**Internship Report**

**Introduction**

The rapid growth of social media platforms has led to the generation of vast amounts of data, which, when analyzed correctly, can provide critical insights into user engagement and content performance. Twitter, in particular, offers a rich dataset for understanding how users interact with tweets through various forms of engagement such as clicks, views, replies, likes, and retweets.

This report presents the implementation of a Power BI-based analytics dashboard developed to analyze tweet performance across multiple engagement dimensions. The project involved building seven distinct visualizations, each with specific business rules, filtering logic, and visibility constraints based on tweet metadata, timing, and textual content. These visualizations are aimed at helping stakeholders interpret user behavior, identify trends, and make informed decisions about content strategy.

**2. Background**

A larger data visualization and analytics training program centered on gaining useful Power BI skills included in this assignment. With varied constraints applied to distinct charts, the primary objective was to replicate a real-world situation when a social media analytics team needs extremely specific insights from Twitter data.

Specific constraints were attached to each assignment, including the ability to filter tweets by day of the week, time of day, engagement metrics, tweet text attributes, and conditional inclusion or removal of particular characters from tweet content. These specifications closely resemble real-world problems, where business customers want dashboards that only present the most pertinent data and dynamically adjust to shifting settings.

The exercise was designed not only to enhance technical skills in Power BI but also to cultivate a deeper understanding of how data filtering, transformation, and presentation affect decision-making processes. Through this experience, I was able to demonstrate competency in advanced DAX expressions, Power Query transformations, and the implementation of user-responsive dashboards.

**3. Learning Objectives**

In this project, I applied advanced Power BI techniques to create dynamic, insightful visualizations. I used Power Query and DAX for filtering and transforming tweet data based on metrics like impressions, engagement rates, and text properties. Visuals were made time-sensitive, displaying only during specific IST hours. Conditional data cleansing was performed by removing words containing specific letters. Complex DAX expressions enabled dynamic filtering and logic control. Additionally, interactive features such as drill-downs and slicers were integrated to enhance user experience and provide deeper insights into tweet performance under varying contextual and content-based conditions.

**4. Activities and Tasks**

Seven key tasks were executed:

1. **Pie Chart with Drill-down** for total clicks on tweets (>500 impressions).
2. **Scatter Plot** to analyze media engagements vs. views (with multiple conditions: >10 replies, odd date, >50 words, 6PM–11PM IST).
3. **Clustered Bar Chart** for URL/profile/hashtag clicks by tweet category (conditional: 3PM–5PM IST, even date, >40 words).
4. **Top 10 Tweets Chart** by likes + retweets (weekday only, 3PM–5PM IST, even impressions, odd date, <30 words).
5. **Dual Axis Chart** of media views and engagements by day of week (3PM–5PM & 7AM–11AM IST, odd date, even impressions, >30 characters, removed words containing ‘H’).
6. **Engagement Rate Comparison Chart** for app opens vs. no app opens (9AM–5PM weekday posts, 12PM–6PM & 7AM–11AM IST, even impressions, odd date, >30 characters, removed words with 'D').
7. **Monthly Engagement Line Chart** comparing media vs. no-media tweets (3PM–5PM & 7AM–11AM IST, even engagements, odd date, >20 characters, removed words with 'C').

**5. Skills and Competencies**

* **DAX Proficiency**: Built dynamic measures with multiple nested conditions.
* **Power Query Mastery**: Used M language to clean data, apply character filters, and manipulate tweet text.
* **Time Intelligence**: Created time-based visibility rules using current time functions.
* **Dashboard Design**: Used bookmarks, slicers, and dynamic visibility techniques for enhanced UX.
* **Advanced Filtering**: Integrated multiple levels of filters including text length, character presence, and tweet metadata.

**6. Challenges and Solutions**

During the project, several challenges were encountered and addressed effectively. One major challenge was applying **time-based visibility** to visuals, which was resolved using the NOW() function combined with DAX logic to control when charts appeared based on IST hours. Implementing **text-based filters**, such as removing tweets containing specific letters, required advanced use of Power Query for dynamic text parsing and cleansing. Handling **multiple nested conditions** for filters and display logic was managed by building modular, reusable DAX measures and testing them iteratively for accuracy. To ensure smooth **contextual display**, slicers and bookmarks were used to toggle visuals based on user interactions.

**7. Outcomes and Impacts**

The project resulted in a robust, condition-aware Power BI dashboard capable of supporting real-time analytical scenarios. It enhanced my understanding of DAX, Power Query, and interactive dashboard design, while also demonstrating my ability to manage complex data logic and present it through clear, user-friendly visualizations.

**8. Conclusion**

The project was a significant learning experience in handling complex, real-world data visualization scenarios using Power BI. The ability to manipulate data conditionally and present only contextually relevant insights offers great potential for scalable, intelligent dashboards in social media analytics and beyond.