

INTRODUCTION TO TABLEAU DATA VISUALIZATION SOFTWARE

Hawai'i Data Science Institute: Data Visualization Workshop

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WHY TABLEAU?

- ▶ Graphical User Interface (GUI)
- ▶ Used predominately in private industry and public service organizations
- ▶ Great for dashboards
 - ▶ Most state government COVID dashboards are made in Tableau
- ▶ And... free for students ☺

WHAT CAN TABLEAU DO?

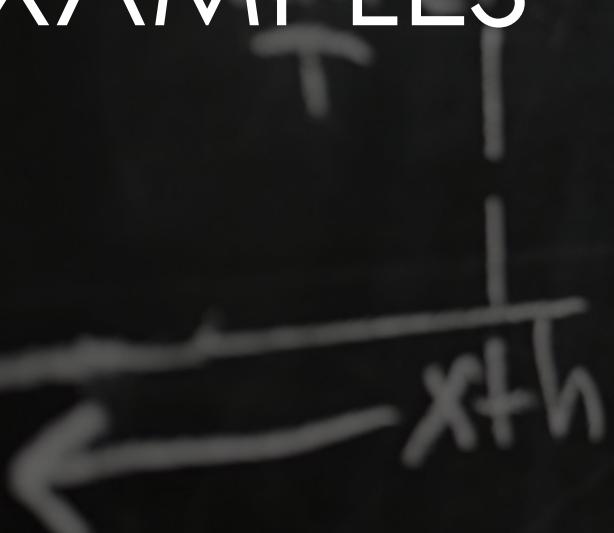
- ▶ Static graphs, charts, and tables
 - ▶ Mapping overlayed with line charts or shape files
 - ▶ Interactive dashboards that display changes to existing graphs and charts simultaneously
-
- ▶ Tableau Website: <https://www.tableau.com/>
 - ▶ Good Tableau Tutorial (Basic graphs and dashboarding)
 - ▶ <https://www.youtube.com/watch?v=TPMIZxRRaBQ>

EXAMPLES

$$y = g(x)$$

Second Lines

Tangent



$$f'(x) = \lim_{h \rightarrow 0} \frac{f(x+h) - f(x)}{h}$$

$$f'(x) = \lim_{h \rightarrow 0} \frac{(x+h)^2 - x^2}{h}$$

$$= \lim_{h \rightarrow 0} \frac{x^2 + 2xh + h^2 - x^2}{h}$$

$$= \lim_{h \rightarrow 0} \frac{2xh + h^2}{h}$$



Data Analytics <

aglanduse_2020

Search

Tables

Crops 2020

Island

Measure Names

Acreage

@ Geometry

Shape Area

Shape Leng

aglanduse_2020.shp (Count)

@ Latitude (generated)

@ Longitude (generated)

Measure Values

Pages

Columns

Longitude (generate..)

Rows

Latitude (generated)

