

Data Storytelling

2) Choose an appropriate visual display

6 Lessons in data storytelling

1. Understand the context
- 2. Choose an appropriate visual display**
3. Eliminate clutter
4. Focus attention where you want it
5. Think like a designer
6. Tell a story

Simple text

**SIMPLE
TEXT**

91%

*Just because you
have numbers doesn't
mean you need a graph!*

Table

TABLE

What is the
main point
I want to make?

OFTEN THERE
ARE MORE
EFFICIENT WAYS

	A	B	C
CATEGORY 1	15%	22%	42%
CATEGORY 2	40%	36%	20%
CATEGORY 3	35%	17%	39%
CATEGORY 4	30%	29%	58%

Avoid using tables in
live presentations because people
stop listening & start reading

Heat map

HEAT MAP

	A	B	C
CATEGORY 1	15%	22%	42%
CATEGORY 2	40%	36%	20%
CATEGORY 3	35%	17%	39%
CATEGORY 4	30%	29%	58%

EYES CAN EASILY
PICK OUT BIG
DIFFERENCES IN
COLOR INTENSITY,
but smaller ones
don't stand out

Can work well when beginning
to explore data and deciding
where to dig further

Bar charts

BAR CHARTS

Great for categorical data

Easy for our eyes - comparing heights to a consistent baseline

Rule:
Must have a zero baseline.
No exceptions!

VERTICAL

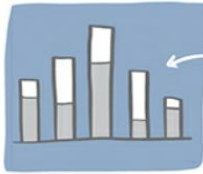


HORIZONTAL

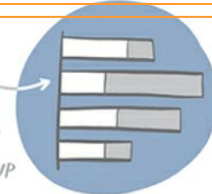


Good when category names are long

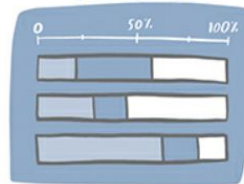
STACKED



OFTEN MISUSED...
EASIER TO COMPARE TOTAL & FIRST SERIES, BUT SEGMENTS UP THE STACK DON'T LINE UP



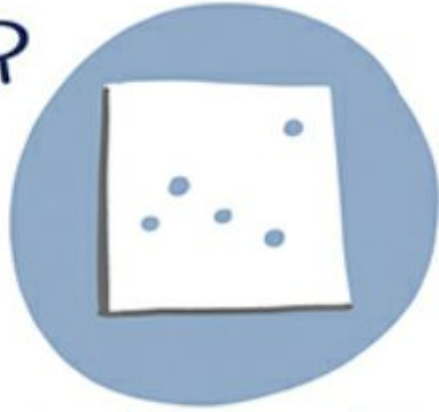
100% STACKED



TWO BASELINES FOR COMPARISON

Scatter plot

SCATTER PLOT



Good for encoding data
simultaneously on two
axes to identify what
relationships exist

Line

LINE



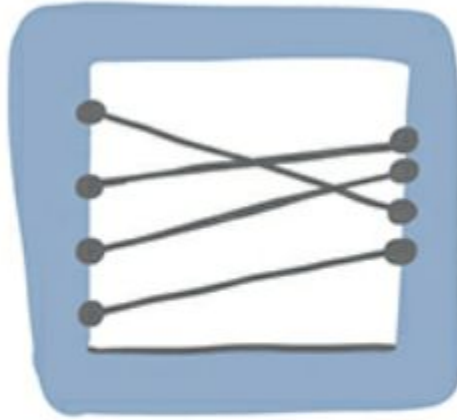
Rule: The lines that
connect the dots have
to make sense! Most effective
with continuous data,
often time

Slope graph

SLOPE GRAPH



A FANCY WORD
FOR A LINE
GRAPH WITH
ONLY 2 POINTS



Useful to focus on change
between two points in time
or difference between group

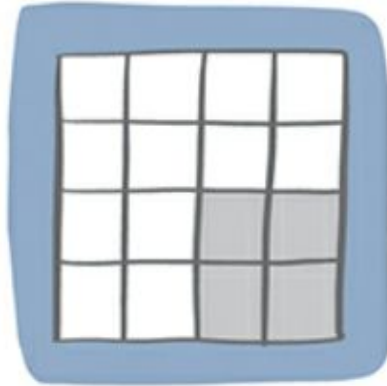
Waterfall



Square area

SQUARE AREA

(AKA WAFFLE
CHART)



THE GRID
IS IMPORTANT
BECAUSE WE TEND
TO OVERESTIMATE
AREAS

Good for showing
numbers of very different
magnitudes, or as an
alternative to a pie chart

Improving plots (mainly with Excel and Python + Plotly)



Download

CSV



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Excel Help & Training / Charts / Create a chart from start to finish

Create a chart from start to ...
Article

Add or remove titles in a chart
Article

Show or hide a chart legend...
Article

Add or remove a secondary...
Article

Add a trend or moving aver...
Article

Choose your chart using Qu...
Article

Update the data in an existi...
Article

Create a chart from start to finish

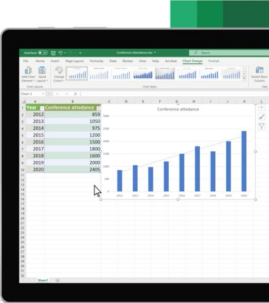
Excel for Microsoft 365, Excel for Microsoft 365 for Mac, Excel 2021, [More...](#)

Charts help you visualize your data in a way that creates maximum impact on your audience. Learn to create a chart and add a trendline. You can start your document from a recommended chart or choose one from our collection of [pre-built chart templates](#).

Windows macOS Web

Microsoft Excel

Create a chart



00:02 / 00:51

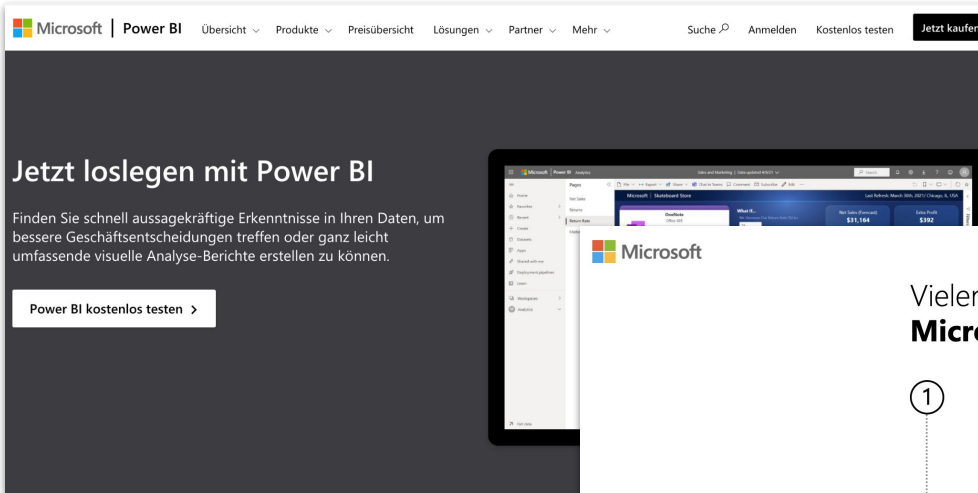
Create a chart

1. Select data for the chart.
2. Select **Insert > Recommended Charts**.
3. Select a chart on the **Recommended Charts** tab, to preview the chart.

Excel video training

Excel for Microsoft 365, Excel 2021, Excel 2021 for Mac, Excel 2019, Excel 2016, [More...](#)

 Quick start	 Intro to Excel	 Rows & columns	 Cells
 Formatting	 Formulas & functions	 Tables	 Charts
 PivotTables	 Share & co-author	 Linked data types	 Get to know Power Query
 Take a tour Download template >	 Formula tutorial Download template >	 Make your first PivotTable Download template >	 Get more out of PivotTables Download template >



Vielen Dank für die Auswahl von **Microsoft Power BI**

1

Lassen Sie uns Ihnen bei den ersten Schritten helfen

Geben Sie Ihre Geschäfts- oder Schul-E-Mail-Adresse ein. Wir überprüfen, ob Sie ein neues Konto erstellen müssen.

E-Mail

Indem Sie fortfahren, bestätigen Sie, dass Ihre Organisation möglicherweise über Rechte für den Zugriff und die Verwaltung Ihrer Daten und Ihres Kontos verfügt, wenn Sie die E-Mail-Adresse Ihrer Organisation verwenden.

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2

Ihre Kontoinformationen

3

Bestätigungsdetails

Search...

