ISA 401: Business Intelligence & Data Visualization

19: Charts Used for Spatial and Spatiotemporal Data

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✈ fmegahed@miamioh.edu
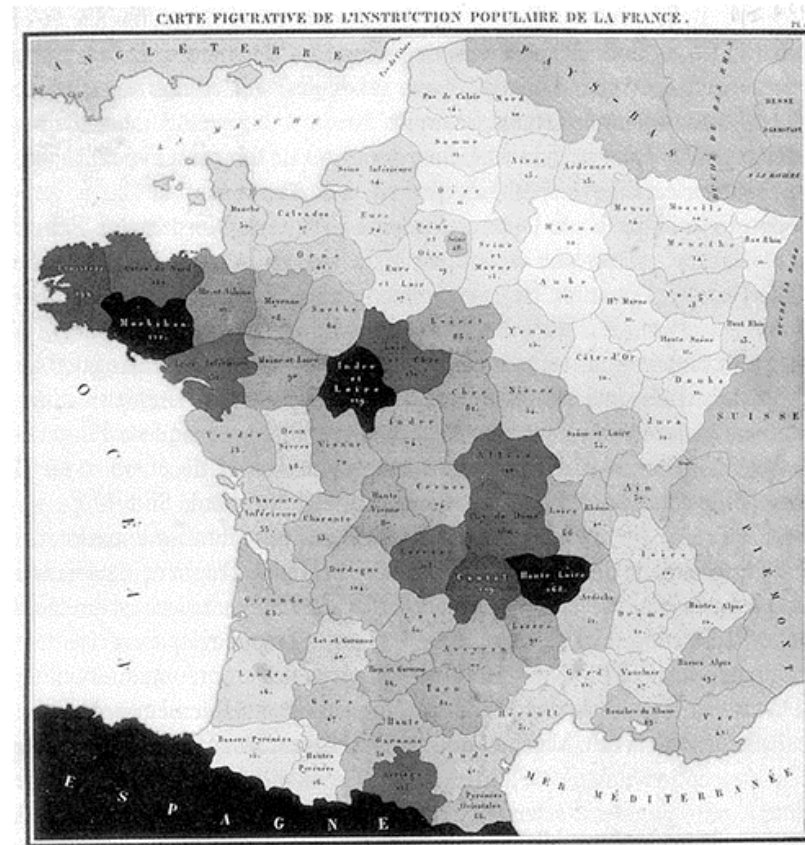❓ Automated Scheduler for Office Hours

Fall 2024

Learning Objectives for Today's Class

- Explain the different types of spatial plots

- Select suitable spatial graphs for different scenarios

- Understand how spatiotemporal plots can help in storytelling (what makes BI special)

