

Intro to Data Visualization

With Tableau

Studied Business
Administration

Worked as Sales,
Account Manager,
Product Manager
(mainly in ad tech)

Now: Data Analyst at
TravelPerk

ESADE



2009-2014

2014-2019

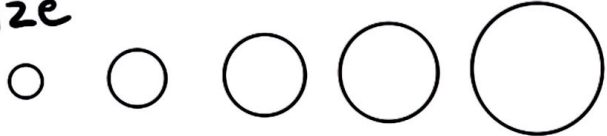





2019

Data Visualization Fundamentals

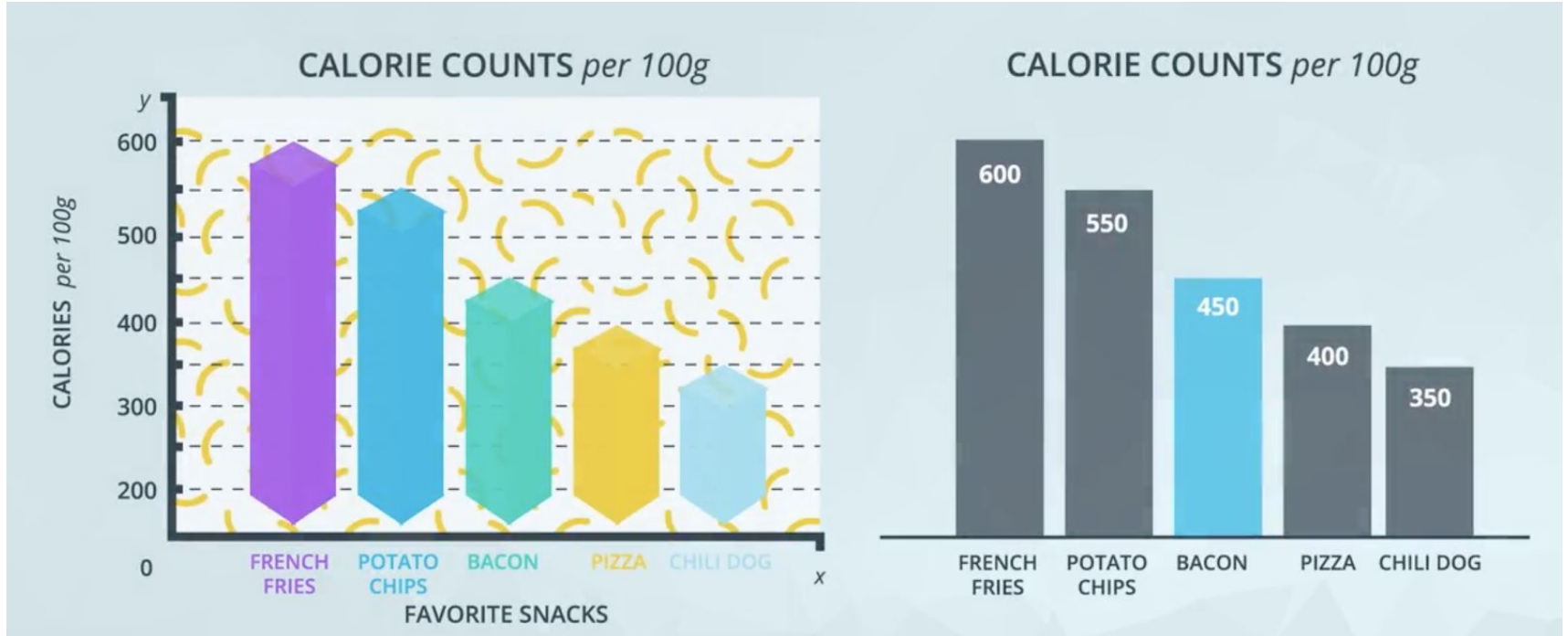
*"A picture is worth a
thousand words"*

English proverb

Visual Encodings

Ordered Data	Nominal Data
<p>Size</p> 	<p>Color Hue</p> 
<p>Orientation</p> 	<p>Shape</p> 
<p>Color Saturation</p> 	<p>Texture</p> 

Data-Ink Ratio



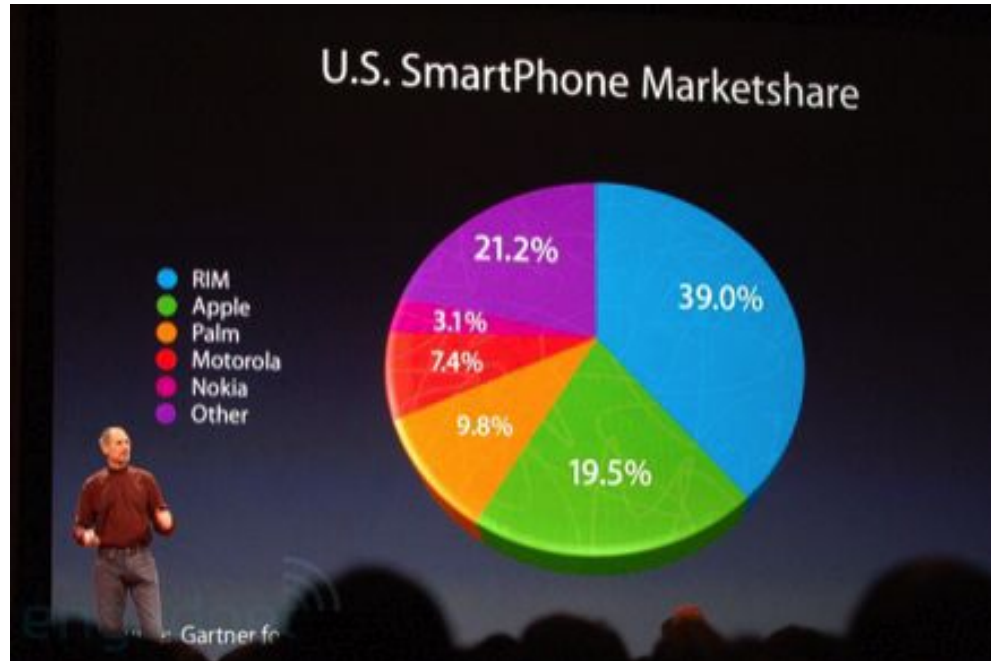
Data-Ink Ratio

$$\text{Data-ink ratio} = \frac{\text{Data-ink}}{\text{Total ink used to print the graphic}}$$

Goal: maximize data-ink ratio and erase as much chart junk as possible.

