

An  
Internship Project Report on  
**Twitter Analytics Dashboard**

At  
**NullClass Private Limited**

*Submitted in partial fulfilment of the requirements for the award of the*

*Internship completion certificate in*

**Data Analytics**



**NULLCLASS**

**Submitted to -**

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**2024**

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## **Introduction**

During my internship at NullClass Pvt. Ltd., I had the chance to contribute to a project focused on analyzing Twitter engagement through Power BI. This report highlights my experiences and key learnings throughout the internship, which lasted from September 1, 2024, to October 1, 2024.

The primary goal of my project was to analyze Twitter engagement metrics and create interactive visualizations to assist the marketing team in understanding user behavior and engagement patterns. I selected this internship to gain practical experience in data analytics and apply my academic knowledge in a real-world environment. I was keen to enhance my technical skills in Power BI and data visualization, while also learning more about the practical uses of data analysis in a business setting.

This report is organized to offer a detailed account of my internship experience. It covers the project's background, my learning objectives, the tasks and activities I completed, the skills and competencies I developed, the feedback I received, the challenges I encountered and how I addressed them, the outcomes and impact of my work, and a final reflection on the overall experience.

## **Background**

The internship at NullClass Pvt. Ltd. was a crucial experience that allowed me to connect my academic knowledge with real-world application in data analytics.

My assigned project focused on analyzing Twitter engagement metrics and developing interactive visualizations with Power BI, aimed at helping the marketing team gain deeper insights into user engagement trends and enhance their social media strategies.

The tasks assigned during the internship were designed to cover various aspects of data visualization and analysis:

### **1. Trend Analysis of Engagement Rates:**

- Created a line chart to show the trend of the average engagement rate over each month of the year, distinguishing between tweets with media content and those without.
- Developed a visualization comparing the number of replies, retweets, and likes for tweets with media engagements greater than the median value, including a filter for tweets posted in the last six months.

### **2. Engagement Comparison:**

- I analyzed tweets to compare the engagement rates of tweets that resulted in app opens versus those that didn't, specifically focusing on tweets posted between 9 AM and 5 PM on weekdays.

### **3. Media Interaction Analysis:**

- Built a pie chart to represent the proportion of total clicks (URL clicks, user profile clicks, and hashtag clicks) for tweets with more than 500 impressions, including a drill-down feature to view specific types of clicks for each tweet.

The project's technology stack mainly centered around Power BI, a top business analytics tool from Microsoft. Power BI was selected for its robust data visualization capabilities.

, user-friendly interface, and robust data modelling features. This tool facilitated the development of dynamic, interactive visualizations, which were essential for extracting actionable insights from the Twitter engagement data.

Overall, the internship project at NullClass offered a well-rounded learning experience in data analytics, blending theoretical understanding with hands-on application using cutting-edge technology.

## **Learning Objectives**

During my internship at NullClass, I set several key learning goals to improve my professional skills and strengthen my knowledge of data analytics and visualization. These goals were designed to give me a solid understanding of the tools, methods, and processes used to analyze social media engagement metrics. My main learning objectives were:

### **1. Power BI Proficiency:**

- Acquire hands-on experience with Power BI to develop interactive and insightful visualizations.
- Utilize various Power BI features, including data modelling, DAX functions, and advanced charting techniques.
- Effectively leverage Power BI to transform raw data into actionable insights.

### **2. Data Cleaning and Preprocessing:**

- Gain experience in cleaning raw Twitter data (removing duplicates, handling missing values).
- Practice preprocessing steps like date formatting, hashtag identification, and keyword extraction.

### **3. Understanding Social Media Analytics:**

- Learn how to collect and analyse social media data, particularly Twitter data.
- Understand key metrics such as engagement rate, likes, retweets, replies, impressions, and followers growth.
- Analyze the relationship between different types of tweets (e.g., original tweets, replies, retweets) and engagement rates.
- Understand which factors drive higher user engagement.

