



**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
(ARTIFICIAL INTELLIGENCE & MACHINE LEARNING)**

B.E / SEM VIII / REV 2019 'C SCHEME' / CSE-(AI&ML)
Academic Year: 2023-24

NAME	PRATHAMESH S. CHIKANKAR
BRANCH	CSE-(AI&ML)
ROLL NO.	AIML11
SUBJECT	SOCIAL MEDIA ANALYTICS LAB
COURSE CODE	CSDOL8023
PRACTICAL NO.	
DOP	
DOS	

Experiment No 1

Aim: Study various - (Boat Lifestyle)

- 1) Social Media platforms (Facebook, twitter, YouTube, Instagram, Whatsapp etc)
- 2) Social Media analytics tools (Facebook insights, google analytics netlytic etc)
- 3) Social Media Analytics techniques and engagement metrics (page level, post level, member level)
- 4) Applications of Social media analytics for business. e.g. Google Analytics

Theory:

1. 1. Facebook:

- Audience: Users of all ages, with a broad demographic reach, including individuals, businesses, organizations, and communities.
- Features: Profiles, news feed, status updates, photos/videos sharing, groups, events, messaging, marketplace.
- Purpose: Facilitate personal connections, share updates, photos, and videos, discover and join interest-based groups, promote businesses, and events.

2. Twitter:

- Audience: Users interested in real-time information, news, and networking, including individuals, journalists, influencers, and organizations.
- Features: Tweets (limited to 280 characters), retweets, likes, hashtags, mentions, direct messages.
- Purpose: Share thoughts, news, and updates in real-time, engage in conversations, follow topics of interest, connect with like-minded individuals.

3. Instagram:

- Audience: Visual content creators and consumers, predominantly younger demographics, including individuals, influencers, and businesses.
- Features: Photos/videos sharing, Stories (ephemeral content), IGTV, Reels, filters, hashtags, likes, comments, direct messages.
- Purpose: Showcase creativity, share visual content, engage with followers, discover trends, and connect with brands or influencers.

4. LinkedIn:

- Audience: Professionals, job seekers, recruiters, businesses, and industry experts.
- Features: Professional profiles, connections, job postings, news feed, articles, groups, messaging.

- Purpose: Build professional networks, showcase skills and experience, find job opportunities, share industry insights, and connect with potential employers or clients.

5. YouTube:

- Audience: Users interested in a wide range of video content, including entertainment, tutorials, vlogs, and education.
- Features: Video uploads, live streaming, comments, likes, subscriptions, playlists, community tab.
- Purpose: Share and discover video content on various topics, entertain, educate, inspire, and connect with creators and audiences worldwide.

2.

Various tools exist for social media analytics, aiding in the examination of your social media performance. Some prominent options include:

- **Facebook Insights:** A complimentary analytics tool furnishing detailed data on your Facebook Page's performance. It tracks metrics like page views, likes, comments, shares, and more, offering insights into audience behavior and aiding in content enhancement.
- **Google Analytics:** A free web analytics service monitoring and reporting website traffic, revealing visitor numbers, behavior patterns, and traffic sources. This data is instrumental in optimizing your website and enhancing online visibility.
- **Netlytic:** A cloud-based text and social networks analyzer automating the summarization of textual data and the identification of communication networks from publicly available social media posts. It accesses public posts from platforms like Twitter, YouTube, and RSS feeds. Netlytic supports data upload and analysis via CSV or Google Sheet, offering Free Tiers 1 & 2 ideal for educational purposes in social media analytics, content analysis, and social network analysis (SNA).

3.

Social media analytics techniques are employed to gauge and scrutinize the efficacy of social media content. Engagement metrics play a pivotal role in social media analytics, aiding in comprehending audience interaction with your content. Here are several engagement metrics assessable at different levels:

- **Page Level:** This level evaluates the overall engagement of your social media page, encompassing metrics like likes, shares, comments, followers, and page reach.
- **Post Level:** Individual post engagement is scrutinized at this level, examining metrics such as likes, shares, comments, post reach, and impressions.
- **Member Level:** Engagement of individual members on your social media page is analyzed here, including metrics like posts, comments, likes, post reach, and impressions per member.

To monitor these metrics effectively, social media analytics tools such as Hootsuite and Buffer are utilized. These platforms enable comprehensive tracking of your social media presence, measuring key metrics across multiple platforms. Additionally, they facilitate the creation of customizable reports and dashboards, enhancing your understanding of social media performance.

4.

Social media analytics serves as a robust tool for businesses, enabling them to measure and scrutinize their social media footprint. By monitoring vital metrics like engagement, reach, and sentiment, businesses can extract valuable insights into their audience and refine their social media strategies. Here are some ways in which social media analytics benefits businesses:

- 1. Identifying trends:** Businesses leverage social media analytics to discern emerging trends within their industry, gaining a competitive edge. By analyzing conversations on social media platforms, businesses can grasp customer discussions and trending topics, allowing them to adapt and capitalize on market shifts.
- 2. Measuring campaign performance:** Social media analytics empowers businesses to evaluate the effectiveness of their social media campaigns. By tracking metrics such as engagement, reach, and conversions, businesses can gauge the impact of their campaigns and fine-tune their strategies for maximum effectiveness.
- 3. Improving customer service:** Businesses utilize social media analytics to enhance their customer service efforts by promptly addressing customer complaints and feedback. By monitoring social media conversations, businesses can swiftly respond to customer inquiries and resolve issues in real-time, fostering positive relationships with their audience.
- 4. Identifying influencers:** Social media analytics aids businesses in identifying influential figures within their industry and establishing partnerships with them. By scrutinizing social media conversations, businesses can pinpoint individuals with substantial followings and influence, allowing them to engage with key influencers for promotional purposes.

Additionally, Google Analytics serves as a valuable web analytics service, furnishing businesses with insights into their website traffic and user behaviour. Although not specifically a social media analytics tool, it complements social media analytics tools by providing a comprehensive understanding of online presence. By integrating Google Analytics with social media analytics tools, businesses can gain holistic insights into their online performance and make informed decisions to drive success.

1. Analyze how Individual / Organization is using social media?

Boat Lifestyle likely has a dedicated social media team responsible for managing its official social media accounts. This team would consist of social media managers, content creators, and digital marketing professionals who work directly for Boat Lifestyle. Their responsibilities would include creating and curating content, engaging with the audience, and managing the

overall social media presence of Boat Lifestyle. It's crucial for such teams to understand the brand's identity, target audience, and marketing goals to effectively promote products and engage with customers on social media platforms.

2. Who are the target audience members?

Boat Lifestyle caters to a diverse range of individuals who share a common interest in audio equipment, technology, and lifestyle accessories. Music enthusiasts seeking immersive sound experiences find appeal in Boat's products, which prioritize quality and clarity. Additionally, the brand attracts tech-savvy consumers intrigued by the latest gadgets and innovations, offering them cutting-edge audio solutions. For fitness enthusiasts leading active lifestyles, Boat provides durable, sweat-resistant headphones and earphones ideal for workouts. Commuters looking for portable and reliable audio options for their on-the-go lifestyles also form a significant part of Boat's target audience. Moreover, gamers seeking optimized gaming experiences are drawn to Boat's headsets and headphones tailored for gaming. Fashion-conscious consumers appreciate Boat's stylish accessories that complement their personal style, while value-conscious shoppers find the brand's balance of affordability and quality appealing. Through targeted marketing strategies, Boat Lifestyle effectively engages with each segment, meeting their unique needs and preferences.

3. Why is the audience engaged in social media with the organization?

The audience engages with Boat Lifestyle on social media because the brand provides valuable content related to audio equipment, technology, and lifestyle accessories. Boat actively interacts with its followers, runs contests and promotions, and leverages user-generated content to foster engagement and build community.

4. What type of content or interaction is the audience interested in?

The audience of Boat Lifestyle is primarily interested in a variety of content and interactions that cater to their diverse interests and needs. This includes staying updated on the latest product releases, features, and innovations, as well as accessing informative reviews and tutorials to make informed purchasing decisions. Additionally, followers seek inspiration on how Boat's audio products can seamlessly integrate into their lifestyles, whether it's for fitness, travel, or gaming. Active engagement from Boat, such as responding promptly to comments and messages, helps foster a sense of community and strengthens the bond with the audience. Contests, giveaways, and promotions also generate excitement and encourage interaction with the brand. Furthermore, the audience appreciates seeing user-generated content, as it adds authenticity and provides real-life examples of how Boat's products are being used and enjoyed. Overall, the audience is drawn to content that is informative, engaging, and relatable to their interests, coupled with interactions that foster a sense of belonging and offer opportunities for participation and rewards.

5. What are the goals of the user? Which of the three interaction methods above are they using? the three interaction methods are (page level, post level, member level)

The goals of users engaging with Boat Lifestyle's social media can vary, but they often include seeking information about products, staying updated on promotions and deals, participating in community discussions, and sharing their experiences with Boat's products.

Among the three interaction methods provided:

1. Page level interaction: Users may engage with Boat Lifestyle's social media page by liking or following it to stay updated on the brand's latest updates, promotions, and events. They might also explore the page's overall content, such as pinned posts, About section, or general announcements.
2. Post level interaction: Users engage with individual posts by liking, commenting, sharing, or saving them. They might share their opinions, ask questions, provide feedback, or tag friends in relevant posts. This level of interaction allows users to directly engage with specific content shared by Boat Lifestyle, contributing to discussions and building community around particular topics or products.
3. Member level interaction: This interaction method typically refers to engagement within groups or communities associated with Boat Lifestyle's social media presence. Users join these groups or communities to interact with like-minded individuals, share experiences, seek advice, and discuss topics related to the brand's products or broader interests. Within these groups, users can engage with other members by commenting on posts, starting discussions, or sharing their own content.

6. How is the user using social media?

Users engage with Boat Lifestyle on social media in several ways to meet their goals and interests. They often browse through Boat Lifestyle's social media feeds, consuming various content such as product releases, reviews, tutorials, and lifestyle posts to stay informed and inspired about audio equipment and accessories. Active engagement is common, with users frequently liking, commenting, and sharing posts to express their opinions, ask questions, or share experiences with friends and followers. Additionally, users utilize direct messaging features to reach out to Boat Lifestyle for personalized interactions, seeking product recommendations, or providing feedback. Many users eagerly participate in contests, giveaways, and promotions hosted by Boat Lifestyle, following guidelines to enter and engage with the brand's content for a chance to win prizes. Moreover, some users contribute to Boat Lifestyle's online presence by creating and sharing their own content featuring the brand's products, further enriching the brand's online community and extending its reach. Overall, users leverage social media as a dynamic platform to interact with Boat Lifestyle, contributing to a vibrant online community and fostering a closer connection with the brand.