On This Page

- Overview
- Installation
- Plotly charts in Dash
- JupyterLab Support
- Jupyter Notebook Support
- Static Image Export
- Kaleido
- Orca
- Extended Geo Support
- Chart Studio Support

Python > Getting Started with Plotly

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Getting Started with Plotly in Python

Getting Started with Plotly for Python.

THIS PAGE IN ANOTHER LANGUAGE



New to Plotly?

Plotly Python Open Source Graphing Library Basic Charts

Plotly's Python graphing library makes interactive, publication-quality graphs online. Examples of how to make basic charts.

Deploy Python AI Dash apps on private Kubernetes clusters: [Pricing](#) | [Demo](#) | [Overview](#) | [AI App Services](#)



We'll start with basic tables and explore how visualizing data in graphs helps us more quickly see what's going on – as well as how different visuals cause us to identify new things and make varying design choices when graphing our data.

All resources (exercises & solutions)

Data and solutions for all exercises

Download



Download

Excel : 

Google : 

CSV : 

Example 2.1

... we start with
Excel

Solution 2.1

Download

Excel : 

Breakdown of new clients by tier

New client tier share

Tier	# of Accounts	% Accounts	Revenue (\$M)	% Revenue
A	77	7.08%	\$4.68	25%
A+	19	1.75%	\$3.93	21%
B	338	31.07%	\$5.98	32%
C	425	39.06%	\$2.81	15%
D	24	2.21%	\$0.37	2%

Slightly improved table

New client tier share

Tier	# of Accounts	% Accounts	Revenue (\$M)	% Revenue
A+	19	2%	\$3.9	21%
A	77	7%	\$4.7	25%
B	338	31%	\$6.0	32%
C	425	39%	\$2.8	15%
D	24	2%	\$0.4	2%
All other	205	19%	\$0.9	5%
TOTAL	1,088	100%	\$18.7	100%













Table with heatmapping

New client tier share

TIER	ACCOUNTS		REVENUE	
	#	% OF TOT	\$M	% OF TOT
A+	19	2%	\$3.9	21%
A	77	7%	\$4.7	25%
B	338	31%	\$6.0	32%
C	425	39%	\$2.8	15%
D	24	2%	\$0.4	2%
All other	205	19%	\$0.9	5%
TOTAL	1,088	100%	\$18.7	100%

Table with embedded bars

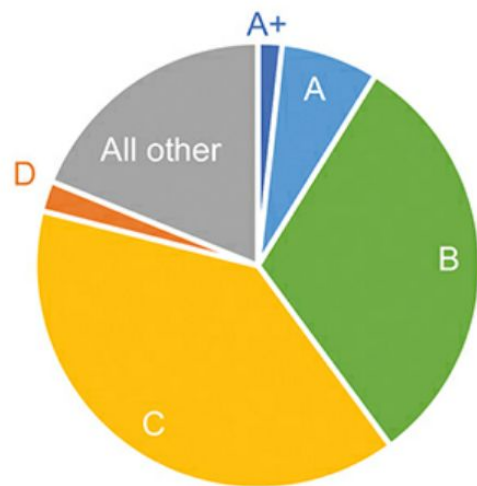
New client tier share

TIER	ACCOUNTS		REVENUE	
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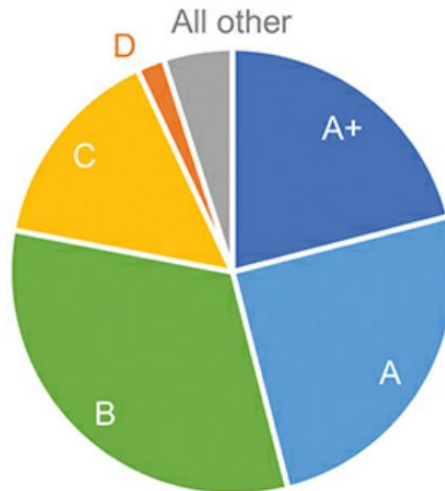
Not so easy to read ...

