Best practices in visualization

DATA VISUALIZATION IN TABLEAU

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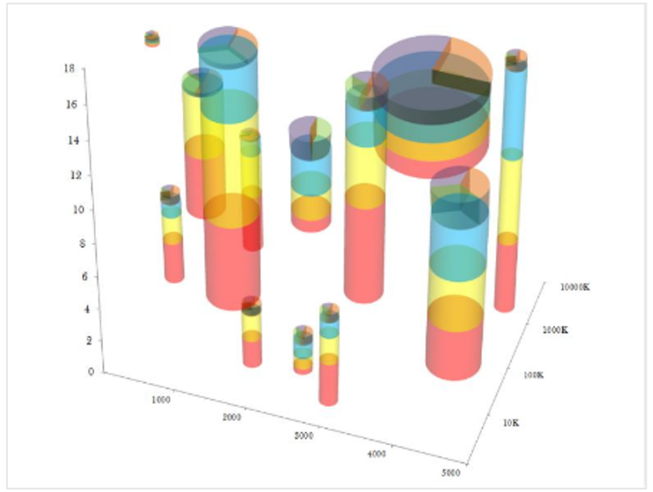
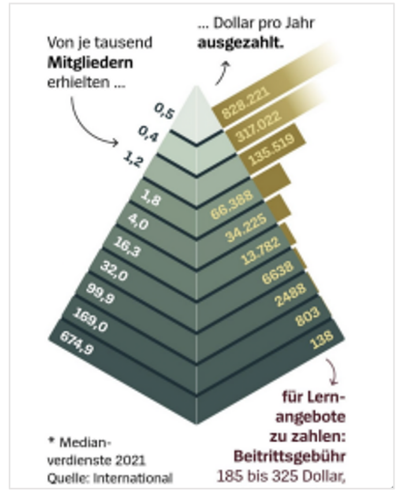
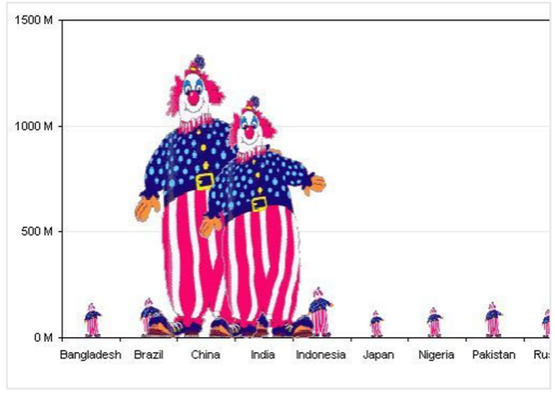
datacamp

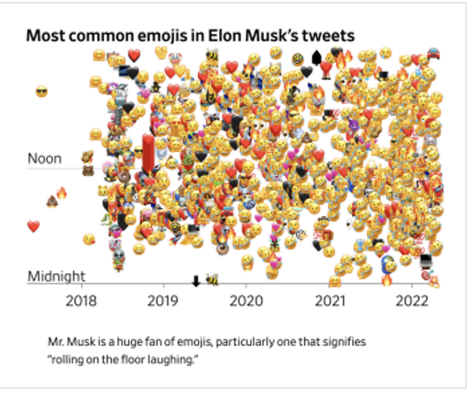
Consequences of bad data visualization

- Ugly charts ("junk charts")
- Loss of interest from your stakeholders
- Unclear, not user-friendly visualization
- Misleading conclusions









Most common mistakes in data visualization

- Poor choice of a visualization
- Misleading design of chart elements
- Incorrect use of color, shape, and size
- Neglectful formatting of the chart
- Wrong handling of missing data

