Getting Data Into Microsoft Access

Tracy Greer • NICAR 2017

h/t to Goodwill Community Foundation (gcflearnfree.org) for the sample data set

Hi!

My name is Tracy

- Managing Editor at the NPR member station in Phoenix

- Digital Media Editor at station and *North County Times*

- Resourceful New Mexican

- No techno-snark!

- Ask me about roller derby

a little bit of lecture
then
a little bit of lab
then
a little bit of lecture

What Is Microsoft Access?

Access is a database management system (dbms), often shortened to "database" or "database software."

A database is a collection of related tables, and a database management system is the interface.

Same term ends up being used interchangeably for all parts.

Why Use Microsoft Access?

- More muscle than Excel but more user-friendly than mySQL

- Want to generate individual records

- Have multiple data tables that need to work together

- Useful for quickly filtering/analyzing data in separate tables

- Can be browser-based or desktop-based

- May be the only database software your shop has!

How To Access Access

- Used to be routine part of old Microsoft Office package.

- Microsoft stopped including Access with some of its Office 365 (cloud) and Office 2016 (desktop) Business packages. You can still get it with Office 365 (cloud) Home, Personal, University, and Office 2016 (desktop) Professional.

- In a newsroom, likely to have Access 2013, 2010, 2007 or 2003. May only be on a few computers.

How To Access Access

Not available for Macs!

- FileMaker Pro, other database management software

- [Wizard, Access DB Manager](), other compatible alternatives
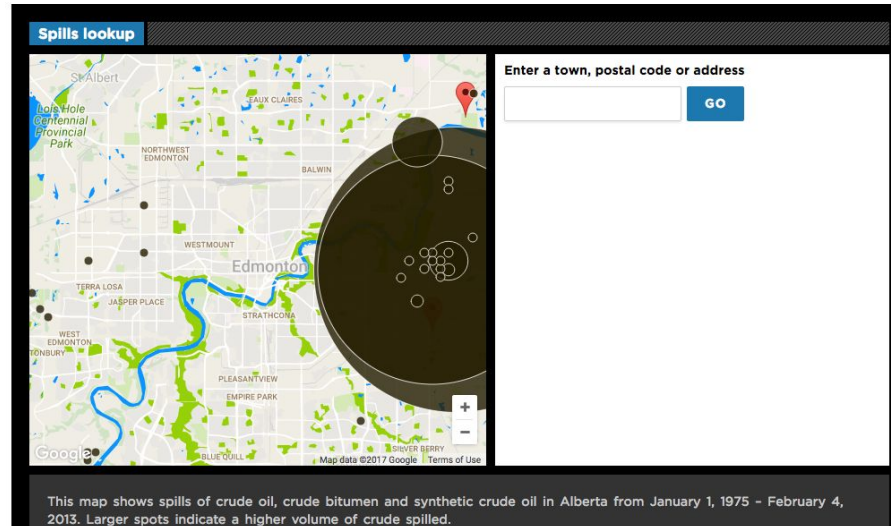
- Run Parallels on a Mac, with Access installed on PC side

Project Examples

GlobalNews.ca

[Crude Awakening: 37 years of oil spills in Alberta](#)

Oil in your backyard

You can find information on every spill of crude oil, crude bitumen and synthetic crude since 1975 in the map below, and search by location.

Spills lookup

Enter a town, postal code or address

[   ] [GO]

This map shows spills of crude oil, crude bitumen and synthetic crude oil in Alberta from January 1, 1975 – February 4, 2013. Larger spots indicate a higher volume of crude spilled.

Tampa Bay Times

No Cash Left Behind: Public schools lose millions to crooks and cheaters

MAKING MILLIONS

The top 20 tutoring companies doing business in Florida made at least $1 million in the 2011-12 school year.

Provider	Location	Earnings (in millions)
! A+ TUTOR U	Orlando	$6.5
AFTER SCHOOL PROGRAMS INC.	Deerfield Beach	$4.6
A+ MARKEM INC.	Naples	$3.5
SI2-SUPPLEMENTAL INSTRUCTIONAL SERVICES INC.	Estero	$2.7
ACES TUTORING	Gotha	$2.5
ATS PROJECT SUCCESS	Clinton Township, Mich.	$1.7
FELC TUTORS	Miami Lakes	$1.6
ALPHA ACADEMIC SERVICES INC.	Cooper City	$1.6
A TO Z IN-HOME TUTORING, LLC	Fort Pierce	$1.5
ROCKET LEARNING PARTNERS, LLC	Miami	$1.5
ONE ON ONE LEARNING	Miami	$1.5
A QUANTUM LEAP EDUCATIONAL SERVICES, LLC	Jacksonville	$1.3
HILLSBOROUGH COUNTY PUBLIC SCHOOLS	Tampa	$1.1
DEVELOPING OUR COMMUNITY INC.	Maitland	$1.1
CLUB Z! IN-HOME TUTORING SERVICES INC.	Tampa	$1
MANATEE STARS/ BRADEN RIVER ELEMENTARY	Bradenton	$1
2-EXCEL LEARNING	Margate	$1
BASIC LEARNING SKILLS INC.	Fort Myers	$1
! "A+C.A.T."	Tampa	$1
HUNTINGTON LEARNING CENTERS INC.	Oradell , N.J.	$1

Source: Times research

Explore our list of tutoring firms in Florida. and see which have had contracts terminated.

