POWER BI PROJECT

REAL TIME TWITTER DATA DASHBOARD ANALYSIS

INTRODUCTION

- The goal of this project was to create a real-time Twitter analysis dashboard to showcase advanced data visualization and filtering techniques in Power BI. The project involved performing complex data transformations and applying DAX measures to complete three assigned tasks over three weeks

KEY QUESTION

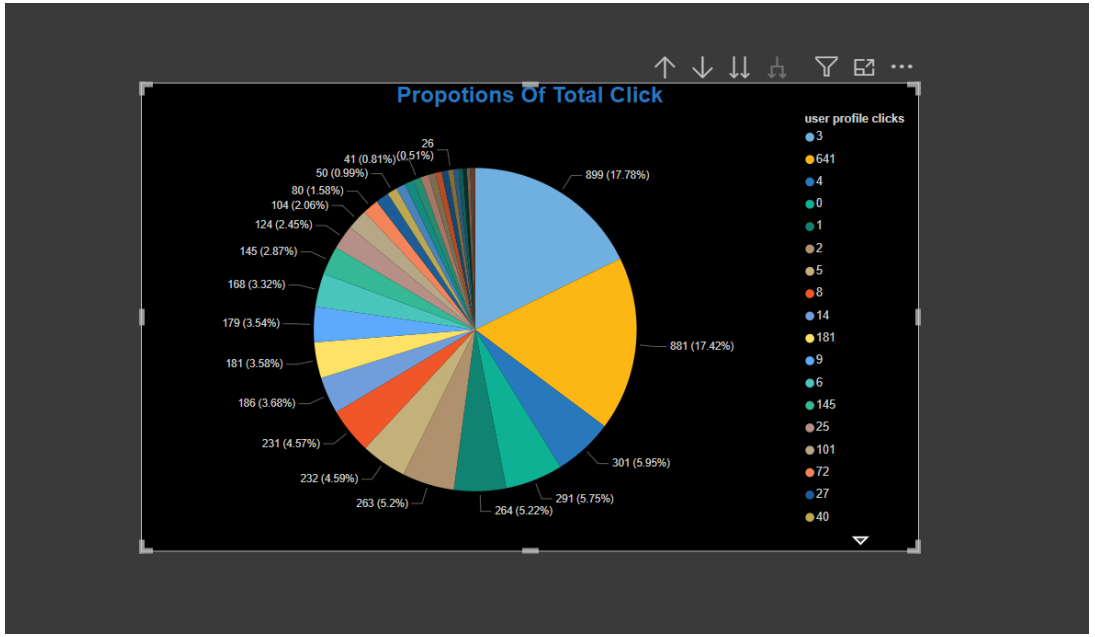
- **Proportion of Total Clicks for High-Impression Tweets**
  To build a pie chart representing the proportion of total clicks (URL clicks, user profile clicks, and hashtag clicks) for tweets with more than 500 impressions.

- **Media Engagement vs. Media Views Analysis**
  To plot a scatter chart analyzing the relationship between media engagements and media views for tweets with specific conditions:

- **Engagement Rate Analysis for App Opens**
  To compare engagement rates for tweets with app opens versus those without app opens, under the following conditions:

Task 1: Proportion of Total Clicks for High-Impression Tweets

- **OBJECTIVE**:
- Build a pie chart that represents the proportion of total clicks (URL clicks, user profile clicks, and hashtag clicks) for tweets with more than 500 impressions. Include a drill-down to view the specific types of clicks for each tweet



Approach

1. Created a **Total Clicks** measure using DAX, summing URL clicks, User Profile clicks, and Hashtag clicks.
2. Designed a pie chart with:
    - **Legend:** URL clicks, User Profile clicks, and Hashtag clicks.
    - **Values:** Total clicks.
3. Applied a filter to include only tweets with **impressions > 500**.
4. Enabled drill-through functionality to allow detailed analysis at the individual tweet level.
5. Formatted the chart for clarity and professional presentation.