#### **4. Problem-Solving and Critical Thinking:**

- Learn to identify problems based on data insights and propose data-driven recommendations to improve social media strategies.
- Enhance critical thinking abilities to derive insights and make data-driven recommendations.
- Approach complex analytical tasks methodically and efficiently.

#### **5. Effective Communication and Presentation:**

- Learn to communicate insights effectively using data storytelling techniques and visualizations.
- Create comprehensive reports and presentations to summarize analytical results.

## **Activities & Tasks**

During my internship at NullClass Private Limited, I performed a range of activities and tasks that allowed me to apply and enhance my data analytics skills in a professional environment. These tasks were mainly centered around the core project of analyzing Twitter engagement metrics using Power BI. The key activities and tasks I completed include:

### **Data Collection:**

- Gather Twitter data using available datasets, focusing on key metrics like tweet text, likes, retweets, impressions, replies, followers, and date of posting.
- Ensured data integrity and completeness by rigorously verifying the accuracy and relevance of the collected data.

### **Data Cleaning and Preprocessing:**

- Perform data cleaning by handling missing values, duplicates, irrelevant data, and inconsistencies in the dataset.
- Conducted data preprocessing to transform the data into an optimal format for analysis, filter data based on the project's needs, such as selecting tweets within a specific time range

### **Engagement Matrix Calculation:**

Develop calculated columns for metrics like engagement rate (likes + retweets + replies divided by impressions) and other performance indicators.

### **Visualization Development:**

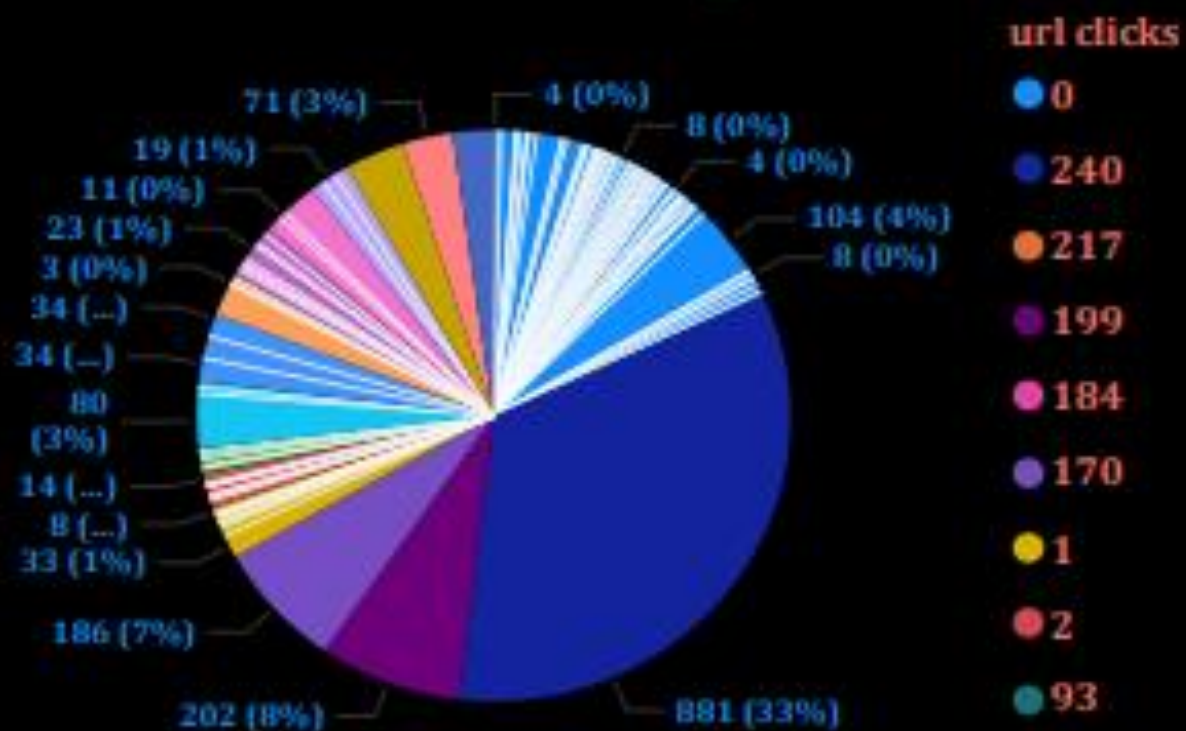
#### **Task 1:**

Create 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 tweeter.

