

Visualisation

- Overview
- Selecting chart type
- Guidelines

Visualisation - Overview

- Data visualisation conveys **information** through visual representations with usually the aim to gain **knowledge** about the internal **structure, trend** and **relationships** between data entities.
- Visualisation can be useful in many **contexts**. In Data Science it is usually used for a number of key (overlapping) purposes:
 - **Discovery**
 - **Analysis**
 - **Communication**
- Using visualisation for communication tends to be the **focus** of most of the articles and books about visualisation. The audience in this case are the **stakeholders** who are typically business oriented.
- In cases of discovery and analysis the audience is usually the Data Science **practitioners**. Requirements and tooling of visualisation in these cases are different from the communication purpose.

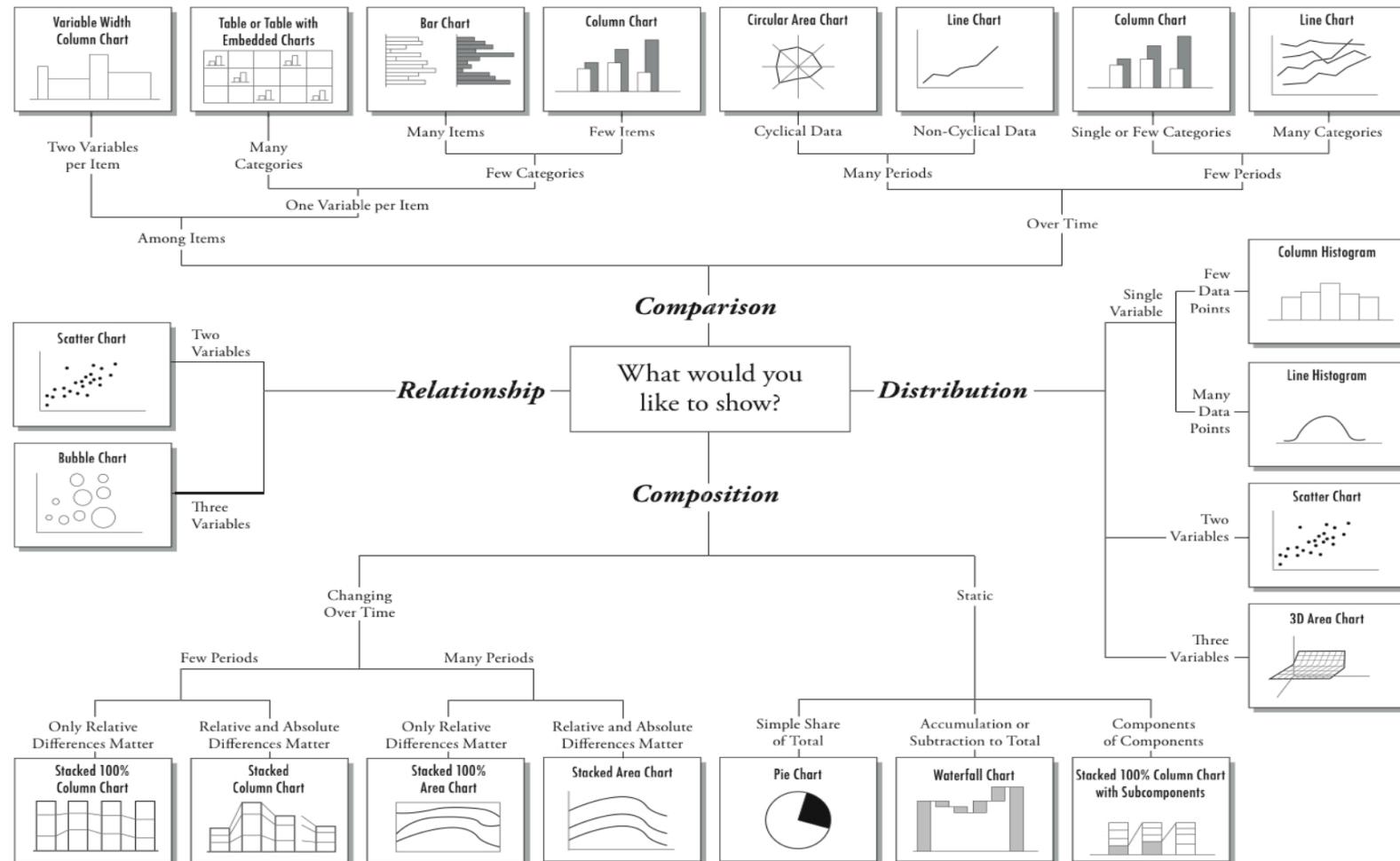
Visualisation – Selecting charts

- The effective visualisation technique depends on what you are **looking at** and what you are **look for**.
- **Type of data** (what are you looking at):
 - Single variable
 - Two variables
 - Many variables
 - Timeline
- **Purpose** (what are you looking for)
 - Range
