DISSECTING THE DIGITAL LANDSCAPE: A COMPREHENSIVE ANALYSIS OF SOCIAL MEDIA

IBM–DOCUMENTATION

UNDER THE GUIDANCE OF

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1. INTRODUCTION

1.1 PROJECT OVERVIEW

Social media is a vast platform that contains an enormous amount of information, making it an excellent source for data analytics. By analyzing social media data, businesses can gain insights into consumer behavior, preferences, sentiments, and trends, which can aid in making informed decisions related to marketing and advertising strategies.

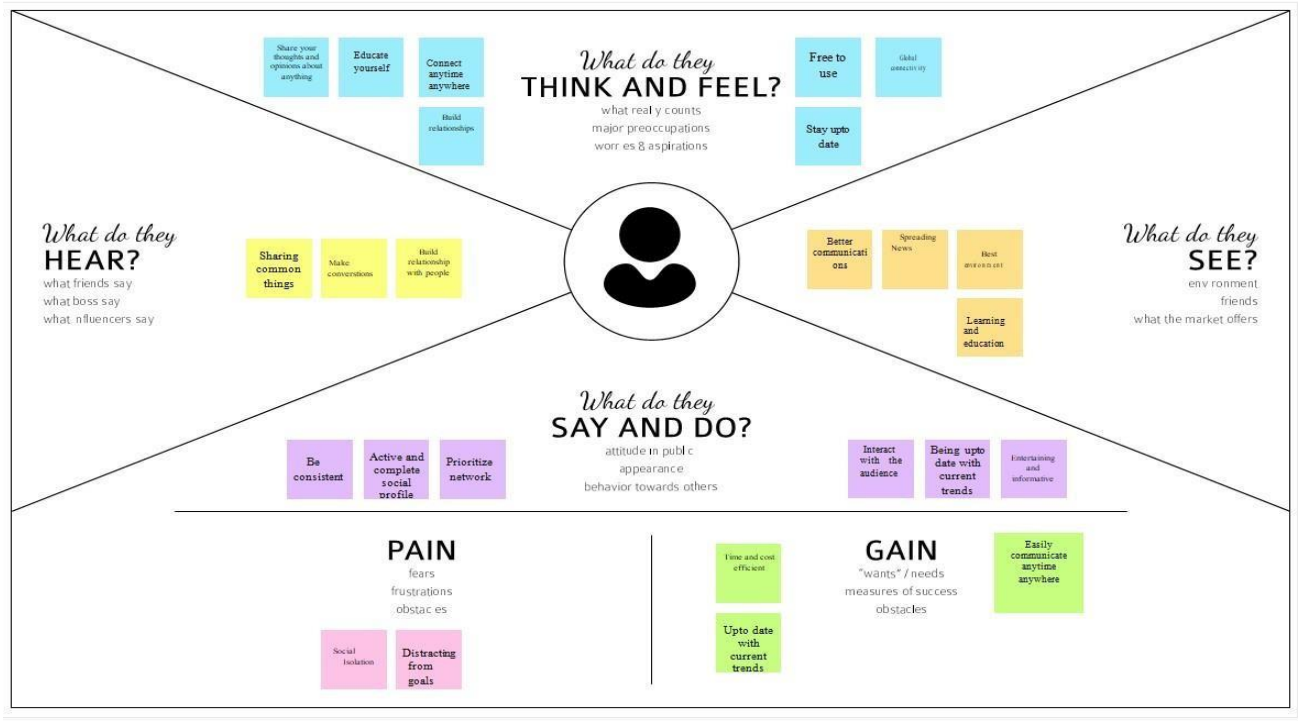
1.2 PURPOSE

The purpose is to accurately predict using the given dataset, we plan to create various graphs and charts to highlight the insights and visualizations.

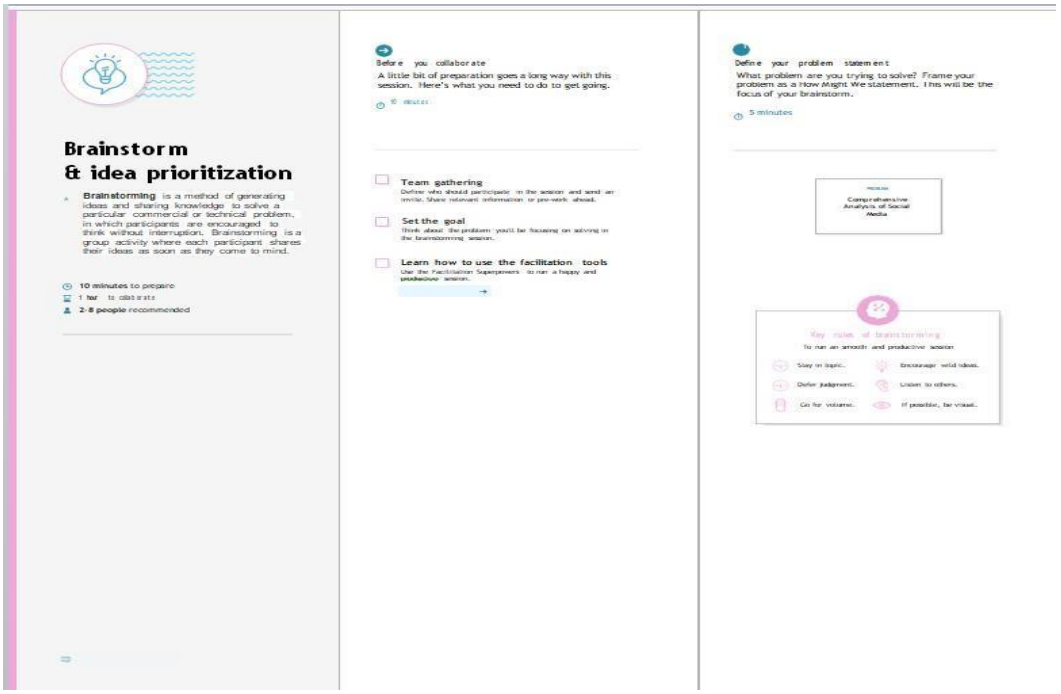
a) Length of stay in twitter for each User.
b) Stay by user social media status.
c) View the details of users visiting hours.
d) Status of Twitter users.
e) Tweets by Pie Chart.
f) Dashboard Creation.
g) Media wise no. of Views by Waterfall Chart.

2. IDEATION & PROPOSED SOLUTION

2.1 EMPATHY MAP CANVAS



2.2 IDEATION & BRAINSTORMING



Brainstorm

Write down any ideas that come to mind that address your problem statement.

10 minutes

Person 1

Choosing Relevant Social Network

Data source for audience

Enhancing content strategy

Avoiding mistakes made by competitor s

Person 2

Data analytics tool for social media

Easy access to many platform

Supports business decisions

Click through rates

Person 3

Conversion Rates

Impression per invite

Engagem ent Rates

Support business

Person 4

Provides clear insights

Supports critical business decisions

Identify Trends

Enhanced content strategy

Group ideas

Take turns sharing your ideas while clustering similar or related notes as you go. In the last 10 minutes, give each cluster a sentence-like label. If a cluster is bigger than six sticky notes, try and see if you and break it up into smaller sub-groups.

