

REAL-TIME TWITTER ANALYSIS USING POWER BI DASHBOARD

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Report on (Real-Time Twitter Analysis Power BI Dashboard)

1. Introduction

Purpose: This report provides a comprehensive overview of the data analysis and visualization efforts undertaken during my internship at NullClass Pvt Ltd. The objective is to document the goals, methodologies, and outcomes of the various data visualization projects completed, emphasizing how these efforts

enhanced our understanding of Twitter data and improved the overall reporting capabilities.

Scope: The report covers the development of multiple visualizations using Power BI. These include a line chart for tracking engagement trends, comparative analyses of engagement rates, dual-axis charts to depict media interactions, and pie charts representing click proportions. Each visualization was crafted to address specific facets of social media data analysis, showcasing proficiency in using Power BI to derive actionable, data-driven insights.

2. Background

Context: The tasks were part of a larger project aimed at analyzing Twitter data to extract meaningful insights. The internship took place at NullClass Pvt Ltd, a company recognized for its expertise in data analytics and visualization. This environment provided a valuable opportunity to apply theoretical knowledge to practical scenarios, using real-world data to solve complex analytical problems.

Organization Overview: NullClass Pvt Ltd is a leading organization in the field of data analytics, known for delivering data-driven solutions across various industries. The company leverages advanced tools and methodologies to provide actionable insights. During my internship, I had the chance to work with diverse datasets, gaining hands-on experience in data analysis and visualization.

3. Learning Objectives

Data Visualization: A primary objective was to develop a strong understanding of data visualization techniques using Power BI. This included mastering the creation and customization of various types of charts and graphs to effectively communicate data insights.

Data Analysis: The internship aimed to enhance my skills in analyzing social media data, with a focus on engagement metrics and interaction patterns. I learned to interpret data trends, compare different engagement metrics, and draw meaningful conclusions from the analysis.

Tool Utilization: Another key objective was to gain practical experience using Power BI, a leading data visualization tool. This involved mastering features

such as data filtering, aggregation, and creating interactive dashboards to facilitate data exploration and support decision-making processes.

4. Activities and Tasks

Task 1: Line Chart and Visualization

Objective: To visualize the trend of average engagement rates for tweets with and without media content over the year. Additionally, the task aimed to compare the number of replies, retweets, and likes for tweets with media engagements above the median value, focusing on tweets posted in the last six months.

Activity: I created a line chart to depict monthly trends in engagement rates, differentiating between tweets with and without media. A comparative visualization was also developed to highlight differences in replies, retweets, and likes for tweets with higher media engagements. Filters were implemented to focus on recent data, ensuring relevance and accuracy.

Task 2: Engagement Rate Comparison

Objective: To analyze and compare engagement rates for tweets with app opens versus those without, focusing on tweets posted between 9 AM and 5 PM on weekdays.

Activity: I filtered tweets based on their posting time and day of the week, focusing on specified hours and weekdays. A bar chart was then created to compare engagement rates for tweets with and without app opens, providing insights into how app interactions affect engagement during business hours.

Task 3: Dual-Axis Chart

Objective: To illustrate the number of media views and media engagements by the day of the week for the last quarter, highlighting significant spikes in interactions.

Activity: I developed a dual-axis chart to visualize trends in media views and engagements over the past quarter. Different axes were used to represent each metric, and visual markers were applied to highlight days with notable spikes in media interactions, facilitating a clear understanding of peak activity periods.

Task 4: Pie Chart with Drill-Down

Objective: To create a pie chart showing the proportion of different types of clicks (URL, user profile, hashtag) for tweets with more than 500 impressions, including a drill-down feature for detailed analysis.

Activity: A pie chart was designed to represent the distribution of click types for high-impression tweets. Drill-down functionality was implemented to allow users to explore specific click types for individual tweets, providing a detailed view of click behavior and engagement patterns.

5. Skills and Competencies

Technical Skills:

Power BI Proficiency: Acquired advanced skills in using Power BI to create various visualizations, including line charts, bar charts, dual-axis charts, and pie charts. Mastered techniques for filtering and aggregating data, customizing visualizations, and leveraging interactive features to enhance user engagement.

Data Analysis: Developed strong capabilities in analyzing large datasets, identifying trends, and comparing different metrics. Gained the ability to derive actionable insights from complex data and present these insights clearly and comprehensively.

Soft Skills:

Problem-Solving: Enhanced problem-solving skills through the application of analytical methods to real-world data. Developed strategies to address challenges related to data complexity and visualization integration.

Communication: Improved communication skills by presenting data insights effectively and clearly. Gained experience in documenting findings and explaining technical concepts to both technical and non-technical audiences.

