Tableau Workshop

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Race, Crime, and Criminal Justice
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Northeastern University
NULab for Texts, Maps, and Networks

Workshop Agenda

- Workshop objectives
- Advanced Tableau Techniques
  - Joining Data & Calculating New Fields
- Research Question Discussion
- Tableau work period & questions
- Group Discussion

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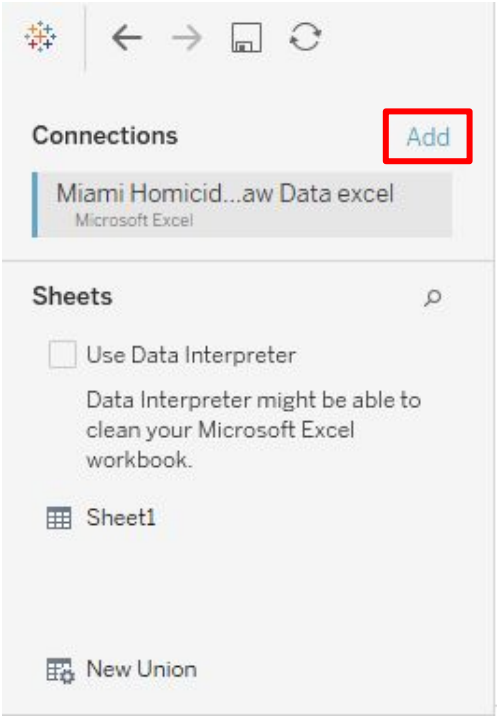
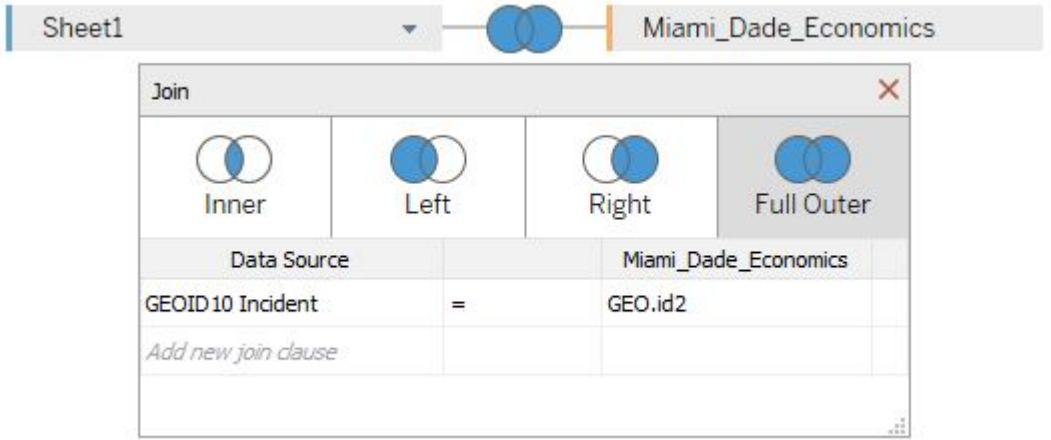
Workshop Objectives

- Learn new Tableau techniques
- Refine your research questions
- Continue working with Tableau in class with the opportunity to ask questions
- Discuss your visualizations with your classmates to better understand the dataset and the different visualization methods

Joining Data - Connecting Two Different Datasets



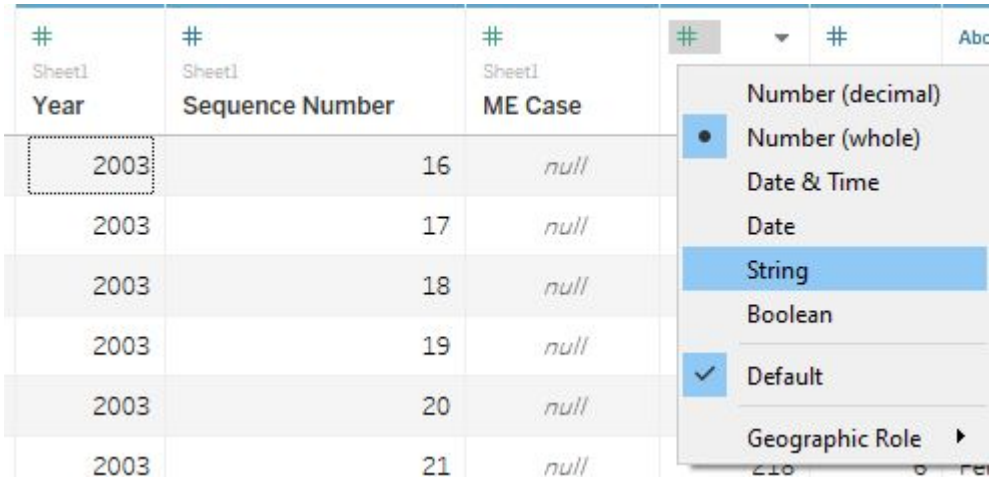


When joining, the two data fields have to match **exactly!** It is usually better to have all of your data in one spreadsheet when you can, but joining is a good solution when this is not possible.