7. Do the user's actions support the goals?

Yes, users' actions on social media generally align with their goals when engaging with Boat Lifestyle. Their behaviours, such as browsing through Boat Lifestyle's content, actively engaging with posts through likes, comments, and shares, and participating in discussions or contests, support their objectives. By consuming various types of content, users gather information about Boat's products and make informed decisions. Their engagement fosters a

sense of community, as they connect with other users who share similar interests in audio equipment and accessories. Additionally, their participation in contests and promotions reflects their desire to potentially win prizes or rewards offered by Boat Lifestyle. Overall, users' actions on social media effectively support their goals of information gathering, community engagement, and participation in activities to receive rewards or incentives from Boat Lifestyle.

Conclusion:

Boat Lifestyle's social media presence effectively serves the needs and interests of its users. Through a combination of informative content, active engagement, and enticing promotions, users are able to achieve their goals of staying informed about products, engaging with a like-minded community, and participating in activities to potentially receive rewards. Boat Lifestyle's commitment to providing valuable content and fostering meaningful interactions on social media contributes to building a strong and engaged user base. As users continue to interact with the brand and each other, Boat Lifestyle's online community thrives, further solidifying its position as a trusted provider of audio equipment and lifestyle accessories.

Case Study: Boat Lifestyle, McDonald's, Coca-Cola, Amazon, Netflix

1. Boat Lifestyle

- List each company and their social media accounts

Facebook: <https://www.facebook.com/BoatNirvana/>

Twitter: <https://twitter.com/BoatNirvana>

Instagram: <https://www.instagram.com/boat.nirvana/>

YouTube: <https://www.youtube.com/channel/UCVYOFumQ8kmoTdU9ZoEs8Sg>

LinkedIn: <https://www.linkedin.com/company/bo-at/>

- Find as many counts for each social media account as described in the section on measuring success.

Account	Counts
Facebook	1200000
Instagram	2500000
YouTube	176000
Twitter	250000

- How often does the company interact on their social network site? Is it many times a day, a few times a week, or never?

Social Media handle of Boat Lifestyle is very active they post everyday information about new contests and users interact with them on their handles along with the new launches.

- What kind of interaction is the company doing? Broadcast, request for input, direct interaction, or a combination? Provide an example of each.



- Assess the company's social media strategy. What are they doing well and why? What could they do better, why would that be better, and how should they do it?

Boat Lifestyle excels in engaging its audience through diverse and resonant content, including user-generated posts that foster authenticity and community interaction. Active engagement with followers and effective management of contests and promotions further enhances its strategy. To elevate its approach, Boat can introduce educational content, enhance social listening efforts, and leverage newer features for increased audience engagement. These enhancements will bolster its position as a trusted authority in the audio industry and strengthen its connection with customers.

2. McDonald's

- List each company and their social media accounts

Facebook: <https://www.facebook.com/McDonalds>

Twitter: <https://twitter.com/McDonalds>

Instagram: <https://www.instagram.com/mcdonalds/>

YouTube: <https://www.youtube.com/user/McDonaldsCorp>

LinkedIn: <https://www.linkedin.com/company/mcdonald's-corporation/>

- Find as many counts for each social media account as described in the section on measuring success.

Account	Counts
Facebook	1500000
Instagram	264000
YouTube	40700
Twitter	73400

- How often does the company interact on their social network site? Is it many times a day, a few times a week, or never?

McDonald's interacts regularly on its social network sites, with activity occurring many times a day across multiple platforms. The company maintains an active presence on platforms such as Facebook, Twitter, Instagram, YouTube, and LinkedIn, where it regularly posts content, responds to customer inquiries, and engages with its audience through comments, messages, and shares.

- What kind of interaction is the company doing? Broadcast, request for input, direct interaction, or a combination? Provide an example of each.



- Assess the company's social media strategy. What are they doing well and why? What could they do better, why would that be better, and how should they do it?

McDonald's excels in maintaining an active and responsive social media presence, engaging its audience with diverse content and prompt interactions. To enhance its strategy, McDonald's could leverage user-generated content to boost authenticity and incorporate more interactive elements to drive engagement. Embracing emerging social media trends would help McDonald's stay ahead in the digital landscape, ensuring continued success in engaging with its audience.

3. Coca-Cola

- List each company and their social media accounts

Facebook: <https://www.facebook.com/cocacola>

Twitter: <https://twitter.com/CocaCola>

Instagram: <https://www.instagram.com/cocacola/>

YouTube: <https://www.youtube.com/user/cocacola>

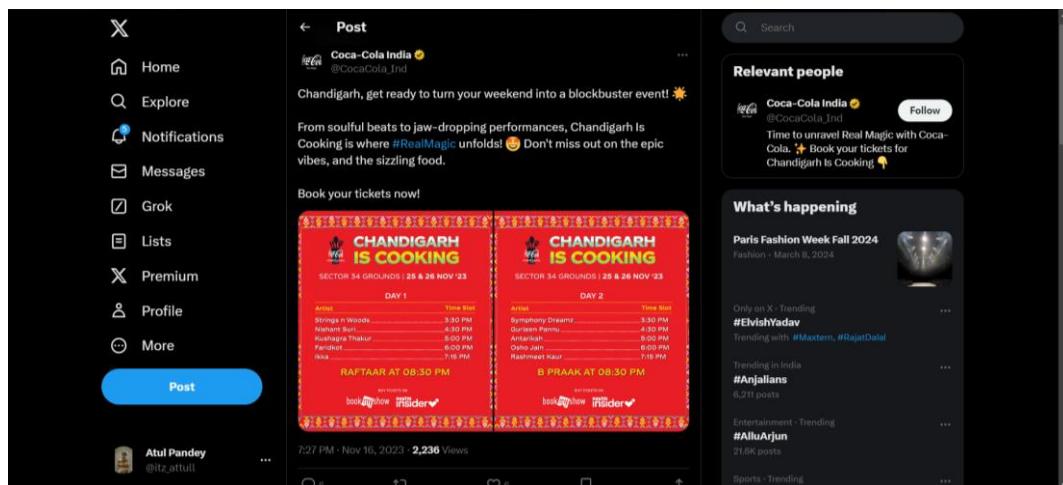
- Find as many counts for each social media account as described in the section on measuring success.

Account	Counts
Facebook	1500000
Instagram	170000
YouTube	4320000
Twitter	26000

- How often does the company interact on their social network site? Is it many times a day, a few times a week, or never?

Coca-Cola interacts regularly on its social network sites, with activity occurring many times a day across various platforms such as Facebook, Twitter, Instagram, YouTube, and LinkedIn. The company maintains an active presence by posting content, responding to customer inquiries, and engaging with its audience through comments, messages, and shares. This frequent interaction demonstrates Coca-Cola's commitment to engaging with its customers in real-time and fostering a sense of community across its social media platforms.

- What kind of interaction is the company doing? Broadcast, request for input, direct interaction, or a combination? Provide an example of each.



- Assess the company's social media strategy. What are they doing well and why? What could they do better, why would that be better, and how should they do it?

Coca-Cola excels in creating visually appealing and engaging content that celebrates moments of happiness. They actively engage with their audience through contests and user-generated content, fostering brand loyalty. To enhance their strategy, Coca-Cola could incorporate more educational content about its products and sustainability initiatives. Leveraging emerging social media trends would help them stay innovative and relevant in a rapidly evolving digital landscape.

4. Amazon

- List each company and their social media accounts

Facebook: <https://www.facebook.com/Amazon>

Twitter: <https://twitter.com/amazon>

Instagram: <https://www.instagram.com/amazon/>

YouTube: <https://www.youtube.com/user/amazon>

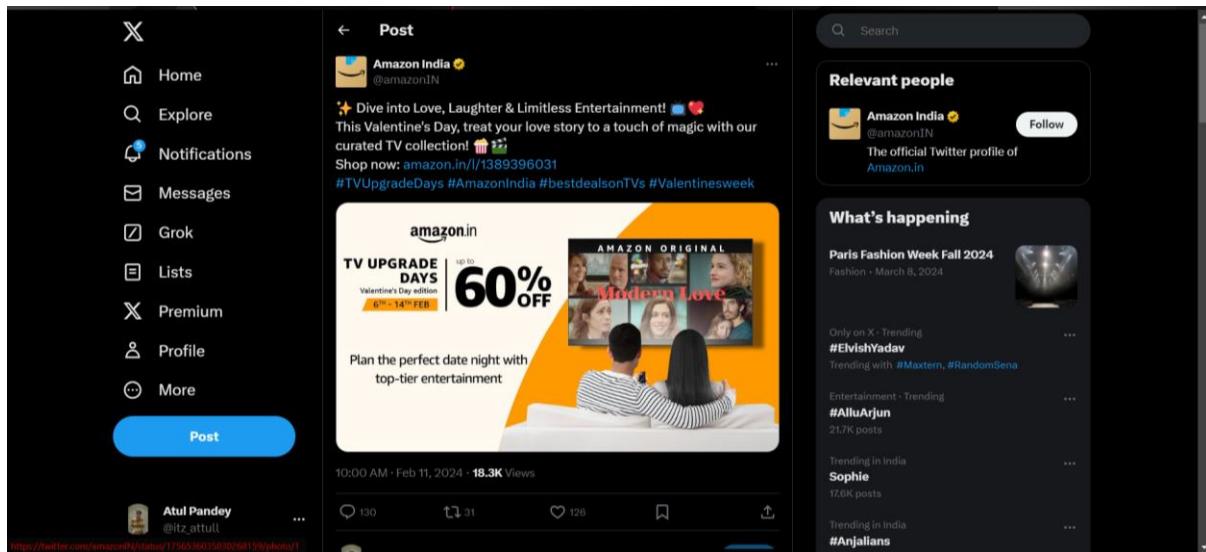
- Find as many counts for each social media account as described in the section on measuring success.

Account	Counts
Facebook	2500000
Instagram	2700000
YouTube	1540000
Twitter	2500000

- How often does the company interact on their social network site? Is it many times a day, a few times a week, or never?