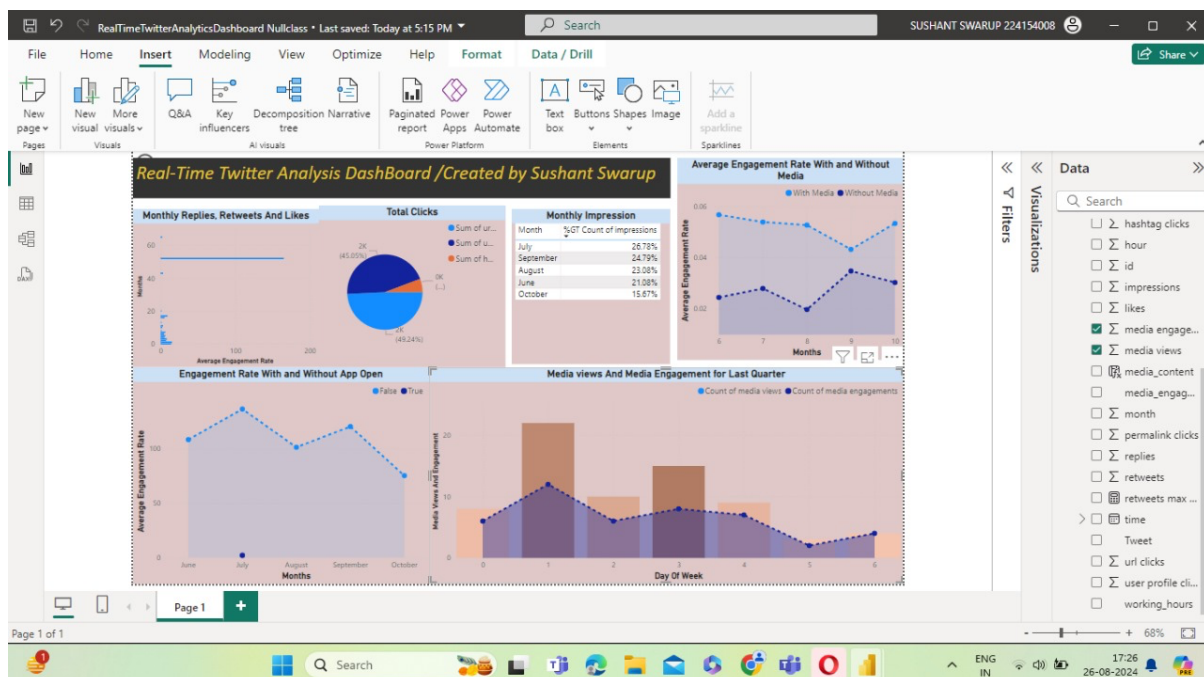
6. Feedback and Evidence

Feedback: Received positive feedback from supervisors and colleagues, particularly highlighting strong analytical skills and effective use of Power BI. The quality of the visualizations and the ability to extract meaningful insights from data were also emphasized.

Evidence:

Completed Visualizations: Delivered visualizations and dashboards that demonstrate the ability to handle and analyze Twitter data, including line charts, comparative analyses, dual-axis charts, and pie charts.

Performance Evaluations: Performance evaluations and team feedback serve as evidence of successful task completion and the skills acquired during the internship.



7. Challenges and Solutions

Challenges:

Data Complexity: Managing and analyzing large datasets with multiple variables was challenging. Ensuring data accuracy and relevance required careful preprocessing and filtering.

Visualization Integration: Combining various data elements into cohesive and informative visualizations was complex. Ensuring that the visualizations effectively communicated insights required iterative design and testing.

Solutions:

Advanced Data Processing: Utilized advanced data processing techniques to manage complex datasets and ensure data cleanliness. Applied data transformation and aggregation methods to facilitate analysis.

Interactive Features: Leveraged Power BI's interactive features to integrate and present data effectively. Implemented filters, drill-downs, and dynamic elements to enhance the usability and clarity of visualizations.

8. Outcomes and Impact

Results: Successfully created a series of insightful visualizations that provided valuable analysis of Twitter engagement data. The visualizations enabled a better understanding of engagement trends, media interactions, and click behaviors.

Impact: The analysis and visualizations contributed to enhanced decision-making capabilities within the team. The insights derived from the data helped in optimizing social media strategies and improving reporting practices.

9. Conclusion

Summary: The tasks completed during the internship provided significant experience in data analysis and visualization using Power BI. The project demonstrated the ability to handle complex datasets, create impactful visualizations, and derive actionable insights.

Reflections: This experience has solidified my understanding of data visualization techniques and their application in real-world scenarios. The skills gained are valuable for both personal and professional development, contributing to a deeper appreciation of data-driven decision-making.

Future Recommendations: To further enhance data analysis capabilities, consider exploring additional data sources and visualization tools. Expanding the scope of projects to include more diverse datasets and advanced analytical techniques will continue to build on the skills acquired during this internship.