20 minutes

EASY ACCESS TO MANY RESOURCES

IMPROVED SOCIAL MEDIA STRATEGY

KNOWLEDGE ABOUT SOCIAL MEDIA

PREFEERED SOCIAL MEDIA CHANNELS

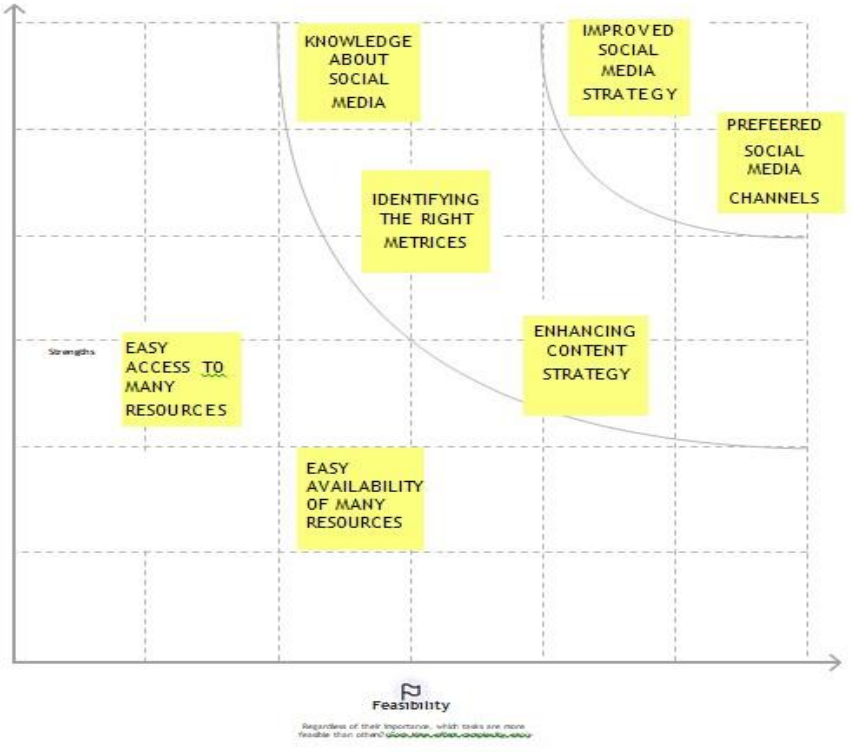
IDENTIFYING THE RIGHT METRICES

ENHANCING CONTENT STRATEGY

Prioritize

Your team should all be on the same page about what's important moving forward. Place your ideas on this grid to determine which ideas are important and which are feasible.

20 minutes



2.3 PROPOSED SOLUTION

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	Social media analysis involves the collection and analysis of data from various social media platforms, such as Twitter, Facebook, Instagram, and LinkedIn. The main goal of social media analysis is to examine user behaviour, sentiment, trends, and opinions in order to better understand how people are using and engaging with these platforms. With the vast amounts of data available on social media, several problems and challenges arise that need to be solved
2.	Idea / Solution description	The solution for social media data analysis typically involves the following steps: 1. Data Collection: The first step is to gather datain sights and information. The data collected from these platforms can include user demographics, engagement metrics, sentiment analysis, and other relevant data points. The solution for social media data analysis involves the use of various tools and techniques to extract meaningful insights from social media data. Some commonly used tools and techniques include data mining, sentiment analysis, topic modeling, and network analysis. The social media data analysis solution can provide businesses with valuable insights that can be used for decision-making, campaign optimization, and customer engagement. By understanding their target audience, businesses can create more effective social media engagement strategies and improve their overall marketing efforts. In conclusion, social media data analysis is a powerful solution that can help businesses stay competitive in today's digital landscape. With the help of data mining, sentiment analysis, topic modeling, and network analysis, businesses can optimize their social media strategies and improve their customer engagement.
3.	Novelty / Uniqueness	Social media analysis is unique because it allows businesses and organizations to track the conversations and activities of their target audience in real-time. It also allows them to tracking trends and patterns over time, providing valuable insights into audience

		behaviour and preferences. Social media analysis can also provide businesses with the opportunity to engage with their audience directly and tailor their marketing campaigns accordingly. Additionally, social media analysis can be used to monitor brand monitor their competitors, industry trends, and brand reputation. Some other unique aspects of social media analysis include: 1. Large and diverse datasets: Social media platforms generate massive amounts of user-generated data from various sources, making it possible to analyse trends, patterns, and sentiments. 2. Multimodal data: Social media data is not just limited to text; it also includes visual and audio content, making it possible to gain insights from diverse forms of data. 3. Instant feedback: Analysis of social media data provides instant feedback on campaigns and brand perception, enabling organizations to quickly respond to crises and adjust their strategies accordingly. 4. Combination of quantitative and qualitative data: Social media analysis allows for both quantitative (numbers-based) and qualitative (text-based) data analysis, providing a more complete understanding of consumer behaviour. 5. Accessibility: Social media platforms are accessible to a diverse range of users worldwide, making it possible to study a wide range of audiences and market segments. Overall, the uniqueness of social media analysis lies in its ability to provide real-time, diverse, and deep insights into consumer behaviour, brand perception, and market trends.
4.	Social Impact / Customer Satisfaction	Social media analysis can provide valuable insights into customer satisfaction levels. By monitoring customer comments, reviews, and feedback on social media platforms, businesses can gauge overall customer satisfaction levels and identify areas for improvement. Here are some ways social media analysis can help improve customer satisfaction: 1. Monitor and respond to customer feedback: By monitoring customer feedback on social media, businesses can respond quickly to negative comments, resolve issues, sentiment

		towards their brand, products, and services. This can help them to identify areas where they may need to improve or make changes in order to better meet the needs and expectations of their customers. Social media analysis can also help businesses to understand the reasons behind customer satisfaction or dissatisfaction. By analysing the language and tone used in customer comments, businesses can gain insights into what specific aspects of their products or services are most appreciated or disliked. This can help them to make targeted improvements that address these issues and enhance customer satisfaction. Moreover, social media analysis can help businesses to quickly identify and respond to customer issues or complaints. By monitoring social media platforms in real-time, businesses can quickly address customer concerns and resolve any issues before they escalate. This can help to not only improve customer satisfaction levels but also build trust and loyalty among customers. In addition, social media analysis can also provide businesses with valuable competitive insights. By monitoring what customers are saying about competitors on social media, businesses can gain insights into what their competitors are doing well or not so well. This information can help businesses to identify opportunities to differentiate themselves and improve their own products and services. Overall, social media analysis is a powerful tool for businesses to measure and improve customer satisfaction levels. By monitoring customer sentiment on social media platforms, businesses can gain valuable insights into what they are doing well and where they need to improve. This can lead to increased customer satisfaction, loyalty, and ultimately, business success.
5.	Business Model (Revenue Model)	When analysing business models in social media, there are several key factors to consider: 1. Revenue model: How does the social media company generate revenue? Some common revenue models in social media include advertising, premium user subscriptions, and transactional fees. Advertising is the most popular revenue model, where companies allow businesses to pay to display ads to users on their social media platform. Premium user subscriptions allow users to There are several

		common revenue models for social media companies including: - Advertising: Many social media platforms generate revenue by displaying ads to their users. These ads can be targeted to specific audiences based on user data and behaviour. - Premium subscriptions: Some social media platforms offer premium (paid) subscriptions that give users access to additional features and content. - Transaction fees: Social media platforms that facilitate transactions between users, such as online marketplaces, may charge a fee for each transaction. - Data licensing: Social media companies can generate revenue by licensing user data to third-party companies or researchers. 2. User acquisition and retention: How does the social media company acquire and retain users? - User acquisition: Social media companies may use various marketing tactics to attract new users, such as advertising, partnerships, and influencer marketing. - User retention: Retaining users is critical for social media companies, as they rely on user engagement to generate revenue. Companies may use tactics such as personalized recommendations, gamification, and social features to keep users engaged and coming back to the platform. 3. Monetization strategy: How does the social media company seek to monetize its user base? - Social media companies may seek to monetize their user base through various means, such as advertising revenue, transactions, or data licensing. It's important for the company to have a clear strategy for monetizing its users while also maintaining their trust and privacy. 4. Competition and differentiation: How does the social media company distinguish itself from competitors? - Social media is a highly competitive market, and companies need to differentiate themselves to attract and retain users. This can be achieved through unique features, content, or user experience. It's important for the company to understand its target audience and what they want from a social media platform. Overall, when analysing business models in social media, it's important to consider how the company generates revenue, acquires and retains users, monetizes its user base, and

