

# MLDS 411

# DATA VISUALIZATION

Winter 2024 Labs

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ENGINEERING

# Schedule

Week	Date	Time	Tableau Topics	Python Topics
1	January 12	11am	Tableau Review	Library Overview
2	January 19	12pm	Joining, Blending	Plotly, Dash
3	January 26	11am	Groups, Hierarchies, Sets	Bokeh
4	February 2	11am	Parameters, Tool Tips	Wordcloud
5	February 9	11am	Dashboards, Stories & Actions	NetworkX
6	February 16	11am	Maps	GeoPandas, Folium
7	February 23	11am	Calculated Fields, Calculations	Plotnine
8	March 1	11am	Forecasting, Clustering	Python + Tableau

# Lab Format

## Goals

- Practice working with Tableau (will post materials before lab)
- Become familiar with the available Python libraries for visualization

## Agenda

- Introduce Tableau topic (10 minutes)
- Work on Tableau exercise on your own (20 minutes)
- Review Tableau exercise as a class (15 minutes)
- Demo Python library (15 minutes)



@dontstopmeowing

# Tableau Review

## Software

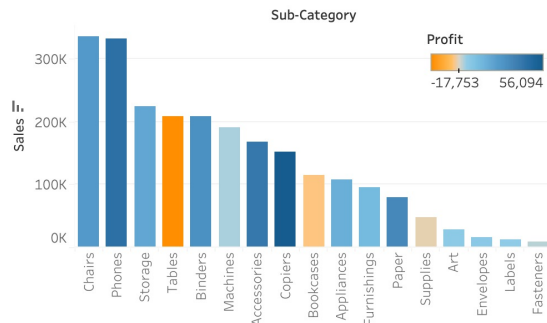
- Tableau Desktop vs Tableau Server vs Tableau Public

## Topics

- Connecting to Data
- Sheets vs Dashboards
- **Data:** Dimensions vs Measures
- **Sections:** Marks, Filters
- **Shortcuts:** Show Me, Swap Rows & Columns, Filter, Undo
- **Plots:** Bar Charts, Line Charts, Scatter Plots & Maps
- **Analytics:** Trend Line
- **File Extensions:** .twb vs .twbx

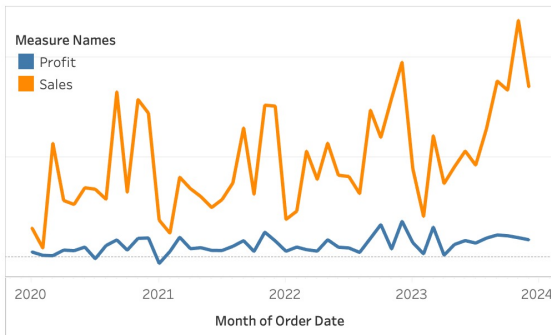
# Exercise: Replicate This Dashboard

Total Sales by Sub-Category



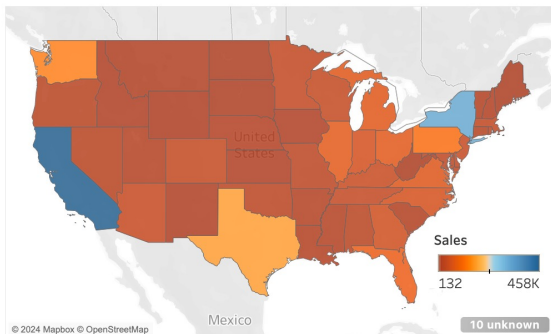
Tables brought in the lowest profit (sales - expenses)

Profit vs Sales Over Time



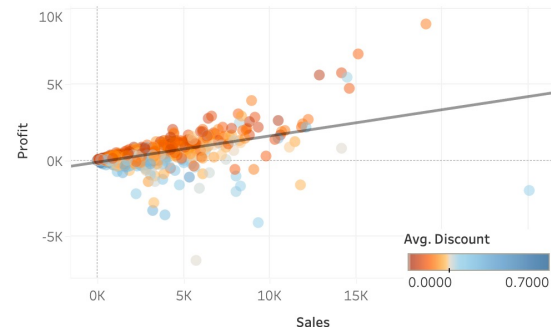
<Fill in your main takeaway here>

Total Sales for Each State



<Fill in your main takeaway here>

Customer Sales, Profits & Discounts



<Fill in your main takeaway here>

# Data Visualization in Python Overview

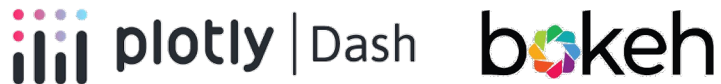
## Standard Libraries



## Mapping



## Interactive Visualizations



## Specialty



# Remember

## Next Week

- Data Visualization Lab on Friday will be at **12pm** (NOT 11am!)

## Snow Tips

- **DON'T** drive along the lake!
- **DO** play in the snow 😊



Snowmageddon 2011 in Chicago



Mount Trashmore in Evanston