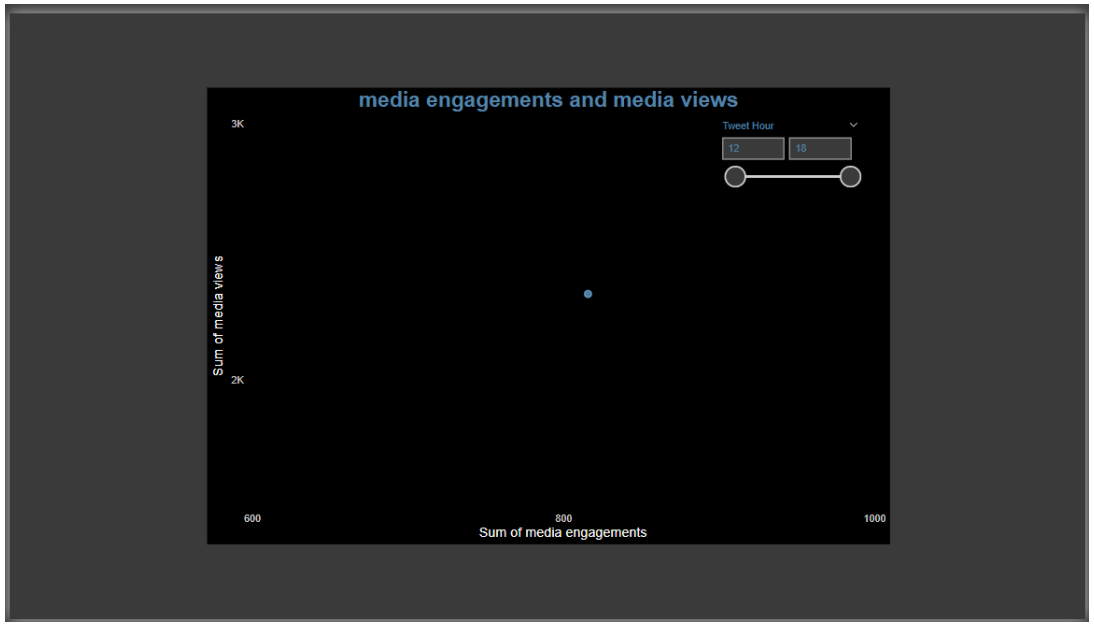
Learning Outcome:

This task improved my understanding of creating calculated measures using DAX and incorporating drill-through for interactive analysis.

Task 2: Media Engagement vs. Media Views Analysis

- **Objective:**

Plot a scatter chart to analyze the relationship between media engagements and media views for tweets that received more than 10 replies. this graph should work only between 12 PM to 6 PM and the tweet date should be odd number as well as tweet word count be below 50.



Approach

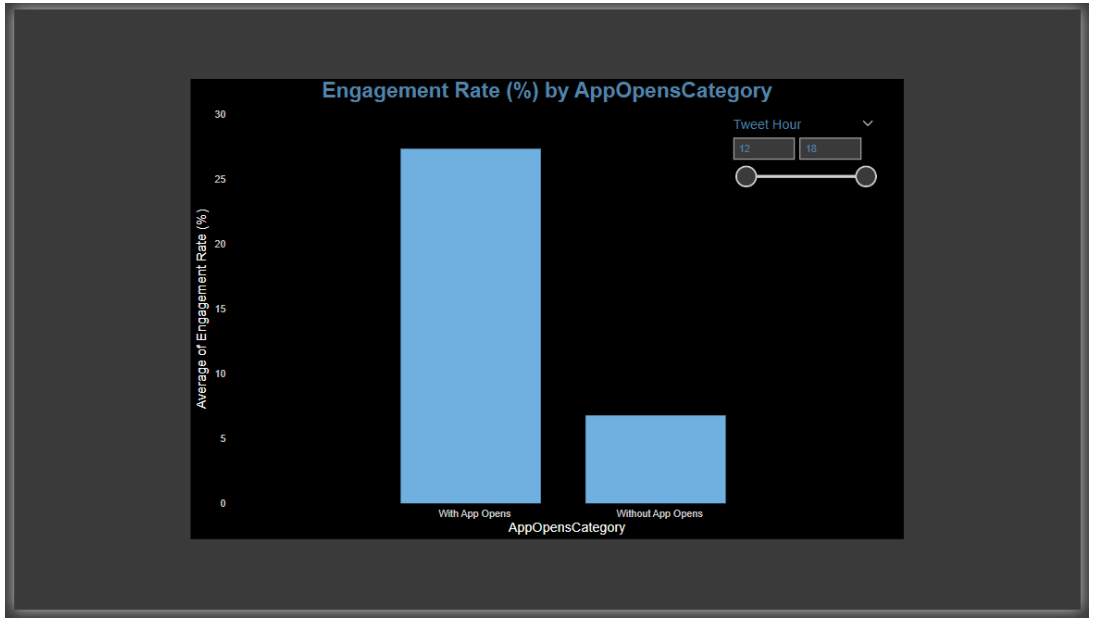
1. Created a scatter chart with:
    - **X-axis:** Sum of media engagements.
    - **Y-axis:** Sum of media views.
2. Applied filters:
    - Tweets with more than **10 replies**.
    - **Odd tweet dates**.
    - Tweets posted between **12 PM and 6 PM**.
    - Tweets with a **word count < 50**.
3. Highlighted tweets with **engagement rate > 5%** for better visual focus.
4. Formatted the chart to enhance readability and visualization aesthetics.