New client tier share

% of Total **Accounts**

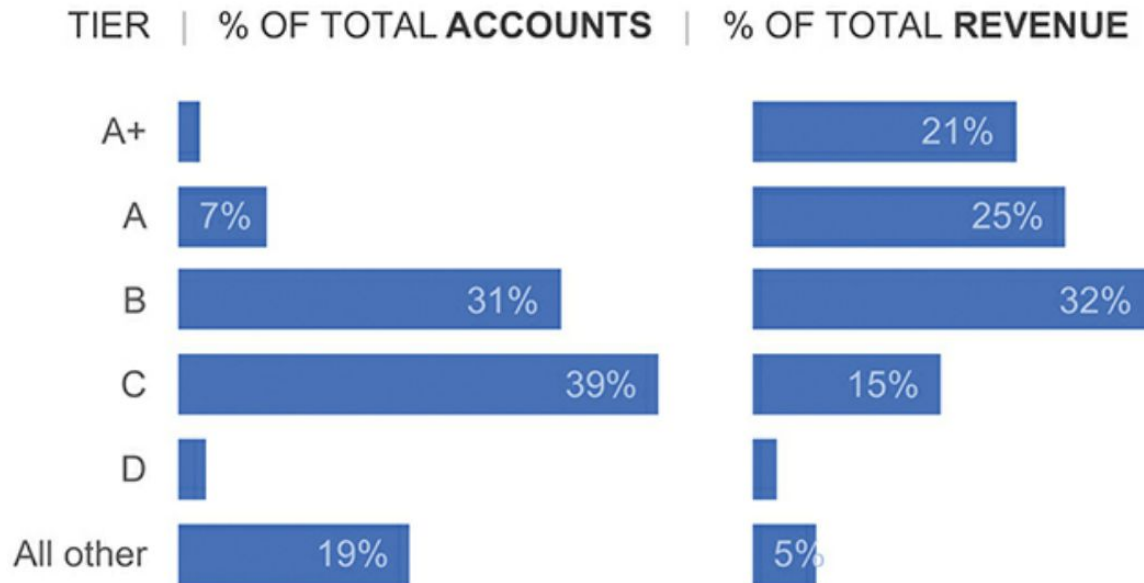


% of Total **Revenue**



Two horizontal bar charts

New client tier share



Horizontal dual series bar chart

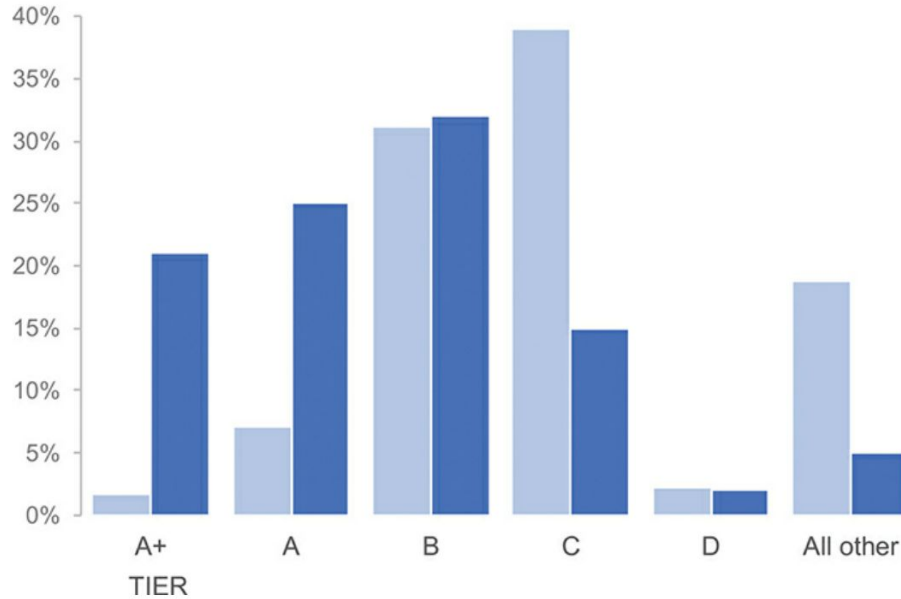
New client tier share



Vertical bar chart

New client tier share

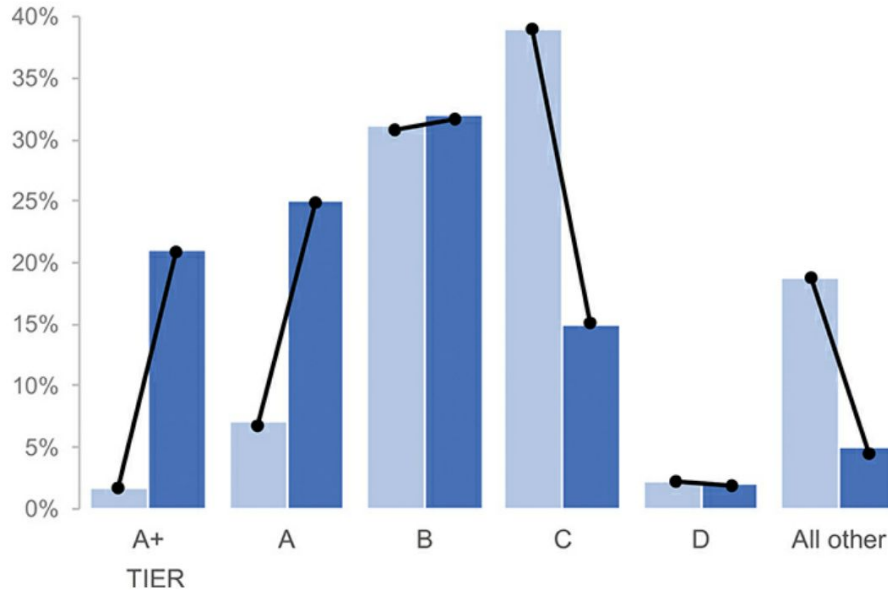
% OF TOTAL ACCOUNTS vs. REVENUE



With some lines

New client tier share

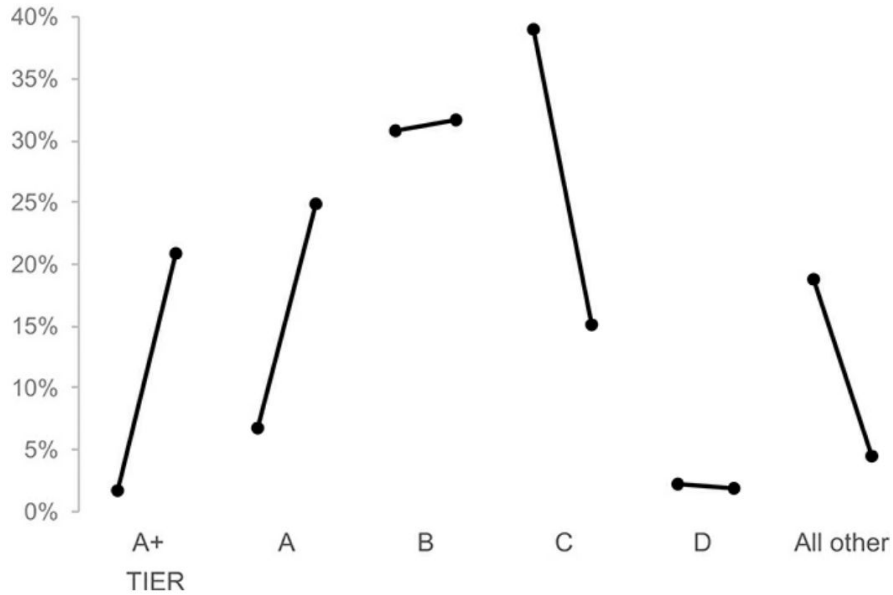
% OF TOTAL **ACCOUNTS** vs. **REVENUE**



Take away the bars

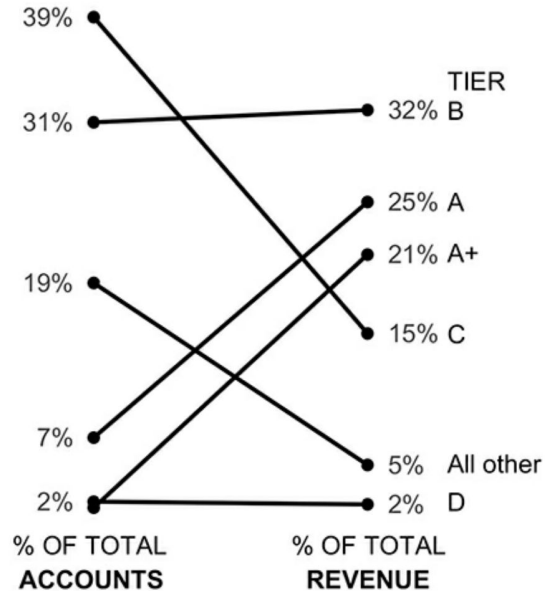
New client tier share

% OF TOTAL **ACCOUNTS** vs. **REVENUE**



A slope graph

New client tier share



Download

Excel : 

Google : 

Make CSV : 

Example 2.2

Solution 2.2

Download

Excel : 

Python : 

Simple table

Meals served over time

Campaign Year	Meals Served
2010	40,139
2011	127,020
2012	168,193
2013	153,115
2014	202,102
2015	232,897
2016	277,912
2017	205,350
2018	233,389
2019	232,797

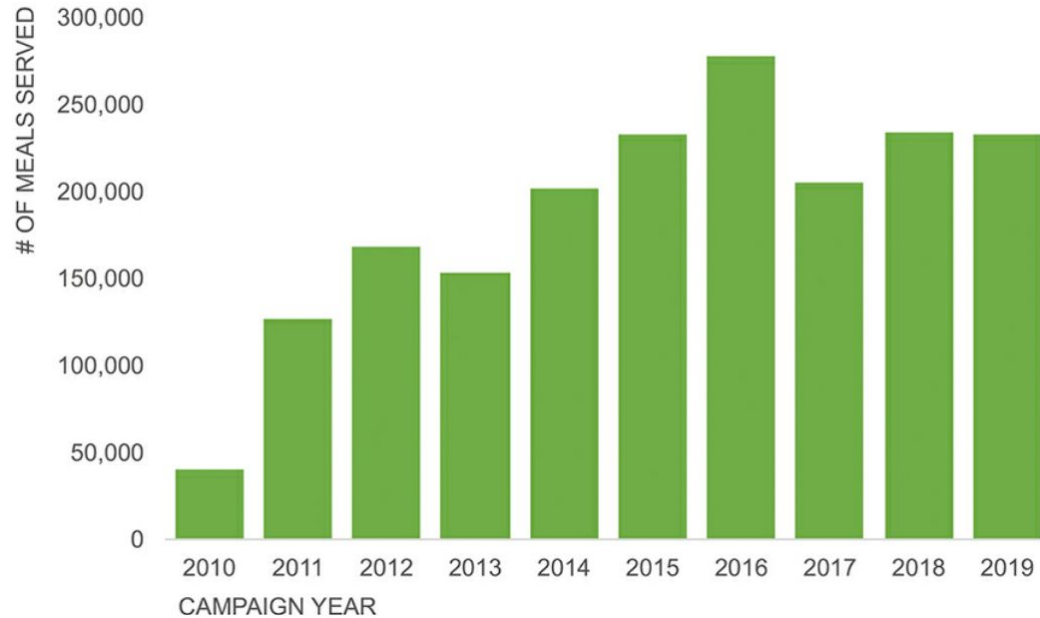
Table with heatmapping

Meals served over time

Campaign Year	Meals Served
2010	40,139
2011	127,020
2012	168,193
2013	153,115
2014	202,102
2015	232,897
2016	277,912
2017	205,350
2018	233,389
2019	232,797