Data visualization bad practices

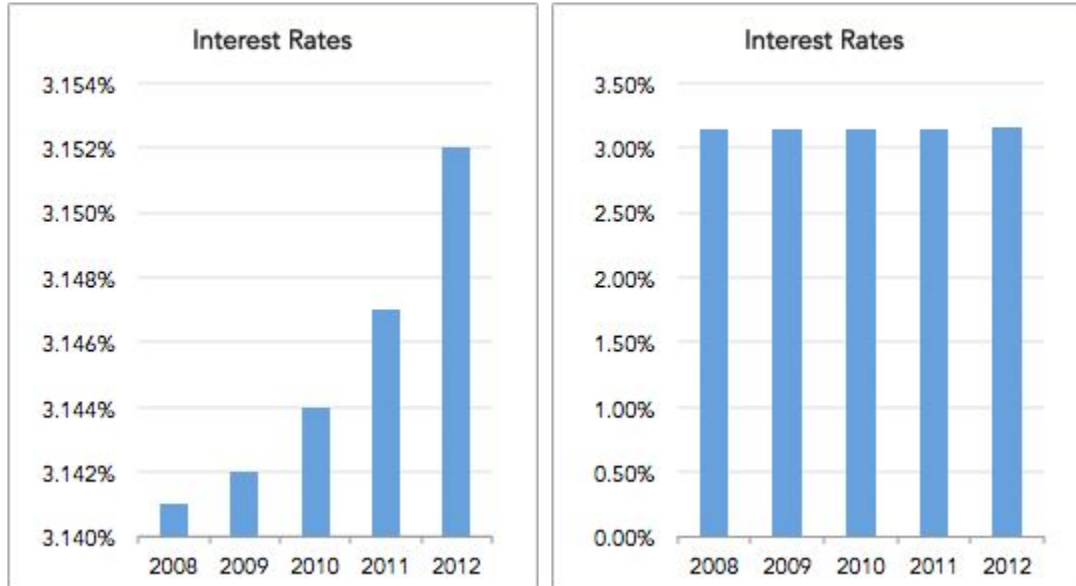
3D visualizations



Data visualization bad practices

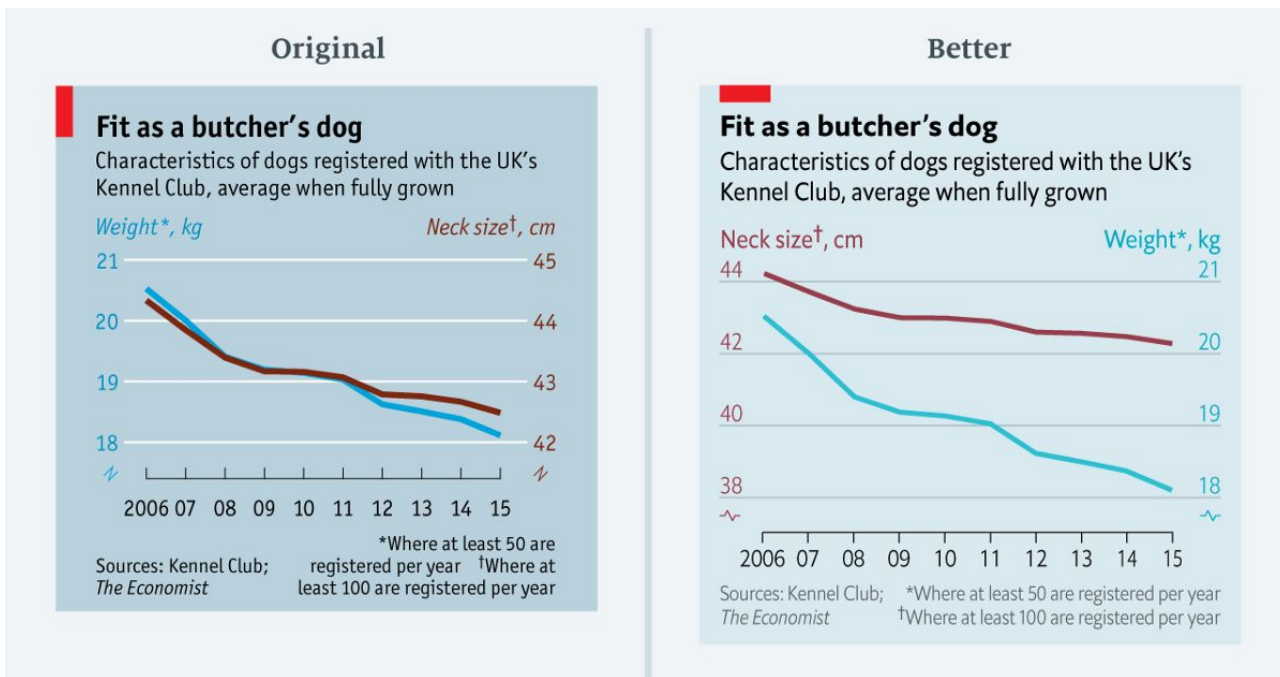
Truncating axes

Same Data, Different Y-Axis



Data visualization bad practices

Dual axes and cherry-picking scales



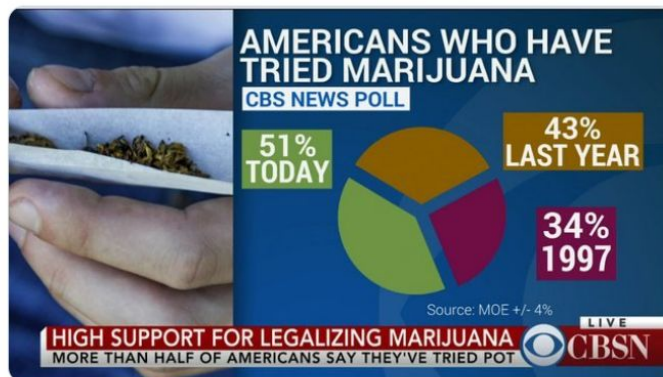
Data visualization bad practices



Dorsa Amir
@DorsaAmir

Easily the funniest data viz I've ever seen.