- **Learning Outcome:**

This task enhanced my ability to apply multiple layers of filters and utilize advanced visualization techniques for insightful comparisons.

Task 3: Engagement Rate Analysis for App Opens

- **Objective:** Analyze tweets to show a comparison of the engagement rate for tweets with app opens versus tweets without app opens. Include only tweets posted between 9 AM and 5 PM on weekdays and this graph should work between 12 PM to 6 PM and the tweet impression should be even number and tweet date should be odd number as well as tweet word count be below 40.



Approach

1. Created a new calculated column named **App Open Category** to categorize tweets.
2. Designed a stacked column chart with:
    - **X-axis:** App Open Category.
    - **Y-axis:** Average engagement rate.
3. Applied filters as per the given conditions.

- Time between **9 AM and 5 PM on weekdays**.
- Tweet impressions are even numbers.
- Tweet dates are odd.
- Word count < 40.
- Active graph filter: Tweets between **12 PM and 6 PM**.

1. Finalized the visual formatting for clear comparison.

- **Learning Outcome:**

This task deepened my knowledge of creating calculated columns and applying advanced filtering techniques to showcase comparative insights effectively.

VISUALIZATION

KEY VISUALS AND INSIGHTS

•**Tweet by Week**:
•**Line Chart**: Displays the count of tweets per day of the week.
•Insight: Tweets decline towards the weekend, with the highest activity early in the week.
•**Media Engagements vs. Media Views**:
•**Clustered Bar Chart**: Compares the number of media engagements and media views for each day of the week.
•Insight: Media engagement trends closely follow media view trends.
•**Tweet by Week (Bar Version)**:
•**Bar Chart**: Another representation of tweet counts by day of the week, with a focus on volume.
•Insight: Highlights consistent trends in daily tweet activity.
•**Retweets and Likes**:
•**Gauge Charts**: Show progress toward predefined goals for retweets and likes.
•Insight: Retweets are low compared to likes, indicating higher engagement with likes.
•**URL Clicks by Tweet**:
•**Horizontal Bar Chart**: Displays tweets with the highest number of URL clicks.
•Insight: The top-performing tweets drive significantly more clicks than others.

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- **Clicks Breakdown (Hashtags, URLs, Profiles)**:
- **Pie Chart**: Represents the distribution of click types (hashtag clicks, URL clicks, profile clicks).
- Insight: All categories have equal proportions, showing balanced interactions.
- **Impressions by Week**:
- **Line Chart**: Tracks the total impressions over the week.
- Insight: Impressions drop as the week progresses.
- **KPI Metrics**:
- **Card Visuals**: Highlight key performance indicators such as:
    - Total Media Views: 89K
    - Impressions: 781.90K
    - Engagement Rate: 0.04
    - Total Tweets: 1,166
- Insight: These provide a snapshot of overall performance.
- **Dropdown Slicer**:
- Allows filtering data by month for focused analysis.

Key Learnings and Reflections

1. **Critical Thinking and Problem Solving:**
    - The tasks required a deep understanding of data attributes and creative solutions for visualization.
    - Filtering data with multiple complex conditions improved my problem-solving and critical thinking skills.
2. **Proficiency in DAX:**
    - Developed confidence in writing DAX queries to create calculated measures and columns.
3. **Advanced Visualization Skills:**
    - Learned to effectively use Power BI's visual features like drill-through, scatter charts, and stacked columns to represent complex data insights.
4. **Increased Confidence in Power BI:**
    - Successfully completing tasks under challenging conditions has boosted my confidence in handling advanced Power BI projects.

THANK YOU

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