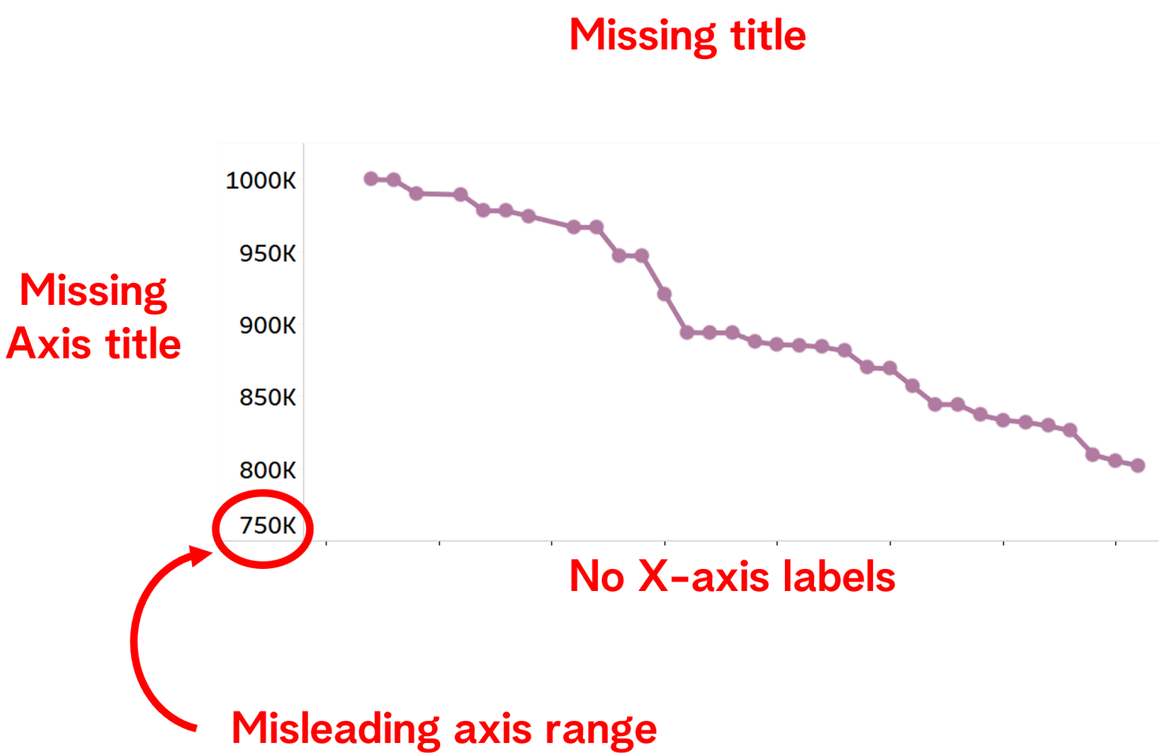
Choosing the right chart for the use case

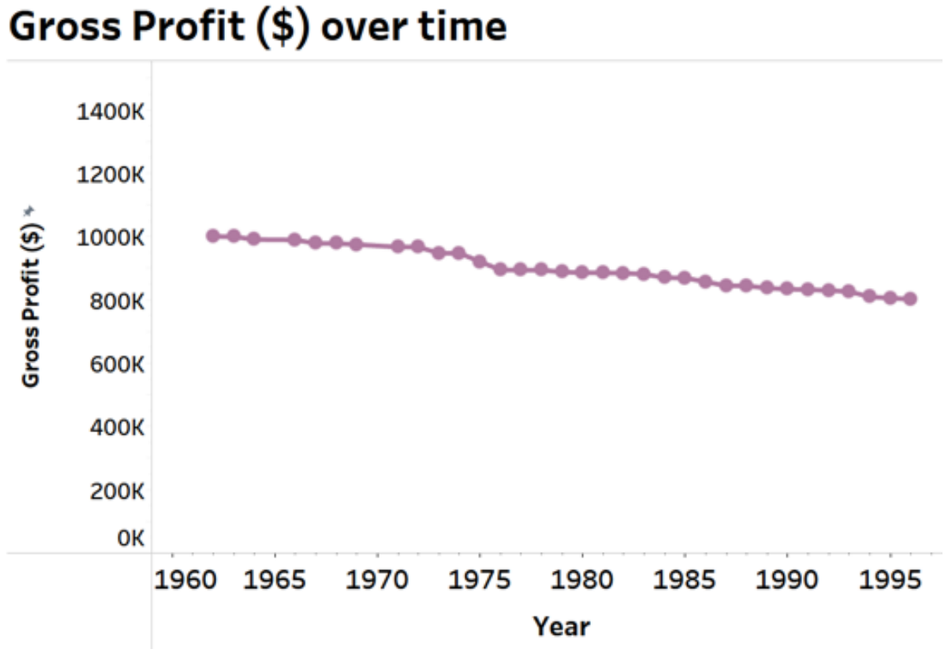
- **To each use case - its chart**
  - Comparison - e.g. bar or line chart
  - Relationship - e.g. scatter plot
  - Distribution - e.g. histogram or box plot
  - Composition - e.g. stacked column chart
- Amount of variables, categories?
- Static or evolving over time?
- Absolute (#) or relative (%) numbers?