I completed this task by first filtering out the high-impression tweets (those with impressions greater than 500) and then creating a separate table to identify the click types for each tweet. I used a pie chart to display the proportions of total clicks, such as URL clicks, user profile clicks, and hashtag clicks. Additionally, I implemented a drill-down feature, so when expanded, it allows users to view the specific type of click for each tweet at a deeper level in the hierarchy.

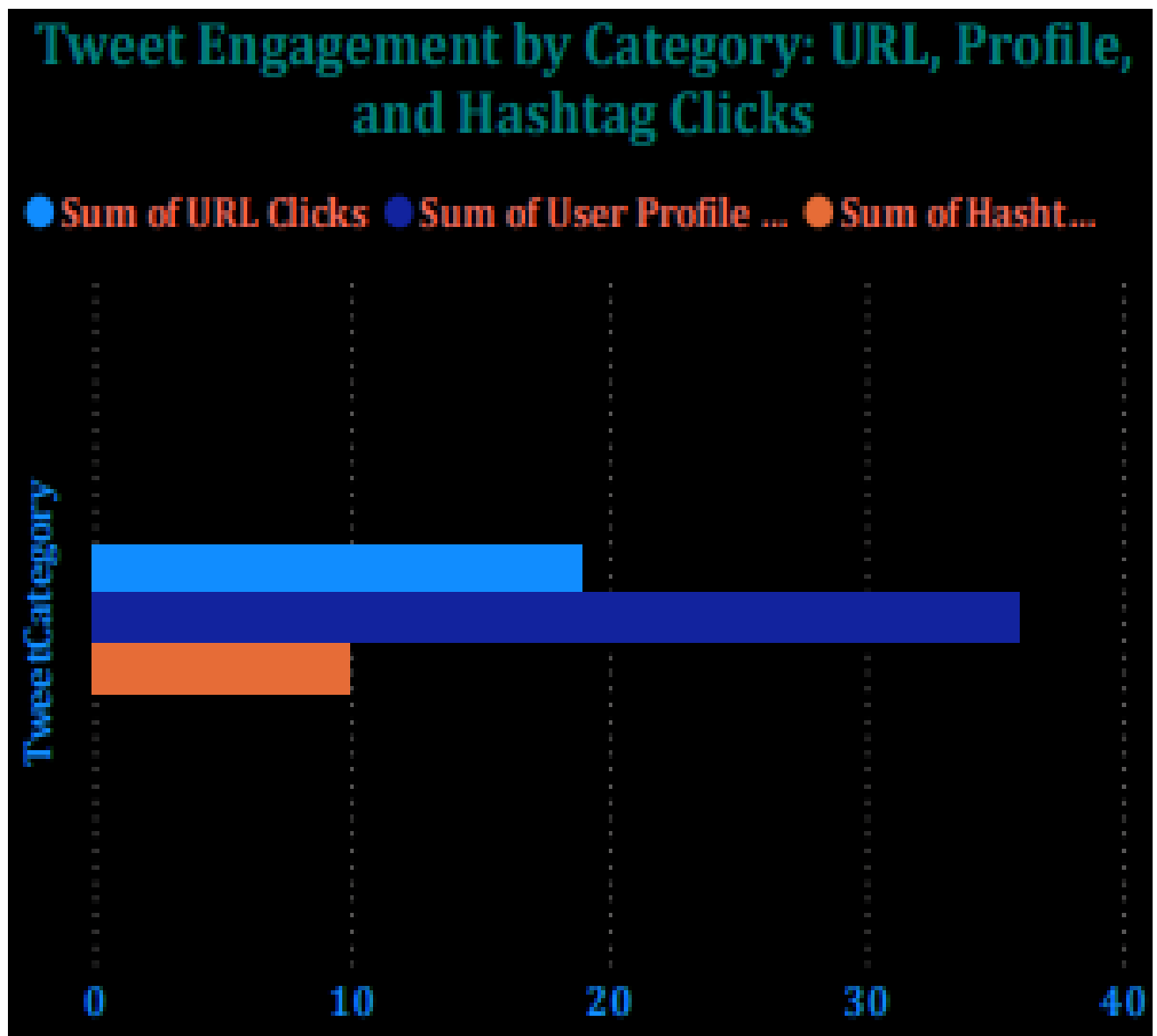


## Proportion of Total Clicks by Type for Tweets with Over 500 Impressions



## Task 2:

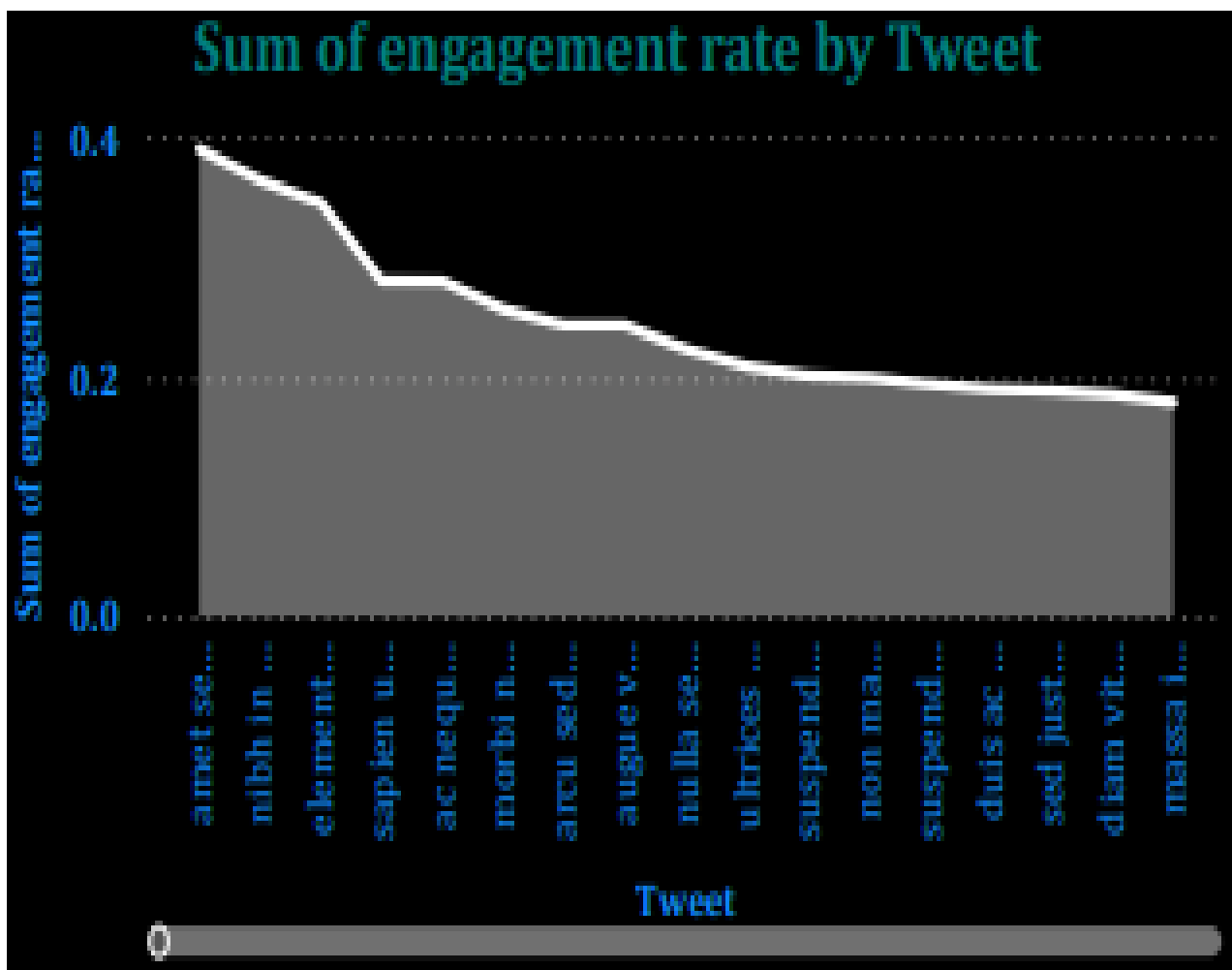
I created a clustered bar chart that breaks down the sum of URL clicks, user profile clicks, and hashtag clicks by tweet. Included tweets that have at least one of these interaction types and this graph works between 3 PM to 6 PM and the tweet date is in even number as well as tweet word count be below 40.