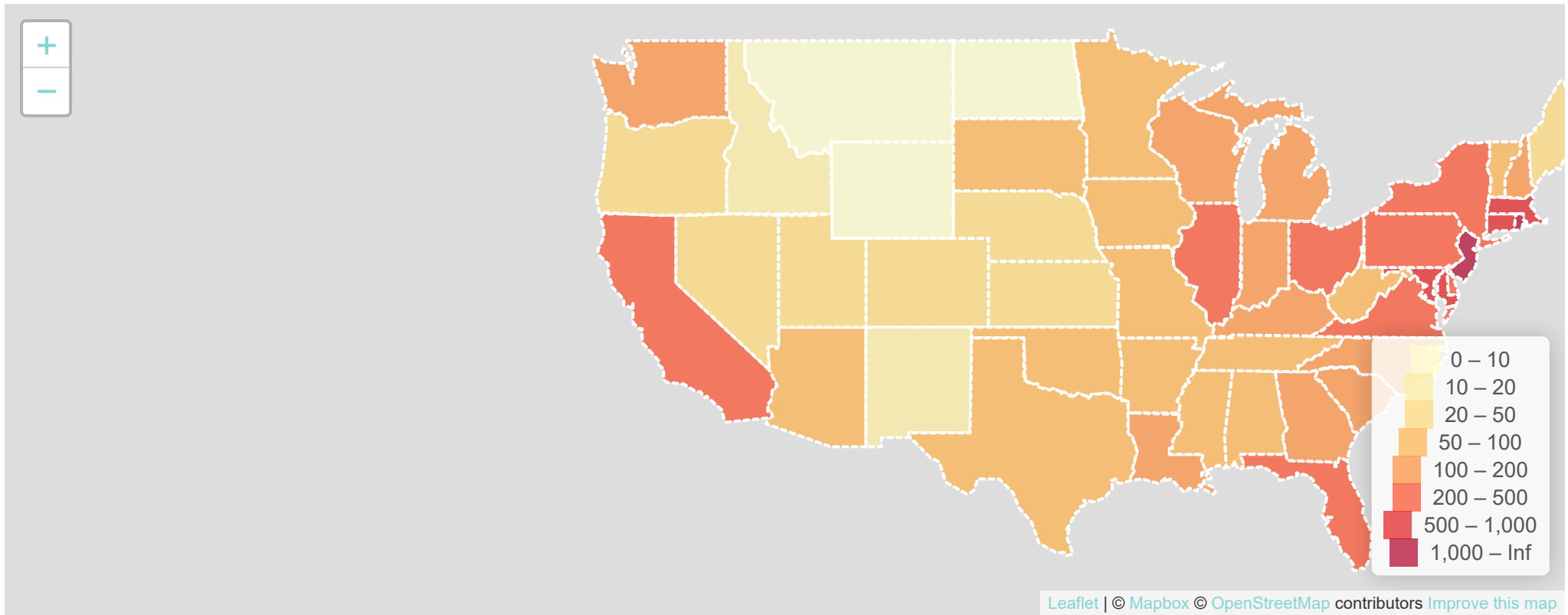# Spatial Plots

Choropleth Maps

Maps where areas are **shaded, colored, or patterned** relative to a data attribute value.

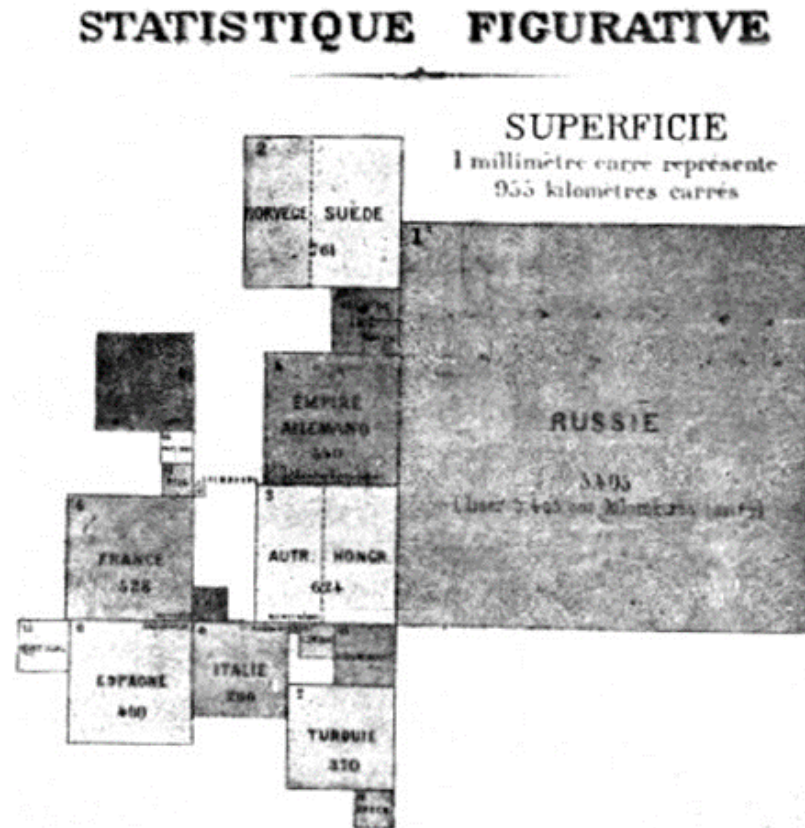Charles Dupin's Illiteracy in France Choropleth, created in 1826

Choropleth Maps

Maps where areas are **shaded, colored, or patterned** relative to a data attribute value.