- **But also:**
  - The goal of the visualization
  - Audience's level of data literacy

[1] https://www.datacamp.com/cheat-sheet/data-viz-cheat-sheet

Correct design of chart elements

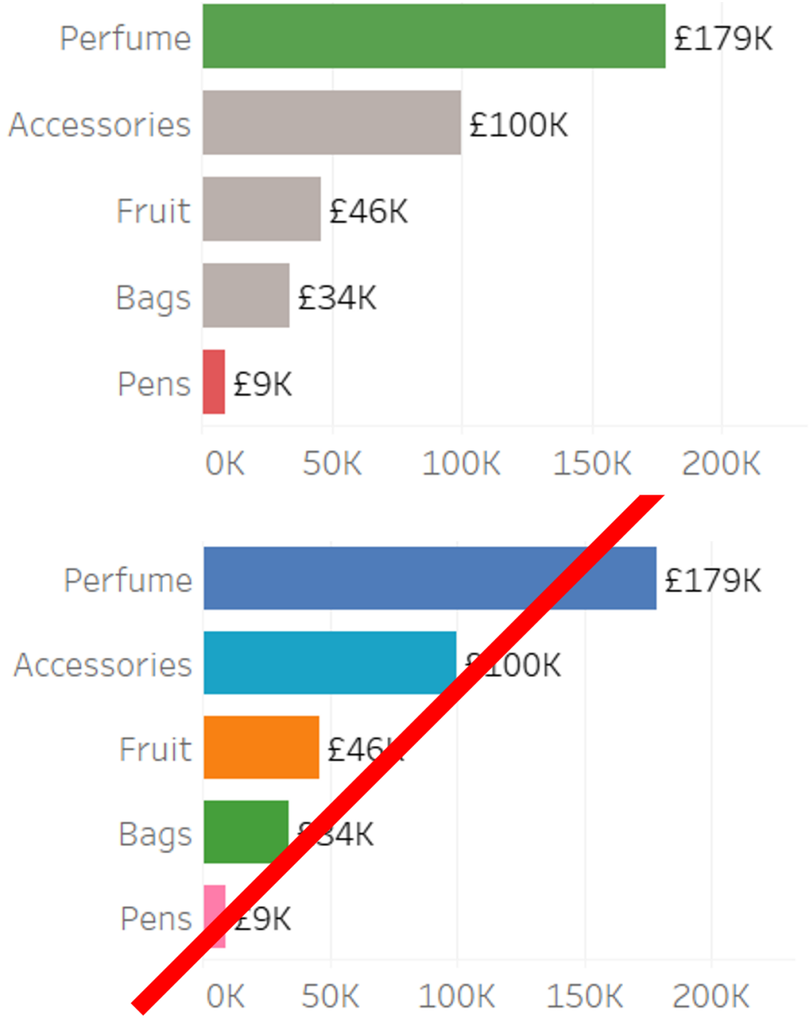




- Add titles to the chart and axes
- If there are no numeric marks on the chart - apply clear axes labels
- Keep the axes starting point at `0`

