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

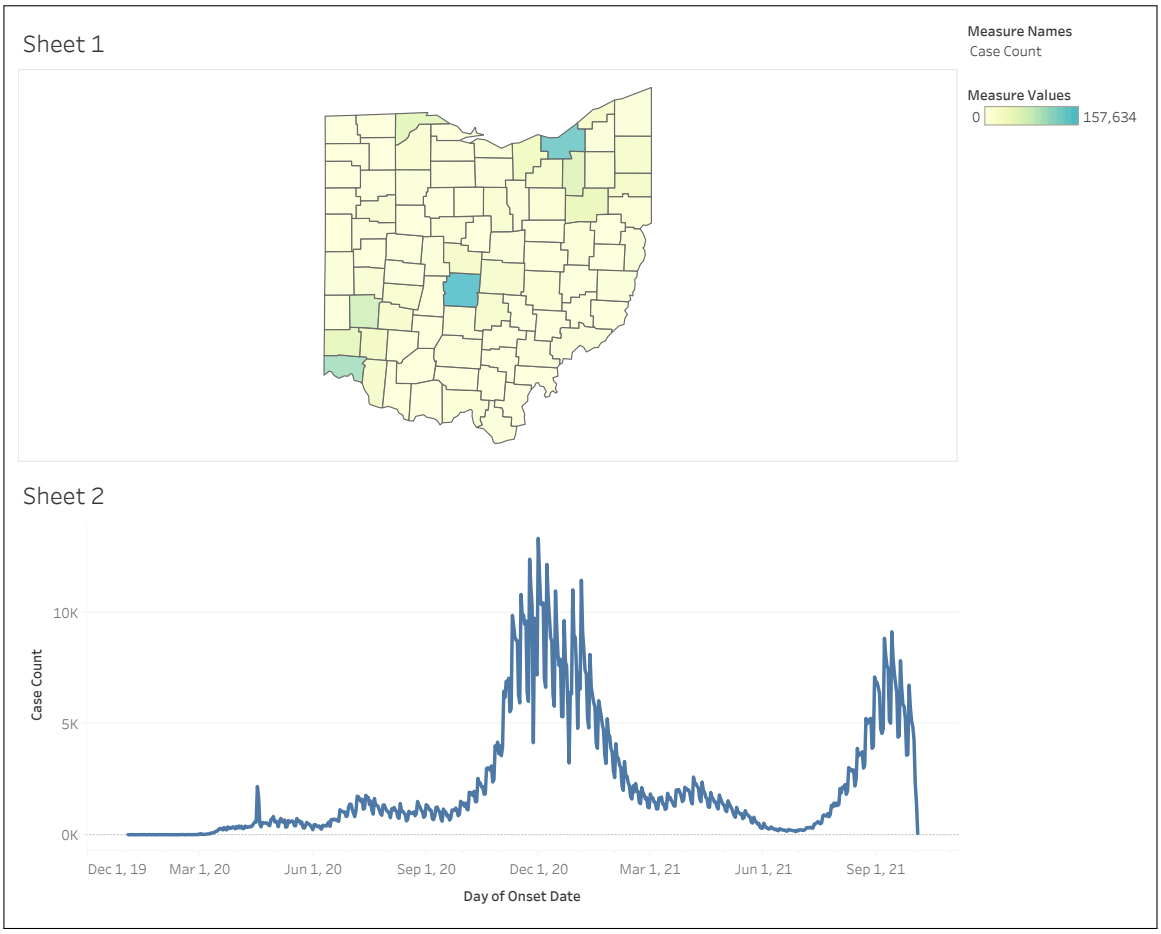
1. (0 points) Let us use **Tableau** to examine Ohio's Summary Data for COVID-19 cases (see the *ohio_covid.csv* file on Canvas). In Tableau, let us:

   (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 2023, and added the airline abbreviation lookup CSV file. The links to these files are on Canvas 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 2023.**