
EuroPython

Python and Data Storytelling to create and deliver better presentations

Sebastián Flores, EuroPyCon 2025

Part 1 - Block 4

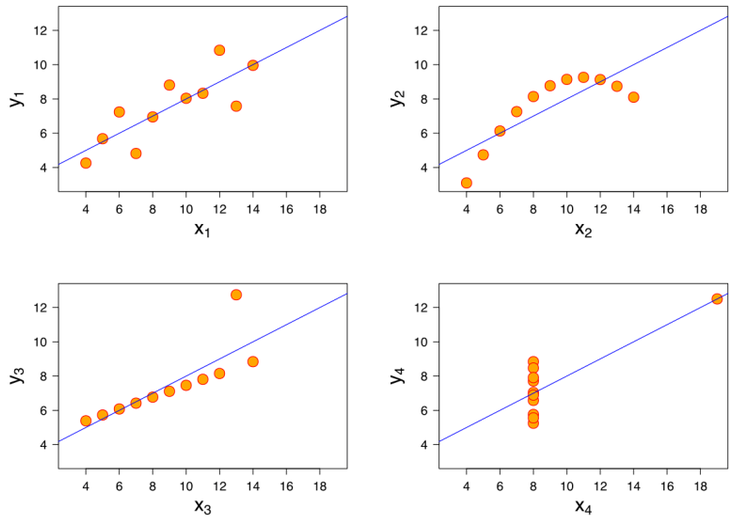
Visualization Quick Wins

Why visualizations?

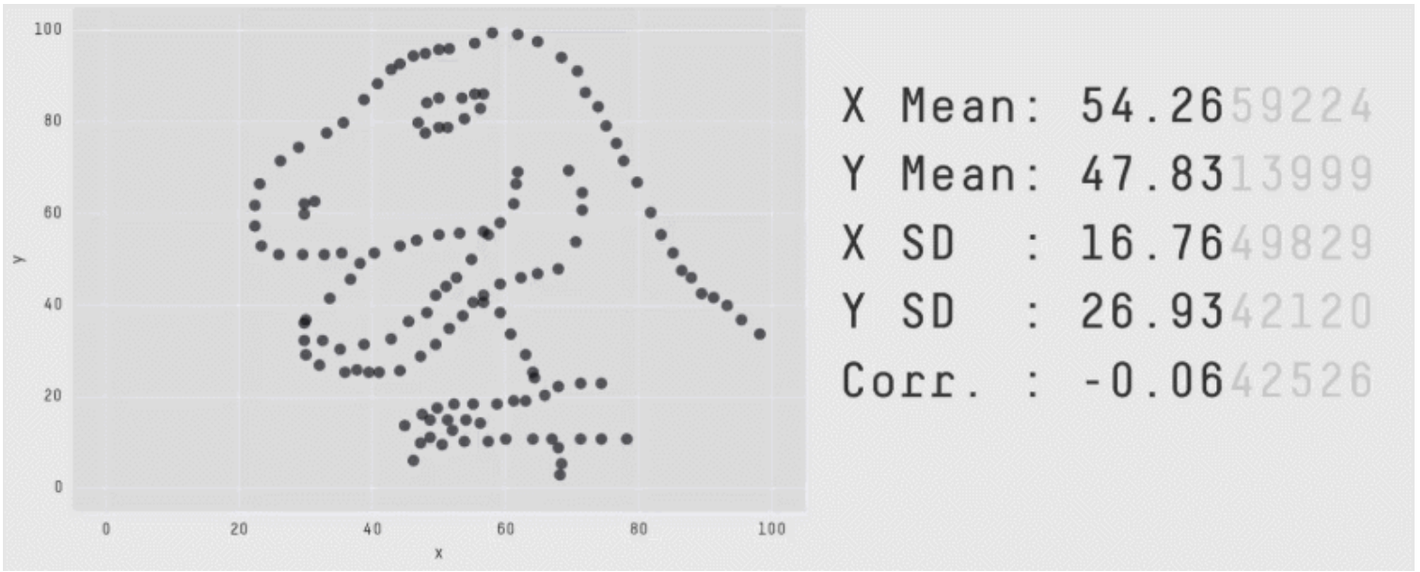
Because of Anscombe’s quartet and the datasaurus.

