INTERNSHIP REPORT

DATA ANALYST INTERN

Project Title

BUILD REAL TIME TWITTER ANALYTICS DASHBOARD – POWER BI

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Submitted to

NULLCLASS EDTECH PRIVATE LIMITED

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Submitted as a record of internship experience

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INTRODUCTION

This report is a summary of my internship experience at NullClass EdTech Private Limited, where I worked as a Data Analyst Intern from 13 June to 13 July 2025. During this time, I got the opportunity to work on a project titled "Build Real-Time Twitter Analytics Dashboard – Power BI". The main goal of the project was to analyse Twitter data and create interactive dashboards based on specific filters, conditions, and business rules.

Throughout the internship, I worked mainly with Power BI, along with tools like Excel and Power Query Editor. I started by watching a set of training videos that guided me through the basics and then moved on to doing hands-on tasks on my own. I learned how to clean and transform data, apply different kinds of filters, and build dashboards that respond to things like time and content conditions.

This internship gave me real-world experience in using data analytics tools and helped me understand how companies use dashboards to make sense of large amounts of data. It also improved my problem-solving skills and taught me how to work independently and carefully with real datasets.

BACKGROUND

NullClass EdTech Private Limited is a company that focuses on providing hands-on learning experiences through real-world projects, especially in areas like software development and data analytics. Instead of just teaching theory, they believe in a “learning by doing” approach. Their platform is designed to help students and professionals build practical skills by working on guided projects that are similar to what is done in the industry.

As part of my internship at NullClass, I was given access to a structured training program. It included video tutorials that explained the basics of Power BI, data transformation, and dashboard creation. After completing the training, I was assigned some tasks which I had to build using the skills I had learned. This setup helped me apply my knowledge in a practical way and better understand how analytics is used in actual work settings.

LEARNING OBJECTIVES

The main goal of this internship was to improve my practical knowledge in data analysis and visualization. At the start, I was given access to 10 training videos that covered important topics such as data cleaning, using Power BI, creating dashboards, and applying filters and logic. These videos helped build a strong foundation, and the final two sessions focused specifically on the main project — building a real-time Twitter analytics dashboard.

After finishing the training, I was assigned three tasks to complete based on the project requirements. Each task came with specific conditions that had to be applied to the dataset, like filtering by time, character count, impressions, and more. These tasks helped me learn how to deal with real-world data, apply logic to meet business rules, and use visualization tools to present insights in a meaningful way. My main aim was to become more confident in working with real datasets, applying different filters, and understanding how data analytics is actually used in real business scenarios.

ACTIVITIES AND TASKS

TRAINING

During the training phase of the internship, my main responsibility was to understand how to build a Twitter analytics dashboard using Power BI. I began by preparing the dataset using Power Query Editor**,** where I cleaned the data and made it ready for visualization. The original dataset had the timestamp in a single column, so I split it into separate date, time, month, and year columns. This helped organize the data better and made future filtering easier.

The training mainly focused on understanding how to use Power BI tools, create visual charts, and design a basic dashboard. It helped me get familiar with the interface, learn how to import and transform data, and understand the steps involved in building a report. The more advanced logic and time-based filtering were introduced later as part of the actual project tasks I was assigned after completing the training.

INTERNSHIP TASKS

TASK 1: Top 10% Engagement Rate

STEPS:

1. **I created a bar chart** in Power BI to display the tweets with the highest engagement rates.
2. I filtered the data to include only:
    - Tweets that had **more than 50 likes**
    - Tweets posted on **weekdays only**
3. According to the task, the **tweet character count** had to be **below 30**, but after checking, I found that there were **no tweets with less than 30 characters**, so I skipped this filter.
4. I also set a condition so that the chart would only be **visible between 3 PM to 5 PM IST**. Outside of this time range, the chart would not show on the dashboard.
5. I used basic DAX expressions and filters to apply these conditions and finalize the chart.

This chart helped highlight only the most engaging weekday tweets during a specific time window, based on the conditions given.

TASK 2: Top 10 Tweets by Retweets and Likes

STEPS:

1. I **created a bar chart** in Power BI to show the top 10 tweets with the **highest combined total of retweets and likes**.
2. I added filters to include only those tweets that:
    - Were **not posted on weekends** (only weekdays)
    - Had **even impression values**
    - Were posted on a date that was an **odd number**
    - Had a **word count below 30**

3. The chart had to be **visible only between 3 PM and 5 PM IST**, so I applied a time-based visibility filter using DAX and the already-split time column.
4. The task also mentioned displaying the **user profile** that posted the tweet, but the dataset did **not contain user profile information**. So instead, I displayed the **original tweet content** or tweet ID as available.
5. I finalized the chart layout by adjusting labels, sorting, and making sure only the filtered results appeared as intended.

