Power BI Exercises Part 1

1 Exercise 1: Skyscrapers use cases

Dataset	Skyscrapers	
Visual	• Slicer • Matrix	
DAX	UseType	(depending), AverageHeight

Continuing on the skyscrapers dataset we're going to split the use cases from the buildings into three different use cases. We also want to create a column which gives an indication if one of the use cases is as an office or not. We wont to use the values 'Office, etc.' and 'Other'.

We're going to create the following visuals.

Use Type

Office, etc. 33.33%

Other 66.67%

Country	Average Height
Canada	429.43
China	451.28
Germany	368.00
Iran	435.00
Japan	634.00
Kazakhstan	395.60
Kuwait	393.00
Latvia	368.50
Malaysia	441.67
Romania	351.50
Russia	455.00
Saudi Arabia	601.00
Slovenia	360.00
South Korea	555.65
Spain	356.00
Sri Lanka	350.00
Taiwan	443.60
Ukraine	385.00
United Arab Emirates	469.38
United States	426.58
Uzbekistan	362.45

2 Exercise 2: Skyscraper Overview
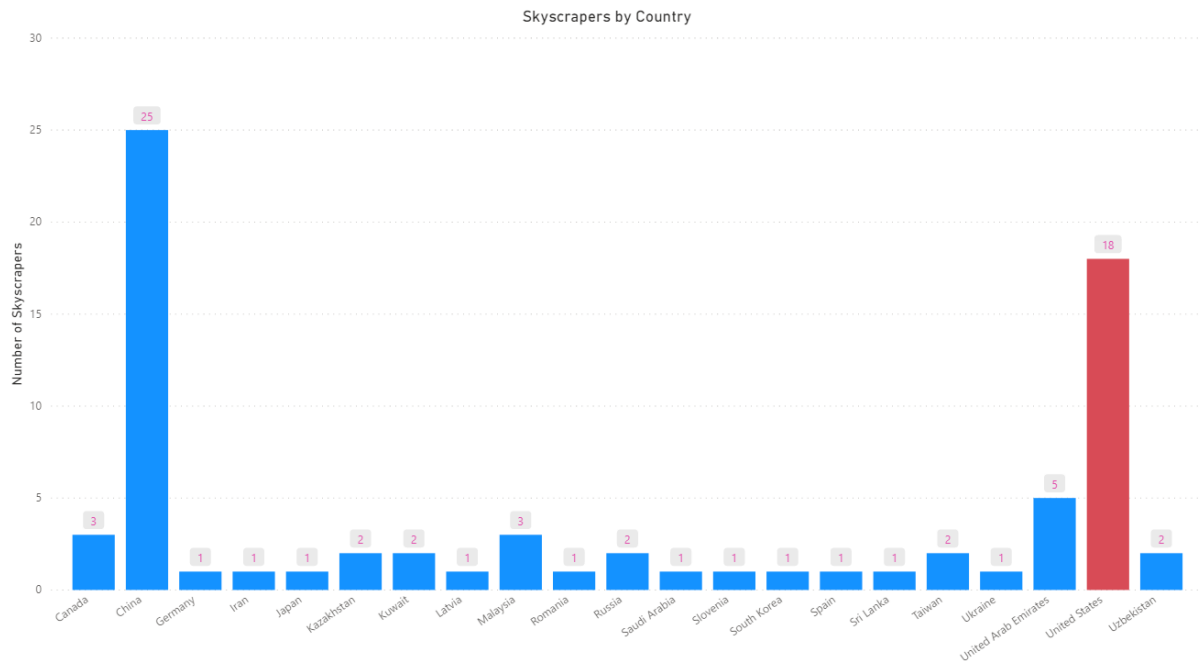
Dataset	Skyscraper
Visual	• Bar Chart • Bar Chart with conditional formatting • Bar Chart with Top • Map
DAX	NumberOfSkyscrapers, HeightAmount

The dataset contains an overview of skyscrapers around the world. Import the dataset into Power BI and split the location column into country and city. Make sure to not leave extra spaces.