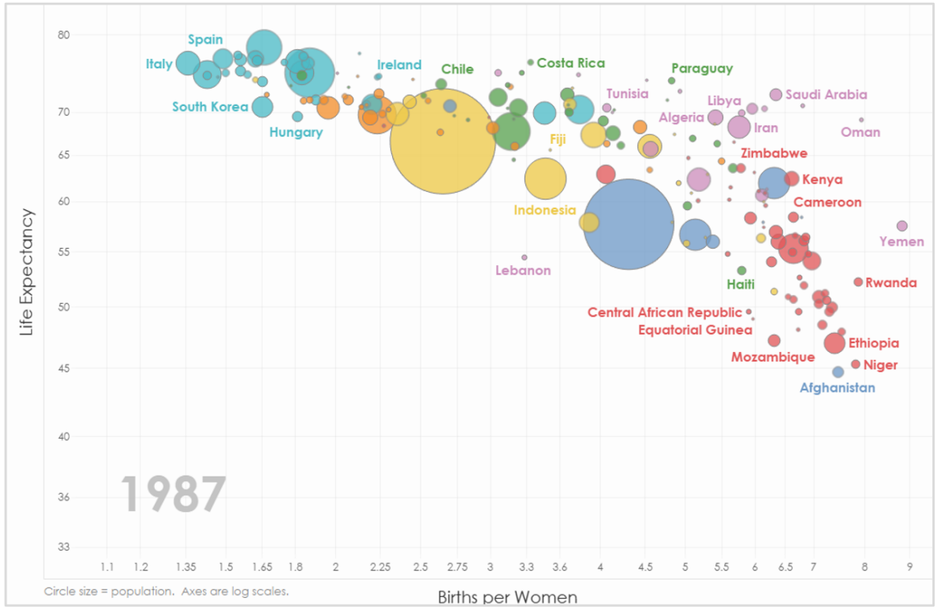
Conscious use of color

- **Do:**
  - Use sparingly
  - Use to highlight key data points
  - Use clear, distinctive colors (consider color blind)
  - Consider matching palettes, company branding, etc.
- **Don't:**
  - Use red, amber and green unless to indicate progression (bad ->good)
  - Color every data point, bar, category

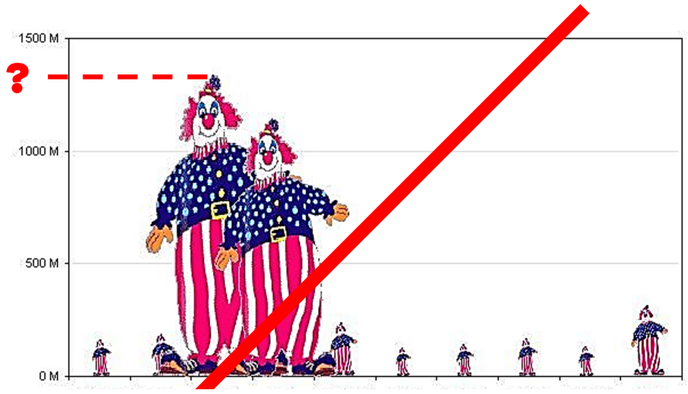


Conscious use of shape and size

- **Do:**
  - Use as an extra variable but only when adding value.
  - Select shapes that can identify categories.