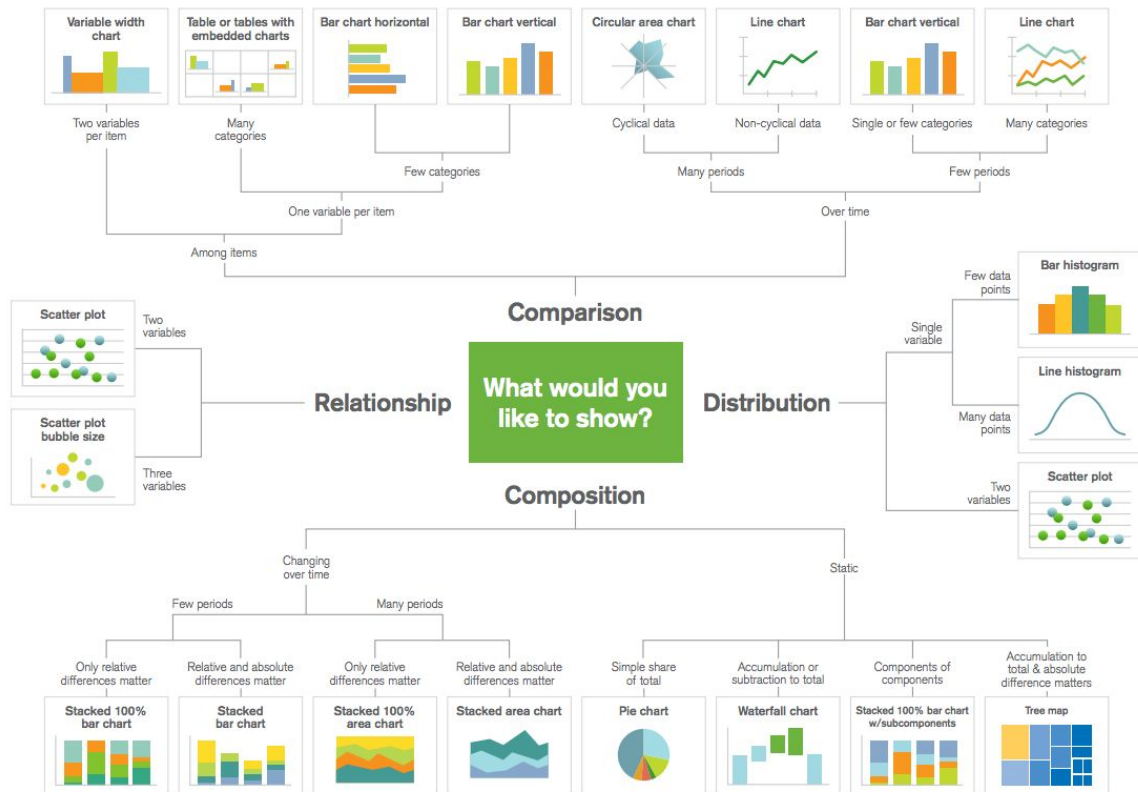
- (1) First of all, it's a pie chart.
- (2) The total is greater than 100%.
- (3) The relevant categories are today, last year, and... the year 1997?
- (4) The margin of error (MOE) is listed as the source.



1:06 AM · Apr 18, 2019 · [Twitter Web Client](#)

8.9K Retweets 33.9K Likes

Choice of Graph Type



Business Intelligence Tools

Most used BI tools



Tableau Public vs Tableau Desktop

Public

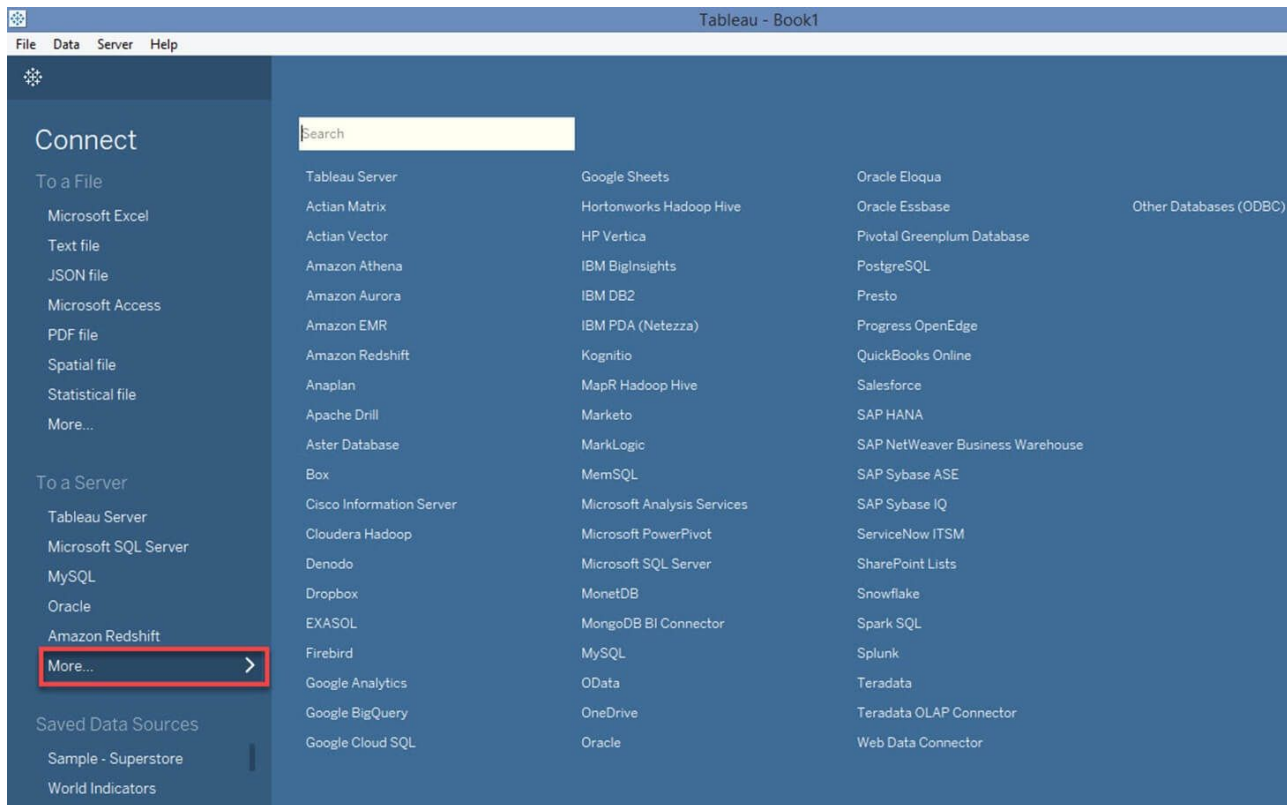
- You can only store your work online
- Can be connected with a limited number of data sources
- Used mostly for education
- Free