Your first visual is going to be a simple bar chart with a representation of the number of skyscrapers by country. Make sure to use an explicit measure. To chart uses data labels and a fixed y-axis.


Skyscrapers by Country
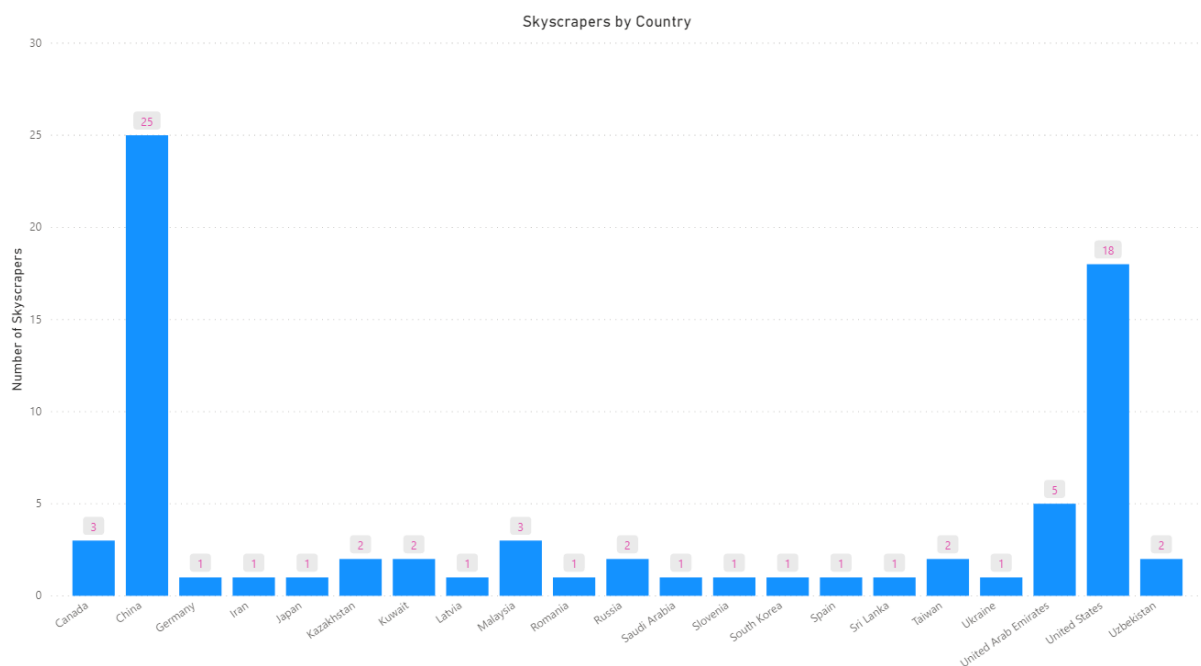
With conditional formatting we're going to highlight the United States on this bar chart. This can be done multiple ways.

