

Access 2016 Module 10

Creating Advanced Queries





Module Objectives

- Query for top values
- Create a parameter query
- Modify query properties
- Create a Make Table query
- Create an Append query
- Create a Delete query
- Create an Update query
- Specify join properties
- Find unmatched records



Query for Top Values (Slide 1 of 2)

- Top Values feature
 - Specify a number or percentage of sorted records that you want to display in the query's datasheet
 - Records must be sorted in either ascending or descending order
- Top Values options

action	displays
Click 5, 25, or 100 in the Top Values list	Top 5, 25, or 100 records
Enter a number, such as 10, in the Top Values box	Top 10, or whatever value is entered, records
Click 5% or 25% in the Top Values list	Top 5 percent or 25 percent of records
Enter a percentage, such as 10%, in the Top Values text box	Top 10 percent, or whatever percentage is entered, of records
Click All	All records



Query for Top Values (Slide 2 of 2)

Designing a summary query for top values

Microsoft Access Query Design View for "Query1". The design grid shows a relationship between the Enrollments and Courses tables. The Enrollments table is linked to the Courses table via the EnrollmentID field. The design grid is as follows:

Field:	Description	EnrollmentID				
Table:	Courses	Enrollments				
Total:	Group By	Count				
Sort:		Descending				
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Criteria:						
or:						



Create a Parameter Query (Slide 1 of 2)

- **Parameter query**

- Displays a dialog box
 - Enter criteria within [square brackets]; appears as a prompt
 - Selects records based on user entry for field criteria
- Can provide the data for a form or report
- Examples of parameter criteria

field data type	parameter criteria	description
Date/Time	>=[Enter start date:]	Searches for dates on or after the entered date
Date/Time	>=[Enter start date:] and <=[Enter end date:]	Prompts you for two date entries and searches for dates on or after the first date and on or before the second date
Short Text	Like [Enter the first character of the last name:] & "*"	Searches for any name that begins with the entered character
Short Text	Like "*" & [Enter any character(s) to search by:] & "*"	Searches for words that contain the entered characters anywhere in the field



Create a Parameter Query (Slide 2 of 2)

Using parameter criteria for the EDepartment field

The screenshot shows the Microsoft Access interface with the 'Query Design' view for a query named 'DeptParameter'. The design grid shows three tables: 'Courses', 'Enrollments', and 'Employees'. The 'Courses' table is linked to 'Enrollments' (1 to many), and 'Enrollments' is linked to 'Employees' (many to 1). The 'Employees' table has a field 'EDepartment' highlighted. An 'Enter Parameter Value' dialog box is open, prompting the user to 'Enter department:'. Below the design grid, the 'Field' list shows the fields from the tables, and the 'Criteria' row shows the parameter '[Enter department:]' for the 'EDepartment' field.

Field:	Description	EnrollmentID	EDepartment
Table:	Courses	Enrollments	Employees
Total:	Group By	Count	Group By
Sort:			
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:			[Enter department:]



Modify Query Properties (Slide 1 of 3)

- **Properties**

- define the appearance and behavior of items in the database, e.g., objects, fields, sections, and controls
- Query properties include
 - Recordset Type (determines if records in a query result are locked)
 - Snapshot (locks)
 - Dynaset (default, allows updates)

- **Field properties**

- describe a field
 - Caption (changes a field name)
- Change in either Table Design View or Query Design View



Modify Query Properties (Slide 2 of 3)

Query Property Sheet

Query To... Training-10 : Database- C:\Users\User\Desktop\Training-10.accdb (Access 2007 - 2016 file format) - Access

External Data Database Tools Design Tell me what you want to do...

Union Pass-Through Data Definition Show Table Builder Return: All Totals Parameters Property Sheet Table Names

Query Type DeptParameter Query Setup Show/Hide

Courses

- * CourseID
- Description
- HoursInClass
- Prereq
- CostOfCourse

Enrollments

- * EnrollmentID
- CourseID
- EmployeeNo
- DateOfEnrollment

Employees

- * ELast
- EFirst
- EDepartment
- ETitle
- DateHired

Property Sheet

Selection type: Query Properties

General

Description	Counts enrollments per cours
Default View	Datasheet
Output All Fields	No
Top Values	All
Unique Values	No
Unique Records	No
Source Database	(current)
Source Connect Str	
Record Locks	No Locks
Recordset Type	Dynaset
ODBC Timeout	60
Filter	
Order By	
Max Records	
Orientation	Left-to-Right
Subdatasheet Name	
Link Child Fields	
Link Master Fields	
Subdatasheet Height	0"
Subdatasheet Expanded	No
Filter On Load	No

