

Assignment 3

Exercise 1 – Sketches and first design

- (a) Make a sketch/sketches of your (preliminary) visualizations design and GUI for your tool (with colored pencils and paper) with detailed textual descriptions. Initially do not be critical just brainstorm ideas on what would make sense given the goal, and task/data abstraction (be creative). Moreover, describe the individual components, views, and needs for menus, buttons, and sliders needed to achieve the different tasks. Think about which GUI components you need and how you combine them. For example, you definitely need an input panel, the main view for all the visualizations (e.g., center large view), and **an output panel** for user requests and details-on-demand (e.g., right-hand side). For the visualizations, you need (individual values), **visualization of individual attributes**, and possibly other **extra visualization** designed by yourself. All of those should be interactively linked together later. Next to the GUI elements, determine what interaction techniques are needed with your visualizations, to support the tasks you defined in assignment 2. For example, should it be possible to highlight and select individual points, or do you need to be able to select a group of points? Make screenshots or pictures (made with your mobile phone). Keep it flexible since you might be adding components through the evolution of the project.
- (b) Once you have multiple options select and improve them according to the principles and theory presented during the lectures. Work from the data/task abstraction point of view (engineering) toward what would be the most suitable encodings and idioms according to the theory seen in class. Iterate between (a and b)
- (c) Decide as a group what your initial design will look like. Notice that this will not be your final result and you should iterate in this process

Exercise 2 – Implementation

- (a) Implement the GUI for your visualization tool in your favorite programming language. The GUI **does not have** to have functionality in form of functioning visualizations or interactions at the moment. You can use the platform you have decided on for Assignment 2.
- (b) Implement a drop-down/ or an equivalent system for the selection of attribute/attributes that are relevant to visualize given your tasks and goals.
- (c) Implement a method where multiple attributes can be selected at the same time.
- (d) Implement at least two different idioms to show the distribution of relevant independent attributes that are possibly selected in (b). Make sure that you chose attributes of different types as seen during the lectures.

- (e) Justify the marks and visual encoding choices in (d) given characteristics of the attribute types.
- (f) Describe which task (or subtask) these visualizations would be fulfilling and their relation to the tasks you defined in Assignment 2.