To create a clearer overview of the top countries we're going to apply a visual filter on this bar chart so that it represents the top 5 countries, **based on height** not number of skyscrapers.
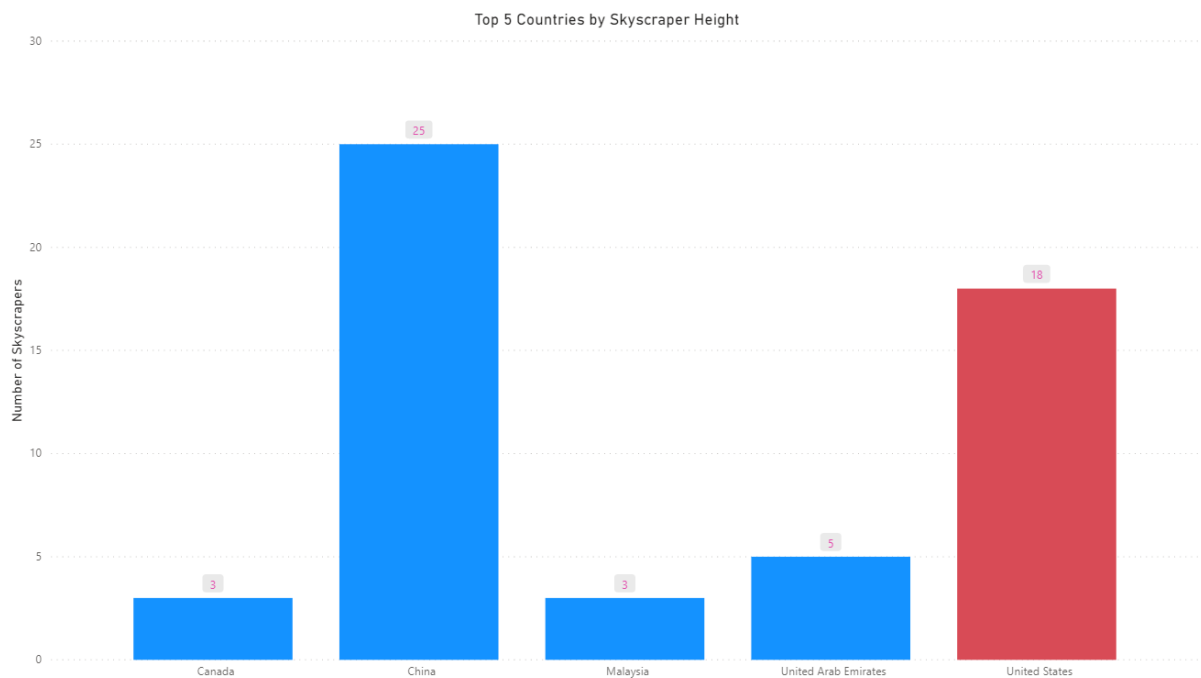
To round of this exercise, since the dataset