Ireland Population Visualization

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Abstract— The novel visualization that was attempted was to visualize the population of Ireland, the provinces and each country that I found on Wiki using d3.js. The Population dataset is a record of the current population for each country in Ireland. The visualization is for user centric, which means it attempts to engage the user and convey information to the user. It contains two technical elements, animated view and an interactive manipulation of the view.

1 Introduction

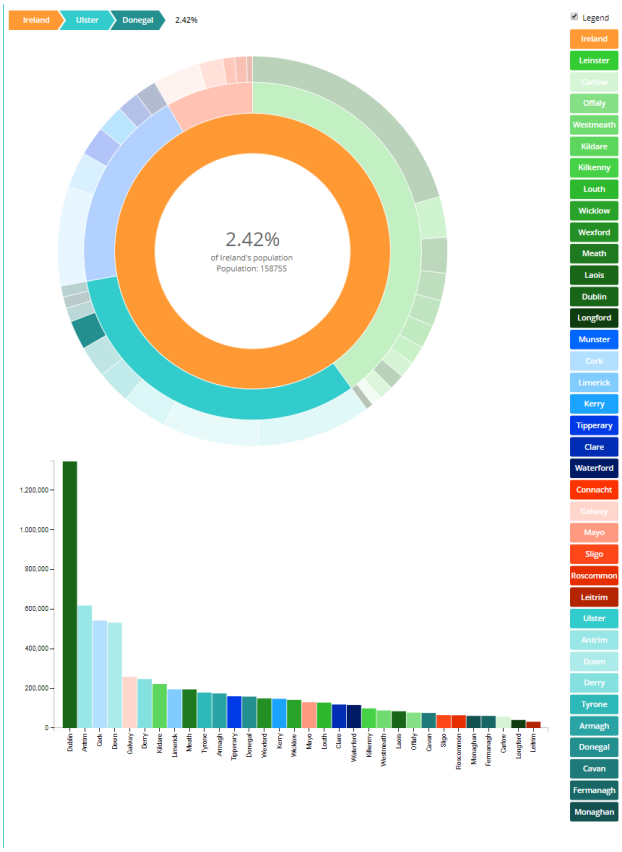
The main task for this assignment is to represent a dataset and come up with a novel visualization. I am trying to visualize the population of Ireland using a sunburst graph. The chart displays the percentage of population in a country or province against the rest of Ireland. The graph displays the specific percentage based on the area of the graph is hovered over on. A bar chart of all the counties population is also displayed in order of the largest population. A legend which displays the colours for each county and province is also displayed.

2 Design

There are two main views in the visualization, the interactive and animated sunburst chart and the bar chart. The visualization makes it easy to understand the population of each county and also the coefficient against Ireland as a whole.

2.1 Sunburst Chart

The sunburst chart displays the percentage of population for each county in Ireland. Each province is displayed as a different colour, and the counties in that province are a variation of that colour. The colour for each county is represented in both the sunburst and the bar chart. When the mouse hovers over a segment of the chart it displays the percentage of population against Ireland in full. The percentage changes as the mouse hovers over a new segment. The first segment is Ireland and displays the population of Ireland. The next of the segments are the provinces which are Leinster, Munster, Connacht and Ulster. From each province segment is all the counties within that province. As the mouse hovers over an animated display of the path from country to province to county is shown also with the percentage is shown.



2.2 Bar Chart

The bar chart is a display of all the populations of every county and is sorted from largest population to the lowest.

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3 Dataset

Name	Description	Type
Data.csv	A dataset containing the connection of province and county and the population	Table
Counties.csv	Dataset of county and population	Table

3.1 Data.csv

Data.csv is a dataset which I created myself and took the data from [1], It contains the connections of what counties is present in each province. Each "-" displays a connection and another outer segment within the sunburst chart. The final value is the population of that county.

3.2 Counties.csv

Counties.csv is a collection of the counties and the population of each. This dataset is solely for the bar chart in displaying all the populations. I created this dataset myself by taking the total population of each country.

4 Implementation Process

The whole process of my developing can be found on my Github repository. There are four main parts to the implementation which are the sunburst chart, the legend, the animated path and the bar chart. I choose this dataset as I feel like the size of each county is a well-known topic but the population for each county would be unheard of. YouTube tutorials and using the d3 webpage assisted greatly as I had never used d3 before [2]. Once the chart was made, the implementation of the animated display and legend were next. Finally, the implementation of the bar chart was done.

5 Novelty

I found some visualisations of the population but never on how much percentage that each county holds of the population against the other counties. This dataset is a very small dataset but a very important dataset and very important to be able to visualize the data.

6 Strengths

My visualization includes two technical elements of the three required. For the animated view part, the connection between province and county is displayed when hovered over. For the interactive part, the chart can be hovered over which allows the user to visually see the different populations of the counties.

7 Weaknesses

There are many flaws in my work, where a lot of them are due to time limits and that I am not very familiar with front-end developing. For example, the legend would ideally be different columns for every province and the bar chart would display the population value and have an interaction element. The population value in the centre of the chart would ideally have the appropriate commas when representing a value also.

8 References

[1] List of Irish counties by population,
https://en.wikipedia.org/wiki/List_of_Irish_counties_by_population
[2] D3 Data-driven Documents,, https://d3js.org/
[3] Filtering in d3.js: http://bl.ocks.org/d3noob/8dc93bce7e7200ab487d
[4] Bar Chart: https://bl.ocks.org/mbostock/3885304
[5] D3.js: Create an HTML table using d3.js and JSON http://bl.ocks.org/jfreels/6734025