Final Release

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Correspondence to Proposal

In the Project proposal, we had proposed to design a visual analytics tool for Website performance analysis with the help of Website performance metrics. With the final prototype produced, we admit that the motivation of this project proposal appropriately corresponds to the solution provided by our visual analytics tool. Our Visual analytics tool provides solution to the users to visually analyze the website of their choice. The prototype design is compact and user friendly and therefore, corresponds to Project Proposal.

Guidance to User to use our Visual Analytics tool

Our Visual Analytics tool has a very simple, friendly and user-friendly design. When the user gets directed to the web Application to test their websites, they will be first directed to a welcome page. In the Welcome page, they need to fill out their credentials and the website they need to test for website performance analysis. Once they enter their website, they will be directed to dashboard where they can view several visuals – Histogram, Density, Table and Bar Ranking view to visualize their website performance. Each of the visuals are interactive with checkboxes, zoom I zoom out, panning, moving sliders features for their effective use of the tool. The user can see the Bar Ranking view to visualize the comparison of their website against standard performance metrics of top websites. They can also see the statistical distribution view - Histogram and Density view to know the distribution of the performance metrics against the number of websites in that range. The distribution is continuous in case of Density view, whereas it is discrete in case of Histogram view. This will provide them an indication of how their website would be performing in comparison to other websites. The user can also switch to Table view in case they want to investigate data of their choice in numerical figures in a table. Finally, the user can also switch to independent views of each visuals with the help of the tabs provided in the top of the tool.

Refinements

For the Final release, we planned to work on the feedback provided in the Beta release to develop a complete refined working prototype of our visualization tool for Website performance analysis. The major part of the work was done in terms of integrating the visuals to the Django web application. During the Beta release, we were facing a major challenge while producing the visuals on the web application. We were able to produce interactive visualization solely through Bokeh server, but when we integrated them to run the server on Django, it created an issue. We were

finding a way to produce interactive visualizations while running our visualization tool through Django and Bokeh together. We fixed the issue and were able to produce all the visuals through Django.

Another refinement was needed in understanding the design choices and their importance. Accordingly, providing correct naming conventions to the visuals for their better understanding. All the visuals were correctly labeled and their significance becomes clear with this refinement in the prototype. Our future additions in this work proposed in Beta release documentation also involved improving the tool by adding - Table view, to visualize the websites and parameter values in the form of tables. We successfully added this additional visualization view for the user to investigate data of their choice in numerical figures in a table if they wish to. Further, we worked to produce a unified view of a single dashboard having multiple views. This unified view made our visual design more compact and user-friendly. The user will be able to view all the visuals on a single dashboard and can interact with the visual of their choice for website performance analysis.

Our final prototype currently works smoothly. The user enters a website name in the welcome page web form. Once the website name is entered, the performance metrics are collected from the back-end and the integration enables the visuals to be produced in the interface. Further, the users can view any visual of their choice – Histogram, Bar Ranking, Density, and a Table view, to explore their website performance. Bar ranking visualization successfully shows the comparison of the user's website performance against the average performance of the top websites.

Code Reference

The code produced can be found in the following GitHub Repository:

https://github.com/kirubeltadesse/Webpageranking