Visualizing Success

COMMUNICATING DATA INSIGHTS

Joe Franklin
Senior Curriculum Manager, DataCamp

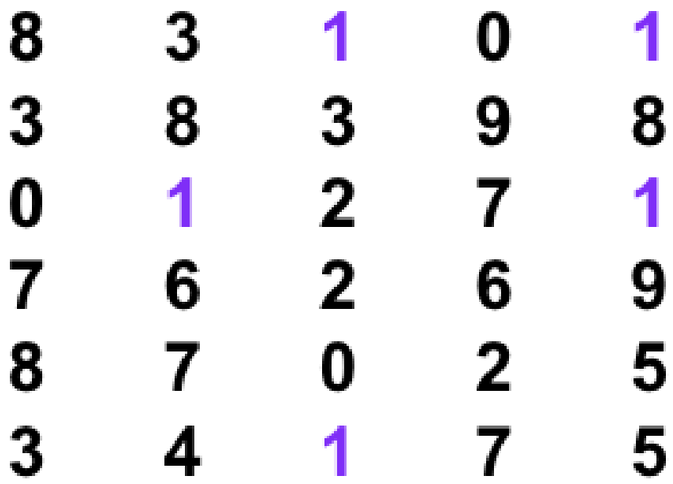
datacamp

Let's play a game

8	3	1	0	1
3	8	3	9	8
0	1	2	7	1
7	6	2	6	9
8	7	0	2	5
3	4	1	7	5

How many zeros are there?

Changing the rules

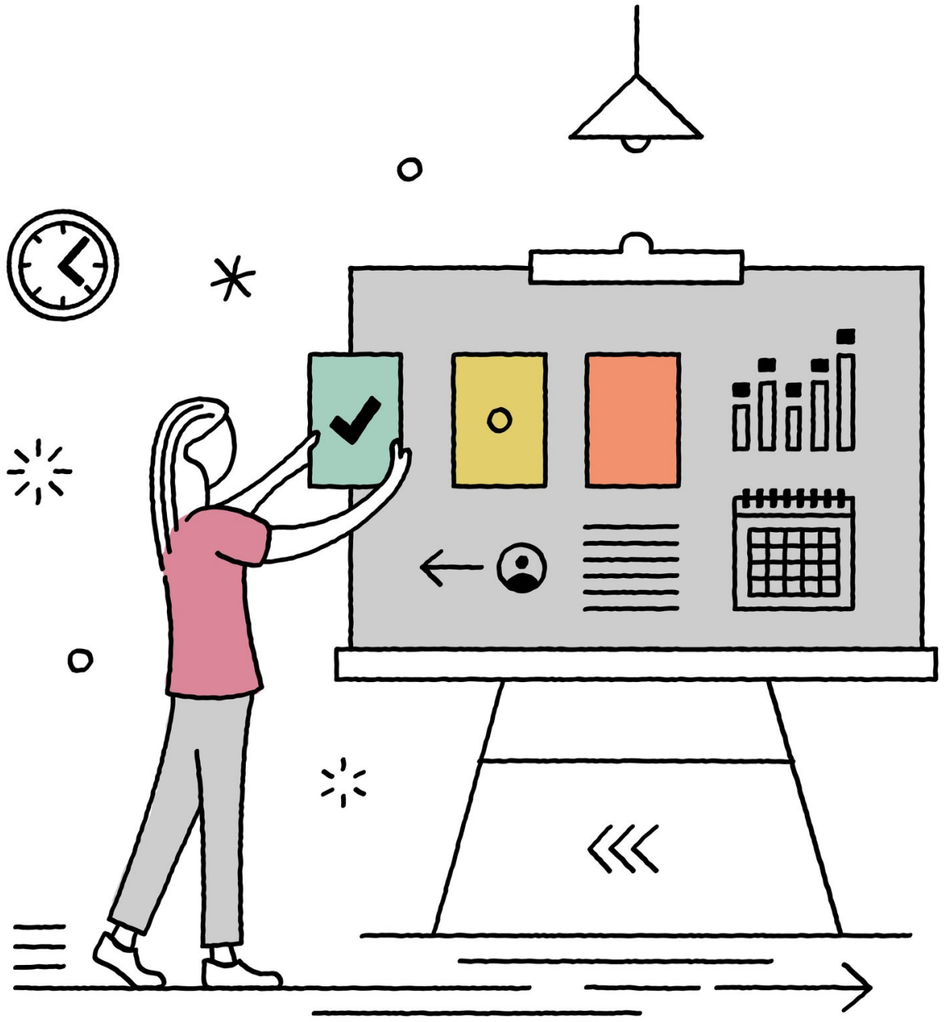


How many 1's are there?

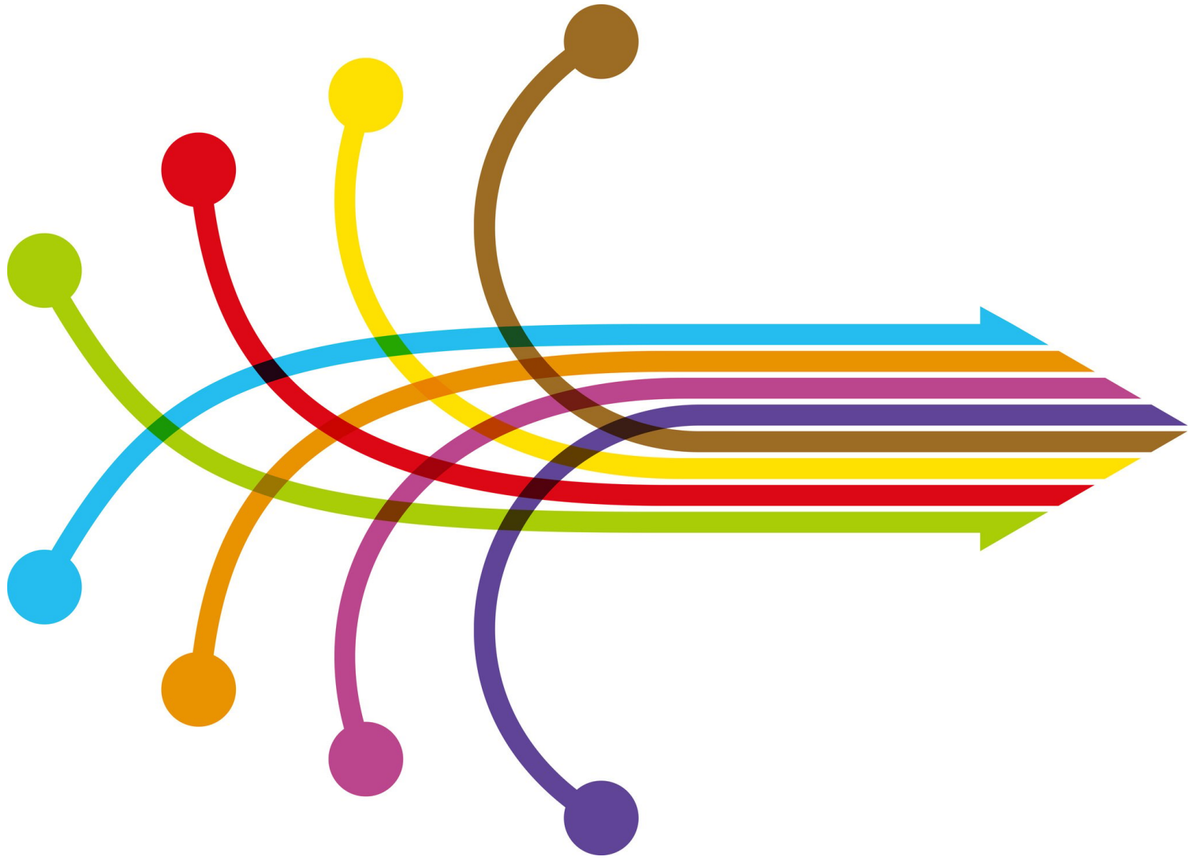
Gateway to understanding

Pictures and Graphics open gateway to understanding.

Visualizations translate information into a more accessible form to discover insights.



Clearer picture



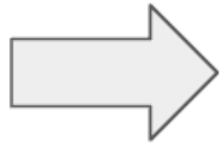
Visualizations are at the forefront of communicating data insights.

