CGS 2545: Database Concepts
Fall 2010

LAB #7

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Lab #7 – SQL In Access

- The objective of this lab is to introduce you to SQL in Access.
- For this lab, I'll use the supplier-parts-jobs-shipments database that we created in Lab #4. Its available in the on WebCourses.
- As with previous labs – start Access and maximize the window. If Security Warning message bar appears, Click on options … and choose Enable this content.

NOTE: In the slides that follow, if the call-out symbol is outlined in red, it means that there is something for you to try, if the call-out is outlined in blue, I am simply giving you some information about what is displayed on that page.

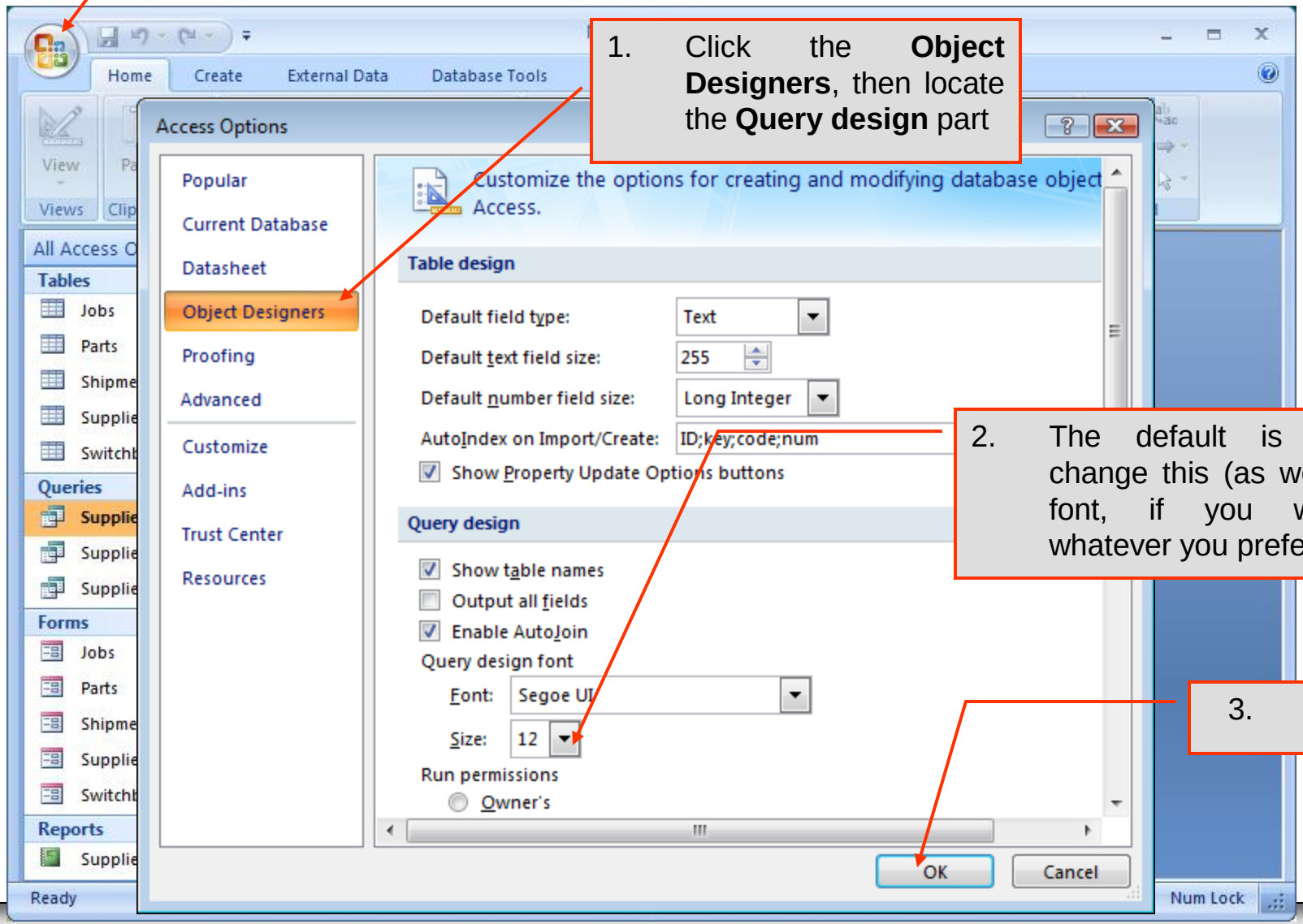
Changing the Font Size For Tables/Queries

- The default font size in which Tables and Query expressions are displayed in Access is 8pt. This is sometimes fairly small, particularly when query expressions get lengthy.
- In this first step I'll show you how to reset the font size. If you want to skip this part that's fine too, you can always refer back to it later if you decide you want to change the font size.
- To change the font size do the following:
  - Click Office button on the top left corner of access window, and then click Access Options on the bottom right of the pop-up menu. You should see the window shown on the next slide.