 - Pattern
 - Comparison
 - Distribution
 - Proportions

Visualisation – Selecting charts

- There a finite number of useful chart types.
Cultivate you [own favourite list](#).
- List of common chart types
 - Area Chart
 - Bar Chart
 - Box-and-whisker Plots
 - Bubble Cloud
 - Cartogram (map)
 - Gantt Chart
 - Heat Map
 - Histogram
 - Network
 - Polar Area
 - Radial Tree
- Scatter Plot (2D or 3D)
- Timeline
- Treemap
- Word Cloud
- And any mix-and-match combination in a dashboard!

Chart Suggestions—A Thought-Starter

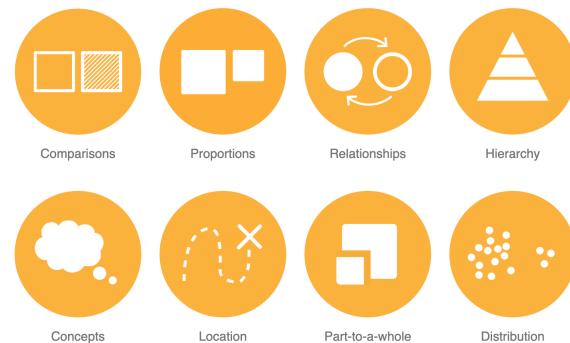


Visualisation - Resources

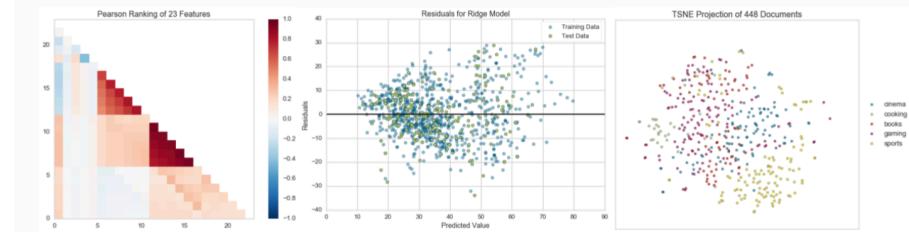
- There are a number of excellent guides to explore and learn about most applicable visualisation techniques for the task at hand :
 - [Visual vocabulary](#)
 - [The Data Visualisation Catalogue](#)
 - [YellowBrick Machine Learning Visualisation](#)

What do you want to show?

Here you can find a list of charts categorised by their data visualization functions or by what you want a chart to communicate to an audience. While the allocation of each chart into specific functions isn't a perfect system, it still works as a useful guide for selecting chart based on your analysis or communication needs.