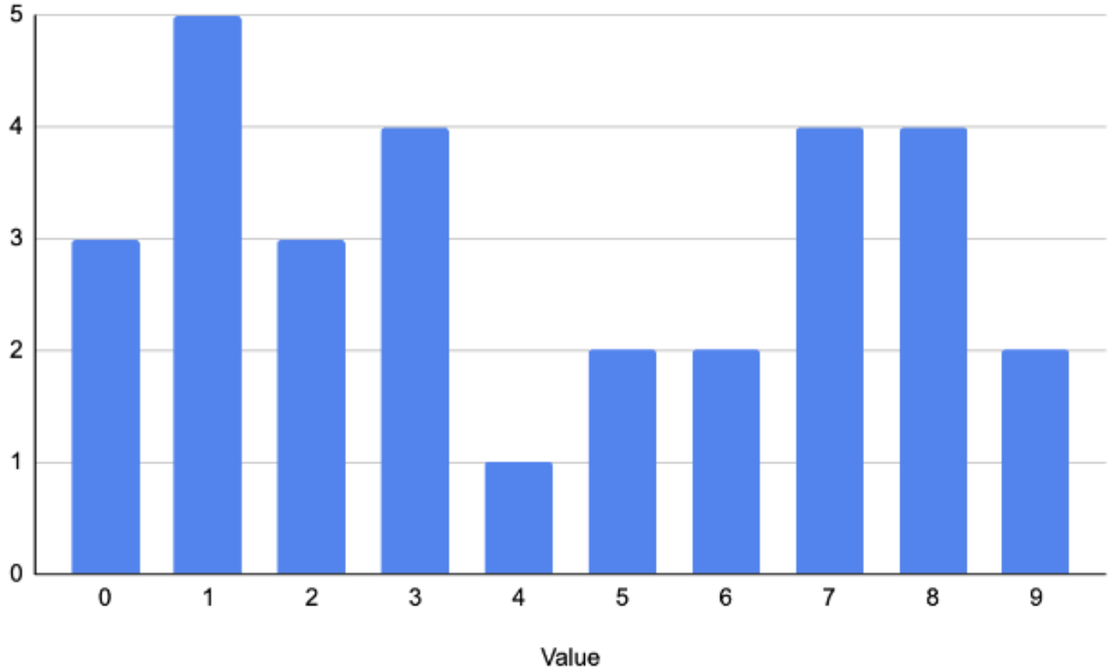
Charts and graphs simplify the vast amount of information generated daily.

Visualizations show an aggregated view of our data, highlighting trends and patterns.

Visual summary

8	3	1	0	1
3	8	3	9	8
0	1	2	7	1
7	6	2	6	9
8	7	0	2	5
3	4	1	7	5





Positive impact

Positive effects of visualizations

- Faster decision making
- Better decision making
- Wider appeal to decision makers
- Shows more complete picture than simple aggregations

Looks can be deceiving

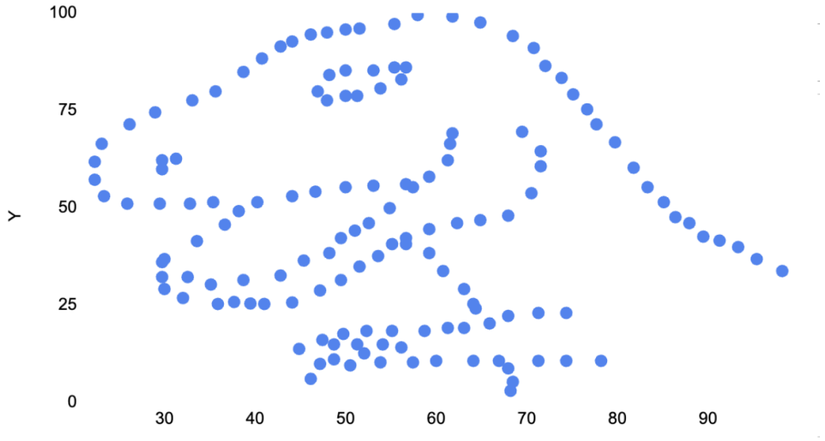
N: 144

X MEAN: 54.26

Y MEAN: 47.83

X SD: 16.76

Y SD: 26.93



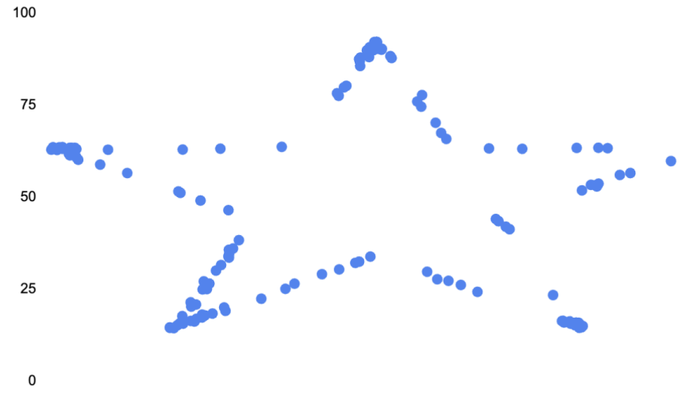
N: 144

X MEAN: 54.26

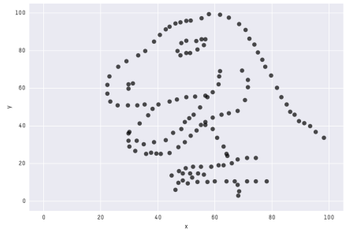
Y MEAN: 47.83

X SD: 16.76

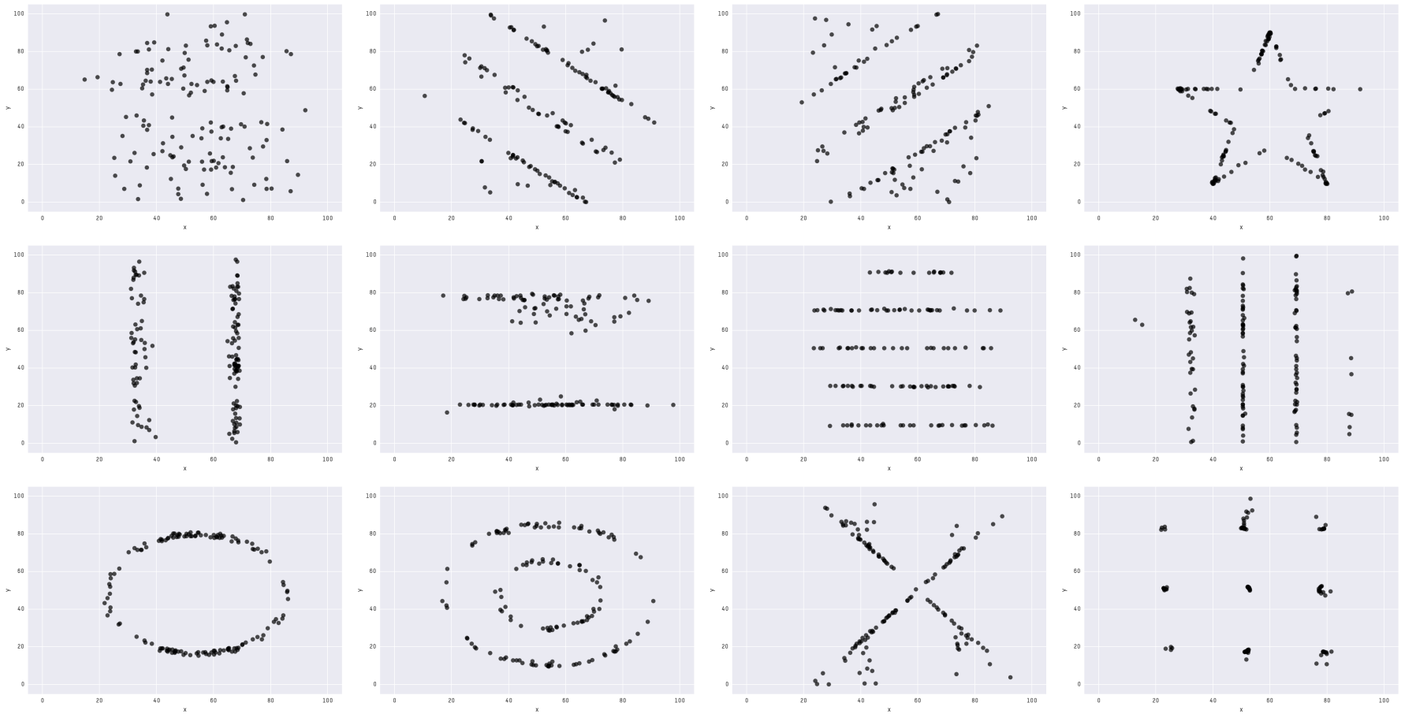
Y SD: 26.93



Looks can be deceiving



```
X Mean: 54.26
Y Mean: 47.83
X SD  : 16.76
Y SD  : 26.93
Corr. : -0.06
```



[1] https://www.autodesk.com/research/publications/same-stats-different-graphs

Let's practice!