Changing Font Size

Office button

1. Click the **Object Designers**, then locate the **Query design** part



2. The default is 8pt, so change this (as well as the font, if you want) to whatever you prefer.

3. Click OK

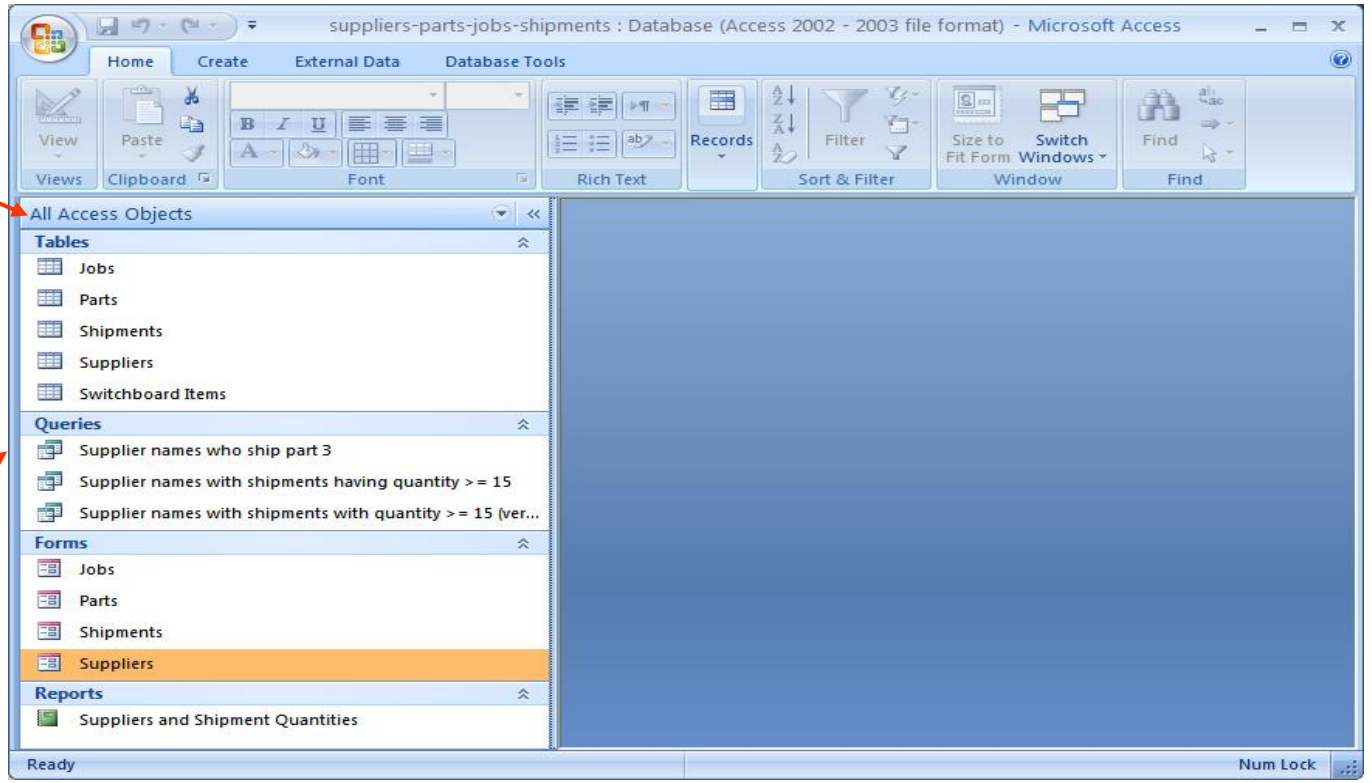
Creating A New SQL Query

- Assuming you have opened the suppliers-parts-jobs-shipments database.
- On navigation panel, there is a list of queries under **Queries** group . You might have to select **All Access Objects** or **Queries** from the pull-down menu (at the top of the navigation panel) to see the list.

Pull-down menu on

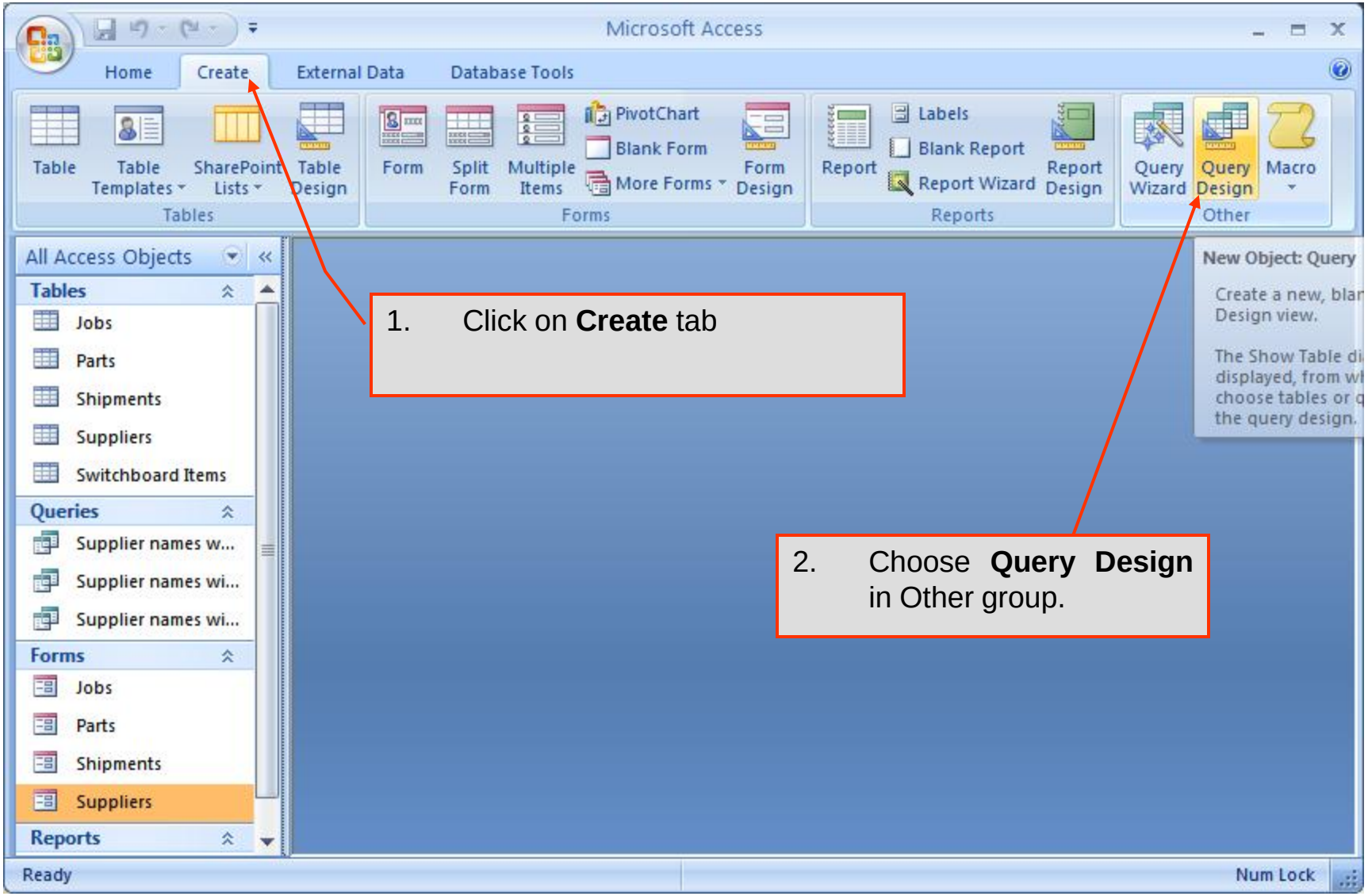
Navigation panel

Queries list



Creating A New SQL Query

- You begin the creation of a new SQL query just like you begin the creation of any other query in Access. The only difference is that you'll use the SQL view instead of the Design View.
- The following steps illustrate how to create an SQL query.
  - Click the **Create** tab.
  - Click the **Query Design** button on the **Other** group.
  - When the Show Table dialog box appears, click its Close button.
  - Maximize the Query1: Select Query window.
  - On the View button, click SQL View
  - (or just Click SQL View on the toolbar.)
- The following few slides illustrate these steps.