### Task 3:

Analyse 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.

I completed this task by first filtering the tweets posted within the specified time frame on weekdays (Monday to Friday). I then used an area chart with the X-axis representing Tweets, the Y-axis showing Engagement Rate, and the legend indicating whether the app was opened or not. However, in the provided dataset, there were no tweets during that time frame with the app open status.



## **Dashboard Customization and User Experience Optimization:**

- Customize the dashboard to be user-friendly, ensuring that filters (by date, tweet type, sentiment) and slicers are available for better interaction.
- Add interactive elements such as date filters, drill-down capabilities, and custom themes to enhance the dashboard's usability.

These activities and tasks provided me with invaluable practical experience in data analytics, from data collection and cleaning to visualization and reporting. They also deepened my understanding of social media analytics and underscored the importance of data-driven decision-making in a business context.

## **Skills and Competencies**

During the internship, I developed several key skills and competencies, including:

- **Technical Skills:**

- Expertise in cleaning raw data by handling missing values, removing duplicates, and standardizing formats.
- Proficiency in using **Power BI** to create interactive dashboards, charts, and graphs to visualize Twitter engagement metrics.
- Expertise in analysing social media engagement metrics.

- **Analytical Skills:**

- Analytical thinking and problem-solving ability to derive insights from data, identify patterns based on twitter engagement
- Competence in translating raw data into actionable insights by evaluating trends and performance metrics.
- customizing dashboards to make them interactive, adding filters, slicers, and drill-down options for enhanced user engagement.

