SDE Interview
Data Visualization Task

Languages/Libraries/Tools to be used:

1. TypeScript or JavaScript

2. React via CRA

3. Yarn | Note: NPM must not be used in place of Yarn.

Task description:

1. You are expected to calculate some statistical measures of the Wine Data Set.

2. In the final product, upon running *yarn start*, the browser should open with the desired page rendered.

3. No other helper libraries like Bootstrap, jQuery, Lodash, etc. should be used.

4. Remove all the unused code (JS, CSS, Test Files, etc) and libraries from the CRA template to reduce clutter.

5. Please perform the following:

   a. Write utility functions to calculate the class-wise mean, median, mode of "Flavanoids" for the entire dataset.

      i. The "Class" of alcohol is denoted by the "Alcohol" property.

      ii. All these measures should be calculated by you without the help of any 3rd party libraries.

      iii. All these 3 properties should be displayed as a React component in a tabular format as shown below:

         1. Format

Measure	Class 1	Class 2	Class …	Class …
Flavanoids Mean				
Flavanoids Median				
Flavanoids Mode				

b. Write a function that helps you create a new property "Gamma" for each point of the dataset. "Gamma" can be calculated as <u>Gamma = (Ash * Hue) / Magnesium</u>. Thereafter, calculate the class-wise mean, median, mode of "Gamma" for the entire dataset.

   i. Again, show this data as a React Component in the following tabular format:

      1. Format

Measure	Class 1	Class 2	Class …	Class …
Gamma Mean				
Gamma Median				
Gamma Mode				

6. No further analysis or any sort of textual summary of data/results is needed.

7. The final calculated values (mean, median, mode) should be <u>rounded off to 3 decimal places</u>.

Evaluation criteria:

1. Calculated values are correct, and the functions are time efficient. Weight: 70%

2. Clean code, modularity, folder structure, quality of comments (to explain code wherever needed). Weight: 25%

3. README should include the full screenshot of both the tables. Weight: 5%

4. Bonus for using TypeScript. Weight: 15%

How to submit?

Please submit a GitHub link to your project with clear instructions on how to build/run/start the project in the README.md. You can email that link to careers@manufacanalytics.com.

The submission deadline is 2 days starting from the day you receive the assignment. Say, if you receive your assignment on 1st July 2022, please submit the assignment solution by 3rd July 2022 at midnight.