

Story Telling Through Data Visualization

Final Exam Submission

Bhavana Yetinthala

50468296

## **Building Your Own Data-Driven Story**

**Before creating the dashboard, the following are considered:**

1. **Audience Persona** - "Board": It is essential to understand the target audience for the dashboard, specifically the "Board" level stakeholders. Knowing their preferences, interests, and level of expertise in data analysis will help tailor the dashboard's content and visualizations to meet their specific needs.
2. **Gestalt Principles**: Incorporating Gestalt principles in the dashboard design can significantly enhance its effectiveness. These principles pertain to how humans perceive visual information and can be used to organize and present data in a way that is intuitive and easily understandable. Examples of Gestalt principles include proximity, similarity, continuity, and closure.
3. **Considerations for Dashboard Building**:
  - a) **Color Palette**: The selection of an appropriate color palette is crucial for creating a visually appealing and accessible dashboard. Colors should be chosen carefully to ensure they convey the intended meaning without causing confusion or misinterpretation.
  - b) **Avoiding Double Misusing Representation of Visuals**: Each visualization should have a clear purpose and should not duplicate information presented in other visuals. Duplicating visual representation can lead to redundant and potentially conflicting interpretations of the data.

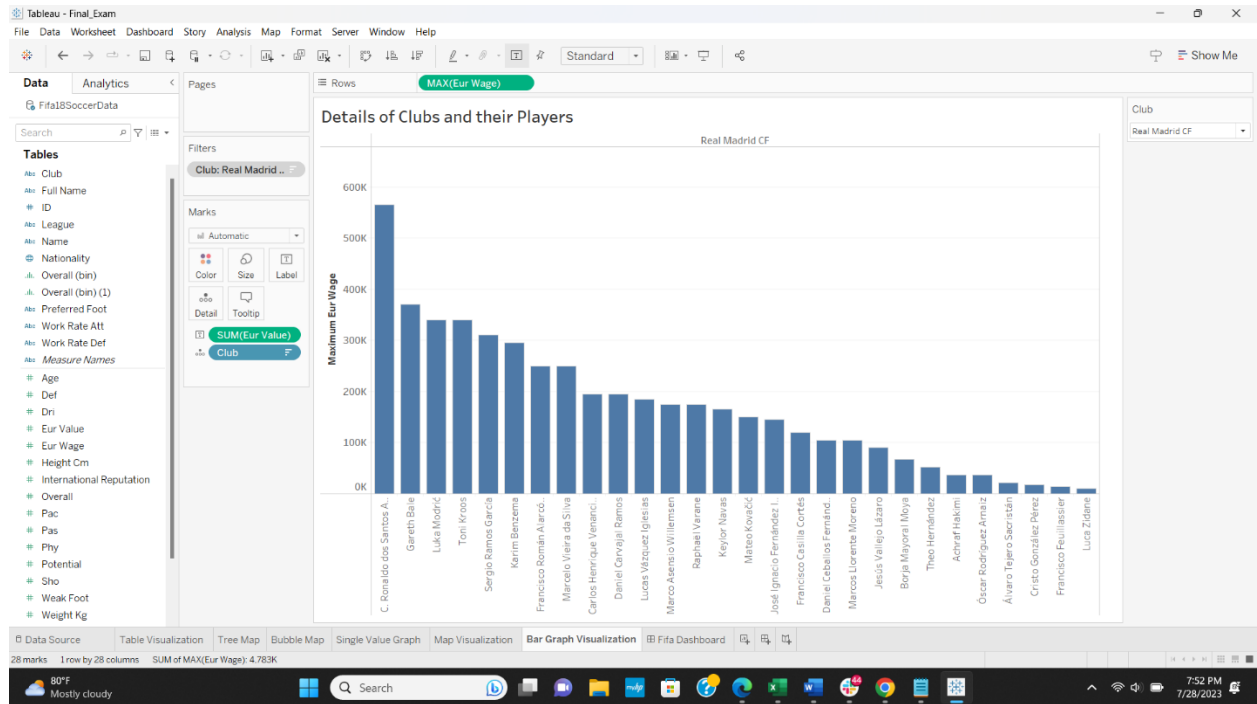
c) **Formatting and Labels:** Consistent formatting and clear labeling of visual elements, axes, and data points are vital to prevent any ambiguity in data interpretation. Proper labeling helps the audience understand what each element represents without any confusion.

d) **Representing Different Types of Question Formats with Filters:** Dashboards often serve various analytical purposes, catering to different types of questions that may arise. Utilizing appropriate filters and interactive elements allows users to explore the data from different angles and derive insights effectively.

e) **Using Appropriate Columns and Rows for Insights:** The arrangement of data in rows and columns should be carefully planned to facilitate data analysis and insights. Organizing data logically and meaningfully can make it easier for stakeholders to derive valuable information from the dashboard.

