Information Visualization lab

Second practical work

Introduction

Using the same dataset that you used for the previous practical work, extract the information of 10 different departments. Augment the information of those departments using futur.upc.edu, and the websites of departments (calculate the actual number of members, use different categories) and create an interactive visualization with multiple views that allow users to carry out the following tasks:

- Visual comparison with detailed numbers (e.g., hover) of the number of publications along time of two departments that can be interactively selected, with a reference on the average publications of the whole group. Enhance such visualization so that the users can easily get insights (be creative, think of whether you are interested in periods where the publications have grown, or whether highest ranked (or lowest ranked) departments must be emphasized…).
- An interactive map of Catalonia/Barcelona where you have a point for each of the department's address and one can hover over the map and see the details (number of members by category, number of publications, average publications per year…). Think on visual variables you can add to the map. Clicking should make the details fix until a new hover/clicking on other department is made.
- Create an interactive visualization for the stats of a department (e.g., publications per year) that can be selected through the previous map.
- Now that you have the actual number of people working there, rebuild the publications vs department size and make it interactive (e.g., make cross selections with the previous chart and the map).
- Create a visualization that provides the same features of the first one and add a slider to determine the elements that must be highlighted (slider should encode the average publications per year). Use a visual cue (e.g., rule) to provide visual feedback on the slider.
- Create a chart that communicates the intersection of the selected 10 departments with the areas of research (publications). Restrict to 40 areas of research at most (the ones with more publications). Make it interactive in the following way: the two departments that are highlighted in the initial view must be highlighted here, but the rest of the information must be still visible.

Questions in blue are only intended for groups of 3.

You may add extra questions. Note that you require data derivation. Some data derivation can be carried out using Open Refine (but even manual adding may be a possibility).

The visualization must be a multi-view visualization. Think carefully the design. Test and redesign.

Design and implementation

Before you start coding anything, you need to think on what visualizations will be provided. Note that the user needs to be able to answer the questions above with a single visualization, that will include multiple views.

Some views will contain several variables, so use visual cues wisely.

Delivery instructions

The work can be implemented in pairs or individually. You have to provide the clean data. You have to describe the cleaning procedure, so that we can generate the clean data from the raw data following your steps. This description must go in the Colab document.

You must include a step-by-step description on **how to solve tasks**. These can go in the Collab document.

The delivery must consist on a single ZIP file with a name that includes the authors, that contains the datasets (raw and clean), the Colab file(s) (*ipnyb*) and optional extra documents if required. The Colab file must be named after the names of the authors. Treat the Colab document as a report, include titles, boldfaces, etc., to make it easier to read.

The deadline for the delivery of this lab project is the 8th of January 2023.

Important remarks

The final grade will take into account the number of variables included in the visualizations (these may include new calculated variables, such as averages, maxima, minima, etc.). Additionally, we will value the number of non-trivial tasks (adequately described in the documentation) that can be properly solved with your visualization tool. You can get interesting data in Futur, or in the websites of the departments.

Don't leave the project for the last day or do the minimum amount of work. In case of doubt, ask us whether the current work is enough or needs more effort.