CSC-395: Peer Review
Zachary J. Susag

April 19, 2017

This is a peer review of the data visualization proposed by Larry Boateng Asante, Ruth Wu, and Uzodinma Nwike for CSC 395, Data Visualizations in the spring of 2017 at Grinnell College.

1 Summary

The visualization proposes to display survey data from StackOverflow about its users such as salary, age, experience, and gender. The data will be processed and filtered to be displayed on a global map which can then be interacted with to gain additional data about a given country. Some of the questions that the visualization hopes to answer is how do software developers' salaries change depending on which country they are from, do experience/training levels change depending upon the country, and what is the demographic makeup of software developers in a given country.

2 Strengths

(1) I think the design of the visualization is intuitive and potentially quite useful. The design consists of a map of the Earth that allows users to click on a country which will then pop up a sidebar with additional information about the user's selection. This is good design because it is relatively simplistic and intuitive.

(2) The idea of including a side bar instead of just a hovering text field is good. In my personal opinion, it will make the visualization less cluttered and more aesthetically pleasing instead of having hovering text everywhere.

(3) Preprocessing data before visualization is crucial because of the inherent bias present in the data that has been acquired. If the data had not been preprocessed, it would raise a red flag, in my opinion, about the validity of the information.

3 Weaknesses

(1) The choice of questions that the visualization hopes to answer do not lend themselves to a topographical visualization in my opinion. The questions that are defined in the proposal are "what" questions which could be displayed in a table that is sorted in either increasing or decreasing order and I could get the same information in, possibly, a more effective way.

(2) It is unclear to me whether the map will give any information without having to interact with the visualization. If no information will be displayed without interaction then it will be a boring visualization.

(3) I feel that software developer is a broad term as there are many sub-fields within that, such as web developer, AI developer, computer science researcher, etc. This may result in weird data coming up because there is a relatively large discrepancy, within the United States at least, when it comes to base salaries.

4   General Comments

In general, the visualization looks good. There are some factors that I believe you should definitely consider whether or not they will affect the validity and accessibility of your visualization. Firstly, it is unclear to me as to why you are using a topographical representation to format your data in. The questions that you aim to answer could just as easily be answered in some sort of graph or chart, such as a pie chart or something that will be able to display proportions easily. If you include shading as a part of your visualization, which would allow users to see how geography affects base salary, for example, then I could see a map being useful.

To solve the issue of the third weakness that has been identified I propose that, if possible, include some drop-down menu to allow users to select what position they want to look at. If it is not possible, as in the data does not discriminate between what type of software developer each person is, then for this project that weakness can be ignored for the most part.

The major issue that I see within your visualization is how you are going to process your data. There is inherent bias within the data set, which you identified, however, there are also confounding variables present. One such example of a variable is that in certain countries, males may have much greater access to education which in turn will result in higher base salaries. Thus, you should consider how to handle these types of confounding variables, if at all. Another issue that I see regarding the data is how are the base salaries being reported? Are they all in US dollar amounts? If so, are they calculated for inflation/deflation depending on the country?

One technique that you might consider if you do end up staying with a world map is a zooming feature because otherwise it might be impossible to click on small countries, such as Luxembourg.