



VISUALISATION AND STORYTELLING

Lecturer: Mark Gillan

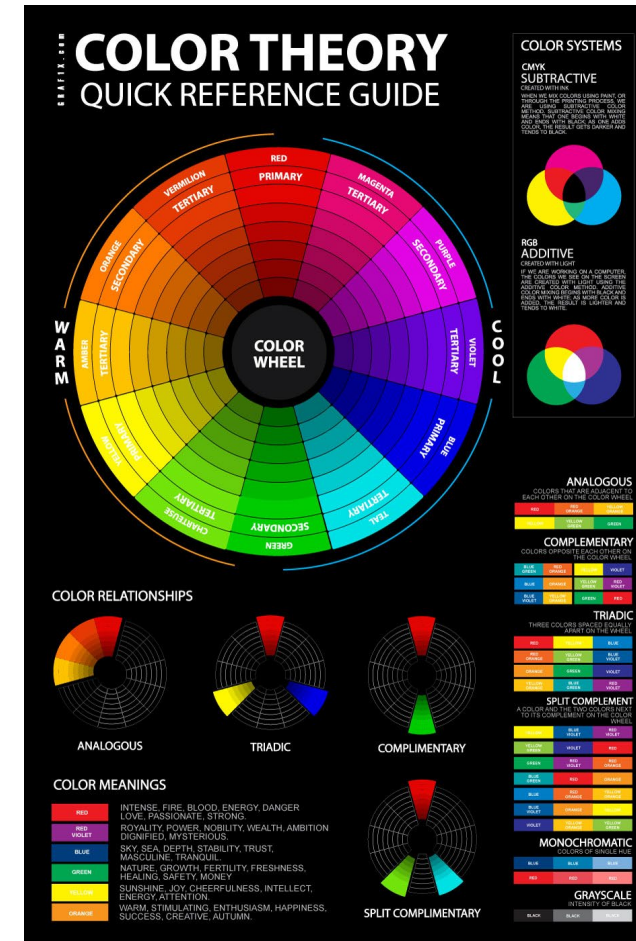
VISUALISATION AND STORYTELLING

The graphical representation of data.

Data is visualised to allow the human brain to spot patterns and identify insights easily and quickly.

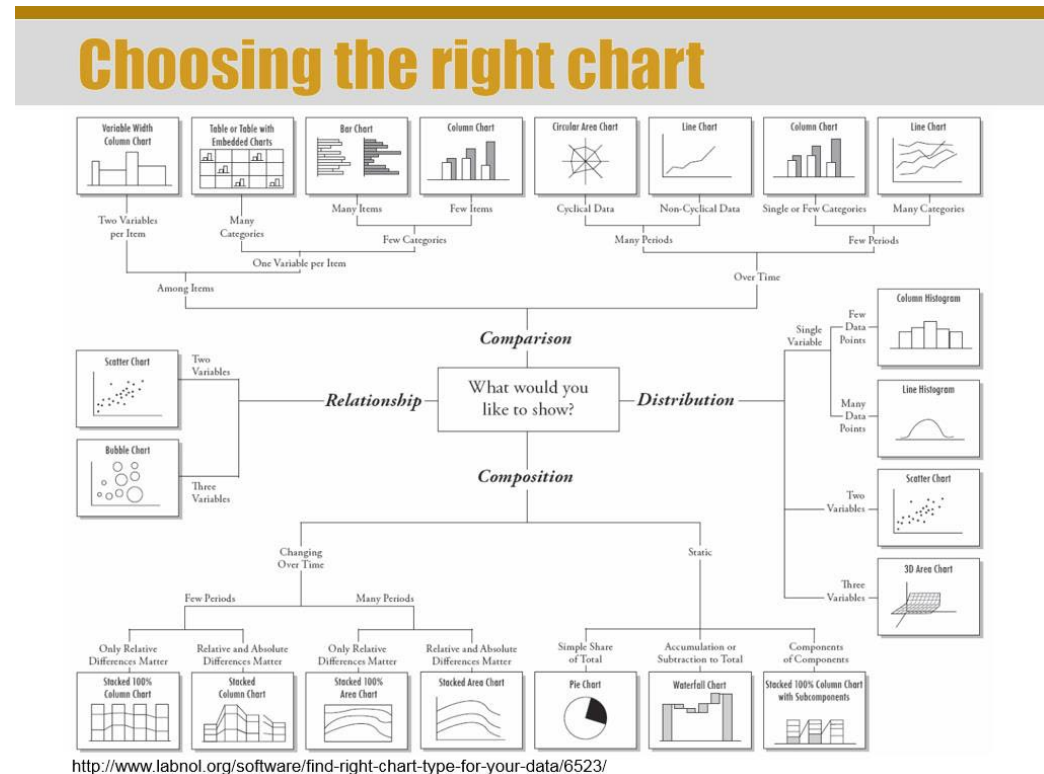
Data visualisation is both an art and a science.