Bar chart

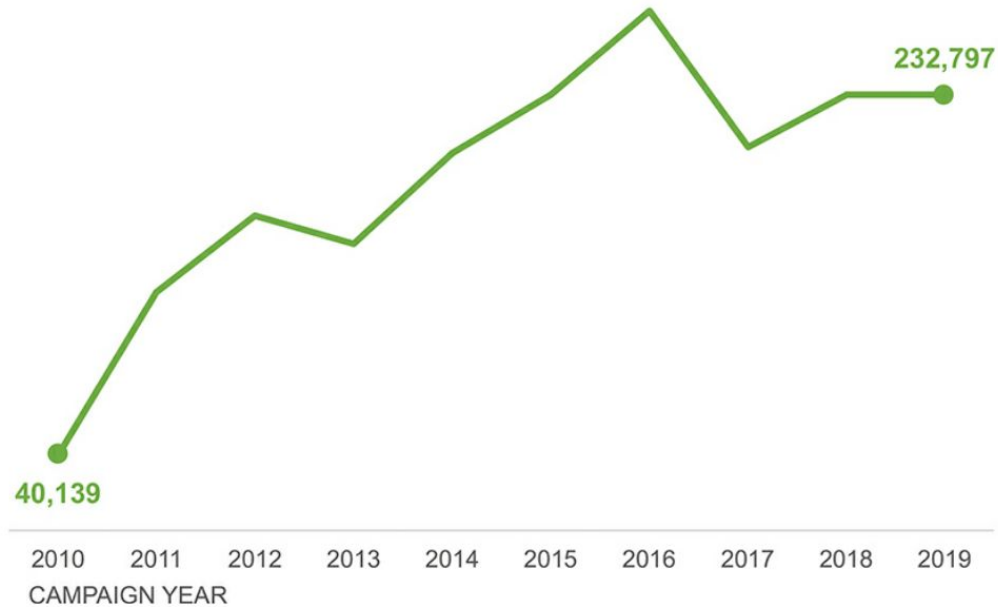
Meals served over time



Line graph

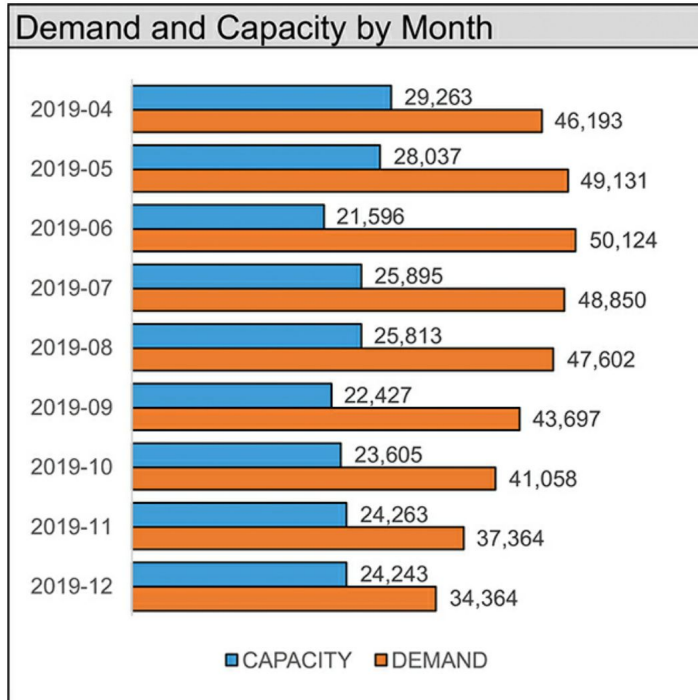
Meals served over time

OF MEALS SERVED

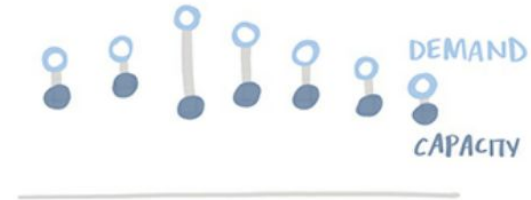
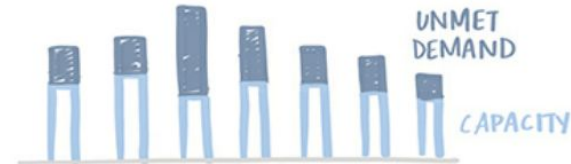
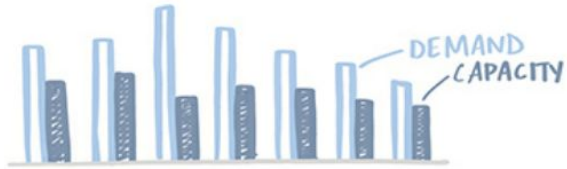