		differentiates itself from competitors.
6.	Scalability of the Solution	The scalability of social media data analysis refers to the ability of a system or platform to handle a large volume of data points in a timely and efficient manner Scalability is a critical aspect of social media data analysis since social media generates massive amounts of data every second. This data comes in various formats, including text, images, and videos, making it complex to process and analyse. Scalability ensures that. With the growing amount of data being generated on social media platforms every second, scalability is crucial for social media data analysis tools to be effective. A scalable platform should be capable of processing vast amounts of data quickly, without sacrificing accuracy or reliability. However, achieving scalability in social media data analysis can be challenging due to the sheer volume and diversity of data generated on social media platforms. It requires robust computing infrastructure, efficient algorithms, and advanced data processing techniques that can handle huge data sets in real-time. In summary, scalability is a critical factor for social media data analysis as it determines the ability to handle large volumes of data and provide actionable insights for businesses.

2.4 PROBLEM STATEMENT

Social media platforms are a powerful tool for businesses to connect with their customers, build brand awareness, and drive sales. However, with the vast amount of data generated on social media each day, it is becoming increasingly difficult for businesses to analyze and interpret this data to make informed decisions.

Additionally with the rise of fake news, trolling, and hate speech, it is crucial for businesses to accurately distinguish between data generated by social media activities, it can be challenging to analyze and extract meaningful insights. That can inform effective marketing strategies.

PROBLEM SOLUTION FIT

1. CUSTOMER SEGMENT

Who is your customer?

A people who was using Social Media.

2. JOBS-TO-BE-DONE/PROBLEMS

Which jobs-to-be-done (or problems) do you address for your customers?

Open to all, Users can view their status and tweet content.

3. TRIGGERS

What triggers customers to act?

Tracking of their daily data

usages.

4. EMOTIONS: BEFORE / AFTER

How do customers feel when they face a problem or a job and afterwards?

- Before : Users doesn't have any ideas about how to know their daily social media usages.
- After : Users have a clear understanding of Social media usages.

5. AVAILABLE SOLUTIONS

Which solutions are available to the customers when they face the problem or need to get the job done?

Visualizing the twitter data on a daily basis and create solutions based on usage and statistics.

6. CUSTOMER CONSTRAINTS

What constraints prevent your customers from taking action or limit their choices of solutions?

Spending time in social media account without knowing when they started to use.

7. BEHAVIOUR

What does your customer do to address the problem and get the job done?

Updating them that, Users social media daily basis and visualize their usages.

8.CHANNELS OF BEHAVIOUR

8.1 ONLINE

What kind of actions do customers take online? Extract online channels from #7

Instead of using social media in online without knowing when they started to use this analytics provides clear understanding of daily social media usages.

8.2 OFFLINE

What kind of actions do customers take offline? Extract offline channels from #7 and use them for customer development.

In Spite of not using the social media in offline the user can save their daily data usages to make them usable even in offline mode.

9. PROBLEM ROOT CAUSE

What is the real reason that this problem exists? What is the back story behind the need to do this job?

Not having clear view or understanding about the data in social media.

Reason:

Users may distract themselves in social media account so taking a clear view in the analytics and statistics of social media account can be of help to the social media users.

10. YOUR SOLUTION

A clear view and understanding of data in social media is needed for every customers.

3. REQUIREMENT ANALYSIS

3.1 FUNCTIONAL REQUIREMENTS

Following are the Functional Requirements of the proposed solution.

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	User Registration	Registration through application
FR-2	User Confirmation	Confirmation via Email Confirmation via Message
FR-3	Data Cleaning	We clean the data because there are many potential for data to be duplicated or incorrectly labelled when merging multiple data sources
FR-4	Reliability	Users may utilize this platform in an effective, efficient, and reliable manner since it is consistent and reliable for them.
FR-5	Accuracy	Users may accurately predicts the social media status and risks based on the messages received.

3.2 NON-FUNCTIONAL REQUIREMENTS

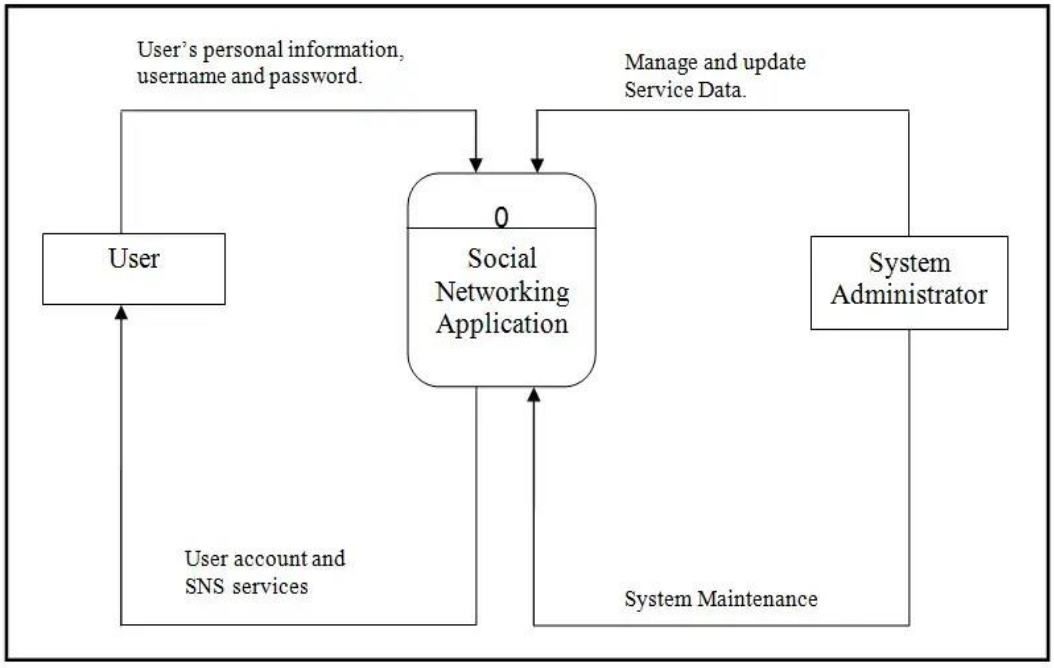
Following are the Non-Functional Requirements of the proposed solution.

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	In order to provide a clear understanding of the social media includes usability considerations and having a strong audience focus, appropriate timing and custom copywriting. It is generally used to engage with friends and family not with organizations.
NFR-2	**Security**	Only users who have the password can access the social media. High degrees of security are provided through the use of encryption techniques to secure the database.
NFR-3	**Reliability**	Users will find this platform to be more reliable than other sources and able to communicate faster, more often and with greater relevance.
NFR-4	**Performance**	The project must respond quickly to the user's actions or even if the user has to wait the waiting period must be short.
NFR-5	**Availability**	The project is independent of platforms. On practically every platform, it functions flawlessly.
NFR-6	**Scalability**	The project enables concurrent usage of the data by several people. Because adding features and improving the social media is simple, it is very scalable.

