

# Project Report

**Team Id: Team-591216**

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## **1. INTRODUCCION:**

### **1.1 Project Overview:**

"Dissecting the Digital Landscape: A Comprehensive Analysis of Social Media" is a research initiative aimed at providing a thorough examination of the ever-evolving social media ecosystem. This project will investigate the historical development of platforms, analyse user behaviour, content trends, and emerging technologies, and assess the societal and psychological impacts of social media. Through a combination of research methods, it aims to offer insights and recommendations.

### **1.2 Purpose:**

This project's goal is to dig deep into the world of social media, understand how it has changed over time, how people use it, and what impact it has on our lives. By doing this, we want to help people make better choices when they use social media and navigate this digital world more wisely.

## **2. LITERATURE SURVEY:**

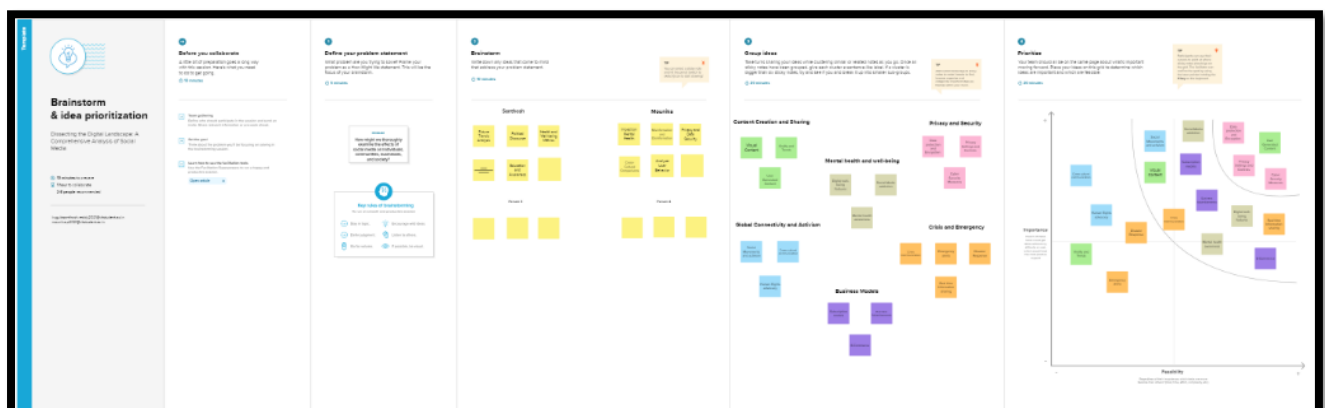
### **2.1 Existing Problem:**

One problem is that people often use social media without fully understanding its effects on their mental health and well-being. They may also encounter misinformation and not know how to identify it. This project aims to address these issues by providing insights and guidance for safer and more informed social media use.

### **2.2 References:** Documents provided in the SmartInternz Portal

### **2.3 Problem Statement Definition:**

"In today's world, social media is everywhere and affects our lives in many ways. We want to understand all the good and bad things about social media. We'll look at how it affects people, how it changes what we see online, how it can affect our privacy, and what's new in the world of social media. Our goal is to learn more about the digital world to help people, policymakers, and researchers deal with the ups and downs of social media."



## 4. REQUIREMENT ANALYSIS:

### 4.1 Functional Requirements:

- Data Collection and Integration
- Data Processing and Analysis
- User Interface and Reporting
- Scalability and Performance
- Data Security and Privacy

### 4.2 Non-Functional Requirements:

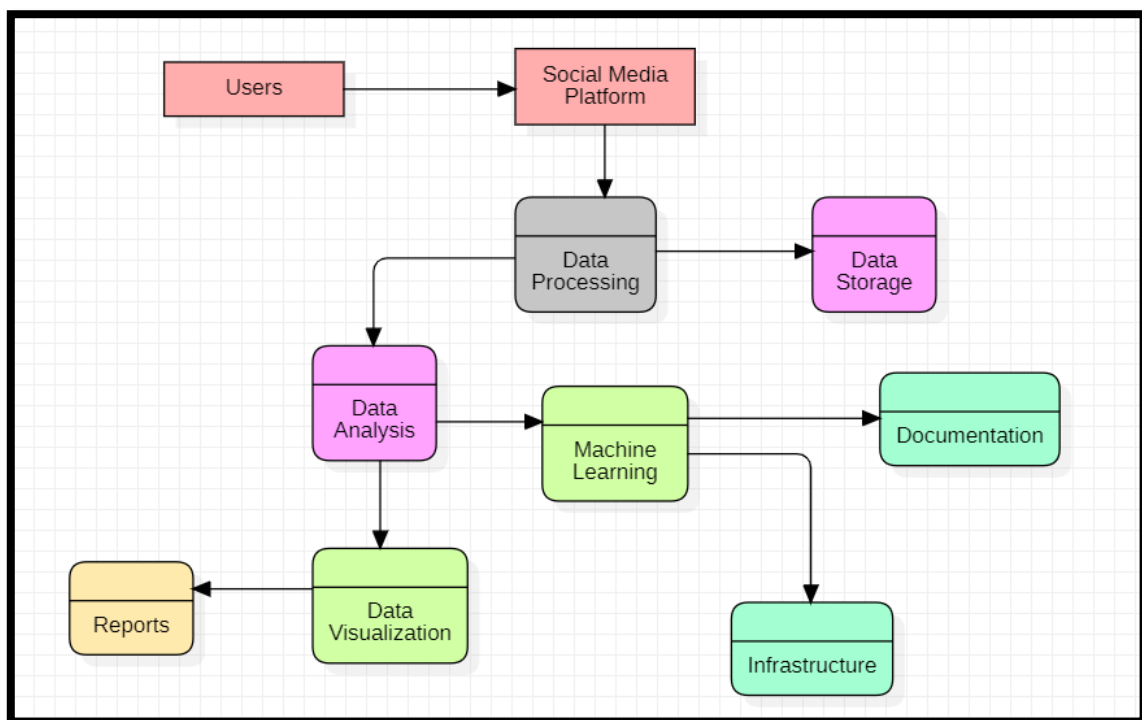
- Performance and Scalability
- Data Security and Privacy
- Reliability and Availability
- Compliance and Legal Requirements
- Usability and User Experience

## 5. PROJECT DESIGN:

### 5.1 Data Flow Diagram and User Stories:

- DFD:

The Data Flow Diagram (DFD) illustrates the flow of social media data from various sources, through data processing and analysis components, to the generation of insights and reports, providing a visual representation of data movement within the system.



- **User Stories:**

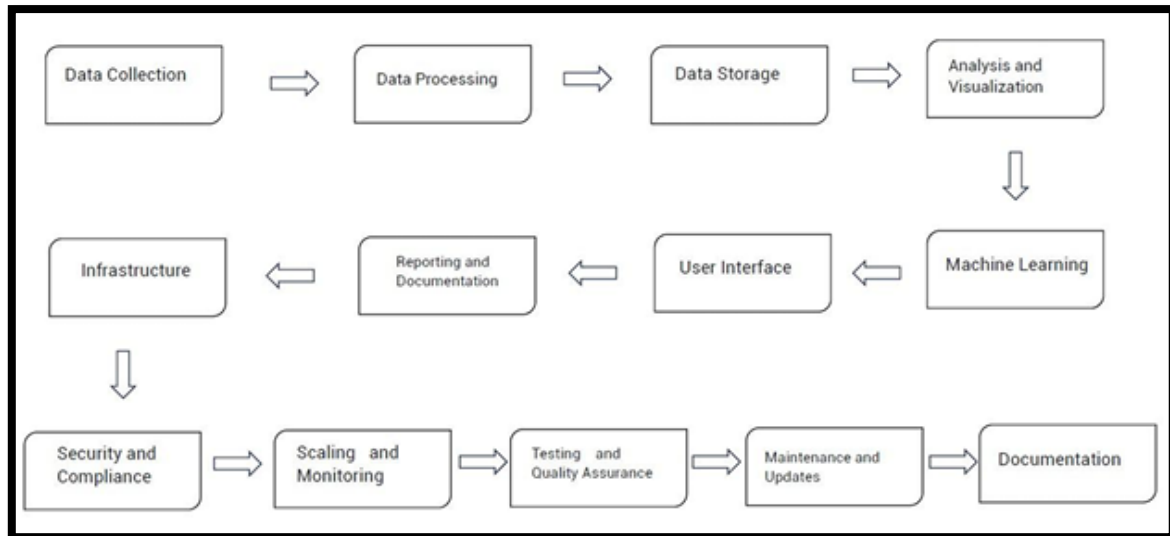
User stories might include scenarios like "As a social media analyst, I want to access real-time trend analysis to identify emerging topics" or "As a project manager, I want interactive dashboards to visualize user engagement metrics for multiple platforms."

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance criteria	Priority	Release
Social Media Marketer	Access to Reports and Insights	USN-1	As a social media marketer, I want to access detailed reports and insights on the latest trends and user behaviour across various social media platforms to improve my content strategy.	<ol style="list-style-type: none"> <li>The user can log in to the system.</li> <li>The user can select a specific social media platform.</li> <li>The user can access trend reports and user behaviour data for the selected platform.</li> </ol>	High	Sprint-1
Small Business Owner	Platform Information and Tools	USN-2	As a small business owner, I want to understand how different social media platforms can help me reach and engage with my target audience effectively, and what tools are available to achieve this.	<ol style="list-style-type: none"> <li>The user can browse information about various social media platforms.</li> <li>The user can access a toolkit of social media marketing resources.</li> </ol>	High	Sprint-1
Student	Case Studies and Real-World Examples	USN-3	As a student studying digital marketing, I want access to case studies and real-world examples from the "Dissecting the Digital Landscape" report to deepen my understanding of social media strategies.	<ol style="list-style-type: none"> <li>The user can access a library of case studies and examples.</li> <li>The user can search and filter case studies by topic or platform</li> </ol>	Medium	Sprint-1
Social Media Enthusiast	Stay Updated with Latest Data	USN-4	As a social media enthusiast, I want to stay updated with the latest statistics and data regarding user demographics, engagement metrics, and emerging platforms to enhance my personal branding efforts.	<ol style="list-style-type: none"> <li>The user can receive regular email updates with the latest social media statistics.</li> <li>The user can access a dashboard displaying realtime metrics for personal accounts.</li> </ol>	Medium	Sprint-1
Content Creator	Best Practices and Trends	USN-5	As a content creator, I want to learn about best practices and trends in visual and written content creation specific to different social media platforms for maximum impact.	<ol style="list-style-type: none"> <li>The user can access a library of content creation guides.</li> <li>The user can view webinars and tutorials on creating content for various platforms.</li> </ol>	High	Sprint-2

Business Analyst	Identify Opportunities and Threats	USN-6	As a business analyst, I want to explore data and statistics from the report to identify potential opportunities and threats in the social media landscape for my company.	1. The user can select data sets and perform custom analysis. 2. The user can generate reports with insights on market opportunities and threats.	High	Sprint-2
Product Manager	Inform Product Development	USN-7	As a product manager, I want to discover insights from the report that can inform product development decisions related to social media integration and user engagement.	1. The user can access reports and analysis specific to product development and social media integration.	High	Sprint-3
				2. The user can export data for use in product development planning.		
Social Media Platform Developer	Improve Platform Features	USN-8	As a social media platform developer, I want to understand the competitive landscape and user preferences, as highlighted in the report, to improve my platform's features and user experience.	1. The user can access competitive analysis reports. 2. The user can access user preference surveys and data.	High	Sprint-3
Digital Marketing Consultant	Provide Tailored Advice	USN-9	As a digital marketing consultant, I want to use the information from the report to provide tailored advice to my clients on their social media strategies and advertising campaigns.	1. The user can create custom reports for clients. 2. The user can schedule and share advice based on the report's findings.	High	Sprint-4
Researcher	Academic Support	USN-10	As a researcher in the field of social media studies, I want to access the comprehensive data and analysis in the report to support my academic work and contribute to the field's knowledge.	1. The user can access raw data for research purposes. 2. The user can request permission for academic use of the data.	Medium	Sprint-4

