Using Computer Graphics for 3D Visualisation

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# 1 Rationale

Creating objects on top of a map relative to the cities means that many of those objects will have inconsistent space. Some objects may be very close, while others could be far apart. Using bars with a consistent and small width/length means that the data can still be visualised accurately while avoiding different objects overlapping with one another, such as if circles were placed on top of the map relative to the population size.

The bars are coloured using a colour map relating the size of the population to traffic light colours, where green is a low population and red is a high population. The colour map limitations specifically exclude the population of London, as it is such an outlier that it warps all of the data and even using a logarithmic scale does not create a useful visualisation.

On the screen at all times the user can see the filter for the current year and the population size, this is shown in the bottom left. Further, if the user clicks on a bar then text detailing the name of the corresponding city and population size will appear near the top of the bar.

# 2 Screenshots

Text

Description automatically generated

Figure - Instruction Menu showing on launch

Map

Description automatically generated

Figure - default view and settings, Belfast data selected

Map

Description automatically generated

Figure - Tilted Camera

Map

Description automatically generated

Figure - Filtering for medium population in 2011, with Bristol data selected