Why visualizations?

Anscombe's quartet



Datasaurus Dozen

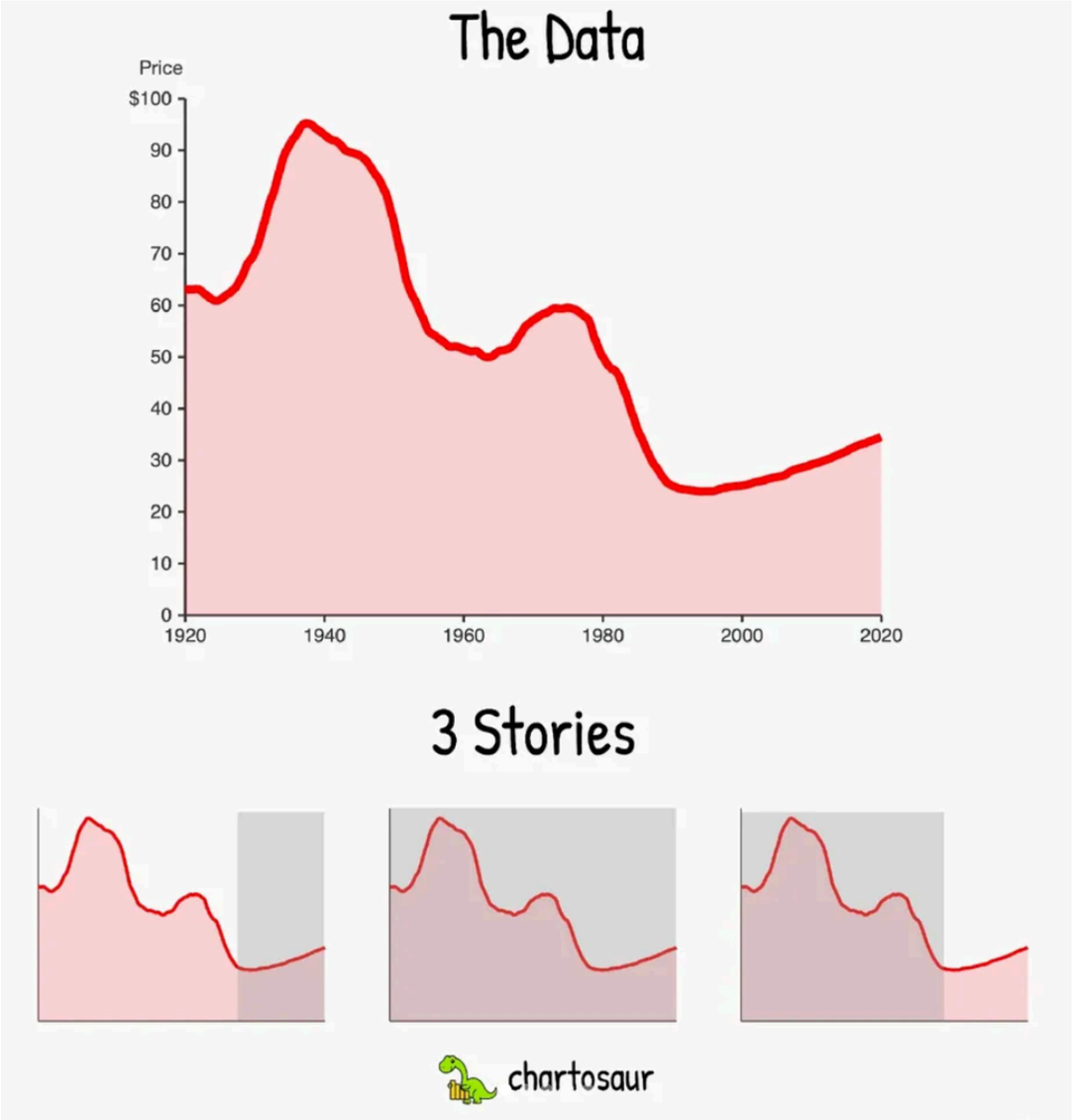


Quick wins

Let’s see some quick wins and code before the coffee break.