## Deliverables:

### 1) Visualization-1

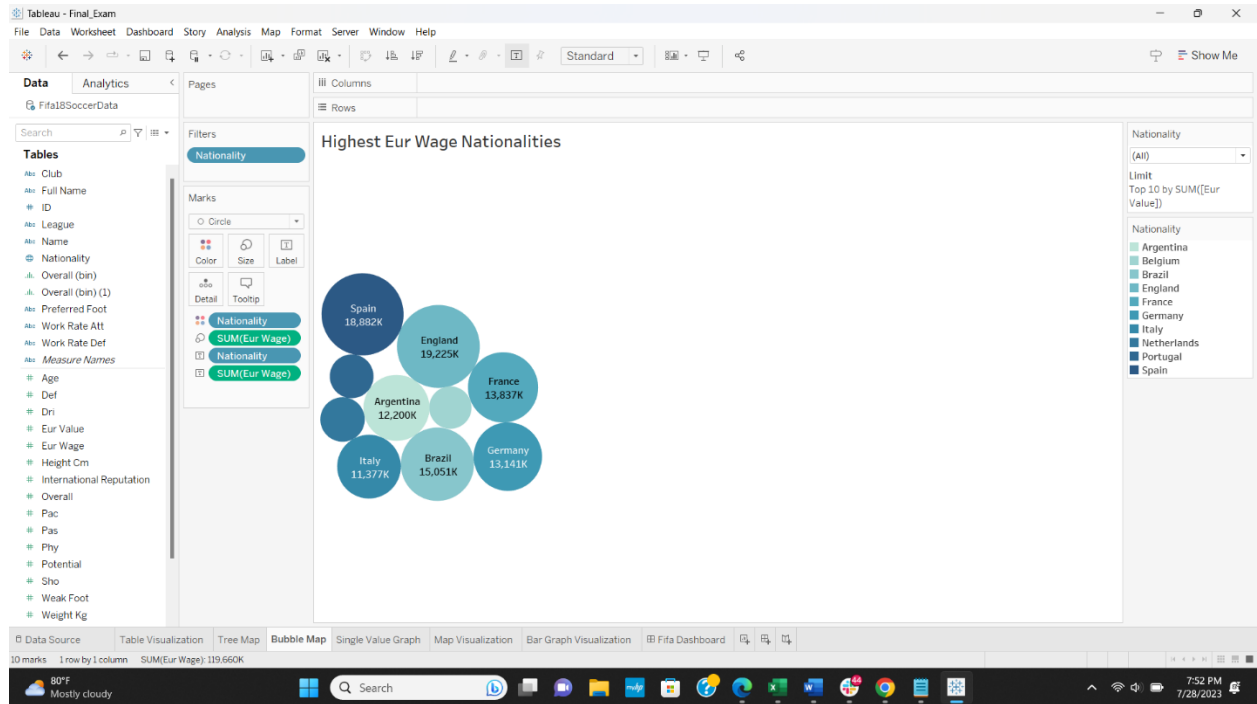


The above screenshot depicts a bar graph showcasing players' wages, utilizing their names as the data fields from the dataset.

#### Explanation:

The bar graph provides information regarding clubs and players, indicating the maximum wage and value. From this visualization, we can obtain details of that particular club and the full names of players in that specific club. The "Similarity" and "Enclosure" Gestalt principles were used to create this visualization. Single color, club labeling, full names, wages, and values are used, adhering to visualization naming design methodologies. To answer different questions arising from the audience persona - "Board," a club filter is used so that viewers can have great flexibility in knowing different clubs and the names of the players included in each club. In an overview, this visualization helps enhance knowledge with respect to various clubs in FIFA soccer.

