



GRAPHICAL BEST PRACTICE

Lecturer: Mark Gillan

USE OF COLOUR EFFECTIVELY

SEQUENTIAL

- Single colour scale from light to dark
- Example: Heatmaps

DIVERGING

- Two colours with a neutral midpoint
- Example: positive/negative value

CATEGORICAL

- A different colour per category
- Example: line charts, or stacked bar charts

HIGHLIGHT

- A highlight colour against a neutral colour to bring attention to a specific point

ALERTING

- Use of a colour code to show whether on target or not

Note: It is best not to use more than 3 colours on a single graph, otherwise the brain needs to revert to **attentive processing** and the patterns cannot be spotted quickly.



COLOUR-BLINDNESS

Care should be taken with colour on a graph. It can be very effective if used correctly.

However, not everyone's perception of colour is identical, so consideration should be given to the *8% of males and 0.5% of females* who are colour-blind

Colour-blindness is the decreased ability to differences in particular colours.

The majority of people with colour-blindness are red-green colour-blind. The blue-yellow form is much rarer.

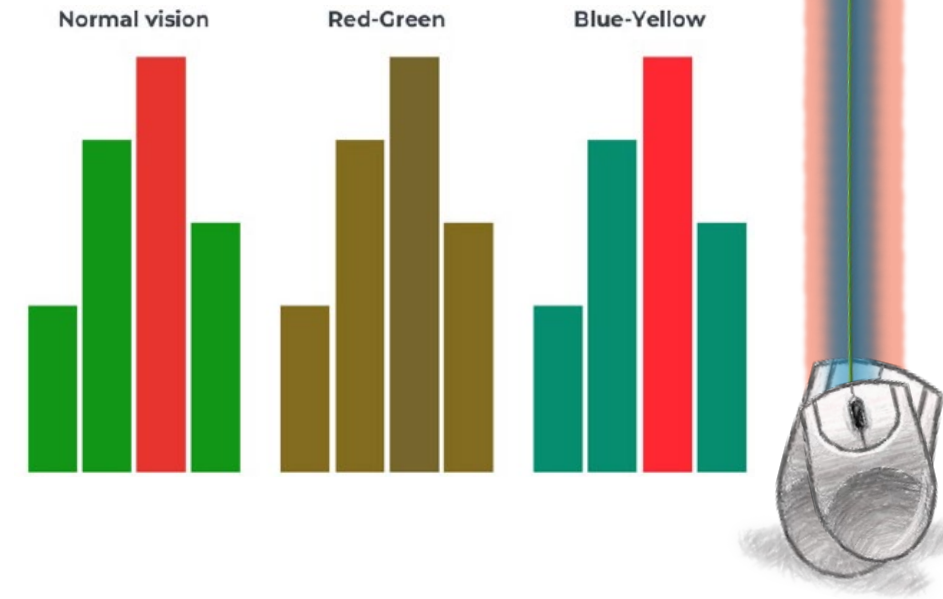
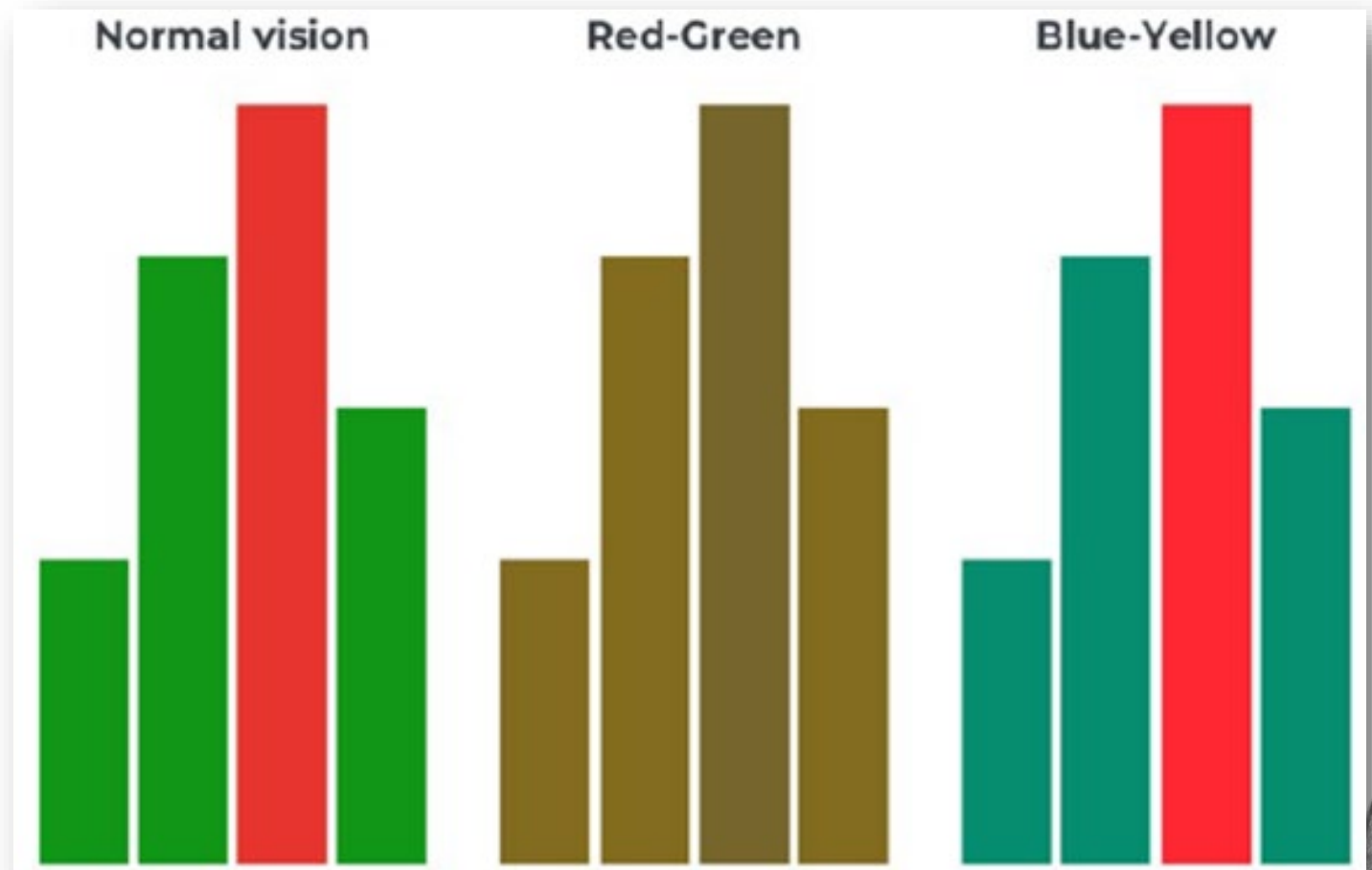


