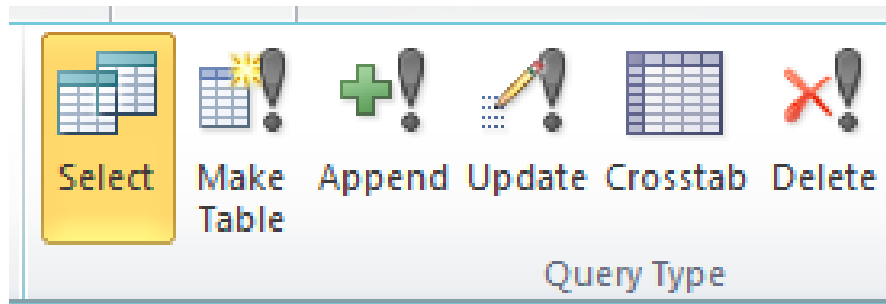


CS1100: Data, Databases, Queries

Action Queries

Action Queries

- So far we have used queries to extract and view data
- But can also be used to create tables, perform data entry, modify records, etc.



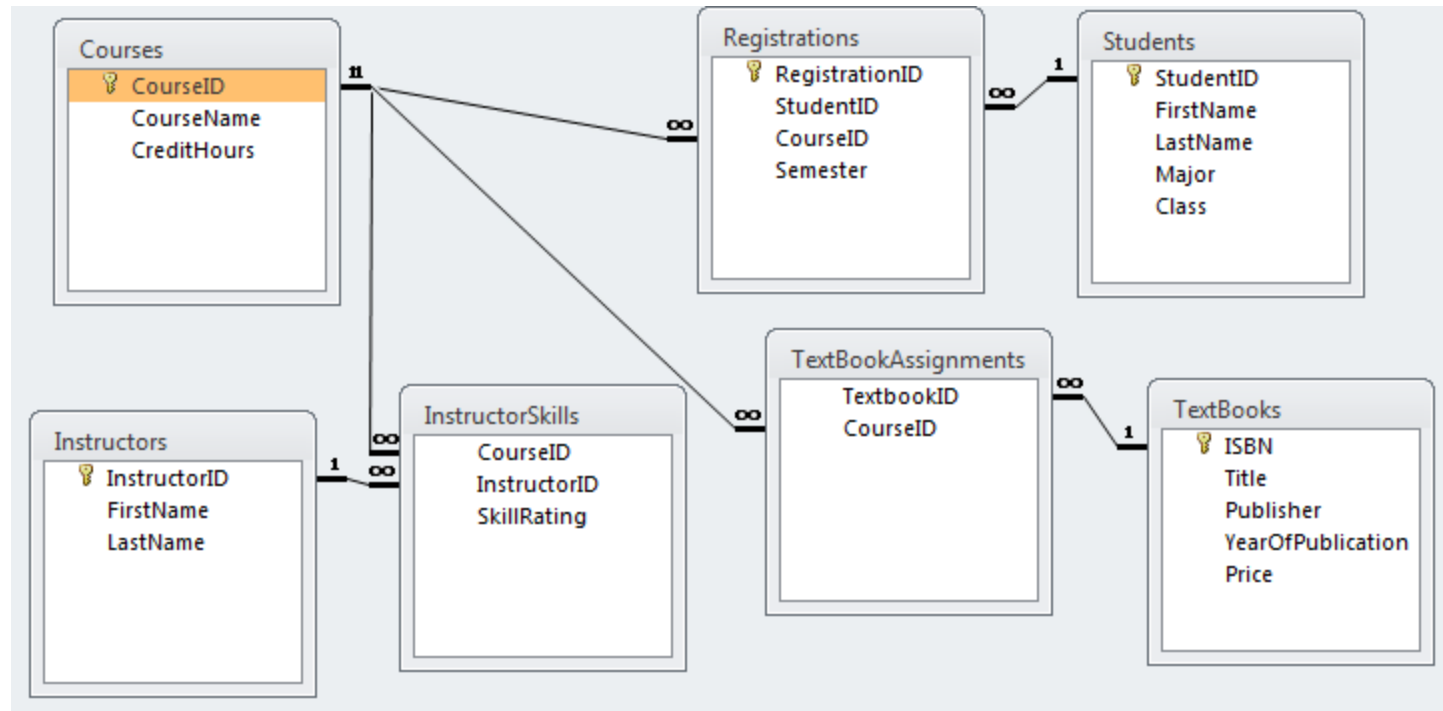
The Query Type group under the Design tab contains commands for four types of action queries – Make Table, Append, Update and Delete