COMMUNICATING DATA INSIGHTS

Beginning visualization

COMMUNICATING DATA INSIGHTS

Joe Franklin
Senior Curriculum Manager, DataCamp

datacamp

Objective

Basic Visualizations:

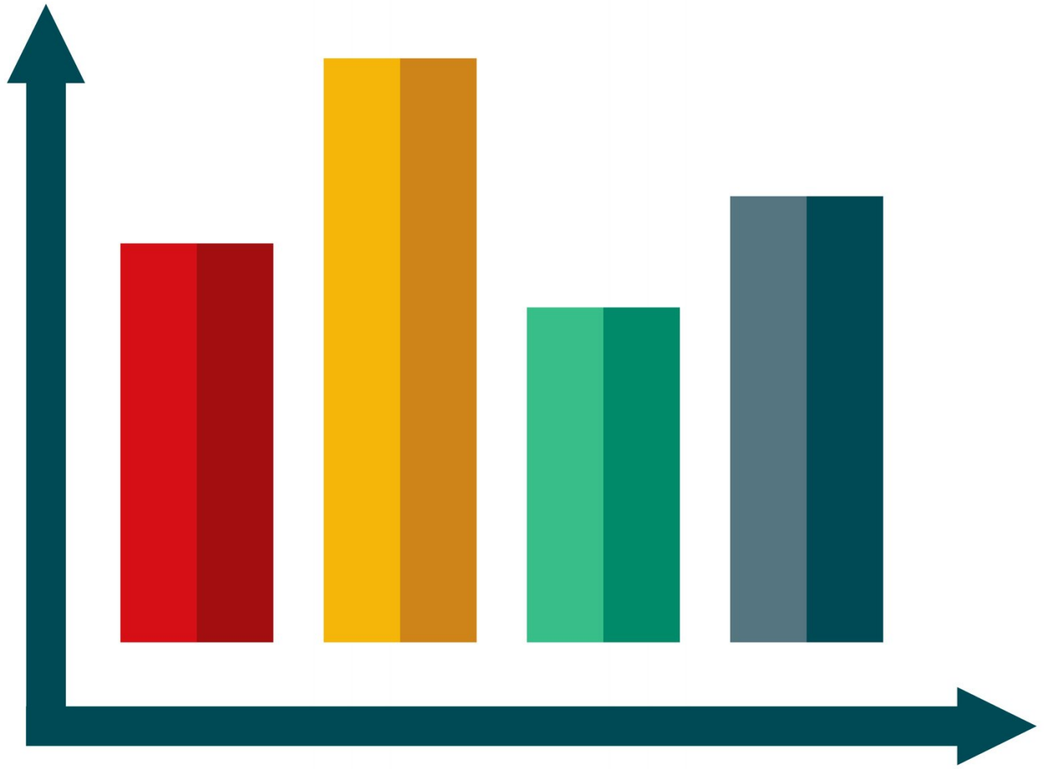
- Bar Chart
- Histogram
- Scatter plot

There are other chart options available, these will serve as a foundation for others.

Setting the bar

Bar charts and histograms look very similar

- Both utilize bars of different heights to display information
- Differ based on which kind of data they support

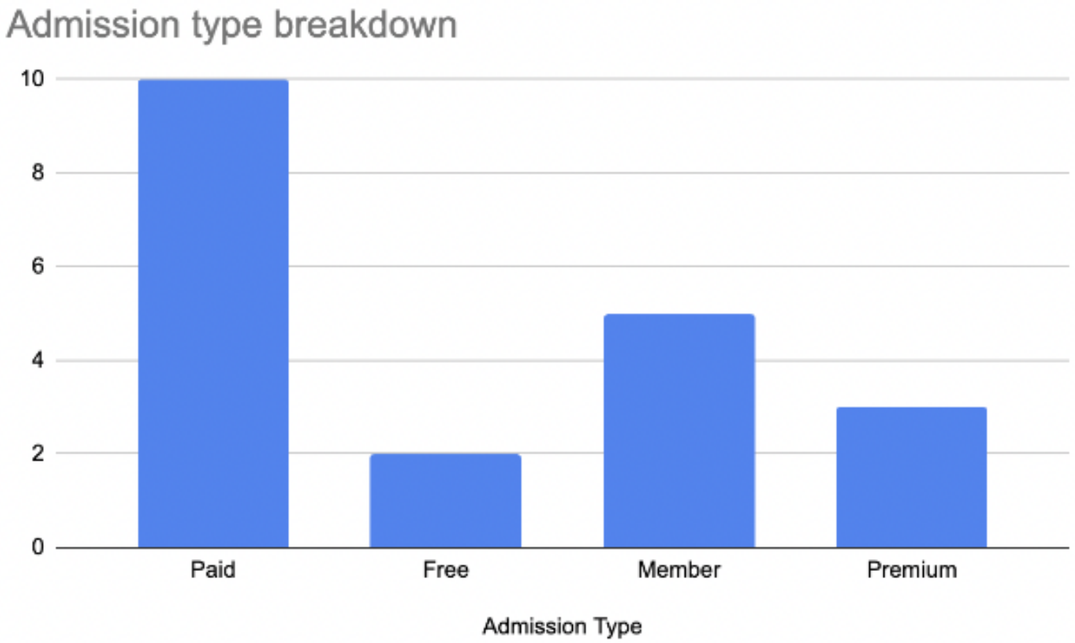


Museum admissions

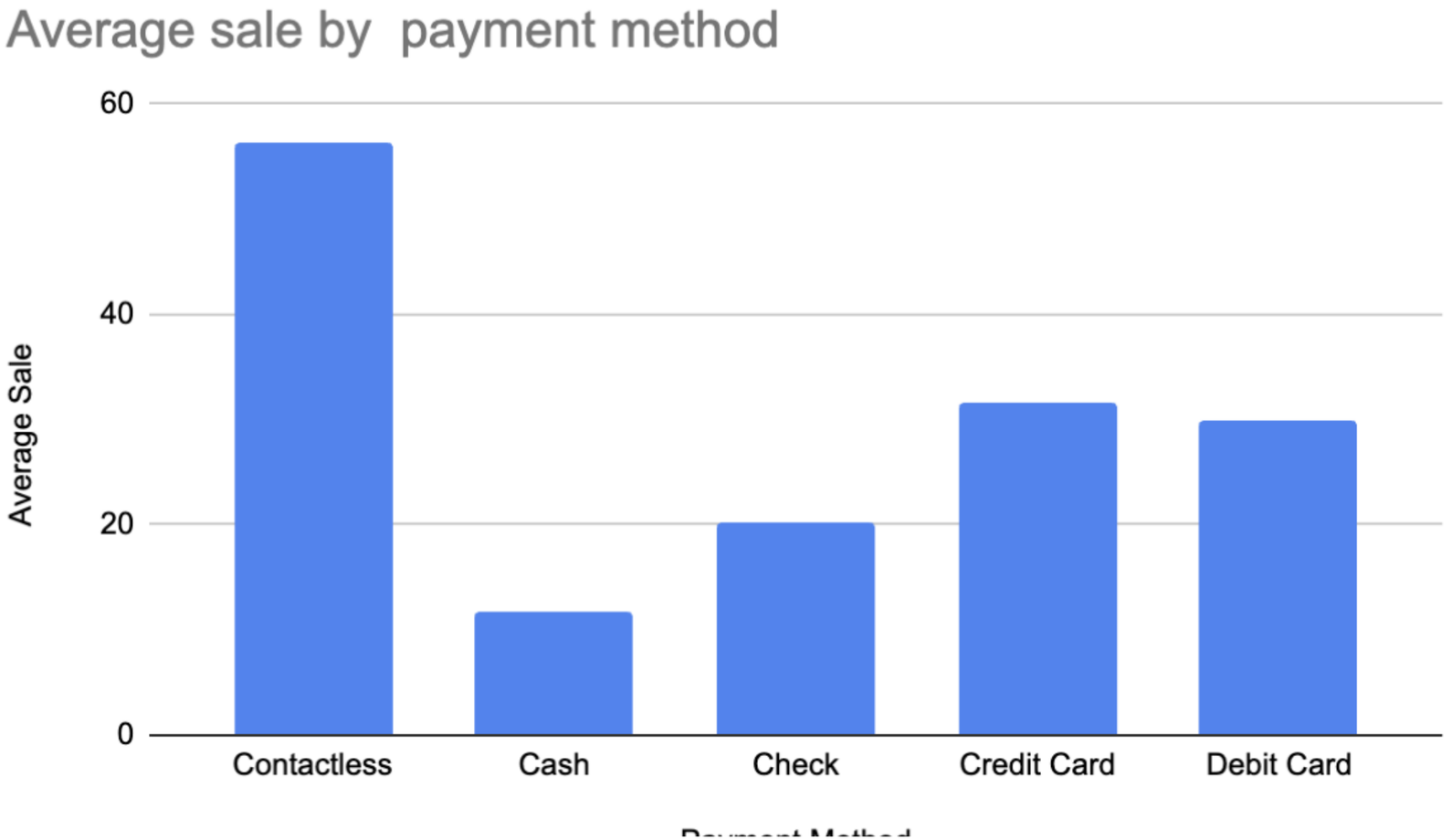
Admission Type			
Paid	Free	Member	Premium
Premium	Member	Paid	Paid
Free	Paid	Paid	Member
Paid	Member	Member	Paid
Paid	Paid	Paid	Premium

Museum admissions

Admission Type			
Paid	Free	Member	Premium
Premium	Member	Paid	Paid
Free	Paid	Paid	Member
Paid	Member	Member	Paid
Paid	Paid	Paid	Premium



