# Real-Time Twitter Analytics Dashboard – Power BI

Name :- Deep Sunilrao Bodkhe

## 1. Introduction

This project focuses on building a real-time Twitter analytics dashboard using Power BI. The dashboard provides key insights into Twitter engagement metrics, ensuring data-driven decision-making. The project also includes dynamic filters and time-based visualizations for enhanced interactivity.

## 2. Background

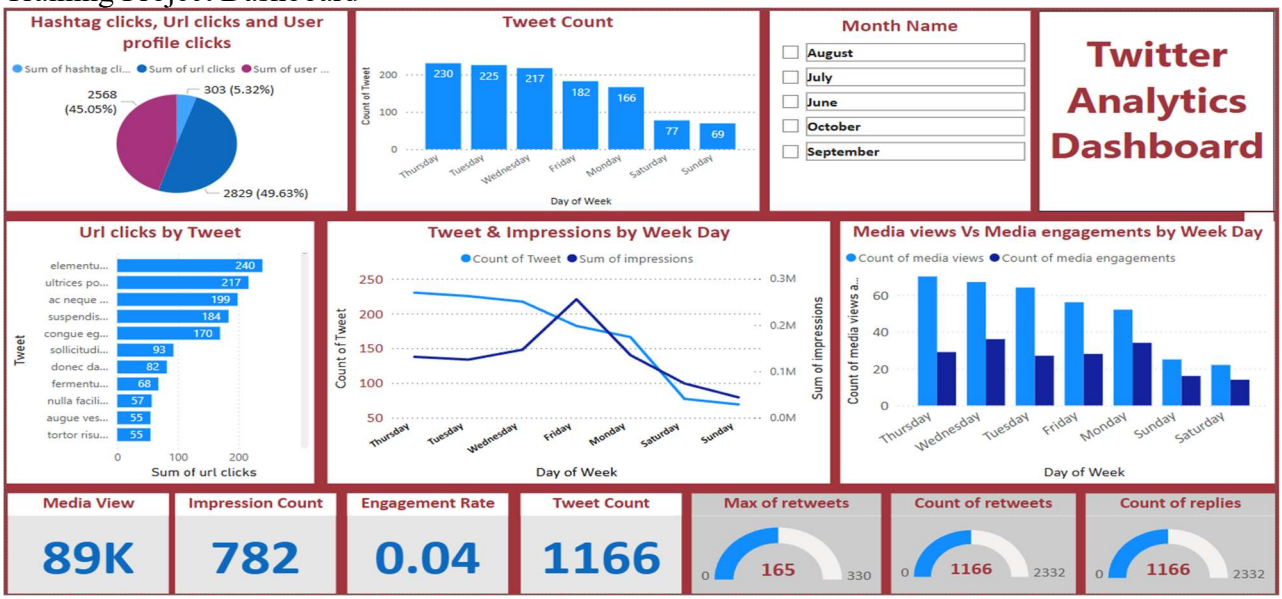
Social media analytics is essential for understanding audience behaviour and optimizing content strategies. Twitter, being a highly active platform, generates vast amounts of engagement data. This project leverages Power BI to transform raw Twitter data into interactive dashboards, providing deeper insights into engagement trends, impressions, and media interactions.

## 3. Learning Objectives

- Develop expertise in Power BI for data visualization and real-time analytics.
- Implement dynamic filters and conditions for controlled data display.
- Enhance understanding of social media metrics and their impact on engagement.
- Apply advanced data transformation techniques for meaningful insights.