Action Queries

- It is important to know that, action queries are not creating a regular query in the strict sense.
- Most of these queries are usually useful only once so often don't need to save them.
- Once it is run, the related action is executed and stays in the database even if the query is not saved – **and it's irreversible**
- Good idea to backup your DB before running action queries

The Database Layout

- These are all of the tables in the Registrar database:



Update Query

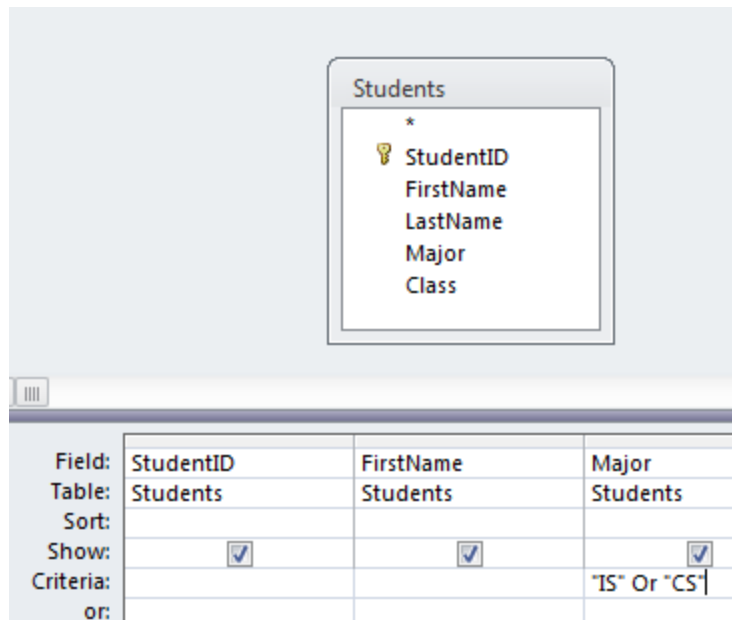
- It's easy to use a table or query in Datasheet view to find a single record and change one value
- But if you want to make the same change to many records, instead of going through individual rows one by one, let Access do the work with a single Update Query

First test with Select Query

- Before running a query to update many records, create a query using criteria that select the records you want to update
- See how many rows need to be changed

Example: Change the CS or IS major to CIS

- We find 16 students that need to be changed in the database:



Students

*
StudentID
FirstName
LastName
Major
Class

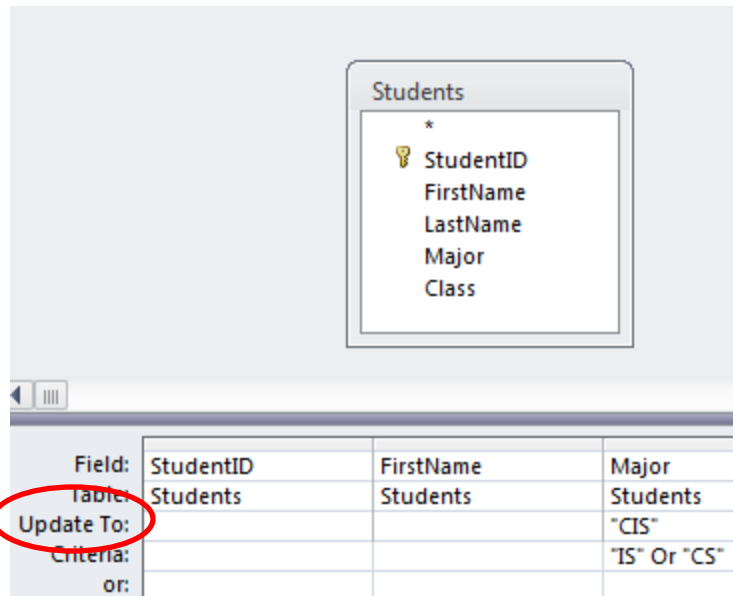
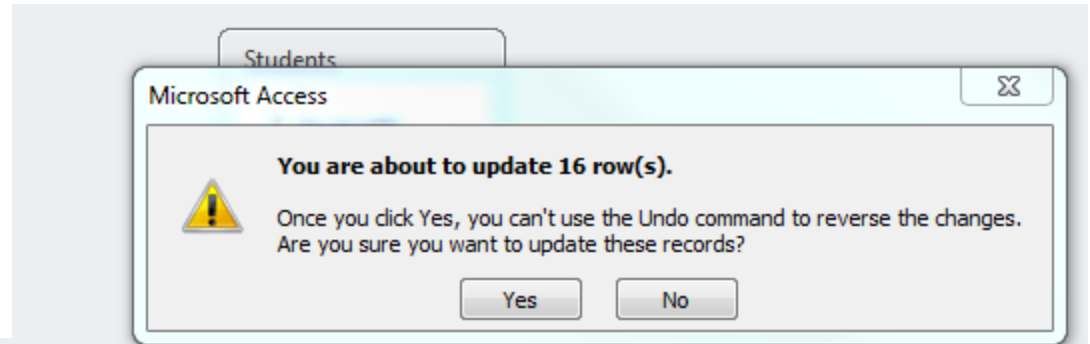
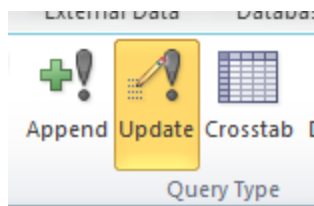
Field:	StudentID	FirstName	Major
Table:	Students	Students	Students
Sort:			
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:			"IS" Or "CS"
or:			



StudentID	FirstName	Major
1	John	CS
2	James	IS
3	Joan	IS
4	Eva	IS
5	Sindha	CS
6	Li	CS
8	Raj	CS
9	Glen	CS
10	Gillian	CS
11	Julie	CS
12	Julia	IS
16	Ben	CS
17	Alex	CS
18	Tim	IS
21	John	CS
22	Allison	IS
(New)		

Convert to an Update Query

- Now change the query so that it will update the table:



StudentID	FirstName	LastName	Major
1	John	Smith	CIS
2	James	Kanata	CIS
3	Joan	Miller	CIS
4	Eva	Filmore	CIS
5	Sindha	Raj	CIS
6	Li	Ju	CIS
7	Lu	Xiao	Math
8	Raj	Sindu	CIS
9	Glen	Witmore	CIS
10	Gillian	Michaels	CIS
11	Julie	Chen	CIS
12	Julia	Welsh	CIS

Criteria Updates

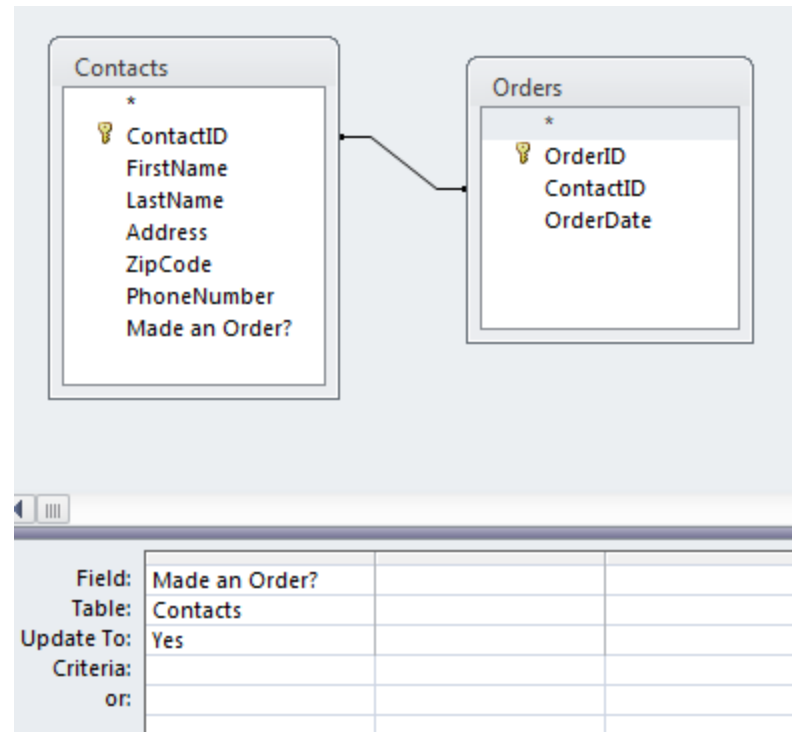
- Add \$10 surcharge to all heavy items.

