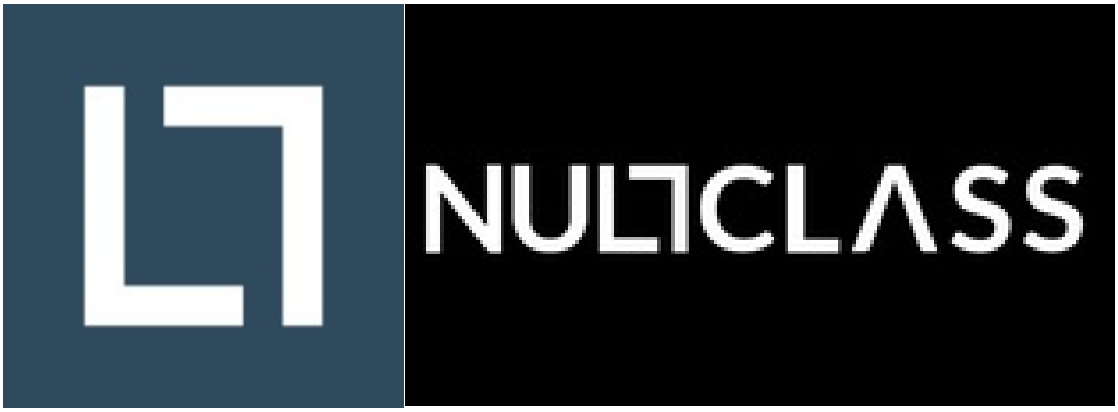
INTERNSHIP REPORT



INTERNSHIP TITLE: DATA ANALYST INTERN

COMPANY/ORGANIZATION: NULLCLASS

INTERNSHIP PERIOD: 22-02-2025 TO 22-04-2025

SUBMITTED BY: KRISHNA G HEGDE

SUBMISSION DATE: 03-04-2025

INTRODUCTION

During my internship at **NullClass**, I had the opportunity to work on **data analytics using Power BI**, focusing on **Twitter data analysis and interactive dashboard creation**. The primary objective was to analyze **engagement metrics**, identify key trends, and present meaningful insights through **visually compelling reports**. This project involved **data cleaning, transformation, visualization, and advanced filtering techniques**, ensuring that the dashboards provided accurate and actionable insights.

Throughout the internship, I worked with **real-world datasets**, applying **business intelligence (BI) techniques** to interpret social media performance. This experience significantly enhanced my **data visualization skills, analytical thinking, and problem-solving abilities**. Additionally, it strengthened my proficiency in **DAX (Data Analysis Expressions), Power Query, and dashboard design principles**, preparing me for real-world data analytics challenges.

This report outlines my experience, the tasks I completed, the challenges I faced, and the **key technical and analytical skills** I developed during the internship. It also highlights the impact of my work in deriving meaningful insights from Twitter data.

BACKGROUND

NullClass is a **technology-driven company** that focuses on providing **practical learning experiences** through **industry-relevant projects**. It bridges the gap between theoretical knowledge and hands-on expertise by offering internships and real-world projects that simulate professional work environments.

The internship was structured to **enhance my understanding of data analytics, visualization, and reporting using Power BI**. The primary goal was to **analyze tweet engagement patterns and develop insightful dashboards** that help in identifying key trends in social media interactions. This experience allowed me to **apply advanced data transformation techniques, create dynamic visualizations, and optimize reports for better decision-making**.

By working on **real-world datasets and business intelligence challenges**, I gained exposure to **data-driven decision-making processes**, preparing me for professional roles in **data analytics and business intelligence**.

LEARNING OBJECTIVES

The key learning objectives of the internship were:

- **Develop Expertise in Power BI:** Gained hands-on experience in **data visualization, dashboard creation, and report optimization** using Power BI.
- **Implement Advanced Filtering Conditions:** Applied **complex filtering techniques**, including **time-based conditions**, to dynamically control **chart visibility based on specific time windows**.
- **Analyze Twitter Engagement Metrics:** Explored **key performance indicators (KPIs) such as likes, retweets, profile clicks, and hashtag interactions** to derive meaningful insights.
- **Enhance Interactive Dashboard Capabilities:** Integrated **real-time data filtering, time-sensitive visual elements, and dynamic interactions** to improve **data-driven decision-making**.
- **Apply Time-Based Chart Visibility Rules:** Implemented **custom DAX measures to display charts only during predefined time periods** (e.g., **3 PM – 5 PM IST, 7 AM – 11 AM IST**), ensuring **data relevance and controlled visualization**.

This structured approach provided a **strong foundation in business intelligence, data analytics, and advanced Power BI techniques**, equipping me with **practical skills applicable to real-world scenarios**.

ACTIVITIES AND TASKS

Throughout the internship, I worked on multiple **data analysis and visualization tasks**, focusing on **Twitter engagement metrics**. My primary responsibilities included **designing interactive Power BI dashboards** with advanced filtering techniques and time-based visibility controls.

