Biodiversity data analysis workshop – Day 2

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Programme – Day 2

08h30 – 10h00	Session 1 – Introduction to R, RStudio, basics of programming
10h00 – 10h30	Tea break
10h30 – 12h15	Session 2 – Data wrangling with the tidyverse
12h15 – 13h30	Lunch
13h30 – 15h00	Session 3 – Data visualisation using ggplot2
15h00 – 15h30	Tea break
15h30 – 17h00	Session 4 – Handling spatial data in R

Data visualisation with ggplot2

- The grammar of language helps us construct meaningful sentences out of words

- The Grammar of Graphics helps us to construct graphical figures out of different visual elements.

- This grammar gives us a way to talk about parts of a plot: all the circles, lines, arrows, and words that are combined into a diagram for visualizing data
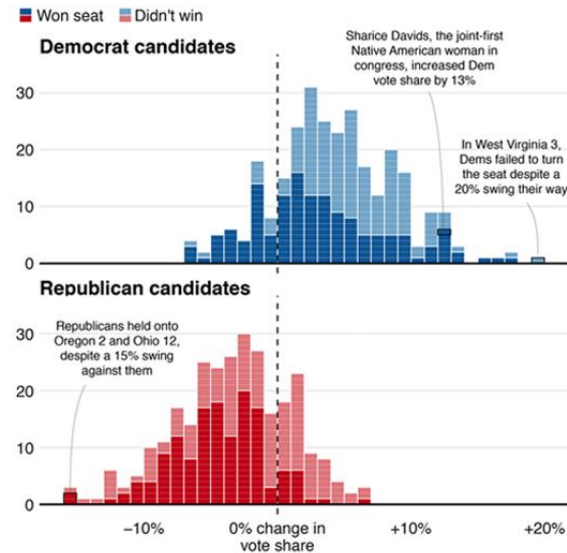
Source: https://uc-r.github.io/ggplot_intro
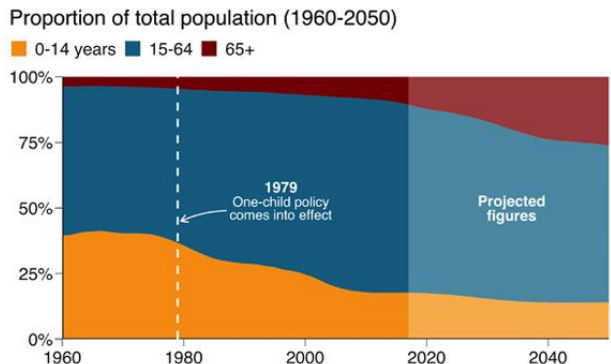
Versatility of ggplot2
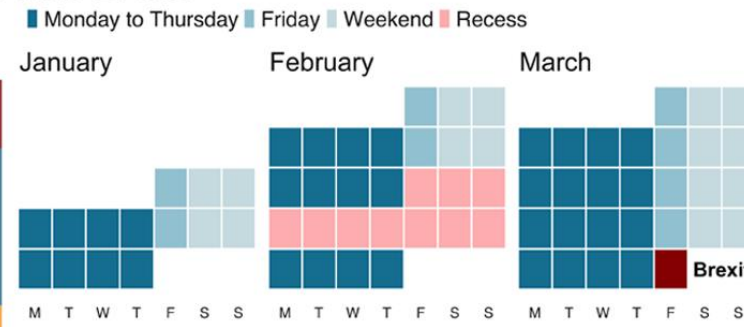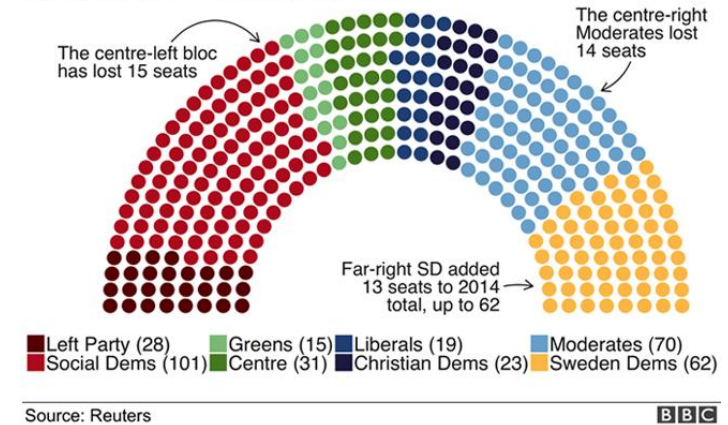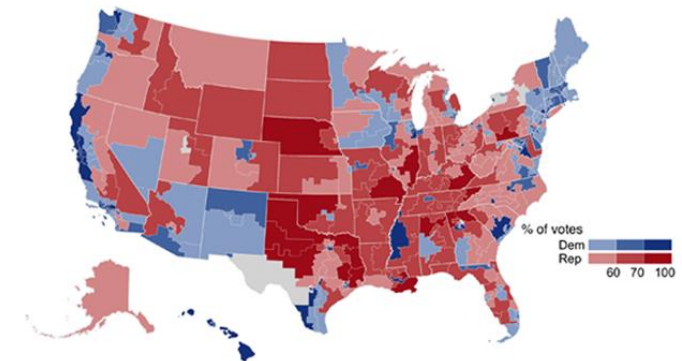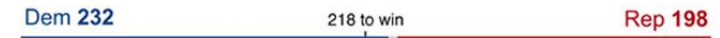
Components of a plot

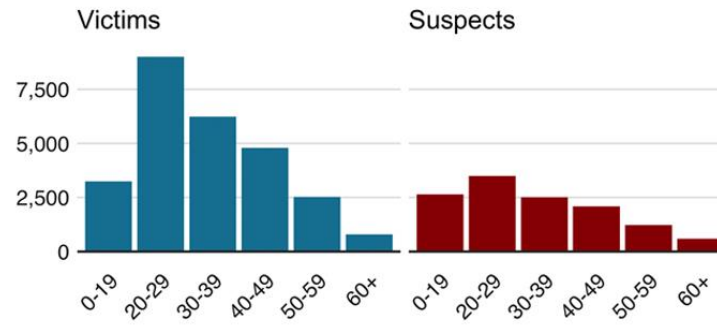- the **data** being plotted

- the **geometric objects** (circles, lines, etc.) that appear on the plot

- a set of mappings from variables in the data to the **aesthetics** (appearance) of the geometric objects

- a **statistical transformation** used to calculate the data values used in the plot

- a **position adjustment** for locating each geometric object on the plot

- a **scale** (e.g., range of values) for each aesthetic mapping used

- a **coordinate system** used to organize the geometric objects

- the **facets** or groups of data shown in different plots

- the **themes** control the display of all non-data elements of the plot

ggplot2 basics

- Call the ggplot() function which creates a blank canvas

- Specify aesthetic mappings, which specifies how you want to map variables to visual aspects (which variables relate to the x- and y-axes)

- Add new layers that are geometric objects which will show up on the plot (e.g., use geom_point to add a layer with points to represent the data).

Demo

Link to Rmd file