## 5.2 Solution Architecture:

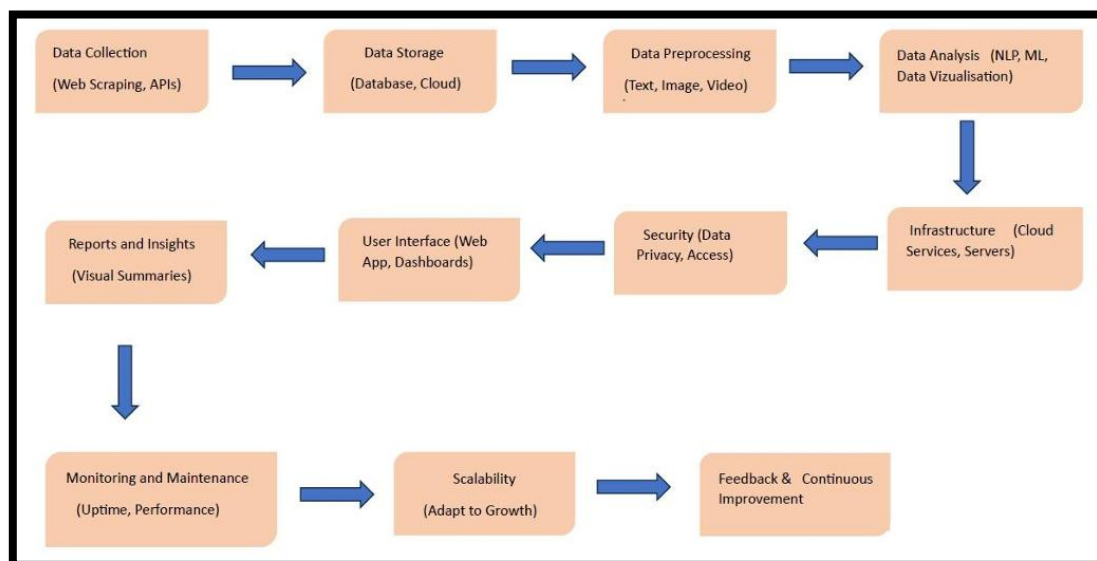
The solution architecture encompasses a distributed and scalable framework with components for data collection, processing, and reporting, integrating various data sources and analytical tools to deliver comprehensive social media insights.



## 6. PROJECT PLANNING AND SCHEDULING:

### 6.1 Technical Architecture:

The technical architecture includes a cloud-based infrastructure with robust data storage, processing clusters, real-time data ingestion, and an API-driven framework for seamless integration with social media platforms and data analysis tools.



## 6.2 Sprint Planning and Estimation:

Sprint planning and estimation for the project involves breaking down tasks, setting priorities, and estimating the effort required to achieve specific milestones, ensuring a structured and iterative approach to project development.

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint-1	Data Collection API Integration	USN-1	As a developer, I want to integrate the Twitter and Facebook APIs to collect social media data.	5	High	Santhosh
Sprint-2	Database Setup	USN-2	As a data engineer, I need to set up the database to store the collected social media data.	3	High	Mounika
Sprint-3	Preprocessing Pipeline	USN-3	As a data scientist, I want to create a preprocessing pipeline to clean and structure the data.	4	High	Santhosh
Sprint-4	Data Visualization Dashboard	USN-4	As a user, I want an interactive dashboard to visualize the social media data analysis results.	4	Medium	Mounika
Sprint-5	Report	USN-5	As a user, I want a report to get an idea on the usage of social media	4	High	Santhosh

## 6.3 Sprint Delivery Schedule:

The sprint delivery schedule outlines the regular intervals at which functional increments and analysis updates will be provided, facilitating iterative development and continuous improvement.

Sprint	Total Story Points	Duration	Sprint Start Date	Sprint End Date (Planned)	Story Points Completed (as on Planned End Date)	Sprint Release Date (Actual)
Sprint-1	5	2 Days	28 Oct 2023	29 Oct 2023	5	29 Oct 2023
Sprint-2	3	2 Days	30 Oct 2023	31 Oct 2023	3	31 Oct 2023
Sprint-3	4	2 Days	01 Nov 2023	02 Nov 2023	4	02 Nov 2023
Sprint-4	4	2 Days	03 Nov 2023	04 Nov 2023	4	04 Nov 2023
Sprint-5	4	2 Days	05 Nov 2023	06 Nov 2023	4	06 Nov 2023



## 7. CODING AND SOLUTIONING:

Coding and solutioning involve the development of software components and algorithms to process, analyse, and visualize social media data, enabling actionable insights and trends to be derived from the collected information.

### 7.1 Feature1:

IBM Cognos is connected with IBM DB2. Data set is uploaded to IBM and created visualizations, dashboard, report and story for easy analysis of data that has collected.

- **Visualizations:**

Visualizing data makes it easier to see trends and connections in the digital realm, aiding our in-depth analysis of social media's multifaceted landscape, from user behaviour to content dynamics.

- **Dashboards:**

The responsiveness and design of a dashboard for analyzing the factors important for Dissecting the Digital Landscape: A Comprehensive Analysis of Social Media analyzes various engagement metrics such as likes, comments, shares, and retweets to understand the level of engagement on different social media platforms. It analyzes social media trends and patterns to understand the changing preferences and interests of users.

- **Reports:**

A report is a document that presents information in a specific format and layout, usually based on data from a database or other data source. A report in IBM Cognos can contain various elements, such as tables, charts, graphs, and images, as well as text and data elements, and it is designed to be used by business users to help them better understand their data and make informed decisions. There are several different types of reports available in IBM Cognos, including list reports, crosstab reports, chart reports, and report studio reports, among others. The type of report that you choose will depend on the specific needs and requirements of your organization, as well as the data that you need to present.

- **Story:**

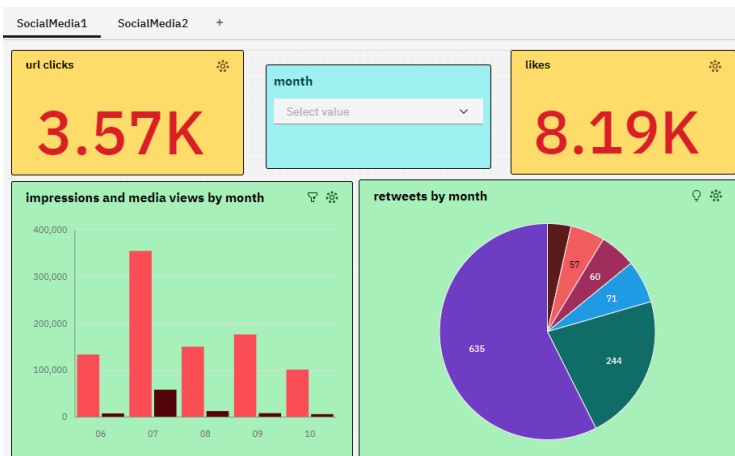
A data story is a way of presenting data and analysis in a narrative format, with the goal of making the information more engaging and easier to understand. A data story typically includes a clear introduction that sets the stage and explains the context for the data, a body that presents the data and analysis in a logical and systematic way, and a conclusion that summarizes the key findings and highlights their implications. Data stories can be told using a variety of mediums, such as reports, presentations, interactive visualizations, and videos.

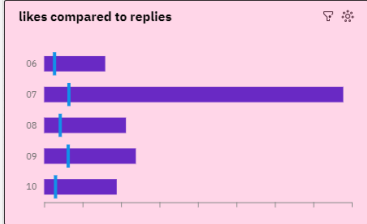

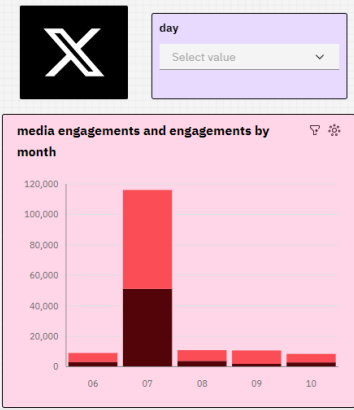
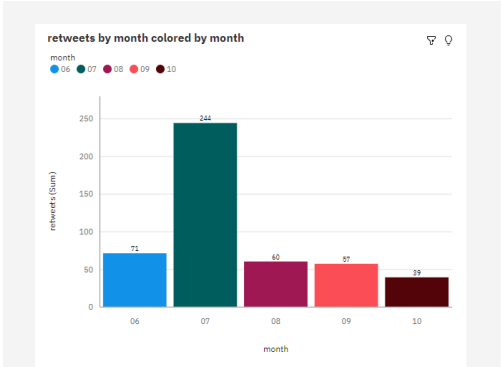
## 7.2 Feature2:

Dashboard, story and report which are created in IBM is integrated with web to visualize the data. Publishing helps us to track and monitor key performance metrics, to communicate results and progress. help a publisher stay informed, make better decisions, and communicate their performance to others. HTML, CSS and bootstrap are used to integrate IBM with web.

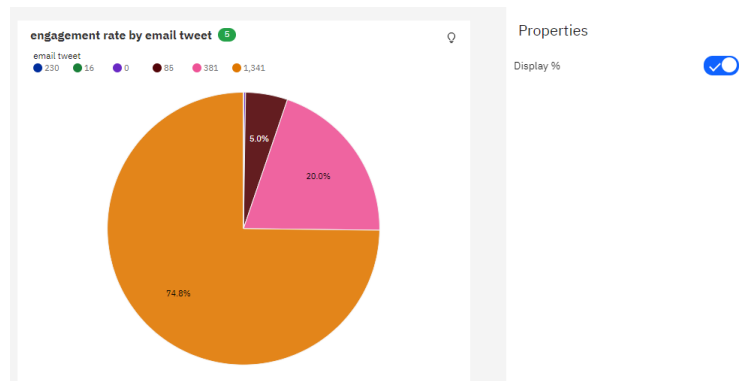
## 8. PERFORMANCE TESTING:

### 8.1 Performance Metrics:

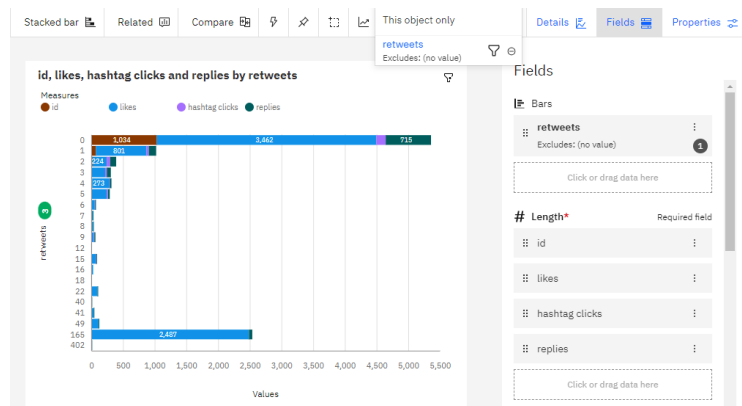
S.No.	Parameter	Screenshot / Values
1.	Dashboard design	<p>5 Visualizations and 2 Summaries and 2 filter drop downs</p>  <p>The screenshot displays a social media dashboard with the following components:</p> <ul style="list-style-type: none"> <li><b>Summary Cards:</b> <ul style="list-style-type: none"> <li><b>url clicks:</b> 3.57K</li> <li><b>likes:</b> 8.19K</li> </ul> </li> <li><b>Filters:</b> A 'month' dropdown menu with 'Select value' as the current selection.</li> <li><b>Charts:</b> <ul style="list-style-type: none"> <li><b>impressions and media views by month:</b> A bar chart showing data for months 06, 07, 08, 09, and 10. The y-axis ranges from 0 to 400,000.</li> <li><b>retweets by month:</b> A pie chart showing the distribution of retweets across different months, with values 635, 244, 71, 60, and 57.</li> </ul> </li> </ul>

		<div><div>SocialMedia1SocialMedia2 +</div><div><div>likes compared to replies</div><div>email tweet sized by user profile clicks</div><div>0</div><div></div></div><div><div>media engagements and engagements by month</div></div></div>
2.	Data Responsiveness	Efficient data collection, real-time processing, and responsive reporting are essential to provide timely insights. Optimization of data set, visualizations, dashboard, report and story making.
3.	Amount Data to Rendered (DB2 Metrics)	1182 data values are rendered
4.	Utilization of Data Filters	<div><div>Show label values:</div><div><div>retweets by month colored by month</div><div><div>Properties</div><div>Value axis show zero origin</div><div>Show value labels</div><div>Value label format</div><div>Value</div></div></div></div>

Display%:



Excluding no value columns:



5. Effective User Story

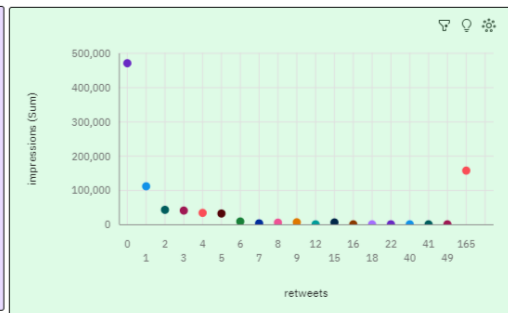
5 scenes are added





### Impressions by retweets colored by retweets

This point chart visually represents retweets and impressions. The x-axis shows the no of retweets, y-axis represents impressions, colored based on retweets.



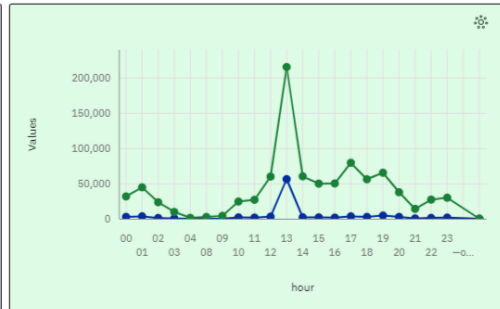
### Average retweets

retweets

0.94

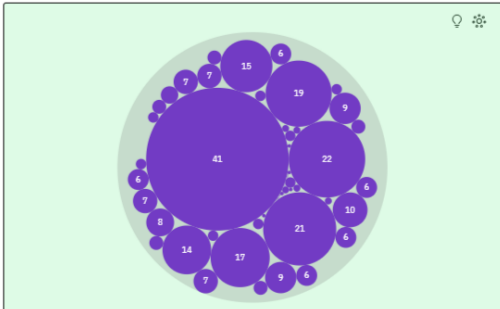
## Impressions and engagements by hour

This line chart displays data over time, with hours on the x-axis and impressions and engagements on the y-axis. Easy to observe and compare these metrics across hours.



Detail expands hierarchy sized by hashtag clicks

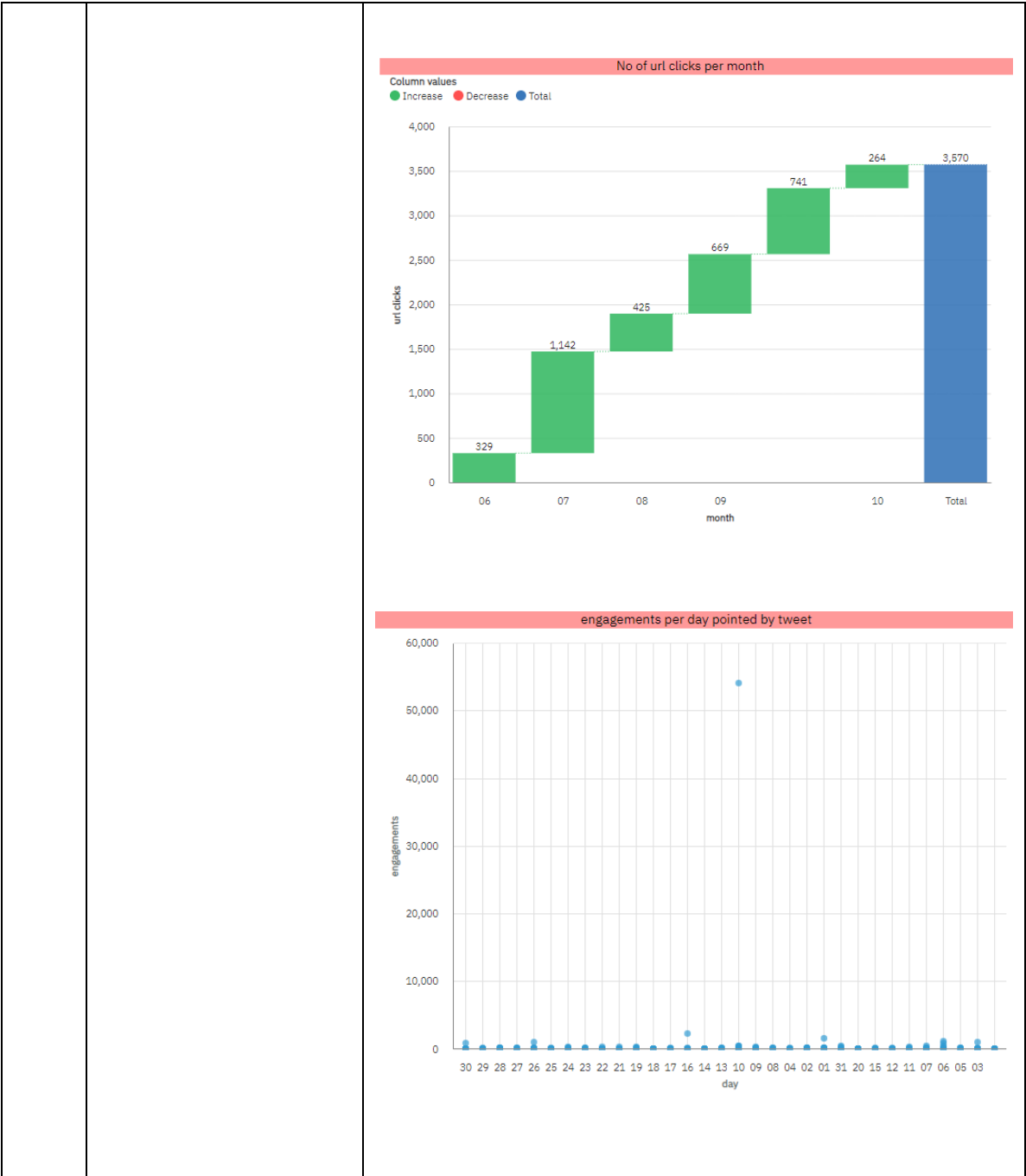
The hierarchy bubble chart showcases detail expands. The size of each bubble corresponds to the number of hashtag clicks.



6.	Descriptive Reports
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## 2 visualization



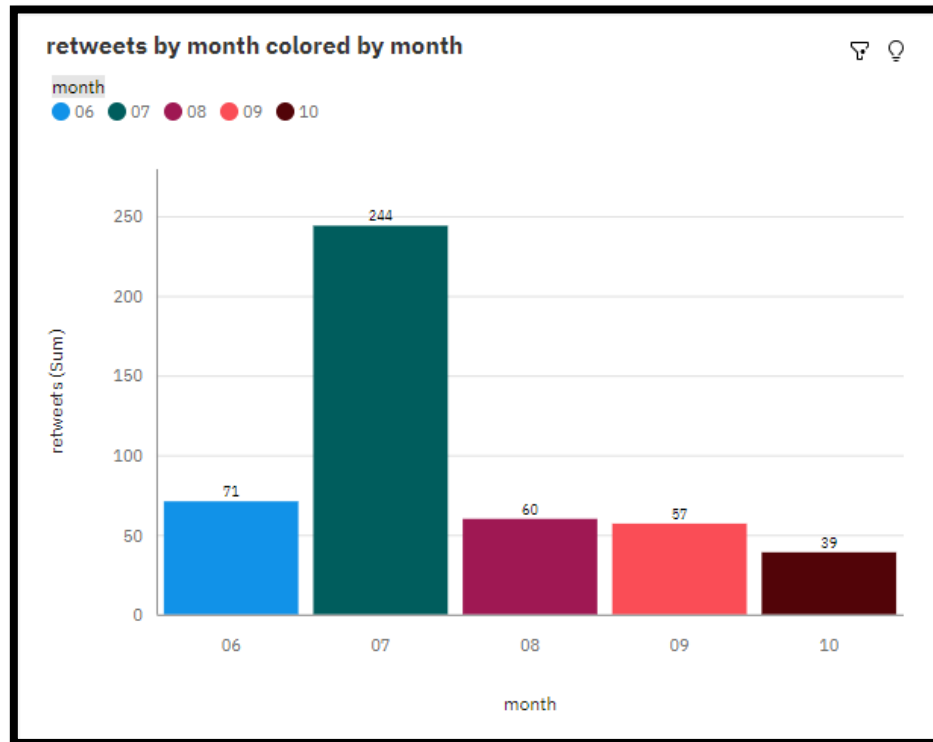


## 9. RESULTS:

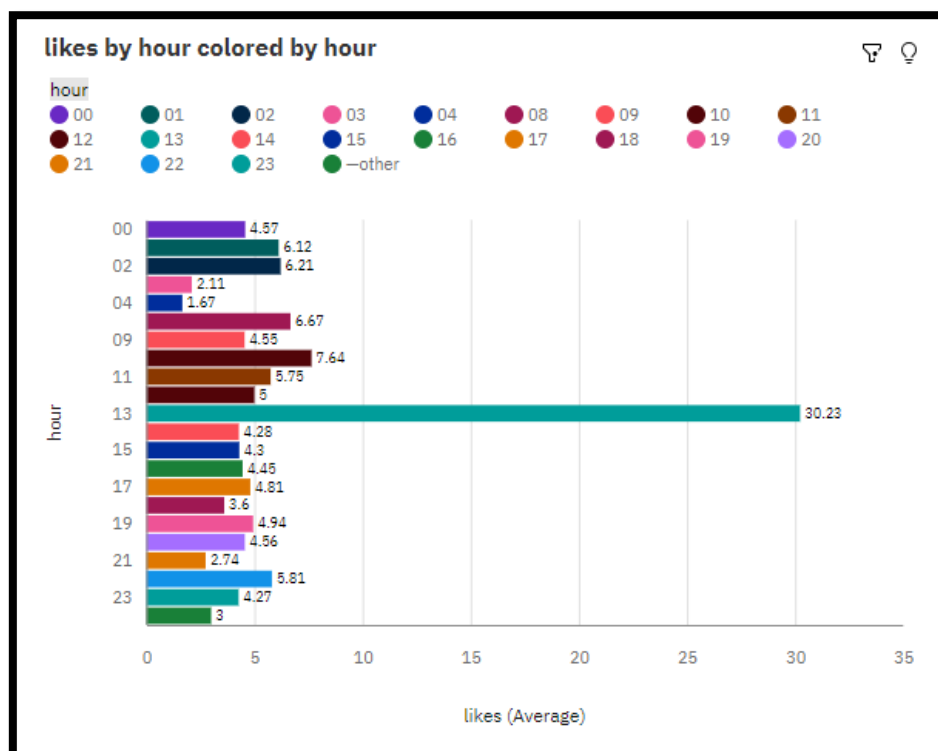
### 9.1 Output Screenshots:

- Visualizations:

#### i. Retweets per month

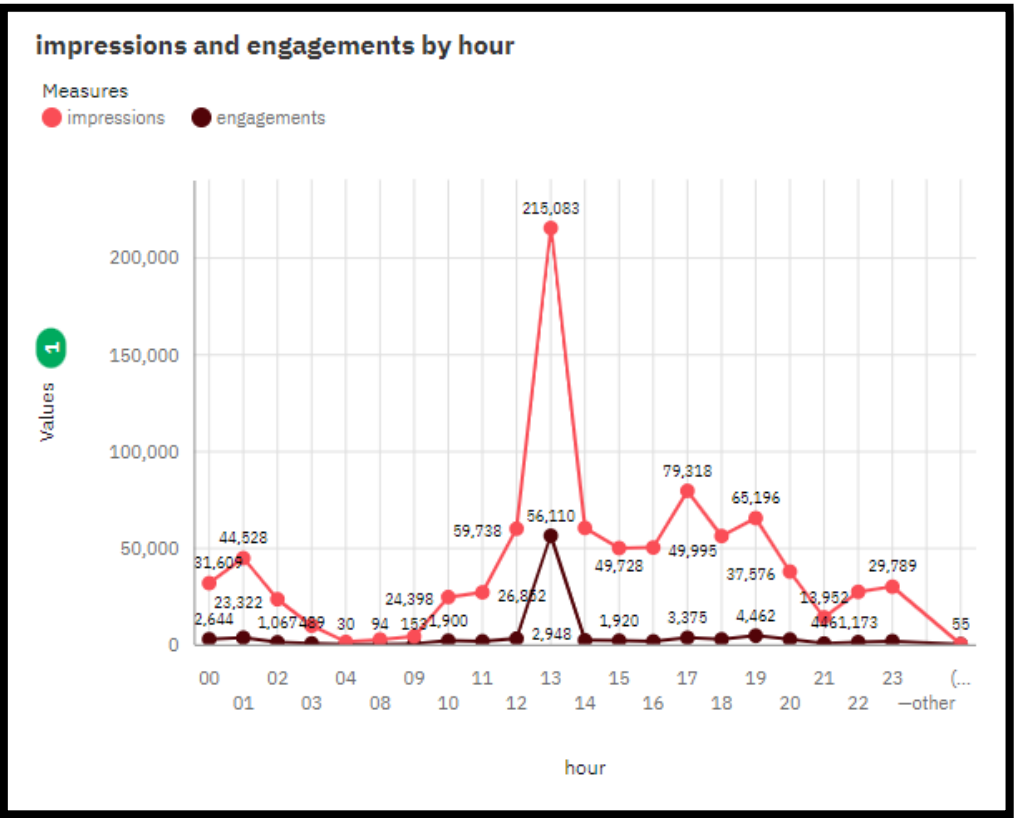


#### ii. No of likes per hour

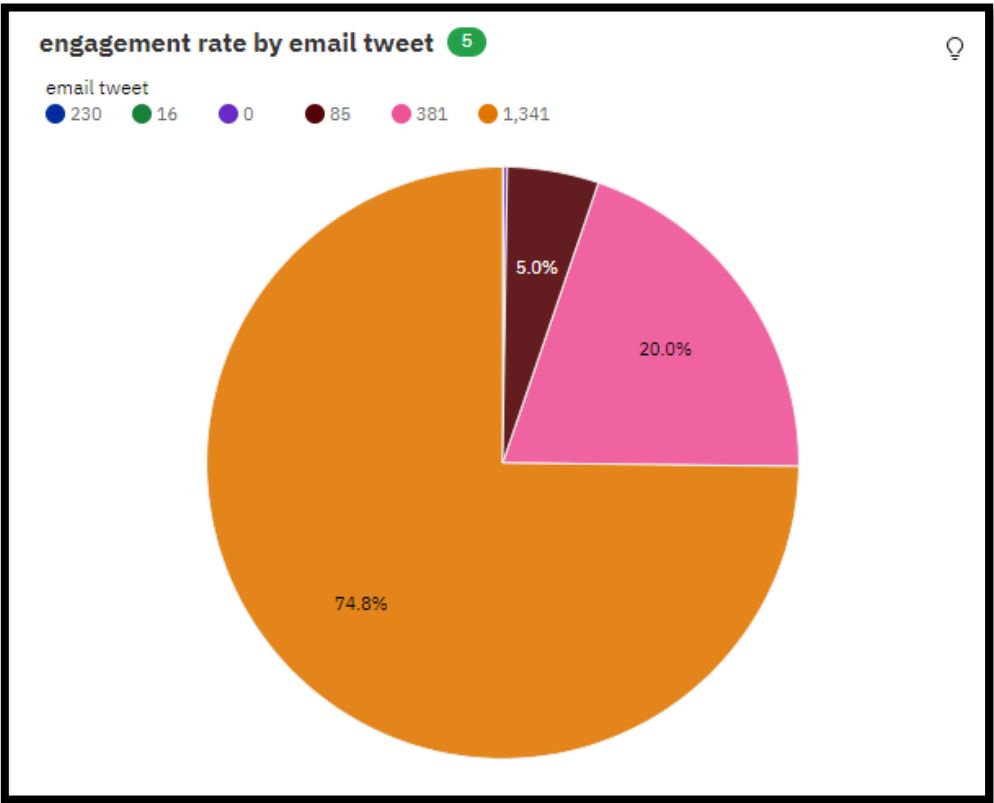




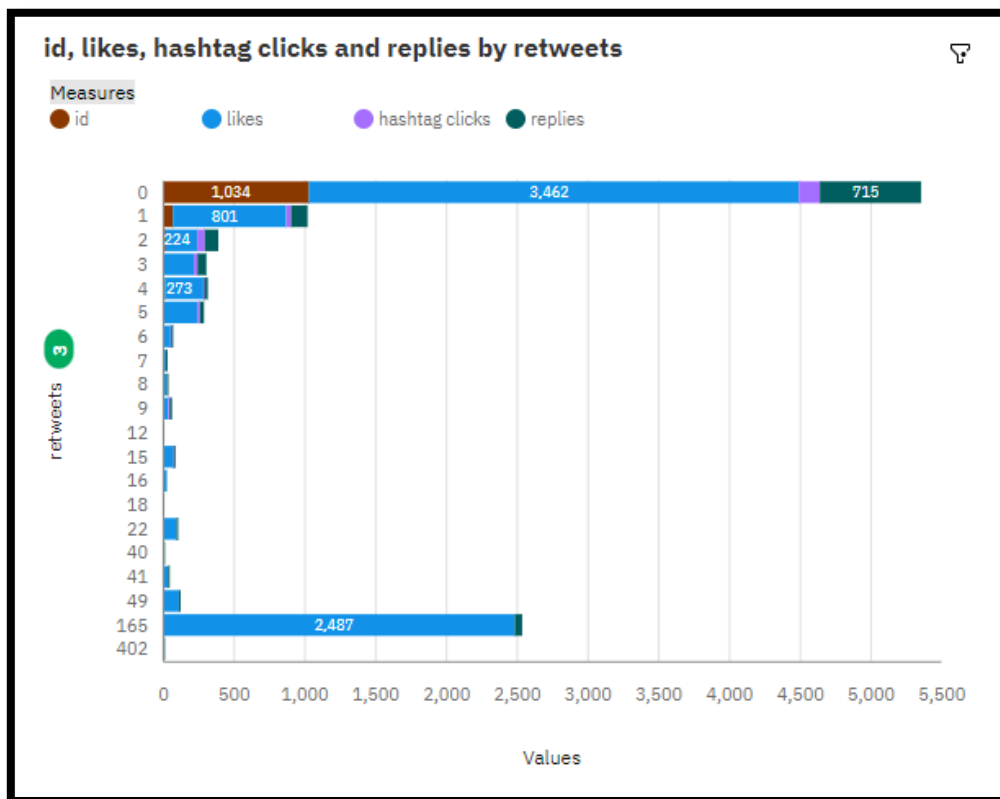
iii. Impressions and engagements per hour