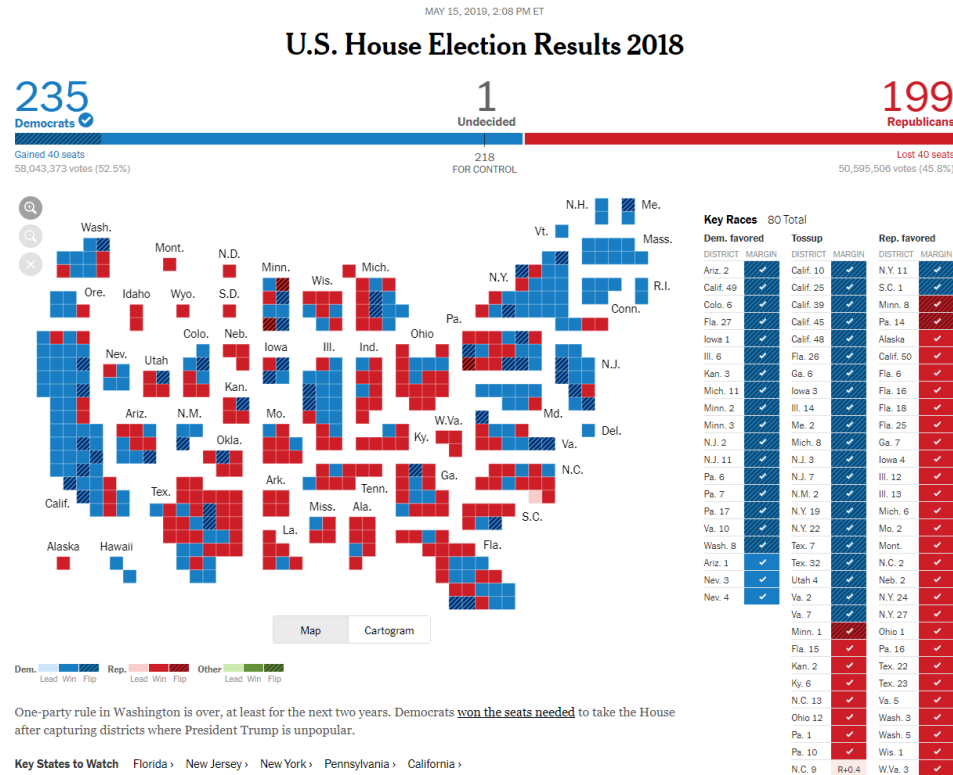

Population Density in U.S.

Cartograms

A cartogram is a map in which **areas are scaled and distorted relative to a data attribute value**