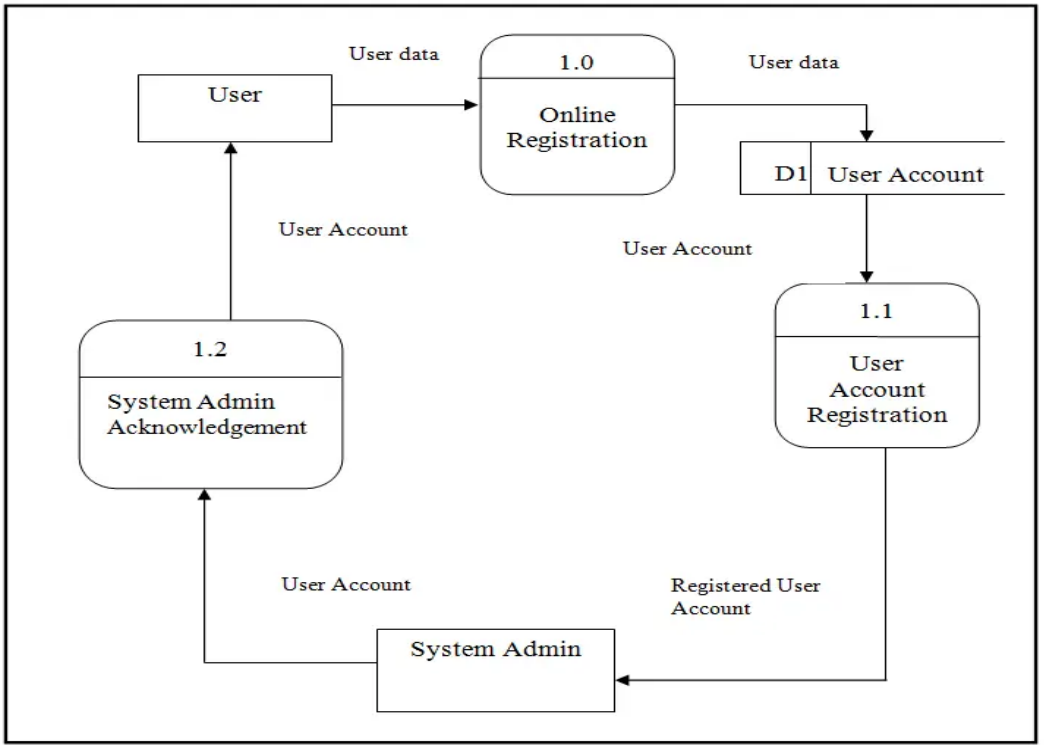
4. PROJECT DESIGN

4.1 DATA FLOW DIAGRAMS

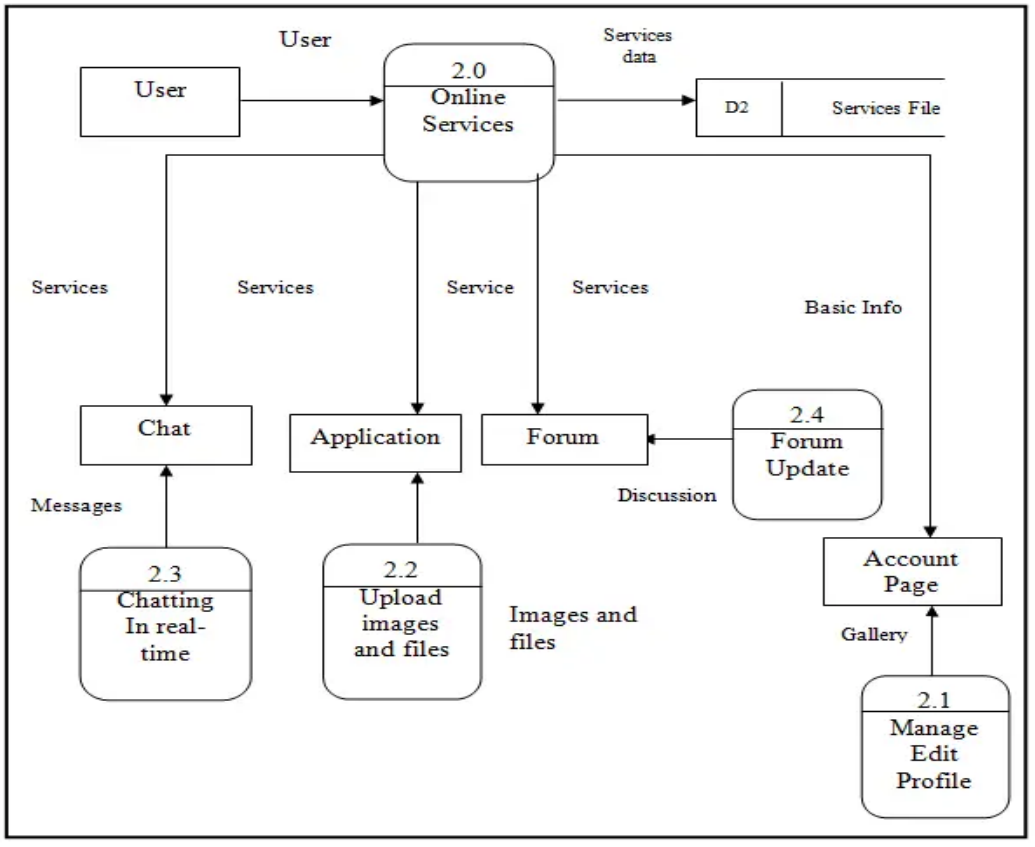
A Data Flow Diagram (DFD) is a traditional visual representation of the information flows within a system. A neat and clear DFD can depict the right amount of the system requirement graphically. It shows how data enters and leaves the system, what changes the information, andwhere data is stored.



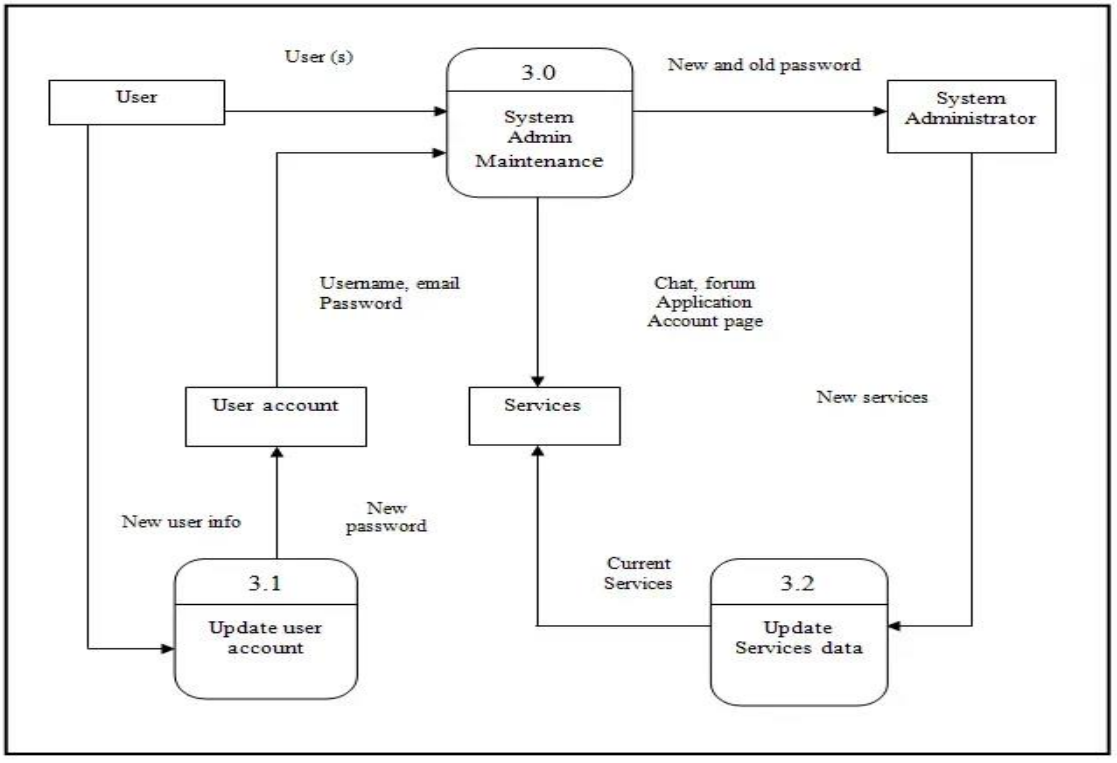
DFD LEVEL 0 (Social Media Analysis)