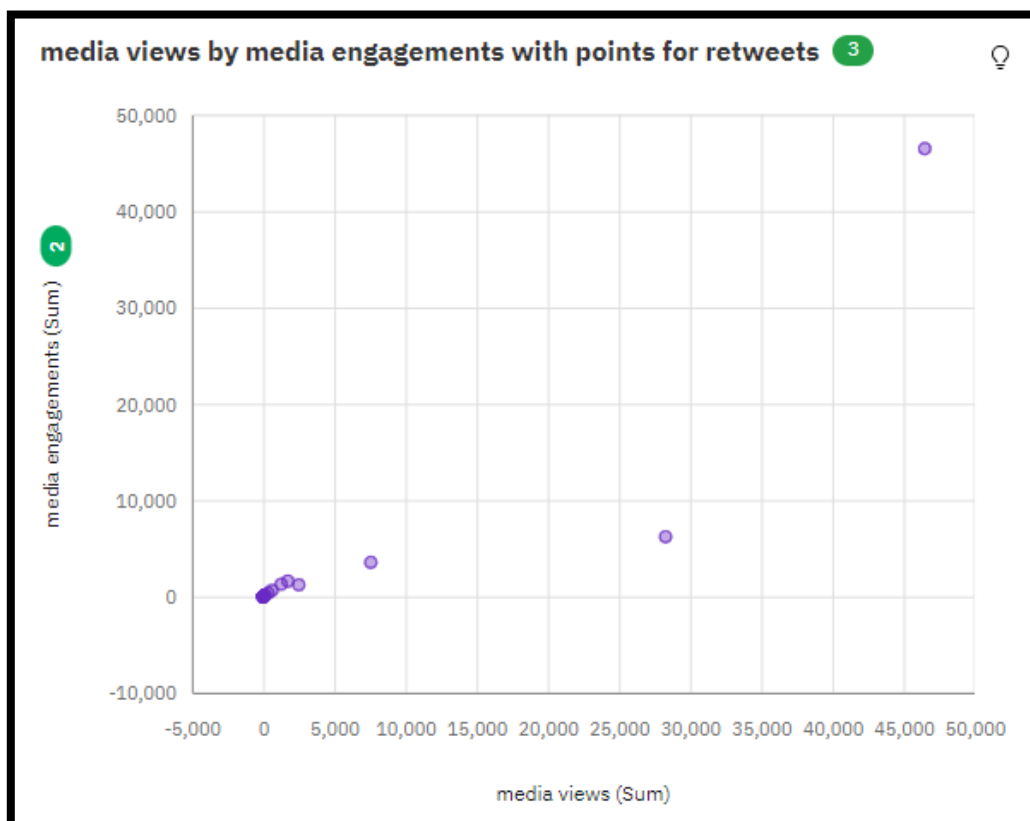
iv. engagement rate by email tweet



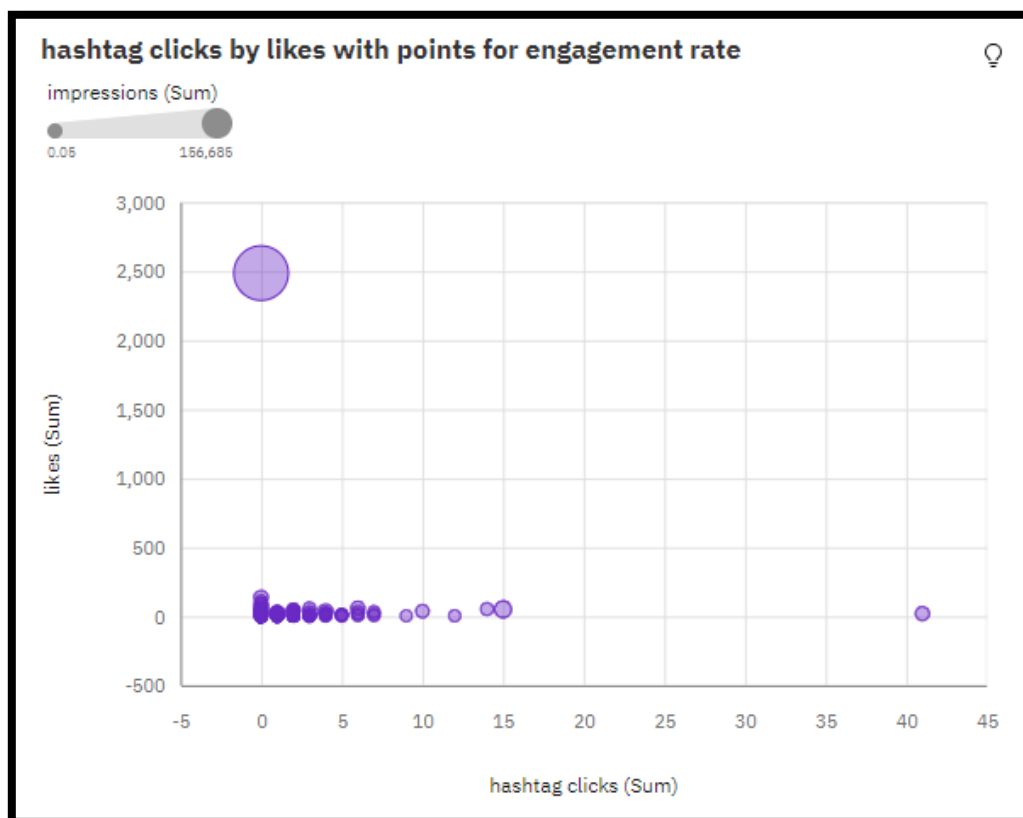
v. id, likes, hashtag clicks and replies by retweets



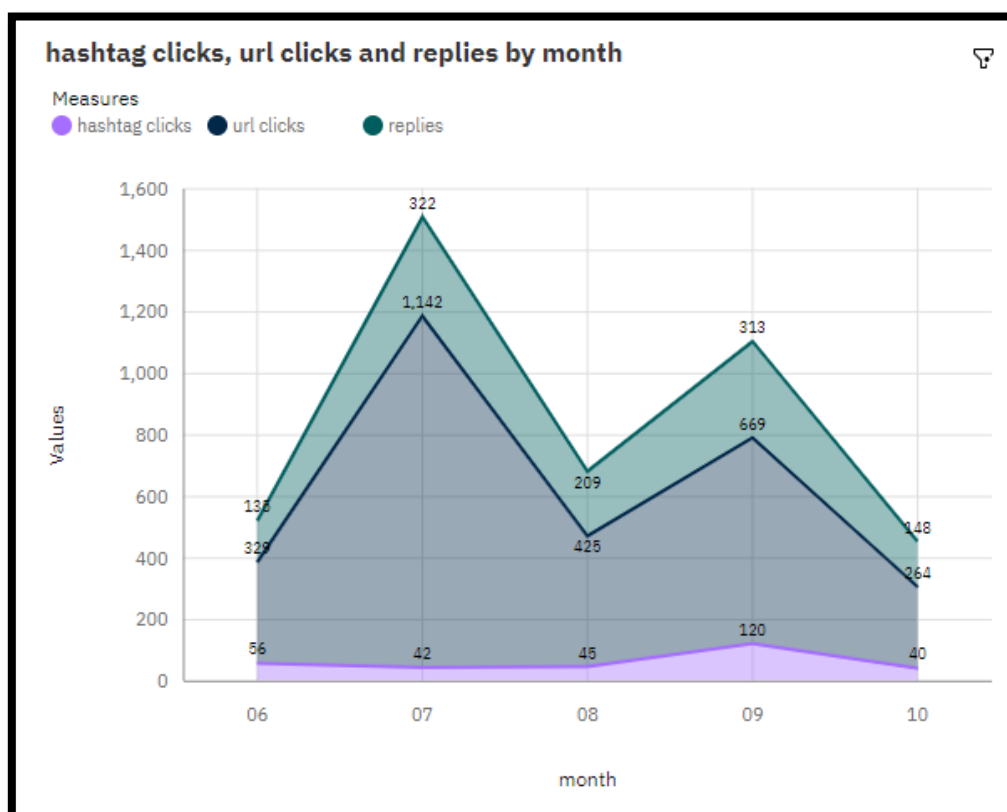
vi. media views by media engagements with points for retweets



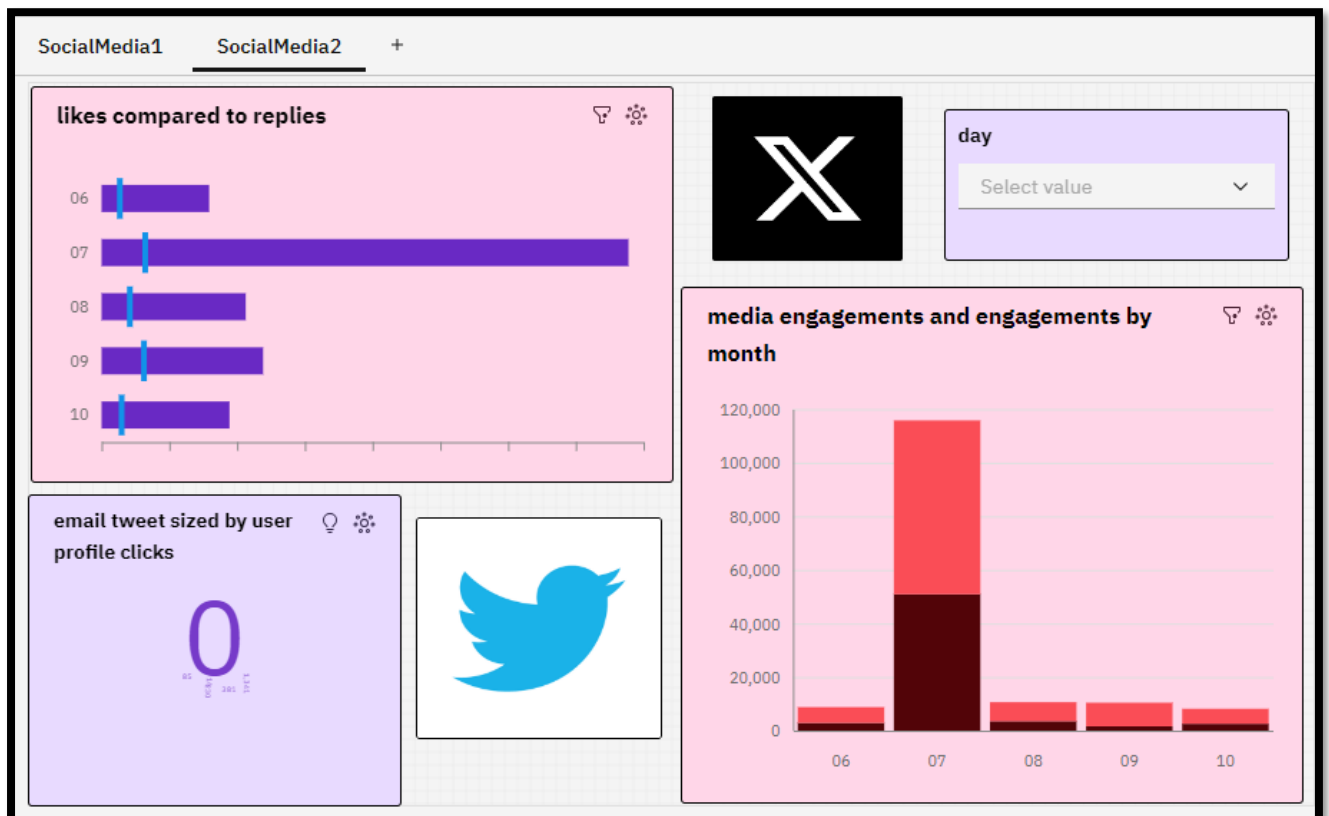
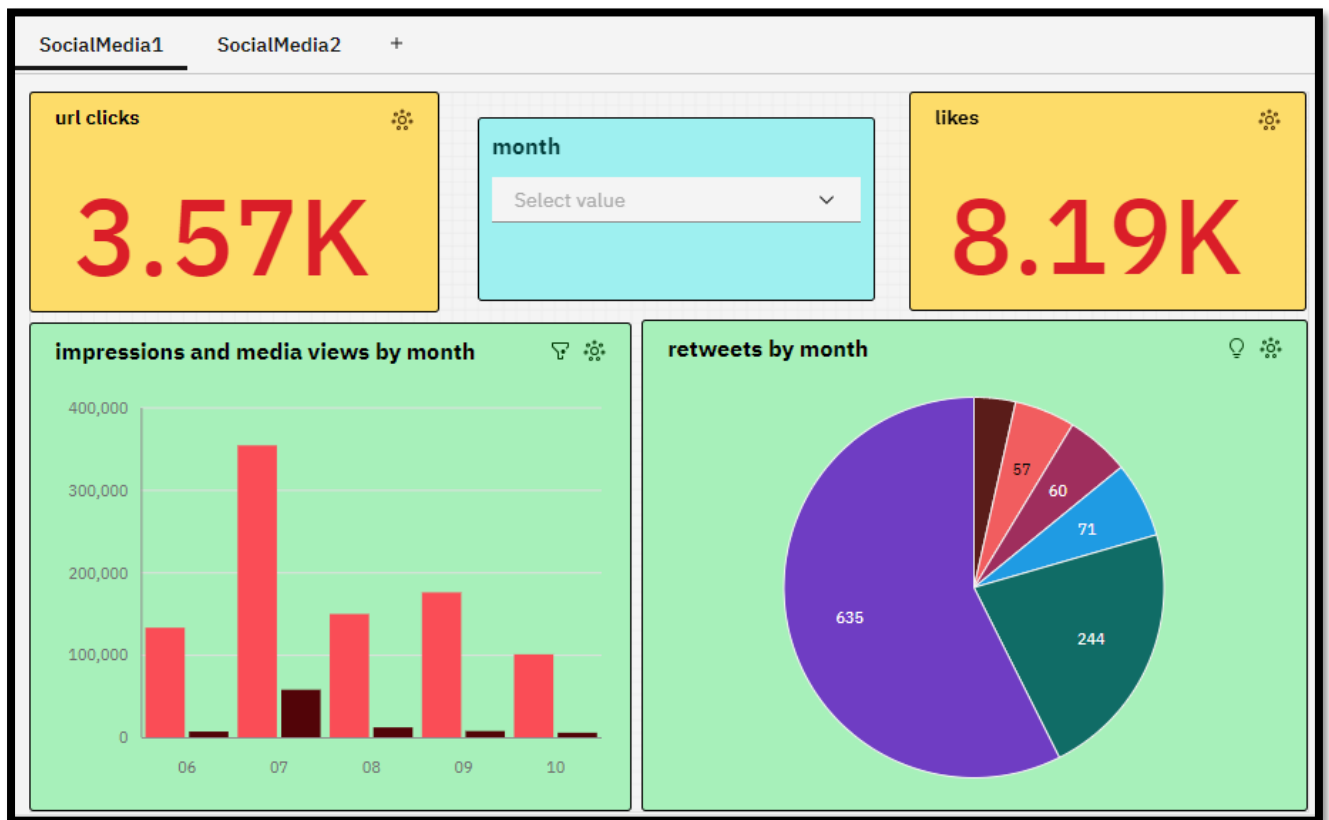
vii. hashtag clicks by likes with points for engagement rate



