**Internship Report**

**Introduction**

This internship report outlines the tasks undertaken to analyze Twitter engagement data using Power BI. The objective was to create interactive visualizations that provide insights into various aspects of tweet performance, such as engagement rates, media interactions, and user behavior.

**Background**

Twitter is a popular social media platform used for communication, sharing information, and building communities. Analyzing Twitter data can help businesses understand their audience, measure the effectiveness of their content, and identify trends. Power BI is a powerful data analysis and visualization tool that can be used to create interactive dashboards and reports.

**Learning Objectives**

The primary learning objectives of this internship were:

* To gain proficiency in using Power BI for data analysis and visualization.
* To learn how to clean and prepare data for analysis.
* To develop skills in creating various types of visualizations, such as line charts, scatter plots, and bar charts.
* To apply data analysis techniques to understand Twitter engagement patterns.

**Activities and Tasks**

The following tasks were completed during the internship:

1. **Average Engagement Rate and Total Impressions:**
   * Created a line chart to visualize the average engagement rate and total impressions for tweets posted between June 1, 2020, and October 31, 2020.
   * Filtered out tweets with fewer than 100 impressions and zero likes.
   * Applied a time filter to display data between 3 PM and 5 PM IST.
2. **Media Engagements and Media Views:**

* Plotted a scatter chart to analyze the relationship between media engagements and media views for tweets with more than 10 replies.
* Highlighted tweets with an engagement rate above 5%.
* Applied a time filter to display data between 12 PM and 6 PM and a date filter for odd-numbered tweet dates.
* Added a filter for tweets with a word count below 50.

1. **URL, User Profile, and Hashtag Clicks:**
   * Created a clustered bar chart to break down the sum of URL clicks, user profile clicks, and hashtag clicks by tweet category.
   * Included only tweets with at least one of these interaction types.
   * Applied a time filter to display data between 3 PM and 6 PM and a date filter for even-numbered tweet dates.
   * Added a filter for tweets with a word count below 40.
2. **Replies, Retweets, and Likes:**
   * Developed a visualization to compare the number of replies, retweets, and likes for tweets with media engagements greater than the median value.
   * Included a filter for tweets posted between June and August 2020.
   * Applied a time filter to display data between 3 PM and 6 PM, a date filter for odd-numbered tweet dates, a media views filter for even numbers, and a word count filter below 50.
3. **App Opens vs. No App Opens:**
   * Analyzed tweets to compare the engagement rate for tweets with app opens versus those without.
   * Included only tweets posted between 9 AM and 5 PM on weekdays.
   * Applied a time filter to display data between 12 PM and 6 PM, a date filter for odd-numbered tweet dates, a tweet impression filter for even numbers, and a word count filter below 40.

**Skills and Competencies**

The following skills and competencies were developed during the internship:

* Data cleaning and preparation using Power Query
* Data modeling and relationship creation
* Creating various types of visualizations, including line charts, scatter plots, bar charts, and custom visuals
* Applying filters and slicers to create interactive dashboards
* Understanding Twitter data and engagement metrics

**Challenges and Solutions**

* The data needed to be cleaned and formatted appropriately for Power BI analysis. It was done by converting data types, handling null values, and standardizing date and time formats.
* Implementing filters based on time, date, word count, and other criteria was little complex, especially while combining multiple filters.
* Due to large volume of Twitter data, performance issues were arise when creating visualizations and applying filters. By using techniques like DirectQuery and incremental refresh helped improve performance.
* Customizing visualizations to meet specific requirements, such as adding labels, formatting axes, and applying themes, can be time-consuming was time consuming.

**Outcomes and Impact**

The internship provided valuable insights into Twitter engagement and the capabilities of Power BI. The visualizations created can be used to inform data-driven decisions and improve content strategy.

**Conclusion**

This internship has been a valuable learning experience, allowing me to develop skills in data analysis and visualization using Power BI. The knowledge and experience gained will be invaluable in future roles.