contains geographical locations, we're also going to produce a map visual. On this visual we're going to represent the max height per city.
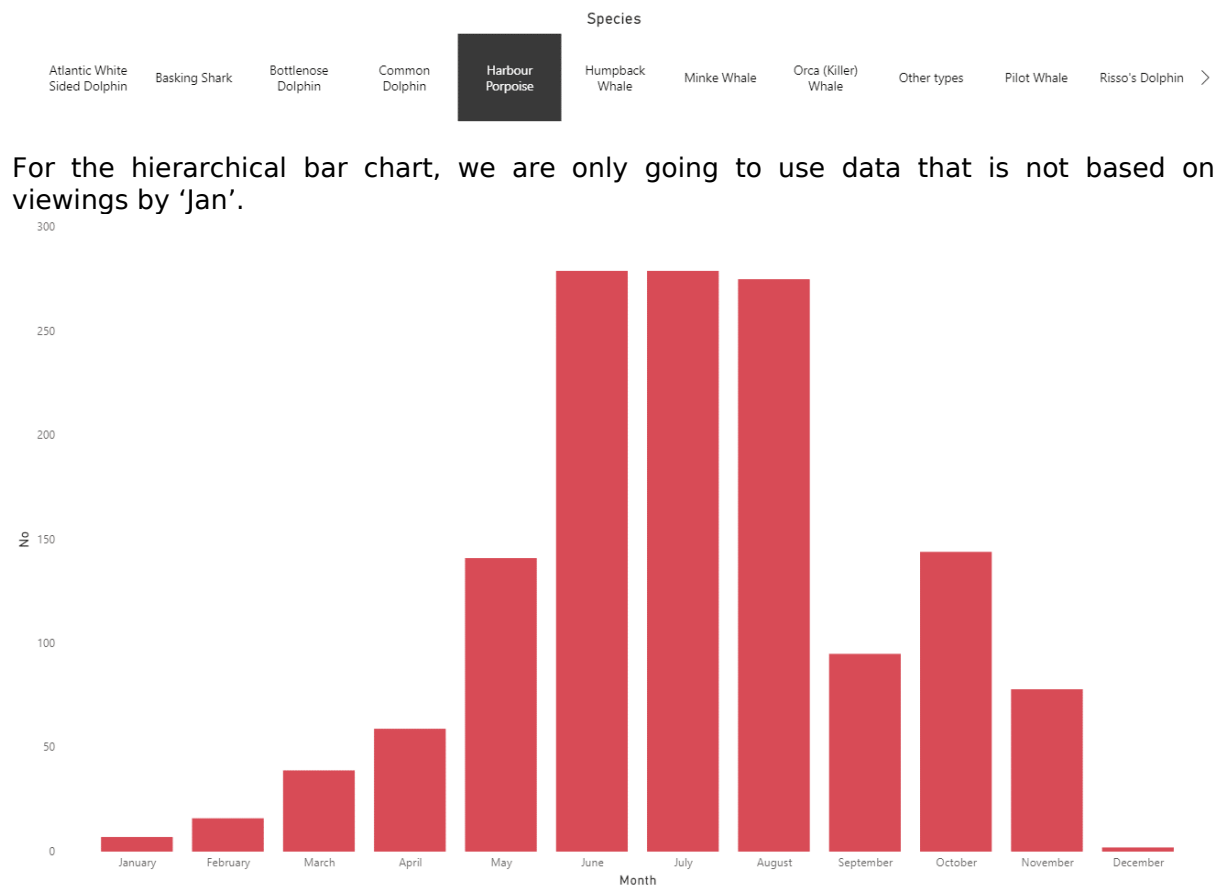
Skyscrapers by Country
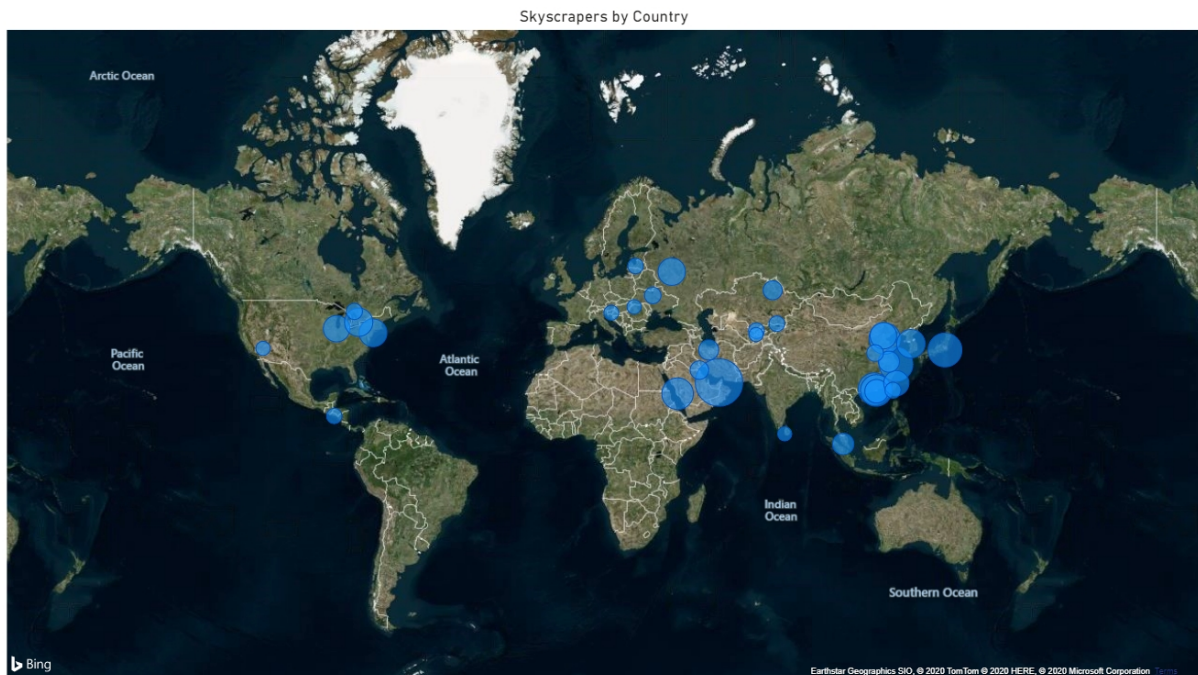
3 Exercise 3: Whale sightings

