

## **Build a Data Visualization and Management Application**

**Overview:** You are tasked with building a single-page application (SPA) that serves as a data visualization and management tool. The application should allow users to visualize data in the form of graphs and tables, along with providing features for data manipulation and comparison.

### **Requirements:**

#### **1. SPA with Routing (20 points):**

- Create a single-page application with at least two routes: "Graph" and "Table". (10 points)
- Use a front-end framework like React, Vue, or Angular to develop the application. (10 points)

#### **2. Graph Visualization (25 points):**

- Implement two types of graphs based on the provided data:
  - The first graph should be a bar chart representing any two valuable data points from the API data. (15 points)
  - The second graph should be a pie chart showcasing relevant data insights. (10 points)

#### **3. Table Management (35 points):**

- Develop a table component to display the data retrieved from the API. (10 points)
- Include the following features in the table:
  - Pagination for efficient navigation through multiple pages of data. (5 points)
  - Filtering options to allow users to refine the displayed data based on specific criteria. (5 points)
  - Search functionality to enable users to search for specific data entries. (5 points)
  - Lazy loading to optimize performance by loading data as needed. (5 points)
  - Allow users to select two rows for comparison purposes. (5 points)

#### **4. Additional Features (15 points):**

- Implement additional features to enhance user experience and functionality:
  - Export functionality to download data in CSV or Excel format. (5 points)
  - Integration with a backend server to fetch and update data from a database. (10 points)

**Bonus Question (10 points):**

- Develop functionality to edit the data displayed in the table and save the changes to the local storage.

**Priority:** Tasks should be prioritized based on points assigned to each task and sub-task. Here's the suggested priority order:

1. Table Management (35 points)
2. Graph Visualization (25 points)
3. Additional Features (15 points)
4. SPA with Routing (20 points)

**Note:** You are encouraged to adjust the priority order based on specific project requirements or constraints. Additionally, feel empowered to showcase your creativity by implementing the requirements using third-party libraries, tools, and frameworks of your choice. You have the flexibility to explore and incorporate additional features, design elements, or optimizations beyond the specified requirements to enhance the application's functionality and user experience. The emphasis should be on delivering a well-designed and innovative solution that showcases your skills and creativity while meeting the core objectives of the project.

**Warning:** Any attempt to use ChatGPT or similar language models for generating code or completing the tasks will result in immediate disqualification from the assessment. Such actions are considered a violation of the integrity of the assessment process and will not be tolerated under any circumstances. Any evidence of cheating or plagiarism will be reported and may have serious consequences for your candidacy. It is imperative that you adhere to the rules and guidelines provided to ensure a fair and transparent evaluation of your skills.