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Assignment 1

Task 1 Popular use of InfoVis approaches

EU Referendum (2016) EU Referendum

The visual representations in the first article are maps of the UK, divided into regions or areas in combination with different types of graphs. The maps and color-coding areas are, if used right, quite intuitive. Combining these maps with one or more bar graphs makes related information understandable for the user. For the data to be clear and understandable these visual representations need to be used right and have a clear label. In this article this is not always the case.

The first element in the article (shown as image 1) depicts the Leave share of the votes in every area of the UK. This map is intuitive and gives a clear overview. The text is relevant and descriptive. If the user would like more detailed information, this is provided in the graph (Image 2) which strategically is placed below the map and with the same color coding which signifies that the two elements are related. Both are good examples of visual representations in this article.

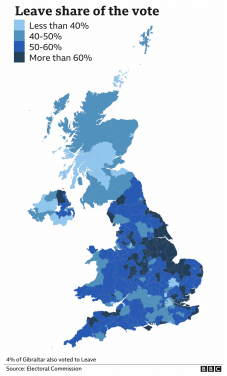


Image 1: Leave share of the votes as a map.

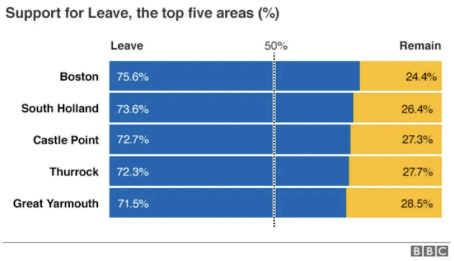


Image 2: Support for leave in the top 5 areas as a graph.

The next two visual elements are almost identical to the two above, the only difference being the depiction of the “remain” share of the votes. We appreciated the consistent use of different colors for "leave" and "remain" throughout the article, maintaining separation. We thought the map (Image 3) was excessive since it's the same map as above but inverted.

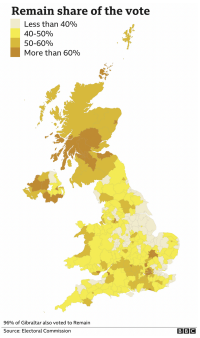


Image 3: Remain share of the votes as a map.

The visual element that stood out the most was the last map in the article (image 4). This image contains two maps of the UK and is supposed to depict the support/lack of support of the Europe Referendum in 1975 vs 2016. The color shown in each area should be dependent on the scale that, in this case, makes no sense. The only thing that can be interpreted from this image is the data in the graph below the maps, telling the user how big the support for remain and leave was in total in the different years.

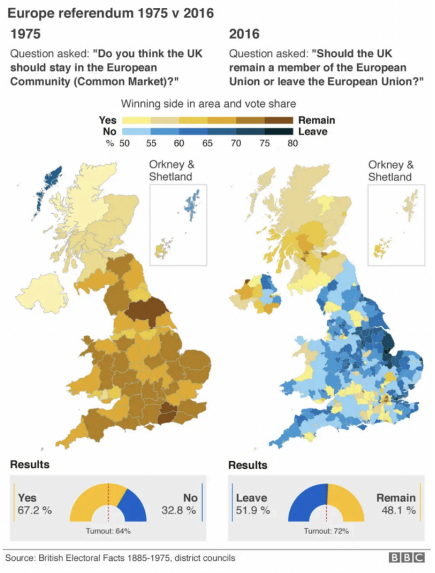


Image 4: Europe referendum 1975 v 2016

US Presidential Election (2016) Election

This website contains a lot of data that is represented in a very clear and educational way. The large bar at the top of the page provides a good overview of the result. The map is very clear and intuitive. The user is able to change the map to either the classic map or the one with boxes where the size corresponds to the number of electoral votes which is a nice graphical property. The cooperation of the map and the bar provides good feedback and gives an increased understanding of the power each state and their electoral vote holds.

The interactive elements; hovering or clicking on a specific state to access filtered information, contribute to a user-friendly experience. The option to click for more in-depth details represent a nice subdivision.

The website's clarity negates the need for additional explanatory text, as the purpose and functionality of each feature are quite apparent, at least according to us. However many functions are explicitly explained on the website to make it clear for everyone.