Yellowbrick: Machine Learning Visualization





Data visualisation guidelines

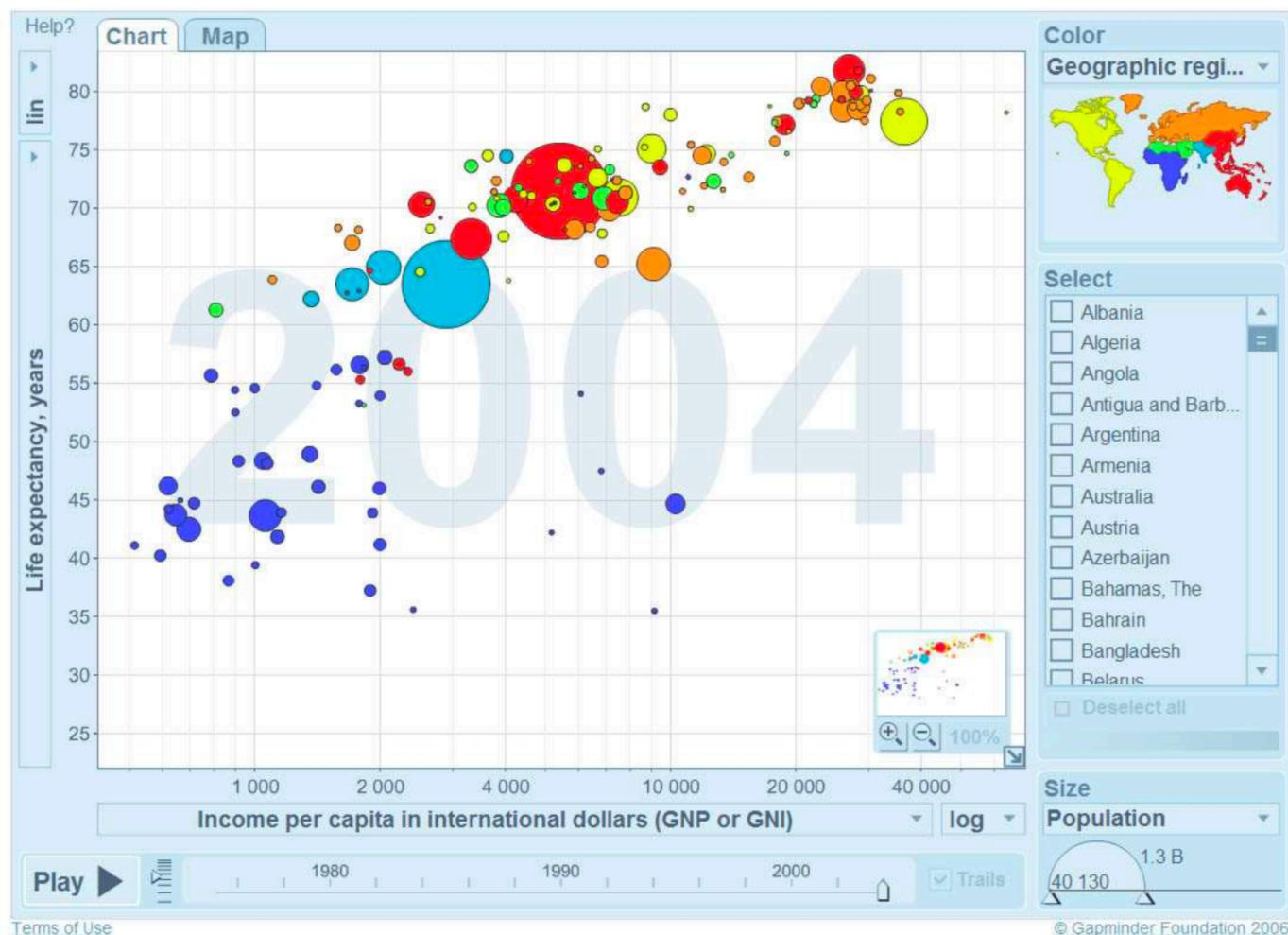
- Articulate the purpose (of the chart)
- Speak to a specific audience
- Provide context
 - Show clear, precise title, labels and legend
- Keep things simple and digestible
 - Use one visualisation to show one key idea
 - Highlight what you want your audience to notice (ideally only one element). Highlight with colour, size or orientation.
 - Make the diagram, text and numbers clearly legible.
- Design for user engagement
 - Use simple interaction if applicable



Questions?



Appendices





End of presentation