- **Communication Skills:**

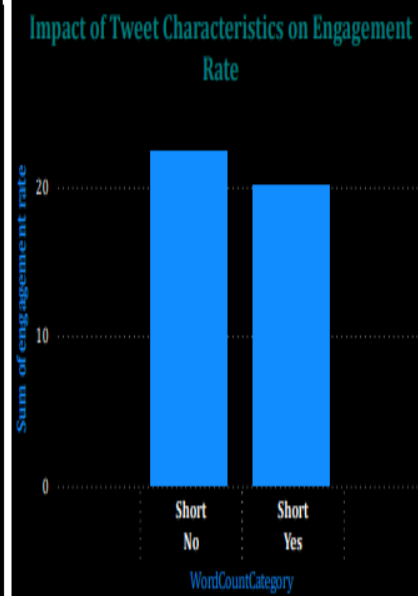
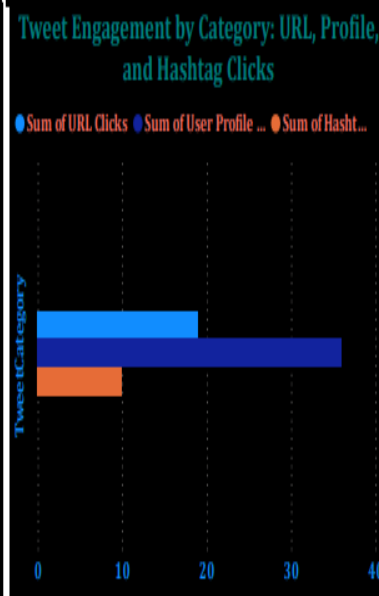
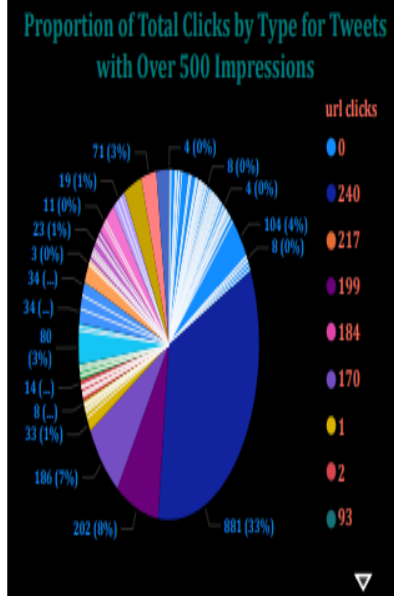
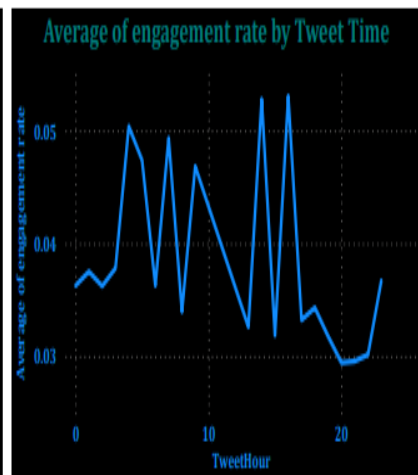
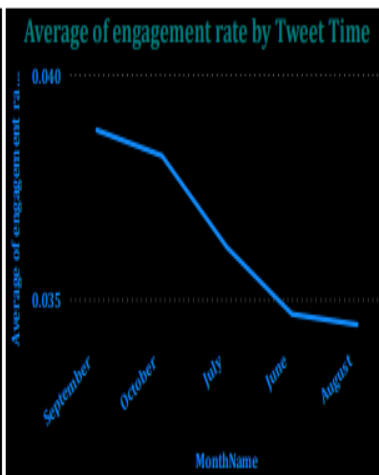
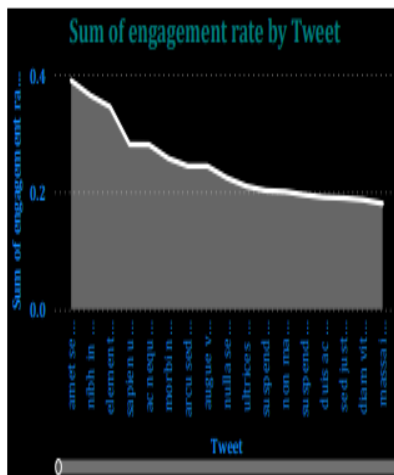
- Verbal and written communication skills to explain complex data trends in a simple, clear manner to team members.
- Clear and compelling presentation of data insights to stakeholders.
- Ability to design dashboards with an emphasis on user experience

## Evidence

Proof of my work includes the finished visualizations, a detailed report, and positive feedback from the team.

1M  
Sum of impressio...