Amazon interacts regularly on its social network sites, with activity occurring many times a day across various platforms such as Facebook, Twitter, Instagram, YouTube, and LinkedIn. The company maintains an active presence by posting content, responding to customer inquiries, sharing updates about products and services, and engaging with its audience through comments, messages, and shares. This frequent interaction demonstrates Amazon's commitment to engaging with its customers in real-time and fostering a sense of community across its social media platforms. What kind of interaction is the company doing? Broadcast, request for input, direct interaction, or a combination? Provide an example of each.

- What kind of interaction is the company doing? Broadcast, request for input, direct interaction, or a combination? Provide an example of each.



- Assess the company's social media strategy. What are they doing well and why? What could they do better, why would that be better, and how should they do it?

Amazon's social media strategy effectively engages its audience through regular interaction and informative content across multiple platforms. The company excels in providing updates on products, services, and promotions, fostering customer engagement and loyalty. However, Amazon could enhance its strategy by incorporating more user-generated content and interactive features to strengthen community involvement and customer relationships. By encouraging customers to share their experiences and opinions, Amazon can create a more authentic and engaging social media presence, further solidifying its position as a customer-centric brand.

5. Netflix

- List each company and their social media accounts

Facebook: <https://www.facebook.com/netflix>

Twitter: <https://twitter.com/netflix>

Instagram: <https://www.instagram.com/netflix/>

YouTube: <https://www.youtube.com/user/NewOnNetflix>

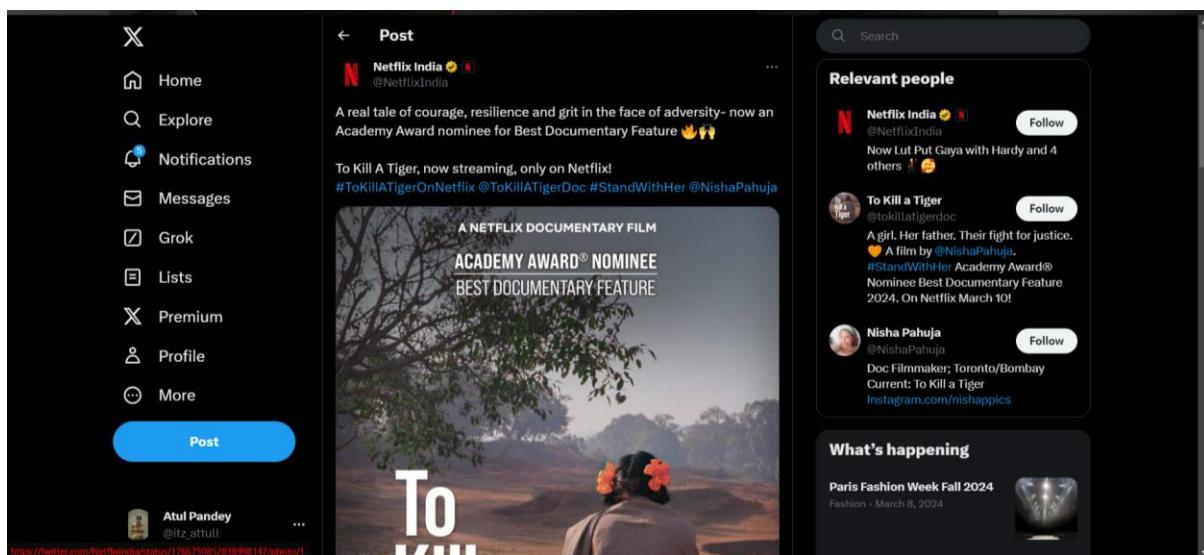
- Find as many counts for each social media account as described in the section on measuring success.

Account	Counts
Facebook	2500000
Instagram	9100000
YouTube	2330000
Twitter	1800000

- How often does the company interact on their social network site? Is it many times a day, a few times a week, or never?

Netflix interacts regularly on its social network sites, with activity occurring many times a day across various platforms such as Facebook, Twitter, Instagram, YouTube, and LinkedIn. The company maintains an active presence by posting content, sharing updates about new releases, engaging with its audience through comments and messages, and responding to inquiries or feedback. This frequent interaction demonstrates Netflix's commitment to engaging with its audience in real-time and fostering a sense of community across its social media platforms. What kind of interaction is the company doing? Broadcast, request for input, direct interaction, or a combination? Provide an example of each.

- What kind of interaction is the company doing? Broadcast, request for input, direct interaction, or a combination? Provide an example of each.



- Assess the company's social media strategy. What are they doing well and why? What could they do better, why would that be better, and how should they do it?

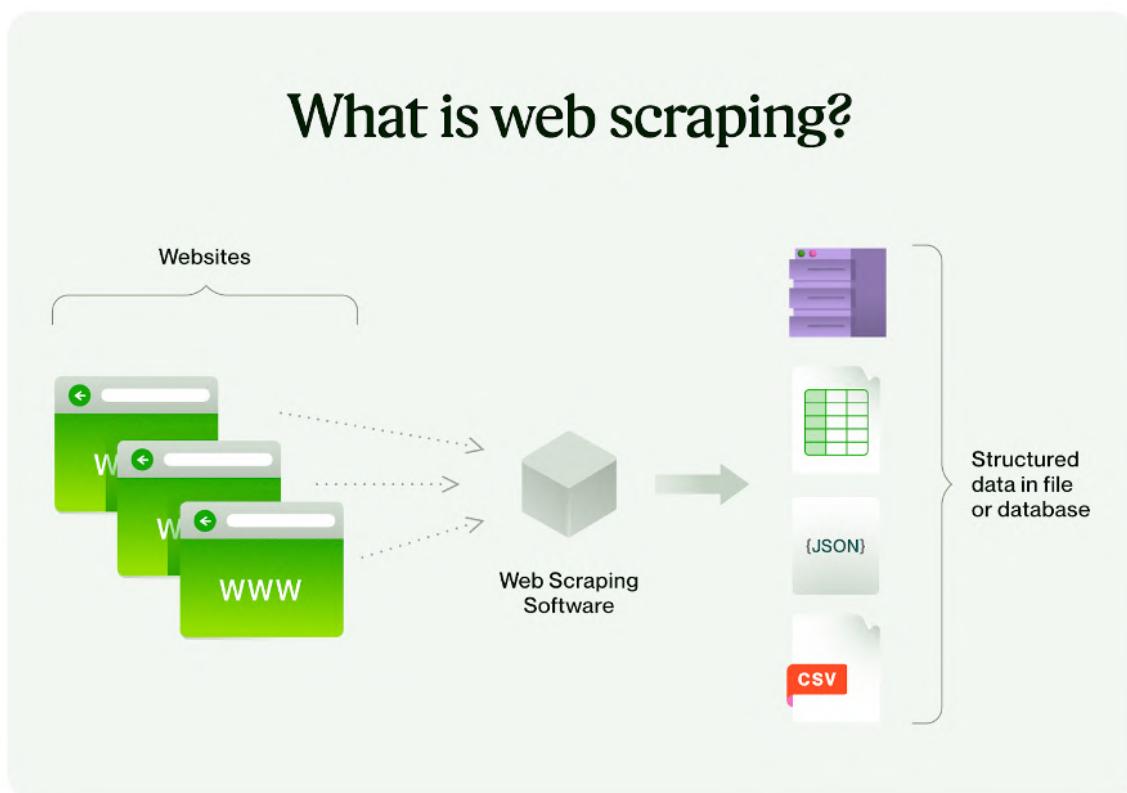
Netflix's social media strategy effectively generates excitement and engagement around its content through captivating posts and interactive features. By utilizing teaser trailers, behind-the-scenes footage, and interactive polls, Netflix builds anticipation and fosters a sense of community among its audience. However, the company could improve by enhancing direct interaction with its audience and incorporating more user-generated content to further amplify engagement and create a more inclusive social media experience. These enhancements would strengthen customer relationships and reinforce Netflix's position as a leading entertainment provider.

Experiment No 2

Aim: Data Collection-Select the social media platforms of your choice (Twitter, Facebook, LinkedIn, YouTube, Web blogs etc.), connect to and capture social media data for business (scraping, crawling, parsing).

Theory:

Web scraping is a process of automatically extracting data from websites. It involves retrieving the HTML content of web pages and then parsing that content to extract the desired information. This technique is commonly used for various purposes such as market research, competitive analysis, data collection, and academic research. Web scraping can be performed using various programming languages and libraries, with Python being a popular choice due to its rich ecosystem of web scraping tools. However, it's important to scrape responsibly, respecting website terms of service and legal considerations.



The process of web scraping typically involves the following steps:

Sending an HTTP request: This is done to access the HTML content of a web page. The request is sent to the server hosting the website.

Downloading the HTML content: Once the server responds to the request, the HTML content of the web page is downloaded.

Parsing the HTML: The HTML content is parsed to extract the relevant data. This is often done using libraries or tools like BeautifulSoup in Python.

Extracting data: After parsing, specific data elements are identified and extracted from the HTML content. This could involve locating elements by HTML tags, classes, or other attributes.

Storing the data: The extracted data is then stored in a structured format, such as a CSV file, database, or another suitable storage method. It's important to note that web scraping should be performed responsibly and ethically. Some websites have terms of service that prohibit or restrict scraping activities, so it's crucial to review and adhere to the terms of the website being scraped.

2.What are different types of web scrapers?

Web scrapers can be classified into various types based on their functionality, complexity, and use cases. Here are some common types of web scrapers:

Simple/Basic Scrapers: These are basic scripts or tools designed for straightforward data extraction from web pages. They are suitable for simple tasks and may not handle complex websites or dynamic content well.

Headless Browsers: These scrapers use headless browsers (browsers without a graphical user interface) to render and interact with web pages, enabling them to handle dynamic content generated by JavaScript. Examples include Puppeteer (for Node.js) and Selenium with a headless browser.

API-based Scrapers: Some websites provide APIs (Application Programming Interfaces) that allow developers to access data in a structured and controlled manner. Instead of scraping HTML content, these scrapers interact with the API endpoints to retrieve data.

3. Explain various web scraping tools:

There are numerous web scraping tools available, each with its own strengths and weaknesses. The choice of a tool often depends on the specific requirements of a project, programming language preferences, and the complexity of the scraping task. Here are some popular web scraping tools:

Beautiful Soup:

Language: Python

Description: Beautiful Soup is a Python library for pulling data out of HTML and XML files. It provides Pythonic idioms for iterating, searching, and modifying the parse tree.

