MSE TSM InfVis AUT25 - Module Task

The **module task** comprises the **completion of a visualization project** on a selected topic. It runs in parallel to the teaching and the exercises throughout the semester. You can complete the module task either **on your own or in a team of maximal two students**. Select a topic and find relevant data. If possible, select data and topic in an area that you are interested in and where there is data available to you. You are **free to use any data, software, and tools available** to you. Please make sure that the **data is not confidential** and that you are allowed to complete, submit, and discuss (in class) the project based on it.

Topic/data requirements

- use data from a topic that interests you but make sure your **data has at least four [4] different substantial data dimensions, including space OR time (or both)**, this may be achieved by adding context information to a data set
    - Example A: hourly [1: time] counts of bicycles [2: attribute] at one location (space: not substantial) do not fulfil the requirements, you may add data from several locations [3: space] or weather data like daily sunshine duration [4: attribute] and amount of rain [5: attribute] for the locations and days analysed to fulfil the data dimension requirement
    - Example B: 20-year averages (no substantial time data dimension) of maximum temperatures [1:attribute] for many different locations [2: space] in the USA give you only two data dimensions, but if you use 20-year averages of daily [1: time] maximum [2:attribute] and minimum [3: attribute] temperatures for different locations [4: space] you fulfil the minimal data dimension requirement
- **Make sure you are allowed to use the data,** to complete the module task with the chosen data, and to show the results in class. Do NOT use confidential data (at least your fellow students should be allowed to view your submission) and make sure that the data is available to you now.

Submissions (each students submits A and B even when working in pairs, dates on Moodle)

A	completed **Moodle questionnaire** in SW04
B	Visualization Project result in SW12, **one pdf document of maximum 4 A4 pages** (portrait, landscape or mixed – see sketch on page 2 of this document)

B.1 Visual data exploration part:
1-2 A4 pages of **2 or 3 exploration graphics** (static visualizations in the pdf document, screenshot and working URL for dynamic visualizations [*note: dynamic visualizations are NOT a requirement*]), show at least two different levels of aggregation of one of the data dimensions (e.g., daily data in one graphic and aggregated weekly data in another graphic) and use at least three of your four substantial data dimensions
1 A4 page of **structured description** (**maximum 500 words**, word count does not include references to sources of data and other information) how your visual exploration of which data lead to the insight(s) communicated in B.2, how you verified your insights, and how you ensure that B.2 clearly communicates the insight(s) (design aspects)

B.2 Visual insight(s) communication part: Single communication visualization / Information Graphic (maximum 1 A4 page, static) that communicates and explains the insight(s)
Remarks:
- the visualization communicates all information required to understand the insight(s)
- the communicated insight(s) are not trivial but include at least 3 of your data dimensions
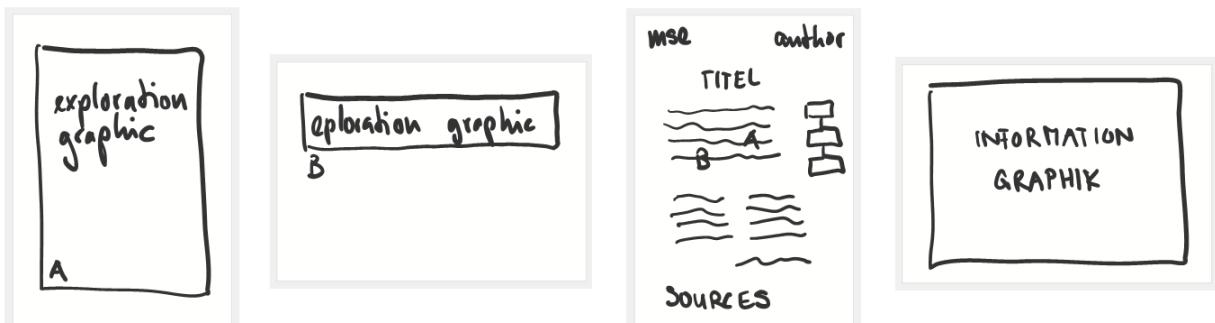
Assessment Criteria / Grading

Criteria	Points
A - complete, adheres to requirements, enough detail, submitted on time	5
B - adherence to formal requirements, submitted on time	5
B.1	
- description of process from visual exploration to communication (not how the visualizations were created but how you visually explored the data to find insight(s))	3
- integration of different aggregation levels of at least one data dimension, using at least 3 dimensions	3
- verification of the insight(s)	3
- description of design aspects for communication graphic	3
- suitable exploration visualizations (2-3 or interactive), including labelling and necessary explanations	8
B.2 – standalone information graphic communicating non-trivial insight(s)	10
(suitable visual variables, layouts, application of gestalt principles and principles of graphical excellence, added highlights and explanations, content-wise title, complete with all necessary information)	
	40

Remarks

- submitting the curated data sets and annotated code/files of the visualization creation processes is possible (as one single .zip file on Moodle together with submission B) but not required
- Grades are calculated from the points using a linear scale. The grade (rounded to 1/10) counts 25% of the final grade.
- When working in pairs, the project is graded once and both students receive the same number of points/grade for the module task.

Sketch of a potential final submission (4 pages A4)

(information graphic works independently)

susanne.bleisch@fhnw.ch