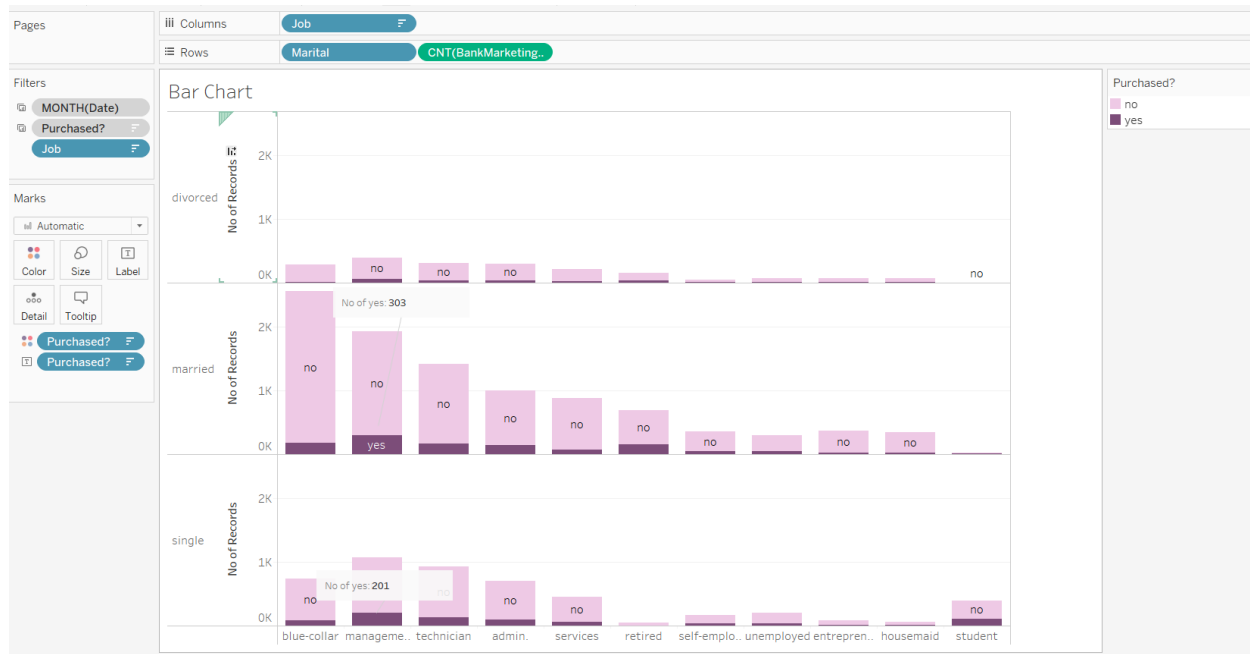


Final Exam

Dataset : Bank Marketing Dataset

Audience: The Board

Visual 1: Bar Chart



Insights:

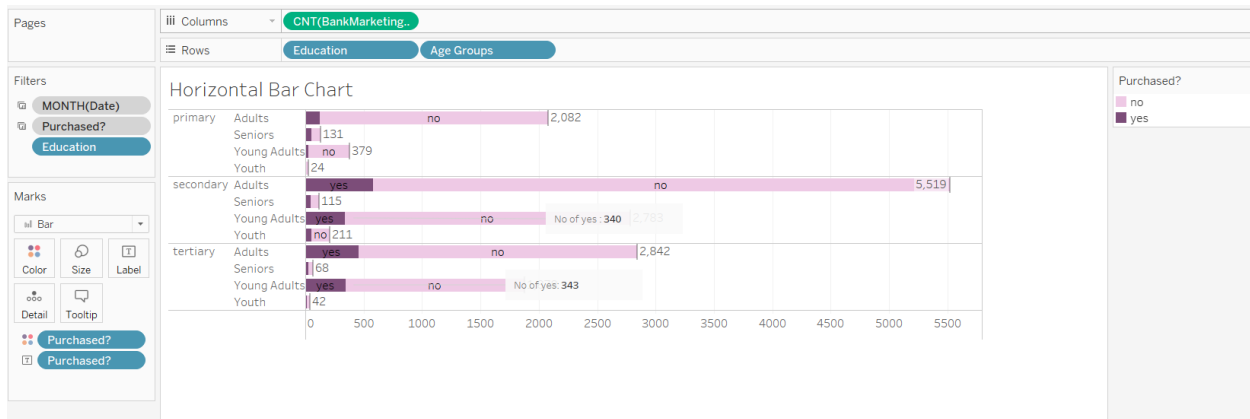
1. **Divorced:** The number of 'yes' purchases is relatively low across all job categories.
2. **Married:** There is a noticeable higher count of 'yes' purchases in the management and blue-collar job categories. Jobs like technicians, administrative roles, and services show moderate levels of 'yes' purchases.
3. **Single:** Single individuals in blue-collar and management roles also show higher levels of 'yes' purchases. Other job categories have relatively low 'yes' purchase counts.