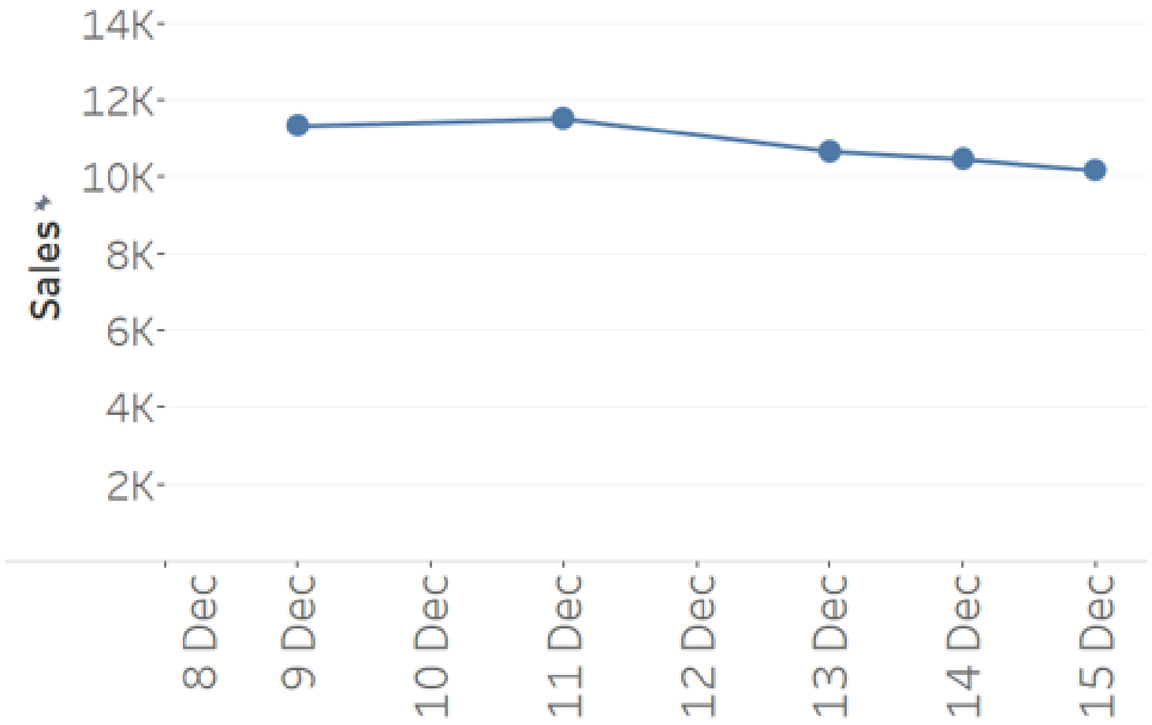


- **Don't:**
  - Avoid using symbols as bars or columns.
  - Use if it distracts attention or renders the chart illegible.

