contains 'Tour' and the 'Replace With' field contains 'Trip'. The 'Look In' dropdown is set to 'Current field'. The 'Match' dropdown is set to 'Any Part of Field'. 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 blue border. The 'Cancel', 'Replace', and 'Replace All' buttons are also visible.

Find and Replace

Find Replace

Find What: Tour

Replace With: Trip

Look In: Current field

Match: Any Part of Field

Search: All

☐ Match Case ☒ Search Fields As Formatted

Find Next

Cancel








Replace

Replace All



## Sort and Find Data (Slide 4 of 4)

### Sort and Find buttons

name	button	purpose
Ascending		Sorts records based on the selected field in ascending order (0 to 9, A to Z)
Descending		Sorts records based on the selected field in descending order (Z to A, 9 to 0)
Remove Sort		Removes the current sort order
Find		Opens the Find and Replace dialog box to find data
Replace		Opens the Find and Replace dialog box to find and replace data
Go To		Helps you navigate to the first, previous, next, last, or new record
Select		Helps you select a single record or all records in a datasheet



# Filter Data (Slide 1 of 4)

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- **Filtering** provides a temporary way to display a subset of records that match given criteria
- Filters are not used to calculate sums, averages, counts, etc.
- Filters are removed when the datasheet is closed
- Filters can be saved as queries
- Filter By Selection: Filtering by a given field value. Filters records for an exact match.
- Filter By Form: Filters by comparative data



## Filter Data (Slide 2 of 4)

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- Wildcards
  - Used to search for a pattern; represents any character
  - Entered as criteria
  - ? Used to search for a single character
  - \* Used to search for any number of characters
  - Often used with LIKE operator



# Filter Data (Slide 3 of 4)





## Filters vs. queries

characteristics	filters	queries
Are saved as an object in the database		•
Can be used to select a subset of records in a datasheet	•	•
Can be used to select a subset of fields in a datasheet		•
Resulting datasheet used to enter and edit data	•	•
Resulting datasheet used to sort, filter, and find records	•	•
Commonly used as the source of data for a form or report		•
Can calculate sums, averages, counts, and other types of summary statistics across records		•
Can be used to create calculated fields		•



## Filter Data (Slide 4 of 4)

### Filter buttons

name	button	purpose
Filter		Provides a list of values in the selected field that can be used to customize a filter
Selection		Filters records that equal, do not equal, or are otherwise compared with the current value
Advanced		Provides advanced filter features such as Filter By Form, Save As Query, and Clear All Filters
Toggle Filter		Applies or removes the current filter





# Apply AND Criteria (Slide 1 of 4)

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- **Criteria** are tests or limiting conditions which restrict retrieval
- **AND criteria** means *all* criteria must be true for the record to be selected
- Created by entering two or more criteria in the *same* Criteria row of the query design grid
- Criteria Syntax
  - Quotation marks (") around text criteria and pound signs (#) around date criteria are automatically added by Access
  - Criteria in Number, Currency, and Yes/No fields are not surrounded by any characters



## Apply AND Criteria (Slide 2 of 4)

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- Searching for blank fields
  - **Is Null** – Finds all records where no entry has been made
  - **Is Not Null** – Finds all records where any entry has been made (even if zero)



# Apply AND Criteria (Slide 3 of 4)

## Query Design View with AND criteria

Query1

Trips

\*

Key: TripNo

TripName

TripStartDate

Duration

City

StateAbbrev

Category

Price

Field:	TripName	Duration	StateAbbrev	Category
Table:	Trips	Trips	Trips	Trips
Sort:				
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:		>=7	"CO"	"Eco"
or:				



# Apply AND Criteria (Slide 4 of 4)

## Comparison operators

operator	description	expression	meaning
>	Greater than	>500	Numbers greater than 500
>=	Greater than or equal to	>=500	Numbers greater than or equal to 500
<	Less than	<"Elder"	Names from A to Elder, but not Elder
<=	Less than or equal to	<="Buehler"	Names from A through Buehler, inclusive
<>	Not equal to	<>"Bridgewater"	Any name except for Bridgewater



## Apply OR Criteria (Slide 1 of 2)

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- OR criteria means *any one* criterion must be true for the record to be selected
- Created by entering two or more criteria on *different* Criteria rows of the query design grid
- Also created by entering two or more criteria in the *same* Criteria cell separated by OR



# Apply OR Criteria (Slide 2 of 2)

## Query Design View with OR criteria

EcoAdventureCO7

**Trips**

\*

✶ TripNo  
TripName  
TripStartDate  
Duration  
City  
StateAbbrev  
Category  
Price

Field:	TripName	Duration	StateAbbrev	Category
Table:	Trips	Trips	Trips	Trips
Sort:				
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:		>= 7	"CO"	"Eco"
or:		>= 7	"CO"	"Adventure"



# Format a Datasheet (Slide 1 of 2)

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- Change font size
- Change font face
- Change colors
- Change gridlines



# Format a Datasheet (Slide 2 of 2)

## Formatting a datasheet

Text Formatting group

Microsoft Access ribbon showing the Text Formatting group in the Fields tab. The ribbon includes sections for Sort & Filter, Records, Find, and Text Formatting. The Text Formatting group includes options for font face (Arial Narrow), font size (12), bold (B), italic (I), underline (U), color (A), and background color (shading). An arrow points to the Text Formatting group.

Customers

	CustNo	FName	LName	Street	City	State	Zip	Phone	FirstContact	Click
+	1	Mindi	Scott	52411 Oakmont Rd	Kansas City	MO	64144	(555) 444-1234	Friend	
+	2	Jacob	Alman	2505 McGee St	Des Moines	IA	50288	(555) 111-6931	Friend	
+	3	Julia	Bouchart	5200 Main St	Kansas City	MO	64105	(555) 111-3081	Mail	
+	4	Jane	Taylor	8206 Marshall Dr	Lenexa	KS	66214	(555) 222-9101	Mail	
+	5	Samantha	Garcia	600 Elm St	Olathe	KS	66031	(555) 222-7002	Friend	