Example 2.3, 2.4

Let's draw this data



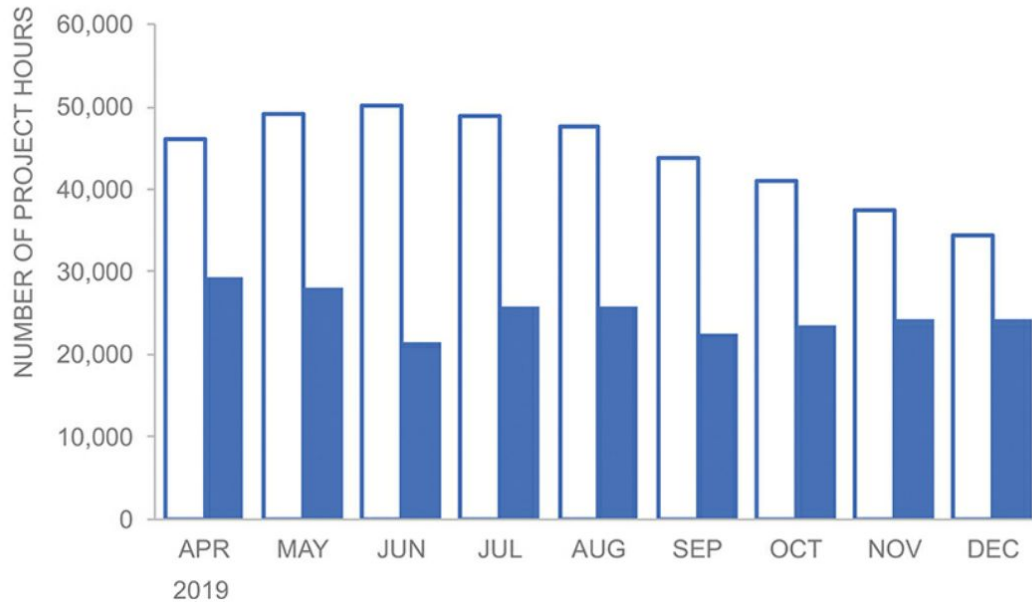
Some options



Basic bars

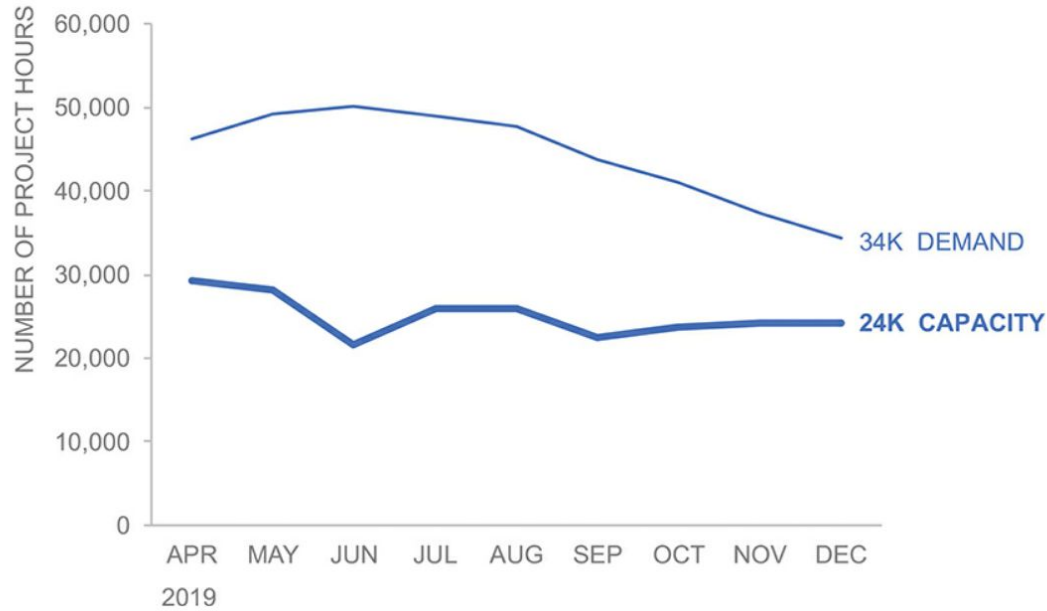
Demand vs capacity over time

DEMAND | CAPACITY



Line graph

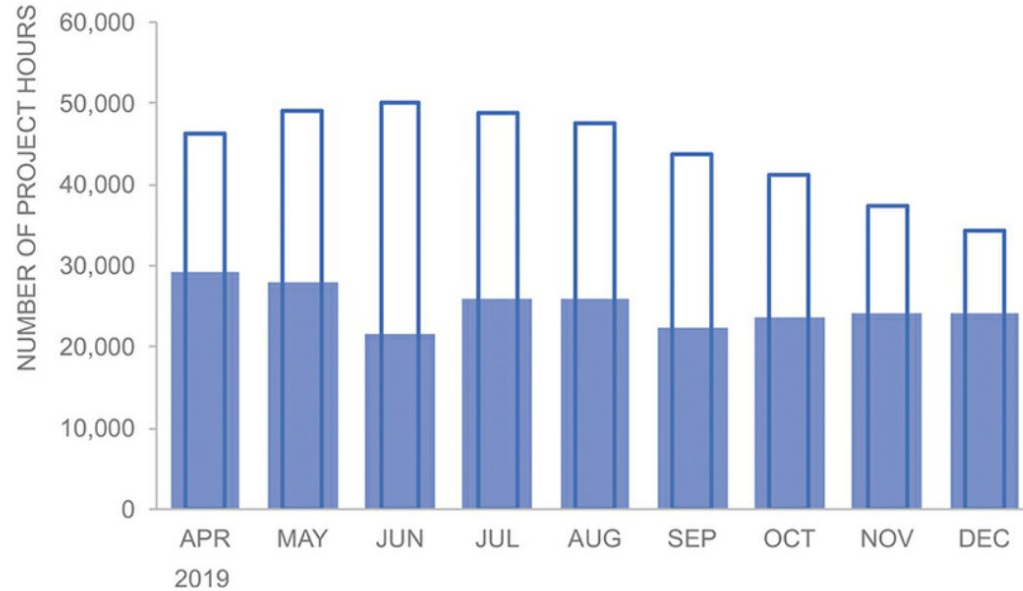
Demand vs capacity over time



Overlapping bars

Demand vs capacity over time

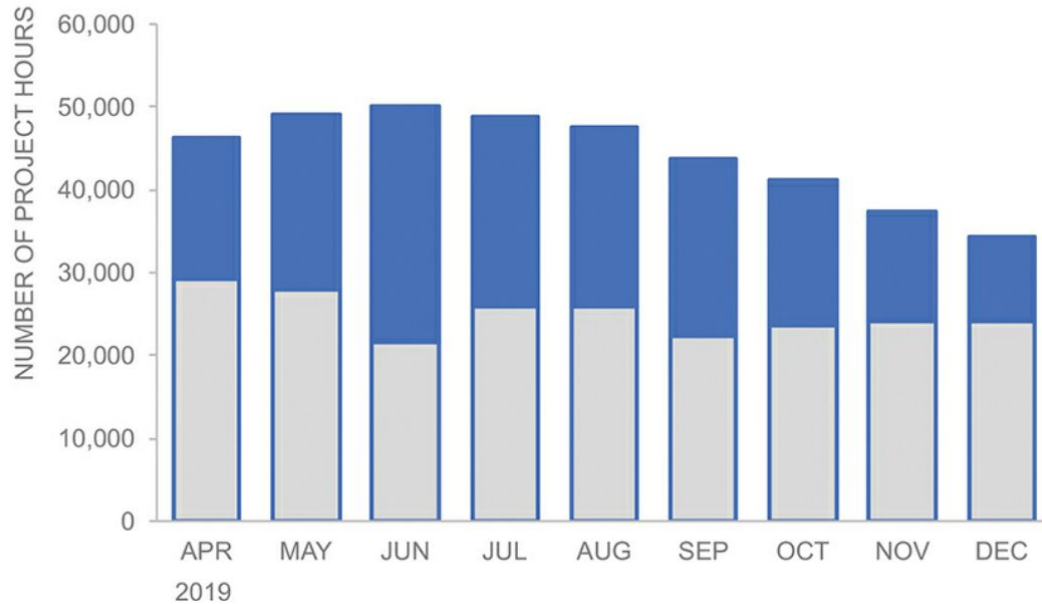
DEMAND | CAPACITY



Stacked bar charts

Demand vs capacity over time

CAPACITY | UNMET DEMAND



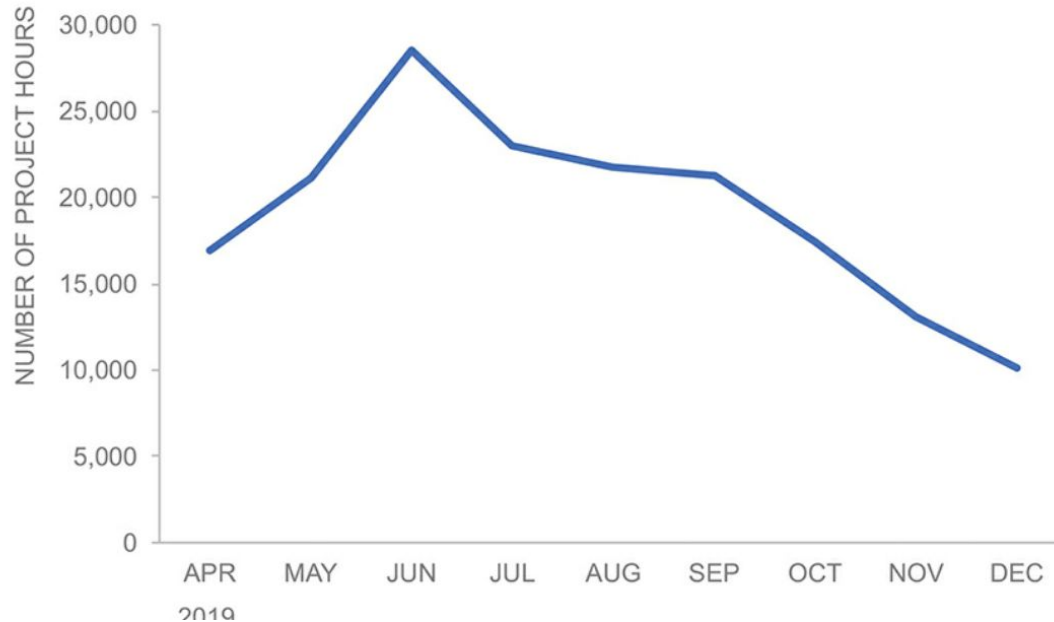
Dot plot

Demand vs capacity over time



Graph the difference

Unmet demand over time



Example 2.5

Attrition over time

Year	Attrition Rate
2019	9.1%
2018	8.2%
2017	4.5%
2016	12.3%
2015	5.6%
2014	15.1%
2013	7.0%
2012	1.0%
2011	2.0%
2010	9.7%
AVG	7.5%

QUESTION 1:

How many **different ways** can you come up with to show this data? Draw or create in the tool of your choice.

QUESTION 2:

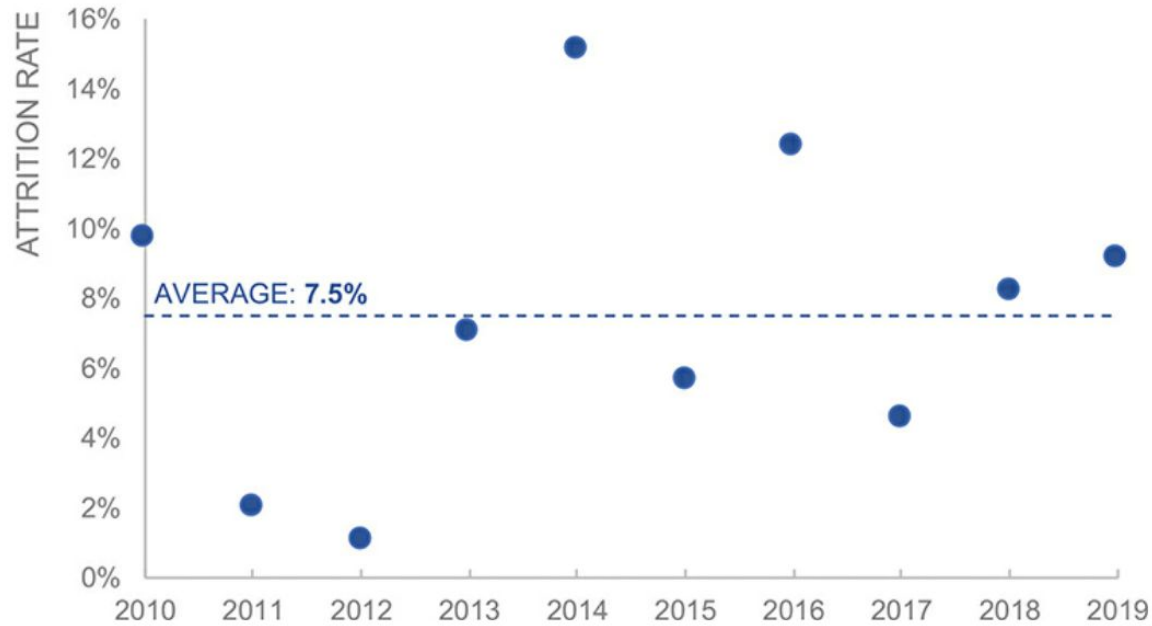
How would you **show** the **average** in the various views you've created?

QUESTION 3:

Which of the visuals you've created do you **like best** and why?