Field: Description EnrollmentID EDepartment

Table: Courses Enrollments Employees

Total: Group By Count Group By

Sort:

Show: ☒ ☒ ☒ ☐

Criteria: [Enter department:]



Modify Query Properties (Slide 3 of 3)

- Creating an Alias
 - Alias property
 - renames a field list in Query Design View
 - Doesn't change actual name of underlying object
 - Right-click the field list in Query Design View, click Properties on the shortcut menu, and then modify the Alias property



Create a Make Table Query (Slide 1 of 3)

- **Action query**
 - changes all of the selected records when it is run
- Four types of action queries
 - Delete
 - Update
 - Append
 - Make Table
- **Make Table query**
 - creates a new table of data for the selected datasheet



Create a Make Table Query (Slide 2 of 3)

Creating a Make Table query





The screenshot displays the Microsoft Access interface for creating a 'Make Table' query. The ribbon includes 'File', 'Home', 'Create', 'External Data', 'Database Tools', and 'Design'. The 'Design' ribbon is active, showing options like 'View', 'Run', 'Select', 'Make Table', 'Append Update', 'Crosstab', 'Delete', 'Union', 'Pass-Through', 'Data Definition', 'Insert Rows', 'Delete Rows', 'Show Table', and 'Builder'. The 'Query Type' dropdown is set to 'Query1'. The 'All Access Objects' pane on the left shows 'Tables' (Courses, Employees, Enrollments, Materials) and 'Queries' (DeptParameter, TopEnrollments). The 'Design' view of 'Query1' shows a table named 'Enrollments' with fields 'EnrollmentID', 'CourseID', 'EmployeeNo', and 'DateOfEnrollment'. The 'Criteria' row is set to '>=#1/1/2017# And <=#3/31/2017#'. The 'Field' row is set to 'Enrollments.*' and 'DateOfEnrollment'. The 'Table' row is set to 'Enrollments'.

Field:	Enrollments.*	DateOfEnrollment
Table:	Enrollments	Enrollments
Sort:		
Show:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Criteria:	>=#1/1/2017# And <=#3/31/2017#	
or:		



Create a Make Table Query (Slide 3 of 3)

- Action queries

action query	query icon	description	example
Delete		Deletes a group of records from one or more tables	Remove products that are discontinued or for which there are no orders
Update		Makes global changes to a group of records in one or more tables	Raise prices by 10 percent for all products
Append		Adds a group of records from one or more tables to the end of another table	Append the employee address table from one division of the company to the address table from another division of the company
Make Table		Creates a new table from data in one or more tables	Export records to another Access database or make a backup copy of a table



Create an Append Query (Slide 1 of 2)

- Append query
 - adds selected records to an existing table (target table)
- Append query
 - works like an export feature
 - Copies the records from one location and pastes a duplicate set to the target table, which can be in the current database or in any other Access database
- 1900 versus 2000 dates
 - How two-digit dates are handled in Access
 - 00 through 29: years 2000 through 2029
 - 30 through 99: years 1930 through 1999



Create an Append Query (Slide 2 of 2)

Creating an Append query

The screenshot shows the Microsoft Access interface with the 'Design' tab selected in the ribbon. The ribbon includes sections for 'Query Tools' (File, Home, Create, External Data, Database Tools, Design), 'Tell me what you want to do...', and 'Query Setup'. The 'Append' button in the 'Create' section is highlighted. The left pane shows the 'All Access Objects' list with 'Tables' expanded, listing '1Q2017', 'Courses', 'Employees', 'Enrollments', and 'Materials'. The 'Queries' section lists 'Make1Q2017', 'DeptParameter', and 'TopEnrollments'. The 'Reports' section lists 'CourseRosters'. The main design area shows a table named 'Enrollments' with fields: 'EnrollmentID', 'CourseID', 'EmployeeNo', and 'DateOfEnrollment'. Below the design area, the 'Append To' table is 'Enrollments', and the 'Criteria' are 'Between #4/1/2017# And #4/30/2017#'.