Charting payments



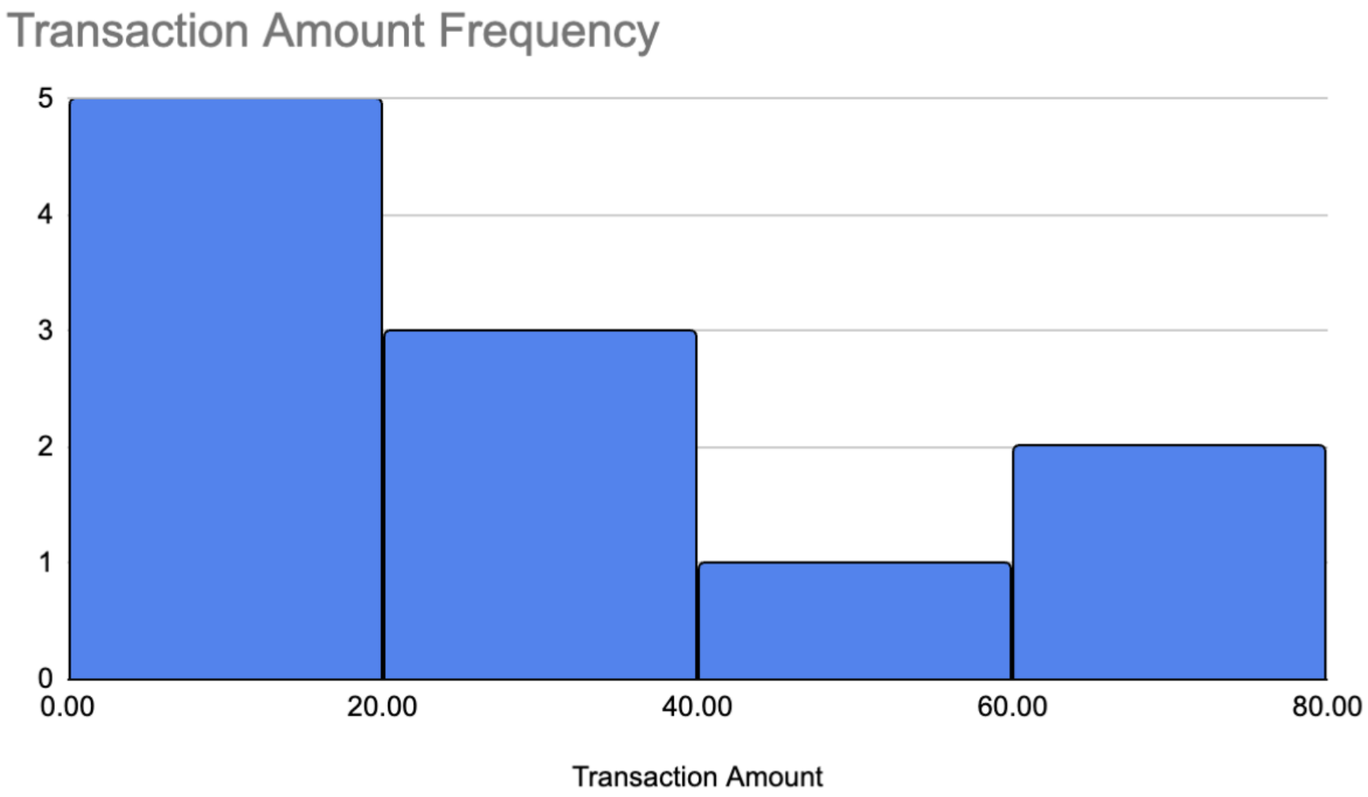
Behind bars

Histograms are similar to bar charts but display numerical data instead of categorical.

Underlying data is broken into bins of equal size.

The height of each bin represents the frequency of data within the bin in the underlying dataset.

Visualizing sales



No gaps intentional gaps between bars.

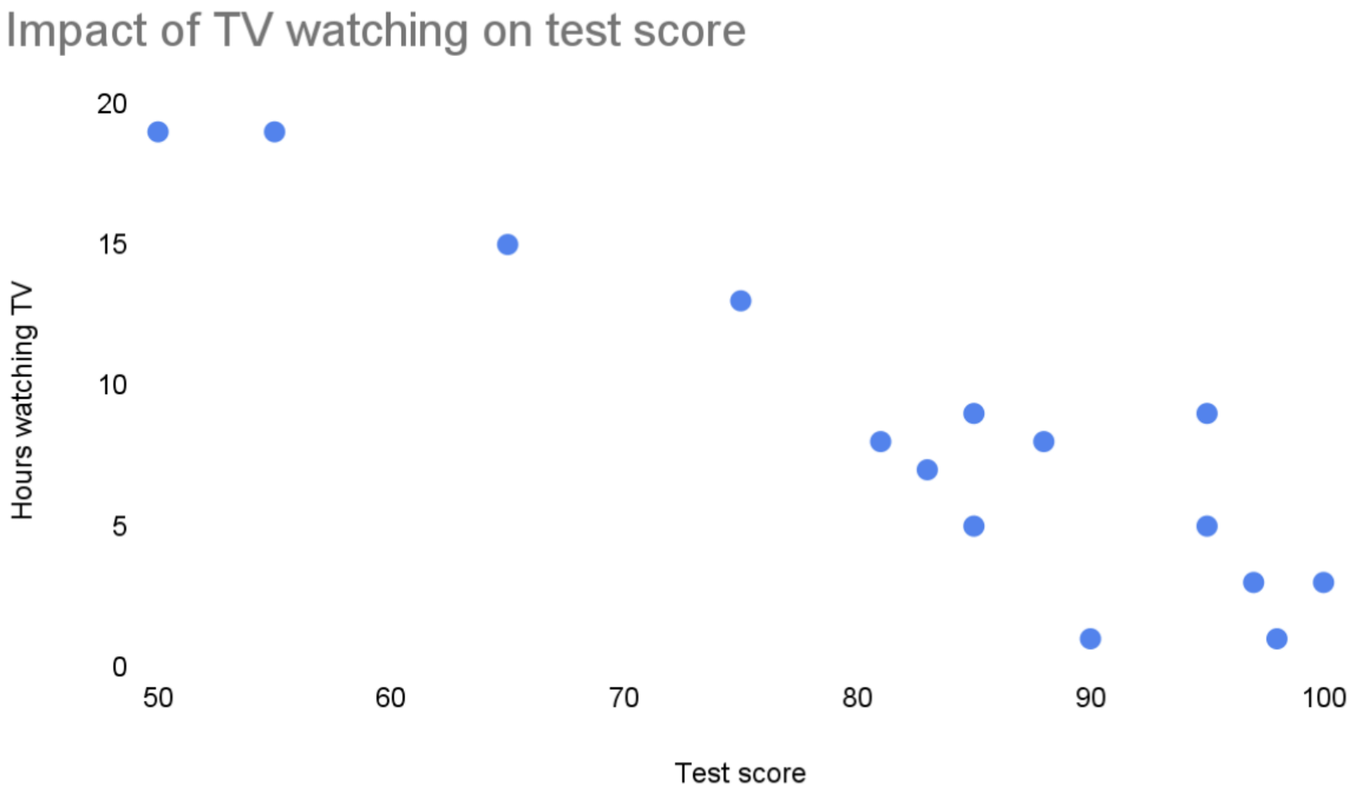
Connecting the dots

Scatterplots show the relationship between two numerical variables in a dataset.

Points are arranged based on their horizontal and vertical positions.

Relationships between variables become easier to detect through a scatter plot.

Don't sit so close



Easily detect potential relationships within a dataset.

Let's practice!

