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JavaScript Final Paper

My project deals with displaying the nutritional breakdown of food items from two very famous fast food chains. I collected two datasets that provide nutritional analysis of all the food items on McDonald's and Burger Kings' menu. McDonalds and Burger are two of the most famous and largest fast food restaurant chains serving in so many countries across the world. Both of them are famous for their burger and fries and have a very diverse customer base. Almost everybody in the United States eats at either of the joints. Even though they are very famous fast food chains, they receive a lot of backlash because of their unhealthy food options. I feel this dataset can be used to make slightly healthier choices while ordering at these fast food joint. This dataset can be used to sort out food based on user's need, be it overall calories, or amount of carbohydrates, or amount of protein etc. It can be used to make food choices based on someone's daily nutritional requirement. It can be used to compare items from McDonald's to items from Burger King. It will be useful for anyone who goes to or orders from McDonald's or Burger King in making a healthy food choice.

The entire project is spread over three pages. The first being the introduction/ Project Overview page. It contains information on what the project is about and how each page works. It also has a fixed navigation bar at the top required to move between different pages.

Figure 1 Home Page- Wireframe

The second page also has the fixed navigation bar at the top and contains two tables that display the nutritional value of all the items on the menu of McDonald and Burger King. These tables are scrollable, and the columns are adjustable. The data is divided into different pages to make it convenient for the user to go through them. The data is also grouped on the basis of category, so the user can close a category if not needed. The columns can be sorted based on ascending or descending values and can also be filtered as per the user's requirement. Also, I edited the CSS provided by tabulator as per my own requirements.

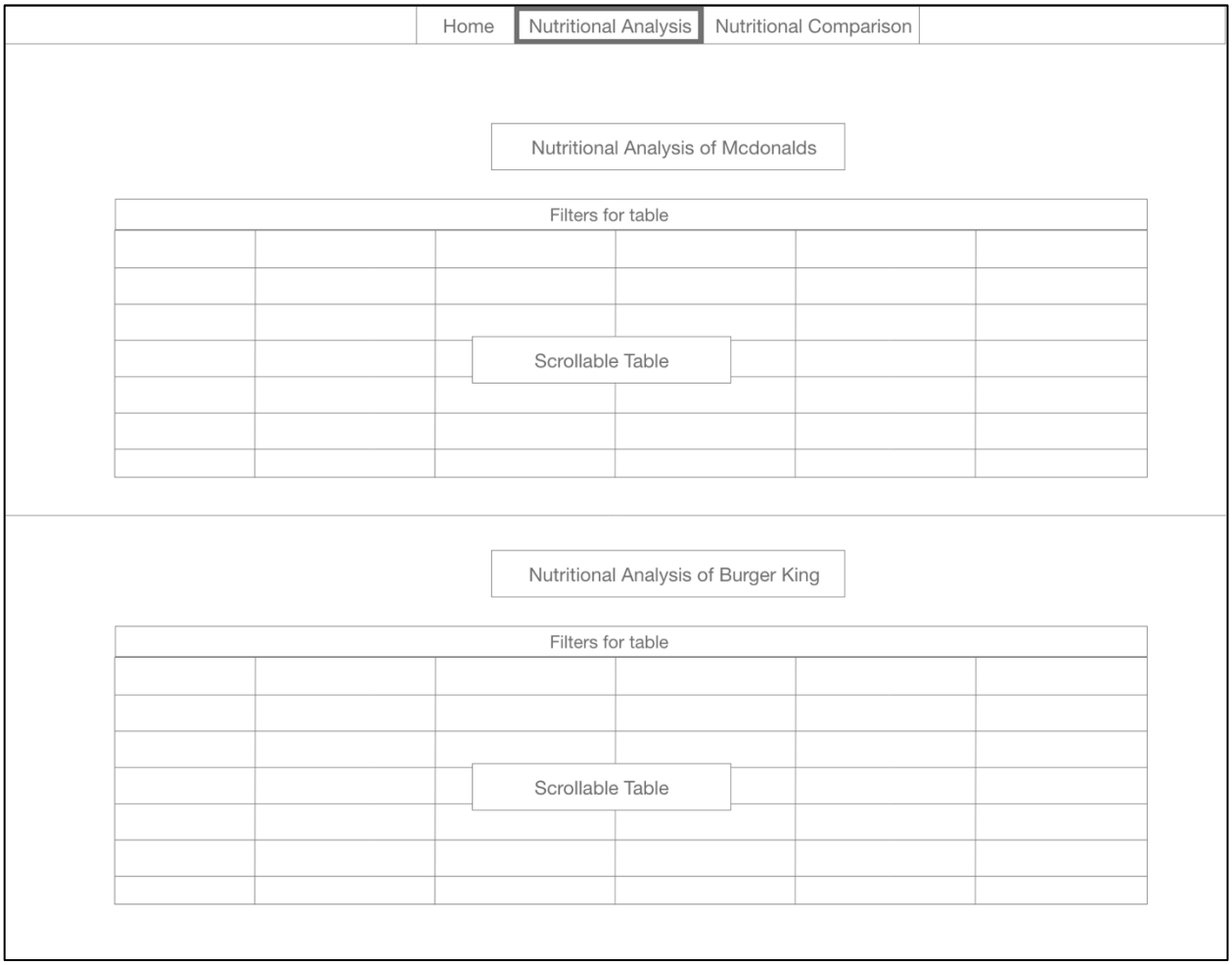

Figure 2 Nutritional Analysis Page- Wireframe

The third page covers the visualization of the data. I turned this into a comparison donut chart for food on McDonald's and Burger King's menu. As both the fast food chains have a very similar menu, just with different names. The user will be able to compare option from both the menus side by side to make a better meal choice.