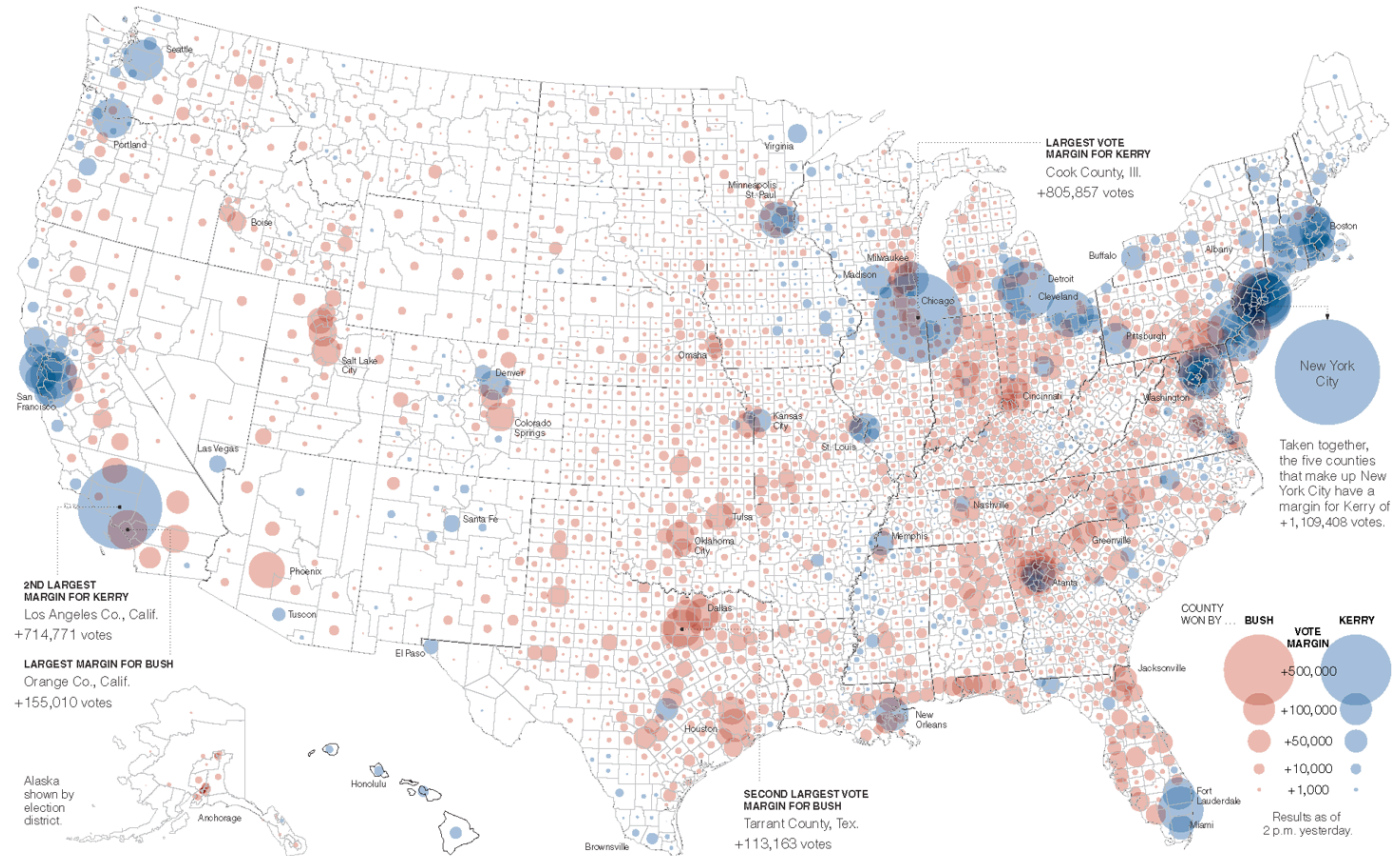The First Cartogram – Emile Levasseur, 1868

Cartograms

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The NYT's U.S. House Election Results 2018

Proportional Symbols Map

The NYT's U.S. Coverage of the Bush Vs Kerry Presidential Elections
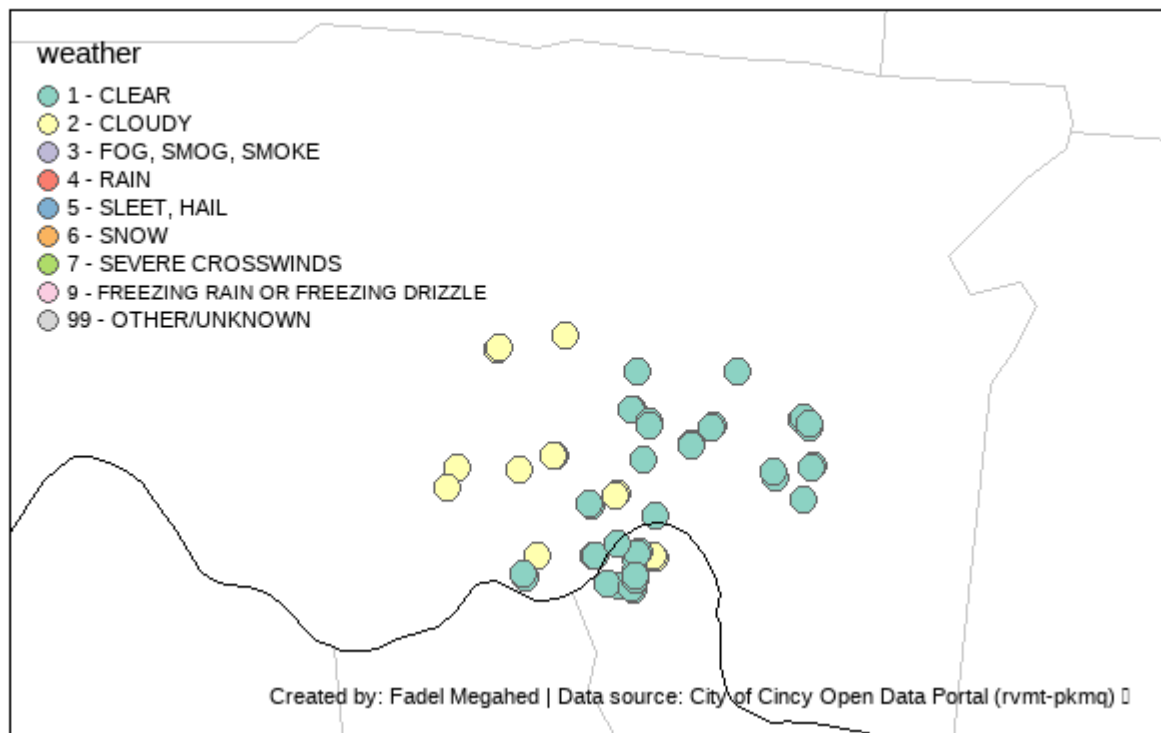
Proportional Symbols Map