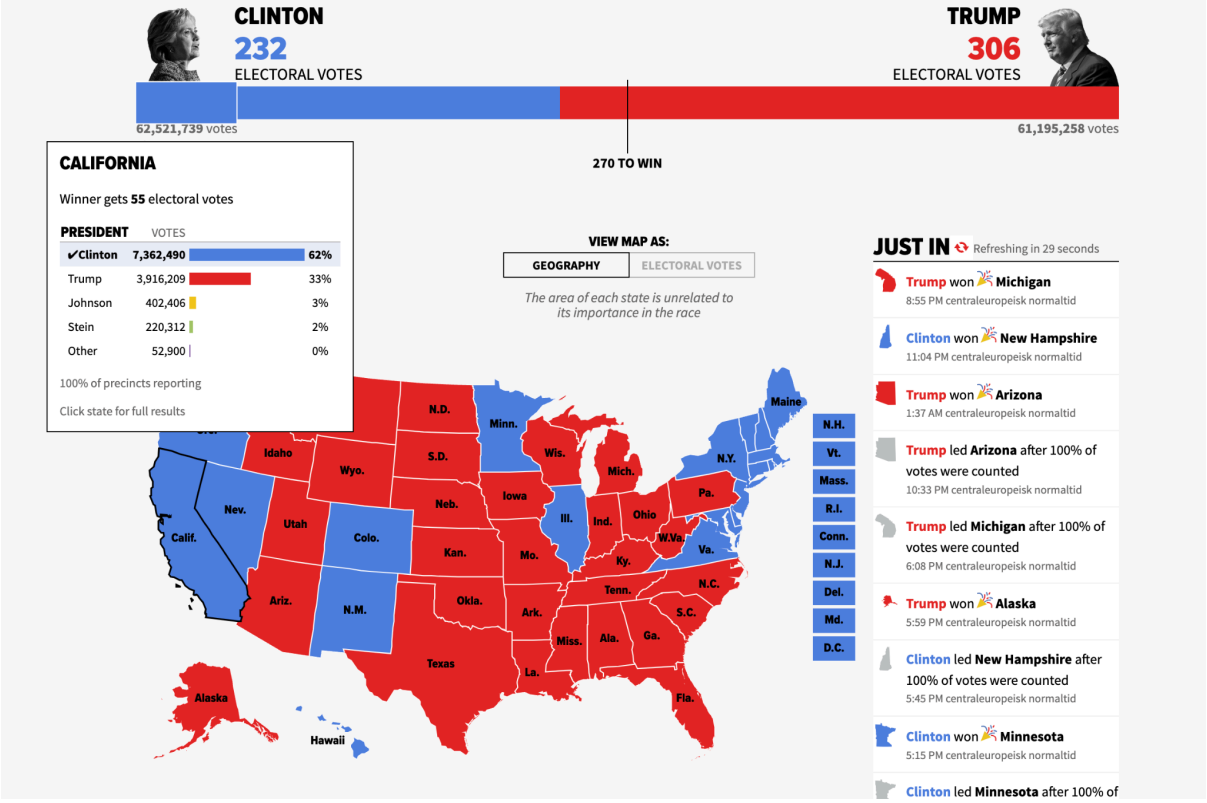


Image 5: user interface on one of the 2016 election sites.

Shooting in Sweden (2023) [Skjutningar]

Image 6: Graph over number of shootings per year

The graphs in this article have some flaws; we naturally think of years as time and therefore think this should be in the x-axis of the graph. This isn't the case in some of the plots (ie. image 6). The graphs also varied in which years, and where they were placed which misled us.