Filters

Crops 2020

Marks

Automatic

Color

Size

Label

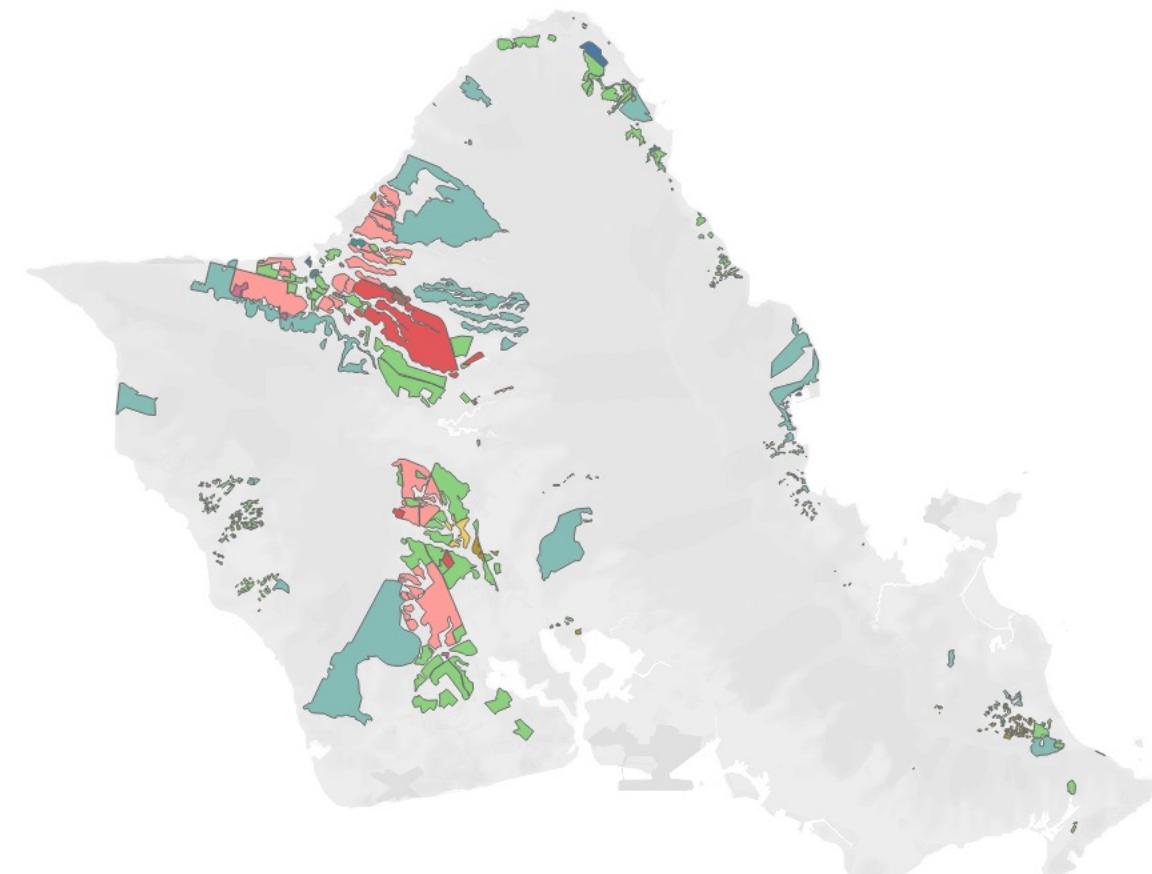
Detail

Tooltip

Crops 2020

COLLECT(Geo..)

Sheet 1



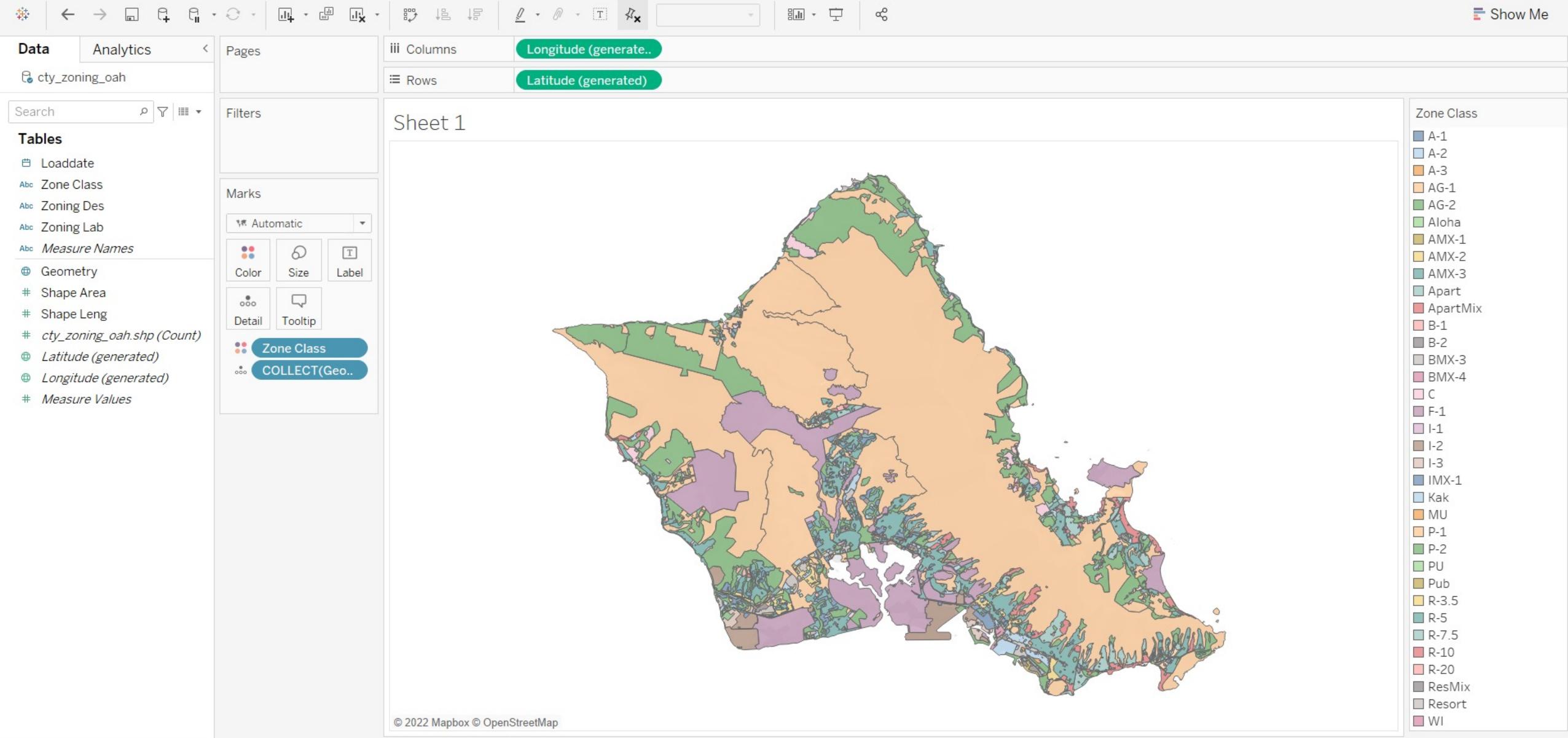
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Crops 2020