## 4. Activities and Tasks

Training Project Dashboard



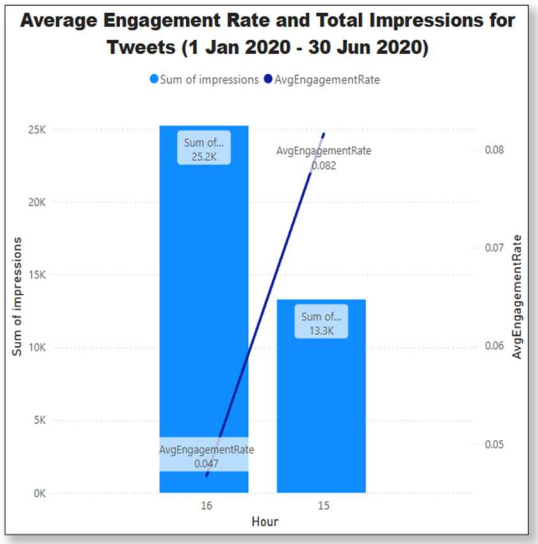
The project involves the following key tasks:

## Task 1

### Visualization: Average Engagement Rate & Total Impressions (01-01-2020 to 30-06-2020)

- Graph Placeholder

**1. Create a visual that shows the average engagement rate and total impressions for tweets posted between '01- 01-2020' and '30-06-2020'. Filter out tweets that received fewer than 100 impressions and like should be 0 and this graph should work only between 3PM IST to 5 PM IST apart from that time we should not show this graph in dashboard itself.**



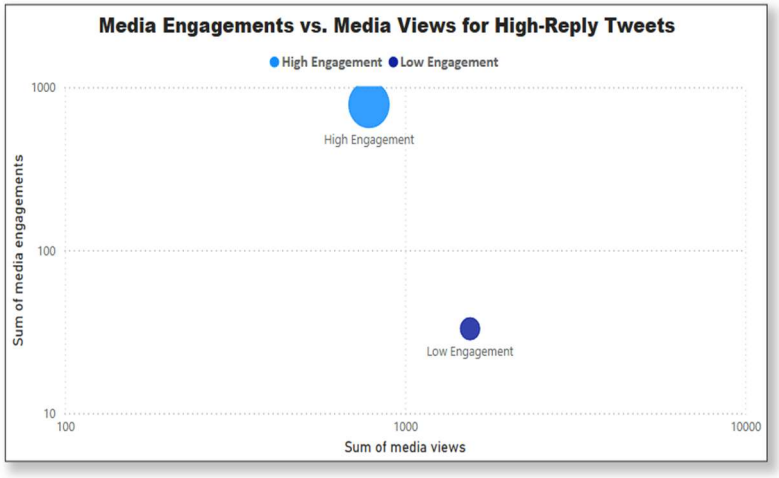

- Tweets with fewer than 100 impressions and 0 likes are filtered out.
- Displayed only between 3 PM to 5 PM IST.

## Task 2

### Visualization: Media Engagements vs. Media Views (for tweets with more than 10 replies)

- Graph Placeholder

**2. Plot a scatter chart to analyse the relationship between media engagements and media views for tweets that received more than 10 replies. Highlight tweets with an engagement rate above 5% and this graph should work only between 6PM IST to 11 PM IST apart from that time we should not show this graph in dashboard itself and the tweet date should be odd number as well as tweet word count be above 50.**