The first dropdown is for McDonald's and the second shows options from Burger King. On selecting both the options, the donut chart shows up displaying only the 4 main elements i.e. carbohydrates, protein sugar, and fat. This side by side comparison of similar food options will help the user make a healthier decision.

Figure 3 Nutritional Comparison Page- Wireframe

To complete this project, I opted to use some of the libraries from the list provided. I chose two of them, tabulator and the second D3.js. I used tabulator as it made making tables from datasets really easy. Also, the amount of customization that one can do with the library is really amazing. I used some of these features like column groups, pagination, responsive layout, sort and filter etc. to customize my table. I used

d3 for my charts. I also chose to use a second library- D3 for the visualization part of my project. D3 provides a customizable solution since you can have more control over what you are building. I went through many examples to get different parts that make up my donut charts. I created a donut chart using d3.pie ( ) and d3.arc ( ) methods and added mouse hover events on the pie chart. Although there was a bit of learning curve to understand the library at first, the overall customizations and animation effects are better than SVG.

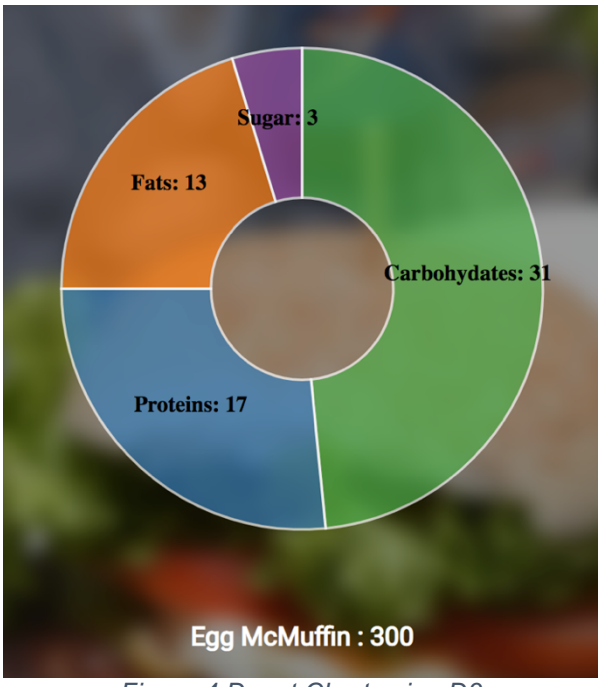

Figure 4 Donut Chart using D3

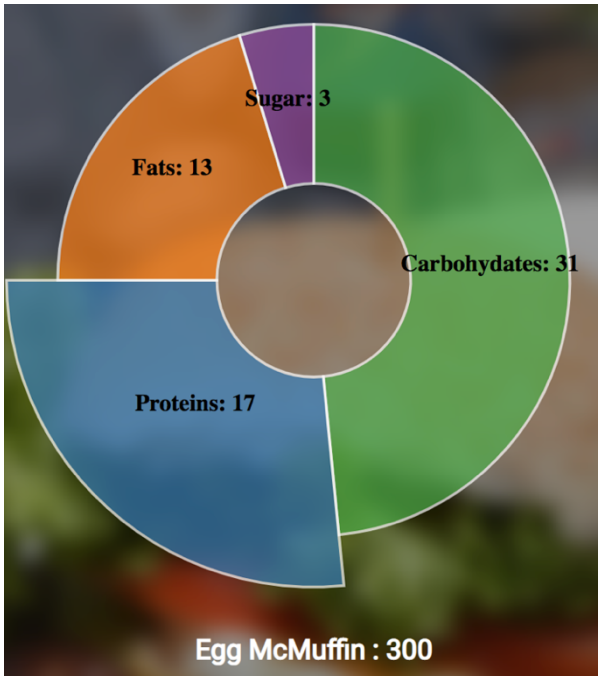

Figure 5 Animating the Donut Chart

D3 has been very tricky to understand and work with. It has such a vast variety of customizations to choose from that it becomes tough to understand, and work will all that in such a short time. I would have preferred to use some other chart library like google charts or high charts that also give you the same abilities for visualizations like D3 but are a lot easier and user-friendly. On the other hand, using tabulator made creating tables and adding customization way easier than it would have been with pure JavaScript. The documentation and examples provided by the tabulator are really clear and easy to follow.

Right now, the visualization clearly compares the food items by providing information about its nutritional value. I would have added the functionality to compare multiple food items instead of two. Another potential improvement would be to add more data sets from other restaurants. Also, right now, the donut chart shows only the necessary values such as proteins, carbohydrates, fats. This can further be increased to show more visualizations. The scope of the project can be increased by making this calorie comparison tool to save the food item in the database. So, that user will be able to track food calories he/she eats outside. Furthermore, the system can also a list of restaurants on the map so that the user doesn't have to leave the app in order to get the address of the restaurant.

References:

Data:

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