

CM50266: APPLIED DATA SCIENCE

LAB 1 – TASK 2

Upon consideration of the fact that the data provided for the weather components is quantitative, utilisation of position and length in encoding the summarised data personally seemed like the most sensible approach. Particularly, this is due to the fact that the aforementioned visual properties are known to be the two most effective encoding techniques according to the Mackinlay's Retinal Variables. Visual mapping using length can be seen via the bar charts for humidity, outdoor temperature and indoor temperature, where each (monthly and seasonal) value corresponds to the length of the bars, such that as length increases, the value increases. Not only does this allow for efficient comparison between each value in the individual charts, but also allows individuals to distinguish between ordinal differences in the data. Additionally, outdoor temperature and indoor temperature were visualised using a bidirectional bar chart, making comparison between the two components even more rapid and effectual. Visual mapping using position can be seen via the line plots for rainfall and atmospheric pressure, where each (monthly and seasonal) value corresponds to different positions on the plots. This is particularly advantageous in visualising maximal and minimal values (peaks and troughs) in the data. By plotting the two components on the same plot, one is effectively able to compare and notice variations in the data throughout the months and seasons, while also identifying if any correlation is present.

The aforementioned graphs are further encoded using colour and saturation. In particular, the bidirectional bar chart for outdoor temperature and indoor temperature can be seen to vary in colour from blue to red hues. This seemed to be the most sensible approach as it is in our human nature to unconsciously associate colder temperatures with blue and warmer temperatures with red. By utilising this intuitional concept, the higher temperatures are encoded using darker red colours, decreasing in saturation as temperature decreases, whereas the colder temperatures are encoded using darker blue colours, decreasing in saturation as temperature increases. Further building on this intuition, the humidity bar chart is also encoded using varying saturations of blue, with the higher humidity levels visually appearing in darker blue. Likewise, the rainfall line plot is encoded in blue as it is the colour instinctually associated with rain. The atmospheric pressure line plot is encoded in black so as to allow for easy visualisation and comparison with the rainfall line plot.

Both infographics utilise a relatively plain yellow and green background. These colours are not present in any of the graphs and hence, allows for less distractions in terms of visualisation and comparison of the data. Lastly, key values appear highlighted and larger than other text so as to draw attention to the reader.