Design Methodologies:

Different colors are used to distinguish between 'yes' and 'no' purchases, making it easy to compare within and across bars. Grouping bars by marital status and job type leverages proximity to show relationships between categories.

Story for Board: The data suggests focusing marketing efforts on married individuals in management and blue-collar roles, as well as single individuals in similar roles, due to their higher likelihood of making purchases.

Visual 2: Horizontal Bar Chart



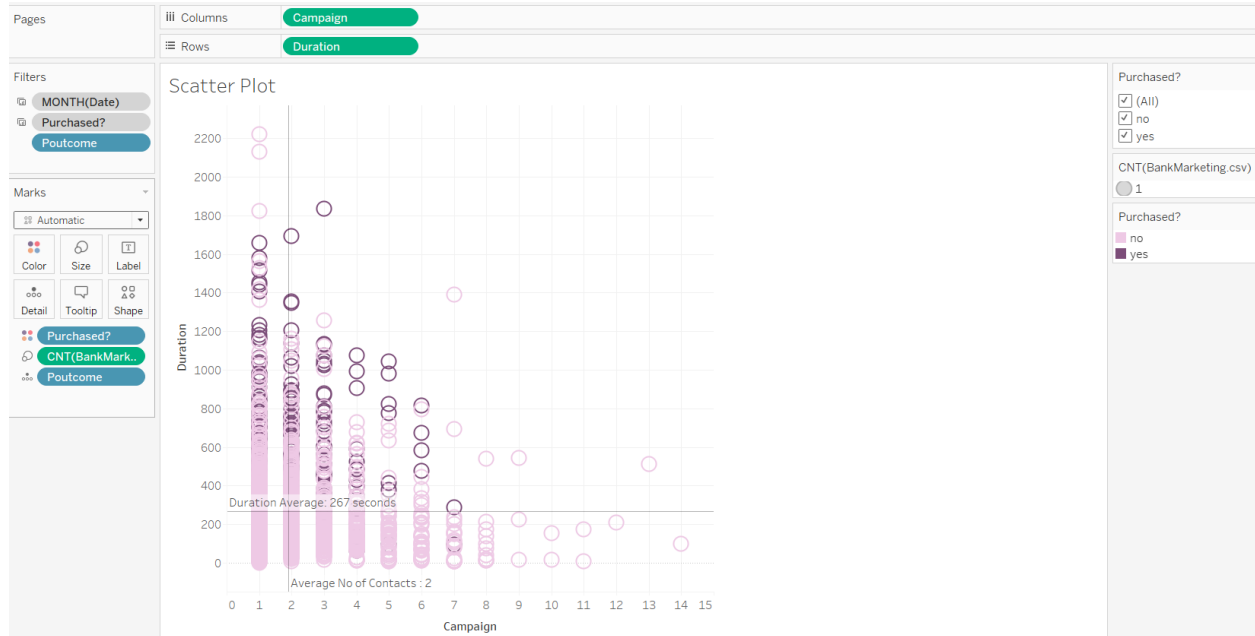
Insights:

- 1. Primary Education:** Youth with primary education have very low purchase rates, indicating that this group is less likely to buy the product.
- 2. Secondary Education:** There is a higher count of 'yes' purchases among adults and young adults with secondary education.
- 3. Tertiary Education:** Young adults with tertiary education show the highest count of 'yes' purchases, indicating that higher education levels correlate with higher purchase rates. Adults and seniors with tertiary education also exhibit significant 'yes' purchase counts.

Design Methodologies: Consistent color to differentiate 'yes' and 'no' purchases facilitate easy comparison. Horizontal bars extend naturally, making it easier to compare lengths and infer higher purchase rates.

Story for Board: Marketing strategies should target young adults and adults with secondary and tertiary education, as these groups demonstrate higher purchase rates.

Visual 3: Scatter Plot



Insights:

The majority of 'yes' purchases occur when the number of contacts is between 1 and 3. This indicates that fewer contacts are more effective in converting to purchases.