Scrapy:

Language: Python

Description: Scrapy is an open-source and collaborative web crawling framework for Python. It provides an integrated way to follow links and extract data from websites, making it suitable for large-scale web scraping projects.

Selenium:

Language: Various (Python, Java, C#, etc.)

Description: Selenium is primarily known as a web automation testing tool, but it can also be used for web scraping. It allows interaction with web pages, including the execution of JavaScript, making it suitable for sites with dynamic content.

Puppeteer:

Language: JavaScript (Node.js)

Description: Puppeteer is a Node library that provides a high-level API to control headless browsers, such as Chromium. It's often used for tasks like taking screenshots, generating PDFs, and scraping websites with JavaScript-rendered content.

4. Applications of web scraping

Market Research: Web scraping can be used to gather data on competitors, market trends, pricing information, product reviews, and customer sentiment. This data can help businesses make informed decisions about pricing strategies, product development, and marketing campaigns.

Lead Generation: Web scraping can be used to extract contact information, such as email addresses and phone numbers, from websites, directories, and social media platforms. This data can be used for lead generation, prospecting, and sales outreach.

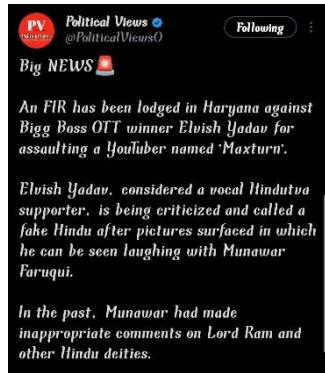
Competitive Analysis: Web scraping allows businesses to monitor competitors' websites and track changes in product offerings, pricing, promotions, and customer reviews. This information can be used to benchmark against competitors and identify opportunities for improvement.

Content Aggregation: Web scraping can be used to collect and aggregate content from multiple sources, such as news websites, blogs, forums, and social media platforms. This curated content can be used to create news feeds, content hubs, and curated newsletters.

Financial Services: In the finance industry, web scraping is used to collect data on stock prices, financial news, market trends, and economic indicators from various sources. This data is used for investment research, algorithmic trading, risk management, and market analysis.

Case Study:

Choose a popular current issue of public debate (a bill under consideration, an election, or a political issue). Search Twitter for posts about that issue.



- **What opinions are you able to find? Summarize them.**

Public opinion on the scenario involving Elvish Yadav and Munawar Faruqui is likely to be diverse and complex. Some may support Yadav, defending his political affiliations and dismissing the assault allegations as baseless. Others may criticize him for hypocrisy and question his commitment to Hinduism. There may also be defenders of Faruqui's free speech rights, while others may call for accountability from both individuals. Overall, the situation is likely to spark discussions about identity politics, free speech, and the complexities of navigating public image and ideological affiliations.

- **Is one opinion dominating the others?**

The maximum public is in the support of Maxturn as the Yadav could not handle a small trigger given by him and the police also changed the FIR which concludes the people to show maximum support for Maxturn.

- **Do you find a lot of content repeated? Perhaps one or two tweets that are repeated by many accounts? Does this appear suspicious, or is there a reason for it?**

Yes, obviously the topic is very fragile so the people tweet the same topic again and again so that the Maxturn will get proper justice and the argument will come to a positive end.



Experiment 3

AIM: Data cleaning and storage - Preprocess, filter and store social media data for business (Using Python)

CODE & OUTPUT:

Text Preprocessing

a. Removing '@names'

Here we can see that at many places we have '@names', which is of no use, since it don't have any meaning, So needs to be removed.

```
: def remove_pattern(text, pattern_regex):
    r = re.findall(pattern_regex, text)
    for i in r:
        text = re.sub(i, '', text)

    return text
```

```
: # We are keeping cleaned tweets in a new column called 'tidy_tweets'
tweets_df['tidy_tweets'] = np.vectorize(remove_pattern)(tweets_df['tweets'], "@[\w]*: | *RT*")
tweets_df.head(10)
```

] :

	tweets	sentiment	tidy_tweets
0	Does AI Truly Learn And Why We Need to Stop Ov...	pos	Does AI Truly Learn And Why We Need to Stop Ov...
1	RT @IntuitMachine: Deep Learning and Why NOT S...	pos	Deep Learning and Why NOT Symbols https://t.c...
2	RT @ipfconline1: Value of #DeepLearning \n\nht...	pos	Value of #DeepLearning \n\nhttps://t.co/SeuyV...
3	RT @Sales_Source: Mainstream finally noticing ...	pos	Mainstream finally noticing what I've pointed...
4	Does AI Truly Learn And Why We Need to Stop Ov...	pos	Does AI Truly Learn And Why We Need to Stop Ov...
5	RT @2peterharris: "Data scientists all too oft...	pos	"Data scientists all too often treat their al...
6	What's the difference between #AI and #Machine...	pos	What's the difference between #AI and #Machine...
7	RT @dmonett: "Most dangerously, we take succes...	pos	"Most dangerously, we take successful algorit...
8	RT @fbplatform: Udacity's introductory course ...	pos	Udacity's introductory course on deep learnin...
9	Deep Learning: Perturbations and Diversity is ...	pos	Deep Learning: Perturbations and Diversity is ...



Filtering most common words

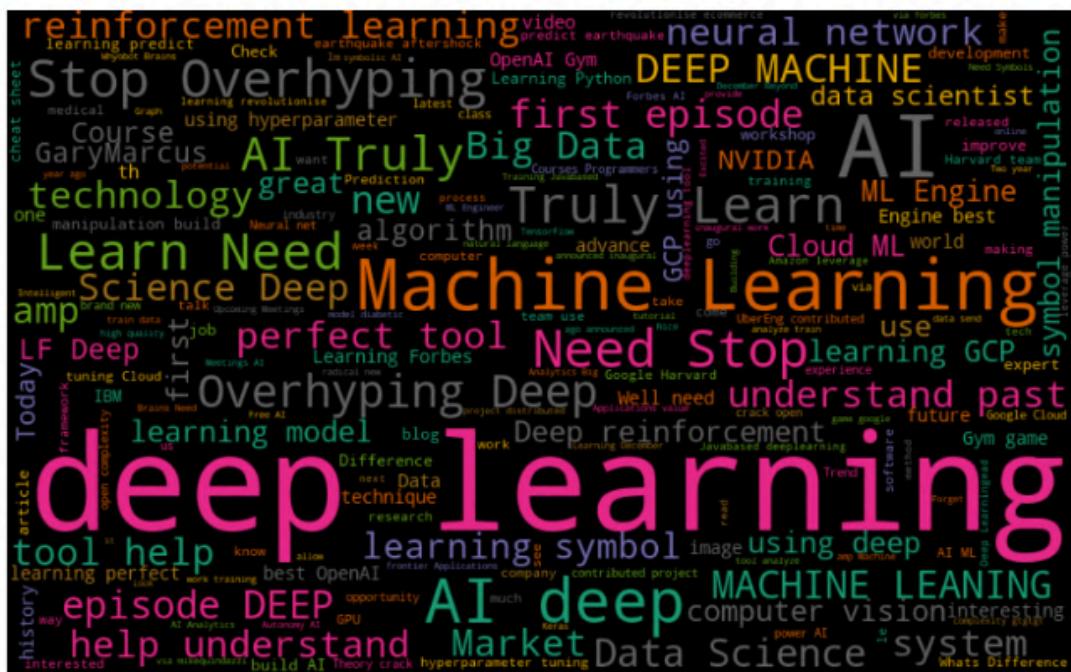
A. Most common words in positive tweets

Answer can be best found using WordCloud

```
def generate_wordcloud(all_words):
    wordcloud = WordCloud(width=800, height=500, random_state=21, max_font_size=100, relative_scaling=0.5, colormap='Dark2').generate(all_words)
```

```
plt.figure(figsize=(14, 10))
plt.imshow(wordcloud, interpolation="bilinear")
plt.axis('off')
plt.show()
```

```
all_words = ' '.join([text for text in tweets_df['absolute_tidy_tweets'][tweets_df.sentiment == 'pos']])
generate_wordcloud(all_words)
```



Most Commonly used hashtags

```

# function to collect hashtags
def hashtag_extract(text_list):
    hashtags = []
    # Loop over the words in the tweet
    for text in text_list:
        ht = re.findall(r"#(\w+)", text)
        hashtags.append(ht)

    return hashtags

def generate_hashtag_freqdist(hashtags):
    a = nltk.FreqDist(hashtags)
    d = pd.DataFrame({'Hashtag': list(a.keys()),
                      'Count': list(a.values())})
    # selecting top 15 most frequent hashtags
    d = d.nlargest(columns="Count", n = 25)
    plt.figure(figsize=(16,7))
    ax = sns.barplot(data=d, x= "Hashtag", y = "Count")
    plt.xticks(rotation=80)
    ax.set(ylabel = 'Count')
    plt.show()

```

```

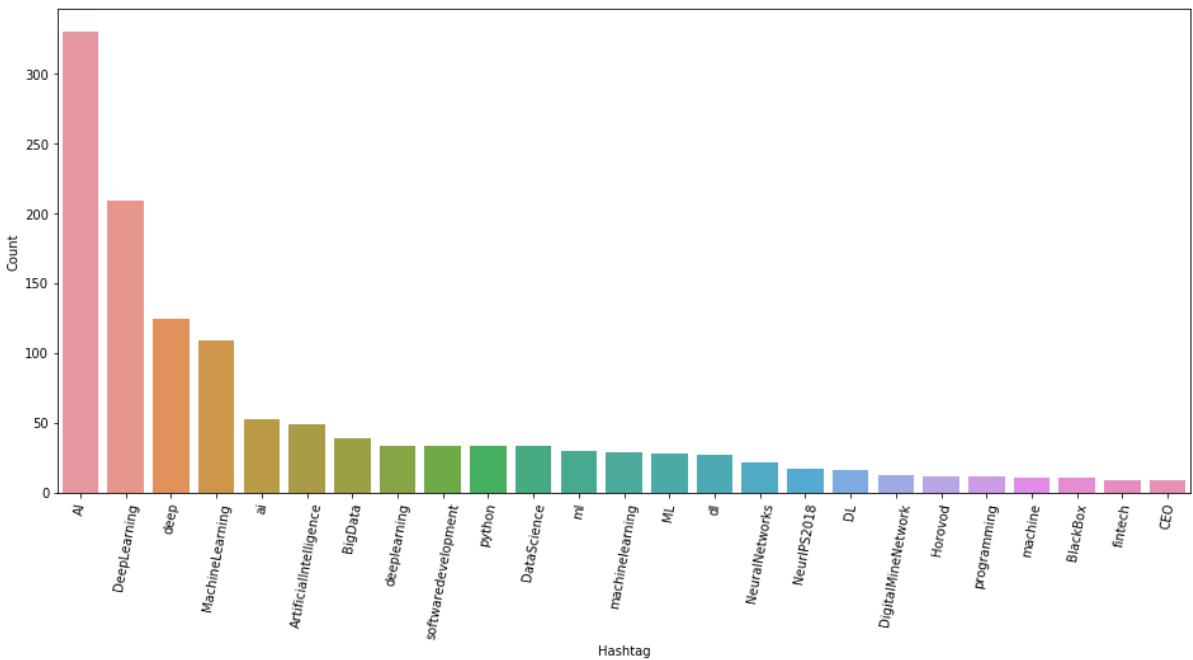
hashtags = hashtag_extract(tweets_df['tidy_tweets'])
hashtags = sum(hashtags, [])

```

```

generate_hashtag_freqdist(hashtags)

```





Experiment 4

AIM: Exploratory Data Analysis and Visualization of Social Media for Business.