Microsoft Access
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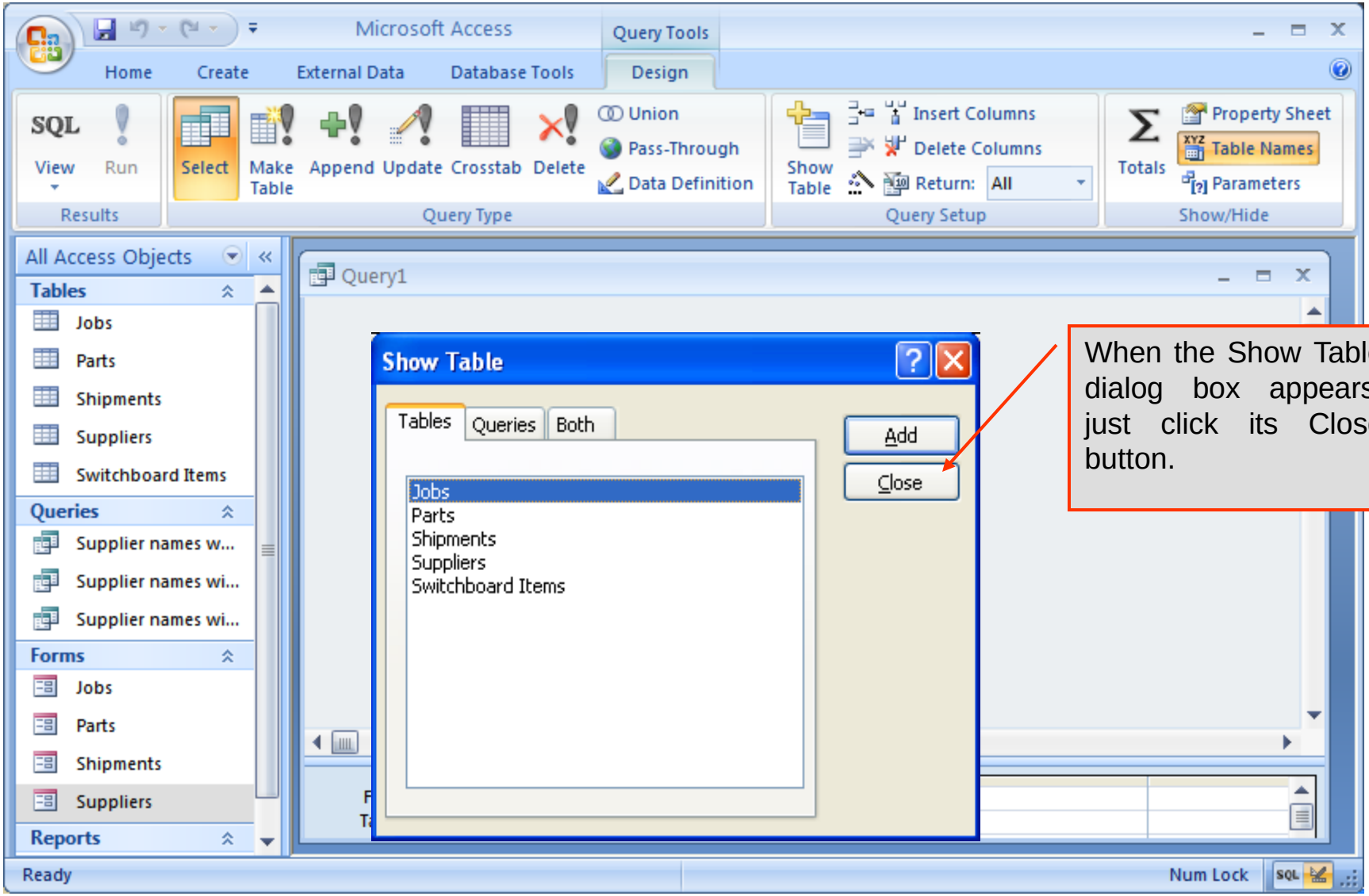
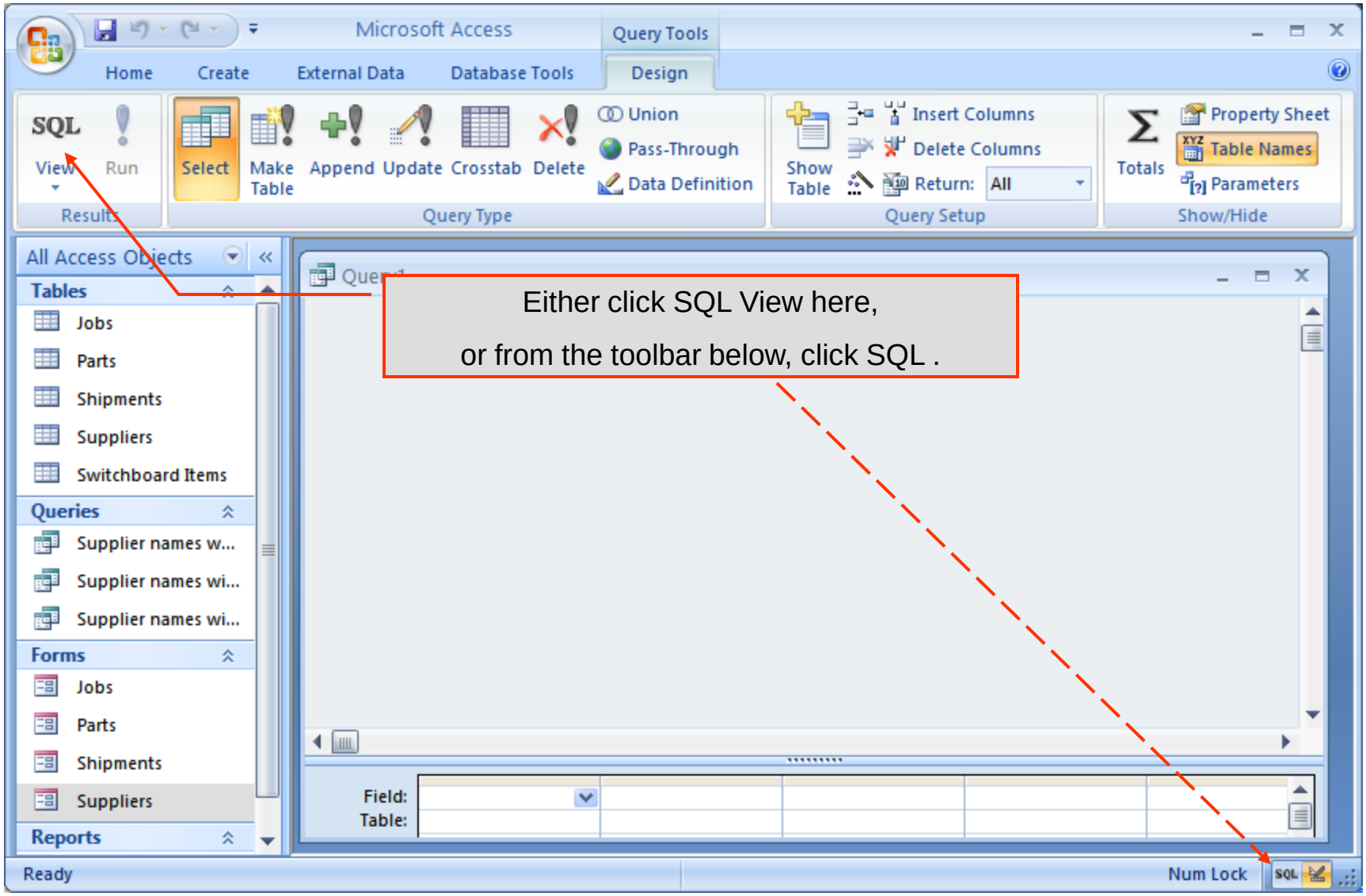
the query design.
1. Click on Create tab
2. Choose Query Design in Other group.
Ready
Num Lock