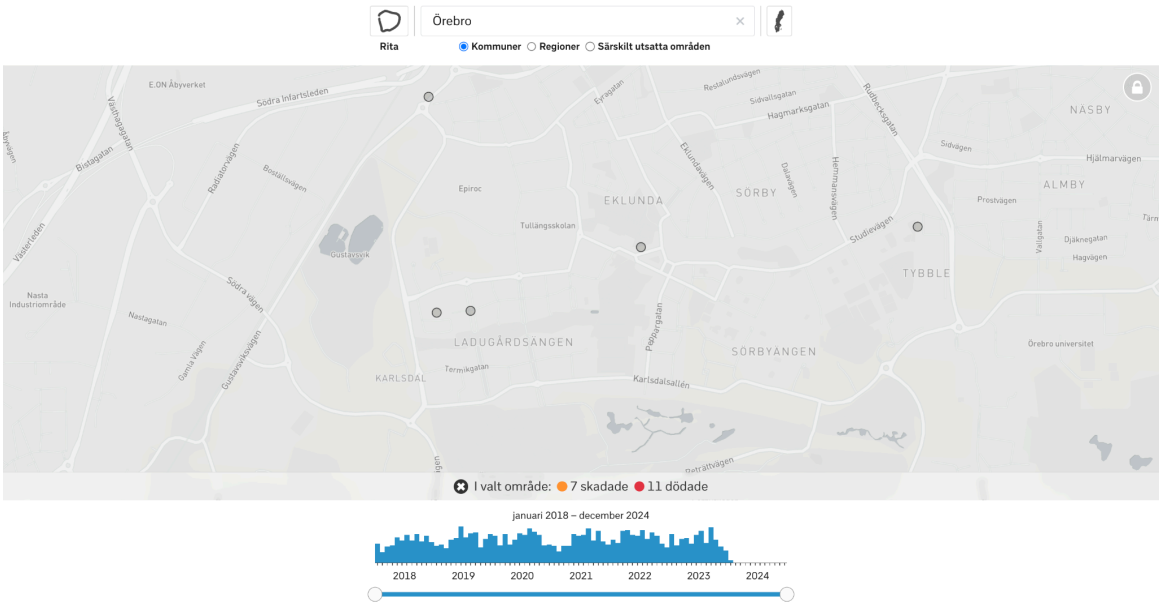


Image 7: The interactive map

The interactive map (image 7) is not user friendly. The settings for the years (on the bottom of image 7) took a while to find and were not clearly a part of the settings for the map. It had excessive functions which made it harder to navigate such as tilting the camera and an automatic lock. It also lacked information about these functions. The dots which represent shootings also lacked data, only the red and yellow were labeled. The map also depicted all of Europe even though only Sweden's shootings were shown. It was not clear that the map and the settings for it affected the data below. We think that you should place the settings for each new area in close proximity to it so that the user doesn't have to scroll to change the settings.

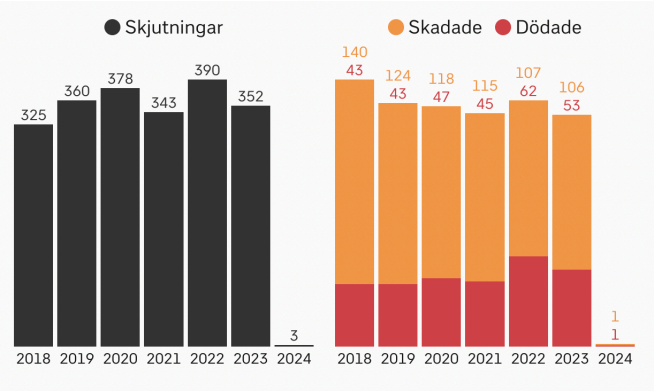


Image 8: Bar-graph over total shootings, wounded and dead.

The bar-graphs in the latter section were weirdly divided. They had similar information and the same color coding but stood for slightly different things which lead to misunderstanding.

Free and Occupied Beds for Covid-19 Patients in Germany (2020)
https://coronavis.dbvis.de/en/overview/map/bedcapacities

