ISA 401 - Business Intelligence & Data Viz
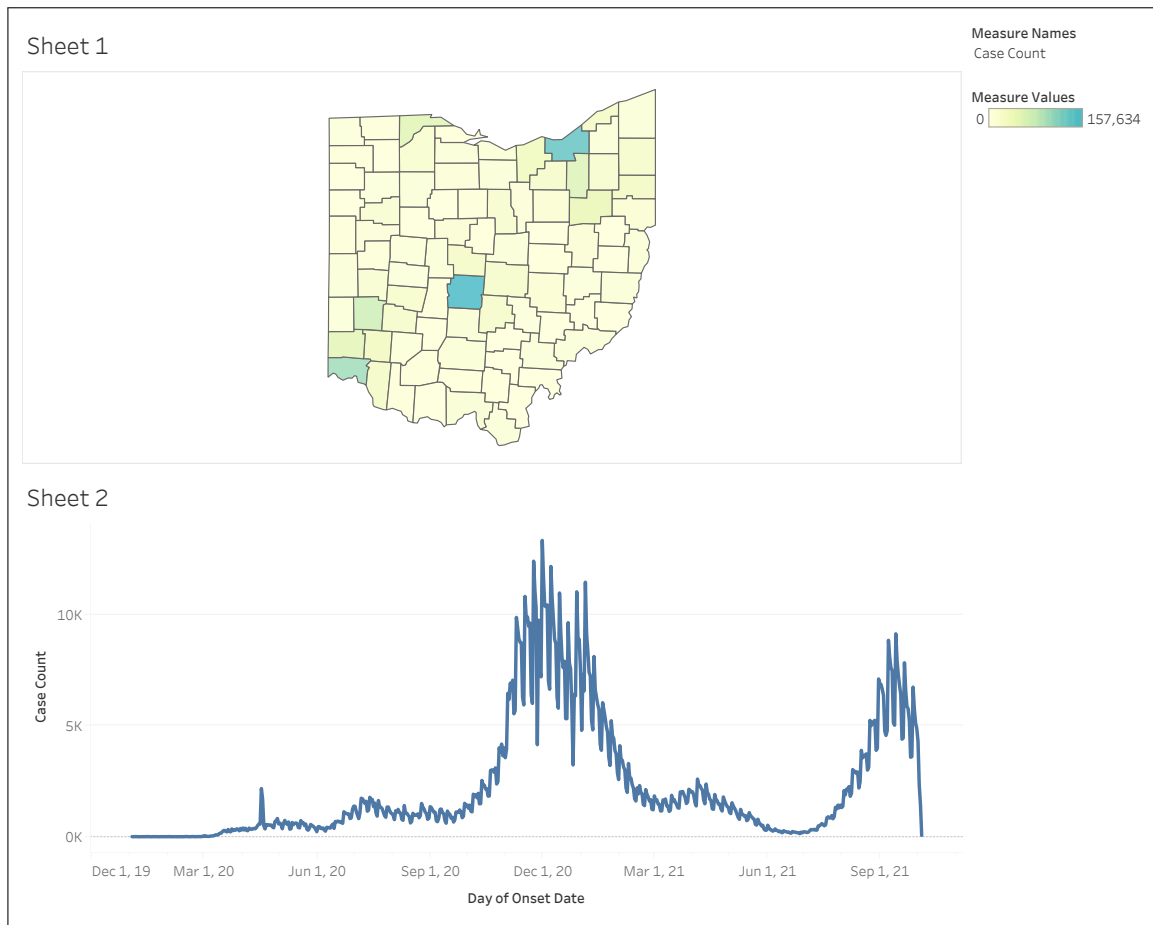## 16: An Overview of Tableau and PowerBI

Learning Objectives for Today's Lab:

(A) Create your first visualizations, dashboard and story map in **Tableau**.

(B) Understand some of the basic Tableau functionalities

(C) Constructing simple visualizations using **Power BI**

- Connecting to data using Power BI and understanding its basic terminology
- The ETL Process in Power BI
- Creating simple visualizations with filters in Power BI

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1. (0 points) Let us use **Tableau** to examine Ohio's Summary Data for COVID-19 cases (see the *ohio_covid.csv* file on Canvas). In Tableau, let us:

   (A) Create a map of the sum of new_cases by county.

   (B) Create a line-chart (as well as a time-based bar chart) for the sum of case counts for the entire state.

   (C) We will then combine these two charts in a dashboard.

   (D) We will also use the storyboard feature to highlight interesting aspects of the data.

A schematic, not exact representation, of our Tableau visualizations.

2. (0 points) As an illustrative example of some of the features of **Power BI**, we will be using the BTS flight delay dataset (from: https://www.transtats.bts.gov/DL_SelectFields.aspx?gnoyr_VQ=FGK&QO_fu146_anzr=b0-gvzr). For your convenience, I extracted the data for June-July of 2025, and added the airline abbreviation lookup CSV file. The links to these files are on <u>Canvas</u> under Week 08. As we will go through the demonstration, you are encouraged to note the following:

(A) How to use the "Get Data" button and the "Query Editor" to **extract** the 2 months of data into Power BI. **Note how Power BI automatically classifies/"guesses" the data types**.

Some Transformation Steps:

(B) How to append the data from June–July. into one table.

(C) Import and merge the CSV file to the generated table. **Note how we will also involve fixing the issue that this imported column may not read the column titles.**

(D) Minor: how to move the "location of the added column" in the "Query Editor"

(E) Let us make the table more manageable by only selecting:
- MONTH
- FL_DATE
- Airline
- FL_NUM
- ORIGIN_CITY_NAME
- DEST_CITY_NAME
- DEP_DELAY
- ARR_DELAY

(F) Let us ensure that the data types are appropriate and then **load** the data into Power BI.

(G) **Let us create a similar visualization; note that the numbers would be different since the data shown below is not from 2025.**

Average of ARR_DELAY and Average of DEP_DELAY by Airline

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