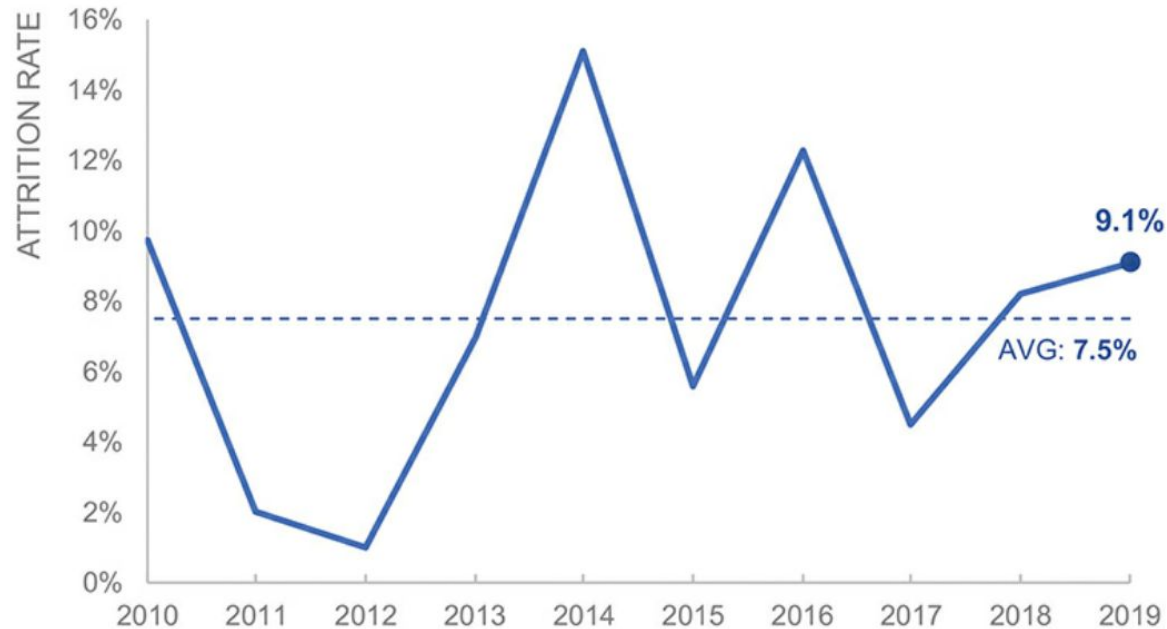
Dot plot

Attrition rate over time



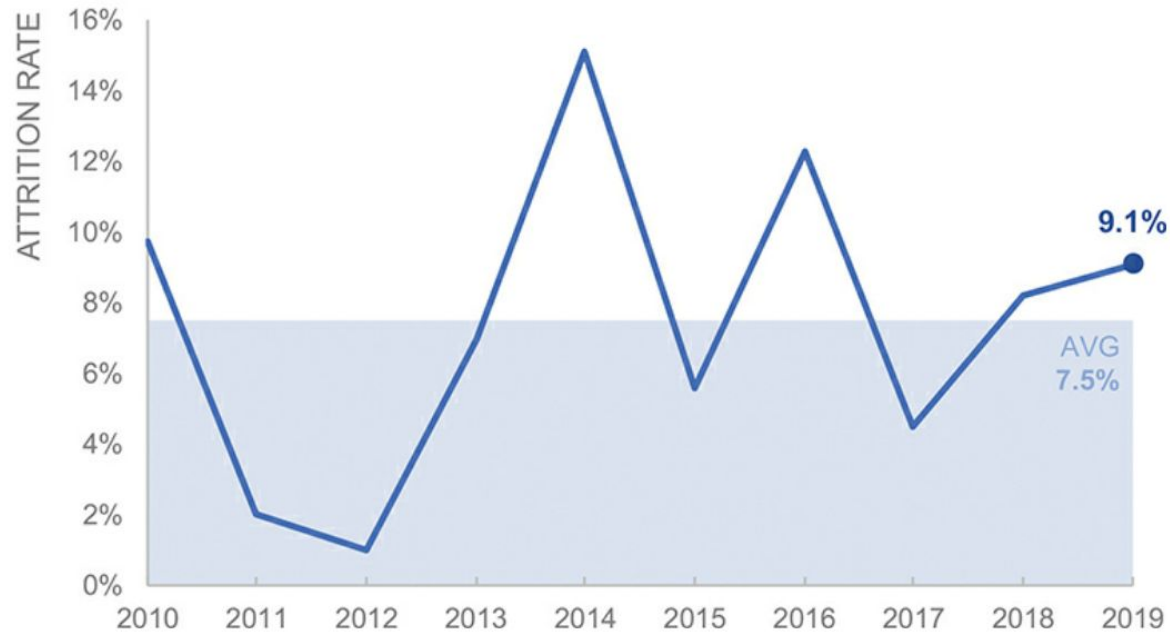
Line graph

Attrition rate over time



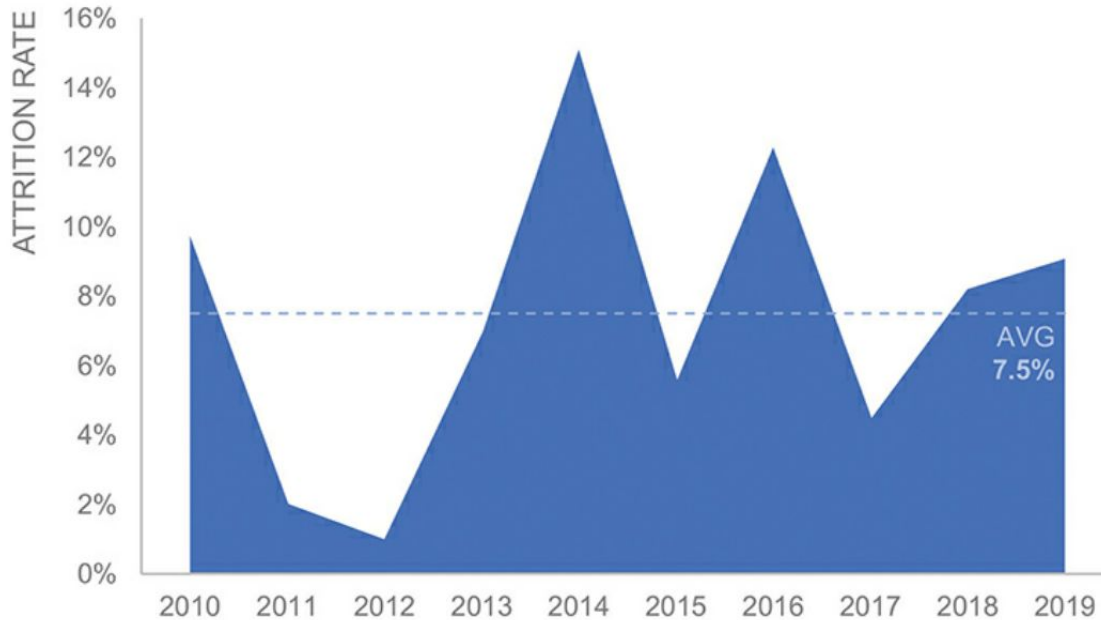
Line graph with shaded area depicting average

