Juniorprofessur für Informatik – Beck

UNIVERSITÄT DUISBURG ESSEN

Offen im Denken

Exercise Sheet 2

Information and Software Visualization (SoSe 2019)

Deadline: Wednesday, 08.05.2019, 14:00

Everyone is required to submit an individual solution. Group discussions are possible and encouraged, but each individual solution must be clearly distinguishable from the others. The submission takes place via Moodle—upload all necessary files as a single zip file. Make sure your code runs in the current version of Google Chrome and includes all dependencies.

This exercise sheet includes 1 task with a total of 10 Points (10 Point $\widehat{=}$ 100%).

Task 1 *[Points: 10]*

You are provided a multidimensional dataset. It contains the appropriateness of certain behaviors in different situations as numerical values. There are fifteen different behaviors and situations. Higher appropriateness value for a given *situation–behavior* pair means that the corresponding behavior is more appropriate to that situation.

Develop a web-based visualization using *JavaScript* and *D3* for showing the appropriateness of different behaviors in certain situations. Please use the template provided in Moodle as a starting point. It contains the dataset and specifies a structure of the web page. For an inspiration on designing a visualization for this data, you can take a look at this link: `http://innovis.cpsc.ucalgary.ca/supplemental/Data-Sketching/`. You are free to choose the design of the visualization (there is no unique solution), but the implemented visualization should meet the following requirements:

(a) *(8 Points)* The visualization should provide an overview of all the numerical values of appropriateness. The values should be encoded as visual elements (e.g., colors, object sizes, shapes, lines, etc.). The visualization should be able to provide a visual comparison between different behaviors or situations without performing any interaction. For instance, users should be able to tell (by just looking at the visualization) which situations are similar or different. Finally, the visualization should have clearly visible labels and a legend.

(b) *(2 Points)* The exact numerical value of the appropriateness should be interactively retrievable by selecting (e.g., clicking or hovering) the associated graphical element. The corresponding graphical element should also become highlighted.

Explain briefly to what extent your solution meets the respective requirements and which approach have you have chosen and why. Complete the description as text on the Web page under the visualization. Include the code sources (e.g., from *Stack Overflow*) or web links of visualizations that inspired you in choosing your design.