Dataset	Whales
Visual	• Horizontal Slicer • Bar Chart with hierarchy
DAX	

This dataset contains data for the sightings of whales and tortoises from the Whale and Dolphin Trust.
We're going to create a horizontal slicer for species.

For the hierarchical bar chart, we are only going to use data that is not based on viewings by 'Jan'.

Here we can see the chart based on aggregated result on month level.

4 Exercise 4: Crime Statistics

Dataset	Crime Stats 2015-2016
Visual	• Slicers • Text Box • Bar Chart with conditional formatting
DAX	

This dataset contains information about the crime statistics in the U.K. in the year 2015-2016. But when we're looking at the dataset it contains a number of columns we don't need. So we're going to remove the following columns:

- Financial Year
- Financial Quarter
- Offense Code

For the exercise we're going to recreate following report.
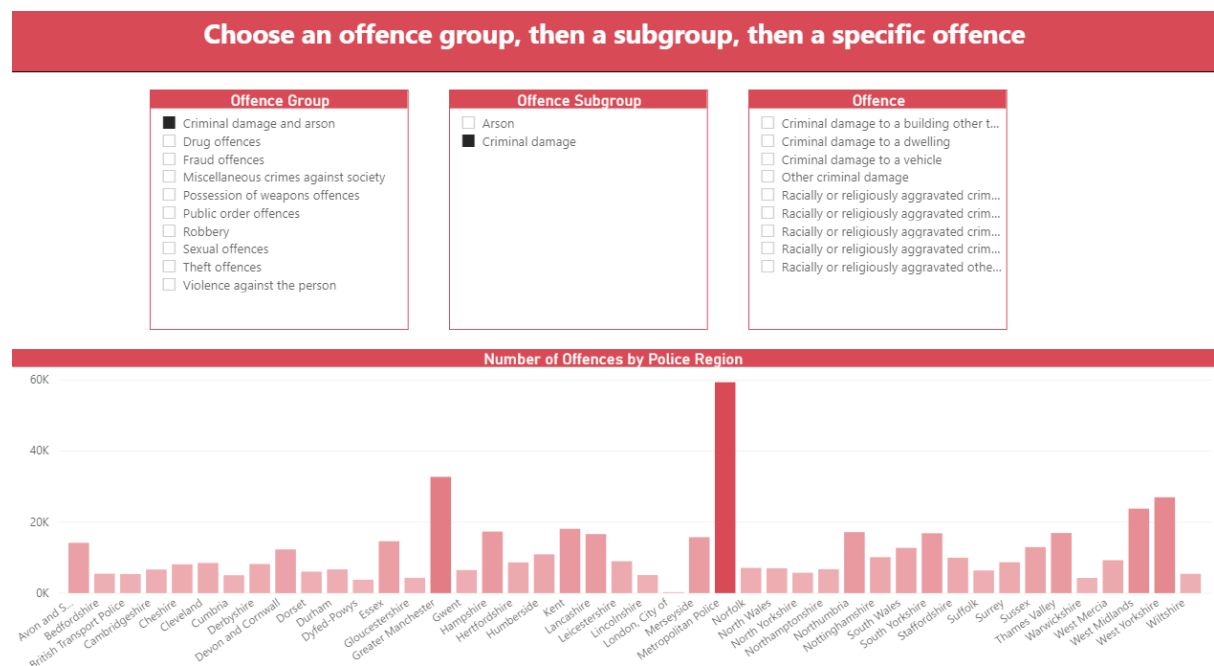
It's important to note that the child slicers don't effect the parent slicers, but the parent slicers do have a filtering effect on the child slicers. The bar chart has a conditional formatting for the data colors and uses solid gridlines.