ILLUSTRATION OF COLOUR BLINDNESS

To the right is an example of how a red and green highlighted bar chart would look for different types of colour-blindness:

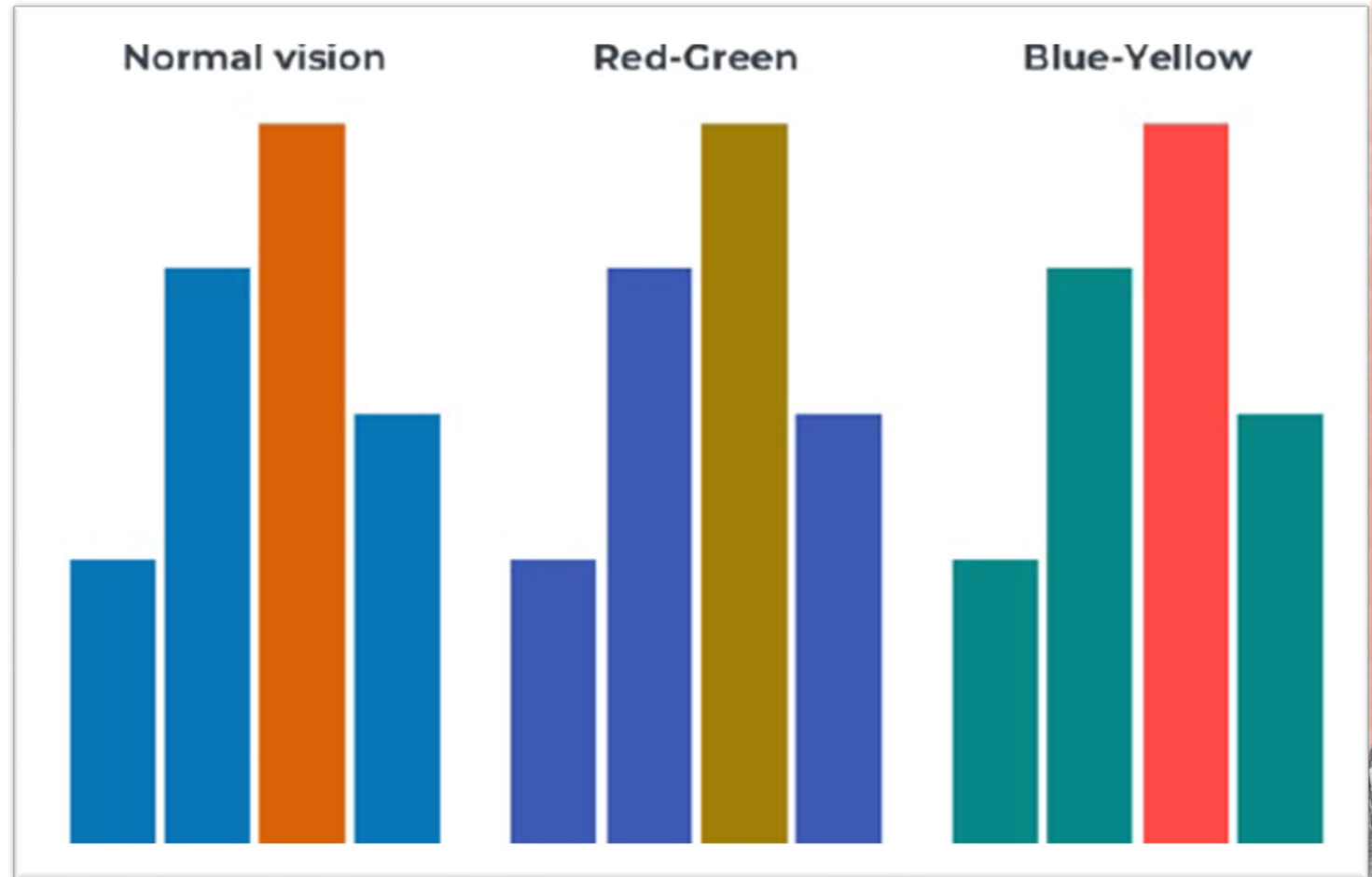


COLOUR FRIENDLY

To the right a colour-blind friendly palette has been used.

These often use combinations of blue and orange and can ensure accessibility for all types of colour-blindness.

To test out how a chart would look for a person with colour-blindness, images can be uploaded to tools such as Coblis (dataed.in/coblis).