Attrition rate over time



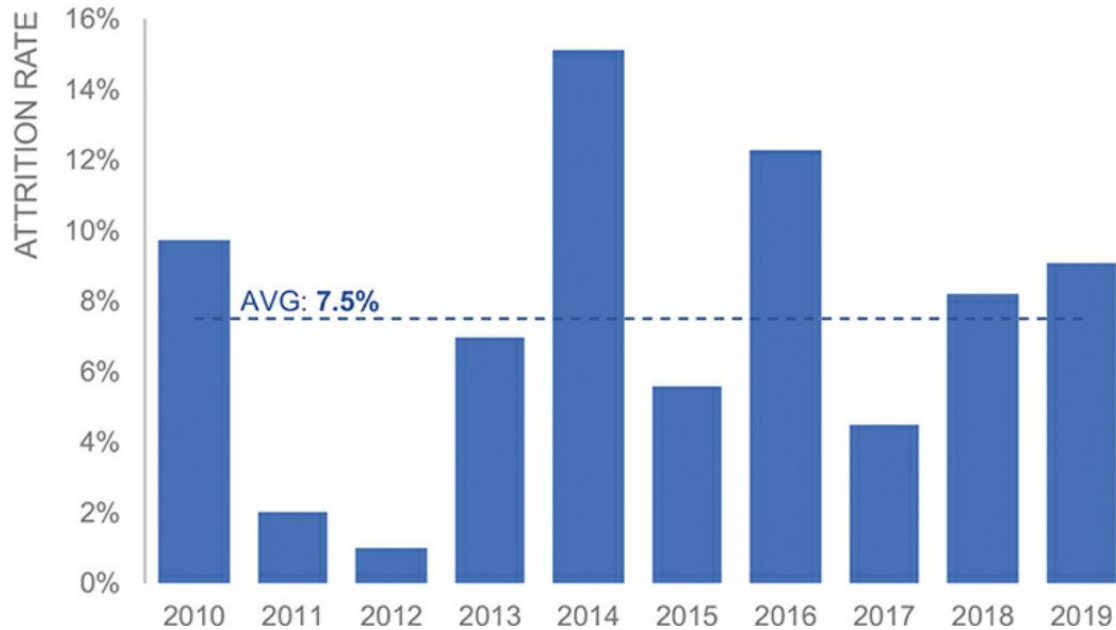
Area graph

Attrition rate over time



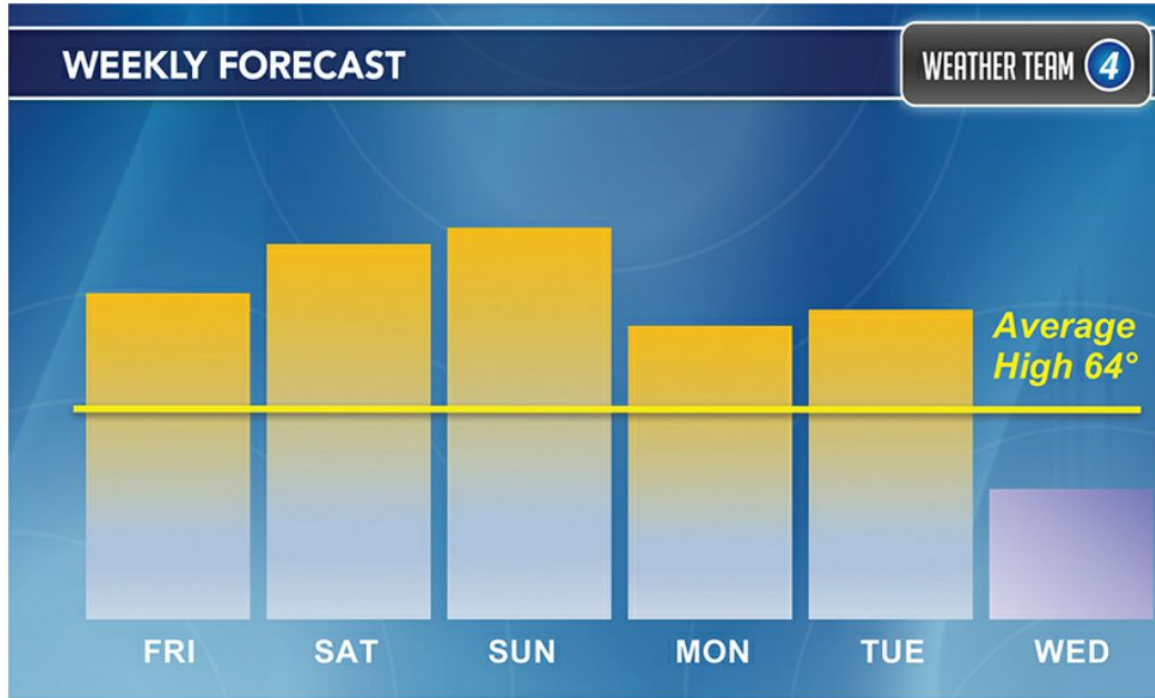
Area graph

Attrition rate over time



Example 2.6

Weather forecast



QUESTION 1:

What temperature would you estimate: **Sunday**?

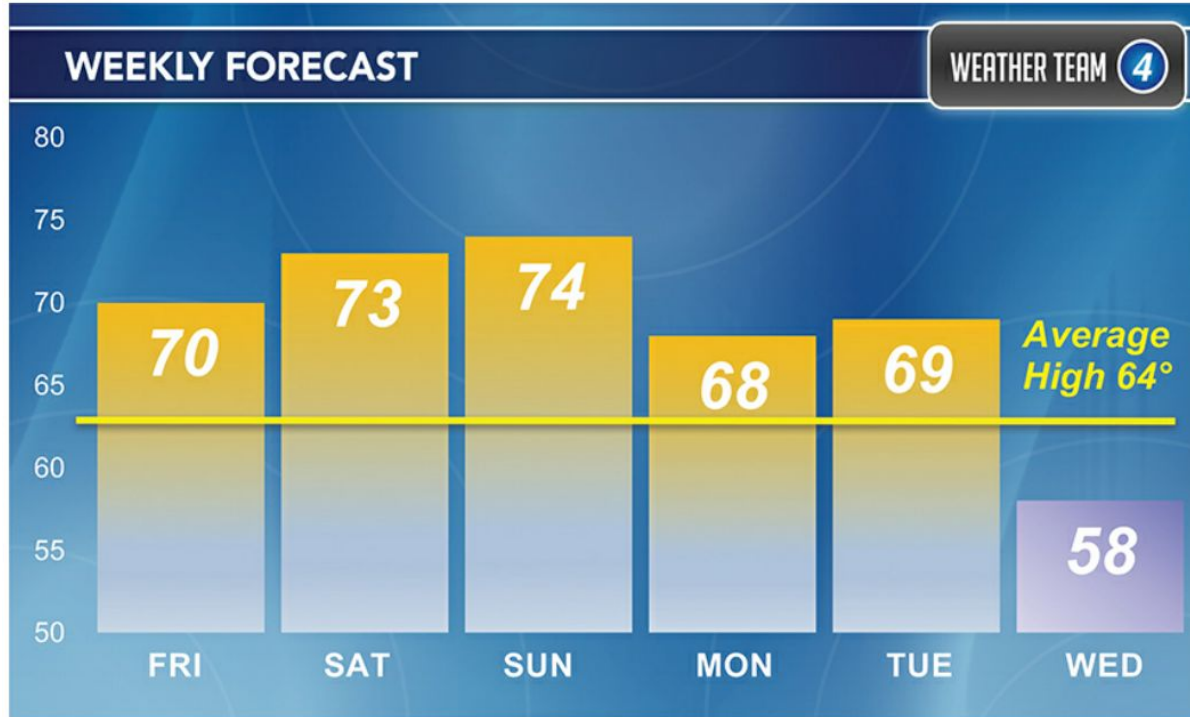
QUESTION 2:

What temperature might you estimate: **Wednesday**?

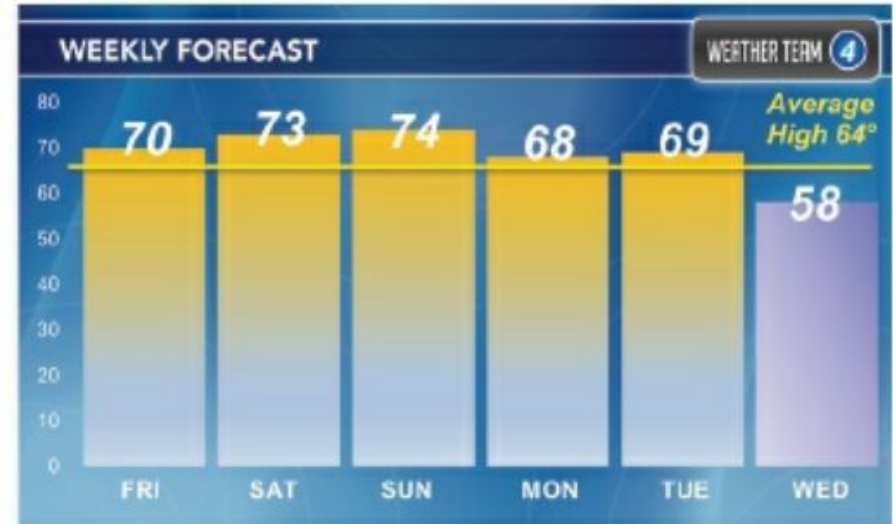
QUESTION 3:

What other observations can you make from this data?

