**Twitter Analysis Dashboard Report**

**1. Introduction** The Twitter Analysis Dashboard is designed to visualize key engagement metrics and provide insights into tweet performance. By leveraging Power BI, the dashboard enables users to analyze clicks, engagement rates, and tweet popularity while incorporating complex filtering conditions for enhanced insights. This analysis helps in understanding user interactions and optimizing content strategies for better reach and engagement.

**2. Background** Social media platforms, especially Twitter, serve as powerful tools for communication, branding, and marketing. Tracking and analyzing engagement metrics such as retweets, likes, and clicks allow organizations to measure the effectiveness of their content. This project aims to extract meaningful insights from Twitter data, ensuring relevant tweets are analyzed under specific conditions to provide a clearer picture of user behavior.

**3. Learning Objectives**

* Develop a data-driven approach to analyzing Twitter engagement metrics.
* Implement advanced filtering and drill-down functionalities in Power BI.
* Understand the impact of tweet characteristics such as impressions, timing, and engagement.
* Improve proficiency in Power BI visualization tools and DAX expressions.
* Optimize dashboard design for better usability and insights presentation.

**4. Activities and Tasks**

1. **Pie Chart for Click Proportion**:
   * Visualizing the share of total clicks (URL clicks, user profile clicks, and hashtag clicks) for tweets with more than 500 impressions.
   * Implementing drill-down functionality to analyze specific click types for each tweet.
   * Ensuring the visualization dynamically updates based on real-time data.
2. **Top 10 Tweets Chart**:
   * Identifying the most engaging tweets based on the sum of retweets and likes.
   * Filtering out tweets posted on weekends to focus on weekday engagement patterns.
   * Restricting visibility of the chart to the time window of 3 PM to 5 PM IST.
   * Applying additional conditions:
     + Only tweets with an even number of impressions are considered.
     + The tweet date must be an odd-numbered day.
     + The tweet word count must be below 30.
   * Ensuring accurate ranking of tweets using DAX calculations.
3. **Engagement Rate Analysis**:
   * Comparing engagement rates for tweets with app opens versus those without app opens.
   * Filtering tweets to only include those posted between 9 AM and 5 PM on weekdays.
   * Displaying the graph only during specified time slots (12 PM to 6 PM IST and 7 AM to 11 AM IST).
   * Additional filtering conditions:
     + Only tweets with even-numbered impressions are considered.
     + The tweet date must be an odd-numbered day.
     + The tweet character count must be above 30.
     + Excluding tweets containing words with the letter 'D'.

**5. Skills and Competencies**

* Advanced data visualization techniques in Power BI.
* DAX (Data Analysis Expressions) for creating complex filters and calculations.
* Data transformation and cleaning to prepare datasets for analysis.
* Implementation of real-time filtering and conditional visualization.
* Dashboard optimization for better performance and usability.

**6. Feedback and Evidence**

* The pie chart provided a clear breakdown of user interactions, aiding in content optimization strategies.
* The engagement rate analysis demonstrated significant trends, emphasizing the importance of tweets with app opens.
* Users found the dynamic filtering and time-based visibility enhancements valuable for focused analysis.

**7. Challenges and Solutions**

* **Time-based filtering:**
  + Challenge: Ensuring graphs appear only during specific time windows.
  + Solution: Implemented dynamic DAX measures to control visual visibility based on system time.
* **Complex filtering conditions:**
  + Challenge: Applying multiple conditions (tweet date, impressions, word count, engagement metrics).
  + Solution: Used calculated columns and DAX expressions to filter relevant data efficiently.
* **Ensuring real-time insights:**
  + Challenge: Keeping the dashboard updated with the latest data.
  + Solution: Set up automatic data refresh cycles and optimized query performance.

**8. Outcomes and Impact**

* Enhanced decision-making by identifying top-performing tweets and optimizing content strategy.
* Improved analytical skills in Power BI, including advanced filtering and visualization techniques.
* Demonstrated practical application of time-based and condition-based data visibility.
* Provided actionable insights to enhance social media engagement.

**9. Conclusion** The Twitter Analysis Dashboard successfully provided a structured and insightful view of tweet engagement patterns. By incorporating specific time-based and content-based filters, the analysis became more refined and actionable. This project not only enhanced technical skills but also demonstrated the power of data-driven decision-making in social media analytics. The ability to filter data dynamically and create highly interactive visualizations made the dashboard a valuable tool for understanding and improving Twitter engagement strategies.