Desktop

- You can store your work locally (on your computer)
- Can connect to more data sources
- Used mostly for work
- Paid

Tableau Fundamentals

Connecting to Data Source



Data Types

Data type icons in Tableau





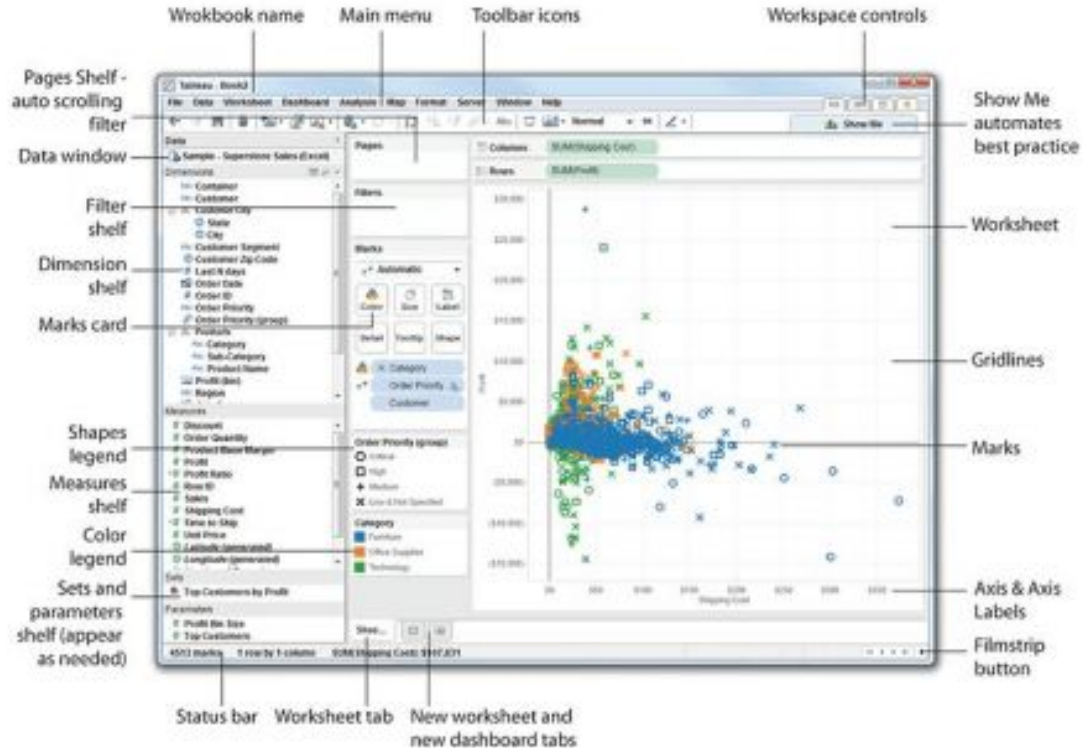
Icon	Data type
Abc	<i>Text (string) values</i>
	<i>Date values</i>
	<i>Date & Time values</i>
	<i>Numerical values</i>
T F	<i>Boolean values (relational only)</i>
	<i>Geographic values (used with maps)</i>