CODE & OUTPUT:

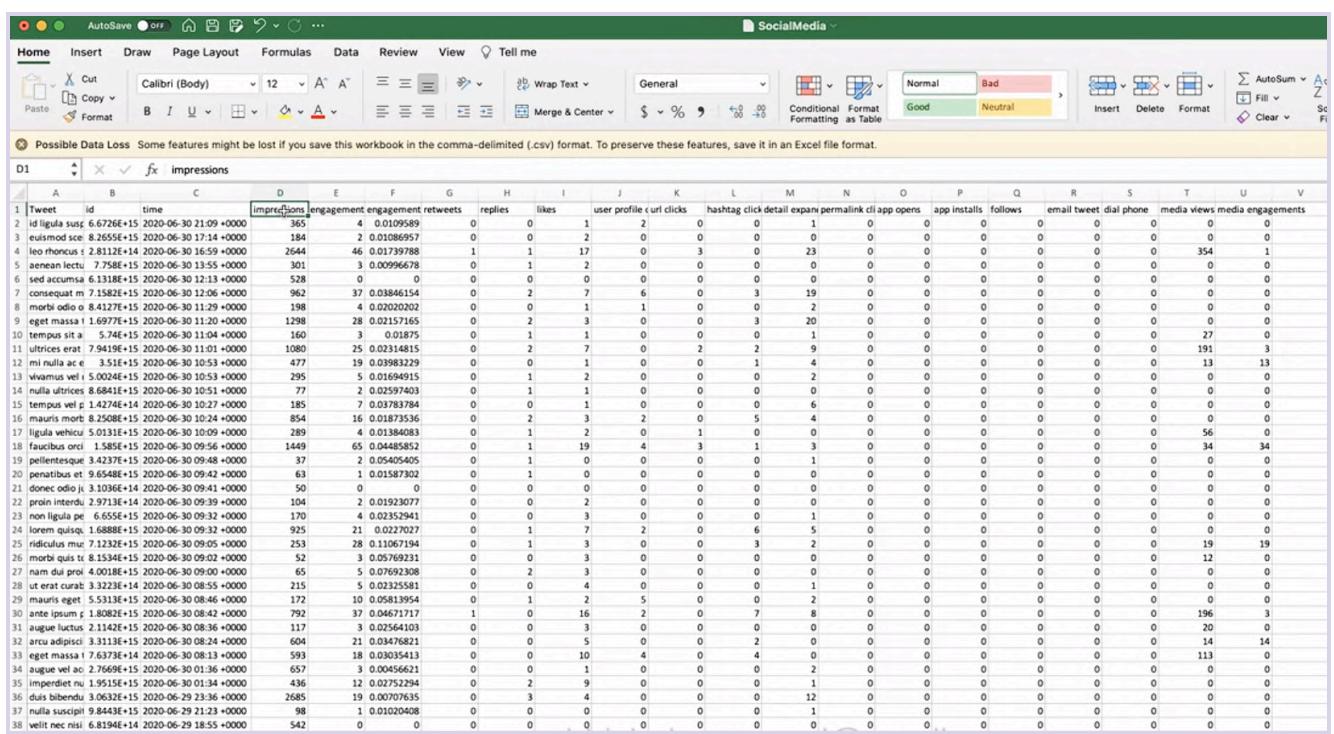
1. Data Acquisition:

Identify relevant data sources: This could include social media APIs (Application Programming Interfaces) for platforms like Twitter, Facebook, or Instagram. You can also use social listening tools that provide pre-compiled data.

2. Data Preparation:

Import data into Tableau: Connect Tableau to your chosen data source or upload a CSV file containing the social media data.

Clean and pre-process data: This may involve handling missing values, formatting dates and times, and creating calculated fields (e.g., sentiment score based on text analysis).

