**Title:** Visualizing COVID-19 Recovery Efforts: A Narrative Data Visualization

**Messaging:**

The narrative data visualization aims to convey the efforts made in combating COVID-19 and understanding the recovery rates in different continents during the years 2020 and 2021. It seeks to provide a comprehensive view of the pandemic's impact and the response of various regions. The main message revolves around presenting COVID-19 data in a meaningful way, enabling users to explore and compare recovery efforts across continents. Additionally, the visualization emphasizes the importance of data visualization in disseminating critical information during global crises.

**Narrative Structure:**

The chosen narrative structure for the visualization is the Martini Glass. This structure begins with a broad overview of the data, narrows down to specific details, and then zooms out to present a broader context again. The hierarchical bar chart serves as the initial scene, presenting an overview of cases, and users can drill down to explore individual countries. Subsequently, the stacked bar chart presents the confirmed and recovered cases for each continent, providing a comparative perspective. Finally, the line chart showcases the recovery rates of each continent in 2020 and 2021, offering insights into the progress made over time.

**Visual Structure:**

The visual structure of the narrative data visualization is designed to enhance user understanding, navigation, and transitions between scenes. The use of consistent colors, font styles, and layout across all charts ensures a seamless user experience. Interactive elements, such as the drill-down functionality in the hierarchical bar chart, empower users to explore the data in a self-guided manner. Clear axis labels, chart titles, and legends contribute to improved data comprehension.

**Scenes:**

The narrative visualization consists of three distinct scenes:

**Scene 1**: Hierarchical Bar Chart

Displaying COVID-19 summary at the continent and country levels.

Drill-down capability for exploring individual countries.

**Scene 2:** Stacked Bar Chart

Presenting COVID-19 confirmed and recovered cases for each continent.

Color-coded legend to differentiate confirmed and recovered cases.

**Scene 3:** Line Chart

Depicting the recovery rate of each continent in 2020 and 2021.

Custom color scales to differentiate between continents.

**Annotations:**

The narrative visualization uses annotations strategically to support the messaging. Scene 1 (Hierarchical Bar Chart) employs a message displayed at the bottom, guiding users to interact with the visualization by clicking on blue bars to drill down and the background to go back up. This annotation template ensures users understand the interactivity options and encourages exploration.

**Parameters:**

Parameters play a crucial role in defining the state and scenes of the narrative visualization. In the "stackedBar.js" file, parameters like continent, confirmed cases, and recovered cases are used to calculate and aggregate the data. In the "lineChart.js" file, parameters like recovery rate and year are utilized to determine the state of the line chart and define the data points.

**Triggers:**

Triggers in the narrative visualization connect user actions to state changes and facilitate user communication. The main trigger is the user's interaction with the hierarchical bar chart, which enables the drill-down and drill-up functionality. When users click on a blue bar, the trigger updates the state, revealing more granular data about countries. Conversely, clicking on the background triggers the opposite action, allowing users to move back to the higher-level view.

**Conclusion:**

The narrative data visualization successfully conveys the message of COVID-19 recovery efforts across continents during the years 2020 and 2021. Its well-structured narrative, interactive elements, and data annotations ensure a compelling and informative user experience. By leveraging parameters and triggers, the visualization effectively communicates critical information and empowers users to explore COVID-19 data with ease. In times of global crises, data visualization continues to play an indispensable role in disseminating information and fostering understanding.