When the Show Table dialog box appears, just click its Close button.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Either click SQL View here,
or from the toolbar below, click SQL .
Field:
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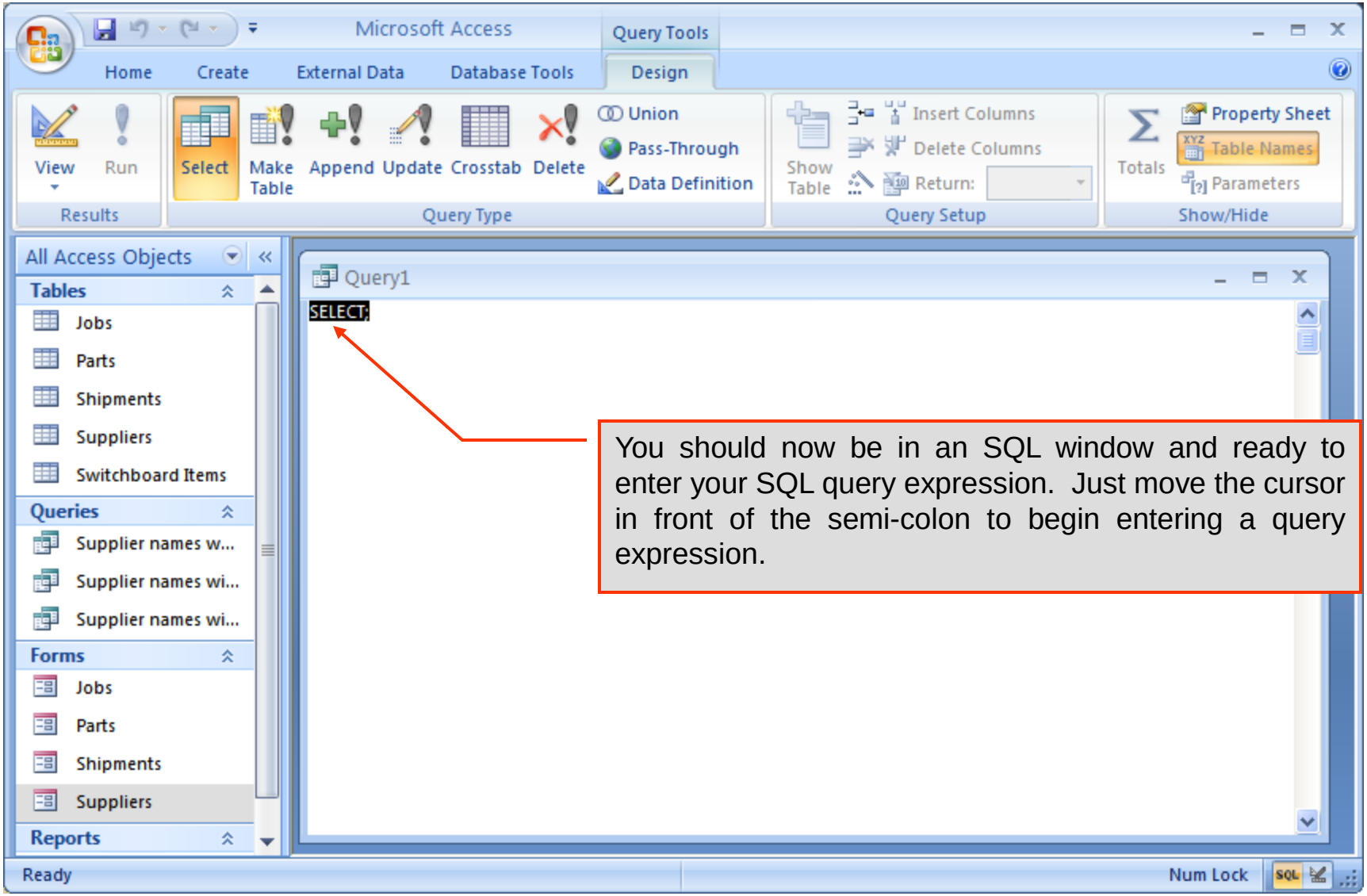
Ready
Num Lock
SQL

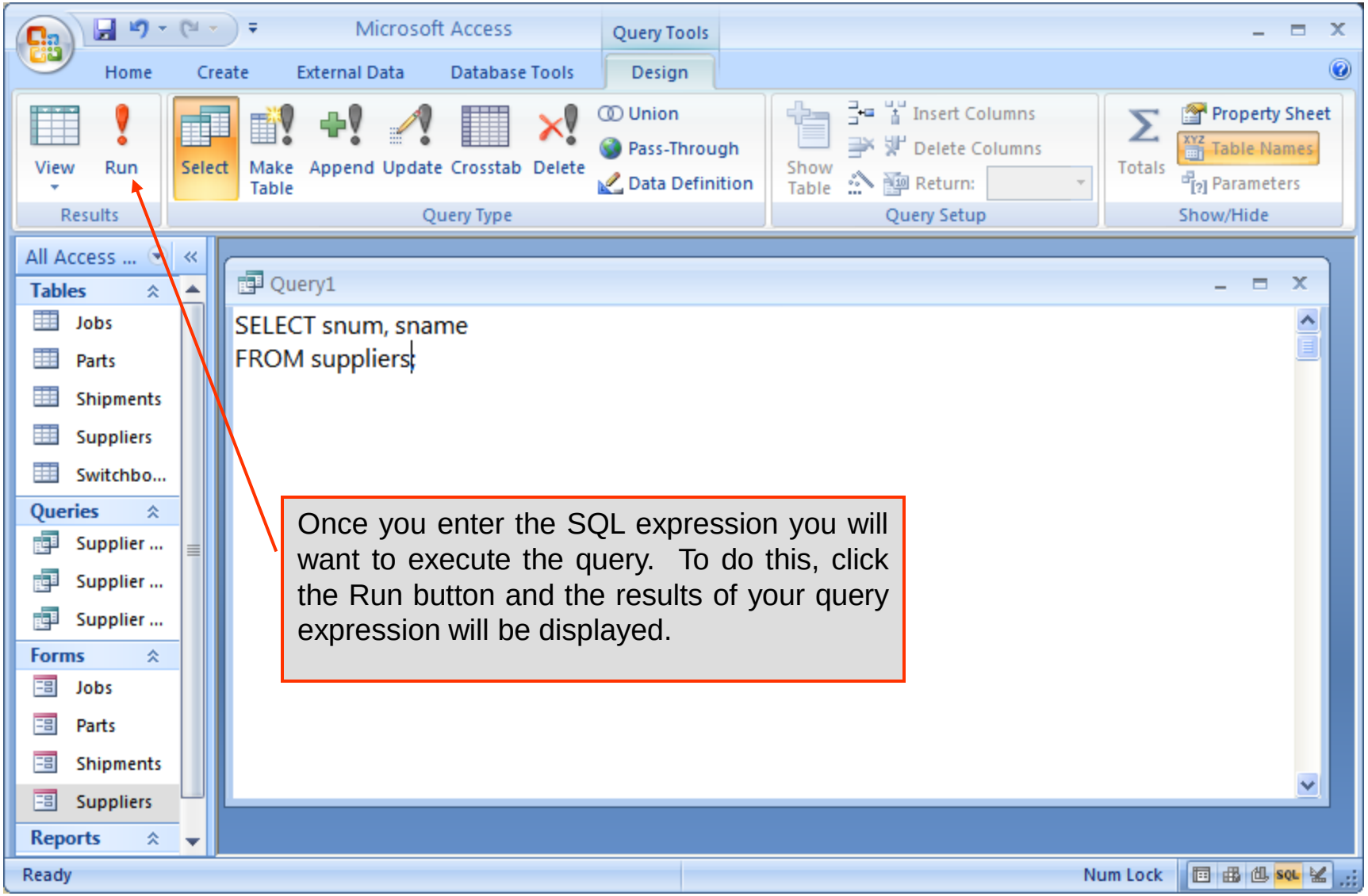


You should now be in an SQL window and ready to enter your SQL query expression. Just move the cursor in front of the semi-colon to begin entering a query expression.