Access Basics

Access Basics

Tables

Forms

Queries

Reports

Access has four types of objects.

Think of your database like a folder of objects.

Your database can have multiple objects, and each can be created, modified, saved individually.

Access Tables

Tables = lists of data

Multiple columns and rows (or records) in a single table

Multiple tables in a database

	ID	First Name	Last Name	Street Address	City	State	Zip Code	Email
	1	Tracey	Beckham	7 East Walker Dr.	Raleigh	NC	27612	beck@email.com
	2	Lucinda	George	789 Brewer St.	Cary	NC	27513	lugeo@email.com
	3	Jerrod	Smith	211 St. George Ave.	Raleigh	NC	27610	texj@email.com
	4	Brett	Newkirk	47 Hillsborough St.	Raleigh	NC	27608	newkb@email.com
	5	Chloe	Jones	23 Solo Ln.	Raleigh	NC	27609	lo@email.com
	6	Quinton	Boyd	4 Cypress Cr.	Durham	NC	27714	denqui@email.com
	7	Alex	Hinton	1011 Hodge Ln.	Cary	NC	27513	dhoda@email.com
	8	Nisha	Hall	123 Huntington St.	Raleigh	NC	27612	hall@email.com
	9	Hillary	Clayton	2516 Newman	Raleigh	NC	27606	mshill@email.com
	10	Kiara	Williams	9014 Miller Ln.	Durham	NC	27714	rogki@email.com
	11	Katy	Jones	456 Denver Rd.	Cary	NC	27513	yjonesk@email.com

Employee Database Navigation | Menu Items | **Customers**

Access Forms

Forms are user-friendly ways to add data into tables

Access Queries

Queries = power! Quickly pull data from multiple tables.
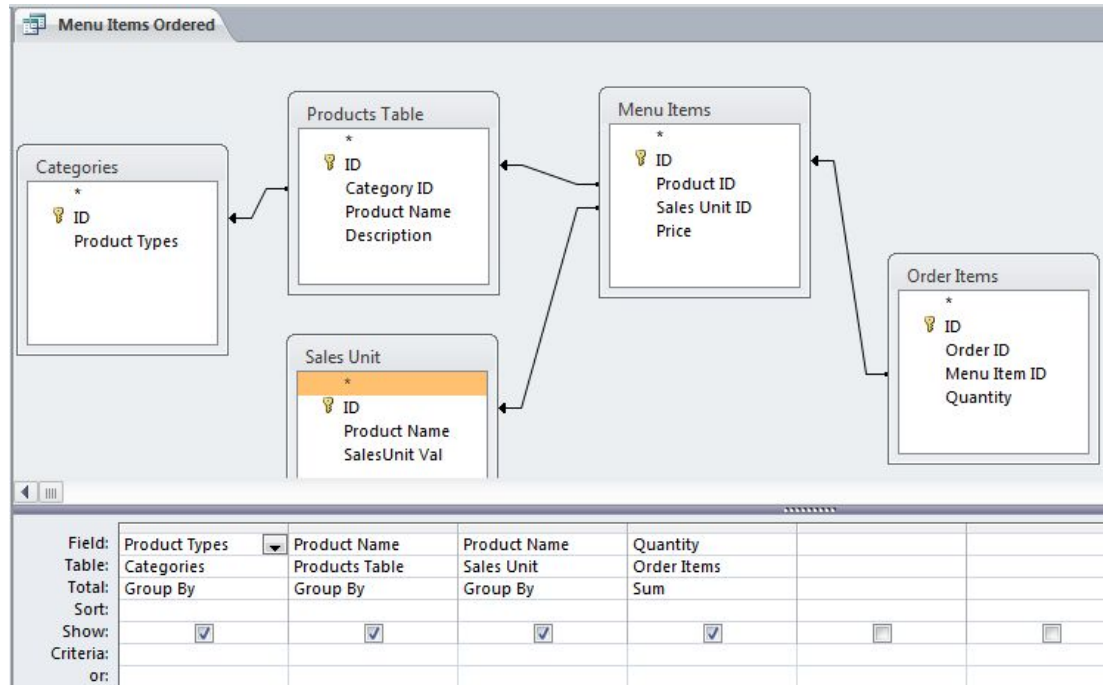
Access Reports

The pretty way to display or export query results.