COMMUNICATING DATA INSIGHTS

Advanced visuals

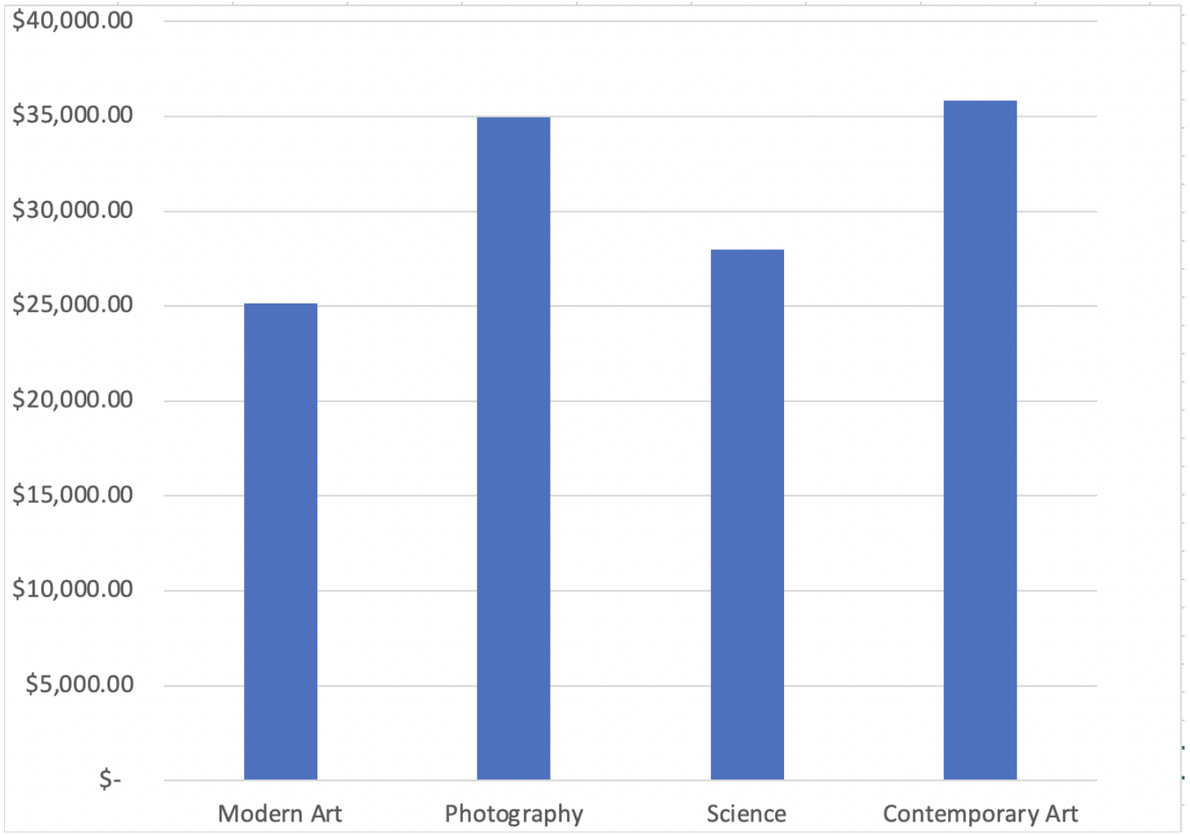
COMMUNICATING DATA INSIGHTS

Joe Franklin
Senior Curriculum Manager, DataCamp

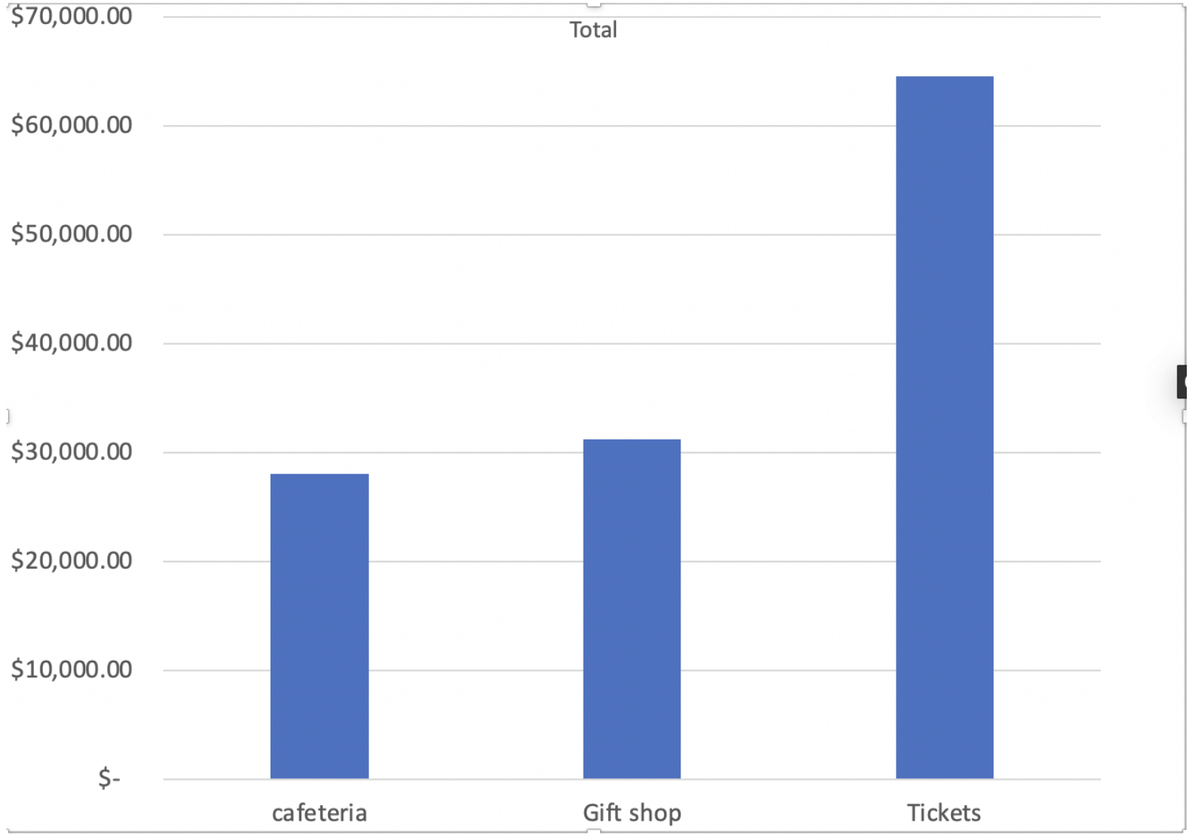
datacamp

Limited offering

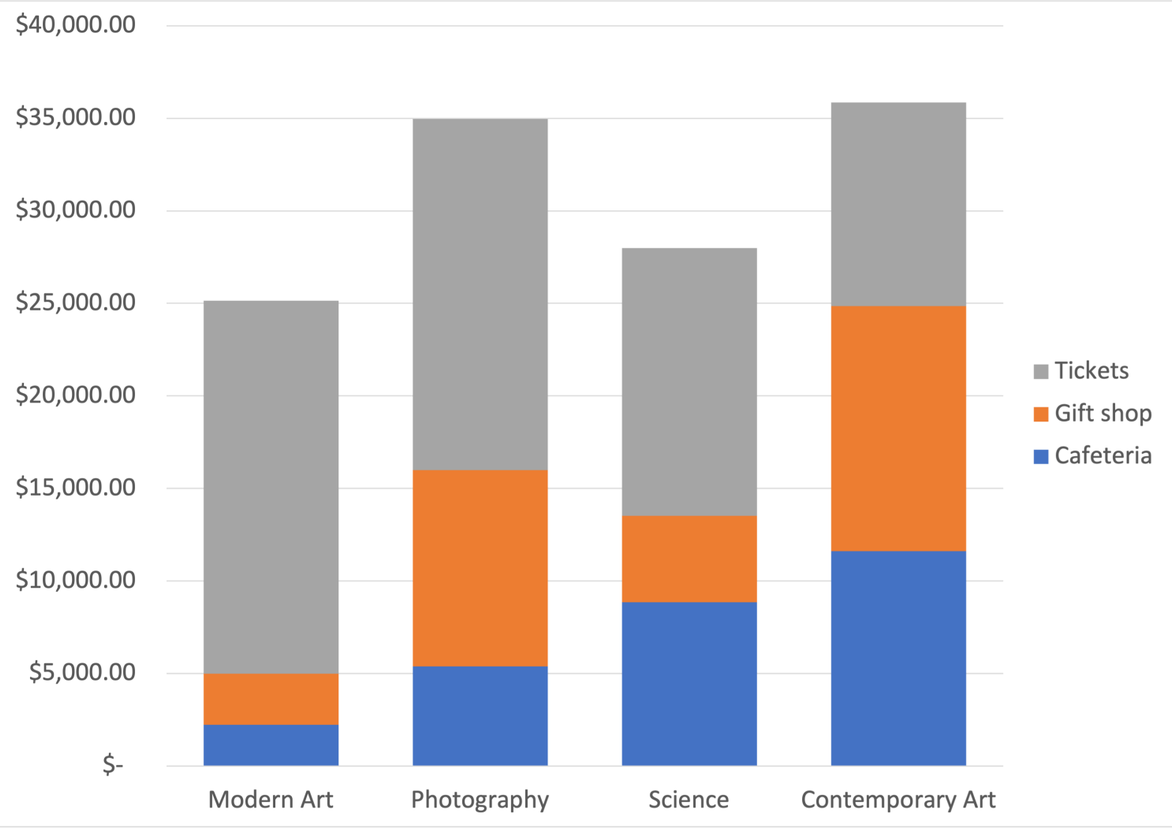
Total revenue by museum



Total revenue by source type



Stack it up



Additional detail with two categorical variables instead of one.

Contemporary art museum's gift shop outperforms its ticket sales.