Creating An SQL Query

- At this point you've got the SQL window up, so let's create an SQL query just like some of those we've done in class using this same database.
- Let's create an SQL query expression to answer the query "List all the supplier numbers and names."

```
SELECT snum, sname
FROM suppliers;
```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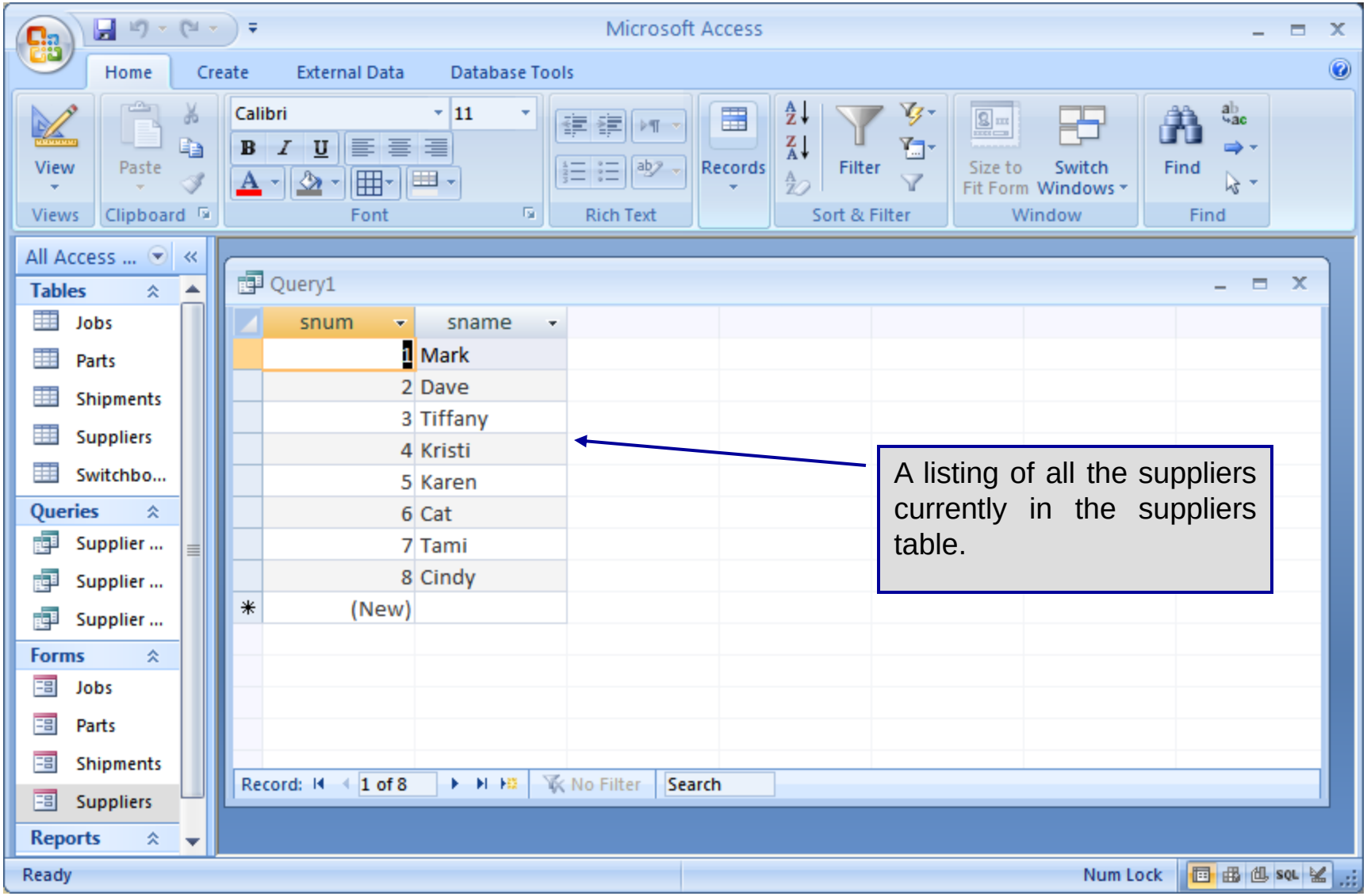
Query1
SELECT snum, sname
FROM suppliers;
Once you enter the SQL expression you will want to execute the query. To do this, click the Run button and the results of your query expression will be displayed.
Ready
Num Lock
SQL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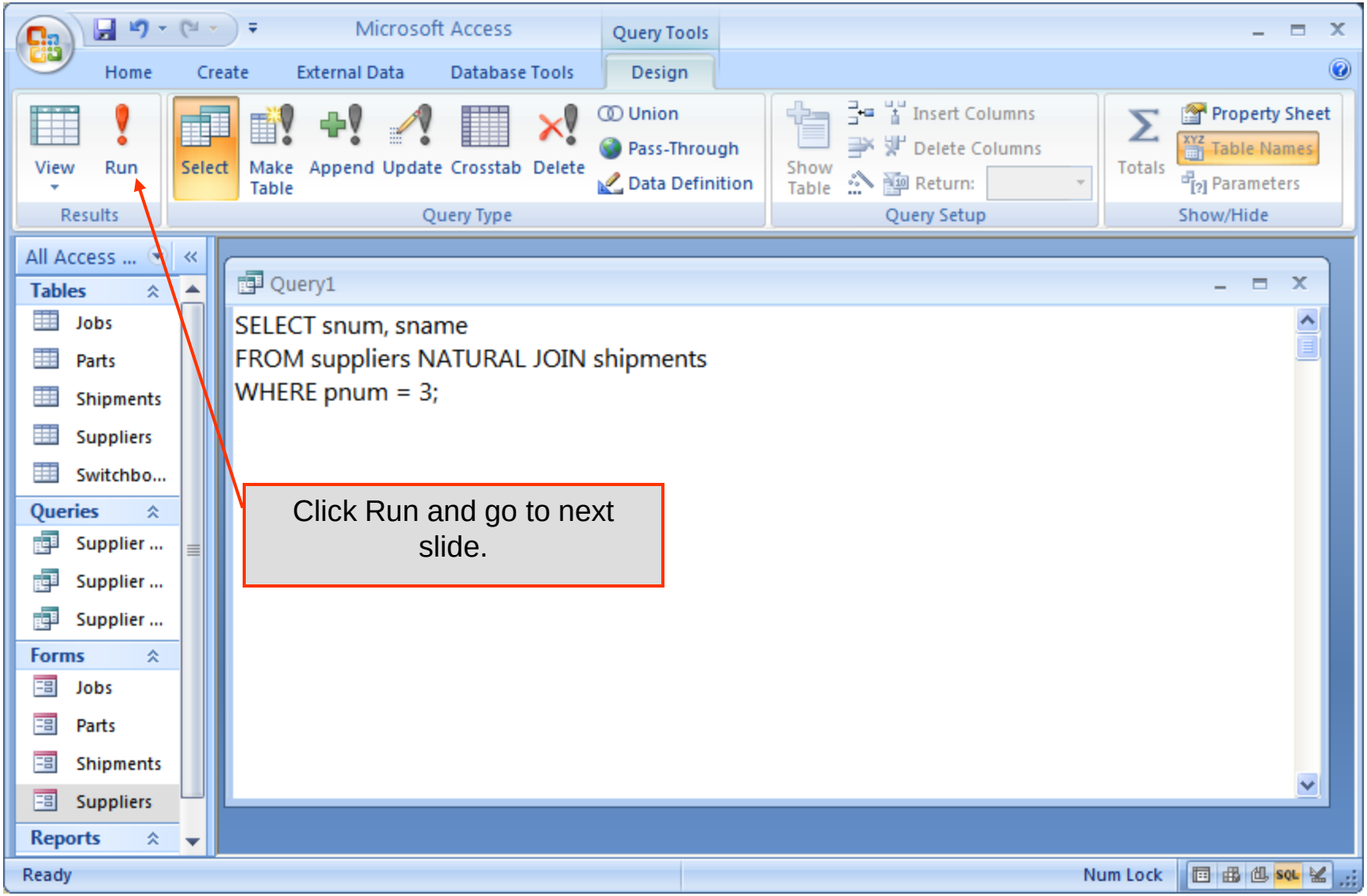
Reports
Query1
snum
sname
1 Mark
2 Dave
3 Tiffany
4 Kristi
5 Karen
6 Cat
7 Tami
8 Cindy
(New)
Record: 1 of 8
No Filter
Search
Ready
Num Lock
A listing of all the suppliers currently in the suppliers table.

