Introduction to MS Access queries

BSAD 141
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Introduction to Queries
- Access provides powerful query capabilities that allow you to do the following:
  - Display selected fields and records from a table
  - Sort records
  - Perform calculations
  - Generate data for forms, reports, and other queries
  - Update data in the tables in a database
  - Find and display data from two or more tables

Filters vs. Query Criteria
- Filters just ‘hide’ records…criteria excludes records from your working dataset
  - Very important when dealing with large datasets
- Need to use Query Criteria to be able to share your results and reproduce them AND to make your result tables more manageable
- Filters are ‘Temporary’. They clear when you close the view. Criteria is saved and reapplied when the query is run.

Query By Example
- When you use query by example (QBE), you give Access an example of the information you are requesting
- QBE is a GUI to generate SQL statements

Queries
- Download the practice-northwind DB from the course schedule
- SAVE a copy of the DB to YOUR hard drive
  - You cannot work with the instance of the DB on my website
  - You MUST save a copy to your computer!!
Queries
- Open the DB
  - Note the eight tables

Queries
- Look at the Access generated ERD using the relationships tool

Queries
- Initial Questions:
  - Get a feel for the database. What are we looking at.
  - How many tables are in this database?
  - How many customer records are there in this database?
  - How many different products are there in this database?
  - How many orders have been recorded in this database?
  - In the Order Details table, how many line item orders are for different products on different orders?

Queries
- Close the Relationships window
- Click on the pulldown menu to the right of "Tables" and choose "Queries"

Queries
- There are four existing queries
  - Choose the "Order" query
Query Window in Design View

Initial Questions:
What does the Order query tell us?

Getting Started
- The different views
- The Run icon
- Sorting
- Add criteria
- Demonstrate "return" pulldown
- Demonstrate wildcard
Getting Started

- Create a calculated field
  - Total: [Order Details.Quantity] * [Order Details.UnitPrice]
  - Returns the $ total associated with each product on each order

- Create a totally new query in design view

Criteria Comparison Operators

- Query Criteria Comparison Operators: How many products have inventory levels greater than 50?
- Which products like "sc*" and inventory > 20?

<table>
<thead>
<tr>
<th>Operator</th>
<th>Meaning</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>=</td>
<td>equal to (boilerplate; default operator)</td>
<td>&quot;=Hel&quot;</td>
</tr>
<tr>
<td>&lt;</td>
<td>less than</td>
<td>&quot;&lt;1/1/999&quot;</td>
</tr>
<tr>
<td>&lt;=</td>
<td>less than or equal to</td>
<td>&quot;&lt;=100&quot;</td>
</tr>
<tr>
<td>&gt;</td>
<td>greater than</td>
<td>&quot;&gt;&quot;400&quot;</td>
</tr>
<tr>
<td>&gt;=</td>
<td>greater than or equal to</td>
<td>&quot;&gt;=10.5&quot;</td>
</tr>
<tr>
<td>&lt;&gt;</td>
<td>not equal to</td>
<td>&quot;&lt;&gt;&quot;Hall&quot;</td>
</tr>
<tr>
<td>Between ... And ...</td>
<td>between two values (inclusive)</td>
<td>Between 50 And 325</td>
</tr>
<tr>
<td>In ...</td>
<td>in a list of values</td>
<td>In (&quot;Hall&quot;, &quot;Seger&quot;)</td>
</tr>
<tr>
<td>Like</td>
<td>matches a pattern that includes wildcards</td>
<td>Like &quot;7066&quot;</td>
</tr>
</tbody>
</table>

Calculated Fields in Queries

- Calculated Field in Query Results. For each customer, show the sum of their Order Totals ([Quantity] * [Price])
- Query Expression Syntax:
  - Reference the field names in Brackets []
  - Expression Label precedes expression with:
    - OrderTotal: [Quantity]*[Price]

Sorting a Query Datasheet

- In the query datasheet, click the arrow on the column heading for the field you want to sort
- In the menu that opens, click Sort A to Z for an ascending sort, or click Sort Z to A for a descending sort
- In the query datasheet, select the column or adjacent columns on which you want to sort
- In the Sort & Filter group on the Home tab, click the Ascending button or the Descending button
- In Design view, position the fields serving as sort fields from left to right
- Click the right side of the Sort text box for the field you want to sort, and then click Ascending or Descending for the sort order
Defining Record Selection Criteria for Queries

- Just as you can display selected fields from a database in a query datasheet, you can display selected records.
- To tell Access which records you want to select, you must specify a condition as part of the query.
- A comparison operator asks Access to compare the value in a database field to the condition value and to select all the records for which the relationship is true.

Specifying an Exact Match

- With an exact match, the value in the specified field must match the condition exactly in order for the record to be included in the query results.

Using a Comparison Operator to Match a Range of Values

- Multiple conditions require you to use logical operators to combine two or more conditions:
  - And logical operator
  - Or logical operator

Defining Multiple Selection Criteria for Queries

Summary

- Introduction to queries in MS Access.