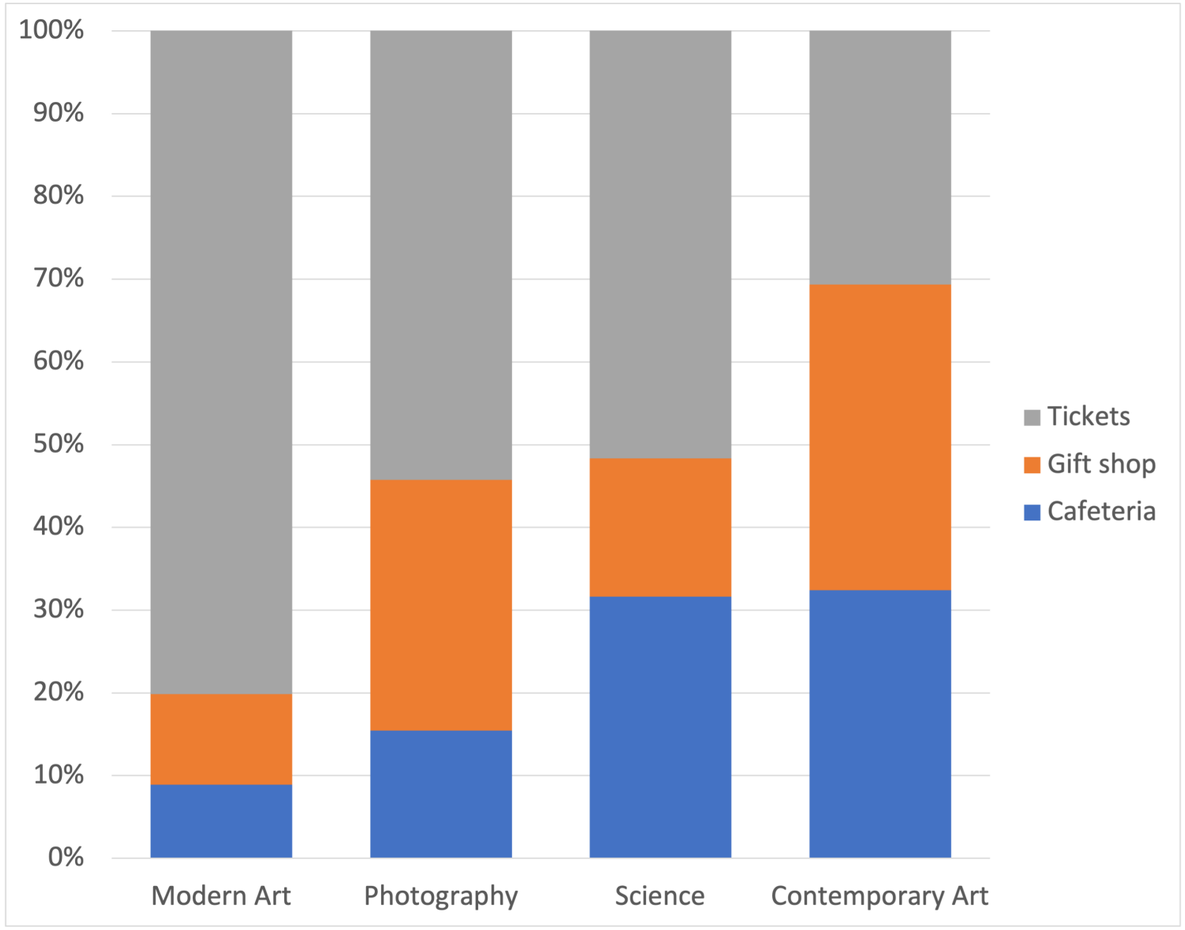
The modern art museum's cafeteria is severely underperforming.

Stretch it out

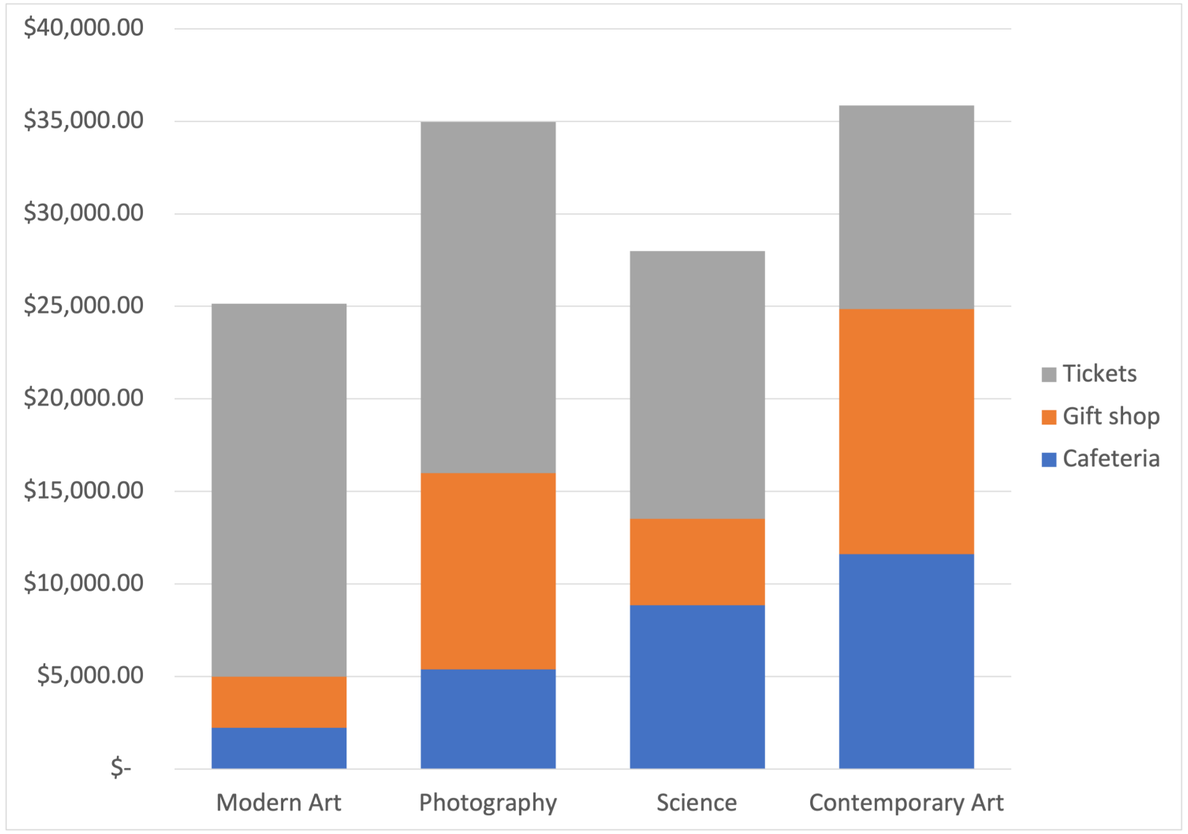
Scale stacked data to compare share of revenue for each source by museum.

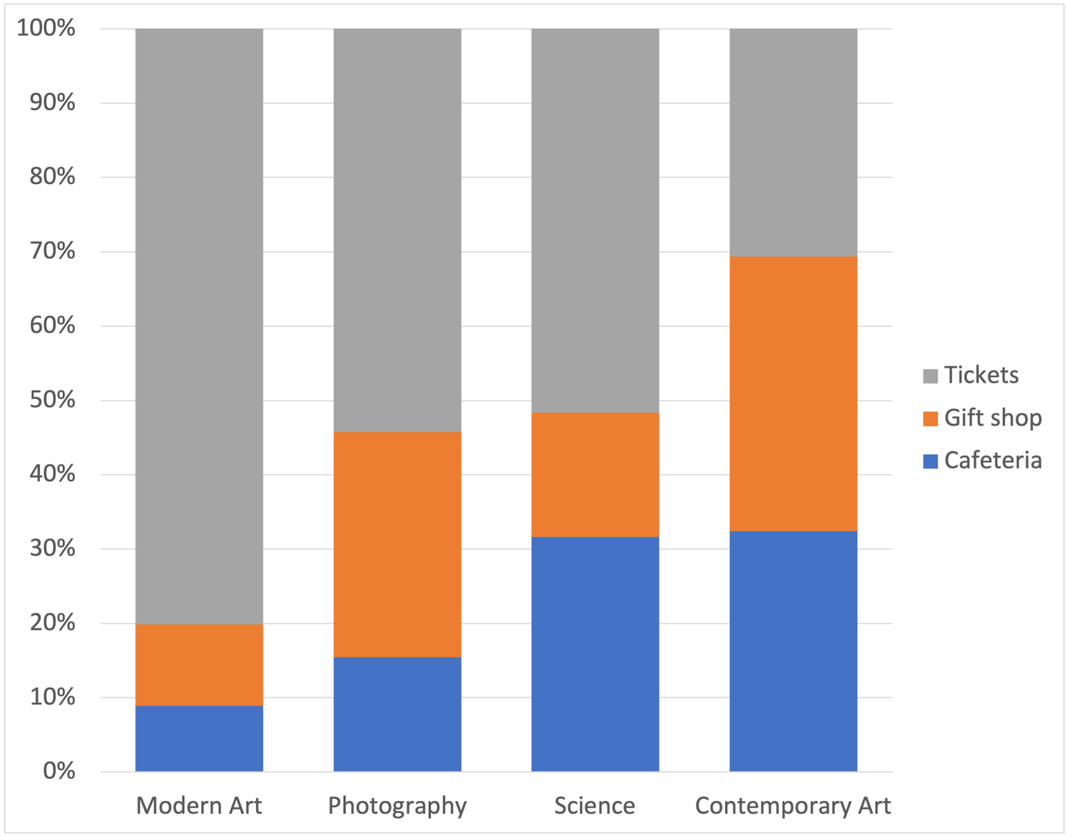
Different insights than standard stacked bar chart

Many more variations and combinations exist to uncover more insights.