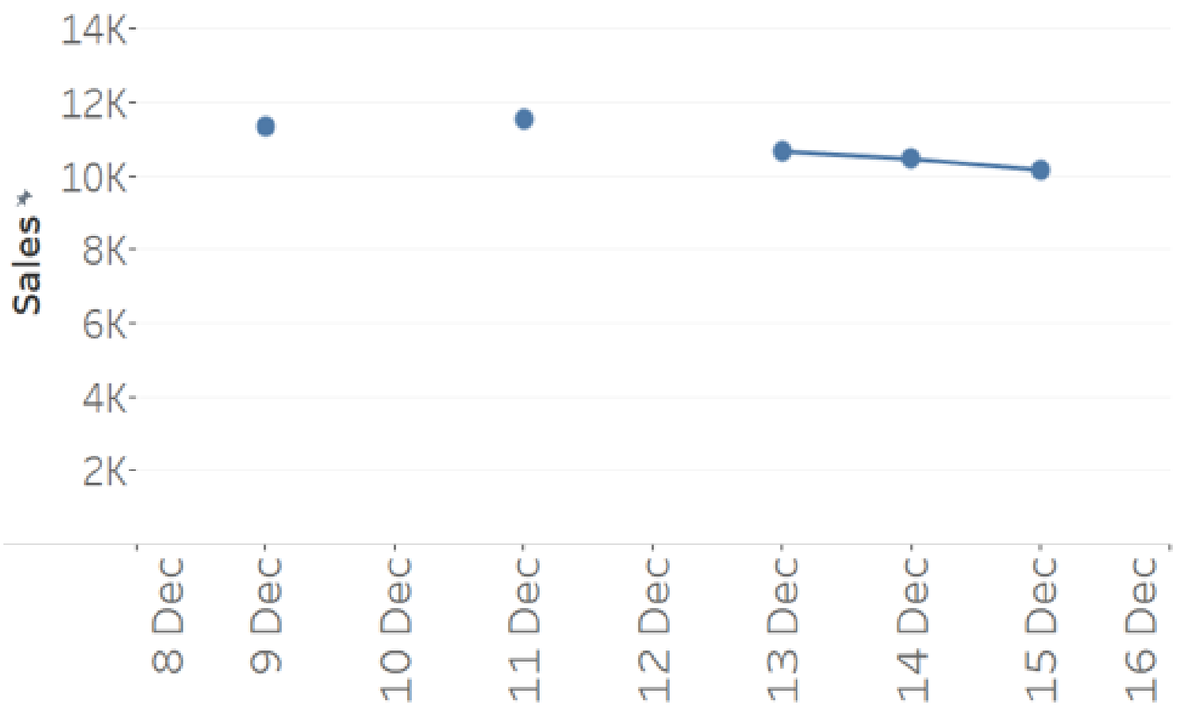


(Un)told story behind the nulls

"Happy" story:



Full story:



Let's practice!

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Practice what you preach

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Building user-friendly, interactive visualizations

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When less is ... more

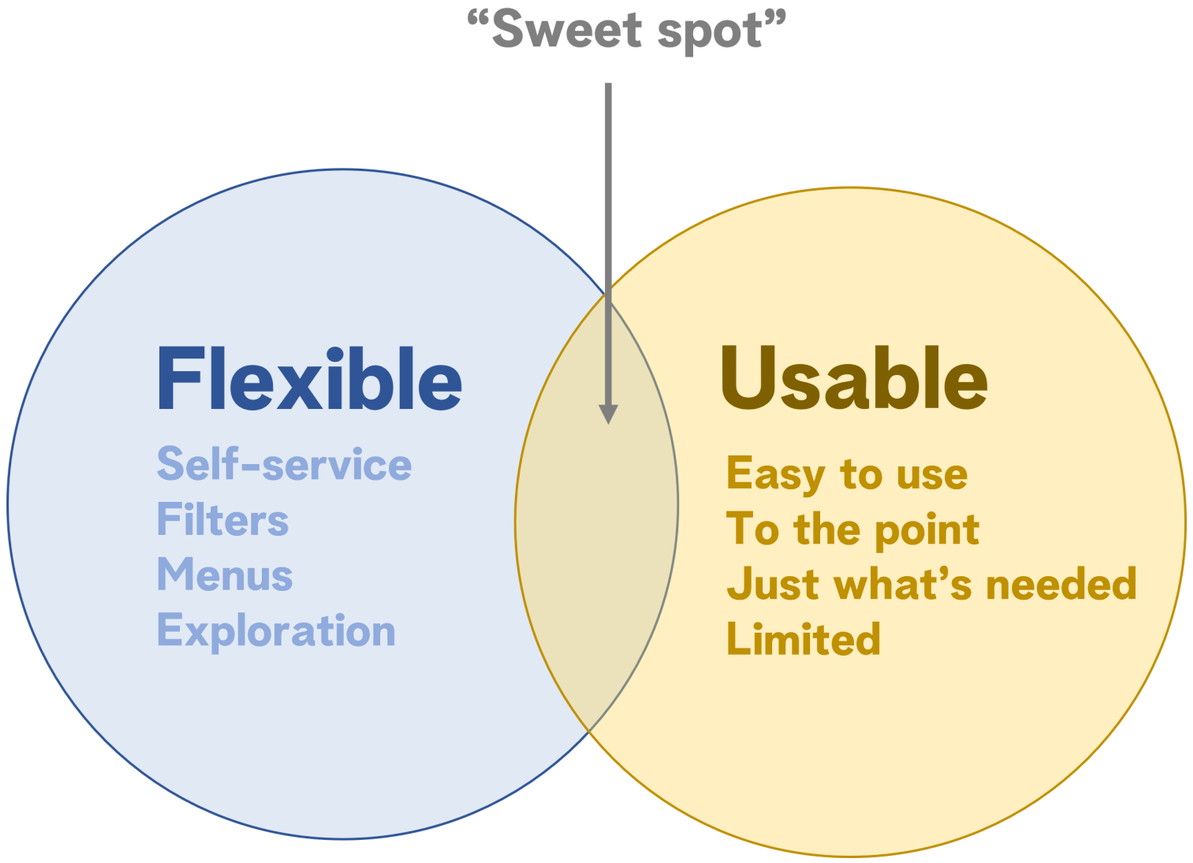
> I didn't have the time, so I wrote you a **long** letter *(Mark Twain)*.