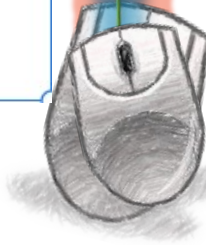
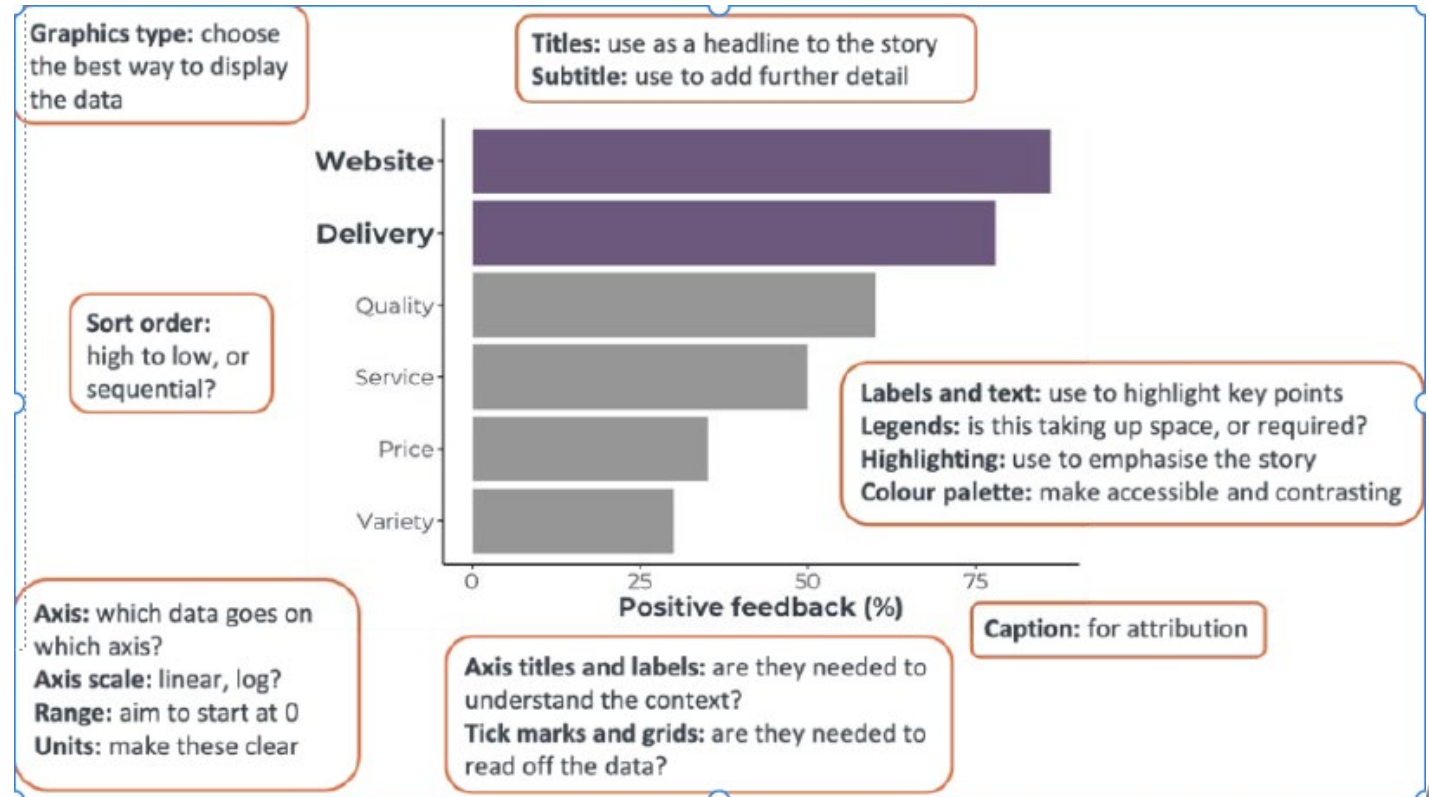
GRAPHIC DESIGN CONSIDERATIONS

There are many little design decisions to be made when creating a data visualisation.

Here is just a subset of the common design decisions that will be required:

Start by designing on paper first, before any data manipulation, since different graphics types will require differently shaped data.

As a minimum, all graphs should have a title and are labelled sufficiently for the audience to understand them without need for further information.



THINK ABOUT IT



- What are the 5 ways to use colour effectively in a data visualisation?
- If more than 3 colours are used on a single graph, what might the brain revert to?
- What is colour-blindness?
- What graphical design considerations can you remember?



THINK ABOUT IT - ANSWERS

- What are the 5 ways to use colour effectively in a data visualisation?

>>> Sequential, Diverging, Categorical, Highlight, Alerting

- If more than 3 colours are used on a single graph, what might the brain revert to?

>>> Attentive Processing

- What is colour-blindness?

>>> Decreased ability to differentiate between particular colours

- What graphical design considerations can you remember?

>>> Titles, sub-titles, sorting order, labels and text, legends, highlighting, colour palette, axis scale, axis titles, grid marks, captions