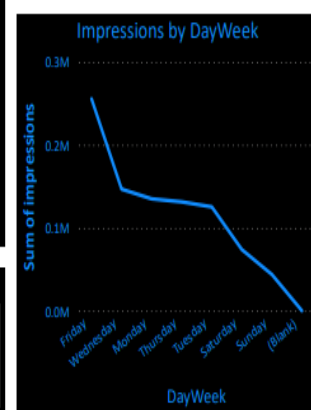
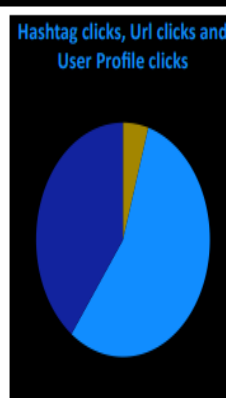
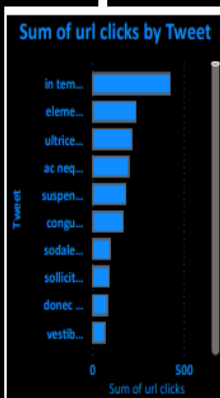
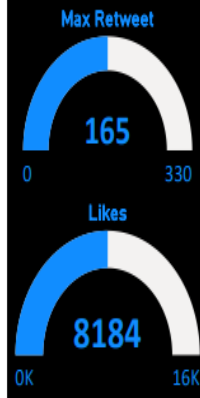
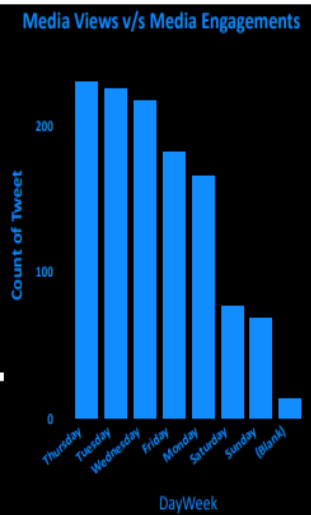
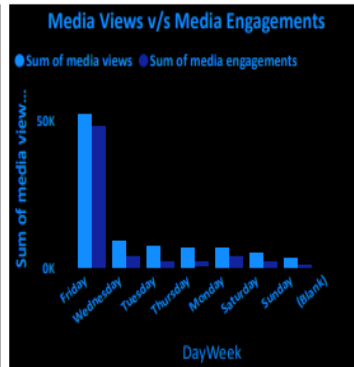
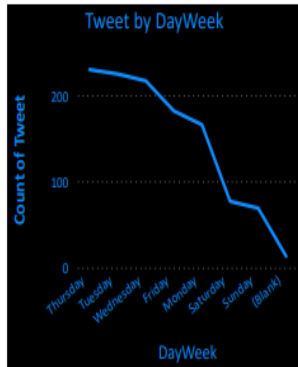
## Twitter Analysis Dashboard Internship Task



# Twitter Analysis Dashboard

MonthName

All



**Media Views**

89K

**Impressions**

1.1...

**Engagement Rate**

0.07

**Tweet Count**

1.1...

# **Challenges and Solutions**

## **1 Challenges:**

- Dealt with missing values, duplicates, and inconsistencies in the dataset
- Encountered issues calculating the median of media engagements using a measure, as it unexpectedly returned zero.
- Faced challenges in highlighting media interactions on a dual-axis chart since conditional formatting cannot be applied to dual-axis charts.

## **2 Solutions:**

- Implemented thorough data cleaning and preprocessing techniques to resolve data quality issues.
- Replaced the measure with the median function in DAX for more accurate comparisons.
- Utilized the line visual within a Line Stacked Column chart to highlight media interactions, showing spikes in media engagements.



## **Outcomes and Impact**

The internship project yielded multiple positive outcomes and impacts, including:

- **Enhanced Data-Driven Decision-Making:** Delivered actionable insights that could inform and refine social media strategies.
- **Improved Understanding of Social Media Engagement:** Gained deeper insights into user behavior and engagement patterns on Twitter, supporting a more strategic approach to engagement analysis.
- **Professional and Personal Growth:** Strengthened my technical skills in Power BI, data analysis, and communication, significantly contributing to my career development and confidence in applying data-driven techniques.

## **Conclusion**

The internship at NullClass Pvt. Ltd. offered invaluable, hands-on experience in data analytics, specifically in analyzing social media engagement metrics, creating interactive visualizations, and generating actionable insights. Working on this project enhanced my technical and analytical abilities, honed my problem-solving skills, and improved my communication, allowing me to present data-driven insights more effectively. This experience provided a solid foundation for my professional growth and boosted my confidence in applying analytics tools to real-world challenges. Overall, the internship was highly rewarding and instrumental in preparing me for future roles in data analytics