- (All)
- Aquaculture
- Banana
- Coffee
- Commercial Forestry
- Dairy
- Diversified Crop
- Flowers / Foliage / Lanai
- Macadamia Nuts
- Papaya
- Pasture
- Pineapple
- Seed Production
- Sugar
- Taro
- Tropical Fruits

Crops 2020

- | |
|---------------------------|
| Aquaculture |
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Dashboard

Layout

Default
Phone

Device Preview

Size

PowerPoint (1600 x 900)

Sheets

Molokai Airport...

Objects

- Horizontal
- Blank
- Vertical
- Navigation
- Text
- Download
- Image
- Extension
- Web Page
- Ask Data

Tiled

Floating

 Show dashboard title

Moloka'i Airport (MKK) Flight Network Map

Departures | Carrying: All | Carrier(s): Southern Airways Express dba Mokulele

Date Range
1/1/2021 8/1/2021

Arrivals/Departures

- (All)
- Arrivals
- Departures

Carrying

- (All)
- Freight
- Passengers

Carrier

- (All)
- Empire Airline...
- Federal Expres...
- Southern Airw...

Flights

0 6,400

Flights

0
2,000
4,000
6,400

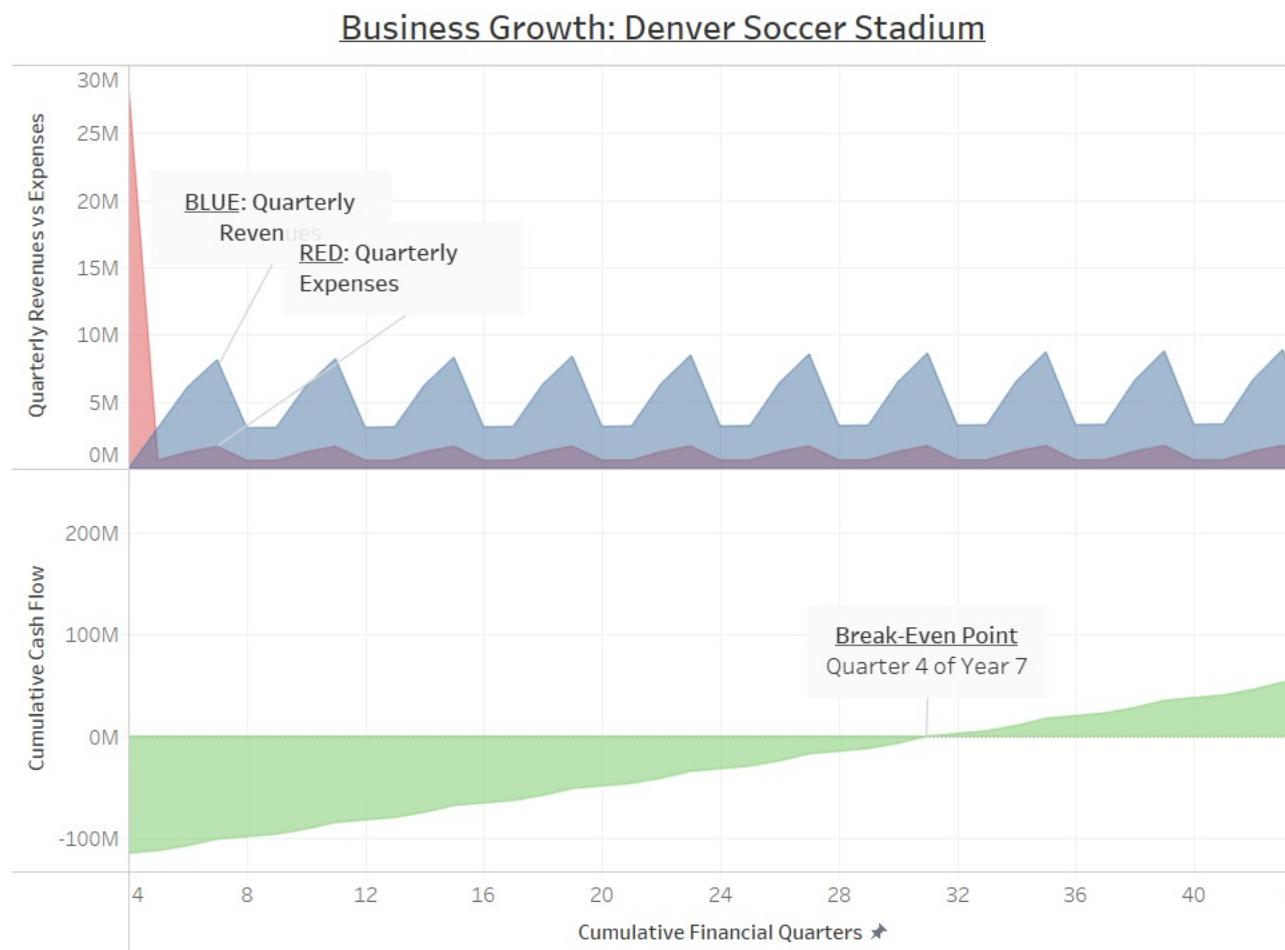


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Data: T-100 Databank 28 Domestic Segments

URL: <https://www.bts.gov/browse-statistical-products-and-data/bts-publications/data-bank-28ds-t-100-domestic-segment-data>





EBGN 553: Project Management
Business Plan - Downtown Denver Soccer Stadium

Note: Groups of 4 indicate 1 financial year. (Ex: Quarter 8 indicates end of the fourth quarter of year 1, Quarter 12 indicated the end of the fourth quarter of y..)