Visualization is never "agnostic/neutral"

There is always more than one story within the data:



Select the story within your data

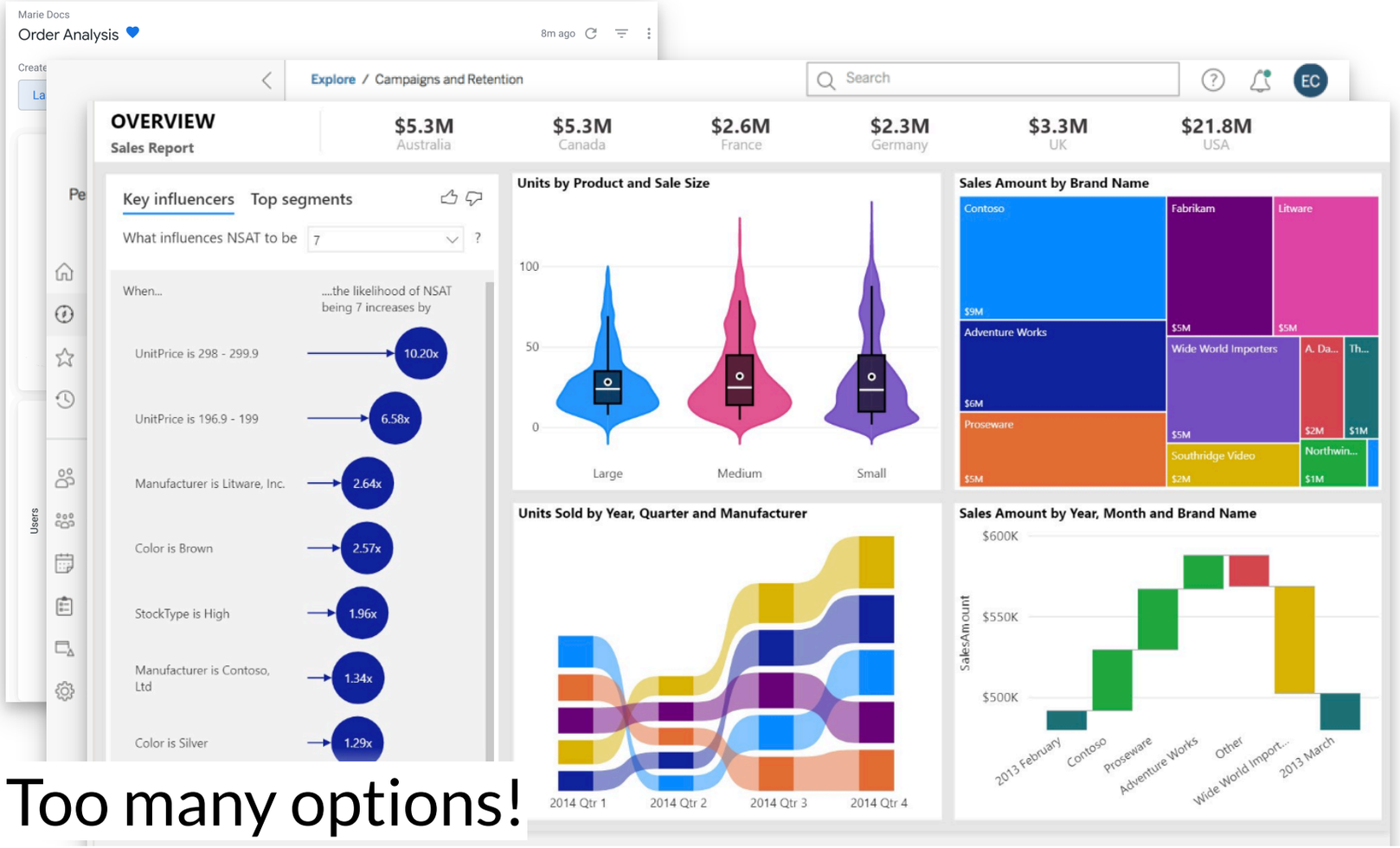
Be fair and truthful.
Be aware you’re not neutral, and that you are showing part of the data in a given way.