5 Exercise 5: Most Watched Shows

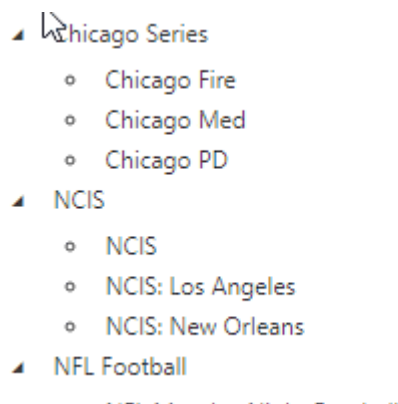| Dataset	Most Viewed Shows 2019
Visual	• 100% Stacked bar chart • 100% Stacked bar chart (grouped)
DAX	

This dataset contains information about the most watched shows according to the Nielsen rating in America in 2019.

In the dataset you're going to see that the network is between brackets behind the name, we're going to split this off into a new column. We're also going to change the viewer numbers to the real value.

The first visual we're going to create is a simple stacked bar chart with the top 10 most watch series and on which network there're shown.
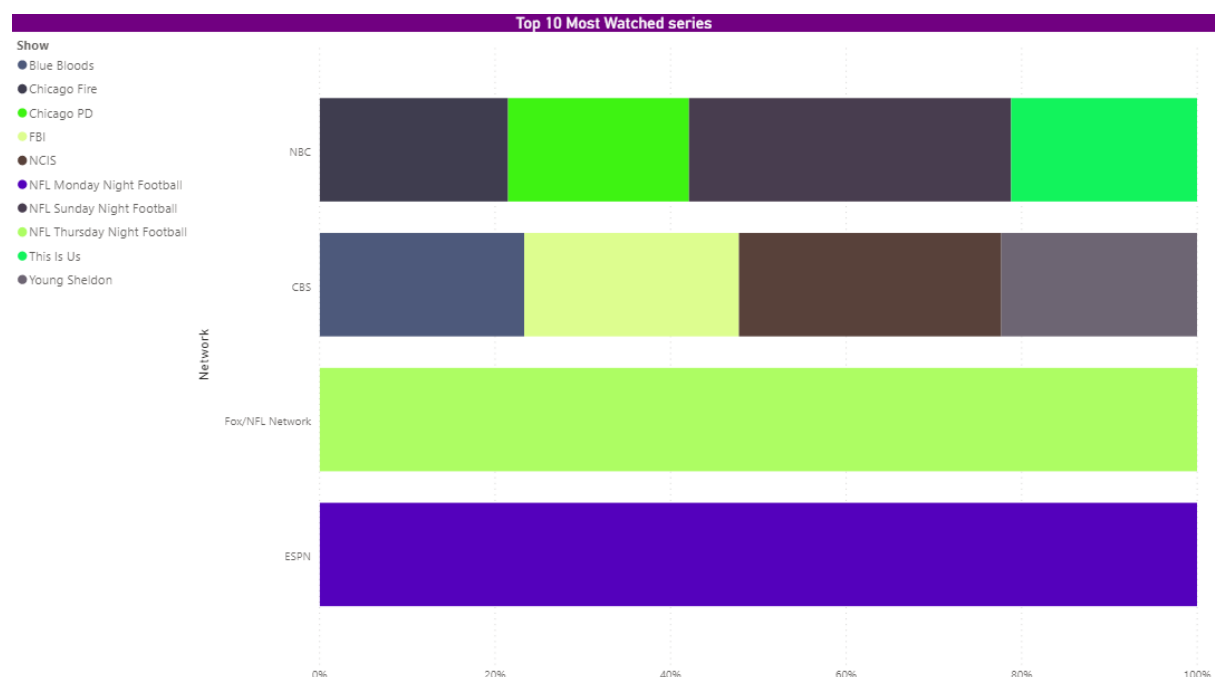
Afterwords we're going to make use of the grouping feature to group a couple of series together. To create following visual.