1. Top 10% Tweets by Engagement (Bar Chart)

- Developed a **bar chart** displaying **tweets with the highest engagement rates (top 10%)**.
- Filtered tweets that had **more than 50 likes** and were **posted on weekdays**.
- Implemented **time-based visibility conditions** (**3 PM IST to 5 PM IST**).
- Applied a **character count filter** (tweets **below 30 characters**).

2. Clustered Bar Chart for Clicks

- Created a **clustered bar chart** breaking down **URL clicks, user profile clicks, and hashtag clicks by tweet category**.
- Included **only tweets with at least one interaction**.
- Applied **time-based filtering** (**3 PM IST to 5 PM IST**).
- Set tweet conditions (**even dates, word count above 40**).

3. Scatter Plot for Media Engagements vs. Media Views

- Analyzed the **relationship between media engagements and media views**.
- Highlighted **tweets with an engagement rate above 5%**.
- Filtered tweets with **more than 10 replies** and **set time restrictions (6 PM IST to 11 PM IST)**.
- Ensured **tweet dates were odd** and **word count was above 50**.

4. Monthly Engagement Rate Trend (Line Chart)

- Created a **line chart** showing the **trend of the average engagement rate by month**.
- Differentiated between **tweets with media** and **those without**.
- Implemented **time-based filters** (**3 PM IST to 5 PM IST, 7 AM to 11 AM**).
- Applied tweet conditions (**even engagement numbers, odd tweet dates, character count above 20**).
- Excluded **tweets containing words with the letter 'C'**.

5. Dual-Axis Chart for Media Interactions

- Developed a **dual-axis chart** displaying **media views and media engagements by day of the week**.
- Highlighted **significant spikes in media interactions**.
- Applied **time-based conditions** (**3 PM IST to 5 PM IST, 7 AM to 11 AM**).
- Set tweet-specific filters (**even impressions, odd dates, character count above 30**).
- Excluded **tweets containing words with the letter 'H'**.

SKILLS AND COMPETENCIES

During the internship, I enhanced my expertise in the following areas:

- **Power BI**: Advanced visualizations, interactive dashboards, and filtering techniques.
- **Data Cleaning**: Handling missing values, transforming data, and applying text-based filters.
- **DAX (Data Analysis Expressions)**: Writing measures and calculated columns for complex conditions.
- **Data Interpretation**: Extracting insights from engagement trends and user interactions.

FEEDBACK AND EVIDENCE

Dashboard Overview

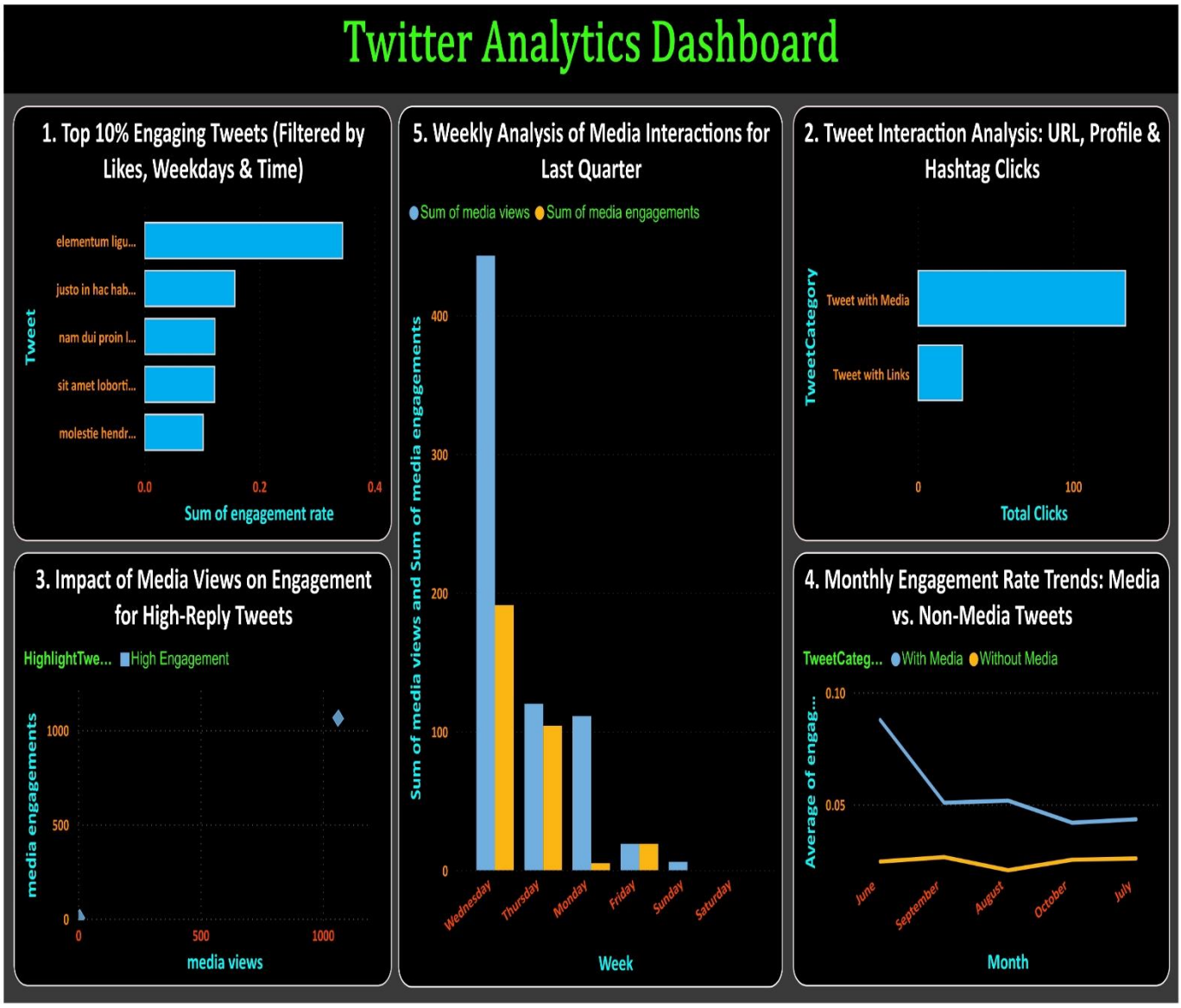
The Twitter Analytics Dashboard provides an interactive and insightful view of engagement metrics, tweet interactions, and media performance. It includes multiple visualizations that help analyse user behaviour, content effectiveness, and overall engagement trends.