It involves both the manipulation of the data into the correct shape for display alongside an understanding of the use of colour, how the brain consumes visual information and effective design choices. This should then all come together into something visually pleasing that tells a story. This requires both patience and practice.

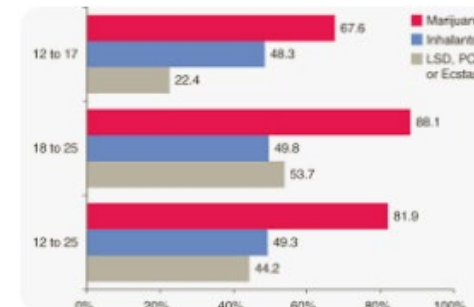
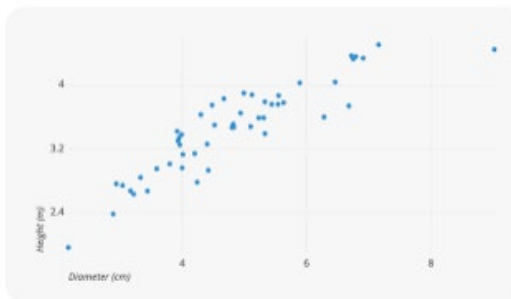
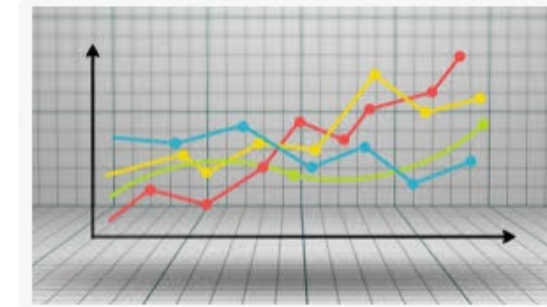
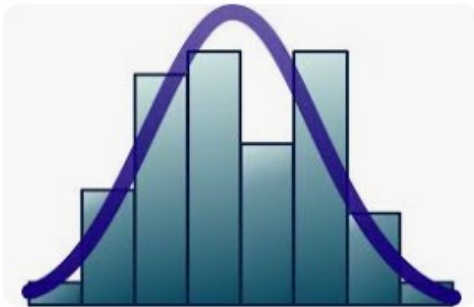
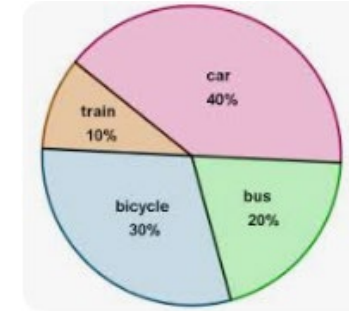
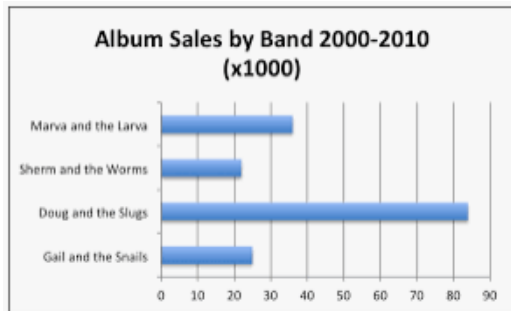


CHOOSING THE RIGHT GRAPH / CHART

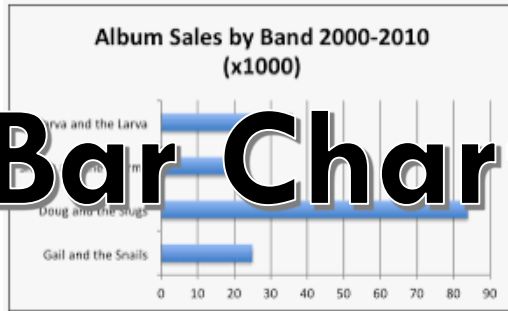
- Before setting out to create a visualisation it is important to plan.
- This involves making sure the output addresses the question being asked and presents back the information clearly.
- Not all chart types are suitable for all types of data, or the questions being addressed.
- There are six main types, that can address different questions, let's look at them ...



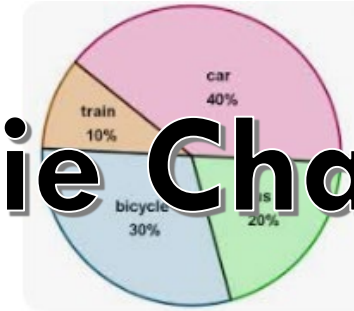
SIX MAIN CHART/GRAPH TYPES — TRY TO NAME THEM