Top 10 Most Watched series

Show (groups)
- 🔵 Blue Bloods
- 🔵 Chicago Series
- 🟠 FBI
- 🟣 NCIS
- 🩷 NFL Football
- 🟣 This Is Us
- 🟡 Young Sheldon

Network

NBC | CBS | Fox/NFL Network | ESPN

0%   20%   40%   60%   80%   100%
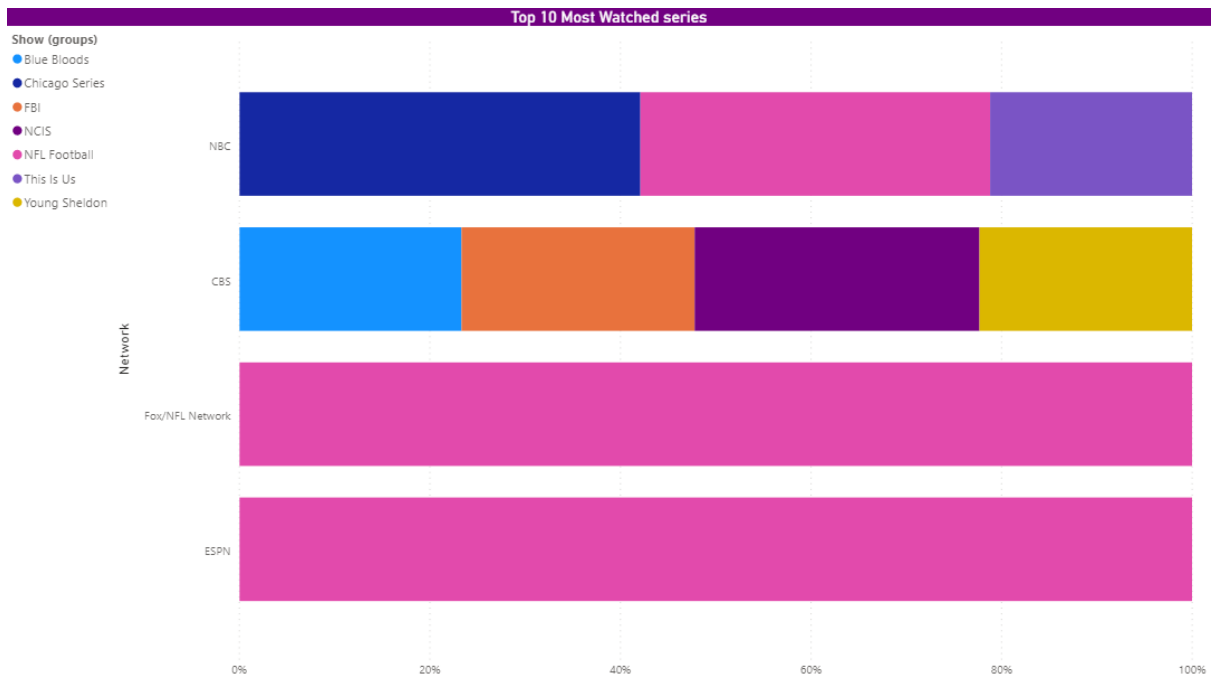
6 Exercise 6: Brexit Votes

Dataset	Votes, Region
Visual	• Matrix
DAX	

The next exercise is going to contain two datasets the first one contains all the votes that were cast in the Brexit poll and the other contains the regions in the U.K.

We're going to do a number of transformations on this dataset:

- We're going to calculate the percentages for the number of leave, remain, valid and invalid votes. Make sure to format them correctly.
- We're going to add the region code to the region table.
- We're going to create a new area table.

We're going to create a hierarchical matrix with country, region and area representing the percentages of votes in that place.

Country	Leave (%)	Remain (%)
⊟ **England**	**54.35%**	**45.65%**
⊞ **East**	**56.96%**	**43.04%**
⊞ **East Midlands**	**59.58%**	**40.42%**
⊞ **London**	**39.09%**	**60.91%**
⊞ **North East**	**59.48%**	**40.52%**
⊞ **North West**	**55.92%**	**44.08%**
⊞ **South East**	**52.17%**	**47.83%**
⊞ **South West**	**52.38%**	**47.62%**
⊞ **West Midlands**	**60.32%**	**39.68%**
⊞ **Yorkshire and The Humber**	**58.65%**	**41.35%**
⊞ **Northern Ireland**	**44.22%**	**55.78%**
⊞ **Scotland**	**39.14%**	**60.86%**
⊟ **Wales**	**53.35%**	**46.65%**
⊟ **Wales**	**53.35%**	**46.65%**
Blaenau Gwent	62.03%	37.97%
Bridgend	54.64%	45.36%
Caerphilly	57.63%	42.37%
Cardiff	39.98%	60.02%
Carmarthenshire	53.75%	46.25%
Ceredigion	45.37%	54.63%
Total	**52.99%**	**47.01%**

