

**Course Assignments**  
**for**  
**Applied Information Visualization**  
**4DV801 – Spring 2017**

Assignment 2

Deadline for this assignment is Apr 18, 2017 at 23:55.

**Task 1** *Conceptual Design*

For this assignment you have to *design* a visualization tool for a multivariate data set, which you will later implement in Assignment 3. We have used a medium-size data set which constitutes a small portion of the IGRA data set (<https://www.ncdc.noaa.gov/data-access/weather-balloon/integrated-global-radiosonde-archive>). You are allowed to modify the format of the provided data set or to extend it, if you wish. You can download it from Moodle or via the following URL: <http://cs.lnu.se/isovis/courses/spring17/4dv801/assignments/temperature-europe.zip>

The file *temperature-monthly-europe.csv* contains monthly average temperature records (based on daily observations registered around 12:00 UTC) from a number of stations in Europe for various time ranges. The records refer to country and station codes defined in the files *country-codes-europe.csv* and *station-codes-europe.csv*, respectively.

You have to make a conceptual design, which means that **you are not supposed to implement the visualization at this point**, since you have to get approval if your conceptual design meets the requirements. Simply draw a visualization and illustrate interaction ideas on paper (you can use software tools for drawing if you wish). Before you begin to create your visualization, think about the data set and what would people like to do with it. Note that the data set involves both temporal and geospatial aspects, and it is related to the climate domain. What would one want to know, how can he/she find specific information, what other tasks would one like to perform with the data? Does it make sense to filter out uninteresting parts or attributes? Your visualization should help users in performing these tasks. Therefore, you should select what would be the most convenient visualization and interaction techniques to support those tasks.

To provide you with inspiration about the tasks and opportunities related to temporal temperature data, we suggest reading the paper by Kerren et al. from <http://cs.lnu.se/isovis/pubs/docs/kerren-sigrad14.pdf>. Related work also includes papers by Ladstädter et al. (<http://dx.doi.org/10.1175/2009JTECHA1374.1>), Tominski et al. (<http://dx.doi.org/10.1109/IV.2011.12>), and Williams et al. (<http://dx.doi.org/10.1109/MC.2013.119>), for instance (you should be able to access these via <https://lnu.se/en/library/search-and-evaluate/articles-and-databases/>).

Submit a report with detailed mockup images of your visualization and an explanation about it. You should explain how the user is able to perform various tasks such as browsing, highlighting, comparison of entries, etc. Additionally, we would like to have your opinion about the advantages and disadvantages of your design.

Please prepare a ZIP archive with your report (PDF) and upload it to Moodle by the given deadline! If you have questions, you can contact Kostiantyn Kucher via email ([kostiantyn.kucher@lnu.se](mailto:kostiantyn.kucher@lnu.se)). You will have to present your work on Apr 19, 15:00-16:00, room B3032V.

Please note: any kind of plagiarism is not acceptable!