DFD LEVEL 1 (Social Media Analysis)

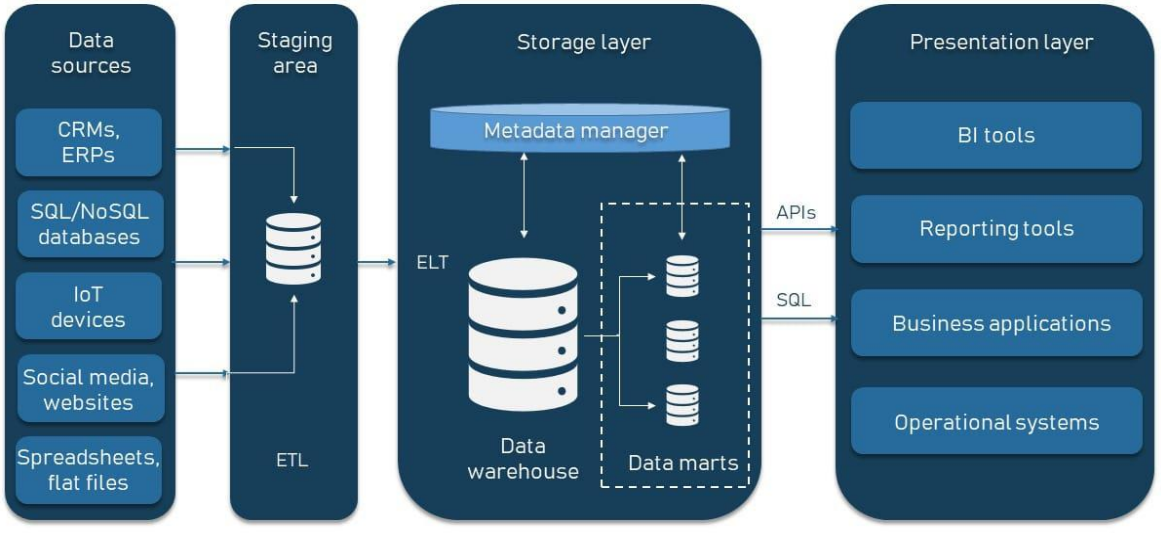


DFD LEVEL 2 (Social Media Analysis)

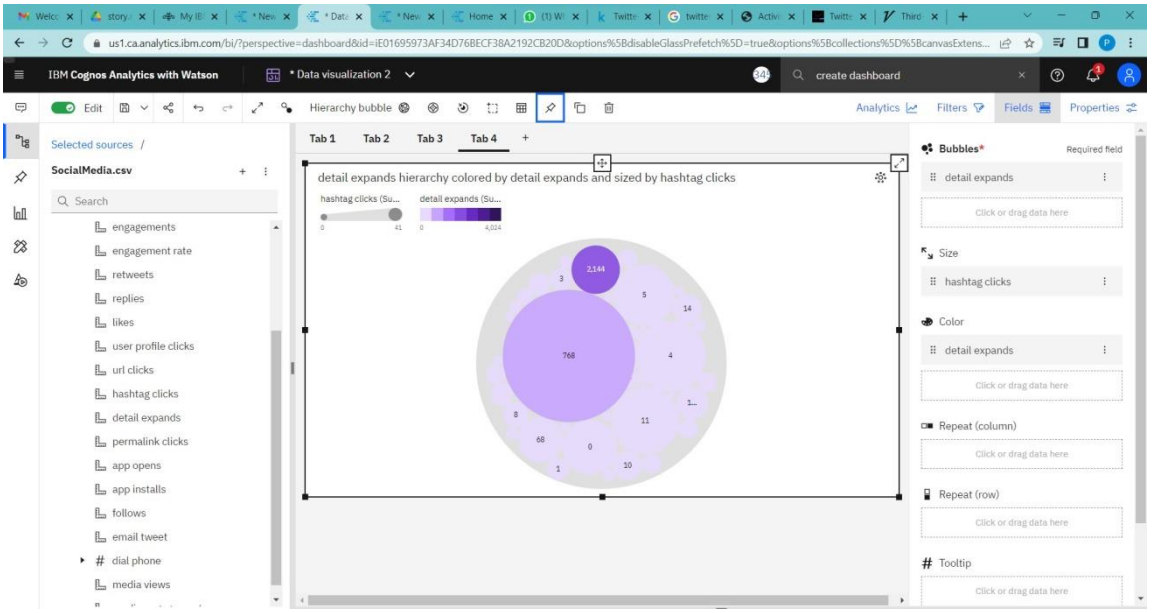


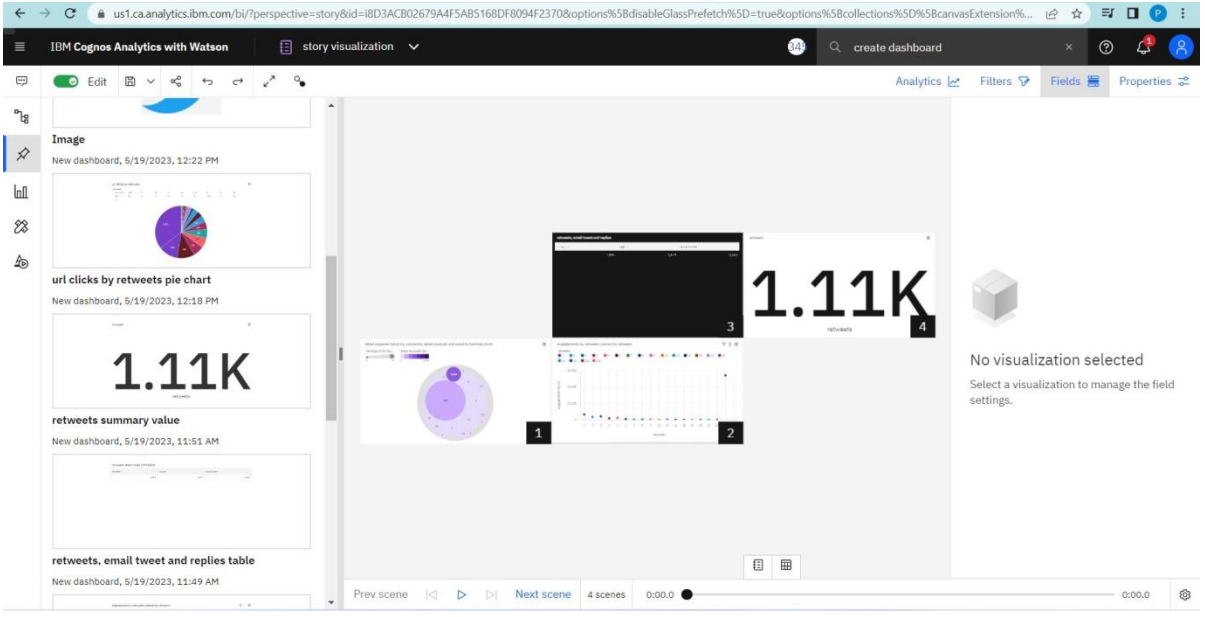
DFD LEVEL 3 (Social Media Analysis)