Data source: American Community Survey, 2013-2017

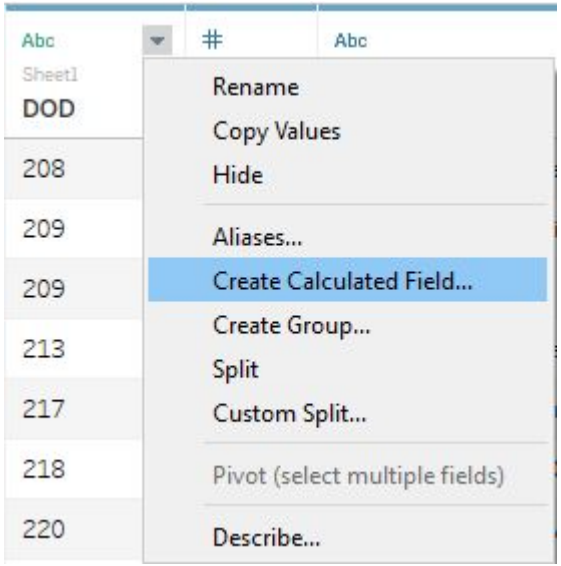
Modifying Variables - Calculating New Fields

What if we want to add together the DOD & Year fields? They are both numbers right now, so we first need to convert them to “strings” (computer speak for a non-numerical sequence of characters).



Modifying Variables - Calculating New Fields

Once we have converted them, we can now add them together. Since they are strings, it will now combine the strings instead of using mathematical addition.



Modifying Variables - Calculating New Fields

I now have a new full date of death field.

Note that if you try to change the Year and DOD fields back to numbers, the new field will break because it is still drawing upon the fields in the calculation.

How can make this work better? With a little very basic programming.

Abc Sheet1 Year	# Sheet1 Sequence Number	# Sheet1 ME Case	Abc Sheet1 DOD	=Abc Calculation DateOfDeath
2003	131	*null*	806	8062003
2003	132	*null*	805	8052003
2003	130	*null*	805	8052003
2003	129	*null*	803	8032003
2003	128	*null*	801	8012003
2003	127	*null*	723	7232003
2003	124	*null*	721	7212003
2003	125	*null*	721	7212003
2003	126	*null*	721	7212003
2003	123	*null*	720	7202003
2003	122	*null*	719	7192003
2003	121	*null*	719	7192003
2003	118	*null*	716	7162003
2003	119	*null*	716	7162003
2003	117	*null*	715	7152003

Modifying Variables - Calculating New Fields

Let's try some simple programming! First, convert the Year and DOD fields back to whole numbers. Notice how your calculated field is now a mathematical addition of the two fields.

Next, edit the new field, and we will need to convert the fields to strings.

Do this, we can use the programming function str() which converts whatever is in the parentheses to a string.

By calculating new fields, we can create new data categories we may not have had before.

Class Research Questions

How would we go about actually mapping the following research questions? What do they tell us about Miami-Dade homicides? What other data would help?

- Race and substance use or drug use
- Victim race and primary death circumstance or homicide motive
- Is there a difference between weapon use and victim race?
- Is there a difference between victim/offender relationship and victim race?
- Does prior felony matter? Racial differences?
- Is there a temporal difference between weapon use and victim race?
- Are homicides correlated with alcohol use? Liquor stores? Bars?
- Do homicides vary by police agency?
- Does age matter? Is there a racial/age difference?
- Does alcohol intoxication matter?
- Does weapon use influence number of killings?
- Does mental illness matter?
- Does neighborhood poverty matter? Victim home?
- Are mental health services available?
- Schools? Area high school dropout rate?
- Family composition.
- Neighborhood disadvantage

Workshop

Using the data:

- Create visualizations (maps & graphs) that can help answer your research question
- Please ask questions of us, we are here to help!

Group Discussion

In your experiences with Tableau so far, what are some of the **strengths** and **weaknesses** of the software?

Have there been any **difficulties** using Tableau?

Questions & Contact Information

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Find these slides, handouts, and more at

https://bit.ly/diti-fall2019_martinez

DITI open office hours: **Tuesdays, 1–3pm in 409 Nightingale Hall**