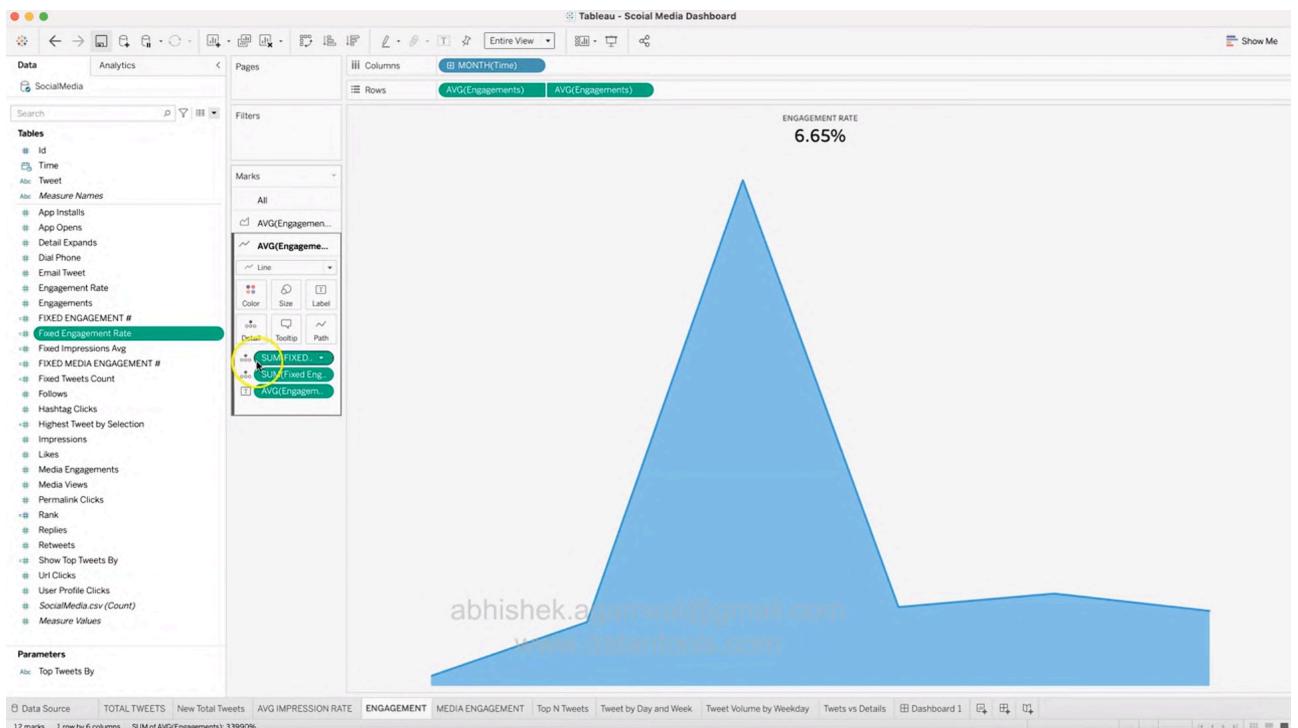


The screenshot shows a Microsoft Excel spreadsheet titled "SocialMedia". The data is contained in a single sheet from row 1 to row 38. The columns are labeled A through V. Column A contains tweet IDs, column B contains user IDs, column C contains dates, and column D contains engagement metrics. Columns E through V contain various social media statistics such as impressions, engagement, retweets, replies, likes, user profile clicks, hashtags, and click-through rates. The last few columns represent app installs, follows, and various media metrics. The data spans from June 2020 to July 2020, with many rows showing zero values for certain metrics.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	
1	Tweet	id	time	impressions	engagement	engagement	retweets	replies	likes	user profile	curl clicks	hashtag	click	detail	expans	permalink	cli	app	opens	app	installs	follows	
2	id	ligula	susc	6.67266e+15	2020-06-30	21:09	+0000	365	4	0.0109589	0	0	1	2	0	0	0	1	0	0	0	0	0
3	euismod	sce	8.26556e+15	2020-06-30	17:14	+0000	184	2	0.01086957	0	0	2	0	0	0	0	0	0	0	0	0	0	0
4	leo	phorum	cus	2.81126e+14	2020-06-30	16:59	+0000	2644	46	0.01739788	1	1	17	0	3	0	23	0	0	0	0	0	354
5	aenean	lecto		7.758E+15	2020-06-30	13:55	+0000	301	3	0.00996678	0	1	2	0	0	0	0	0	0	0	0	0	0
6	sed	accumsan		6.1318E+14	2020-06-30	12:13	+0000	528	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	consequat	in		7.1582E+15	2020-06-30	12:06	+0000	962	37	0.03846154	0	0	2	7	6	0	3	19	0	0	0	0	0
8	morti	odio		8.4127E+14	2020-06-30	11:29	+0000	198	4	0.02020202	0	0	1	1	0	0	2	0	0	0	0	0	0
9	egest	massa		1.69977E+15	2020-06-30	11:20	+0000	1298	28	0.02157165	0	0	2	3	0	0	3	20	0	0	0	0	0
10	tempus	sit		5.746E+15	2020-06-30	11:04	+0000	160	3	0.01875	0	1	1	0	0	0	1	0	0	0	0	0	27
11	ultricies	erat		7.9419E+15	2020-06-30	11:01	+0000	1080	25	0.02314815	0	0	2	7	0	2	2	9	0	0	0	0	191
12	mi	nulla	et	3.516E+15	2020-06-30	10:53	+0000	477	19	0.05983229	0	0	1	0	0	0	1	4	0	0	0	0	13
13	vivamus	vel		5.0024E+15	2020-06-30	10:53	+0000	295	5	0.01694915	0	1	2	0	0	0	2	0	0	0	0	0	0
14	nulla	ultrices		8.6841E+14	2020-06-30	10:51	+0000	77	2	0.02597403	0	1	1	0	0	0	0	0	0	0	0	0	0
15	tempus	vel	p	3.4274E+14	2020-06-30	10:27	+0000	185	7	0.03783784	0	0	1	0	0	0	6	0	0	0	0	0	0
16	mauris	mort		8.2508E+15	2020-06-30	10:24	+0000	854	16	0.01873536	0	2	3	2	0	5	4	0	0	0	0	0	0
17	ligula	vehicul		5.0131E+15	2020-06-30	10:09	+0000	289	4	0.01384083	0	1	2	0	1	0	0	0	0	0	0	56	0
18	fauibus	ord		1.585E+15	2020-06-30	09:56	+0000	1449	65	0.04485852	0	1	19	4	3	1	3	0	0	0	0	0	34
19	pellentesque	3.4237E+15	2020-06-30	09:48	+0000	37	2	0.05405405	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0
20	penatibus	et	9.6548E+15	2020-06-30	09:42	+0000	63	1	0.01587302	0	1	0	0	0	0	0	0	0	0	0	0	0	0
21	dolor	odio	p	3.1036E+14	2020-06-30	09:41	+0000	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	prin	interd		2.9713E+14	2020-06-30	09:39	+0000	104	2	0.01923077	0	0	2	0	0	0	0	0	0	0	0	0	0
23	non	igulus		6.6556E+15	2020-06-30	09:32	+0000	170	4	0.03535941	0	0	3	0	0	0	1	0	0	0	0	0	0
24	lorem	quisq		1.6888E+15	2020-06-30	09:32	+0000	925	21	0.0227027	0	1	7	2	0	6	5	0	0	0	0	0	0
25	ridicul	us		7.1232E+15	2020-06-30	09:05	+0000	253	28	0.11067194	0	1	3	0	0	0	3	2	0	0	0	0	19
26	morts	quis	it	8.1534E+15	2020-06-30	09:02	+0000	52	3	0.05769231	0	0	3	0	0	0	0	0	0	0	0	0	12
27	nam	dui	pro	4.0018E+15	2020-06-30	09:00	+0000	65	5	0.07692308	0	2	3	0	0	0	0	0	0	0	0	0	0
28	ut	erat	curas	3.3223E+15	2020-06-30	08:55	+0000	215	5	0.02325581	0	0	4	0	0	0	1	0	0	0	0	0	0
29	mauris	egit		5.5313E+15	2020-06-30	08:46	+0000	172	10	0.05873954	0	1	2	5	0	0	2	0	0	0	0	0	0
30	ante	ipsum		2.0880E+15	2020-06-30	08:42	+0000	792	37	0.04671717	1	0	16	2	0	7	8	0	0	0	0	0	196
31	augue	luctu		2.1142E+15	2020-06-30	08:36	+0000	113	3	0.05564103	0	0	3	0	0	0	0	0	0	0	0	0	0
32	arcu	adjisp		3.3138E+15	2020-06-30	08:24	+0000	604	21	0.03475821	0	0	5	0	0	2	0	0	0	0	0	0	14
33	egest	massa		7.6379E+14	2020-06-30	08:13	+0000	593	18	0.03035413	0	0	10	4	0	4	0	0	0	0	0	0	113
34	augue	vel	ad	2.0859E+15	2020-06-30	08:06	+0000	657	3	0.05455111	0	0	1	0	0	0	2	0	0	0	0	0	0
35	imperdiet	nu	1.9515E+15	2020-06-30	08:04	+0000	436	12	0.02752294	0	2	9	0	0	0	1	0	0	0	0	0	0	0
36	duis	bibendi		3.0632E+15	2020-06-29	23:36	+0000	2685	19	0.00707635	0	3	4	0	0	0	12	0	0	0	0	0	0
37	nulla	suscipit		9.8443E+15	2020-06-29	21:23	+0000	98	1	0.01020408	0	0	0	0	0	0	1	0	0	0	0	0	0
38	velit	nef	nisi	6.8194E+14	2020-06-29	18:55	+0000	542	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Univariate Analysis:

Analyze the distribution of key metrics: Use histograms or bar charts to understand how frequently mentions, likes, shares, etc., occur.



Identify trends over time: Create line charts to visualize how engagement metrics (likes, comments, shares) change over days, weeks, or months.



3. Compilation of all the graphs and plots for final business presentation:





EXPERIMENT NO.: 5

Aim: To develop content-based social media analytics for local business. (Text – Topic Modelling/issue/trends/ Sentiment analysis, etc).

Theory: Content based social media analytics is a type of data analysts that focuses on the content of social media posts, messages, and other types of digital content. It involves analysis the text, images, videos, and other media that users post on social media platforms to identify trends, sentiment & other insights that can help businesses and organizations make data-driven decisions.

Content-based social media analytics typically involves using natural language processing (NLP) & machine learning algo to analyse large volumes of social media data. These tools can help identify patterns & trends in social media content.

Examples of content-based social media analytics include monitoring brand mentions, analysis customer feedback, & tracking social media influencers. By analysis social media Content, businesses can gain valuable insights into their target audience, improve their social media strategy & data-driver decisions to drive business growth.

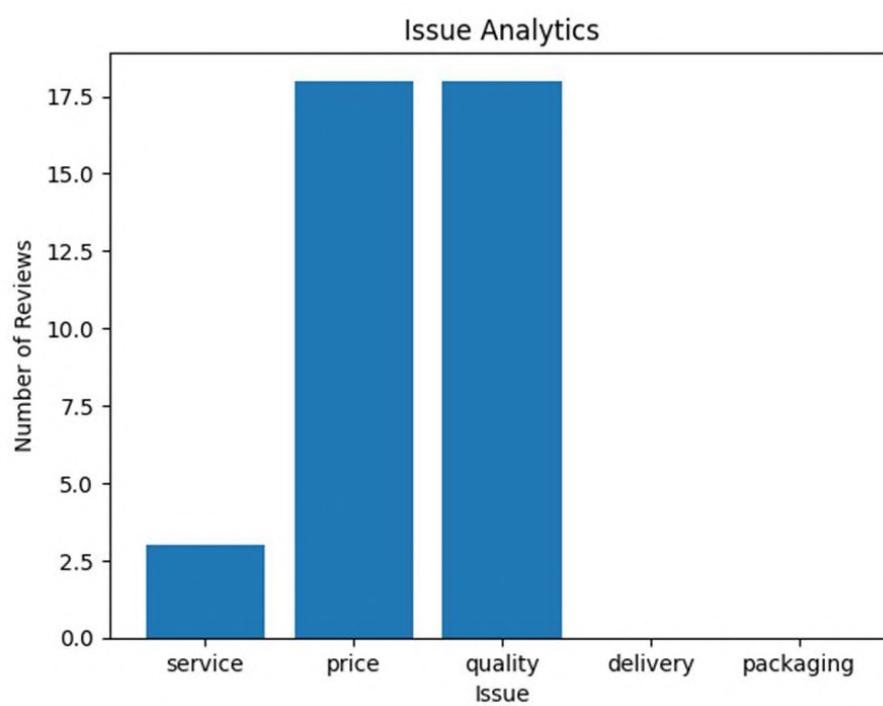
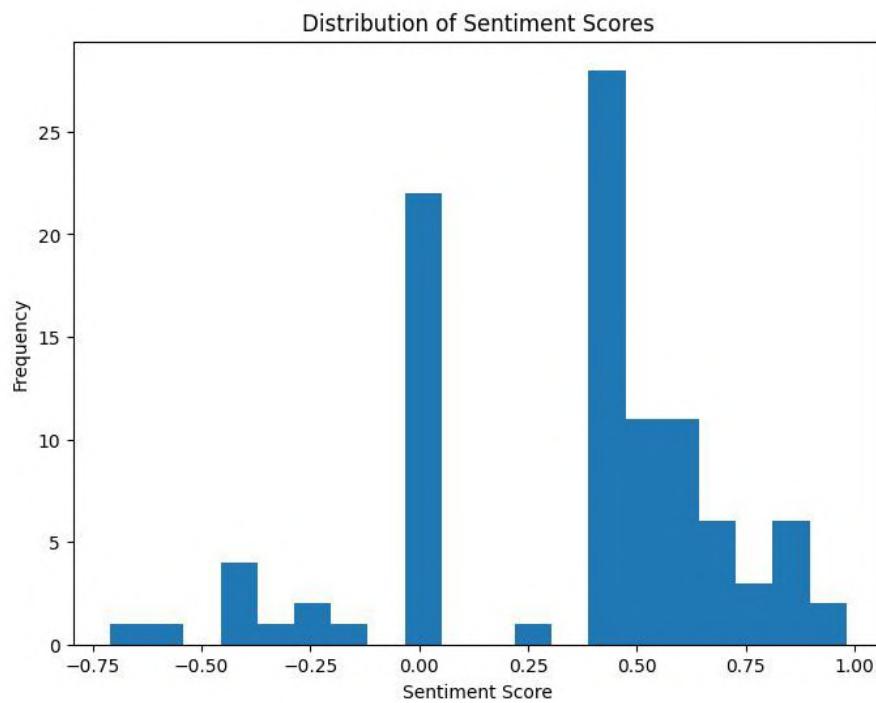
1. **Topic modelling:** Topic modelling is a technique in natural processing (NLP) & machine learning that aims to automatically identify topics present in a collection of documents or texts. The goal of topic modelling is to uncover the underlying themes or topics that are being discussed in a particular set of documents or texts. In topic modelling, algo analyse the co-occurrence of words & phrases in a large dataset of texts to identify clusters of related words. These clusters are then interpreted as topics, which can be used to categorize and label the documents.

2. **Sentiment analysis:** Sentiment analysis is a type of NLP and ML technique that aims to automatically identify and extract the sentiment or opinion expressed in a piece of text such as social media posts reviews, or news articles. In social media analytics, sentiment analysis is used to understand the overall sentiment of users towards a particular brand, product, or topic.
In social media analytics, sentiment analysis can be used to track the sentiment of users towards a particular brand or product over time. This info can be used to identify customer needs and preferences, track changes in customer sentiment, a develop strategies to improve customer satisfaction.

