Concept.

Maps4stats is an application to visualise the central statistics office Ireland's data. It specialises in displaying geographical data.

To view the geographical data click on the one of the options on the left hand side of the page. This will expand to show all the datasets which have geographical data for that region. Click on the name of the data set and a map will appear in the main page.

The data displayed on the map can be adjusted by changing the menu boxes above the map. For example if you select population by county the first map that will be displayed will show the population for the first year in the data set (1841) and for both sexes. If you change the year or sex and press the **Map Data** button then a new map will be displayed. The older map is still displayed and is available by scrolling down the page. All the other maps work in a similar way.

To use the application for other kinds of visualisation select the data set from the side panel or for non-geographical data select from the drop-down menu at the top of the page[1]. From here you can select any dataset from the cso and the fields will be displayed in the main drop down boxes. Select a value for each field and clink on one of the graphing buttons.

Graphing Buttons	Action
View Data point	This button displays the value of the currently selected data.
Bar Chart	This will display a bar chart by time of the currently selected data set
Line Plot	Displays a line chart by time of the currently selected data set.
Map Data	Displays the current data set by geographical region.
County by Bar	Displays the current geographical regions in a bar chart.
Bar	Displays all of the statistics for the current data set as bar chart[2].

The bar chart and line plot facilitates were added towards the end of development because there is a lot of interesting data which dose not have a geographical nature. They are useful to get an idea of how the data

changes over time but they are not finished a lot of the names of the bars write over each other, and the line plot will just display one dot if there is only one year in a data set such as Census data. In the next version these charts will be cleaned up.

Development

This application was coded using Javascript with the visualisation library D3.js to draw the graphs. The application is hosted using google app engine. I used Javascript because json-stat, the format of the cso's API was designed for use with Javascript, After completing this much of the application and getting to know google app engine I would consider re-writing the back end using python because of the statistical libraries available, I would have included features such as regression lines, and simple statistical tests between data sets, except I would have had to implement them from scratch in Javascript. Using python I could have used all of the statistical library's already available.

I would also like to write a json-stat tool kit for python there is a library available which converts the dataset to a pandas data frame while this is useful because it in the correct format for many python librarys it must store many copies of the meta data which defeats the purpose of json-stat.

Future Development

Now that I have spent the time to understand how the json-stat file format works and have learned to use D3 I can see many future uses of the cso web API. I would like to create applications which concentrate on different parts of the data available, like this one focused on geographical data.

I would like to create a dashboard with all of the agricultural data such as the historic prices and incorporating the weather data. This would be useful for farmers and given the contribution farming makes to the Irish economy this could be very useful.

A Census explorer would also be useful to any body who is interested in Irish demographers. I have noted that my current application dose not give any useful visualisations of the census data this and the farming are next on my list.

Longer term after creating some more area specific dashboards I would like to create an application which will draw an intelligence set of graphs for any dataset available from the cso. I have a picture in my head what this will look like and will keep working until this vision is realised.

1. This Is a bad interface a drop down list with 3500+ options future versions of maps4stats will have a search feature. I have started to implement the search but it was buggy so I left it out of the final version.

2. This feature dose not split the data by base so some of the bars will be very small because of the different units used, especially if some of the values are percentages.