## 2) Visualization-2

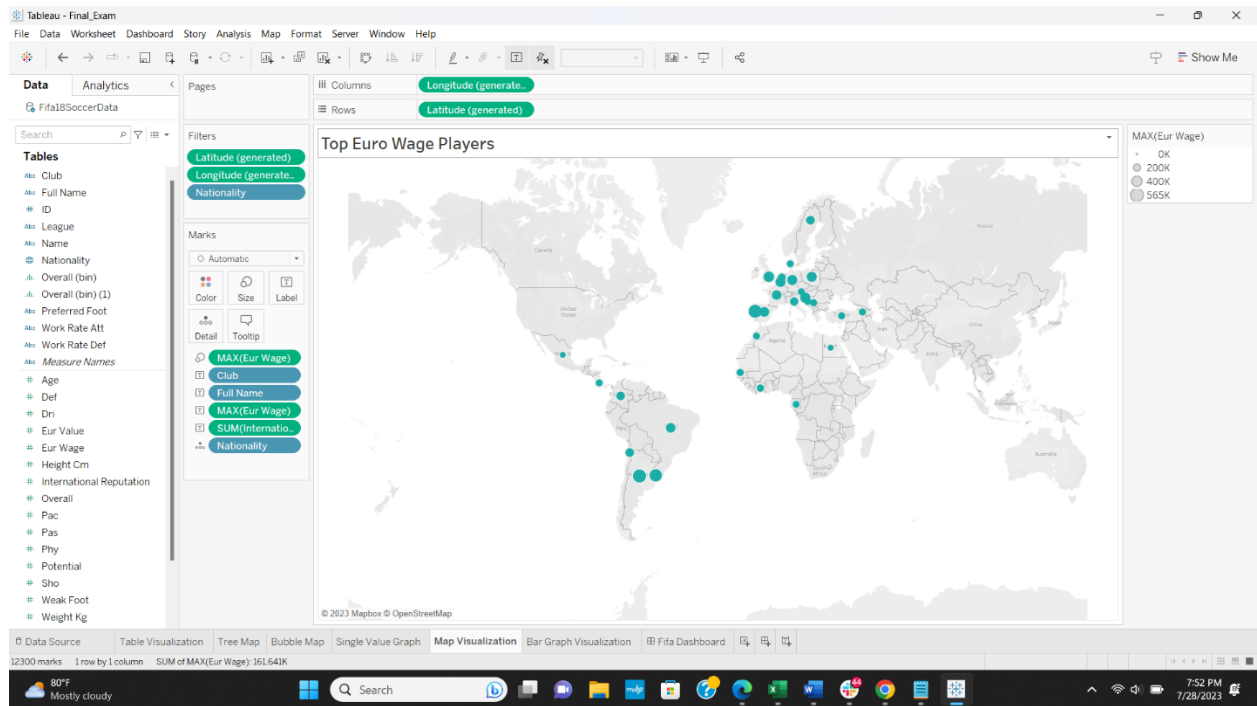


The above screenshot depicts a bubble map representing the top ten nationalities with the highest wages.

Explanation:

The bubble map provides information regarding the top ten countries with the highest wages, indicating the nationality names and the corresponding wage values in thousands. From this visualization, we can obtain details about each region and the respective wage values within that particular region. The "Similarity," "Enclosure," and "Connectivity" Gestalt principles were employed to create this visualization. An appropriate color palette, representation of region names, and proper formatting of wage values were utilized, adhering to visualization naming and formatting design methodologies. To address different questions arising from the audience persona - "Board," a nationality filter is incorporated, granting viewers the flexibility to explore the top regions included in the highest wages. The use of color representation helps avoid confusion for viewers. In an overview, this visualization enhances knowledge regarding the top wage regions in FIFA soccer.