4.2 SOLUTION & TECHNICAL ARCHITECTURE



4.3 USER STORIES





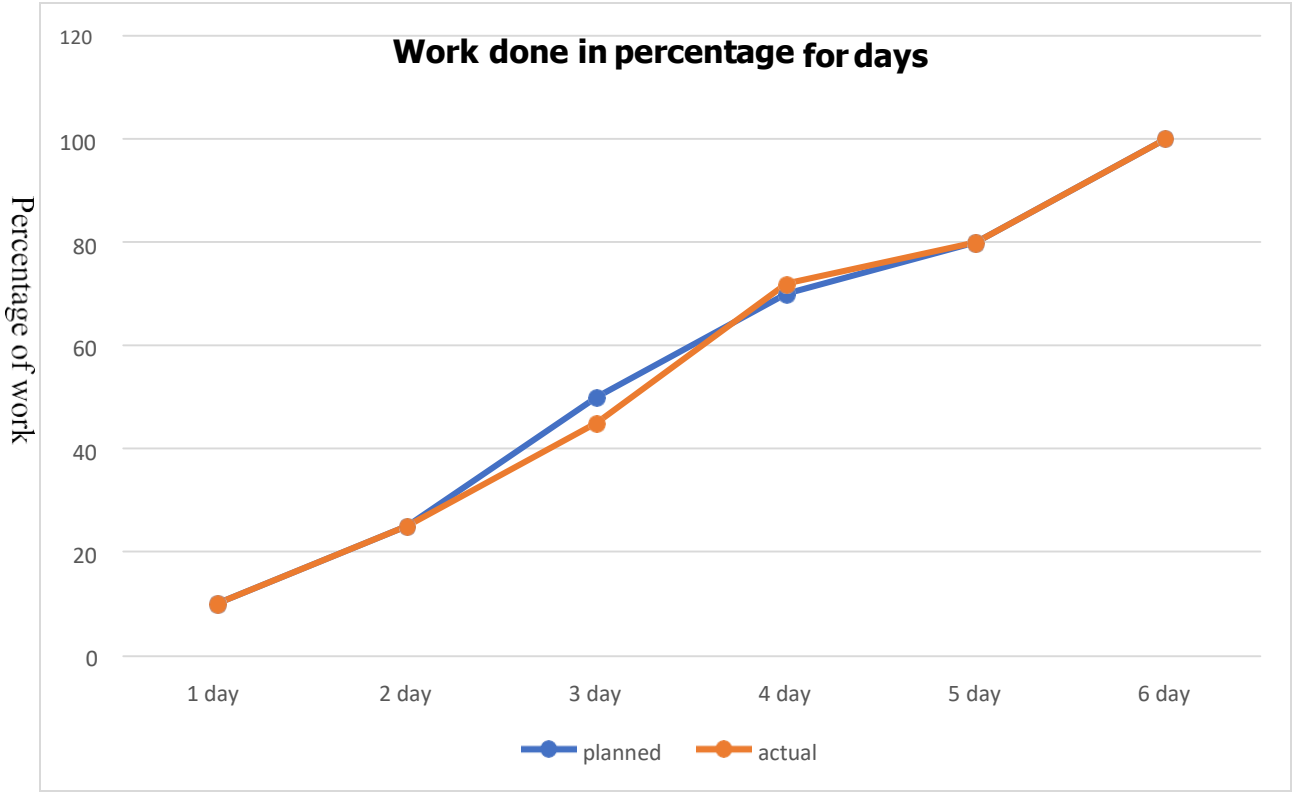
User Stories:

A User story is an informal, general explanation of a software feature writer from the perspective of the end user or customer. The purpose of a user story is to articulate how a piece of work will deliver a particular value back to the customer.

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance criteria	Priority	Team Members
Administrator (Admin)	Login		As a admin, I can add users details.	I can provide username and password for the users.	High	Pavithra.k
User	Login	USN-1	As a user, I can login into the application using username and password.	I can access Dashboard and user account.	High	Pavithra.k
	Dashboard	USN-2	As a user, I receive notifications during the time of the event.	I can view the event without missing any events.	Medium	Pavithra.k
	Dashboard	USN-3	As a user, I have to share important details and stories with friends and family.	My friends and family can discover and comment on these stories.	Medium	Sarulatha.s
	Dashboard	USN-4	As a user, I can protect my data.	I can detect spam messages.	High	Sarulatha.s

Burn down Chart:

A burn down chart is a graphical representation of work left to do versus time. It is often used in agile_software development methodologies such as Scrum. However, burn down charts can be applied to any project containing measurable progress over time.



5.TESTING

TEST CASES

This report shows the number of test cases that have passed, failed, and untested.

Section	Total Cases	Not Tested	Fail	Pass
Print Engine	0	0	0	0
Client Application	0	0	0	0
Security	0	0	0	0
Outsource Shipping	0	0	0	0
Exception Reporting	0	0	0	0
Final Report Output	0	0	0	0
Version Control	0	0	0	0

USER ACCEPTANCE TESTING

This report shows the number of resolved or closed bugs at each severity level, and how they were resolved.

Resolution	Severity 1	Severity 2	Severity 3	Severity 4	Subtotal
By Design	5	5	3	0	13
Duplicate	0	0	0	0	0
External	7	5	1	0	13
Fixed	11	8	7	5	31
Not Reproduced	1	0	0	0	1
Skipped	0	0	0	0	0
Won't Fix	0	0	0	0	0
Totals	24	18	11	5	58