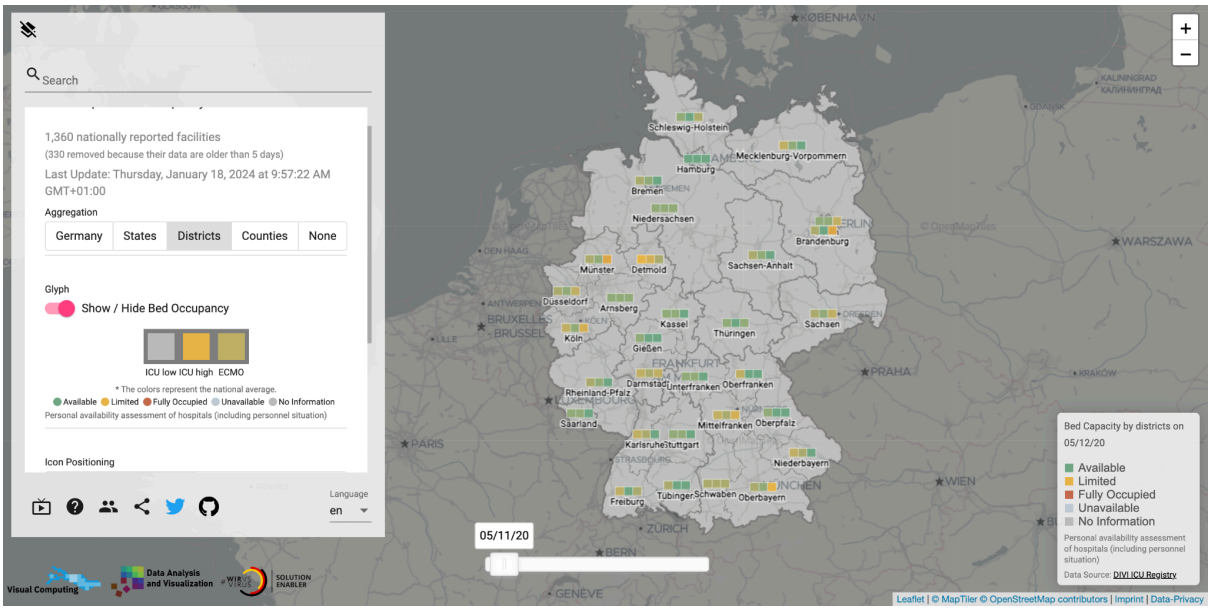


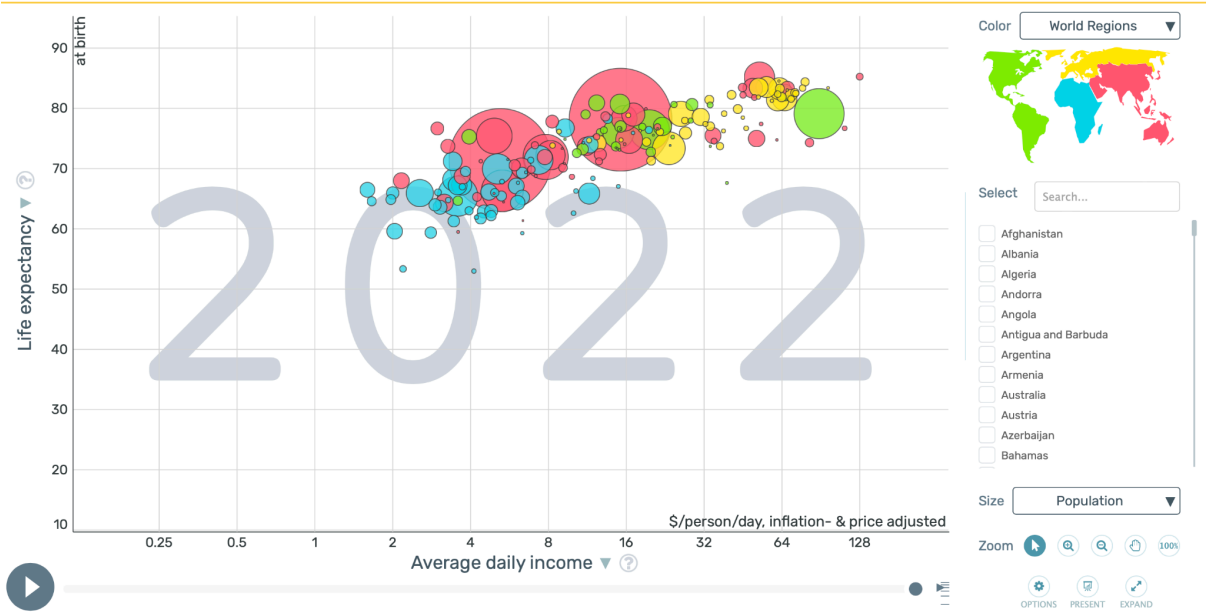
Image 9: interface of bed capacity over hospitals in Germany.