Queries and Reports?

Getting Data Into Access

Getting Data Into Access Tables

Manual Entry

Boo! Hiss!

But ...

It's important to understand where the data goes in the tables so you can learn to spot errors.

Getting Data Into Access Tables

Import Existing Files

Easiest way to get data into Access so you can create queries and reports.

Only certain file formats allowed!

Make sure the data is clean.

File Formats

File Extension	File Type	Import into Access?
.mdb or **.accdb**	Microsoft Access	**Yes**
.dbf	database file	**Yes**
.xls	Microsoft Excel	**Yes**
.csv	comma-separated values	**Yes**
.txt or **.asc**	plain text files	**Conditional**
.xml	Extensible Markup Language	**Conditional**
.html	Hypertext Markup Language	**Conditional**
.pdf	Portable Document Format	**No**
.doc	Microsoft Word	**No**

File Formats

A note about .txt, .asc, .xml, .html files ...

Must be really clean for import!

Works best when exported from another source.

Not so much when scraped from a web page or written as plain text. Get it into .csv or .xls for easy import.

File Formats

Scraped Source Code HTML

Clean HTML

File Formats

Plain Text as you write

Cookie Recipes Plain Text.txt

```
Chocolate Chip Cookies
Yield 5 dozen
1 cup sugar
1/2 cup brown sugar firmly packed
1 cup shortening
1 teaspoon vanilla
2 large eggs
2 1/4 cups flour
1 teaspoon baking soda
1 teaspoon salt
1 (12 ounce) package chocolate chips
Preheat oven to 375°.
In a mixing bowl, cream together the first five ingredients.
After creaming the first five ingredients add the last four and make
sure everything is mixed together well.
Drop by tablespoonfuls on to cookie sheets and bake for 9-10 minutes.
For M&M cookies: Replace chocolate chips with M&M plain baking bits.


Sugar Cookies
Yield 2 dozen
2 large eggs
2/3 cup vegetable oil
2 teaspoons vanilla
3/4 cup white sugar
2 cups flour
2 teaspoons baking powder
1/2 teaspoon salt
Beat together eggs, oil, vanilla and sugar; add flour, baking powder
and salt and mix well.
Drop by heaping teaspoon approx 3" apart on an ungreased cookie sheet.
Flatten with bottom of glass moistened with water and dipped in sugar.
Bake at 400°F for 6-10 minutes or just until lightly golden.
```

Plain Text for import

December Orders Plain Text.txt

```
"Cakes","Black Forest","Single",8.00,1,8.00
"Cakes","Black Walnut","Single",5.00,1,5.00
"Cakes","Buche de Noel (Christmas Cake)- Winter","Single",
12.00,1,12.00
"Cakes","Carrot Cake","Single",8.00,1,8.00
"Cakes","Cheesecake","Single",18.00,1,18.00
"Cakes","Coconut","Single",2.00,1,2.00
"Cakes","Cookies n' Cream","Single",1.00,1,1.00
"Cakes","French Vanilla","Single",1.00,1,1.00
"Cakes","Fudge Chocolate","Single",6.00,1,6.00
"Cakes","German Chocolate","Single",2.00,1,2.00
"Cakes","Gingerbread - Winter","Single",4.00,1,4.00
"Cakes","Italian Rum","Single",4.00,1,4.00
"Cakes","Red Velvet","Single",1.00,1,1.00
"Cookies","Butter Pecan","One Dozen",1.00,12,12.00
"Cookies","Butter Pecan","Single",1.00,1,1.00
"Cookies","Butterscotch","Single",3.00,1,3.00
"Cookies","Chocolate Banana Walnut","One Dozen",1.00,12,12.00
"Cookies","Chocolate Banana Walnut","Single",1.00,1,1.00
"Cookies","Chocolate Chip","Half-Dozen",1.00,6,6.00
"Cookies","Chocolate Chip","One Dozen",2.00,12,24.00
"Cookies","Chocolate Chip","Single",5.00,1,5.00
"Cookies","Cranberry Walnut","One Dozen",3.00,12,36.00
"Cookies","Fudge Brownie","One Dozen",7.00,12,84.00
"Cookies","Fudge Brownie","Single",3.00,1,3.00
"Cookies","Ginger Shortbread","Half-Dozen",1.00,6,6.00
"Cookies","Ginger Shortbread","One Dozen",5.00,12,60.00
"Cookies","Oatmeal Raisin","One Dozen",1.00,12,12.00
"Cookies","Peanut Butter","Half-Dozen",1.00,6,6.00
"Cookies","Snickerdoodle","One Dozen",1.00,12,12.00
"Cookies","Snickerdoodle","Single",3.00,1,3.00
"Cookies","White Chocolate Macadamia Nut","Half-Dozen",3.00,6,18.00
"Cookies","White Chocolate Macadamia Nut","One Dozen",2.00,12,24.00
"Cupcakes","Candy Cane- Winter","One Dozen",3.00,12,36.00
```

Sample Data

Pre-Existing Database

Fictional business owner database for a bakery tracking orders, customers, products, etc.