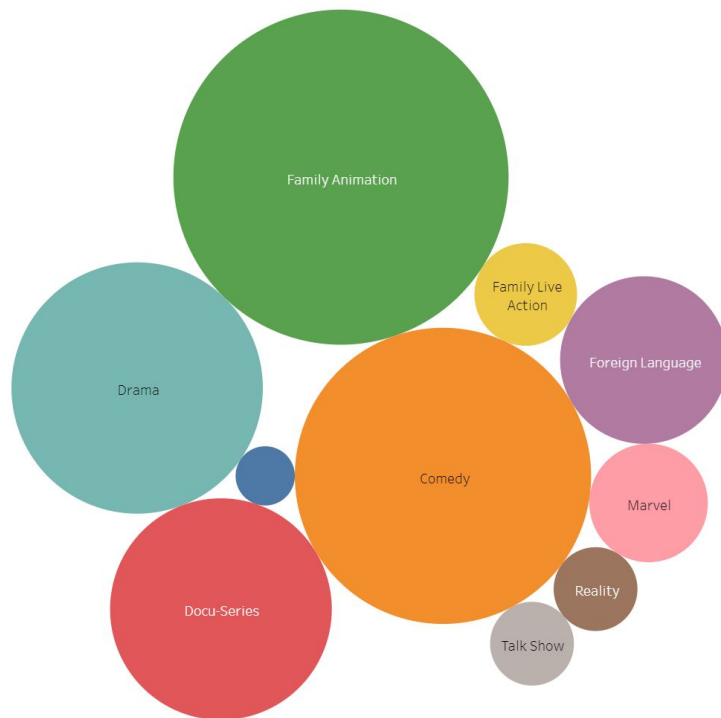
Tableau Workspace



Building Charts in Tableau

Bubble Charts

Netflix Genres

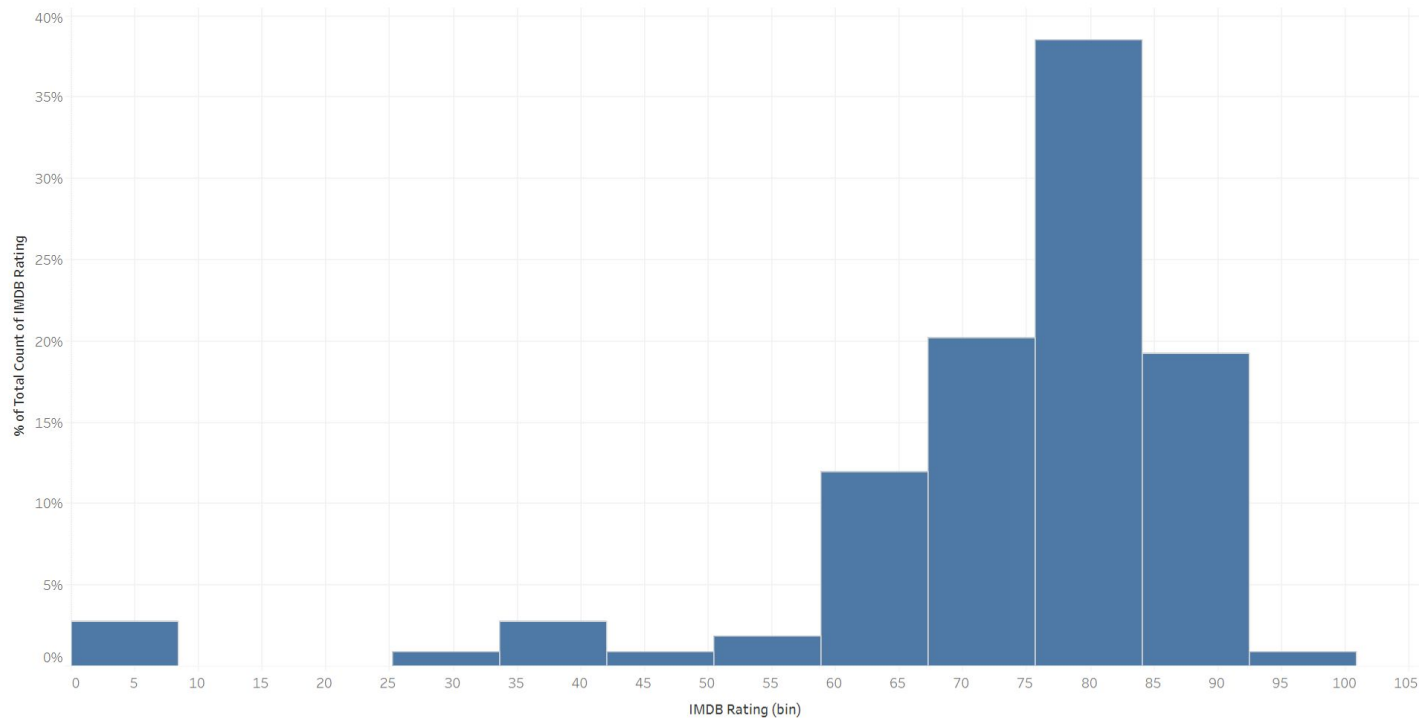


Major Genre

- Animation
- Comedy
- Docu-Series
- Drama
- Family Animation
- Family Live Action
- Foreign Language
- Marvel
- Reality
- Talk Show