Exploratory Viz != Explanatory Viz

Craft what **YOU** want your audience to see.

Avoid exploratory graphs on your presentation.

Data Exploratory Viz



Too many options!

User **cannot** be responsible of finding your insights.

Remember: Never use exploratory visualizations on a presentation!

Simplicity is the ultimate sophistication.

Leonardo da Vinci

My references:

- **Storytelling with data** (book), by Cole Nussbaumer Knaflic
- **Matplotlib Journey** (online course), by Yan Holtz and Joseph Barbier

Simple ideas with high impact

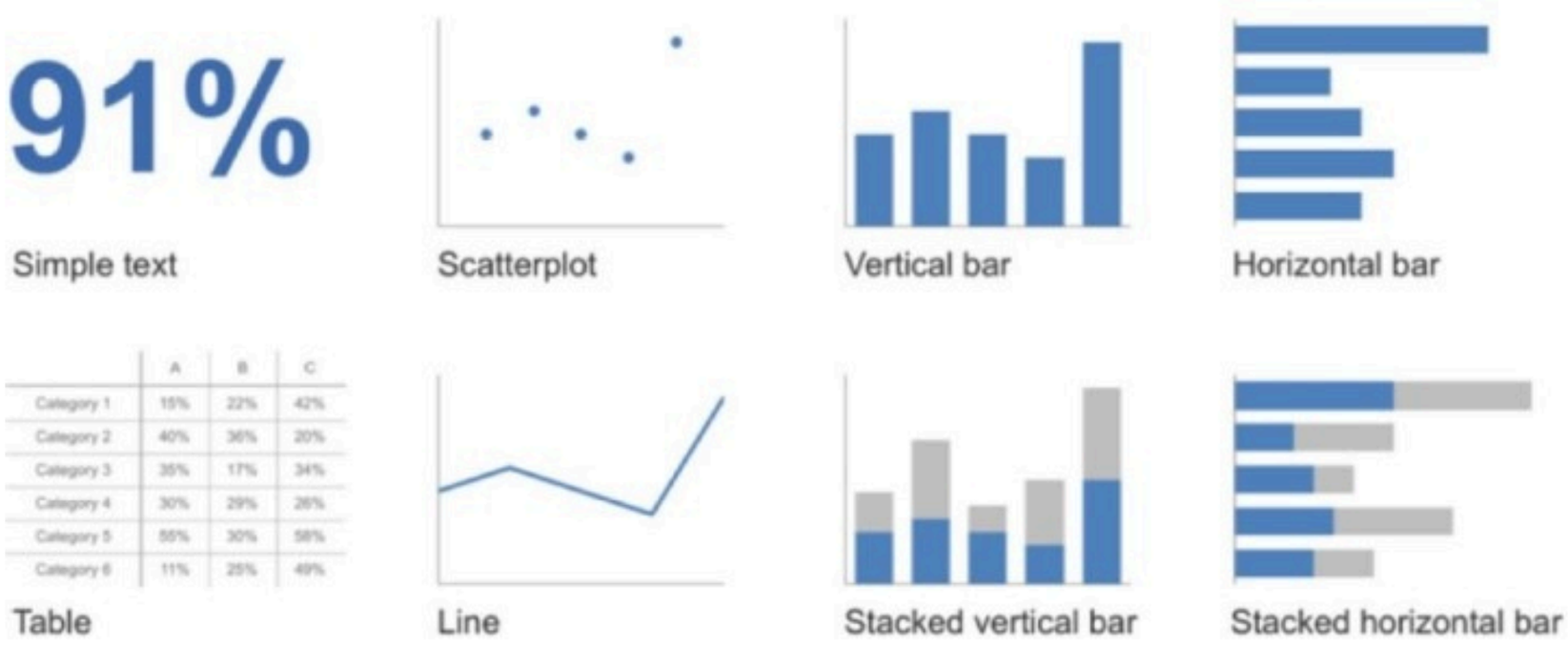
0. Use simpler plots
1. Apply a mis-en-place
2. Annotate your plots
3. Use better colors
4. Develop a progression

0. Use simpler plots

Avoid using complex/custom plots.

Most of the time, you can use just 8 types of plots.