Field:	EnrollmentID	CourseID	EmployeeNo	DateOfEnrollment
Table:	Enrollments	Enrollments	Enrollments	Enrollments
Sort:	EnrollmentID	CourseID	EmployeeNo	DateOfEnrollment
Append To:	EnrollmentID	CourseID	EmployeeNo	DateOfEnrollment
Criteria:				Between #4/1/2017# And #4/30/2017#
or:				



Create a Delete Query (Slide 1 of 2)

- **Delete query**

- Deletes a group of records from one or more tables
- Deletes entire records, not just selected fields within records
- Cannot reverse the action



Create a Delete Query (Slide 2 of 2)

Creating a Delete query

The screenshot shows the Microsoft Access interface with the 'Design' view of a 'Delete' query. The 'Enrollments' table is selected as the data source. The criteria row specifies the date range for deletion.

Field:	Enrollments.*	DateOfEnrollment
Table:	Enrollments	Enrollments
Delete:	From	Where
Criteria:		Between #1/1/2017# And #4/30/2017#
or:		



Create an Update Query (Slide 1 of 2)

- **Update query**
 - Updates the values in a field
- **Hidden property**
 - Use to keep an action query in the Navigation Pane but hide it
 - To restore hidden property
 - Right-click a blank spot in Navigation Pane, choose Navigation Options
 - In Navigation Options dialog box, check Show Hidden Objects check box, click OK



Create an Update Query (Slide 2 of 2)

Setting up an Update query

Field: Description CostOfCourse

Table: Courses Courses

Update To: 25 + [CostOfCourse]

Criteria:

or:



Specify Join Properties (Slide 1 of 3)

- **Join lines**

- Link fields with the same name and data type
- Automatically created in Query Design View if no relationships established in the Relationships window

- **Edit table relationships for a query in Query Design View**

- Double-click the join line to open the Join Properties dialog box

- **Left join**

- All records in the one table even if there are no matching records in the many table

- **Right join**

- All records in the many table even if there are no matching records in the one table



Specify Join Properties (Slide 2 of 3)

Join Properties dialog box

Join Properties

Left Table Name: Courses

Right Table Name: Enrollments

Left Column Name: CourseID

Right Column Name: CourseID

☒ 1: Only include rows where the joined fields from both tables are equal.

☐ 2: Include ALL records from 'Courses' and only those records from 'Enrollments' where the joined fields are equal.

☐ 3: Include ALL records from 'Enrollments' and only those records from 'Courses' where the joined fields are equal.

OK Cancel New

Left join

Right join



Specify Join Properties (Slide 3 of 3)

- **Null**
 - A field value that does not exist because it has never been entered
- **Zero-length string**
 - Deliberate entry that contains no characters
- **Null and zero-length string values, criterion for queries**
 - Zero-length string values
 - Enter two quotation marks (“”)
 - Null values
 - Enter “Is Null”
 - Value other than a null value
 - Enter “Is Not Null”



Find Unmatched Records (Slide 1 of 3)

- **Find Unmatched Query Wizard**
 - Creates an outer join between the tables in the query
 - Selects all records in one table even if there is no match in the other table
- **Find Duplicates Query Wizard**
 - Find duplicate values in a field
 - Can assist in finding and correcting potential data entry errors



Find Unmatched Records (Slide 2 of 3)

Using the Find Unmatched Query Wizard

Find Unmatched Query Wizard

What piece of information is in both tables?

For example, a Customers and an Orders table may both have a CustomerID field. Matching fields may have different names.

Select the matching field in each table and then click the <=> button.

Fields in 'Employees' :

1			
2			
3			
4	1		
	2		
	4		

Fields in 'Enrollments' :

EnrollmentID
CourseID
EmployeeNo
DateOfEnrollment

<=>

Matching fields: EmployeeNo <=> EmployeeNo

Cancel < Back Next > Finish



Find Unmatched Records (Slide 3 of 3)

- Reviewing referential integrity
 - Established in the Relationships window
 - Applies a set of rules to the relationship
 - ensures that no orphaned records currently exist, are added to, or are created in the database
 - Orphan record: “many” table’s foreign key field entry doesn’t have a matching entry in the “one” table’s primary key field
 - “One” table (parent records)
 - “Many” table (child records)
 - Delete query
 - not allowed to create orphans