Creating An SQL Query

- Now let's create a query expression involving the join of two tables.
- Let's create an SQL query expression to answer the query "List all the supplier numbers and names for those suppliers who have a shipment of part number 3."

```
SELECT snum, sname
FROM suppliers NATURAL JOIN shipments
WHERE pnum = 3;
```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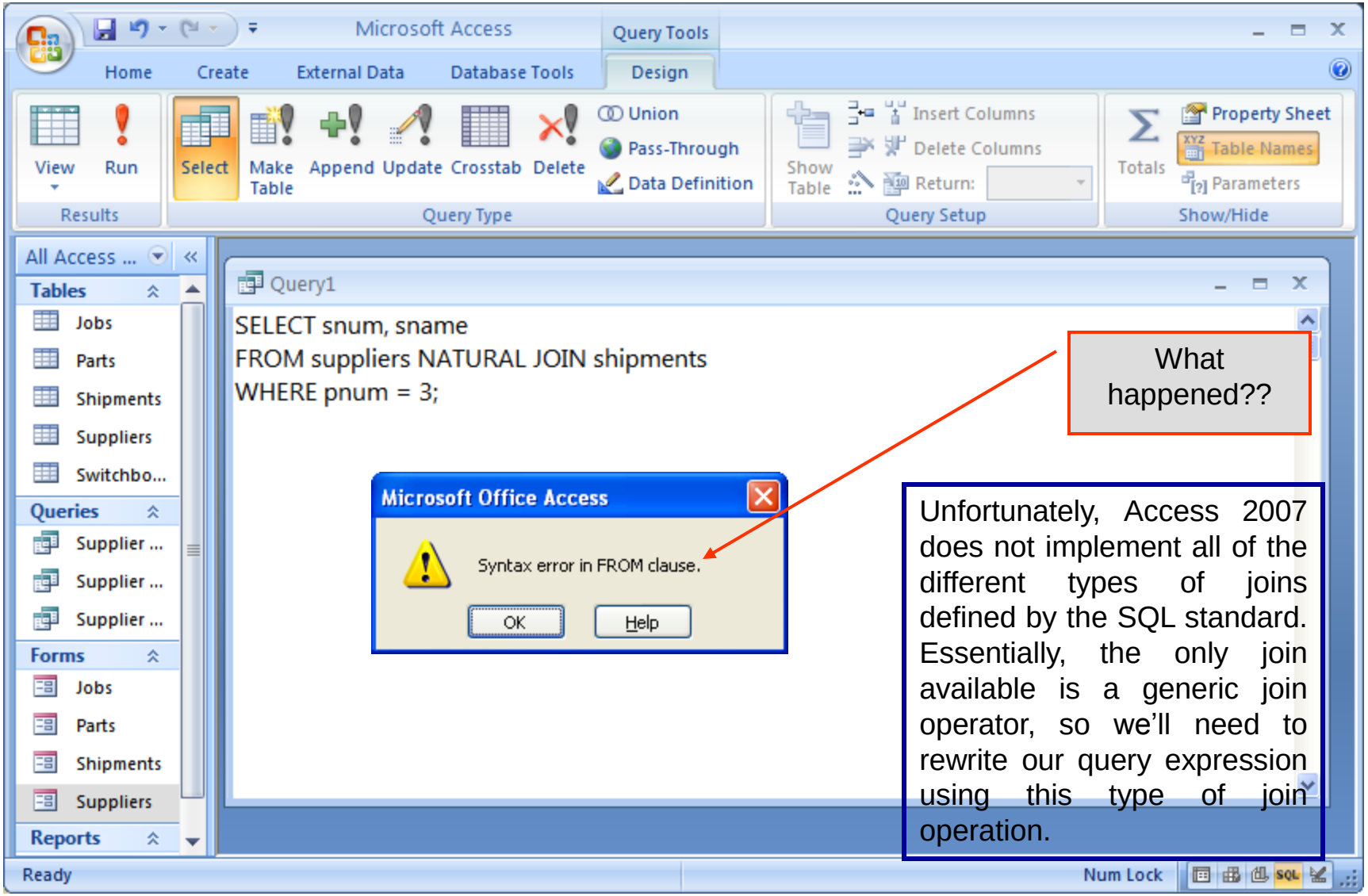
Reports
Query1
SELECT snum, sname
FROM suppliers NATURAL JOIN shipments
WHERE pnum = 3;
Click Run and go to next slide.
Ready
Num Lock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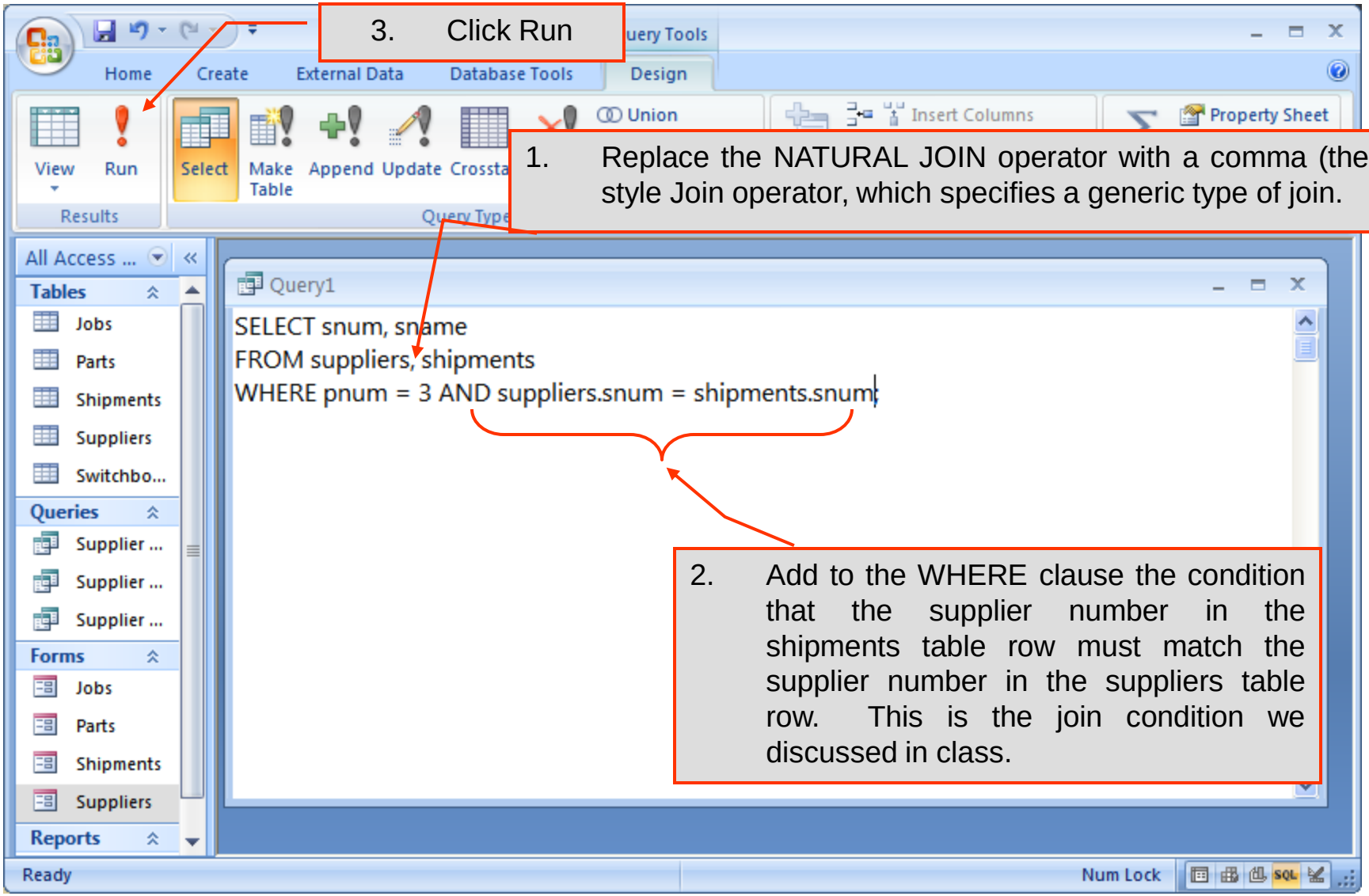
Supplier ...
Supplier ...
Supplier ...
Forms
Jobs
Parts
Shipments
Suppliers
Reports
Query1
SELECT snum, sname
FROM suppliers NATURAL JOIN shipments
WHERE pnum = 3;
Microsoft Office Access
Syntax error in FROM clause.
OK
Help
What happened??
Unfortunately, Access 2007 does not implement all of the different types of joins defined by the SQL standard. Essentially, the only join available is a generic join operator, so we'll need to rewrite our query expression using this type of join operation.
Ready
Num Lock
SQL