### 3) Visualization-3

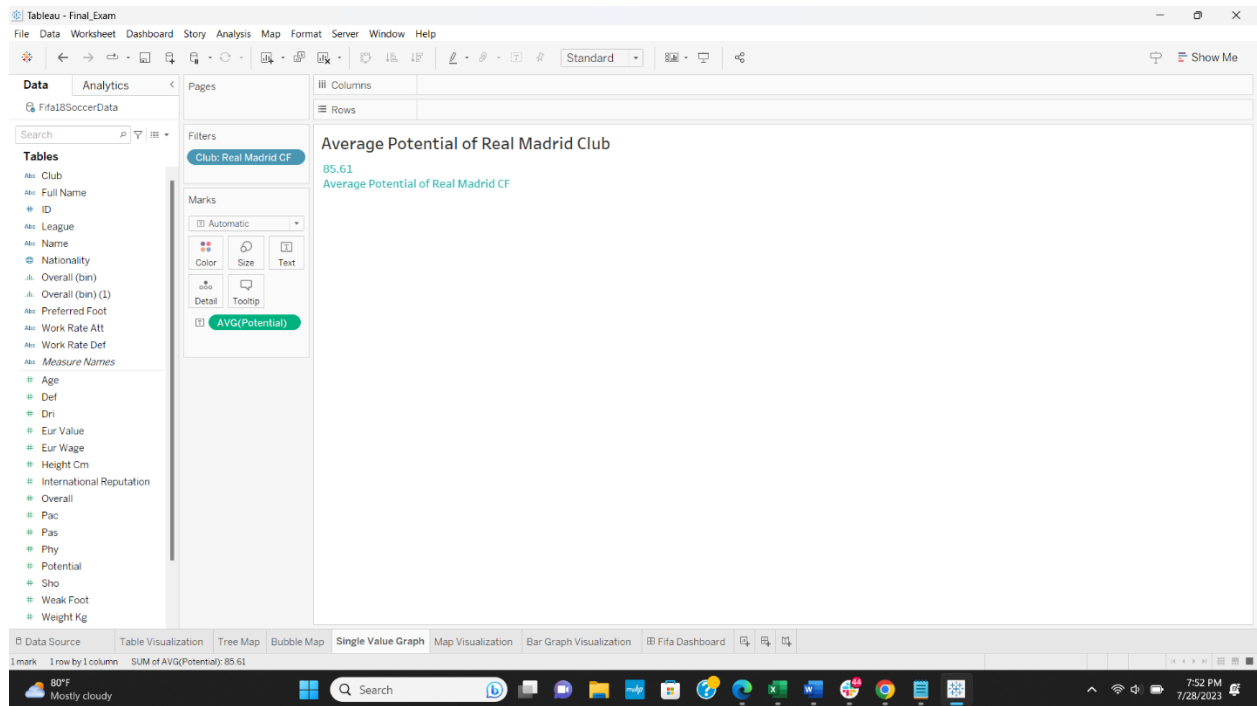


The above screenshot depicts a geographical map representing regions around the world with the top players who comprise the highest wages.

Explanation:

The map provides information regarding the regions where players belong, along with the highest wages, indicating the name of the club, full player names, nationality, wage value in thousands, and the international reputation the players hold. From this visualization, we can obtain details about each player's region and their respective information. The "Similarity," "Enclosure," and "Connectivity" Gestalt principles were employed to create this visualization. A single color, representation of all player details, and proper formatting of wage values were utilized, adhering to visualization naming and formatting design methodologies. To address different questions and potential confusion from the audience persona - "Board," appropriate filters and labels were used. The use of wage sizing (bubble sizing) helps avoid confusion for viewers. In an overview, this visualization enhances knowledge regarding the regions of top players in FIFA soccer.