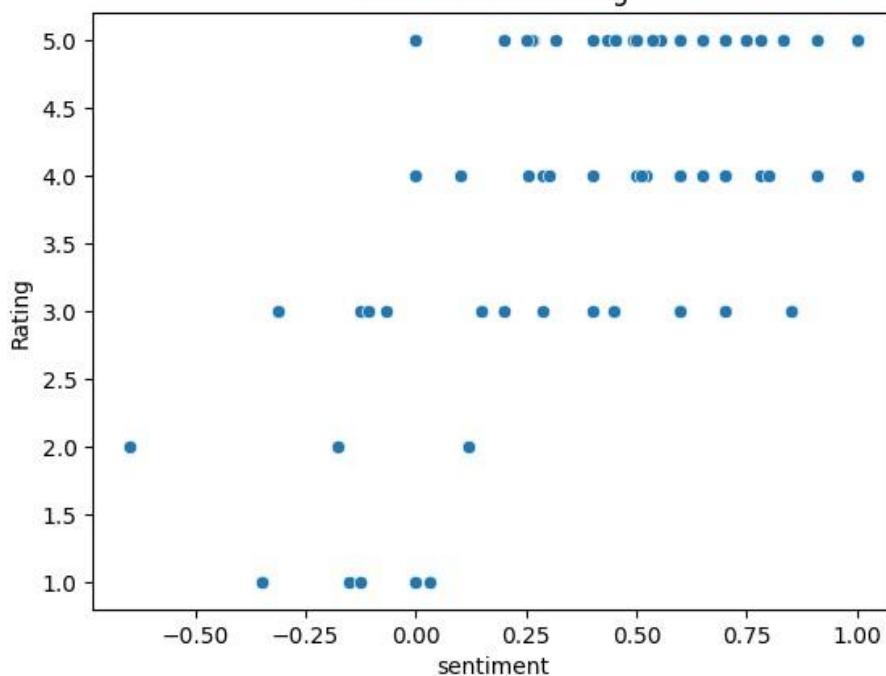
3. **Issue analytics:** Is a type of data analysis that focuses on identifying & addressing issues raised by customers or users of a product or service. One way to conduct Issue analytics is by analysis negative reviews on various platforms such as social media, review sites. Negative reviews often contain valuable info about the issues or challenges that customers are facing with a product or service. By analysis these reviews businesses can identify common themes and patterns in customer complaints, specific issues or problems mentioned by customers, such as product defects, poor customer service, or issues with pricing and use this information to make improvements to their products or services.



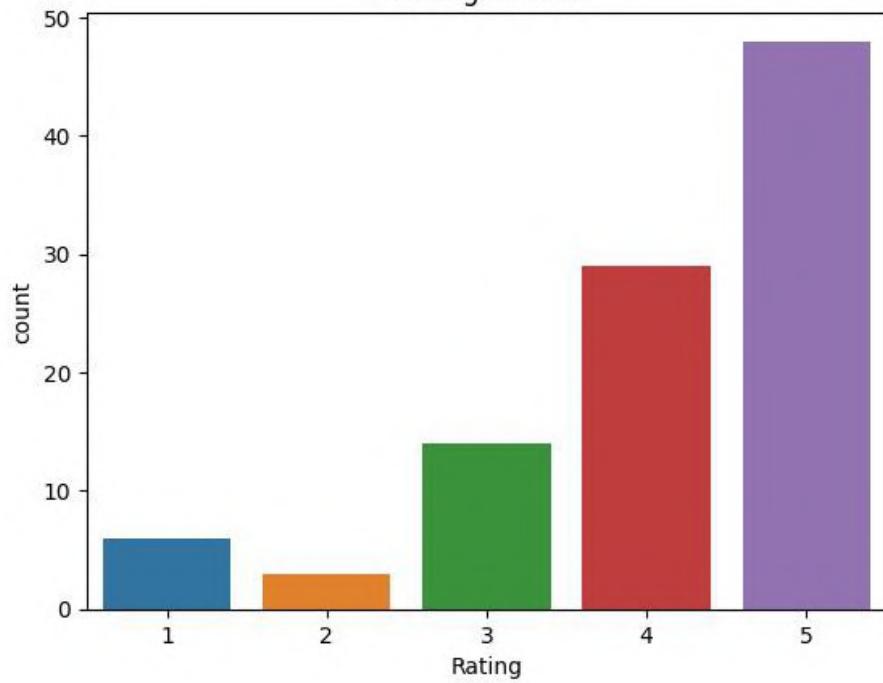
Output:



Sentiment vs Rating



Rating Counts



Conclusion: Thus, we have learnt about content-based social media analytics and its various applications, & have implemented them successfully.



EXPERIMENT NO.: 6

Aim: To Develop structure based social media analytics model for any business (community detection, influence analysis, etc).

Theory: Structure-based social media analysts is a type of social media analysts that involves using a structured approach to analyse social media data. It uses techniques such as NLP, ML, and data mining to extract valuable insights from social media data. The structured approach involves breaking down the social media data into smaller more manageable components, such as individual's posts, tweets in comments. These components can be analysed to identify patterns, trends, and themes within the data.

Structure-based social media analytics can be used analytics can be used to measure the effectiveness of social media campaigns, monitor brand reputation, track customers sentiment, and identify emerging trends and topics within a particular industry or niche.

1. **Community detection:** Community detection is a technique used in structure based social media analytics to identify groups of users within a social network to identify clusters or communities of users who are densely connected to each other.

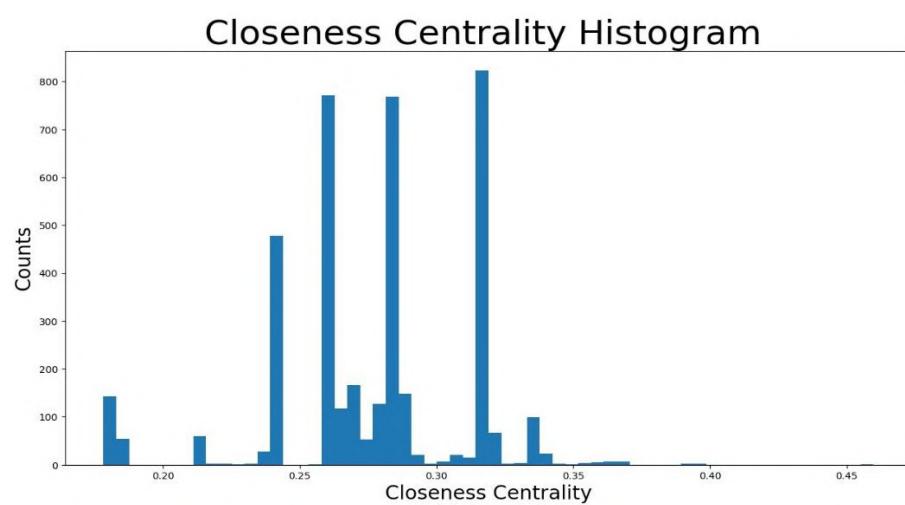
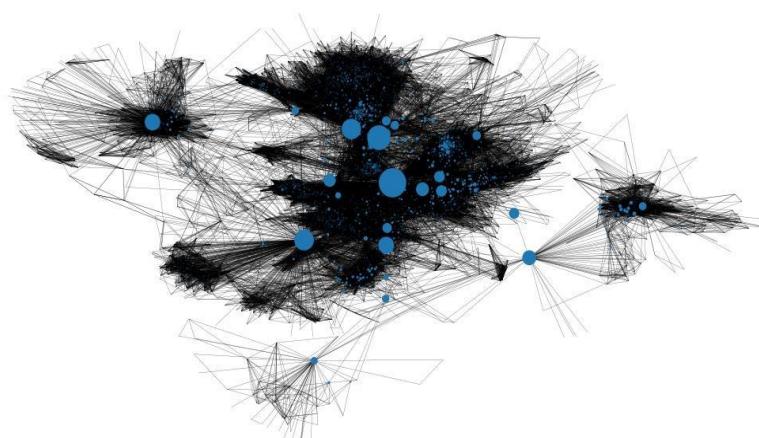
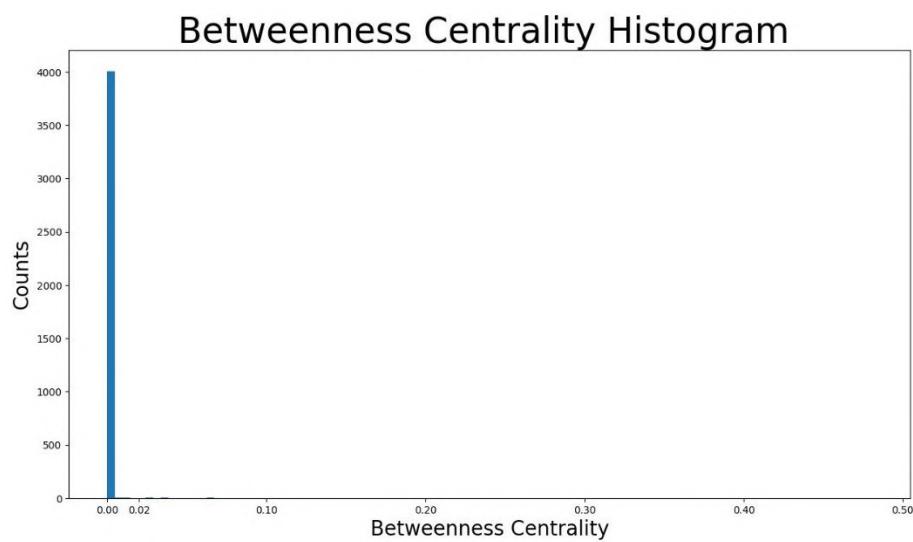
In the context of social media, community detection can be used to identify group of users who are talking about a particular topic or who are a common interest in a brand or product. This info can be used to inform social media marketing strategies, such as targeting specific communities with tailored content on advertisements.

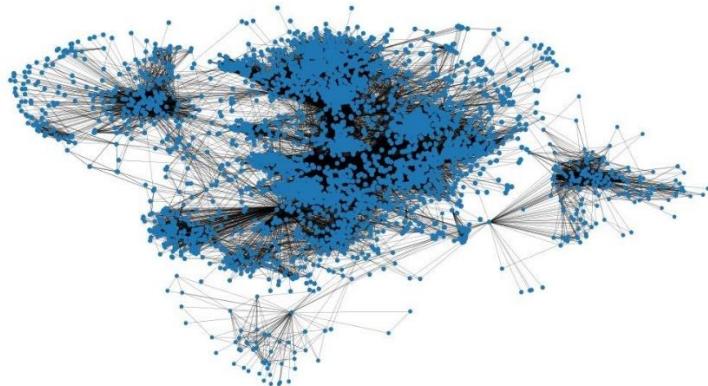
There are several methods for community detection, including modularity optimization, hierarchical clustering, and spectral clustering. These methods involve analysing the structure of the social network, such as the connection between user on the content of their posts, to identify groups of users who are closely connected to each other than to users outside of the groups.