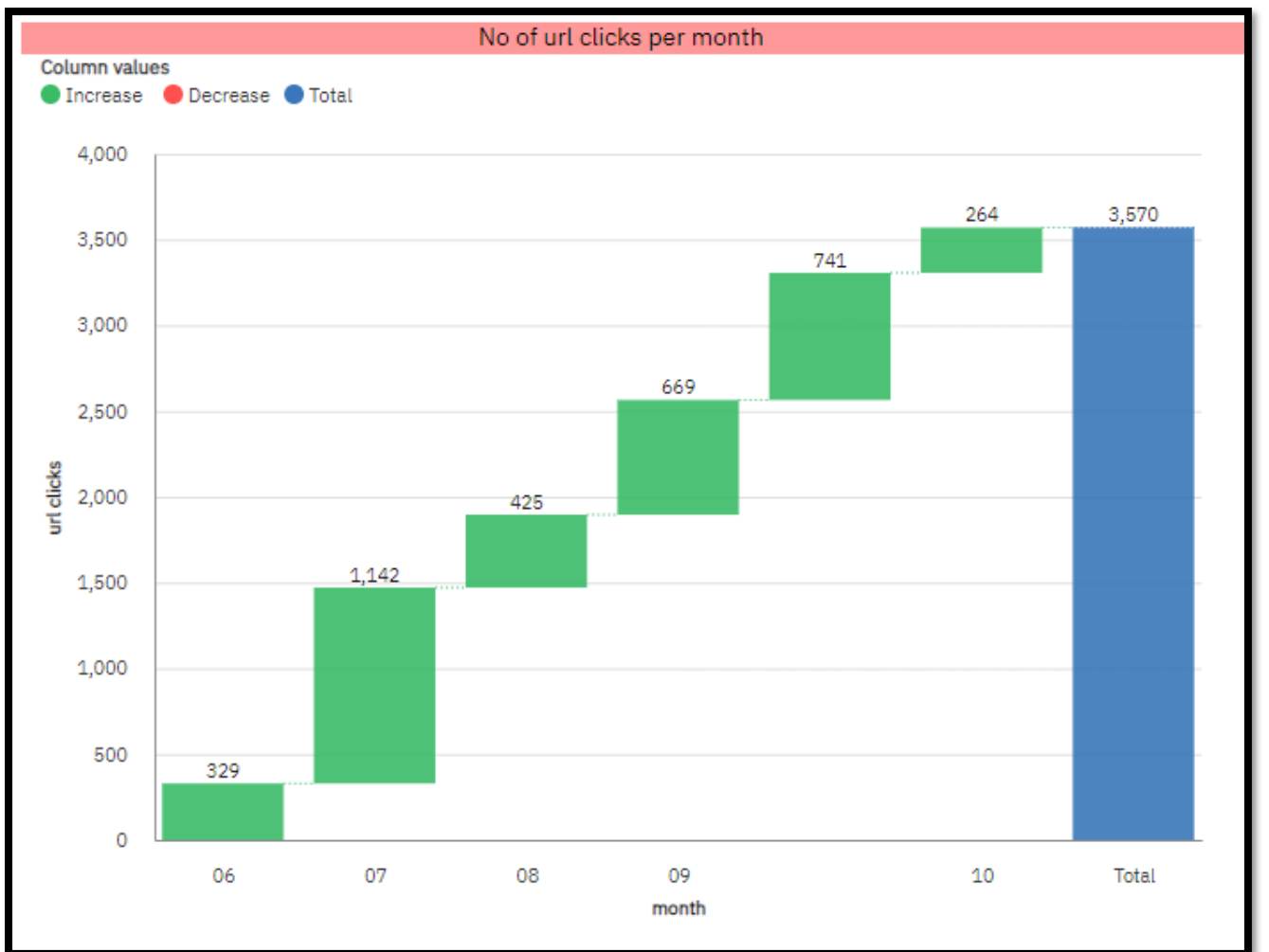
viii. hashtag clicks, url clicks, and replies by month

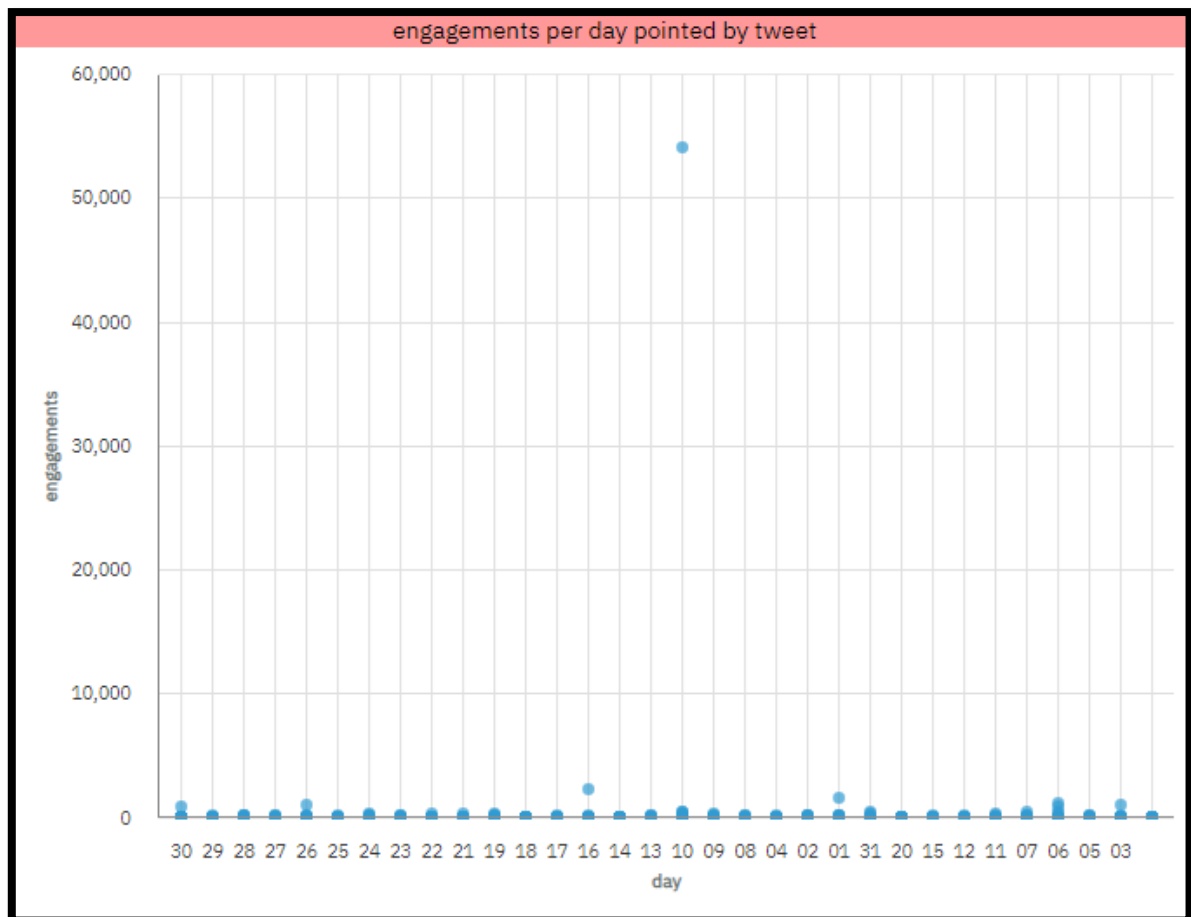


- **Dashboard:**



- **Report:**





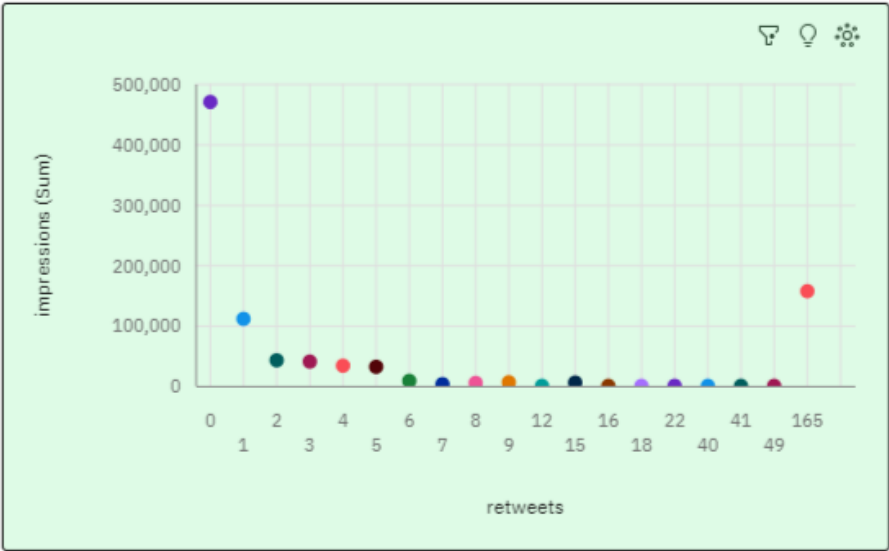
- Story:





Impressions by retweets colored by retweets

This point chart visually represents retweets and impressions. The x-axis shows the no of retweets, y-axis represents impressions, colored based on retweets.