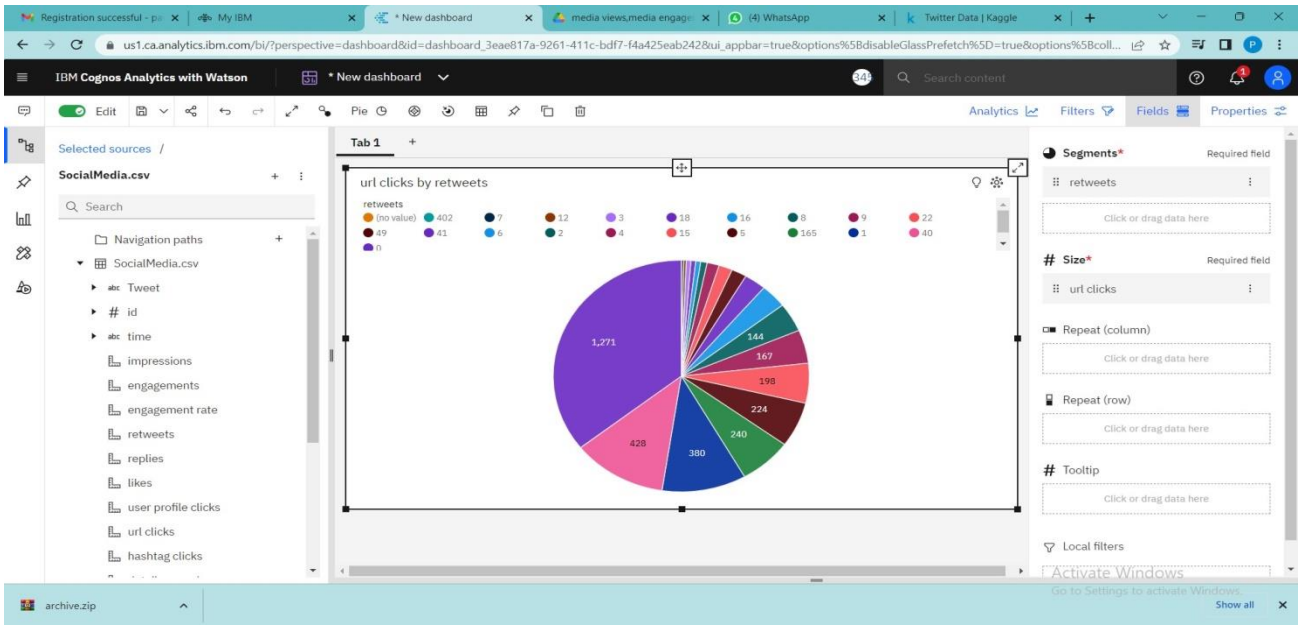
6. RESULT

6.1 PERFORMANCE METRICS

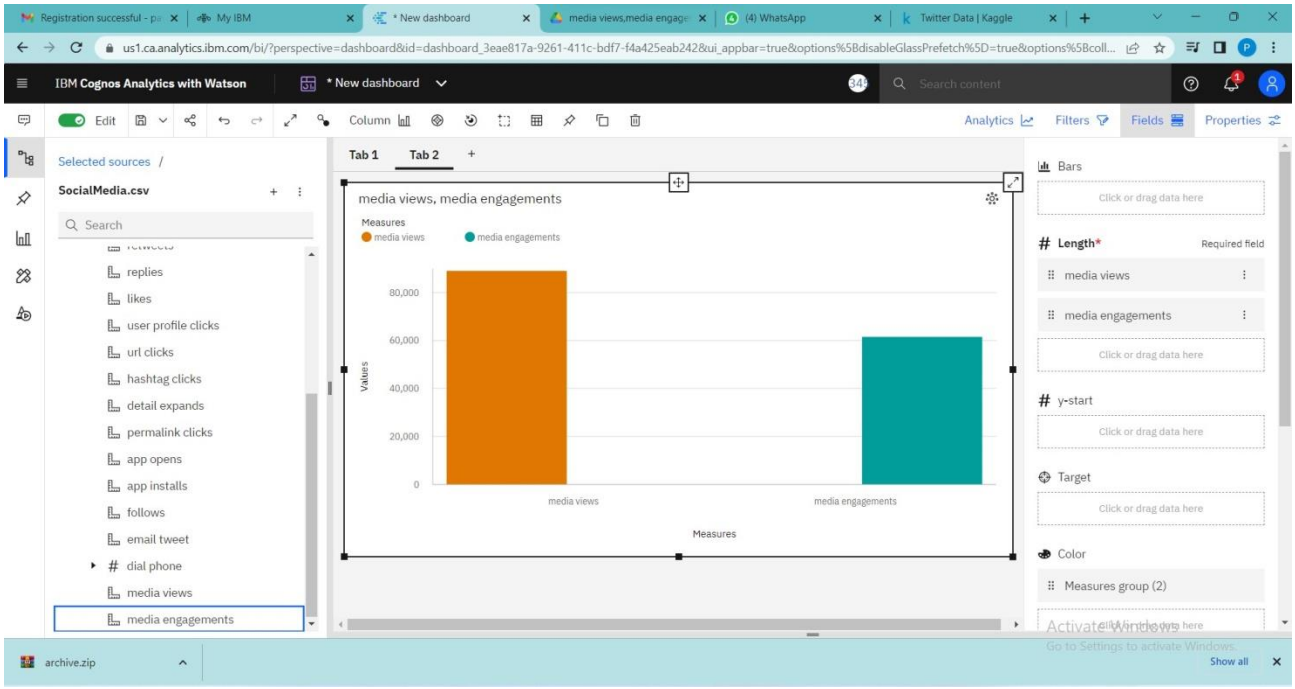
Project team shall fill the following information in model performance testing.

S. No.	Parameter	Screenshot / Values
1.	Dashboard design	17 / 5
2.	Data Responsiveness	The final output from IBM Cognos With Watson further converted into PDF or Story file, So it can be viewed by all devices.
3.	Amount Data to Rendered (DB2 Metrics)	0 KB.
4.	Utilization of Data Filters	The Utilization of data Filters like Ascending , Descending, Format and so on.
5.	Effective User Story	12
6.	Descriptive Reports	17 / 5

