



Assignment 8

Information Visualization & Visual Analytics (WS 2019/20)

Due: Tuesday, 17.12.2019, 16:00 **Discussion:** Wednesday, 18.12.2019

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Please solve the assignment in **groups of up to three (3) students**. Choose one student who uploads your solution on the assignments page in ILIAS as PDF (for theoretical submissions) or ZIP (for practical submissions Impl). The submitted files should follow the naming scheme `yourlastname1_yourlastname2_yourlastname3` with respective file-ending, of course. Make sure that you create your team before uploading the solution.

Please post general questions regarding the exercise, but *no solutions*, to the forum. In case of more specific problems, especially such that cannot be posed outside of the context of your own solution, please send an email to, or make an appointment with, the tutor responsible for the exercise.

Task 1 The happiness index by country [Points: 25]

In this task, we are providing you a dataset (*happiness_development.csv*)¹ that records statistics about each country in the world that could contribute to the well-being of a particular country.

The dataset was created by combining data coming from the following sources:

- (Happy) Happiness dataset:
<https://www.kaggle.com/unsdsn/world-happiness/version/2#2017.csv>
- (CIA) CIA Factbook:
<https://www.cia.gov/library/publications/the-world-factbook/index.html>
- (INA) Inequality-adjusted Human Development Index:
<http://hdr.undp.org/en/content/inequality-adjusted-human-development-index-ihdi>
- (HDI) Human Development Index:
<http://hdr.undp.org/en/content/human-development-index-hdi>

In the file *Dataset Description* (PDF), you can find additional information about what each individual column provided alongside the data means.

(a) (10 points) Visualizing the data

- The goal of this task is to create a dashboard or a poster that visualizes the information in the given dataset. Your submission should consist of 3 or 4 views/visualizations that complement each other. For this task, you may use any visualization software (Microsoft Excel, Tableau etc.) or programming language. You may augment your poster with additional sketches and text. Sketches are also accepted, however using fictitious values instead of the real data is discouraged in this assignment. Remember, your poster/dashboard should be stand-alone.
- You may consider this task both from a story-telling perspective, similar to the task in assignment 2, or from a data exploration perspective. In either case, reflect and report in 3-10 sentences on the message of your poster/dashboard: if it is a storytelling assignment, what is the point of view you are conveying? if it is a data exploration assignment, what are potential conclusions an external viewer of your visualization might reach upon inspecting/reading your poster?

¹This dataset was created by Christoph Kralj, from the Visualisation & Data Analysis Group at University of Vienna.

- Briefly report on weaknesses and strengths of your visualization, as well as potential improvements.

For this task, 70% of the grade will be awarded for the poster and 30% on the report. Great poster/dashboards may be printed and displayed in the faculty.

(b) *(10 points)* **Evaluation**

- Here you are asked to present your work to 3 other people who are not your team-mates. Let them inspect/interact with your poster/dashboard. Try to understand how **efficient** and **accurate** the visualization is. How long does it take for users to interact/read with your work? Do the conclusions they reach align with the visualization purposes you outlined in the previous section?
- Summarize your approach to interviewing your users. What are the benefits and weaknesses of your interviewing approach?
- Summarize the results of the evaluation. Did you get any unexpected feedback? Comment on how you might improve the visualization based on the feedback you received.

(c) *(5 points)* **Bonus Points**

In this assignment, there are the following possibilities to earn bonus points:

- During the tutorial, you could either volunteer to present or you may be asked to present your results.
- Creative/outstanding submissions may be awarded with additional points.