3. Click Run
Home
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Database Tools
Design
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Insert Columns
Property Sheet
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Run
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Make Table
Append
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Results
1. Replace the NATURAL JOIN operator with a comma (the old style Join operator, which specifies a generic type of join.
All Access ...
Tables
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Forms
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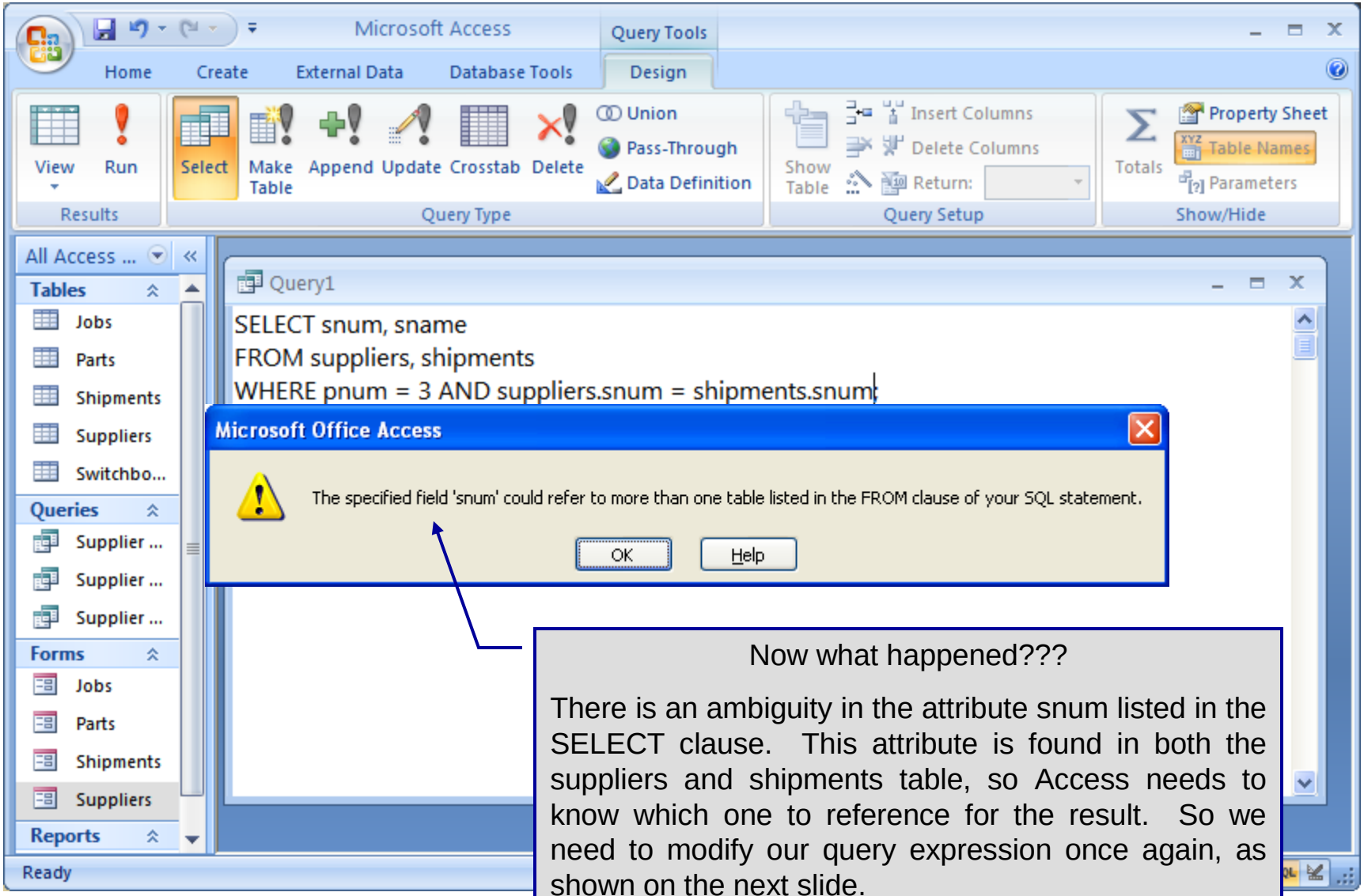
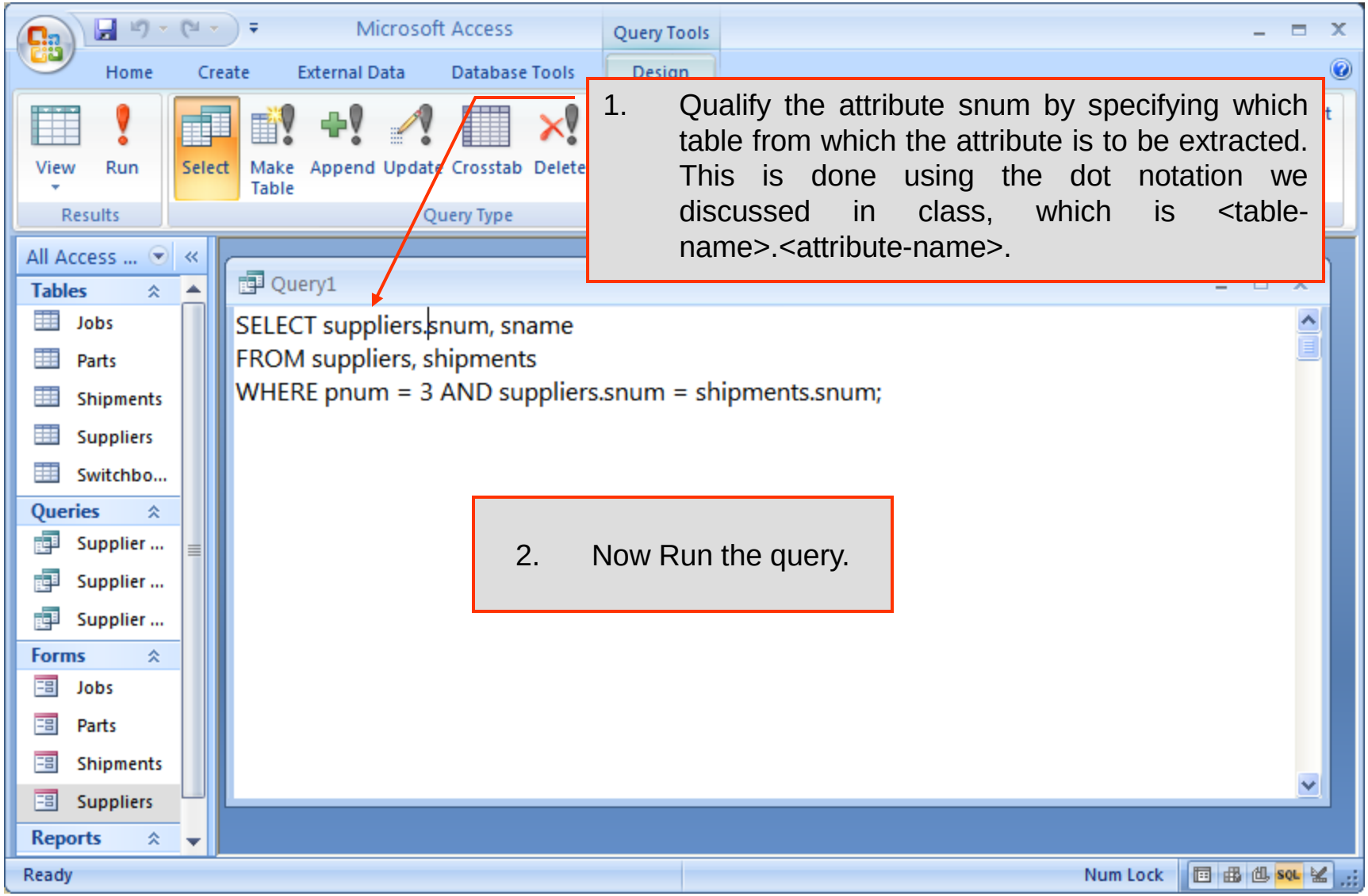
Reports
Query1
SELECT snum, sname
FROM suppliers, shipments
WHERE pnum = 3 AND suppliers.snum = shipments.snum;
2. Add to the WHERE clause the condition that the supplier number in the shipments table row must match the supplier number in the suppliers table row. This is the join condition we discussed in class.
Ready
Num Lock