## Average retweets

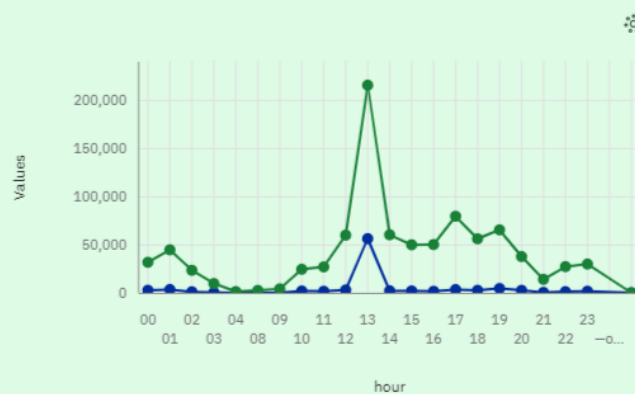
retweets



0.94

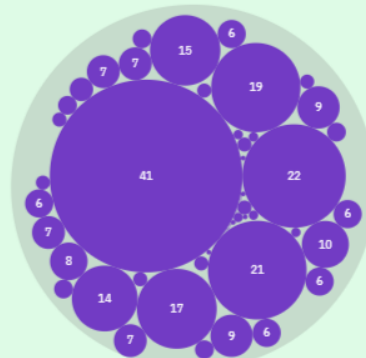
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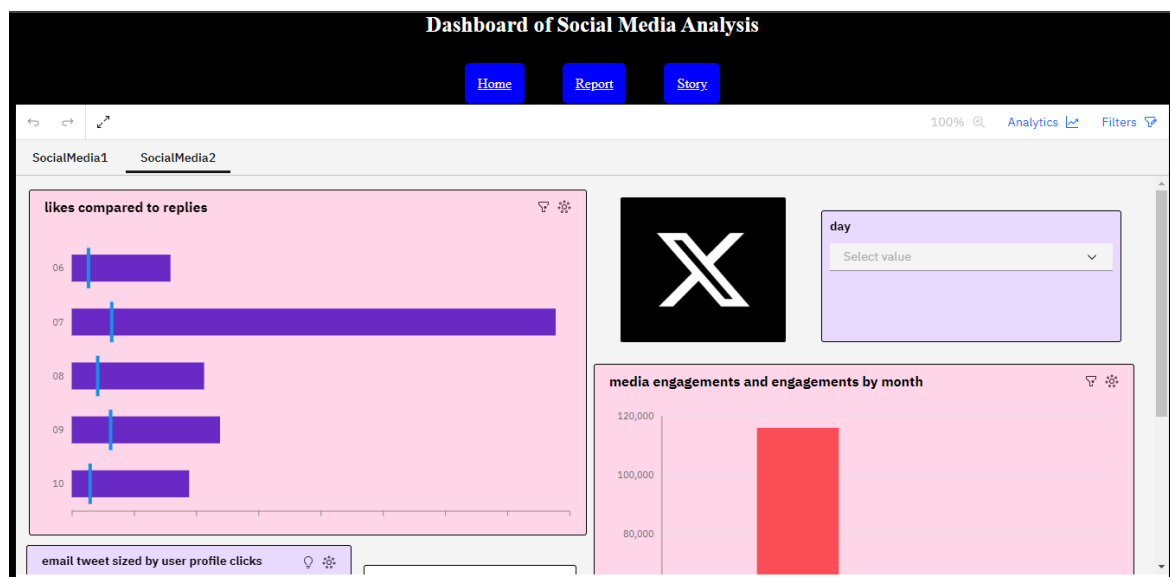
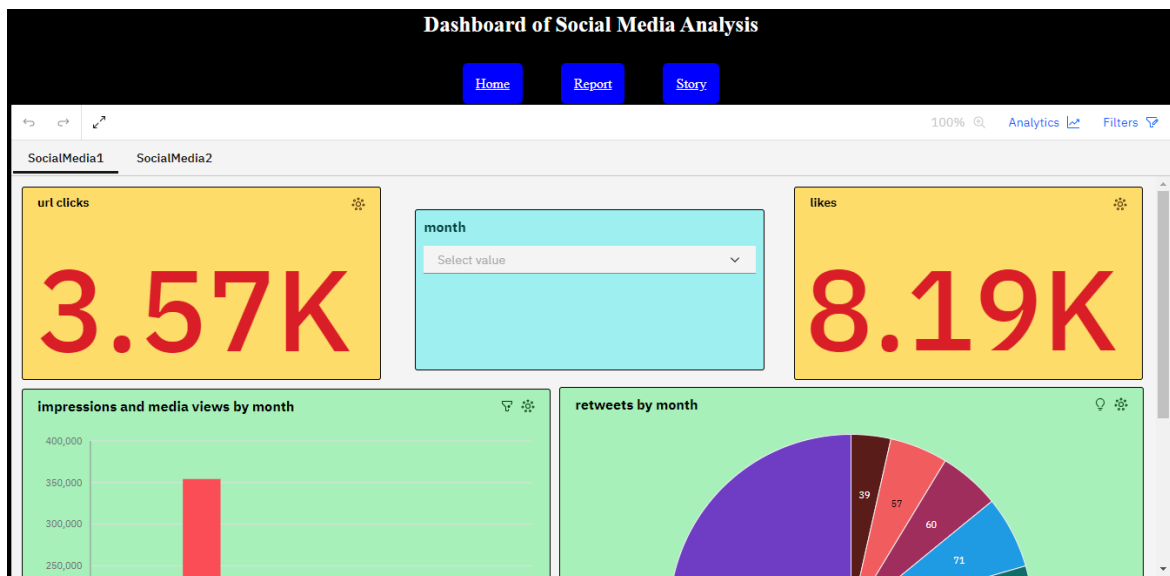
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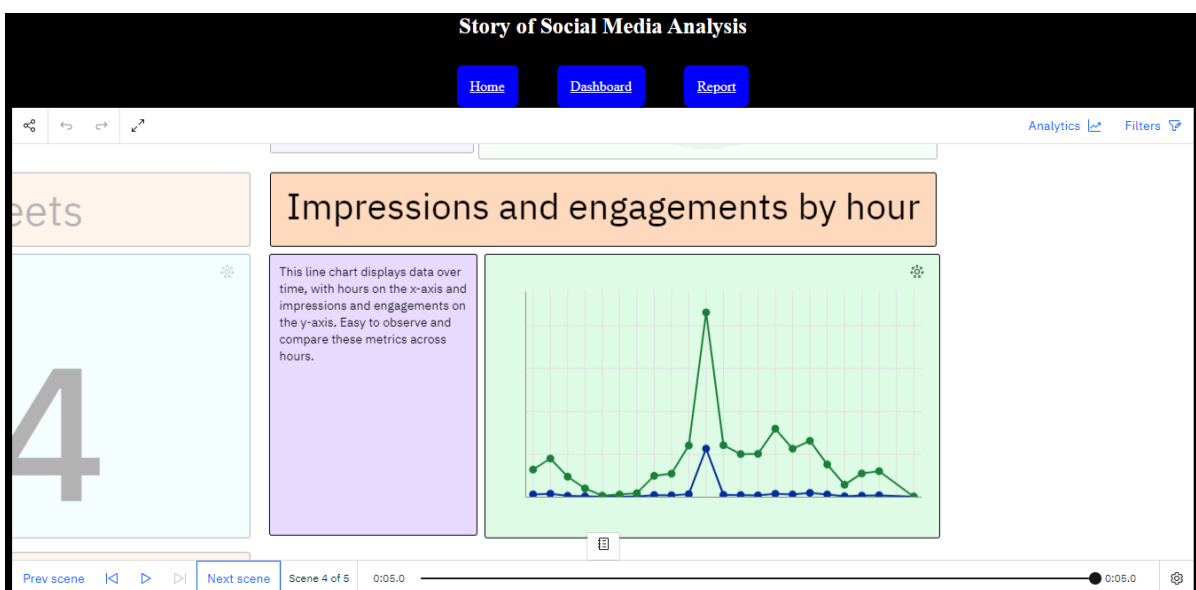
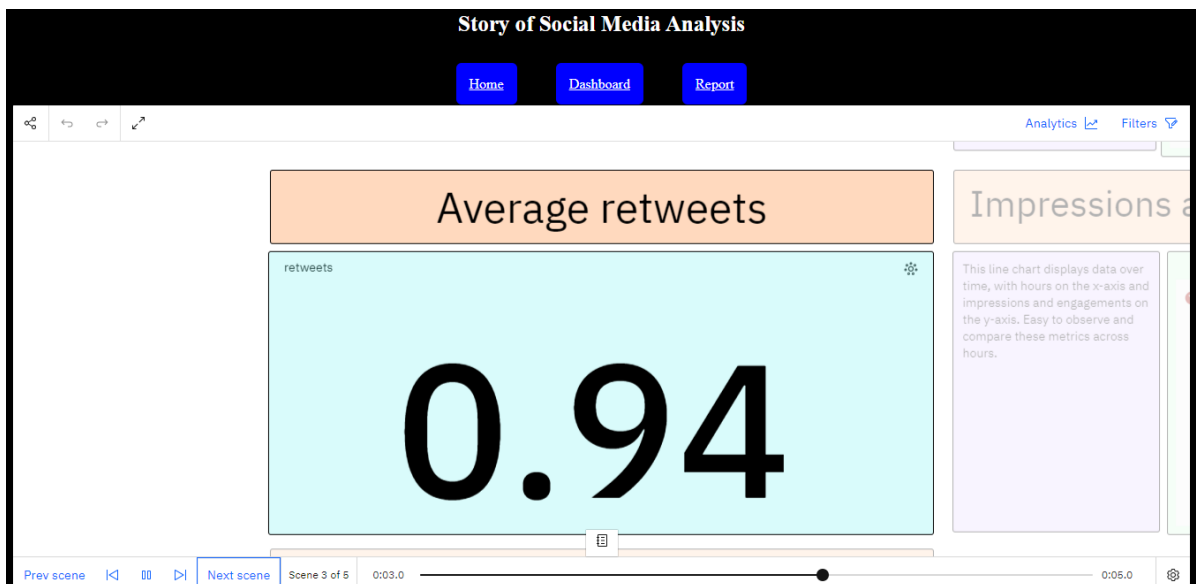
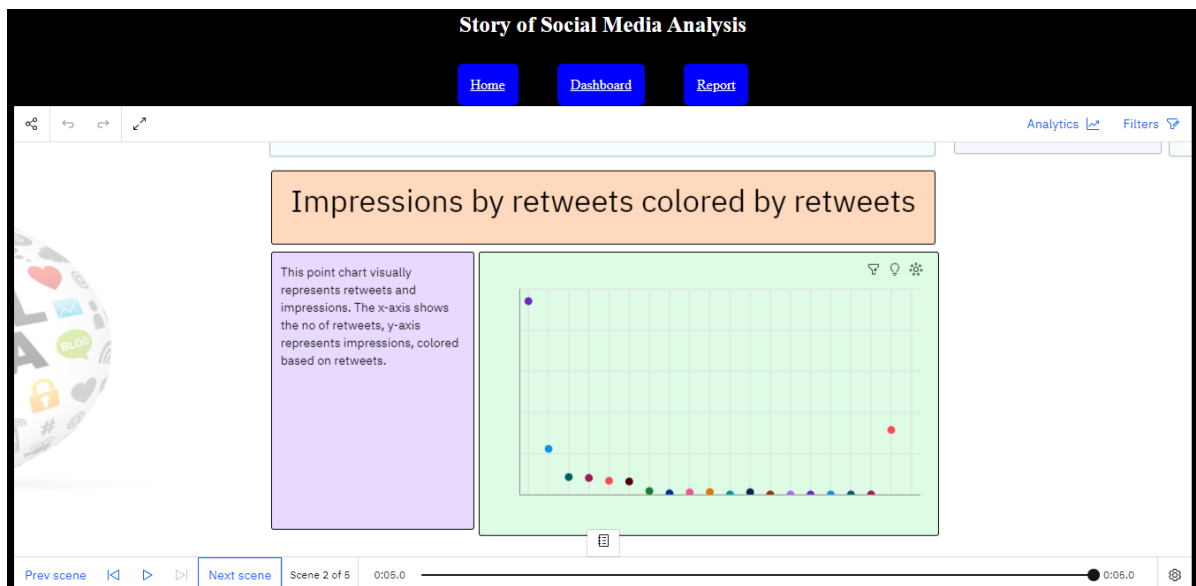