#### 4) Visualization-4

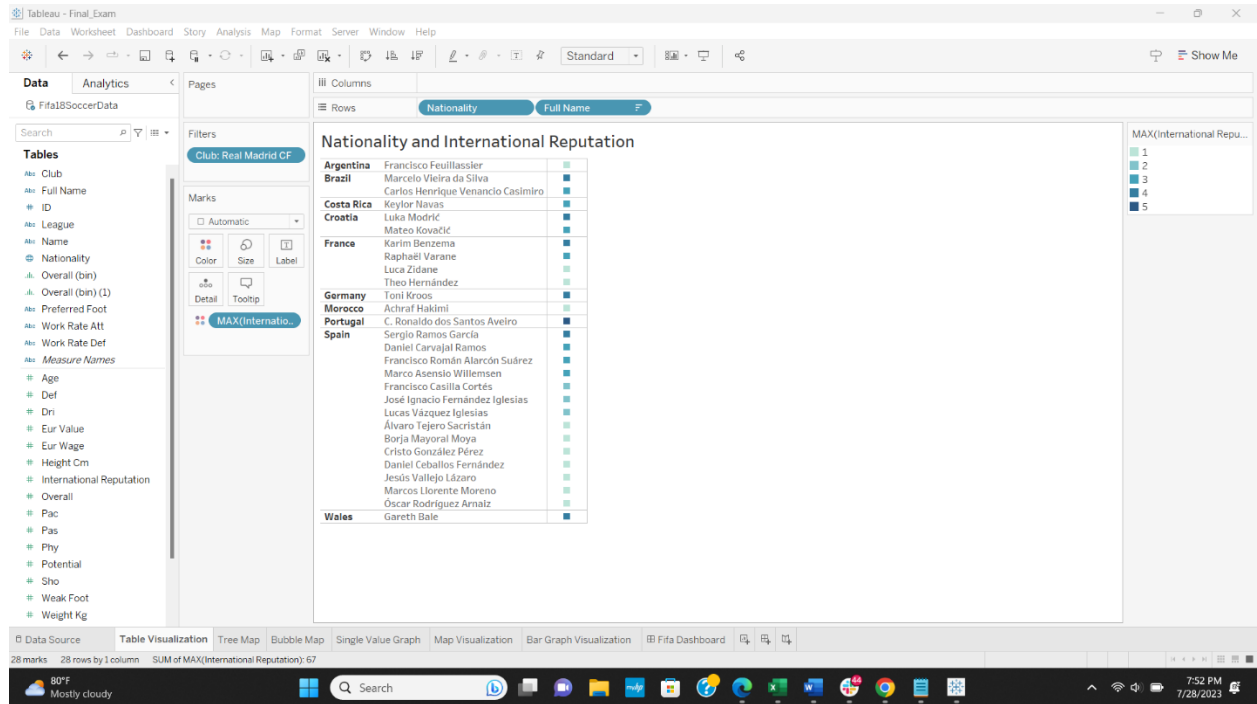


The above screenshot depicts a single value graph representing the average potential of "Real Madrid Club" – a highly reputed club with talented players.

Explanation:

The single value graph provides information regarding the average potential of a particular club - "Real Madrid." This visualization offers insights into the overall potential of the team, which is crucial for improving the club's growth. The "Closure" Gestalt principle was employed to create this visualization, utilizing a single color and proper formatting of numerical values while also providing a clear visual name in adherence to visualization naming and formatting design methodologies. To address different questions and potential confusion from the audience persona - "Board," appropriate filters and labels were used. The use of an additional sentence describing the average value helps avoid confusion for viewers. In an overview, this visualization enhances knowledge regarding the potentiality of the particular club in FIFA soccer.