Top 8 plots according to Cole Nussbaumer Knaflic's Storytelling with Data:



- Number: *directly on your slideware*
- Scatterplot: `plt.scatter`
- Vertical bar: `plt.bar`
- Horizontal bar: `plt.barh`
- Table: *directly on your slideware*
- Line: `plt.plot`
- Stacked Vertical bar: *Iterate over* `plt.bar`
- Stacked Horizontal bar: *Iterate over* `plt.barh`

1. Mis-en-place

Prepare your data before plotting

- Create a clean dataset
- If necesary: cast, group and simplify the data before plotting.

2. Mixed bag of tricks

- Learn the difference between fig and ax
- Prefer to use `ax.text` and `fig.text` over `title`, `subtitle`, `suptitle`, `xlabel`, `ylabel`, etc.
- Remove any unnecesary bounding box or line (spine of ax)
- Simplify axes and ticks
- Avoid vertical text

3. Annotate your plots

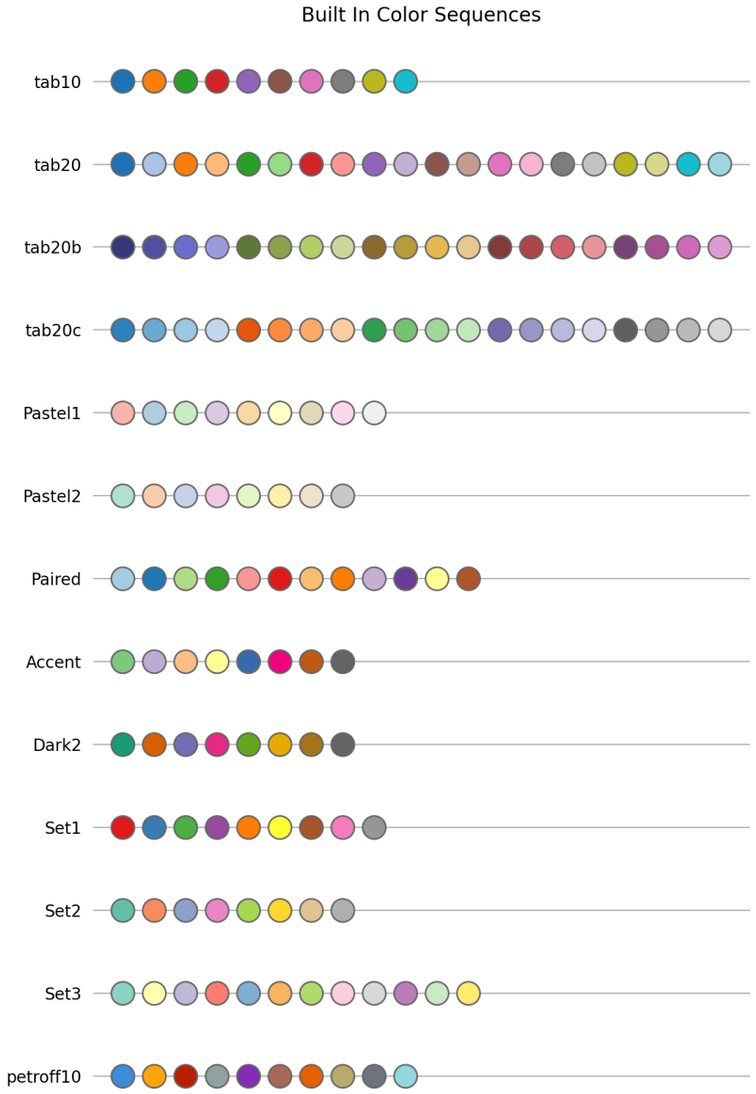
- Remove the “legend” (if possible): annotate contextually.
- Use “highligth_text” to mix font sizes, weigths and colors.