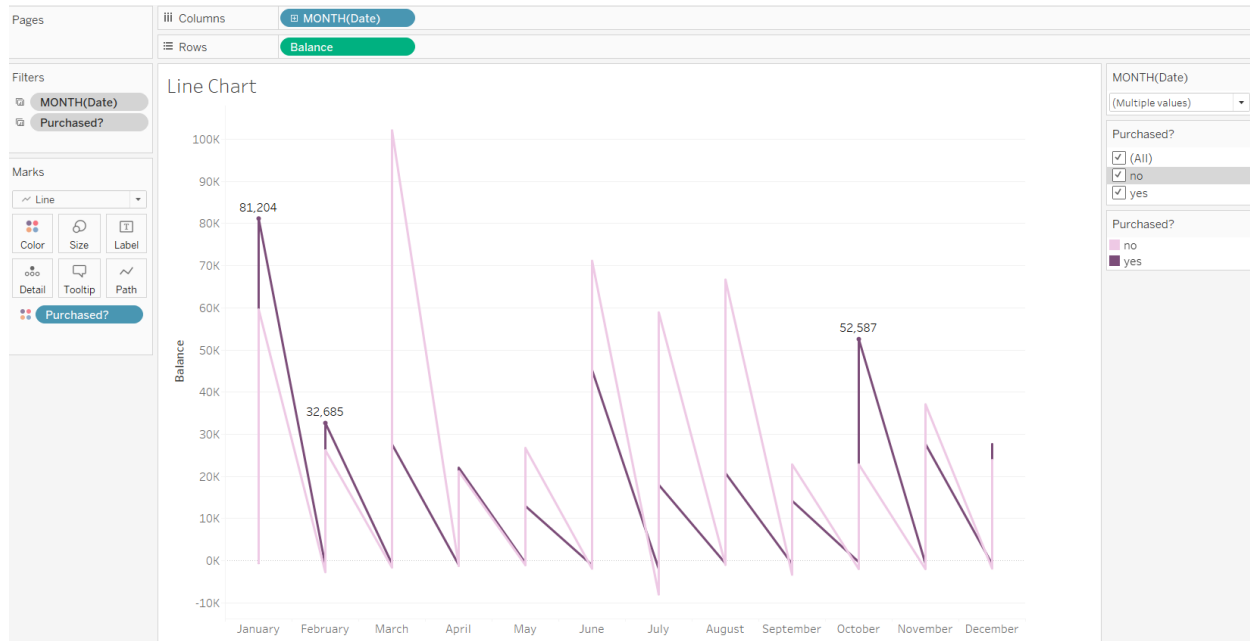
Successful purchases (denoted by 'yes') tend to cluster around contact durations of up to 500 seconds (about 8 and a half minutes), suggesting that longer conversations may be more effective for conversions.

The average contact duration for successful purchases is around 267 seconds (about 4 and a half minutes), highlighting the importance of investing time in each contact.

Design Methodologies: Different colors for 'yes' and 'no' purchases make it easy to distinguish successful contacts. Clustering of points around certain values highlights trends in contact duration and frequency. The scatter plot uses contrasting colors and a clean background to make data points stand out.

Story for Board: Data suggests refining campaign strategies to focus on making fewer, more meaningful contacts to improve purchase rates.

Visual 4: Line Chart



Seasonal Impact on Subscriptions: The chart distinctly shows that certain months, specifically January, July, and October, have higher balances for customers who subscribed to a term deposit. This suggests a correlation between higher balances and the decision to invest in term deposits during these peak financial months.

After a peak in January, there is a noticeable dip in February and March, suggesting possible expenditure after saving or receiving bonuses, affecting the ability or willingness to subscribe to new term deposits.

End of Year Spending: There is a noticeable decline in balances from both subscribers and non-subscribers towards the end of the year, particularly in November and December, likely due to increased spending during the holiday season, which may deter financial commitments like term deposits.

Story for Board: Understanding these patterns can inform more strategic marketing and client engagement approaches, especially timing campaigns around peak months where clients are more financially equipped and likely to subscribe to term deposits.