7 Exercise 7: Skyscrapers uses

| Dataset		Skyscraper	
Visual			
DAX	U	s eTypeOffice, AvgFloorHeight	

In exercise 2 we already worked with a dataset about skyscrapers. The following exercise will expend on this dataset. To start with we want to define extra columns to split up the main uses of buildings. At the moment this is all present in one column, use Power Query to adjust this so that there are four columns with uses.

Because a lot of this buildings are being used as office space we want to option to apply a filter so we can easily single out these buildings. To do this we're going to make a calculated column that sees if any of the four main uses is as an office building.

We're also going to make a measure that calculates the average floor height for these buildings.

As an output we're going to create the following report.

Use Type

Select all	Office, etc.	Other
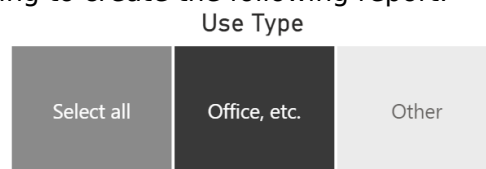
Number of Skyscrapers	
Country	**Count of Name**
China	10
United States	9
United Arab Emirates	3
Malaysia	2
Canada	1

Number of Skyscrapers	
Country	**AvgFloorHeigt**
United Arab Emirates	5.42
United States	5.28
Malaysia	5.14
Canada	4.93
China	4.91

Use Type

Select all	Office, etc.	Other

Number of Skyscrapers

Country	Count of Name
China	15
United States	9
Canada	2
Kazakhstan	2
Kuwait	2
Russia	2
Taiwan	2
United Arab Emirates	2
Uzbekistan	2
Germany	1
Iran	1
Japan	1
Latvia	1
Malaysia	1
Romania	1
Saudi Arabia	1
Slovenia	1
South Korea	1
Spain	1
Sri Lanka	1
Ukraine	1

Number of Skyscrapers

Country	AvgFloorHeigt
Kazakhstan	113.03
Germany	61.33
Iran	36.25
Malaysia	28.07
Sri Lanka	26.92
Uzbekistan	24.16
Japan	21.86
Kuwait	9.03
Russia	7.58
China	6.84
Taiwan	6.57
United States	6.41
Canada	6.35
Saudi Arabia	5.01
South Korea	4.52
United Arab Emirates	4.39

8 Exercise 8: Premier League Season 2019-2020

Dataset	Premier League 2019-2020
Visual	T
DAX	Percentage of Total Points (%), England Ratio, Average Total Points, England Ratio Adjusted

In the final exercise where going to take a look at the results of the Premier League season 2019-2020 and take a look at what (if any) impact the nationality of a manager has on the results of the club there're managing.

We want to show the following statics in a table chart on nationality level:
- Total Number of Points Won
- Number of teams managed by that nationality
- Percentage of Total Points won by that nationality
- Compare the number of points won to the number of points won by English managers
- Total Points adjusted by the number of clubs
- The compare ratio to English managers adjusted by the number of clubs.

You should end up with following chart.

Overview of Manager Nationality Statistics						
Nationality	Total Points	Count of Club	Percentage of Total Points (%)	England Ratio	Average Total Points	England Ratio (Adjusted)
England	467	10	44.56%	1.00	46.70	1.00
Spain	137	2	13.07%	0.29	68.50	1.47
Germany	120	2	11.45%	0.26	60.00	1.28
Portugal	118	2	11.26%	0.25	59.00	1.26
Norway	66	1	6.30%	0.14	66.00	1.41
Austria	52	1	4.96%	0.11	52.00	1.11
Italy	49	1	4.68%	0.10	49.00	1.05
Schotland	39	1	3.72%	0.08	39.00	0.84