BASIC TABLEAU DEMONSTRATION



SALARY DATA FOR 2018 MLS PLAYERS

via FIFA 18 Video Game

TELLING A STORY THROUGH DATA: WWII THOR DATASET DEMONSTRATION

THEATER HISTORY OF OPERATIONS REPORTS (THOR)

- ▶ Project led by Air Force Colonel Jenns Robertson
- ▶ Database of all bombs the U.S. and allied militaries have dropped since WWI
 - ▶ ~1,000 reports from WWI
 - ▶ ~10,000 reports from WWII
 - ▶ ~1,000,000 reports from the Vietnam War
- ▶ Used to help identify unexploded ordinances in Cambodia, Laos, and Vietnam
- ▶ Sources and Other Information
 - ▶ “A Database of Every Bomb the U.S. Military Has Dropped Since WWI” by Megan Garber of *The Atlantic*
 - ▶ <https://www.theatlantic.com/technology/archive/2012/08/a-database-of-every-bomb-the-us-military-has-dropped-since-wwi/260640/>
 - ▶ “Bomb Database Useful for Past, Present Wars” by Bryan Bender of *The Boston Globe*
 - ▶ <https://www.bostonglobe.com/news/nation/2012/07/29/century-data-and-destruction-chronicled-air-force-officer/5m2HK2CP9UcwwJzMhtdQOO/story.html>

The Atlantic

A Database of Every Bomb the U.S. Military Has Dropped Since WWI

By Megan Garber

AUGUST 2, 2012

SHARE ▾

The history of war, as told from the perspective of the weapons themselves

A photograph showing two military aircraft, possibly F/A-18 Hornets, flying low over a landscape. In the foreground, there is a large, intense fire with bright orange and yellow flames and thick black smoke billowing upwards. The sky is clear and blue.