## 5) Visualization-5

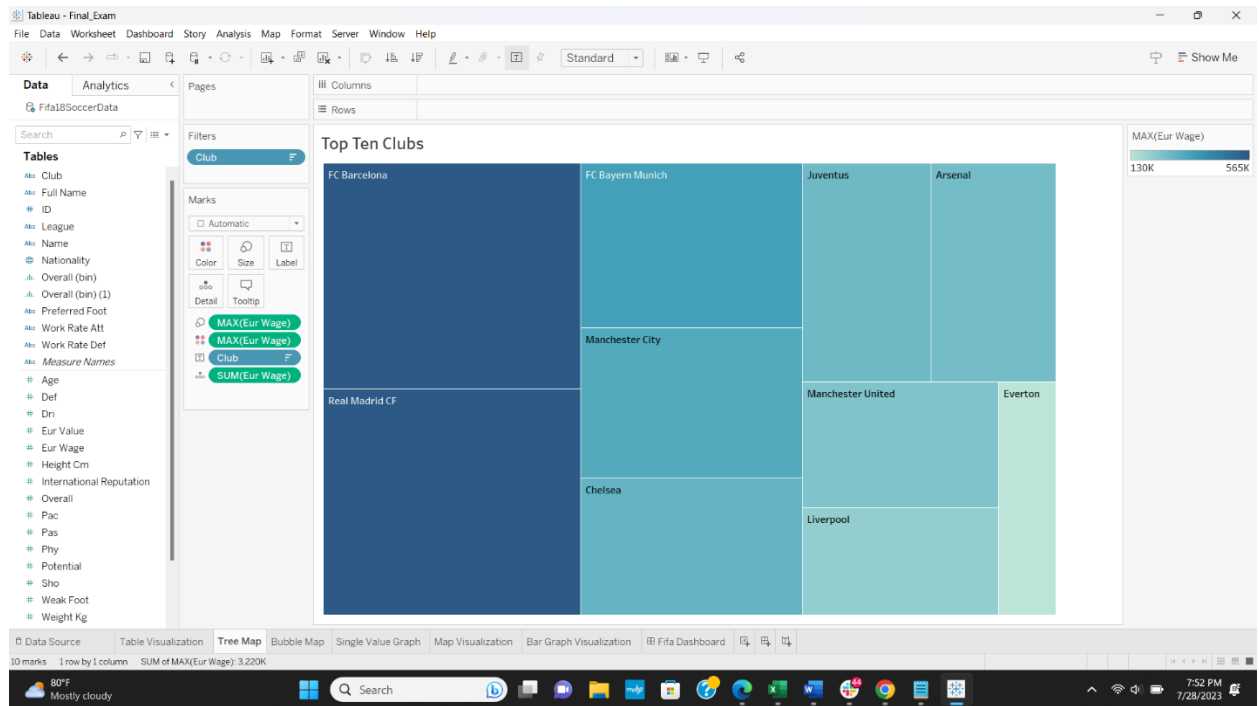


The above screenshot depicts the nationality and international reputation of players belonging to the "Real Madrid Club" – a highly reputed club with talented players.

Explanation:

The table visualization provides information regarding the "Real Madrid" club players' regions and international reputation. This visualization offers insights into the overall data of the team, including reputation and regions. The "Similarity," "Enclosure," and "Connectivity" Gestalt principles were employed to create this visualization, utilizing an appropriate color palette and proper formatting of the table, including full names and colors denoting reputation values, while providing a clear visual name in adherence to visualization naming and formatting design methodologies. To address different questions and potential confusion from the audience persona - "Board," appropriate filters and labels were used. The use of a color palette describing the reputation helps in getting a clear idea of the visual and avoids confusion for viewers. In an overview, this visualization enhances knowledge regarding the overall details of the "Real Madrid" club in FIFA soccer.

## 6) Visualization-6



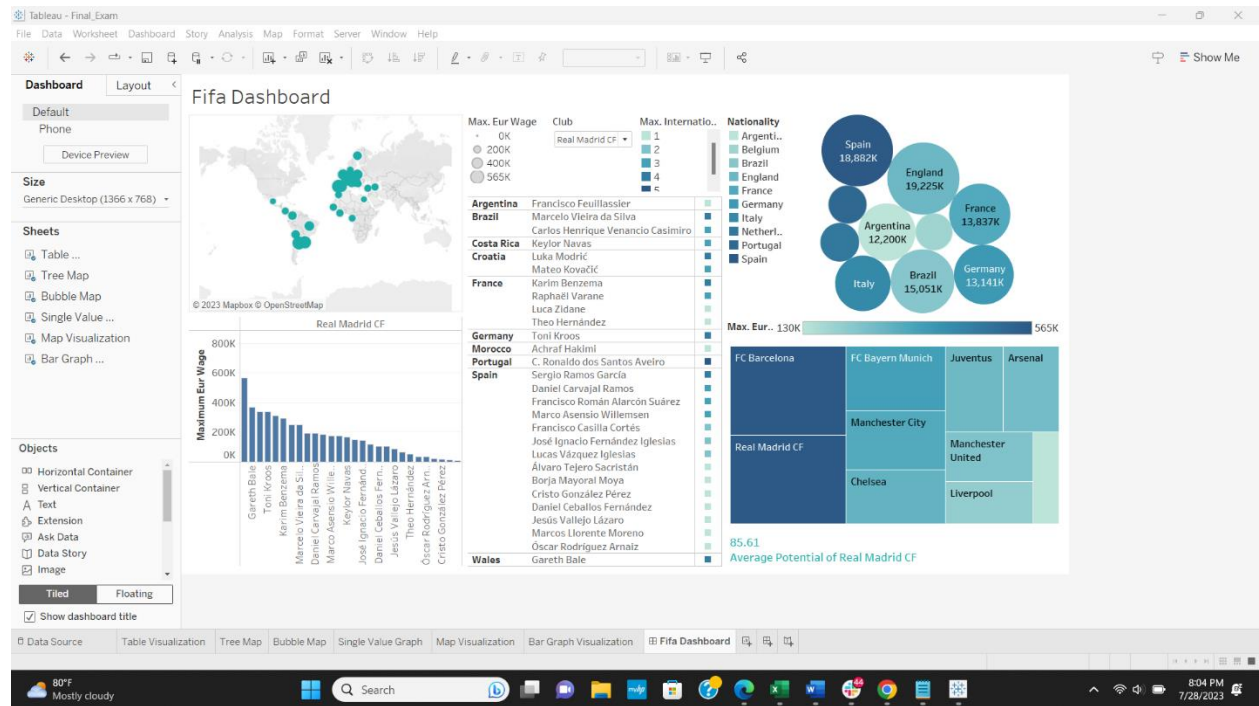
The above screenshot depicts the names of the top ten clubs with the highest wages.