- Simplicity and synthesis ***versus*** complexity and deluge of data points
- Love for data analytics versus the impact on our consumers

Flexibility vs. usability

- "One dashboard to rule them all"
- Overwhelmed stakeholders

- Cognitive overload:
  - New and complex information
  - Limited attention --> loss of interest
  - Inability to distill the key insights



Design - formatting - interactivity

Design

- Cascading design: from general to detailed
- Keep simple, consistent style
- Foresee enough "white space"

Formatting

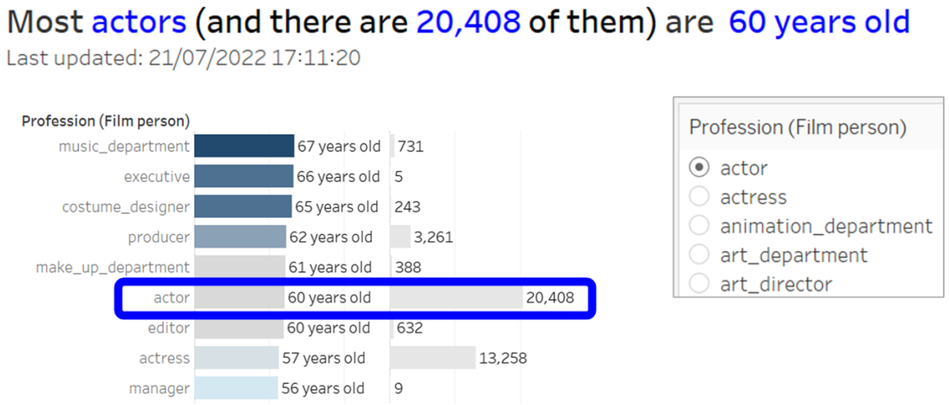
- Accentuate what's important
- Use chart elements to your advantage
- Avoid "visual overload", i.e., too many colors, shapes, sizes, labels

Interactivity:

- User-friendly parameters
- Dynamic highlighting, drill-downs
- Animations (if add value)

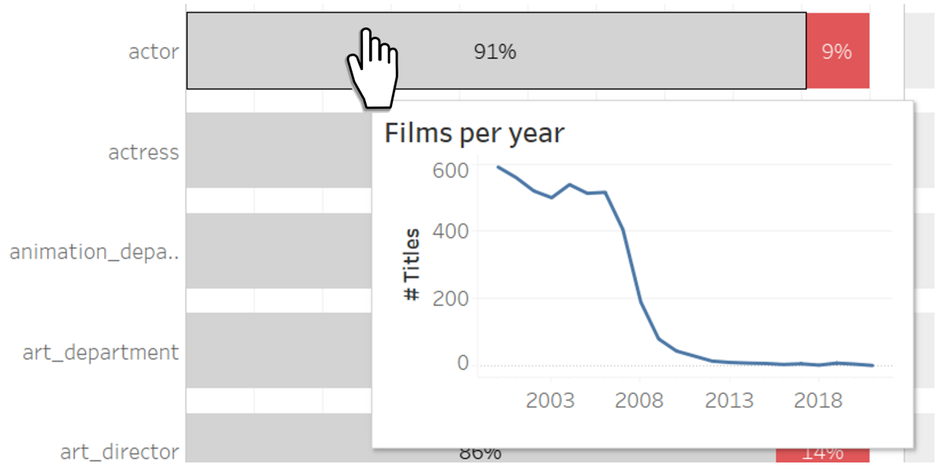
Keeping it user-friendly

Adaptive titles:



- Impactful titles based on the values of measures, dimensions, and filter values
- Information on last data load date and hour
- Use color and font formatting for emphasis

Viz in tooltip:

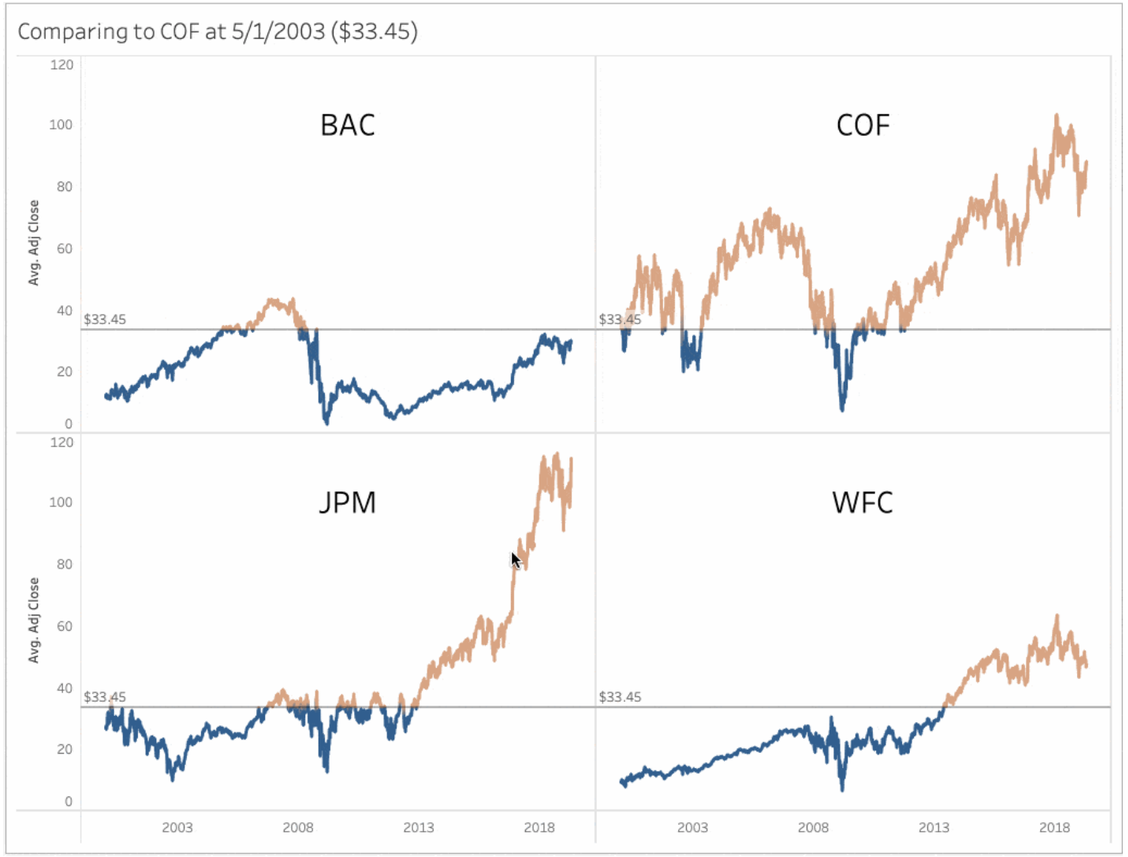


- Embedded visualizations with more detail
- Relevant to a given data point
- Neat way to "hide" extra insights

Making it interactive

Actions:

- Changing a value through
  - Clicking
  - Hovering
  - Selecting a mark on the visualization
- Intuitive design, interaction with data
- Exploration and drill-downs in a few clicks



Check out Tableau blog for more examples

Tips for stimulating user-adoption

- Design and develop in co-creation with stakeholders
- Short feedback loops (show and try)
- Interactive user training
- Visual documentation (e.g. demos, gifs)
- Usage monitoring of your dashboards

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Tooltip . . . and Action!

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