4. Use better colors

- Don’t use regular colors: use a palette
- Options:
  - Matplotlib’s palette: 13 options
  - Pypalette: +2600 curated palettes
- “Inspire” yourself from great examples

4. Colors: Matplotlib

https://matplotlib.org/stable/gallery/color/color_sequences.html:


Built In Color Sequences
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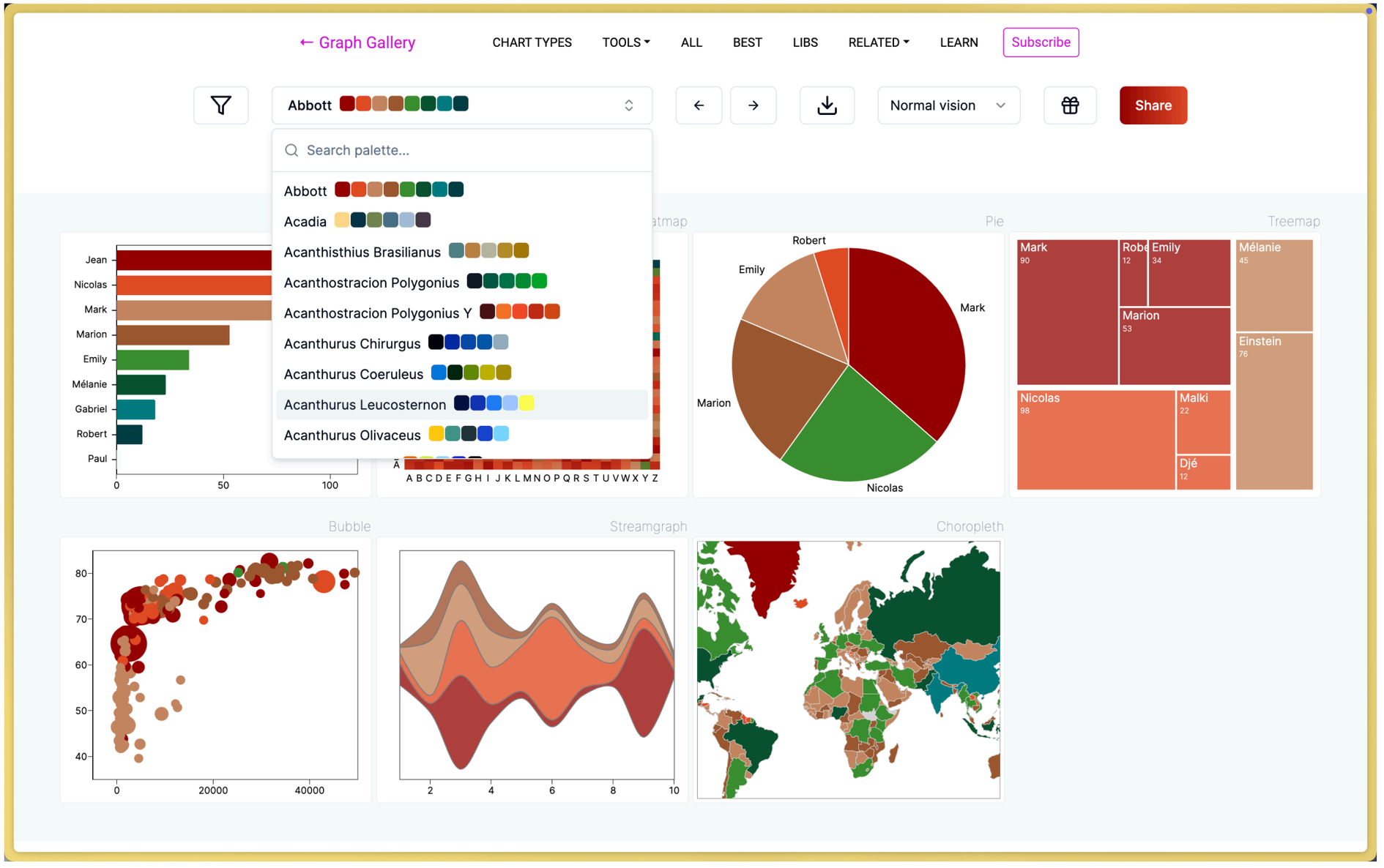
4. Colors: Pypalette

https://python-graph-gallery.com/color-palette-finder/: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5. Develop a progression

- Don’t reveal the final plot inmediately
- Use a progression to train the audience into how to read
- Revel the plot step by step and explain each step
- Keep the control of the attention at all steps

Let’s code!