**CM50266 Lab 1 - Task 2 Report**

The weather data from Winterbourne (BS36), UK, was captured from 2016 to 2017. It was inspected, mocked, analysed, and visualised. The report aims to inform the purpose of each infographic and the fact-findings from monthly and seasonal values. It also mentions the visual mappings and the use of colour. There are two infographics: "UK's Monthly Weather Review" and "A look back at the Seasonal Weather of the UK in 2016-2017".

For the first infographic, "UK's Monthly Weather Review", its objective is to deliver the months that represent superlative, highest or lowest, values to the audience. These values were calculated from daily to monthly averages. They are selected to indicate the coldest, warmest, wettest, and driest months.  The line graph of average temperatures throughout the year depicts the coldest and warmest months by both indoor and outdoor temperature values. In addition, the graph of monthly average humidity displays the same trend as the temperature, which implies that the temperature and the humidity have a positive correlation. The wettest and driest month are shown in the combined chart, where the monthly barometric pressure and the amount of rainfall negatively correlate. As the monthly averages of the weather components are quantitative values, positioning is selected to encode the data mainly. Line graphs and bar charts are effective designs for the measurements of each weather component since the position has the highest ranking in the quantitative section according to Mackinlay's ranking of visual properties. For instance, the average temperatures throughout the year are illustrated with a line chart that allows readers to quickly pick up each month's information from the temperature interval of 0 to 30 °C. Furthermore, colours are integrated to categorise four distinct values and emphasise some critical values. Four colours are used to distinguish different meanings; these colours are based on analogous matching, which means selecting the colours next to each other on the wheel. The light blue and orange representing the coldest and warmest months are picked and further adjusted by the hue and brightness to create another two colours. The blue and brown colours are used to indicate the wettest and driest months accordingly. The month texts are all in white to stand out from other values as they are the significant information that the audience shall perceive fast and accurately. The graphs consist of two colours which are grey and dark grey. While the lines of data that provide the evidence of why it is the coldest, warmest, wettest, and driest are all in dark grey, the rest of the supporting graphs are in grey. Finally, the size and boldness of the text are also applied to highlight the critical information.

The goal of the second infographic, "A look back at the Seasonal Weather of the UK in 2016-2017", is to provide the average amount of rainfall, humidity, and temperature in different seasons. It also displays the maximum and minimum temperatures that have been reached in each season. The average rainfall does not rely on the temperature as the winter and autumn have the same value. However, their average temperature is different, 5.6C and 13.7 for winter and autumn, respectively. The seasonal value does not indicate the explicit correlation between the weather components as there are only four data points for comparison. The broad view of the trend can still be found in the seasonal values as the humidity and temperature have an upward trend from winter to autumn. Similarly to the monthly infographic, this seasonal infographic represents information with bar graphs as positioning is the most suitable visual type to encode the quantitative data. It also utilises text labelling as a numerical value to inform the average amount of rainfall in each season. The choice of colour for this infographic is monochromatic matching. Different shades of brown colour are used to deliver different types of data. Colours of text out of the tone, orange and blue, are applied to emphasise the data that this infographic would like to tell the audience. The rests of the styling are the same as the previous infographic.

In summary, both infographics deliver fact-findings from different perspectives but still provide a similar sense of conclusion as they are produced from the same data source. Seasonal values are grouped on a three-month basis; the average data does not clearly display the relation to another weather component as the monthly values do. When comparing the information of monthly and seasonal values, it can be confirmed that the coldest month is in January as the season representing this month is winter with the lowest temperature. Likewise, the warmest month is July which is also in the summer period with the highest temperature record.