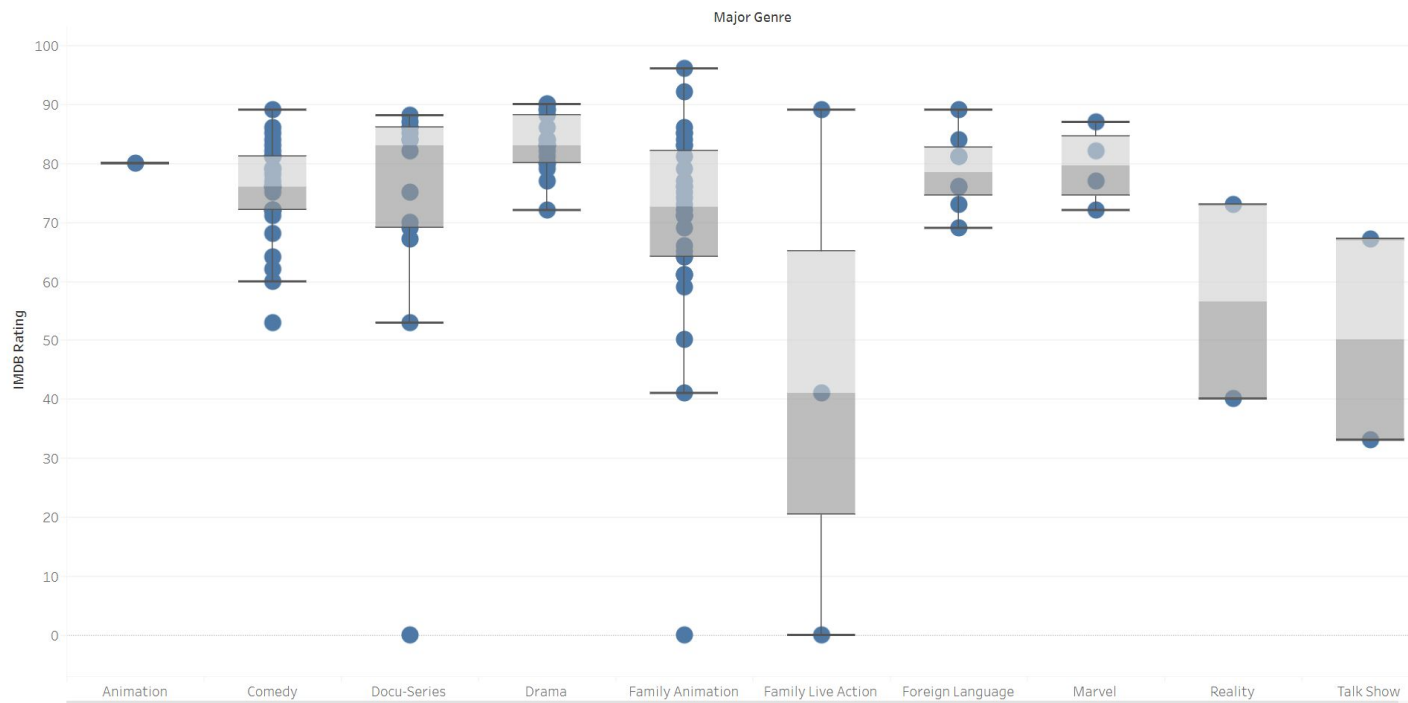
Histograms

IMDB Ratings Distribution



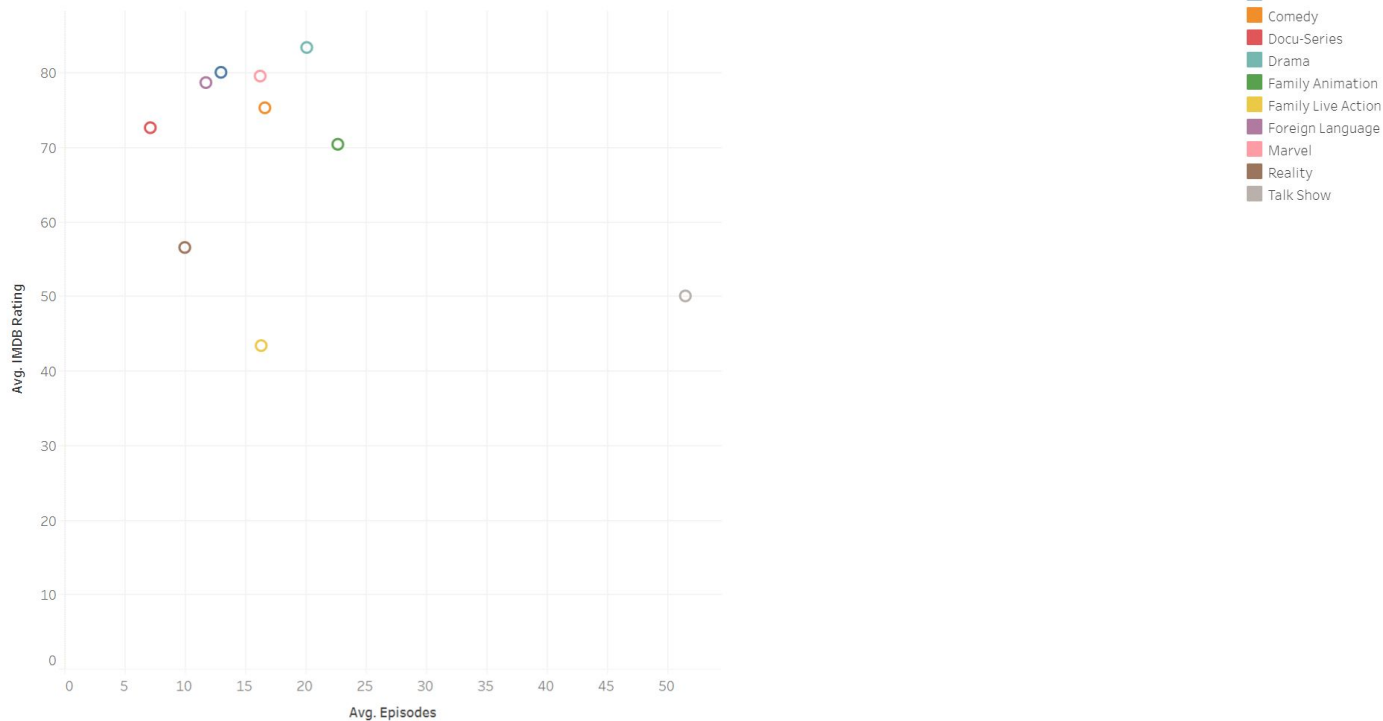
Boxplots

IMBD Rating Distribution by Genre



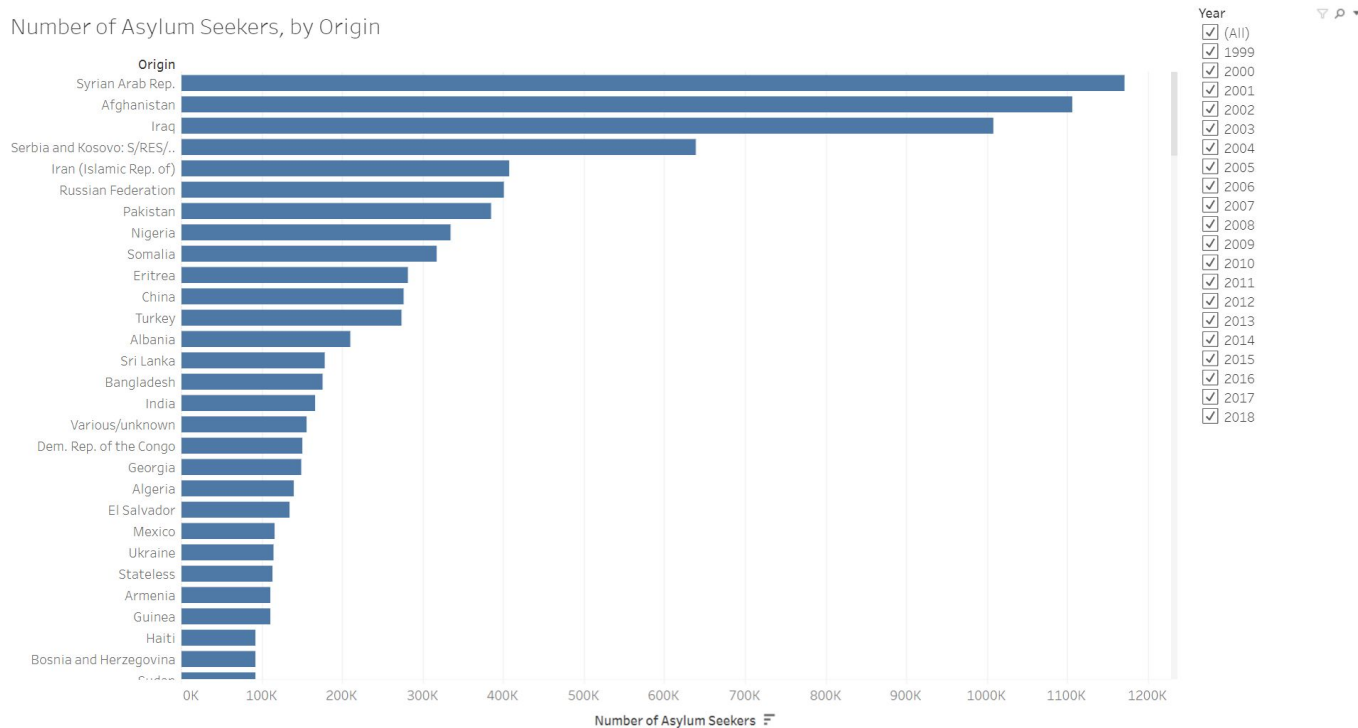
Scatterplots

IMDB Rating vs Number of Episodes, by Genre



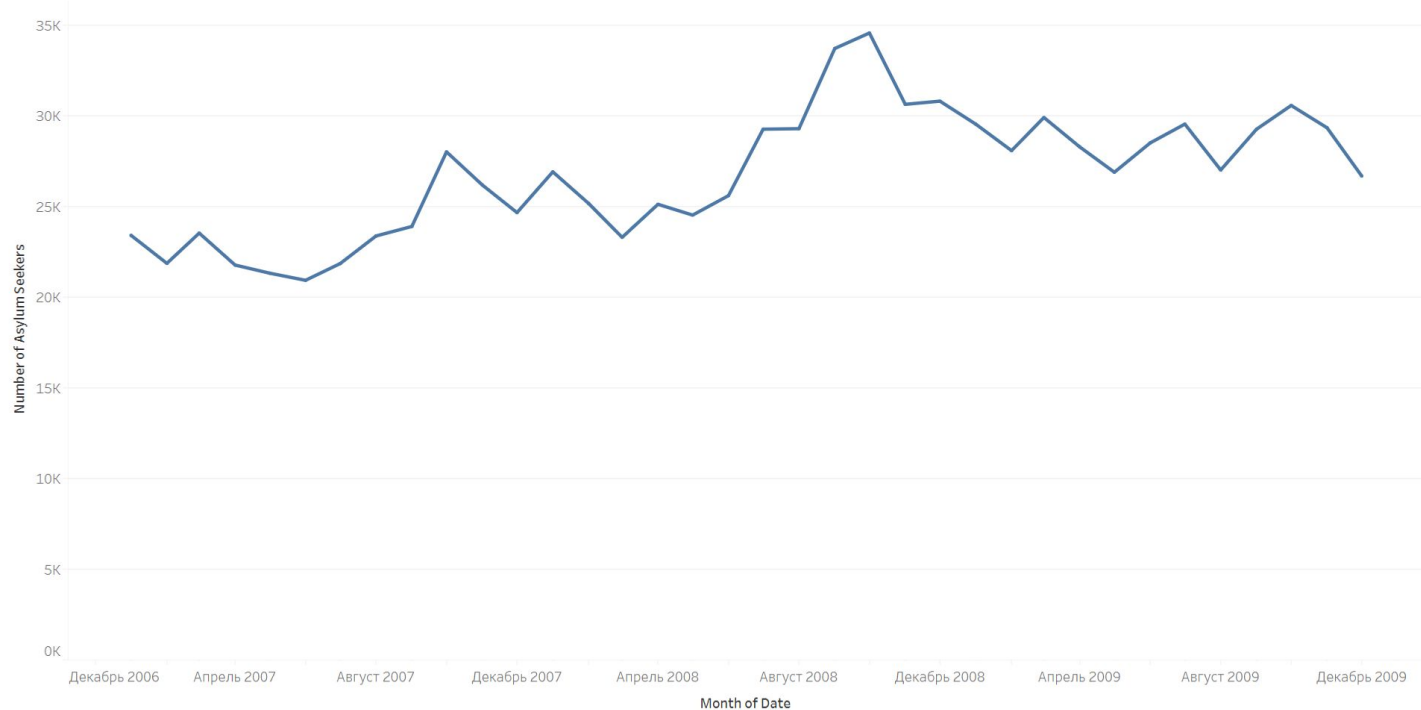
