

CS7DS4 / CSU44065 Data Visualization 2019-20

Assignment 1.1

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Declaration

"I have read and I understand the plagiarism provisions in the General Regulations of the University Calendar for the current year, found at <http://www.tcd.ie/calendar>.

I have also completed the Online Tutorial on avoiding plagiarism 'Ready Steady Write', located at <http://tcd-ie.libguides.com/plagiarism/ready-steady-write>."

Q1.

(a) What is the difference between Explanatory and Exploratory visualisation

Explanatory data visualisation is where you already know what the data contains and you are trying to convey some form of narrative or conclusion that can be derived from the data. For example, an info-graphic that compliments a newspaper article about the various warring parties in Syria. You get to decide the granularity of presentation that best suits the story you are trying to tell [1].

Exploratory data visualisation is where you want to gain a better understanding of a data-set whose contents you have little to no prior knowledge of. You want to visualise the full picture of what the data contains and so the level of granularity should be high. Otherwise, you risk missing some important features of the data [1].

You typically perform Explanatory data visualisation at the data presentation phase of your work whereas Exploratory data visualisation would be performed at the data analysis phase of your work.

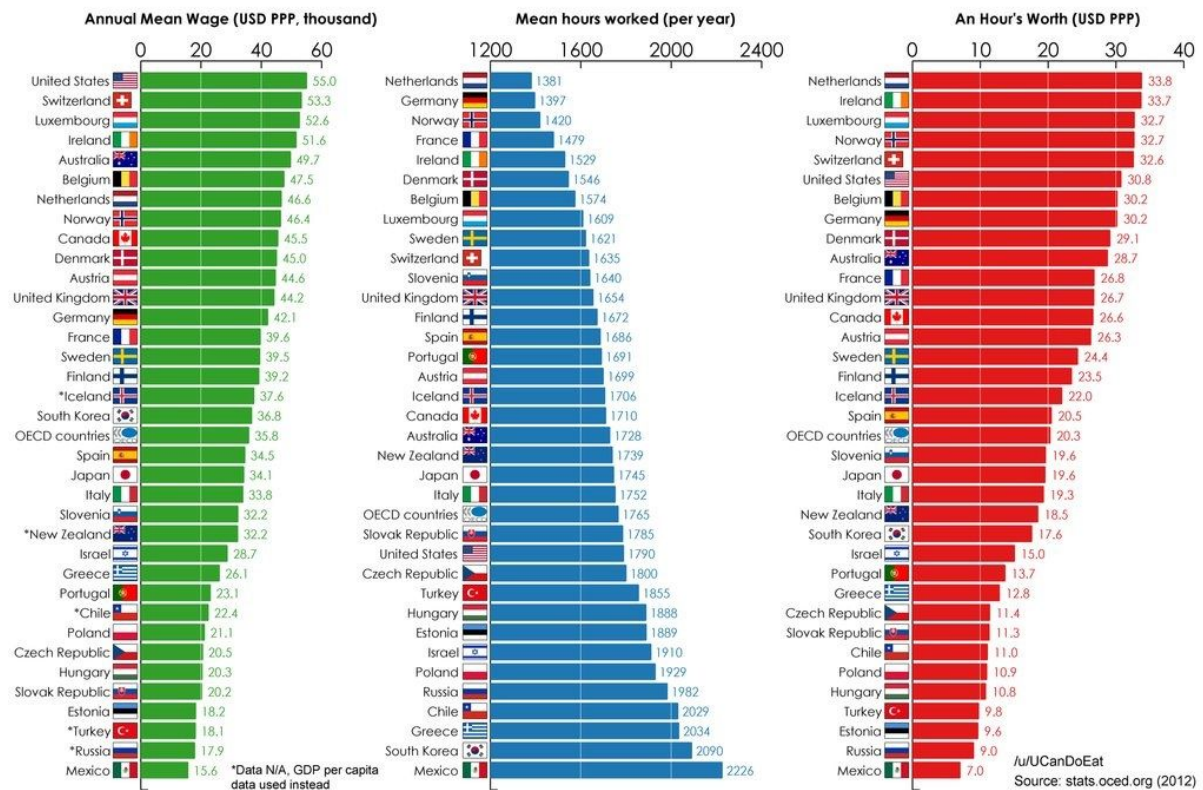
(b) What are some of the reasons for why a human-in-the-loop is required in the process of data analysis

1. Poorly specified problem where the right questions to ask are not known in advance, a humans pattern detection ability in conjunction with data analysis may be required to determine the optimal questions.
2. In certain situations visualisation is only used as an indicator as to the correctness of some system being designed by humans and the data analysis will eventually work itself out of a job.
3. In certain situations there may be no hope of automating an entire process. The Human is forever in the loop and data analysis and visualisation is used as a means of confirming the hypothesis of the human observers.

All reasons gathered from [2].

Q2.

No, I have never created a visualisation of data. Therefore I would like to use this graphic, taken from the OECD in 2012.



The data presented in the above visualisation shows three things, The mean wage per country, mean hours worked and how much an hour of work is worth. By creating three vertical bar charts displaying OECD members score relative to other members and placing the three charts beside each other, a story is being told of the income of an individual in each country and the amount of work that is required to attain such wealth in each country.

Bibliography:

- [1] Iliinsky, N. and Steele, J., 2011. *Designing data visualizations: Representing informational Relationships*. " O'Reilly Media, Inc."
- [2] Munzner, T., 2014. Visualization analysis and design.