



NULLCLASS INTERNSHIP REPORT

on

**PROJECT TITLE: BUILD REAL-TIME TWITTER(X) ANALYTICS
DASHBOARD - POWER BI**

Working as a Data Analyst Intern for the **NullClass**

From 01/02/2025 to 01/05/2025

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INTERNSHIP OBJECTIVE

The objective of this internship was to develop an interactive and real-time Twitter Analytics Dashboard using Power BI, focusing on tweet engagement analysis based on specific business rules and time constraints.

INTRODUCTION

Using Microsoft Power BI, I developed a real-time Twitter analytics dashboard during my internship, which is detailed in this report. Through a variety of visualizations and filters, the project seeks to examine tweet interaction in order to provide real-world data-driven insights for assessing social media success. As part of this internship, I had to filter twitter data according to particular engagement criteria, apply time-based limits for dashboard visibility, and work with DAX formulae to generate bespoke computations. The project effectively provided interactive insights into tweet exchanges by utilizing Power BI's capabilities, which helped to improve the decision-making process for social media strategy.

BACKGROUND

Businesses and analysts must efficiently measure interaction trends because social media platforms like Twitter (X) create enormous amounts of data every day. It is possible to gain important insights into user behaviour, campaign efficacy, and content performance by examining engagement indicators like likes, retweets, responses, and media interactions.

Analysts and businesses need to evaluate interaction trends effectively because social media sites like Twitter (X) generate massive amounts of data every day. By looking at engagement metrics like likes, retweets, responses, and media interactions, useful insights about user behaviour, campaign effectiveness, and content performance can be obtained.

The key challenge was to dynamically control the visibility of different visualizations based on time-based conditions while maintaining data accuracy and performance. The dashboard was developed to help social media managers, marketers, and analysts make informed decisions backed by real-time analytics.

LEARNING OBJECTIVES

During this internship, I aimed to achieve the following learning objectives:

- Build practical Power BI skills in dashboard creation, feature utilization, and report optimization.
- Master advanced DAX for custom calculations, dynamic filtering, and complex Power BI logic.
- Grasp data modeling principles including relationships, normalization, and transformation for efficient models.
- Implement dynamic time-based filters to control data visibility within dashboards.
- Extract insights from social media data (X) by analysing engagement metrics and KPIs for data-driven decisions.
- Apply best practices for handling large datasets, optimizing queries, and improving Power BI dashboard speed.
- Sharpen critical thinking and analytical abilities to effectively troubleshoot and solve Power BI challenges.

ACTIVITIES AND TASKS

During the internship, I undertook the following activities and tasks:

- Proficiently collected and cleaned Twitter engagement data for analysis.
- Skilfully created visualizations to effectively display tweet engagement metrics.
- Developed and applied DAX formulas for tweet filtering and categorization.
- Implemented dynamic time-based controls for graph visibility.
- Optimized Power BI dashboards to enhance performance and responsiveness.

SKILLS AND COMPETENCIES

Through this internship, I enhanced and developed the following skills and competencies:

- **Technical Skills:** Power BI, DAX, data visualization, Power Query Editor and data modelling.
- **Analytical Skills:** Data analysis, trend identification, and problem-solving.
- **Time Management:** Working within deadlines and prioritizing tasks effectively.
- **Attention to Detail:** Ensuring data accuracy and correct implementation of conditions.
- **Critical Thinking:** Developing efficient solutions for filtering and displaying relevant data.
- **Communication:** Documenting findings and presenting insights clearly.

FEEDBACK AND EVIDENCE

My internship experience was marked by valuable constructive feedback, which I actively sought and appreciated. My mentors particularly commended:

- My adeptness in applying intricate DAX calculations with efficiency.
- The precision and pertinence of the DAX queries and conditions I implemented in the dashboard's table view.
- My consistent initiative in seeking clarification and raising questions during online meetings.
- My proactive approach to incorporating feedback and rapidly implementing enhancements.

The culmination of my efforts was the successful development and delivery of a fully functional Power BI dashboard. This deliverable effectively met all defined requirements, dynamically visualizing key engagement metrics through time-based controls and filters.

CHALLENGES AND SOLUTIONS

During the internship, I faced several challenges (*mostly in DAX*) and how I to overcame them:

- **Challenge: Implementing *IST* time-based visibility in Power BI.**
Solution: Used DAX to fetch the system time that controlled graph visibility based on tweet time and system time.
- **Challenge: Filtering tweets based on multiple engagement criteria simultaneously.**
Solution: Created separate columns and applied filters separately during graph representation.
- **Challenge: Optimizing dashboard performance when handling large datasets.**
Solution: Used calculated columns, measures and optimized queries to improve loading speed and efficiency.
- **Challenge: Removing specific words (e.g., words containing 'S', 'C', 'D') from tweet text.**
Solution: Used the Text.Combine function in custom add column in Power Query Mode to dynamically remove unwanted characters from text fields.

OUTCOMES AND IMPACT

The successful completion of this internship led to several key achievements:

- Creation of a functional and interactive Power BI dashboard designed for real-time Twitter (X) analytics.
- Significant growth in my Power BI, DAX, and data visualization skills.
- Improved analytical abilities specifically related to social media engagement data.
- Development of a tangible solution for the ongoing monitoring of social media performance.
- Increased proficiency in problem-solving through the application of creative solutions in DAX, data manipulation, and visualization.

CONCLUSION

This internship offered me significant growth in data analytics, Power BI, and DAX queries. I successfully built a real-time Twitter (X) analytics dashboard featuring intricate filters and dynamic time-based controls, leading to notable improvements in my technical and analytical abilities. The acquired knowledge, skills, and experience from this project will be highly valuable for my future career as a data analyst. Overall, this enriching internship provided valuable learning opportunities that strengthened my expertise in business intelligence and social media analytics.