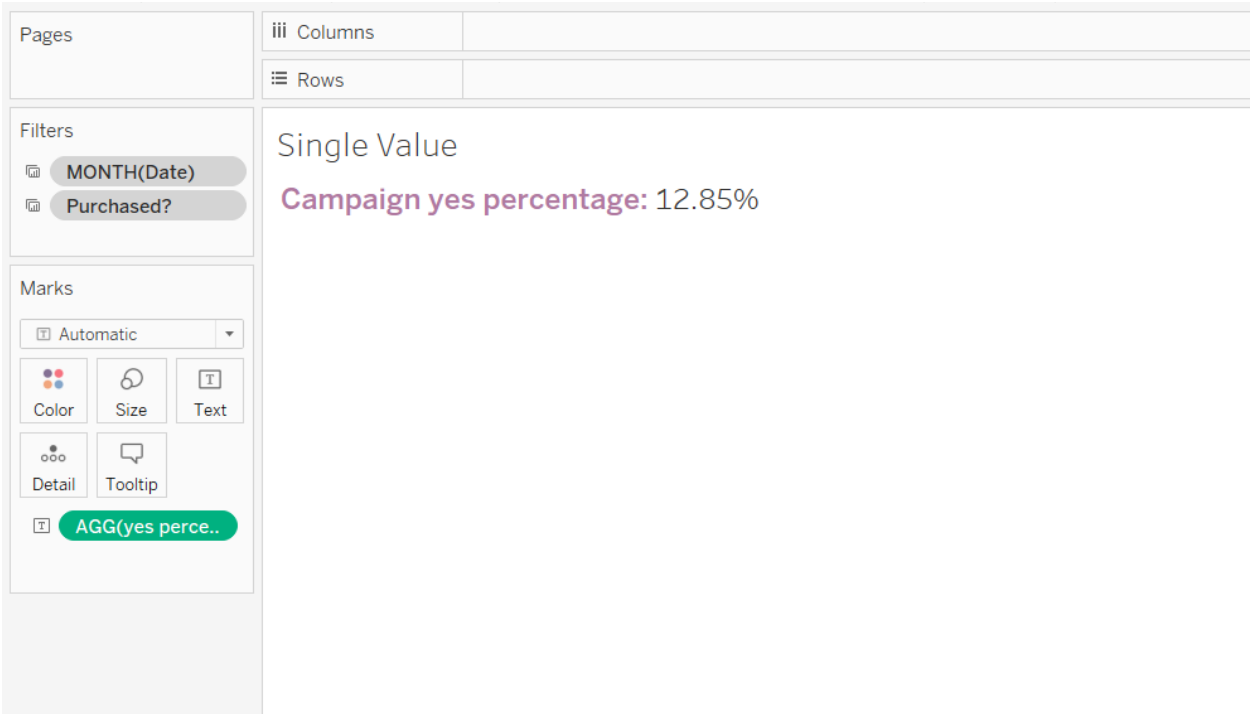
Design Methodologies:

Utilizes dark purple and light pink to distinguish between clients who subscribed to a term deposit and those who did not, facilitating quick visual differentiation.

The line chart clearly displays balance trends over months, which is suitable for tracking changes and patterns.

Designed to offer detailed data on hover, this feature enhances user engagement without cluttering the visual space.

Visual 5: Single Value Text



Insights and Story for the Board:

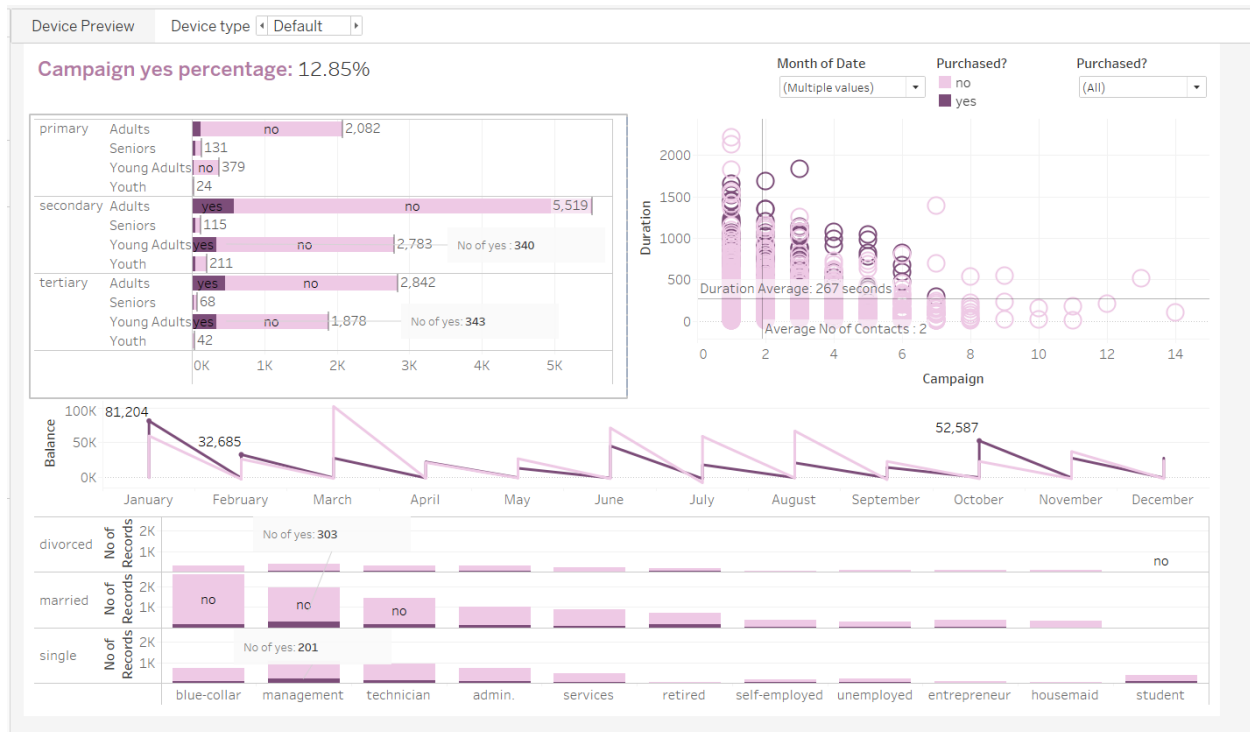
This single-value display highlights that 12.85% of our campaigns resulted in clients subscribing to a term deposit, indicating the effectiveness of our marketing strategies. This metric is important in assessing the impact of our campaigns and strategizing future enhancements to increase conversions.