We were overwhelmed by the first view over the map. Once we had looked over and filtered the data in the settings panel, we had the possibility to subcategorize and filter the data into bigger and smaller regions of Germany which was useful to get a better understanding and was a nice subdivision of the space. The visualization provided tools such as a time-line scroll to visualize the changing capacity over time and detailed information when hovering over a specific hospital (such as name and a bigger and more clear visualization of the bed capacity). The bed capacity could be shown in two ways. One was to have the bar with the 3 categories to be shown over the map. The other was to select one of the categories ICU low, ICU high or ECMO and have the status in that department color the region in a background map. The first alternative easily led to a cluster of information which made it hard to understand. Our opinion was that the second way was much more understandable but we keep in mind that the detail of the data could be necessary for the people in the medical field.

Task 2 - Good and bad visual design

Good visualization - Hans Rosling Gapminder

[Gapminder Tools]



Gap minder by Hans Rosling is an excellent example of good visualization. To specify the pros, but also some cons, we choose to focus on one area/data: Life expectancy in combination with average daily income.

Visual structures (elements and graphical properties)
By using simple shapes (spheres) and their movement over time MindGap effectively visualizes change over time. The world regions on the map are color coded and the countries (the spheres) within these regions have the same color in the scatter plot. This makes it easy to connect data in the plot with a region in the world. It is also an effective way to categorize the whole world (meaning a lot of data) into only four colors.

By hovering over a sphere you get the name of the country and the region it is located in also changed on worldwap in the right upper corner.

Axes
The scatter plot is categorized with both a Nominal and quantitative axes. On the two quantitative axes we have *Life expectancy* and *average daily income* which are placed orthogonal. On the right side of the page, in the panel, you have an N-axis where one can subcategories the whole world into regions and countries.

View transformations
The user can interact with the data, modify and extend visual structures by changing the settings in the right side panel. It is possible to select one or several countries

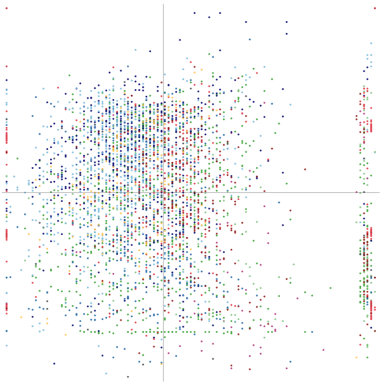
and follow their journey over time but other than that there are not a lot of ways for the user to interact with the data.

In conclusion, gapminder is a simple but effective type of visualization. It is an example of effective data visualization due to its emphasis on storytelling and global perspective. The simplicity and self explaining elements and structures of the visualization are all pros. With more extended data it would have been nice with some filtering and specific information.

Bad visualization - SVT

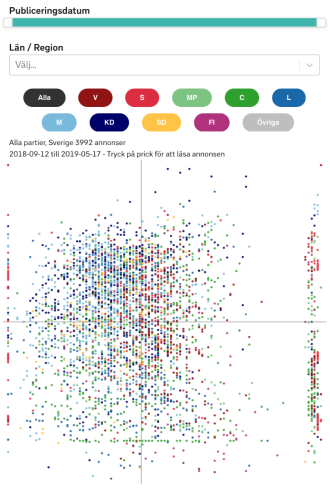
[Riktade anonser]

In short this visualization has a big cognitive load. It is a cluster of information and too much information in one space. There is a big lack of labels..



This is the first view….Later in a text box you get the information *“Längst till vänster i grafen finns annonser som visas i huvudsak för män och längst till höger har vi annonser som visas för kvinnor. Högt upp i grafen har vi äldre personer och långt ner har vi yngre.“* . But we still don't have any information about the age-span.

Later you get to interact with the data.



First of all the sliding bar called “publicerings datum” does not have a start or end date. So you have no information about the time span except for the very small text above the scatter plot. If you change the slider the information does not get updated and there are no steps in the slider so it is impossible to know by how much you have expanded or shrunk the timeline. Second of all the axis still does not have any

labels. Third of all by filtering on region and party the axis changes position, which is probably supposed to represent something but what is very unclear what.

It is then impossible to zoom and click on one advertisement so you get a bunch in that area… If you click on the little bubble you can read the advertisement but not all of it because you cant scroll