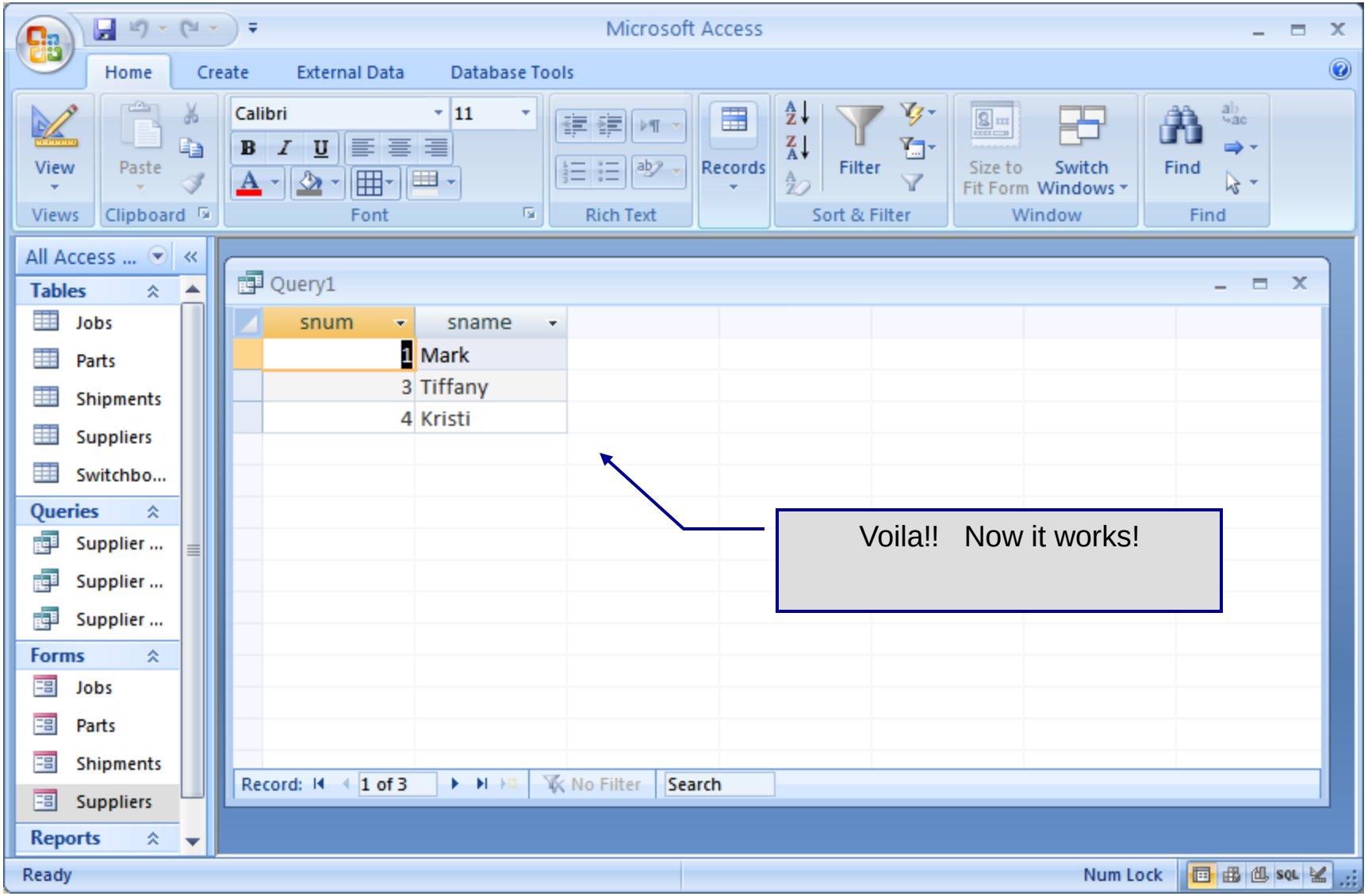
Now what happened???

There is an ambiguity in the attribute snum listed in the SELECT clause. This attribute is found in both the suppliers and shipments table, so Access needs to know which one to reference for the result. So we need to modify our query expression once again, as shown on the next slide.



1. Qualify the attribute snum by specifying which table from which the attribute is to be extracted. This is done using the dot notation we discussed in class, which is <table-name>.<attribute-name>.

2. Now Run the query.


Microsoft Access
Home
Create
External Data
Database Tools
Query1
snum
sname
1 Mark
3 Tiffany
4 Kristi
Voila!! Now it works!
Record: 1 of 3
No Filter
Search
Ready
Num Lock

Lab Work

You now have all the basic tools you need to build and utilize Access databases including those necessary to complete your database project for this course. Next week the project begins!

Try a few more SQL queries in Access if you'd like otherwise, go ahead an continue to work on your project! Good luck!

Lab Assignment #7

Lab Assignment #7 – Due Tuesday November 9th by 11:55 pm (WebCourses time) – 25 points

Using the supplier-parts-jobs-shipments database create SQL query expressions for the following 3 queries.

1. List the names of those suppliers who have a shipment with a quantity greater than 12.
2. List the names of those suppliers who have a shipment of both a red and a green part.
3. List the part number and name of those parts that are red and are located in Orlando.

Submit a screen shot of each of your query expressions and of the result set from executing each of your expressions. NOTE: Please use the following naming convention for your uploaded files:

HW07_FirstNameLastName or HW07_FirstNameLastName