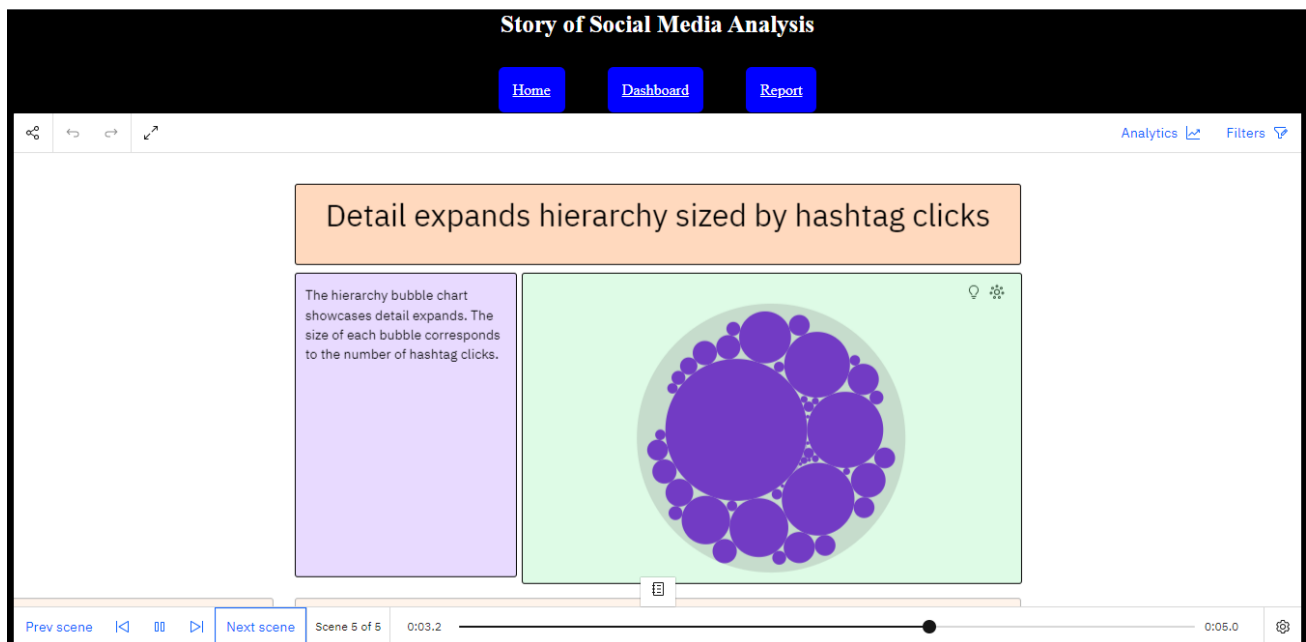


- IBM Integrated Web Results:









## 10. ADVANTAGES & DISADVANTAGES:

- **Advantages:**

- Connectivity:** Social media platforms allow people to connect with friends, family across the globe, fostering communication and maintaining relationships, especially over long distances.
- Information Sharing:** Users can easily access and share news, information, and updates on various topics, making social media a valuable source of information and awareness.
- Networking:** Social media platforms enable professionals and businesses to connect with potential clients, partners, and collaborators, expanding their networks and opportunities.
- Marketing and Promotion:** Businesses can use social media for cost-effective marketing and promotion of products and services to a global audience, targeting specific demographics with precision.
- Creativity and Expression:** Social media allows individuals to express themselves creatively through photos, videos, and posts, which can be empowering and personally fulfilling.
- Support and Communities:** People can find support groups and communities on social media where they can discuss and connect over shared interests, hobbies, or challenges.
- Awareness and Activism:** Social media has played a significant role in raising awareness about social issues, fostering activism, and driving positive social change.

viii. **Learning and Education:** Many educational institutions and experts use social media as a platform to share educational content, making learning more accessible.

- **Disadvantages:**

- i. **Privacy Concerns:** Social media platforms often require users to share personal information, raising concerns about privacy, data security, and the potential for identity theft.
- ii. **Addiction:** Excessive use of social media can lead to addiction and negatively impact mental health, productivity, and real-world relationships.
- iii. **Cyberbullying:** Social media can be a platform for cyberbullying, harassment, and the spread of hate speech, which can harm individuals and communities.
- iv. **Misinformation:** False or misleading information can spread rapidly on social media, contributing to the dissemination of fake news and misinformation.
- v. **Negative Mental Health Effects:** Excessive use of social media has been linked to increased feelings of anxiety, depression, and loneliness, particularly among young people.
- vi. **Time Wasting:** Many users find themselves spending excessive amounts of time on social media, which can be unproductive and interfere with real-life activities.
- vii. **Comparison and Insecurity:** Seeing carefully curated and idealized versions of others' lives on social media can lead to feelings of inadequacy, low self-esteem, and social comparison.

## 11. CONCLUSION:

In wrapping up our project, we've gained valuable insights into the world of social media. We've learned about its history, how people use it, and its impact on our lives. By understanding these aspects, we're better equipped to make informed choices, use social media more wisely, and promote a safer and more beneficial online environment for everyone.

## 12. FUTURE SCOPE:

Looking ahead, we can continue to explore the digital world of social media. This means keeping up with new developments, studying how social media affects our lives and society, and finding ways to use it better. As technology advances, we'll also investigate how social media interacts with exciting new technologies. Our goal is to keep providing useful insights for making smart choices in the ever-changing digital.

## 13. APPENDIX:

### 13.1 Source Code:

```
14  <!DOCTYPE html>
15  <html>
16  <head>
17      <title>Social Media Analysis</title>
18      <style>
19          h1 {
20              text-align: center;
21              font-size: 40px;
22              color: white;
23              font-weight: bold;
24          }
25          .head-background-container{
26              background-image: url("https://img.freepik.com/free-vector/social-
media-icons-background_23-
2147511281.jpg?size=626&ext=jpg&ga=GA1.2.953688091.1686812285&semt=ais");
27              height: 100vh;
28              background-size: cover;
29          }
30          .card{
31              background-color: #00000080;
32              border-color: #0934f7;
33              border-style: solid;
34              border-width: 10px;
35              padding: 25px;
36          }
37          .card2{
38              background-color: #00000080;
39              border-color: #0934f7;
40              border-style: solid;
41              border-width: 10px;
42              padding: 25px;
43              margin: 25px;
```

```

44         text-align: center;
45         margin-top: 200px;
46     }
47     .link{
48         background-color: blue;
49         border-radius: 6px;
50         border-width: 0px;
51         color: white;
52         padding: 15px;
53         margin: 20px;
54     }
55     p{
56         text-align: center;
57         color: white;
58         font-size: 25px;
59         padding: 5px;
60         font-weight: bold;
61     }
62     .container-card{
63         text-align: center;
64         padding: 15px;
65     }
66 </style>
67 </head>
68 <body style="background-color: black">
69     <div id="homepage" class="head-background-container d-flex flex-row
justify-content-center">
70         <div class="card">
71             <h1>Social Media Analysis</h1>
72         </div>
73         <div class="card2">
74             <a href="#dashboard-container" class="link">Dashboard</a>
75             <a href="#report-container" class="link">Report</a>
76             <a href="#story-container" class="link">Story</a>
77         </div>
78     </div>
79     <div id="dashboard-container">
80         <div class="dashboard">
81             <p>Dashboard of Social Media Analysis</p>
82             <div class="container-card">
83                 <a href="#homepage" class="link">Home</a>
84                 <a href="#report-container" class="link">Report</a>
85                 <a href="#story-container" class="link">Story</a>
86             </div>
87             <iframe
src="https://us1.ca.analytics.ibm.com/bi/?perspective=dashboard&pathRef=.public_folders%2FPJT%2FSocial%2BMedia%2Bdashboard&closeWindowOnLastView=true&ui_appbar=false&ui_navbar=false&shareMode=embedded&action=view&

```

```

    amp;mode=dashboard&subView=model0000018b9937943d_00000000" width="100%"
    height="550" frameborder="0" gesture="media" allow="encrypted-media"
    allowfullscreen=""></iframe>
88     </div>
89 </div>
90
91 <div id="report-container">
92     <div class="report">
93         <p>Report of Social Media Analysis</p>
94         <div class="container-card">
95             <a href="#homepage" class="link">Home</a>
96             <a href="#dashboard-container" class="link">Dashboard</a>
97             <a href="#story-container" class="link">Story</a>
98         </div>
99         <iframe
src="https://us1.ca.analytics.ibm.com/bi/?pathRef=.public_folders%2FPJT%2FSocial%2BMedia%2Breport&closeWindowOnLastView=true&ui_appbar=false&ui_navbar=false&shareMode=embedded&action=run&format=HTML&prompt=false" width="100%" height="550" frameborder="0" gesture="media" allow="encrypted-media" allowfullscreen=""></iframe>
100     </div>
101 </div>
102
103 <div id="story-container">
104     <div class="story">
105         <p>Story of Social Media Analysis</p>
106         <div class="container-card">
107             <a href="#homepage" class="link">Home</a>
108             <a href="#dashboard-container" class="link">Dashboard</a>
109             <a href="#report-container" class="link">Report</a>
110         </div>
111         <iframe
src="https://us1.ca.analytics.ibm.com/bi/?perspective=story&pathRef=.public_folders%2FPJT%2FSocial%2BMedia%2Bstory&closeWindowOnLastView=true&ui_appbar=false&ui_navbar=false&shareMode=embedded&action=view&sceneId=-1&sceneTime=0" width="100%" height="550" frameborder="0"
gesture="media" allow="encrypted-media" allowfullscreen=""></iframe>
112     </div>
113 </div>
114
115 </body>
116 </html>

```



## 13.2 Git Hub and Project Demo Links:

- **Visualizations:**

[https://drive.google.com/file/d/1T7aIa-19P6RBbgX932WB687TPKz\\_n-dA/view?usp=sharing](https://drive.google.com/file/d/1T7aIa-19P6RBbgX932WB687TPKz_n-dA/view?usp=sharing)

<https://drive.google.com/file/d/1Tvtal5eD5e0wZpGWe3nnvV6SqkvLbr6J/view?usp=sharing>

- **Dashboard:**

[https://drive.google.com/file/d/1p84PLi3\\_ukVHOgv9k2lmmSHO0AfU5sRM/view?usp=sharing](https://drive.google.com/file/d/1p84PLi3_ukVHOgv9k2lmmSHO0AfU5sRM/view?usp=sharing)

- **Report:**

<https://drive.google.com/file/d/15nXufAfFXQGo3i7Gyd97FvkPkwlbJYde/view?usp=sharing>

- **Story:**

<https://drive.google.com/file/d/16DhFdB6DRQSL5t5YErXzoyx1kKglgVh/view?usp=sharing>

- **Web Integration:**

<https://drive.google.com/file/d/1UqyPzuKr0Ut4uMy76ekTzA0A9xxgVASK/view?usp=sharing>

- **GitHub:**

<https://github.com/smartinternz02/SI-GuidedProject-587224-1697545705>