Bar Plots

Number of Asylum Seekers, by Origin



Line Charts

Number of Asylum Seekers by Month



Geospatial data in Tableau

Asylum seekers by country of asylum

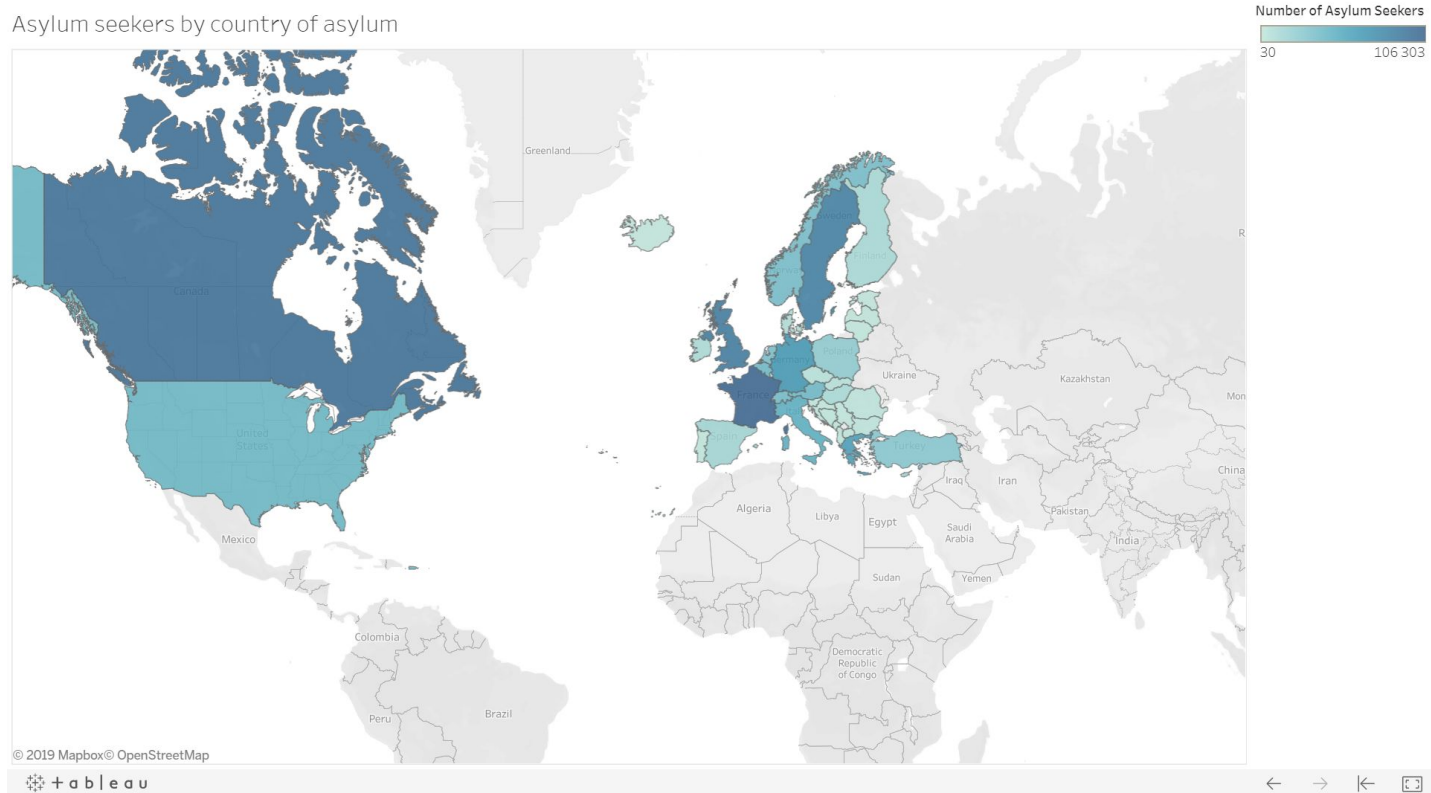
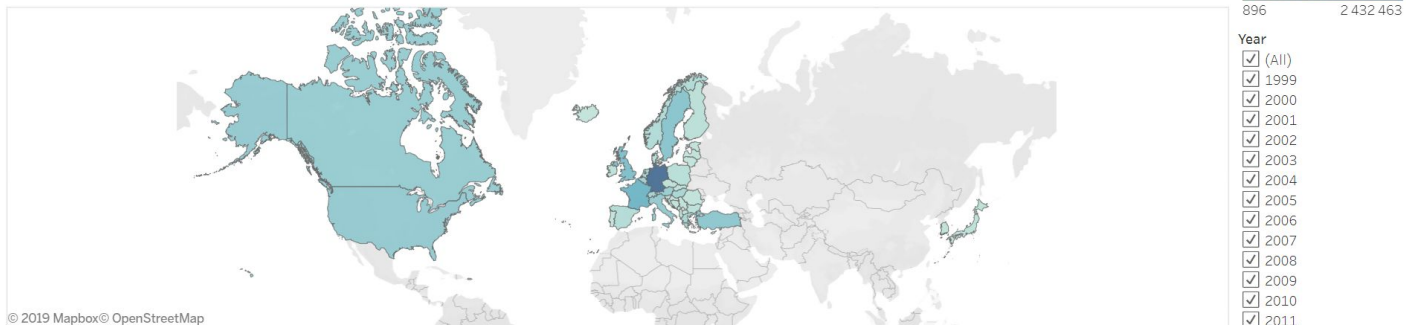
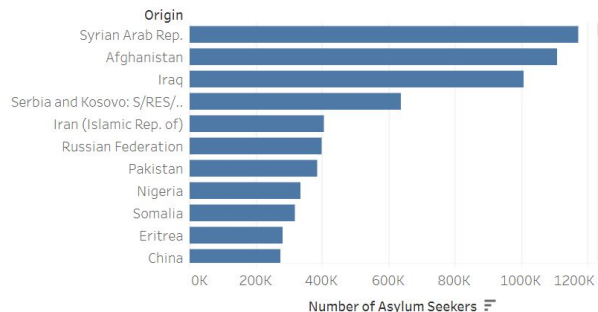