Different strokes





Highlight individual museum performance along with income source.

Focused on relative performance for each revenue source by museum.

Let's practice!

COMMUNICATING DATA INSIGHTS

Guiding principles of visualization

COMMUNICATING DATA INSIGHTS

Joe Franklin
Senior Curriculum Manager, DataCamp

datacamp

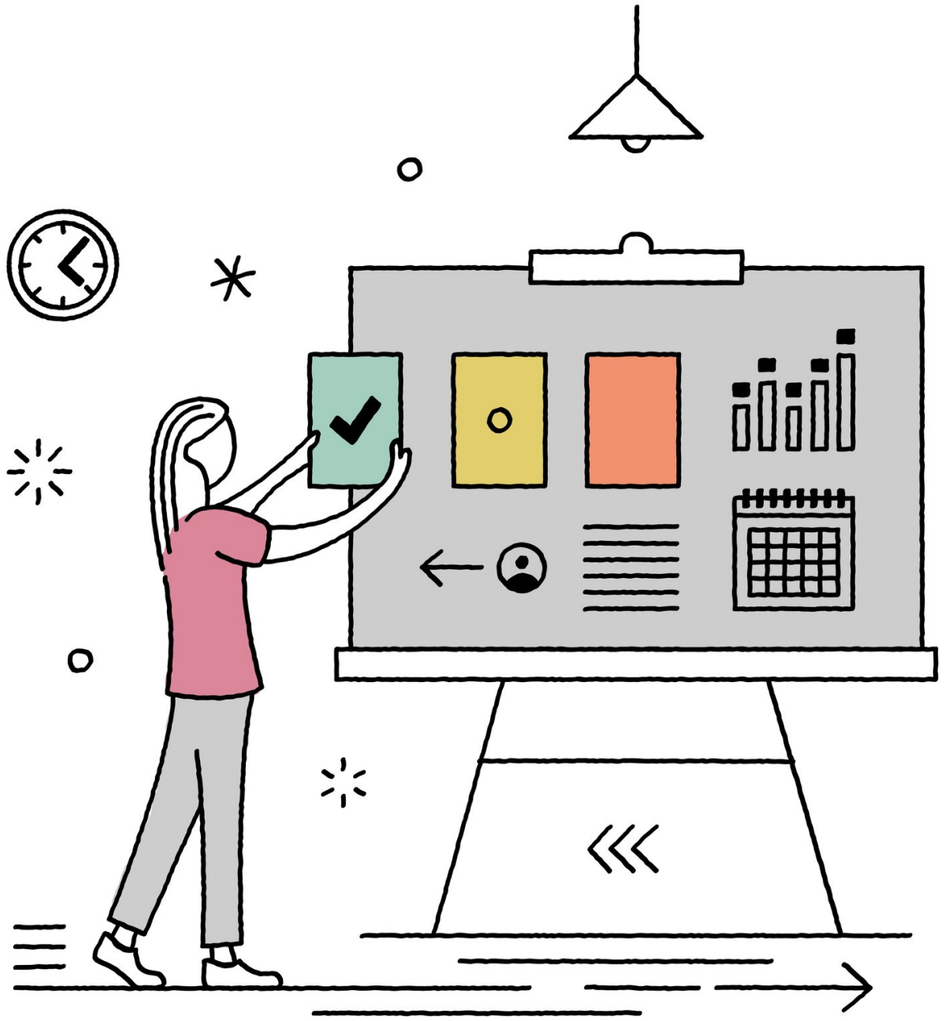
Driving success

Recap:

- Nearly limitless amount of visualizations exist, find more that speak to you.

Looking ahead:

- Understand what makes a visualization powerful and how to create impactful visualizations.



Getting the right picture

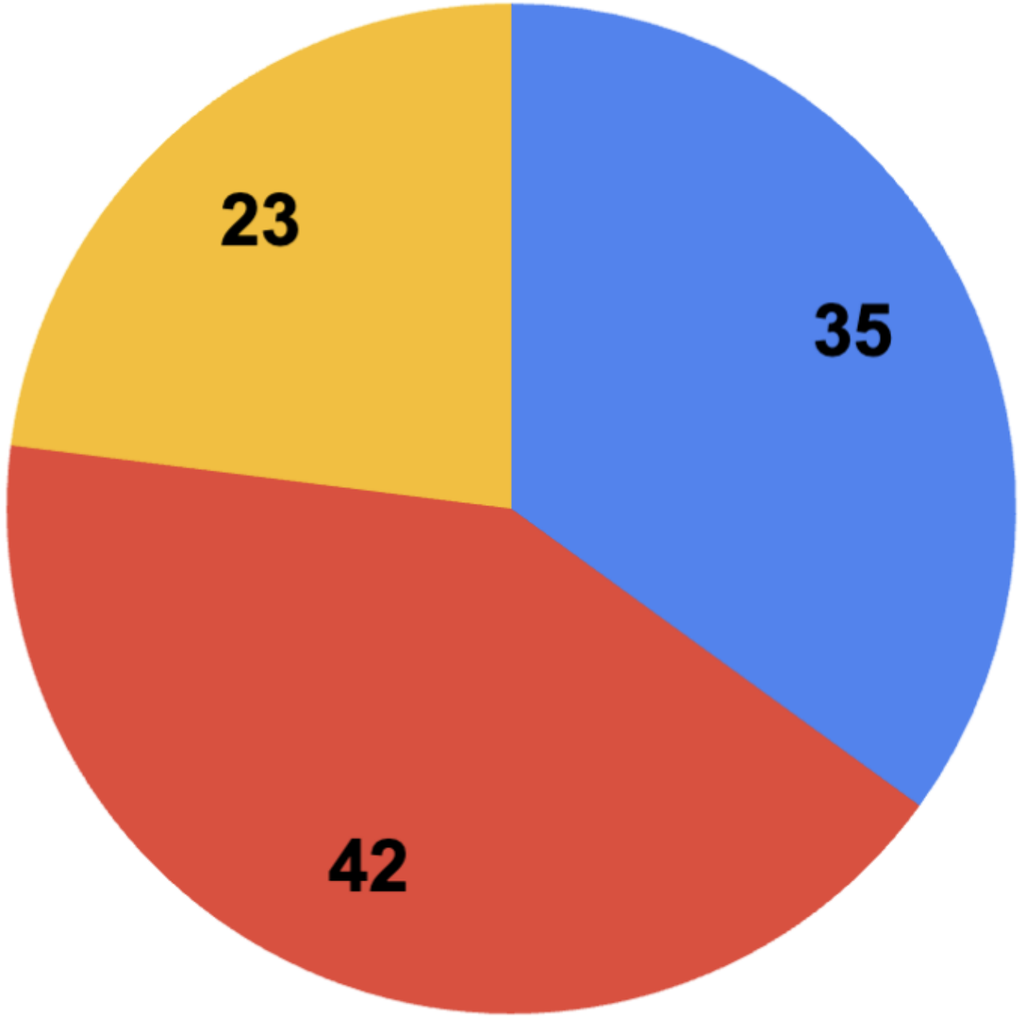
Visualizations aim to share general information that can be quickly understood and actioned.

Overall trend information is more important than knowing exact details when constructing a visual.