SIX MAIN CHART/GRAPH TYPES — TRY TO NAME THEM



Bar Chart



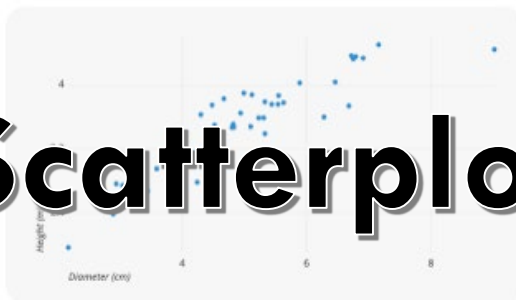
Pie Chart



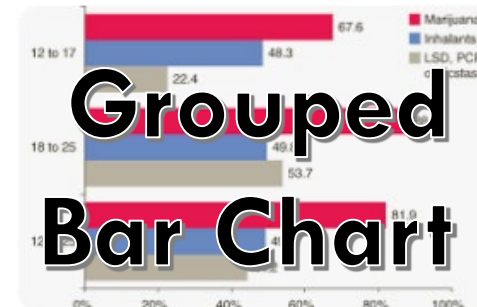
Histogram



Line Graph



Scatterplot



Grouped Bar Chart

SIX MAIN CHART/GRAPH TYPES - EXPLAINED

Comparison

- Comparing and sorting data points
- Example: Bar Chart

Composition

- Part-to-whole comparisons
- Example: Pie Chart

Distribution

- Comparison of data points along an axis
- Example: Histogram

Relationship

- Patterns between two or more variables
- Example: Line Graph

Evolution

- Patterns over time
- Example: Scatterplot

Profiling

- Pattern comparison
- Example: Grouped Bar Chart



USEFUL TOOLS

- There are many useful tools which can be used to narrow down the choice of chart to use.
- A summary of them is given here: dataed.in/cool
- Some posters and printouts that can be downloaded for reference are (see opposite)
- [data-to-viz \(dataed.in/dtv\)](http://dataed.in/dtv)
- [Chart.Guide \(dataed.in/cg\)](http://dataed.in/cg)
- Qualitative chart chooser (dataed.in/cc3)
- FT Visual Vocabulary (dataed.in/ftvv)



VISUAL PERCEPTION

Our brains are particularly good at spotting a number of specific patterns

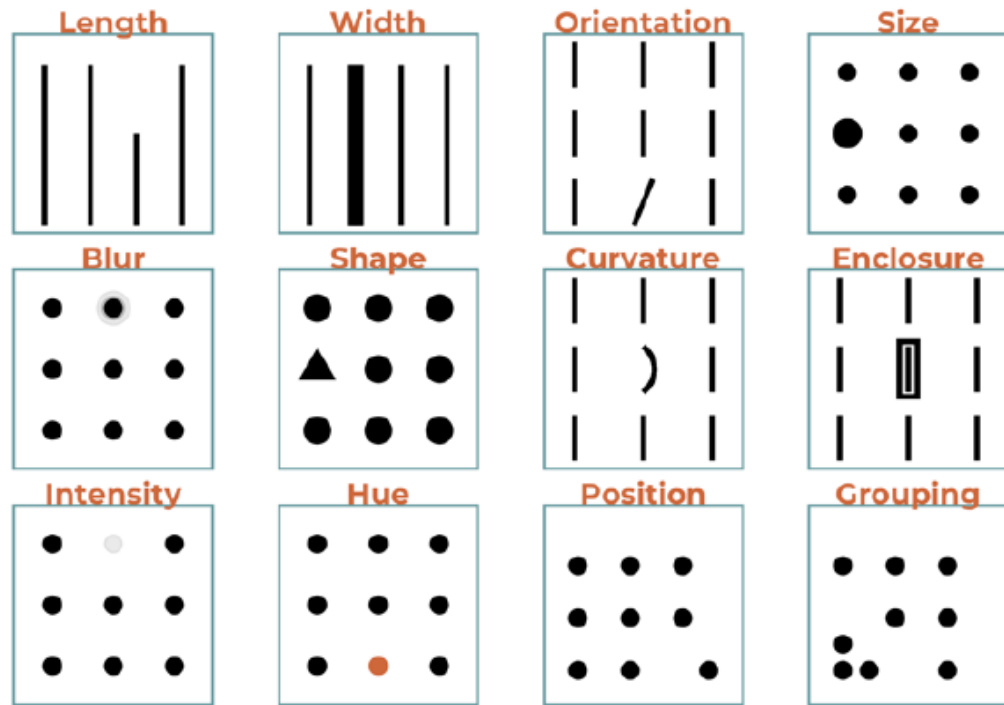
This means that we process them subconsciously and patterns just “pop-out”.

This is called **pre-attentive processing**.

By designing graphs that make use of these visual features it ensures that they can be processed at a glance.



PRE-ATTENTIVE PROCESSING



The first eight (counting horizontally from the top left) make use of form or how shapes appear. The next two use colour, and finally the last two use the **position** of the marks relative to each other. There is actually a final visual feature that can be processed subconsciously, this is **motion**, but this is not often used for graphics as it can be distracting to have a moving mark on a graph.

Different graph types **encode** data using combinations of these different visual features.



OPTICAL FUN