The NYT's U.S. Coverage of 2009 Super Bowl
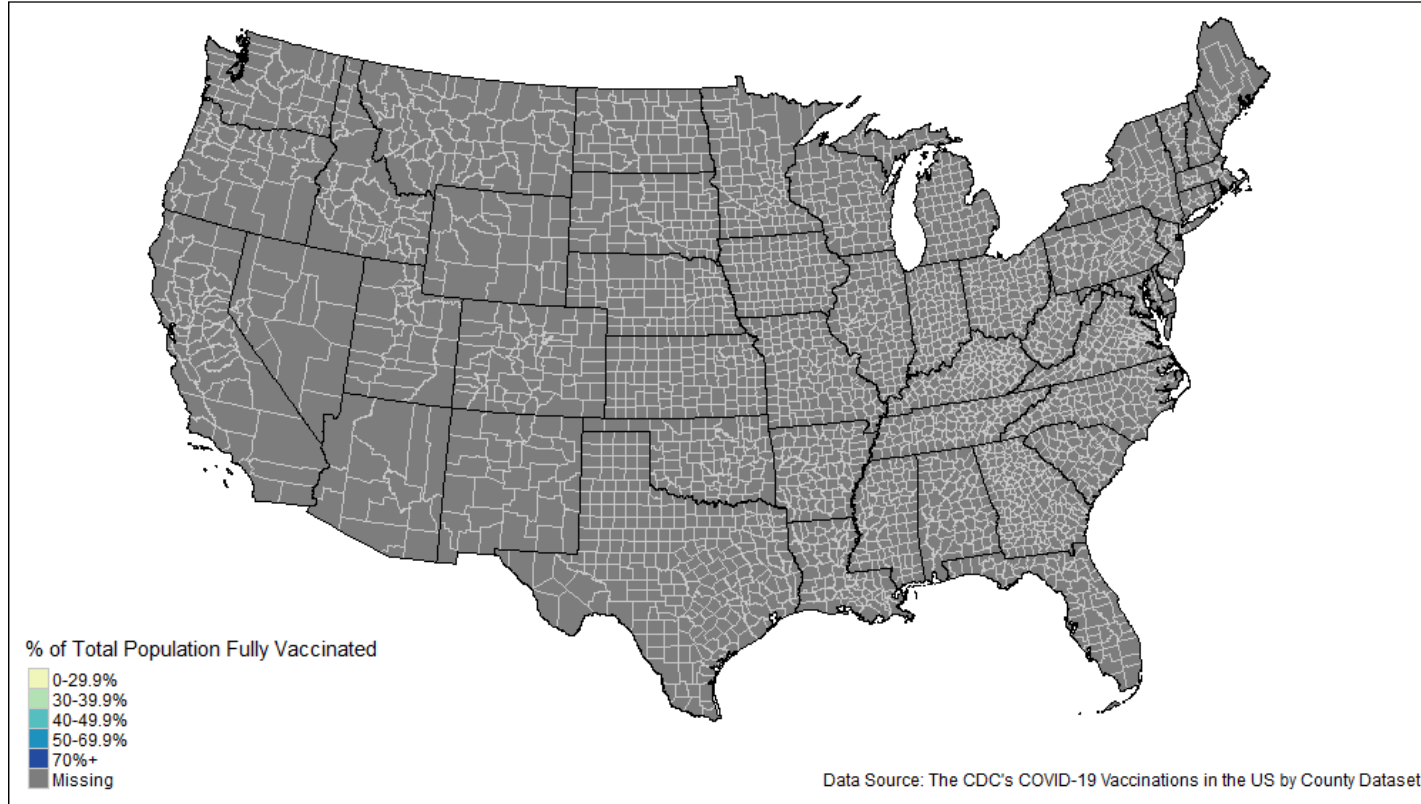
Spatiotemporal Maps