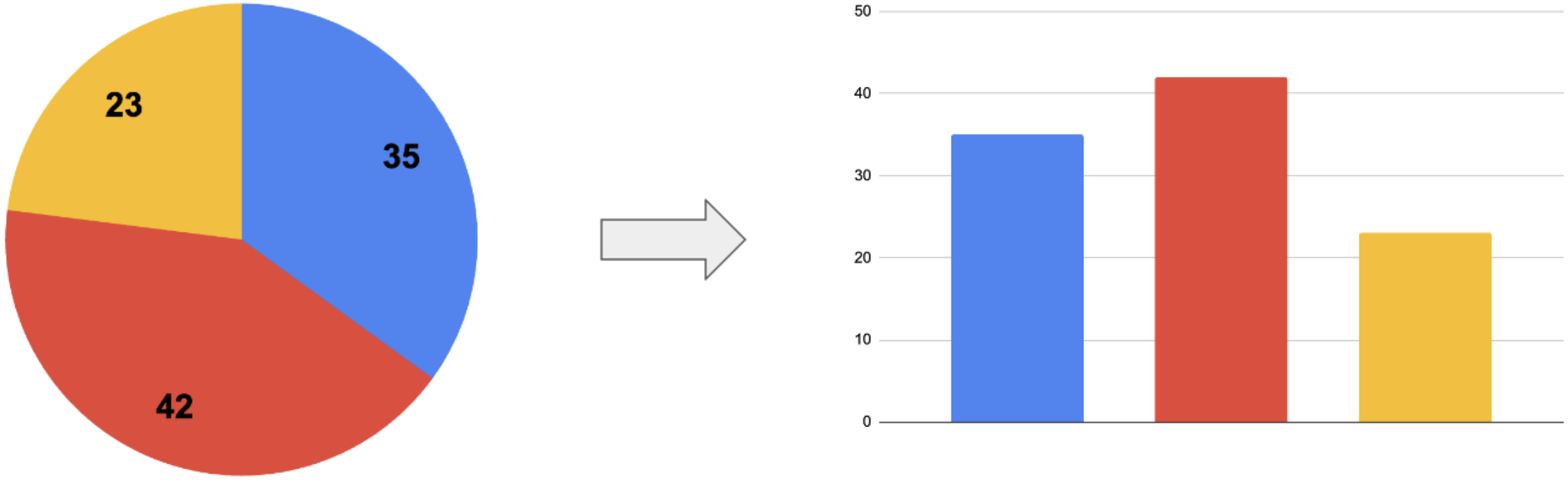
Trying to be too specific is a common issue with visualizations.

Piece of the pie

Piece of the pie



Piece of the pie



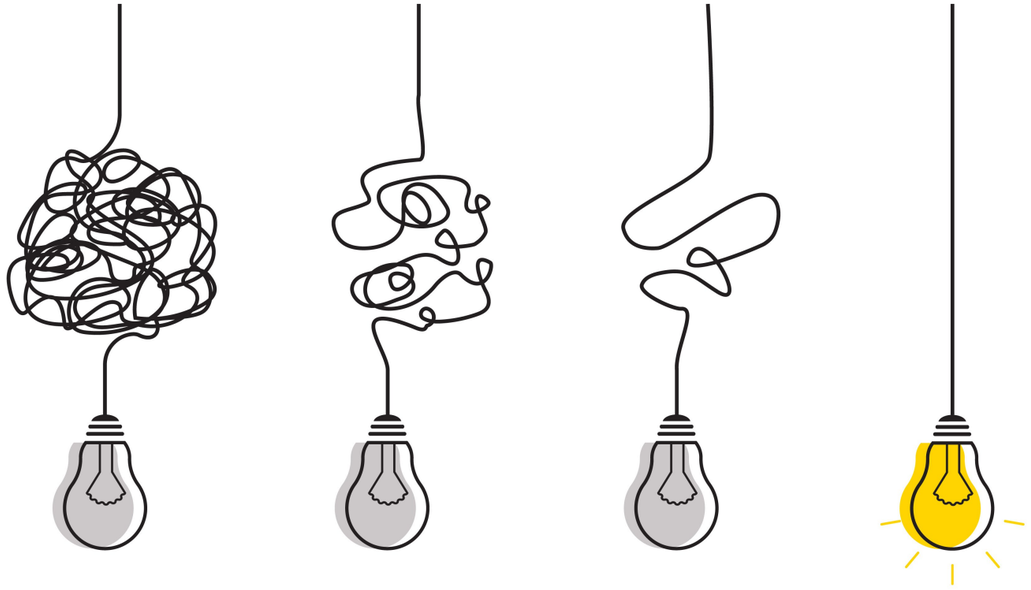
Visualizations are meant to show some information, not all information about a dataset.

Keep it simple

Don't try to do too much with a visualization.

Aim for simplicity over complexity.

Complex formats are powerful but should be used sparingly.

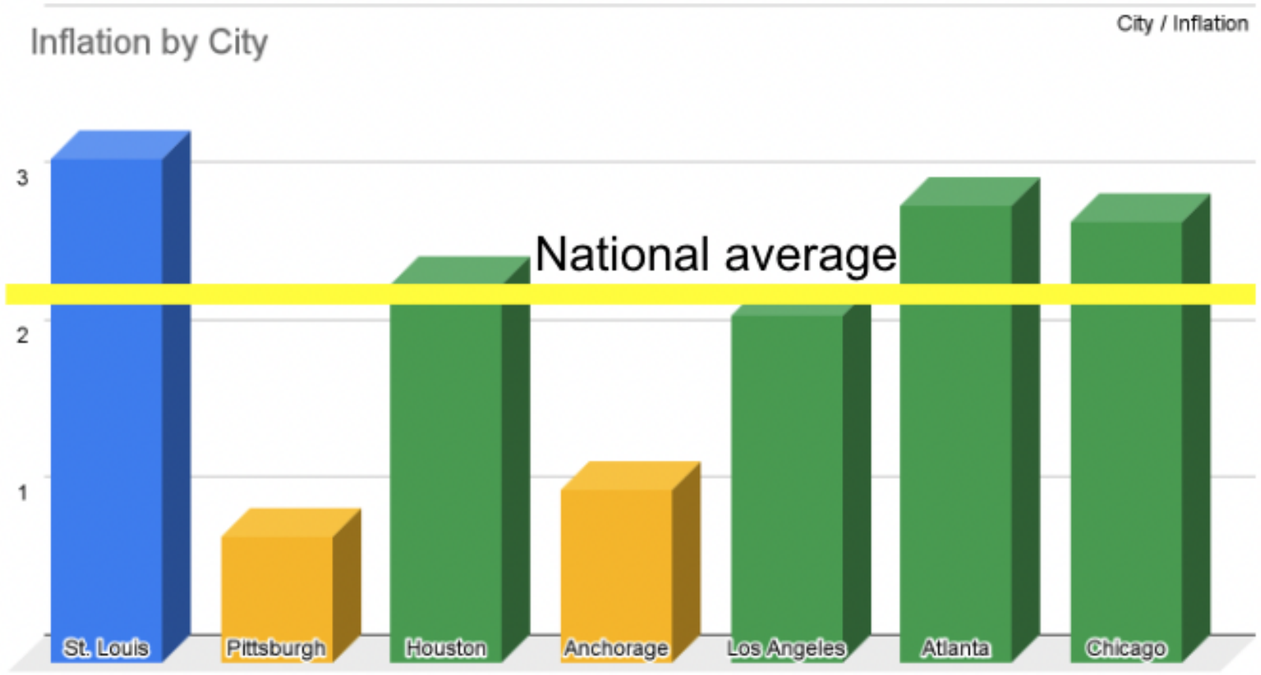


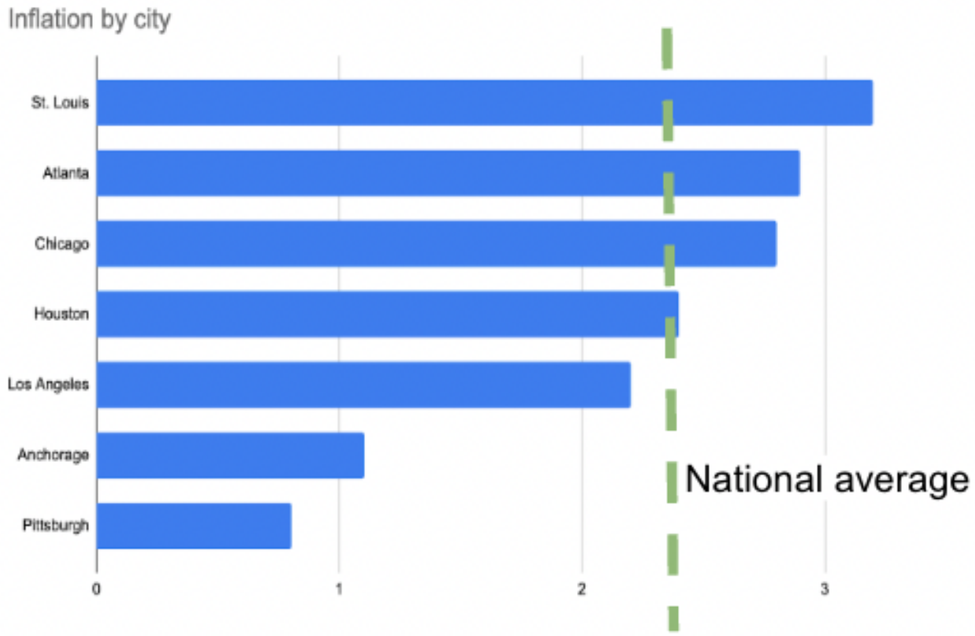
Does it bring you joy?

Is there anything I can remove?

- Gridlines
- Color schemes
- Chart decorations

Tale of two charts





Great expectations

Visualizing data is a two-way street.

Don't deviate severely from established paradigms.

Make minor incremental changes and gather audience feedback.

Let's practice!

COMMUNICATING DATA INSIGHTS