Design Methodologies:

Single Value Focus: Emphasizes the conversion rate, ensuring the key performance indicator is immediately noticeable, aiding quick comprehension.

Text Formatting: Uses bold and larger font to draw attention directly to the conversion percentage, enhancing its visibility and importance.

Dashboard:



Overview and Purpose:

This dashboard is designed to provide a comprehensive overview of the effectiveness of marketing campaigns for bank term deposits across various demographics and campaign characteristics. The chosen visuals delve into campaign success rates, client engagement, and financial behaviors, enabling a multi-dimensional analysis of marketing strategies.

Dashboard Design Concepts:

- **Consistency in Design:** The use of a consistent color palette (shades of purple and pink) across all visuals creates a cohesive and aesthetically pleasing interface, which is easy on the eyes and helps in distinguishing different data elements quickly.
- **Strategic Layout:** The layout follows a logical flow—starting from a general overview at the top (campaign success rate) and moving towards more specific analyses (demographic and campaign details), which guides the viewer through the data in a structured manner.
- **Interactive Elements:** Tooltips and filters (e.g., by month or purchased status) enhance user interaction, allowing for dynamic exploration of the data. This interactivity enriches the user experience, making the dashboard not only informative but also engaging.

Summary:

Process Overview

The process of developing the dashboard visuals began with a thorough analysis of the dataset to identify key variables influencing term deposit subscriptions. My initial step was to clean and preprocess the data, ensuring accurate and meaningful visual representations. Next, I selected visual types that best communicated the relationships within the data: bar charts to depict categorical data, scatter plots for correlations, line charts for trends over time, and a single value display for impact metrics.

Issues Encountered

Several challenges arose during the visualization process. One significant issue was ensuring clarity and readability when dealing with overlapping data points in scatter plots, which initially led to a cluttered visual appearance. I addressed this by adding reference lines to enhance user interaction and understanding. Another challenge was the optimization of space within the dashboard to accommodate all necessary visuals without sacrificing their interpretability.

Insights Derived

Insights reveal that married individuals, particularly in management and blue-collar jobs, and single individuals in similar roles, demonstrate higher 'yes' purchase rates, suggesting targeted marketing strategies could be effective for these groups. Additionally, educational attainment plays a significant role, with young adults possessing tertiary education showing the highest 'yes' purchase rates. Interaction patterns indicate that 1-3 contacts are most effective, and conversations around 4.5 minutes yield the best results. Seasonal trends show higher balances and potential for term deposit subscriptions during January, July, and October, with noticeable spending dips towards the year-end affecting subscription decisions. Overall, the campaign's success rate stands at 12.85%, emphasizing the need to optimize contact strategies and timing to enhance future campaign outcomes.

Audience Persona

The primary audience persona for this dashboard is bank marketing executives and campaign managers interested in optimizing marketing strategies. This persona guided the choice of

visuals and the dashboard's layout, emphasizing metrics and trends that directly inform marketing decisions, such as campaign effectiveness, demographic engagement, and financial readiness of clients.