Explanation:

The tree map provides information regarding club names and represents the maximum wage value and total wage value. This visualization gives information about the top club names contributing to the highest wage value, including the maximum wage value. The "Similarity," "Enclosure," and "Closure" Gestalt principles were employed to create this visualization, utilizing an appropriate color palette and proper formatting of the map, including club names, popping values of wages, and a color range palette denoting wage values, while providing a clear visual name in adherence to visualization naming and formatting design methodologies. To address different questions and potential confusion from the audience persona - "Board," appropriate filters and labels were used. The use of a resize color palette describing the wage value helps in getting a clear idea of the visual and avoids confusion for viewers. In an overview, this visualization enhances knowledge regarding the top clubs in FIFA soccer.



## Dashboard



The above "FIFA Dashboard" provides various information and insights regarding players, regions, reputation, and wages of all clubs included in the data.

### Explanation:

The above dashboard consists of six different visualizations, offering valuable insights into FIFA 2018 Soccer data. It includes a geographical map representing regions, a bar visualization displaying all players of a club, a table showcasing details of the renowned "Real Madrid" club, a bubble map illustrating regions with the highest wages, and a tree map providing club and potential details to get an overall team idea. The data contains players belonging to the same region and the same club with players from different regions, leading to the need for grouping elements. To effectively visualize and draw insights from these groups, the "Similarity," "Enclosure," "Connectivity," and "Closure" Gestalt principles were utilized. Following color palette rules were employed to maintain dashboard harmony, and necessary columns were properly labeled to avoid user re-checks. Numerical formatting, including unit alignment, row and column names, chronological order, and appropriate filters, were used to prevent

confusion. Overall, the dashboard design concepts taught in the class were successfully applied to create a visually appealing and insightful FIFA 2018 Soccer data representation.

## One-Page Summary

The dashboard was created using the "Fifa18SoccerData" dataset, which includes columns such as full\_name, club, nationality, eur\_value, eur\_wage, and potential. The target audience persona for the dashboard was the "Board," which requires a brief explanation of visuals to get an overall idea of the dataset's aspects. Various data visualization techniques and insights were applied to the dataset. The world map visualization provided an overview of regions with players having high wages, allowing the audience to quickly identify regions with high-paid players. The bar chart helped in obtaining details of all players within a specific club, enabling a focused analysis of individual clubs. To explore information specifically related to Real Madrid players and their reputation, a table was used to present the relevant data concisely and systematically. The bubble map was employed to gain insight into the top ten regions with the highest wage values. By varying the size of bubbles based on wage values, the audience could easily identify the regions with the highest salaries. Additionally, a tree visualization was used to determine the clubs with the highest wage values worldwide. This hierarchical representation assisted in identifying the clubs with the most significant financial investments in players. Several design principles and rules were applied to enhance the usability and aesthetics of the dashboard. A carefully chosen color palette ensured that the visualizations were visually appealing and easy to interpret. Appropriate labeling and formatting of data elements helped the audience understand the information clearly. To enable interactivity, selected values were highlighted to draw the audience's attention to specific data points. Properly fitting the visuals into the entire view ensured that the dashboard appeared cohesive and well-organized. To allow users to explore the data more effectively, appropriate filters were applied, preventing confusion while enabling interactive data exploration. Throughout the dashboard creation process, the Tableau tool provided valuable suggestions to improve the visualizations and overall design, contributing to better ideas and insights. Creating the dashboard came with various challenges, with the primary difficulty being dataset selection. The available datasets were complex, and each had its unique problems. Overall, the "Fifa Dashboard" provided valuable insights and facilitated a different way of utilizing thinking capabilities.