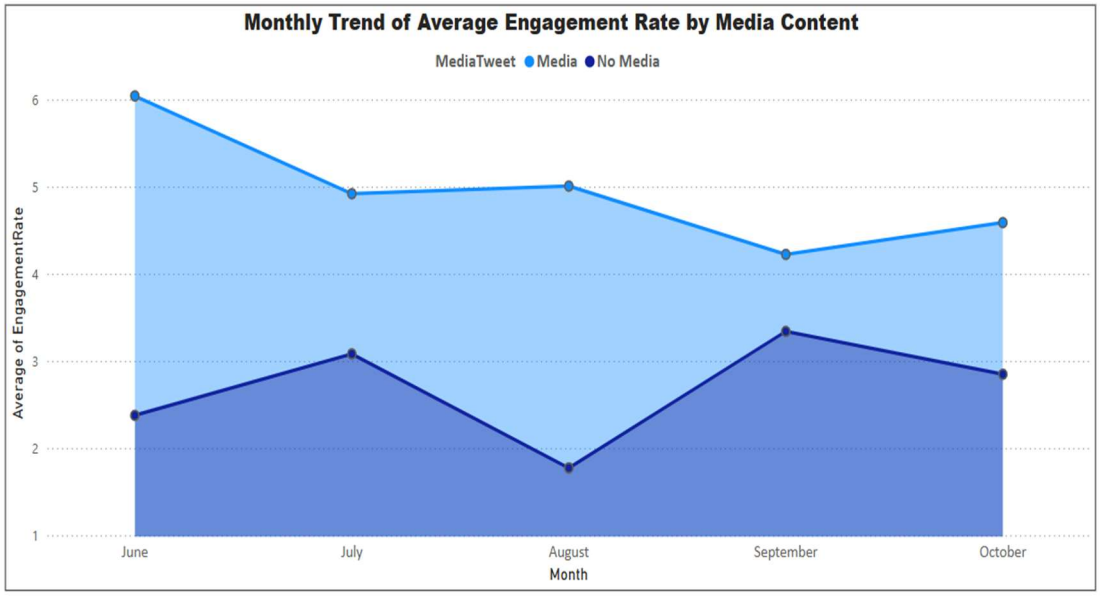
- Tweets with engagement rates above 5% are highlighted.
- Displayed only between 6 PM to 11 PM IST.
- Filters: Odd tweet dates and word count above 50.

## Task 3

### Visualization: Trend of Average Engagement Rate (Monthly Breakdown)

- Graph Placeholder

**3. Create a line chart showing the trend of the average engagement rate over each month of the year. Separate the lines for tweets with media content and those without and this graph should work only between 3PM IST to 5 PM IST and 7 AM to 11AM apart from that time we should not show this graph in dashboard itself and the tweet engagement should be even number and tweet date should be odd number as well as tweet character count should be above 20 and need to remove tweet word which has letter 'C'.**




- Separates tweets with media content from those without.
- Displayed only between 3 PM to 5 PM IST and 7 AM to 11 AM IST.
- Filters: Even engagement numbers, odd tweet dates, and tweet character count above 20.
- Excludes words containing the letter 'C'.

## 5. Skills and Competencies Developed

- **Data Analysis & Cleaning**: Preprocessing Twitter data for meaningful insights.
- **Power BI Visualization**: Creating dynamic reports with filtering conditions.
- **Time-Based Filtering**: Implementing logic to restrict visualization availability.
- **Conditional Data Display**: Applying constraints based on tweet attributes.

## 6. Feedback and Evidence

- Screenshots of the Power BI dashboard with each task completed.
- Source code and dataset utilized for analysis.

## 7. Challenges and Solutions

## Challenges Faced:

- Implementing time-based visualization restrictions in Power BI.
- Filtering out specific tweet attributes dynamically.
- Managing large datasets efficiently.

## Solutions Implemented:

- Used **DAX functions** and **Power Query transformations** for filtering.
- Applied **custom date-time conditions** to control visualization display.
- Optimized dataset performance by indexing and aggregating data.

## 8. Outcomes and Impact

- Developed a **fully functional Twitter analytics dashboard** with dynamic filtering.
- Improved proficiency in **Power BI, DAX, and social media analytics**.
- Gained **real-world experience in data visualization and interactive reporting**.

## 9. Conclusion

This project has successfully provided an in-depth analysis of Twitter engagement using Power BI. The implementation of time-based visualization and dynamic filtering ensures that meaningful insights are displayed under the required conditions. The experience gained from this project strengthens data analysis and visualization skills, essential for any aspiring data analyst.

## Attachments:

- Power BI (.pbix) file containing the completed dashboard.
- CSV dataset used for analysis.
- Screenshots of the final dashboard.


## GitHub Repository:

All project files, including datasets, source code, and reports, are available at:

[GitHub Repository]