

**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 19/02/2025 to 19/03/2025**

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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**

This report details my internship experience focused on developing a real-time Twitter analytics dashboard using Microsoft Power BI. The project aims to analyze the tweets engagement through various visualizations and filters, ensuring the real-world data-driven insights for social media performance evaluation. This internship involved working with DAX formulas to create custom calculations, filtering tweet data based on specific engagement criteria, and implementing time-based constraints for dashboard visibility. By leveraging Power BI's capabilities, the project successfully delivered interactive insights into tweet interactions, contributing to more effective social media strategy decisions.

**BACKGROUND**

The Social media platforms like Twitter (X) generates the vast amounts of data daily, making it essential for businesses and analysts to track engagement trends effectively. Analyzing engagement metrics such as likes, retweets, replies, and media interactions can provide valuable insights into user behavior, campaign effectiveness, and content performance.

This internship project aimed to build a real-time Twitter analytics dashboard using Power BI, allowing users to monitor tweet performance based on specific engagement criteria. The dashboard was designed to display only relevant data within predefined timeframes, ensuring that users could focus on high-impact tweets. By applying advanced DAX calculations, the project implemented filtering mechanisms based on tweet attributes, engagement rates, media interactions, and time constraints.

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:

1. **Develop Proficiency in Power BI** – Gain hands-on experience in creating interactive dashboards, working with Power BI features, and optimizing report performance.
2. **Enhance DAX Skills** – Learn advanced DAX functions to perform custom calculations, filter data dynamically, and manage complex logic in Power BI visualizations.
3. **Understand Data Modeling** – Develop an understanding of data relationships, normalization, and data transformation techniques to build efficient data models.
4. **Implement Time-Based Filtering** – Learn how to apply dynamic time-based constraints to control data visibility within the dashboard.
5. **Analyse Social Media Data(X)** – Gain insights into social media analytics, engagement metrics, and key performance indicators for effective data-driven decision-making.
6. **Optimize Data Performance** – Understand best practices for handling large datasets, optimizing queries, and improving dashboard responsiveness.
7. **Enhance Problem-Solving Skills** – Develop critical thinking and analytical skills to troubleshoot issues and implement efficient solutions in Power BI.

**ACTIVITIES AND TASKS**

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

* Collected and cleaned Twitter engagement data for analysis.
* Created multiple visualizations to display tweet engagement metrics effectively.
* Developed DAX formulas to filter and categorize tweets based on various conditions.
* Implemented dynamic time-based constraints to control the visibility of graphs.
* Optimized Power BI dashboards for 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, 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**

Throughout the internship, I received constructive feedback from my mentors and I hope. They appreciated:

* My ability to apply complex DAX calculations efficiently.
* The accuracy and relevance of the DAX QUERIES and conditions used in the dashboard (table view).
* My constant emails and doubts asking during online live whatsapp video calls (google meet)
* My responsiveness to feedback and ability to implement improvements quickly.

As evidence of my work, I successfully delivered a fully functional Power BI dashboard that met all the specified requirements, showcasing various engagement metrics dynamically based on time constraints 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 create conditional statements that controlled graph visibility based on tweet time and system time.
* **Challenge: Filtering tweets based on multiple engagement criteria simultaneously.**  
  **Solution: *(tweets more than 50, without s)*** Created nested IF and SWITCH statements in DAX to ensure accurate filtering.
* **Challenge: Optimizing dashboard performance when handling large datasets.**  
  **Solution:** *(at first i didn’t understood which chart do I use and how do I fit in my dashboard along with other charts)* Used calculated columns and optimized queries to improve loading speed and efficiency. *(Used different sheets and labelled them as per the task and used the desired charts)*
* **Challenge: Removing specific words (e.g., words containing 'S') from tweet text.**  
  **Solution:** Used the SUBSTITUTE function in DAX to dynamically remove unwanted characters from text fields.

**OUTCOMES AND IMPACT**

The completion of this internship resulted in good outcomes:

* I successfully built an interactive Power BI dashboard tailored to real-time Twitter (X) analytics.
* Enhanced my expertise in Power BI, DAX, and data visualization techniques.
* Improved my ability to analyze social media engagement data effectively.
* Developed a practical solution that can be used for social media performance tracking.
* Strengthened my problem-solving skills by implementing innovative solutions for DAX, transforming data and visualization.

**CONCLUSION**

These internship provided me with an valuable experience in data analytics, Power BI, and DAX QUERIES. I successfully developed a real-time Twitter (X) analytics dashboard that incorporated complex filters and dynamic time-based conditions, improving my technical and analytical skills. The knowledge , skills and experience which I gained from this project will be highly beneficial for my future career in data analyst. Overall, this internship was enriching with an learning opportunity that helped me strengthen my expertise in business intelligence and social media analytics.