Tableau Dashboards & Stories

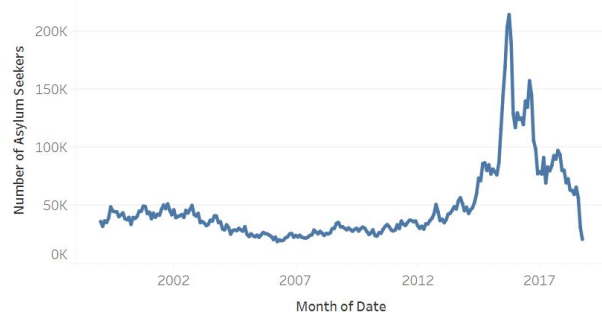
Asylum seekers by country of asylum



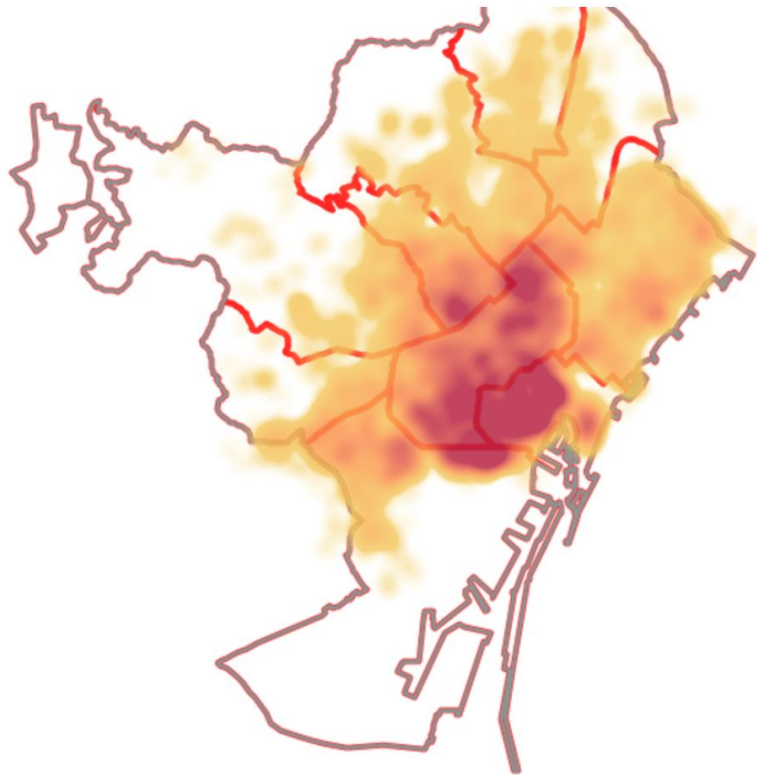
Number of Asylum Seekers, by Origin



Number of Asylum Seekers by Month



Local Maps & Density Maps



- What geographical location does this map correspond to?
- What do you think this graph represents?

Tableau Practice

Tableau Practice

Dataset: [OECD Meat Consumption](#) combined with GDP per country

Task: Build an interactive dashboard that answers the following questions:

Q1: What is the trend of consumption of each type of meat per capita over years for each country? (use meat_per_cap file)

Q2: Which countries consume the most and the least amount of meat per capita, given a specific year (and meat type)? (use meat_per_cap file)

Q3: Is there any relationship between meat consumption per capita and GDP per capita? (use meat_gdp file)

Additional Resources

- [Video Visualization of Countries Wealth vs Life Expectancy](#)
- <https://datavizcatalogue.com>
- [Gapminder](#)
- [Best Data Visualization Projects of 2018](#)
- [Learning from errors in data our visualizations by The Economist](#)
- [Choosing graph type mindmap](#)
- [The Pudding](#) - Data Journalism