## Assignment 8 Write-up

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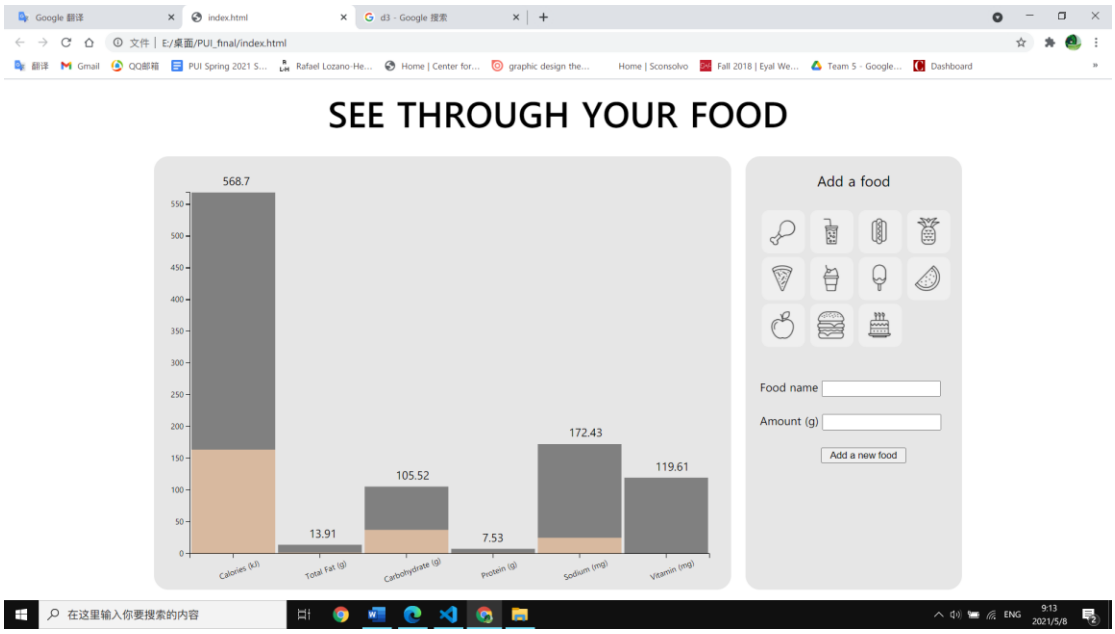


## Part 1 Description

### i. Purpose

This website is an interactive data visualization tool of food ingredients. Users are able to calculate their daily serving ingredients by inputting the food they eat.

### ii. Information to convey

Six ingredients of one kind of food: Calories, Total Fat, Carbohydrate, Protein, Sodium, Vitamin.
Total intaking ingredients of the daily serving amount of food.
The colorful part of the diagram is displaying the ingredients of the food that are currently input. The grey part in the background and numbers are showing the total ingredients that the user intakes each day.

### iii. Interesting point

Users can calculate the total amount by input the food they intake one by one, they can choose the food options provided in the button list and input the amount they intake. They can also see the proportion of one food in a daily amount of ingredients.

### iv. Target audience

This tool is particularly targeted at people who are sick, exercising to keep fit or having the intention to eat healthy. At the end of the day, they can calculate their food ingredients and see if they are eating healthy, which part of food should be cut down and what they should intake more. They can have a basic understanding of food ingredients.

## Part 2 Interaction

### i. Interaction type

Food buttons, the adding button: click to start the interaction.

Input boxes: click to select, then input numbers on keyboard or clicking the “up” “down” buttons to change the number.

**ii Reproducing**

Choose the food that you want to calculate in the options. Click the input boxes in the form on the right, input the amount of food that you intake today. Click “add a new food” and see the diagram on the left. It will show the current food that you just input and the total amount of food ingredients that you intake today.

## Part 3 External tool

**i. Name**

D3.js library

**ii. Reason**

D3 is Data-Driven Documents, it allows you to bind data to a Document Object Model (DOM), and apply data driven transformations to the document. It’s a good tool to do data visualization on website.

**iii. How I use it**

First, download the d3.zip and include the d3.js in the headings. Second, get the input information from the form and transfer it to the d3 part. Setup the data set of ingredients of different food in a 2D-list. Setup the scale, axis in x and y direction, then the scale is going to change based on the minimum and maximum number in the total daily amount. Draw the rectangles based on the current food and total amount of food. Draw the text of intaking amount on the top of each rectangle. Redraw the y axis every time when a new food is added.

## Part 4 Iteration

In HW7, I was intending to display the different part of the food ingredients in a total daily amount. I tried to implement that by using d3.stack(), however, it’s a little bit beyond my ability and I have to change that point to only showing the total daily amount and the current food that the user just inputs.

In HW7, I was intending to show the ingredients in line chart. But bar chart is more meaningful and intuitive while showing the proportion.

## Part 5 Challenges

The difference between v3 version and v4 version of d3.js caused me a lot of troubles. When I used many functions, I didn’t know which version they are in. When the code was not showing the result that I want, I had to spend a big amount of time to find out which function is not working in the new version.