The screenshot shows the 'Criteria Update' dialog box in Microsoft Access. At the top, a list box titled 'Products' contains the following fields: ProductName, Current Unit Pri, UnitsInStock, Width, Height, Depth, and Weight. Below this, a table defines the update criteria. The table has three columns: 'Field', 'Table', and 'Criteria'. The first row specifies updating 'Current Unit Price' from the 'Products' table to '[Current Unit Price]+10'. The second row specifies the criteria 'Weight > 25' from the 'Products' table. The 'or:' label is positioned below the criteria field.

Field:	Table:	Criteria:
Current Unit Price	Products	[Current Unit Price]+10
		Weight > 25

Update and Join

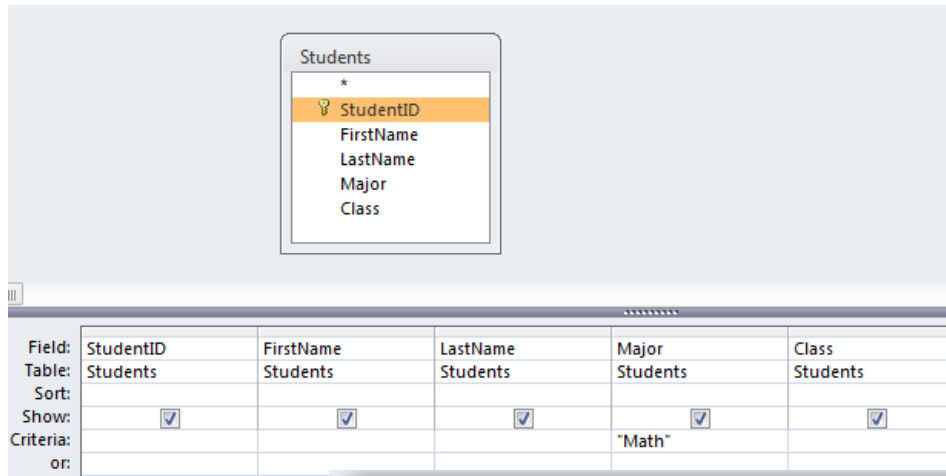
- Change a field for everyone who placed an order.



Make-Table Query

- If you already have values stored in a table, Access allows you to create a new table filled with values from that table.
- This query is used to retrieve all or some fields of an existing table and creates a brand new table, independent of any existing table.

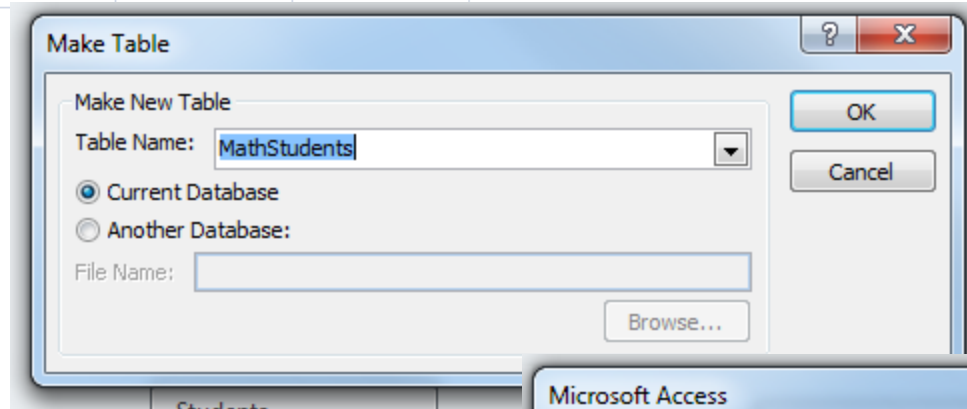
Make-Table Example: The Math department would like a new table of students who are Math majors:



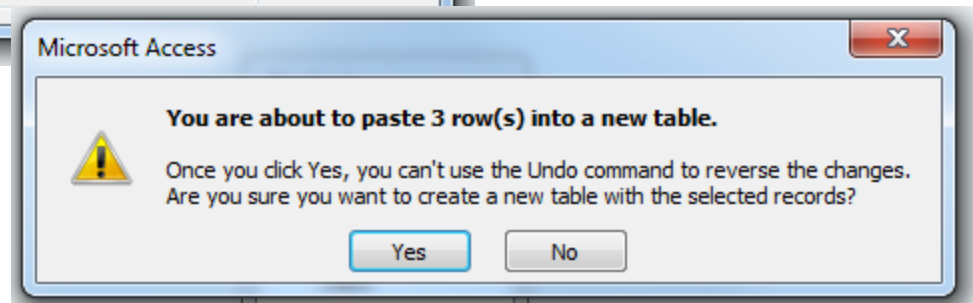
The screenshot shows the 'Students' table structure with fields: StudentID (primary key), FirstName, LastName, Major, and Class. Below it is a query grid with the following fields and criteria:

Field:	StudentID	FirstName	LastName	Major	Class
Table:	Students	Students	Students	Students	Students
Sort:					
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:				"Math"	
or:					

Give the new table a name.



The 'Make Table' dialog box is shown with the 'Table Name' field set to 'MathStudents'. The 'Current Database' radio button is selected. The 'File Name' field is empty, and the 'Browse...' button is visible. The 'OK' and 'Cancel' buttons are also present.



The warning dialog box from Microsoft Access states: 'You are about to paste 3 row(s) into a new table. Once you click Yes, you can't use the Undo command to reverse the changes. Are you sure you want to create a new table with the selected records?' It has 'Yes' and 'No' buttons.

Append Query

- Access allows you to create a special query that can be used to add many records to a table in one step.
- An Append Query allows you to add records to an existing table, retrieved from one table and transferred to another table.

Appending Data

- The data to be appended should have the same fields as the fields in the table
- The fields should have the same data types
- Key violations can occur if the data to be appended has the same keys as some records in the table
- Data can be appended from another table or imported from another application such as Excel

Append Example: append incoming freshmen to the students table

The screenshot shows the Microsoft Access interface. In the background, a table named 'Sheet1' is visible with the following fields: ID, FirstName, LastName, Major, and Class. The 'Append' dialog box is open, showing the 'Append To' section with 'Table Name: Students' selected. The 'Current Database' radio button is selected. A red arrow points from a text box to the 'Table Name' dropdown. Below the dialog box, a warning message from Microsoft Access is displayed, stating: 'You are about to append 3 row(s). Once you click Yes, you can't use the Undo command to reverse the changes. Are you sure you want to append the selected rows?' with 'Yes' and 'No' buttons.

Append

Append To

Table Name: Students

☒ Current Database

☐ Another Database:

File Name:

Browse...

OK

Cancel

Choose the table to append to

Field: ID, Table: Sheet1, Sort: , Show: ☒, Criteria: , or:

Microsoft Access

You are about to append 3 row(s).

Once you click Yes, you can't use the Undo command to reverse the changes. Are you sure you want to append the selected rows?

Yes No

ID	FirstName	LastName	Major	Class

Delete Query

- To delete a group of records in one action, you can use a Delete Query
- Allows you to select records to delete
- Like other action queries, it is irreversible

Summary

- Action queries can be used to make changes to a database
- Once an action query is run, it is executed and stays in the database even if the query is not saved
- Action queries are not reversible