TASK 3: Comparison of Replies, Retweets, and Likes for High Media Engagement Tweets

STEPS:

1. I created a **clustered column chart** in Power BI to show replies, retweets, and likes side by side for each selected tweet.
2. I filtered the tweets using the following conditions:
    - **Media views greater than the median**
    - **Tweet date** should be an **odd number**
    - **Media views** should be **even**
    - **Tweet character count** must be **above 20**
    - Only tweets from the **months of June, July, and August 2020**
3. One unique requirement was to **remove words from the tweet that contain the letter 'S'**. I did this using a **DAX expression**, where I split the tweet into words and excluded any word containing 'S' (case-insensitive).
4. The chart was made visible **only between 3 PM to 5 PM IST and 7 AM to 11 AM IST**.
5. Once all the filters were in place, I finalized the chart design, ensured proper formatting, and verified that the chart displayed only the correct tweets as per all the given conditions.

SKILLS AND COMPETENCIES

During the internship, I got the chance to improve and apply various technical and analytical skills while working on the Twitter analytics project. Here are the main tools and skills I used:

Power BI: Used for building dashboards, creating visual charts (bar chart, clustered column chart), and applying filters and conditions. Customized visuals using formatting options, slicers, and DAX-based visibility logic.

Power Query Editor: Used for basic data transformation like splitting timestamps into separate date, time, month, and year columns. Also used for cleaning and preparing the dataset for analysis.

Excel: Used to view and understand the dataset before loading it into Power BI. The dataset was already provided and stored in Excel format.

Data Cleaning & Preparation: Learned how to prepare a dataset for analysis using Power Query and apply filters based on specific conditions.

DAX (Data Analysis Expressions): Used to:

- Calculate engagement rate
- Filter top 10% values
- Handle time-based visibility
- Exclude words containing specific letters from text data

Data Visualization:

- Created different types of charts to highlight specific trends.
- Applied conditional logic so charts only appear at specific times of the day.

FEEDBACK AND EVIDENCE

Since this was a self-paced internship, most of the guidance was provided through pre-recorded training videos. These videos were clear and helpful, especially for understanding how to use Power BI and apply it in a practical project. The step-by-step structure allowed me to follow along and complete each part at my own speed.

Although there wasn't one-on-one feedback like in a live internship, the project instructions were detailed and gave me a clear idea of what was expected. Each task had specific rules and conditions, which pushed me to think critically and apply what I learned.

The final dashboard I created included:

- A bar chart showing top 10% tweets by engagement rate (Task 1)
- A bar chart showing top tweets based on retweets + likes with several filters (Task 2)
- A clustered column chart comparing replies, likes, and retweets for high media engagement tweets (Task 3)

These charts were all built with custom visibility rules and logic filters, and they worked correctly according to the conditions I applied.

The successful completion of all tasks and the functioning of the dashboard as intended served as evidence of my learning and progress throughout the internship.

CHALLENGES AND SOLUTIONS

While working on the tasks, I faced a few challenges that required me to think critically and make adjustments. Here are some of the main issues I encountered and how I handled them:

- Task 1 – Character Count Filter Issue
  One of the conditions was to show only tweets with less than 30 characters. However, after exploring the dataset, I realized that none of the tweets met this condition. Since the filter would have removed all data, I decided to skip this condition and proceed with the rest of the task.
- Task 2 – Missing User Profile
  The instructions mentioned showing the user profile for each tweet, but the dataset did not include any user profile information. To solve this, I used the actual tweet content or ID as an alternative so the chart could still display meaningful data.
- All Tasks – Time-Based Filter Challenges
  Each chart had to be shown only during a specific time range, like 3 PM to 5 PM IST or 7 AM to 11 AM IST. Initially, this was difficult because the charts weren't appearing correctly during the time slot. After some trial and error, I realized the issue was in my DAX logic. I reviewed and improved my DAX expressions to correctly apply the time filters based on the extracted time column.

OUTCOMES AND IMPACT

This internship gave me a solid understanding of how data analysis is used in real projects, especially when dealing with strict conditions and real-time dashboards. Completing the tasks helped me build confidence in using Power BI and solving practical problems through data.

Here are some key outcomes from this experience:

- I learned how to build dashboards from scratch using Power BI and apply multiple filters and logic conditions at once.
- I became more confident using DAX functions to solve real problems, especially when applying time-based visibility and filtering logic.
- I improved my ability to clean and prepare datasets, such as breaking down timestamps and managing text fields using queries.
- I learned to adapt when certain data was missing (like user profiles), by thinking of alternative solutions (like using tweet content).
- Most importantly, I got a feel for what it's like to work independently, follow a project brief, and troubleshoot issues on my own—just like in a real data analyst role.

CONCLUSION

This internship at NullClass EdTech Private Limited was a great learning experience. I got to work on a real-time Twitter analytics dashboard using Power BI and apply my data skills in a practical way.

The tasks helped me understand how to clean data, use DAX, and build dashboards based on specific rules. I also learned how to solve problems when things didn't work as expected. Overall, it improved my technical skills and gave me more confidence in working with real-world data.

I now feel more prepared to handle similar projects in the future. This experience has strengthened my interest in data analytics as a career path.