Spatiotemporal Maps

A visualization of car crashes in the Cincinnati metro area
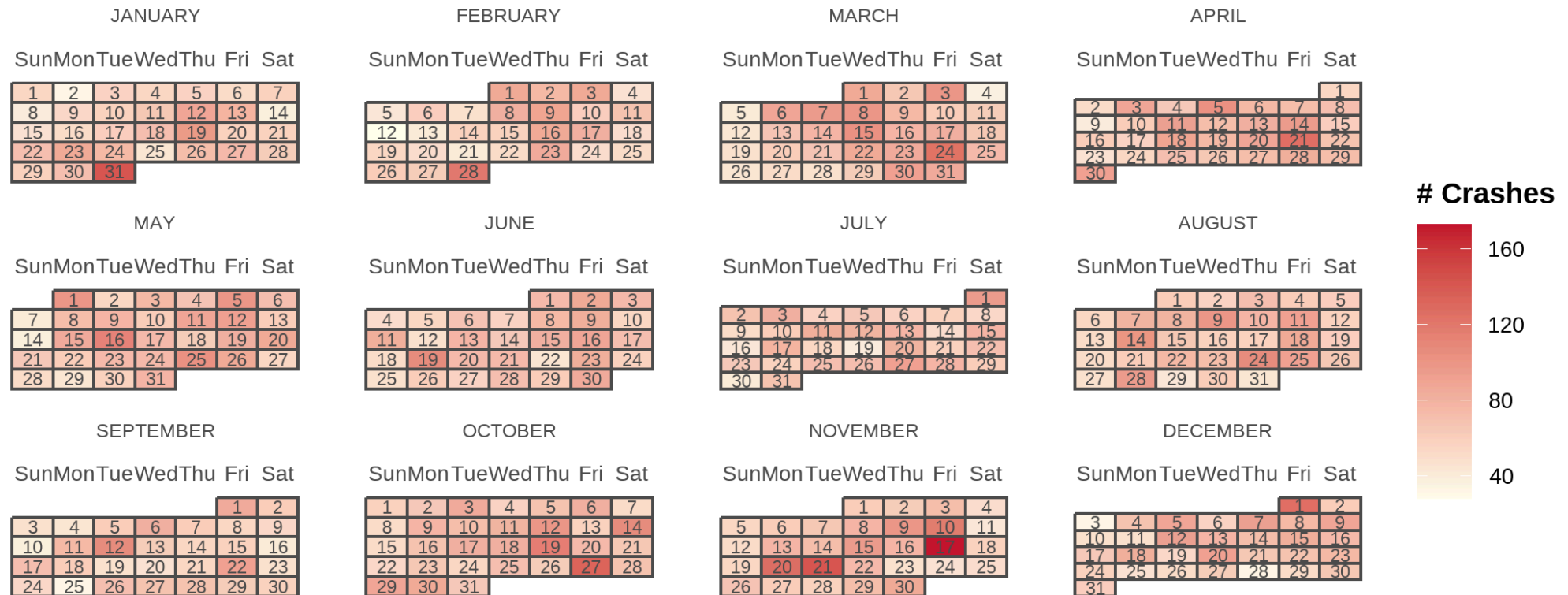
Spatiotemporal Maps

Software Demo

Exploring the Cincy Crashes Dataset

Let us use Tableau to explore the cincy_2023_crashes.csv, where we will create the following:

- A calculated field titled `unique_count`

- A plot of the total number of unique crashes per day

- A table of number of unique crashes by week day

- A table of number of unique crashes by week day

- An animated symbols map

Bonus: A Calendar Plot in PowerBI

Let us use ® inside Power BI to create this based on cincy_daily_crashes.csv.

Created by: Fadel Megahed | Data source: City of Cincy Open Data Portal (rvmt-pkmq)

Recap

Summary of Main Points

- Explain the different types of spatial plots

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