Key Insights and Visualizations:

1. **Tweet Engagement Trends:**
    - The dashboard includes bar charts displaying tweet counts by week and highlighting the top 10% most engaging tweets.
    - Engagement filtering conditions, such as likes, weekdays, and time-based constraints, help focus on high-performing tweets.
2. **Tweet Interactions Analysis:**
    - A clustered bar chart showcases tweet interaction metrics, including URL clicks, user profile clicks, and hashtag clicks.
    - The analysis distinguishes between tweets with media and those containing links, revealing engagement differences.
3. **Impact of Media on Engagement:**
    - A scatter plot visualizes the correlation between media views and media engagement, particularly for high-reply tweets.
    - Tweets with higher media engagement rates are highlighted for better interpretation.
4. **Engagement Rate Trends Over Time:**
    - A line chart tracks the monthly engagement rate, differentiating between tweets with and without media.
    - Time-based filtering and word exclusions enhance the accuracy of insights.

5. **Media Interaction and Impressions Analysis:**
    - A dual-axis chart examines media interactions, including media views and engagements, across different days of the week.
    - Additional summary metrics such as total impressions, likes, retweets, and engagement rates provide an at-a-glance overview.

The dashboard successfully integrates advanced filtering techniques and real-time interactivity, allowing users to drill down into specific engagement patterns and optimize content strategies.


Twitter Analytics Dashboard
1. Top 10% Engaging Tweets (Filtered by Likes, Weekdays & Time)
Tweet
elementum ligu...
justo in hac hab...
nam dui proin l...
sit amet loborti...
molestie hendr...
0.0
0.2
0.4
Sum of engagement rate
5. Weekly Analysis of Media Interactions for Last Quarter
Sum of media views
Sum of media engagements
Sum of media views and Sum of media engagements
400
300
200
100
0
Wednesday
Thursday
Monday
Friday
Sunday
Saturday
Week
2. Tweet Interaction Analysis: URL, Profile & Hashtag Clicks
TweetCategory
Tweet with Media
Tweet with Links
0
100
Total Clicks
3. Impact of Media Views on Engagement for High-Reply Tweets
HighlightTwe...
High Engagement
media engagements
1000
500
0
0
500
1000
media views
4. Monthly Engagement Rate Trends: Media vs. Non-Media Tweets
TweetCateg...
With Media
Without Media
Average of engag...
0.10
0.05
June
September
August
October
July
Month

OUTCOME AND IMPACT

Outcome:

1. **Successful Dashboard Creation** – Developed interactive Power BI dashboards to analyze Twitter engagement metrics.
2. **Advanced Filtering Implementation** – Applied complex conditions like time-based, character count, and interaction-based filtering.
3. **Data-Driven Insights** – Extracted meaningful patterns on tweet engagement, media interactions, and user behavior.
4. **Hands-on Experience with Power BI** – Strengthened skills in DAX, visualization techniques, and real-time data processing.

Impact:

1. **Improved Engagement Analysis** – Helped in understanding which tweets perform best based on different conditions.
2. **Decision-Making Support** – The insights from dashboards can assist businesses or social media teams in optimizing content strategy.
3. **Enhanced Analytical Thinking** – Developed a structured approach to problem-solving using data visualization.
4. **Professional Growth** – Gained industry-relevant experience, making the transition to real-world projects smoother.

CONCLUSION

The internship at NullClass provided a valuable opportunity to apply data analytics and visualization skills in a practical setting. By working on **Twitter engagement data**, I successfully built interactive **Power BI dashboards** that highlight critical trends in **tweet performance, user interactions, and media engagement**. The project deepened my understanding of **DAX, advanced filtering, and data-driven storytelling**, reinforcing my ability to extract meaningful insights.

This experience has enhanced my technical expertise and analytical thinking, preparing me for real-world data analytics challenges. Moving forward, I aim to **leverage these skills in future projects**, further refining my ability to **analyze and present complex data effectively**.