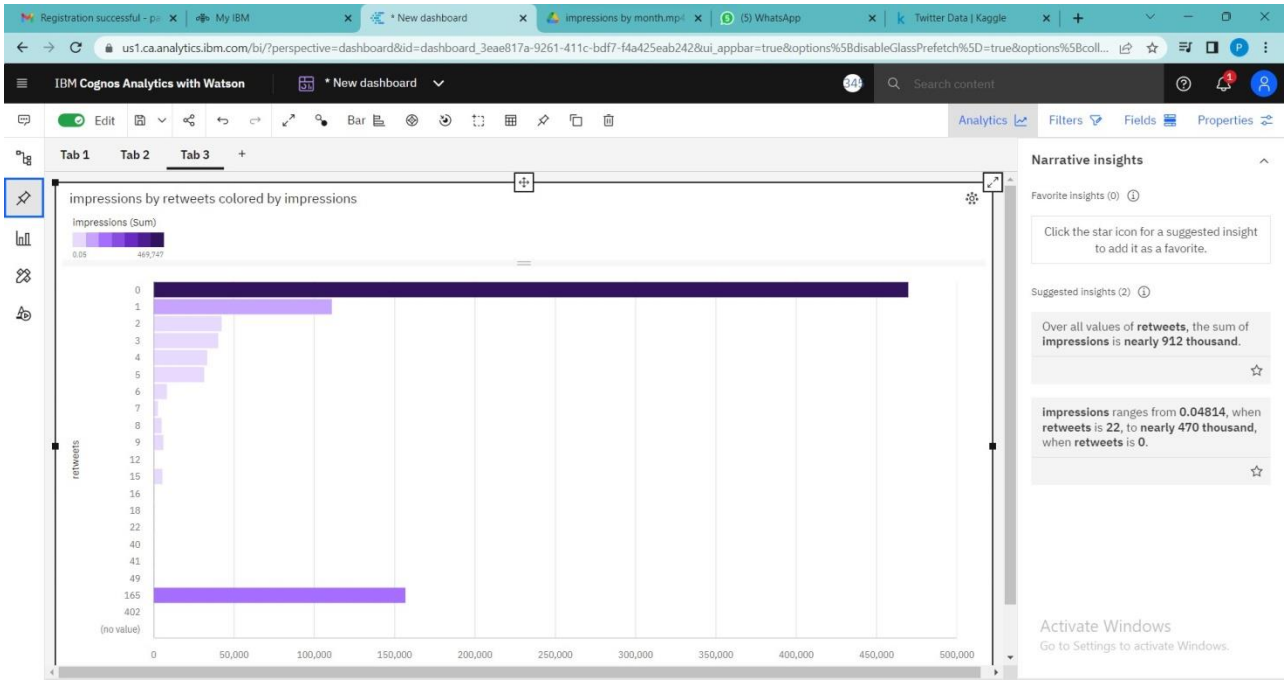
- Number Of URL clicks by Retweets



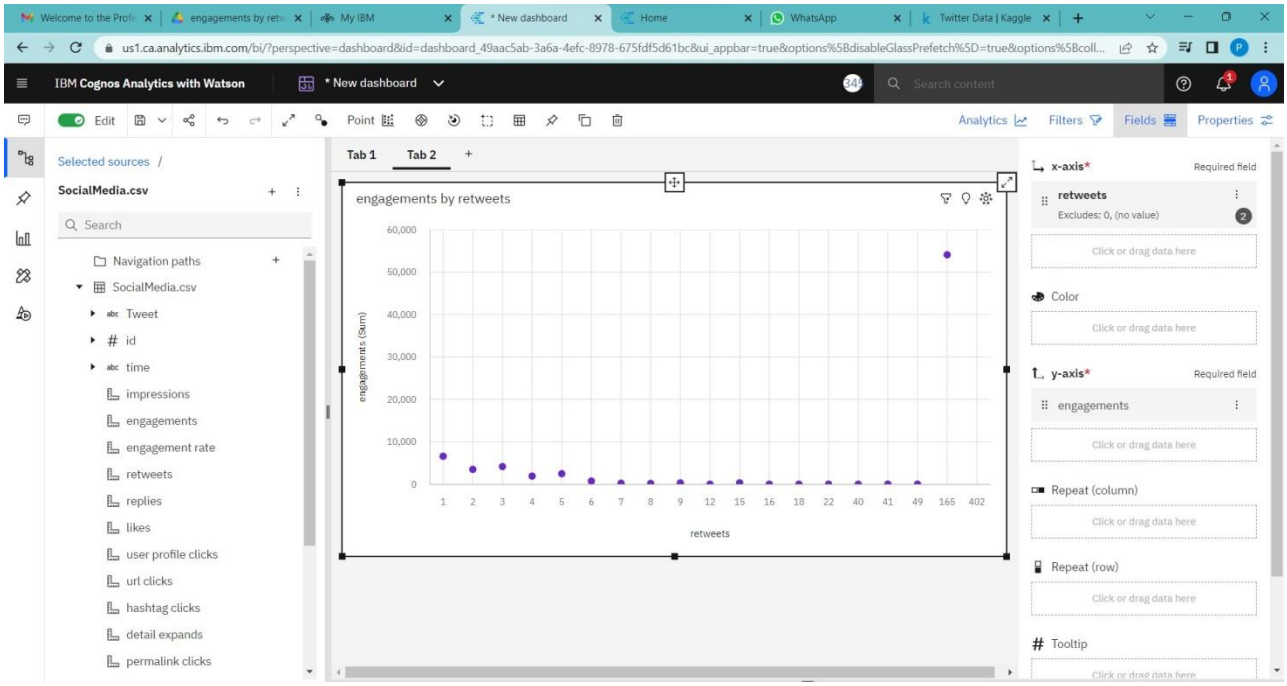
- Number Of Media Views and Media Engagements



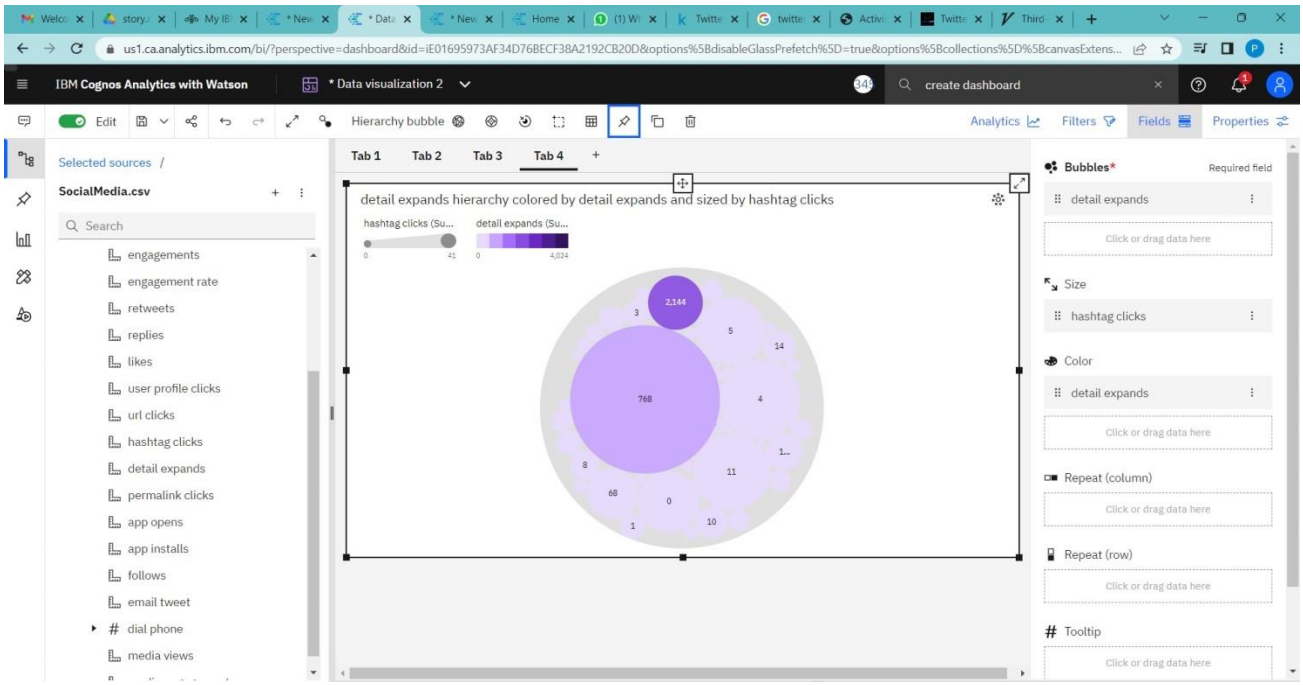
- Impressions by Retweet



- Engagement by Retweet



- Detail expands hashtag clicks



7. ADVANTAGES & DISADVANTAGES

ADVANTAGES:

- Helps an organization to make a better decision
- Increase the efficiency of the work
- The analytics keeps you updated of your customer behavioral changes.
- Personalization of Social Media details.
- Improving quality of services in social media.

DISADVANTAGES:

- Lack of alignment within teams
- Lack of commitment and Users
- Low quality of data
- Privacy Concerns
- Complexity and Bias

8. CONCLUSION

Data analytics in health care is vital. It helps health care organizations to evaluate and develop Number of patients by ward, Age wise patients with department details, Various types of visualizations to analyze the hospital's datasets and hence predict outbreaks in illness, Data analytics can also lower costs for health care organizations and boost business intelligence.

9. FUTURE SCOPE

The Future scope of social media analysis is expected to grow rapidly with the increasing usage of social media platforms. It is used for predictive analysis in areas such as sales forecasting and customer behavior analysis.

Social media Analysis has vast amount of data, social analytics tools can help brands make informed predictions about future trends and behavior which can help brands create targeted and personalized marketing campaigns for their specific audience based on their online behavior and preferences.

10. APPENDIX

GitHub & Project Demo Link

- Our GitHub Repository Direct Link

  https://github.com/naanmudhalvan-SI/PBL-NT-GP--4729-1680771816

- Project Demonstration Video Direct Link
  https://github.com/naanmudhalvan-SI/PBL-NT-GP--4729-1680771816

- Webpage to view analyzed visualizations

  https://pavithrakcse.wixsite.com/a-comprehensive-anal