

Project Proposal

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Information Visualization WS18/19

Motivation:

The environment, global warming and climate change has during the later years become a more and more talked about topic. Numerous of books, articles and TV-programs have been made to educate the people of the danger in global warming. A topic everyone knows is important but hard to grasp. We want our visualization of the temperature to show people that global warming is real and let the users see how it has changed throughout time.

Which goals/task should be addressed:

Our goal and task for the users is to let them explore the temperature of the cities chosen over the time and see how the temperature is changing over time.

Who are target audience/users:

The targeted users or audience for our visualization is the everyday people. We want the visualization to be broad so that everyone who has heard of climate change can look at our visualization and see/explore the difference themselves.

Which datasets we use:

We are using datasets from *SMHI*, *HISTALP* and *OMSZ*. SMHI is the Swedish Institute of Meteorology and Hydrology. We are using their open source data about temperature and rainfall. The data is taken from the project called *Luftweb* (can be translated into air-web). We are using SMHI's data to visualize the daily average temperature of Stockholm between 1961 and 2017.

HISTALP is the historical instrumental climatological Surface time series of the greater alpine region. It is a project that started at the climate division of Austrian weather service called *ZAMG*. They have collected data about the weather about the area around the alpine region which includes Austria. We are using HISTALP's data to visualize the daily average temperature of Vienna between the times of 1948 and 2009.

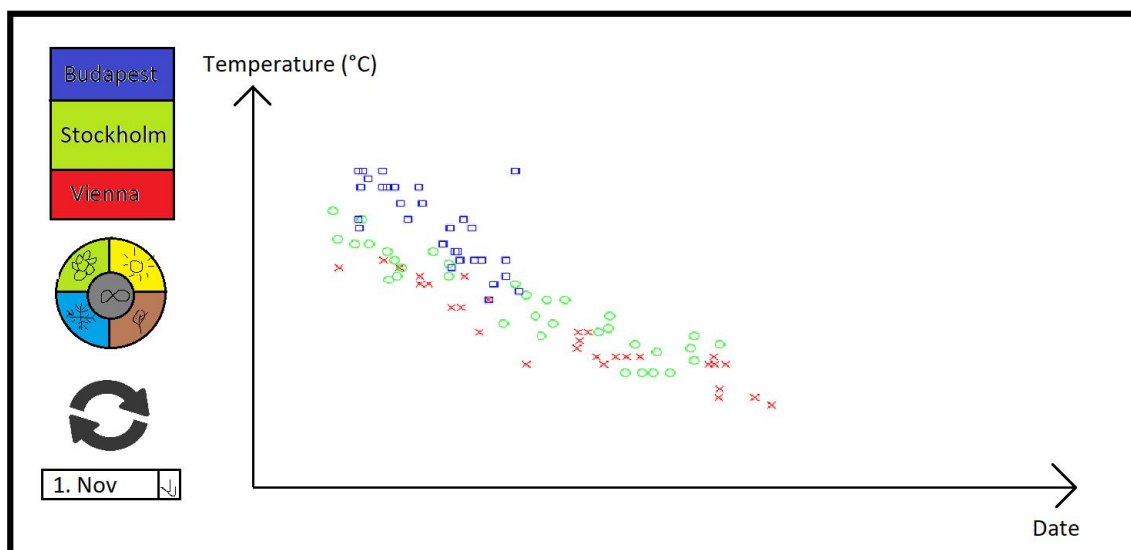
OMSZ is the hungarian meteorological service. They are an institute that analyse the Hungarian weather. We are using OMSZ's data to visualise the daily temperature of Budapest between the times of 1901 and 2010.

How is the available data structured:

The datasets are available in a csv, xls or txt format. We will re-format them all to csv and perform a data clean-up in order to get only the relevant information. There are slight differences between the datasets of the different cities. For example, some of them consists precipitation data that is unnecessary for us. Another problem is that the Austrian dataset only provides minimum and maximum temperatures while the others have the average temperature values - and that is what we need. We will need to find a way to make an approximation for the average temperature.

Preliminary design ideas of your visualization:

We would like to implement a multiple-view visualisation. The user should be able to choose from different views, drill down in the data for different granularity. We would like to visualize the temperature values for the three different cities on a same dashboard to get insights of the climate condition differences and similarities. Another view should contain the temperature data for just one city for one specific day, sorted annually. This day should be selected in a calendar view. We expect this view to show a rising tendency through the years.



Our first Mock-up of what we want our visualisation to look like

Related work:

- Formatting datasets to a consistent format
- Cleaning up data: getting rid of things we do not need, generating values we would need
- Building the visualization in D3.js