File: **Songbird_Bakery.accdb**

Access > File > Open > Songbird_Bakery.accdb

Should see a variety of objects (tables, forms, queries, reports)

Let's Add More Tables!

- Discounts Excel.xlsx

Open Cookbooks XML.xml in Notepad

- Cookbooks XML.xml

Using The Wizard

- Data Type - property that determines what type of info a field will store and display

- Primary Key - unique identifier for each record

- Save Your Steps - import macro

Adding Data To Existing Tables

Adding Data To Existing Tables

Three ways to do this:

- Manually entering new records

- Importing a file into existing table

- Creating a form tied to existing table

Adding: Manually Enter

Open Table (sample: **Discounts**), OK to be in Datasheets View

Skip to last record using tools at bottom of table

Complete all fields:

 ID: *automatically generates*

 Discount Type: Brownie Lovers Club

 Discount Amount: $2.50

 Discount Description: Buy five brownies, get the sixth free

Adding: Import To Existing Table

Go to:

https://github.com/tracygreer/Access

Click on:

Customers To Add.xlsx

Click "download"

Adding: Import To Existing Table

Is data clean, do fields line up?

External Data > Import Excel

Browse for file in Wizard

Select table to append records to

Run the Wizard

Double-check your new records in table

Adding: Create A Form

A user-friendly interface to add content to an existing table

Create > Form Wizard

Choose target table, then select fields to enter

Choose layout style and give form a title

Choose "modify form design"

Adding: Create A Form

In Design View select Design Tab

Choose Button and draw it on the layout

Choose Record Operations > Add New Record

Choose Text > give button a name

Repeat with Record Operations > Save Record

Back to Form View for data entry

Tables Made From Scratch

Tables Made From Scratch

Create > Table > Design View

Open **Employees - Manual Entry.txt** in Notepad

Set fields and field type and save

Switch to Datasheet View

Manually enter content

Database Made From Scratch

Database Made From Scratch

What if you have external files (.xls, .csv, .xml, etc.) but no database to add them to?

Access Home > New > Blank Access Database

Import all files related to the project to create tables

Save the database as a .accdb or .mdb file

Bad Data

When Good Data Goes Bad

- Not all data is ready to be used!

- Know what you're looking for so you can spot abnormalities and troubleshoot

- Example: CDC Youth Risk Behavior Survey http://tinyurl.com/bad-data-2017

When Good Data Goes Bad

site	year	weight	stratum	PSU	record	age	sex	grade	race4	race7	bmipct	q67	qn8	qn9	qn10	qn1
AL	1991	59.277	1	1	7	5			1	6					2	
AL	1991	63.5552	15	1	8		2	4	2	3			1	1	1	
AL	1991	54.4759	5	1	9		2	4	2	3				1	1	
AL	1991	73.9484	12	1	10	1	2	3	2	3		2	2	2		
AL	1991	78.2424	8	2	11	2	2	2	2	3				2	1	
AL	1991	56.4935	3	1	12	2	2	4	4			1	1	2		
AL	1991	98.1638	8	2	1							1	2	1		
AL	1991	69.1663	15	2	2	1		2	4			1	2	1		
AL	1991	80.3232	15	1	3	2		3	1	6		2	1	1		
AL	1991	66.5061	20	2	4	4		2	1	6		1	2	1		
AL	1991	89.3992	5	1	5	5		1	1	6		1	2	2		
AL	1991	63.1244	1	1	6	5			2	3		2		1		
AL	1991	141.3714	13	1	15	3	2	1	1	6		1	2	2		
AL	1991	105.206	3	1	16	3	2	1	2	3		1	2	1		
AL	1991	127.6129	11	1	17	3	2	1	1	6			2	1		
AL	1991	127.1775	20	1	18	3	2	1	1	6		1	1	2		
AL	1991	121.1215	5	2	19	3	2	1	1	6		1	1	2		
AL	1991	141.3714	13	1	20	3	2	1	2	3		1	2	2		
AL	1991	86.6484	5	1	21	3	2	1	2	3		1	2	2		
AL	1991	90.3925	8	2	22	3	2	1	1	6			1	2		
AL	1991	83.4393	4	2	23	3	2	1	1	6		1	1			

SADCQN

Record: 1 of 511110   No Filter   Search

When Good Data Goes Bad

- Limited to two tables (forms? queries? reports?)
- Table columns didn't have headers
- Not sure what we're looking at!

- Fixes: match columns with data key and rename
- Fixes: create own queries, reports

Questions?