Take a closer look the baseline

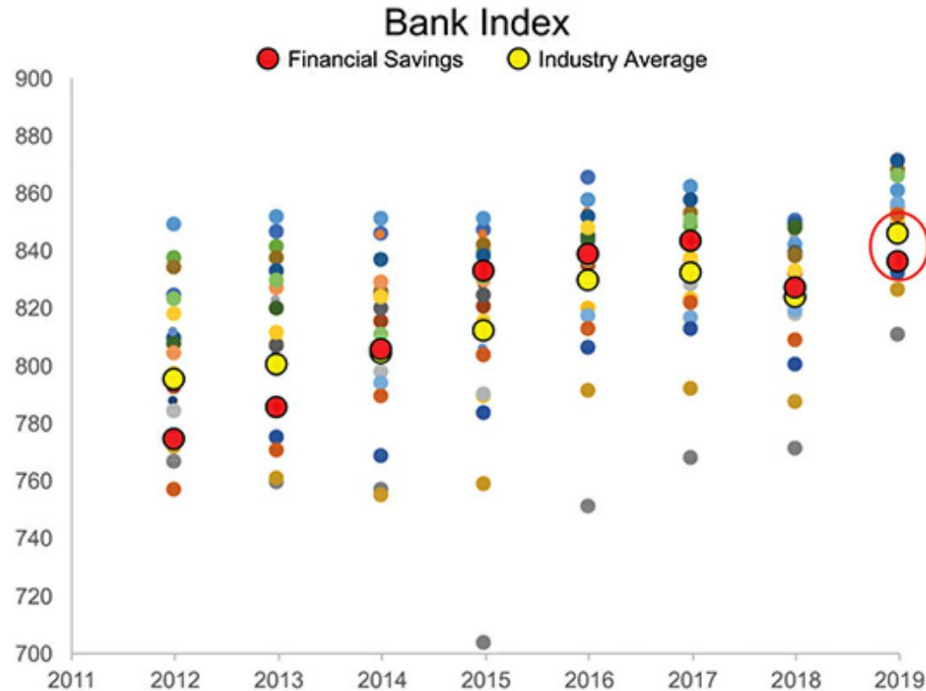


Compare the two graphs. Bar charts must have a zero baseline!



Example 2.7

Bank index



QUESTION 1:

What **questions** do you have about this data?

QUESTION 2:

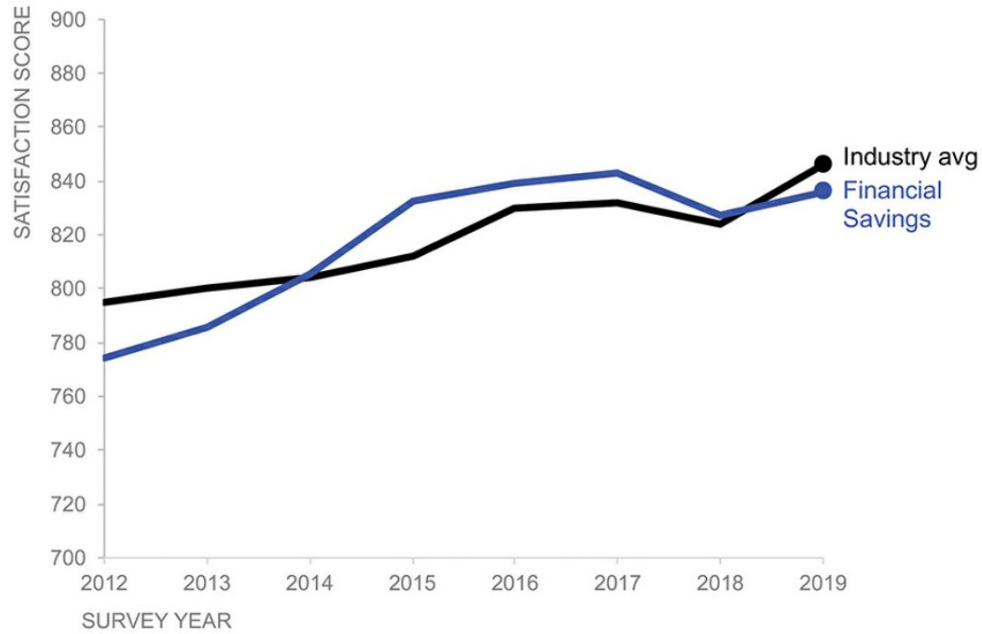
If you were designing the graph, what **changes** would you make?

How would you **visualize** this data?

Optimized graph

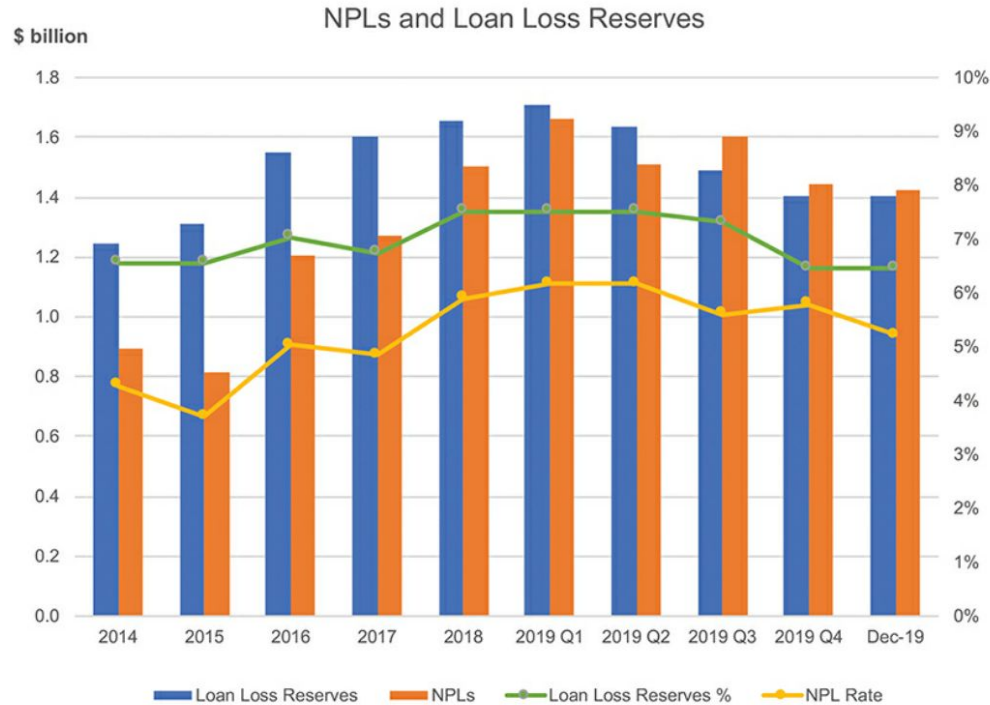
BRANCH SATISFACTION

Financial Savings below **industry** for first time in 5 years



Example 2.8

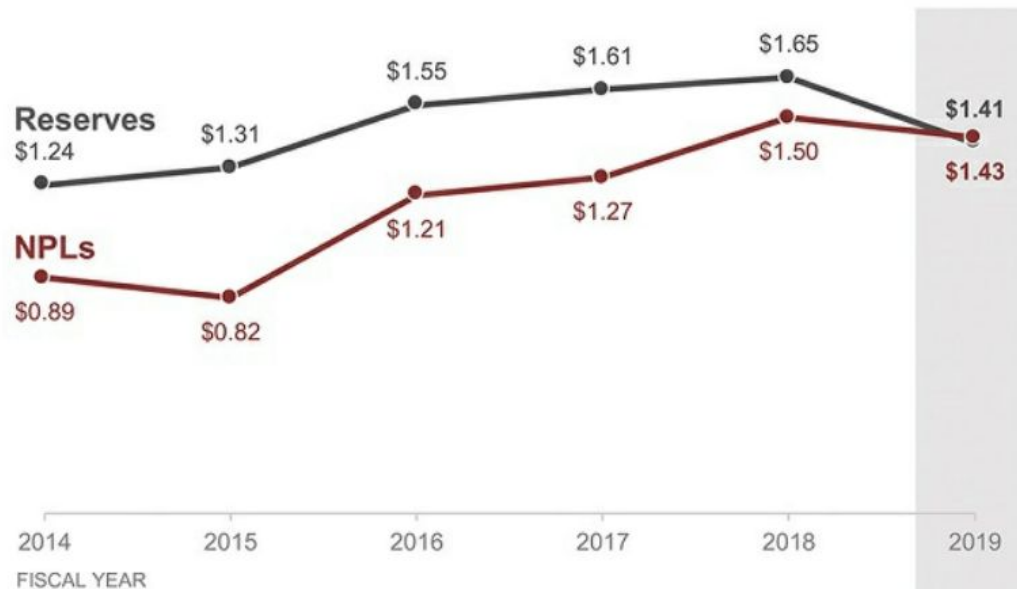
What's confusing in this graph?



Alternative view

Annual Loan Loss Reserves & Non-Performing Loans (NPLs)

BILLIONS



2019 quarterly view

BILLIONS



All resources (exercises & solutions)

Data and solutions for all exercises

Download

