Assignment 3

Exercise 5 – Graphical User Interface (GUI)

A graphical user interface (GUI) is important in each visualization tool since it describes the layout of individual visual components like views, menus, buttons, sliders and so on. Moreover, it describes how those are linked and which impact all of the interactions have on the modifications of views and visualizations. For your visualization project you can take a standard GUI design or be creative and build your own one. There is no limitation in GUI complexity. You should consider that a visualization tool will need to be able to interact with multiple views at the same time.

(a) Discuss in your group which GUI components you need and how you combine them. For example, you definitely need **an input panel**, **a 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.
Make a sketch of your (preliminary) GUI (by colored pencils and paper) with detailed textual descriptions. Moreover, describe the individual components, views, menus, buttons, sliders and so on that you need so far to realize the visualization project. Add a screenshot or a picture (made with your mobile phone) of your GUI design to the pdf. Keep it flexible since you might be adding components through the evolution of the project **(T, 3 pts.)**

(b) Implement the GUI for your visualization tool in your favorite programming language. Make a screenshot of the implemented GUI and attach it to the pdf. Also attach the source code of the GUI and all other code as a separate zip archive (as always). The GUI **does not have** to have functionality in form of functioning visualizations or interactions at the moment, just the GUI is needed in this exercise. **(T, I, 5 pts.)**

Exercise 6 – Attribute visualization

Build GUI components and implement visualization techniques. Always attach source code in a zip archive and add screenshots of the individual components to the pdf and describe them in detail.

(a) Implement a drop-down/ or an equivalent system for selection of attribute/attributes that are relevant to visualize given your tasks and goals. **(I, 2 pts.)**

(b) Identify a strategy where multiple attributes can be selected at the same time. **(I, 1 pts.)**

(c) Design and implement at least two visualizations of the value distribution of relevant attributes independently that are possibly selected in (a). Make sure that you chose attributes of different types as seen during the lectures **(I, T, 4 pts.)**

(d) Justify the marks and visual encoding choices in (c) given characteristics of the attribute types. **(T,3 pts)**

(e) Mention which task these visualizations would be fulfilling and their relation to the tasks you defined in Assingment 2 **(T, 2 pts.)**