Showcase of d3.js and it's possibilities in infographics using the Ukraine conflict as an example

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1 Introduction

The postmodern word produces huge amouts of data every second. Analysing this data leads can lead to better informed decision making in every sector. Yet the wast amounts of data created are often hard to comprehend with the human mind. Infographics is about finding ways to represent this data in visually appealing, yet easily understandable visual representations. Doing this quickly and always up to date can be crucial. There are many tools awailable to to help with the creationg of infographics. In this thesis we will do a deep dive into the possibilities of one of these tools. The 'd3.js'(D3) library for JavaScript. To show its capabilities we will create graphics giving an overview of the Ukrain as a soverign nation.

2 Basics

Infographics "Infographics (a clipped compound of "information" and "graphics") are graphic visual representations of information, data, or knowledge intended to present information quickly and clearly. They can improve cognition by utilizing graphics to enhance the human visual system's ability to see patterns and trends." [1]

What is it?

Technologies the project will be built using mainly JavaScript and html, with a bit of CSS. This allows to easily adapt the results into all kinds of web based applications, without compatability issues which could arise by using a framework. Additionally we use the D3.js library. It "is a JavaScript library for manipulating documents based on data. D3 helps you bring data to life using HTML, SVG, and CSS." [2] Versioning control is done using a git repository. For easy access, the repository is hosted on github. Offline data is not provided in git directly, as the files are too big. Sources are provided.

d3.js, JavaScript, html, git, python

Diagrams Diagrams or charts are visual representations of data. They help understand and comprehend big amounts of data. There are three main use-cases for diagrams. The first is to represent how parts of a whole are in relation to each other. A typical example are pie-charts. The second is to compare the same data over an amount of time or between differnt data origins. Like bar-charts or line graphs. The third use-case is to show relations between different aspects of a general topic. Like a mind-map. Many diagrams combine different use-cases in their approach.

What are they? Why are they useful? Which types, and for what purposes do they exist?

[1] https://en.wikipedia.org/wiki/Infographic - 31.03.2022
[2] https://d3js.org/ - 31.03.2022

Data Data is produced everywhere. Most of it is created in a comercial setting. But there is publicly available data as well. Some is even open source or available through an api. Yet most of the available data on current events is highy individual and not mashine readable. For this thesis we will use data which is publicly available and mashine readable. As this thesis focuses on the technical implementation and to show the possibilities of d3js, we do neither need nor claim the data to be correct or unbiased.

What kind? From where? Reliability?

3 Selection process

Selecting the diagrams we show goes hand in hand with the available data we can find. Using the available data: Which types of diagrams are useful? How can we show off as many differnt diagrams as possible?

4 Creating a showcase

How do we pull it all together? In which context are the graphics to be shown?

5 Expectations

What will issues be? How do I think the possibilities are? How complex can we be in not too much time?