2. **Influence analysis:** Influence analysis is another technique used in structure- based social media analytics that focuses on identifying the most influential users within a social network. These influential users can be individuals, brands, organizations that have a large following and the ability to shape opinion and behaviours of others within the network. In the context of social media, influence analysis involves analysing the interactions between user in a network to identify the user who have significant impact on the conversations and discussions within the network. This info can be used to inform social media marketing strategies, such as identifying key influences to collaborate with or targeting influential cases with specific promotions or content.

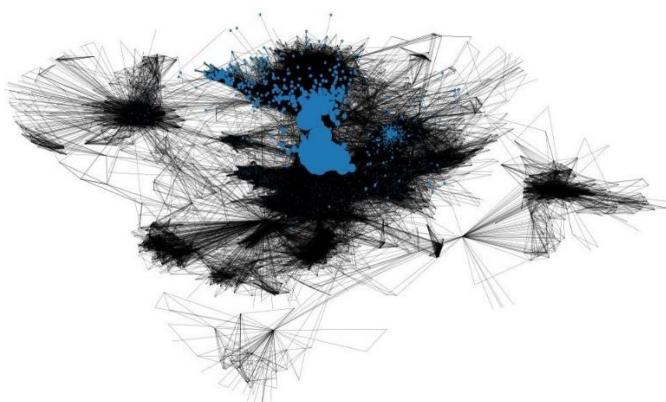
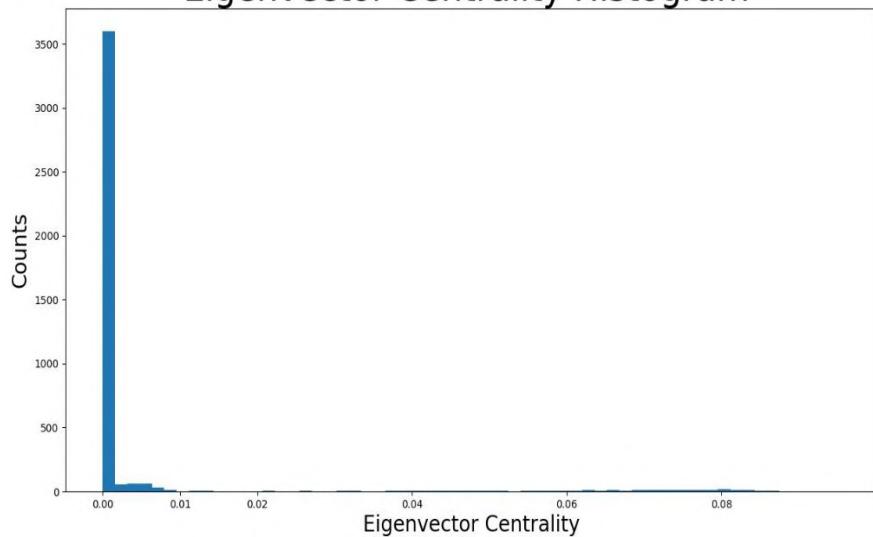
These are several methods for conducting influence analysis, including social network analysis, ML and NLP. These methods involve analysis factors such as the number of followers, the frequency and tone of posts, and the level of engagement and interaction with other users to identify influential users with the network.

Output:





Eigenvector Centrality Histogram



Conclusion: Thus, we have learnt about structure-based social media analytics and its various applications, I have implemented them successfully.



EXPERIMENT NO.: 7

Aim: To Develop a dashboard and reporting tool based on real time social media data.

Theory: Power BI is a business analytics service provided by Microsoft that allows users to analyse and visualise data from various sources. It enables users to create interactive reports, dashboards and visualisations that can be shared with others. Power BI can be used to connect to multiple data sources including excel spreadsheets, cloud-based premises data sources and various databases. It provides a wide range of visualisation options and tools for data preparation and modelling making it a powerful tool for data analysis and decision making.

Power BI dashboards are a collection of visualisation, reports and data that provide a summary views of an organisations Key Performance Indications (KPIs) and metrics. These are designed to help users quickly analyse and monitor business data and track progress towards specific goals.

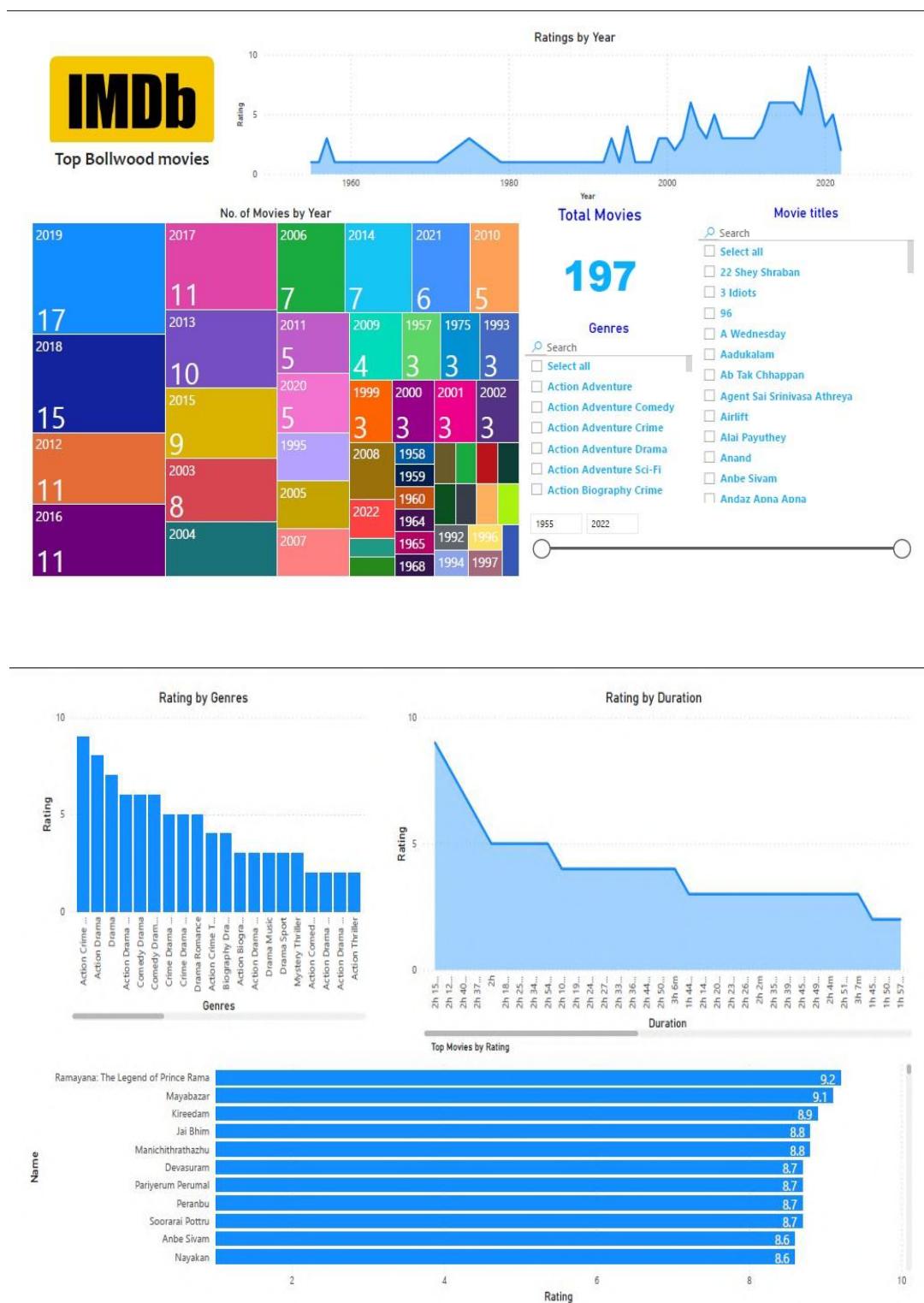
A Power BI dashboard can be created by connecting to various data sources and then creating visuals such as charts, graphs and tables which represent the data in a meaningful way. These visuals can be customised and arranged on the dashboard to provide a clear and concise user of the most important information.

Power BI provides a wide range of visualisation options to represent data in a meaningful and interactive way. Some of the common visualisations available in Power BI includes:

1. **Bar charts:** Shows value as horizontal or vertical bars. Useful for comparing different categories of data.
2. **Column Chart:** Like bar charts but with vertical bars and can be used to compare different categories of data.
3. **Line Chart:** Shows data trends over time and is useful for identifying patterns on change in data.
4. **Table:** A simple grid that displays data in rows and columns.
5. **Map:** Shows geographical data on a map and can be used to visualise location-based data.
6. **Gauge:** Shows a value on a scale on dial can be used to indicate progress towards a goal on target.
7. **Tree map:** Displays hierarchical data as nested rectangles useful for visualising hierarchies.
8. **Scatter Chart:** Shows the relationship between two variables and be used to identify correlations or outliers.
9. **Funnel Chart:** Shows a series of steps or stages and can be used to track progress through a process or sales pipeline.



Output: Visualization using PowerBI



Conclusion: Thus, we have learnt about Power BI and have developed a dashboard for social media data successfully.



EXPERIMENT NO.: 8

Aim: To design the creative content for promotion of your business on social media platform.

Theory: Social Media marketing refers to all use of social media platforms such as Facebook, twitter, Instagram, LinkedIn, and other to promote a product, service, or brand. It involves creating and sharing content, engaging with followers and influencers, running paid advertising campaigns, and analysing data to measure the effectiveness of the marketing efforts – social media marketing can help business build brand awareness, increase website traffic, generate leads, and ultimately drive sales. It is a powerful tool for reaching a large and diverse audience, building effectiveness with customers, and staying relevant in an increasingly digital world.

Social media content creation is much more than just posting to Instagram every so often. It involves strategy, planning, analysis, and a good helping of skill to master creating content for a brand's social media presence.

The main objective of the ad is to increase awareness of the company's review analysis services and to encourage potential businesses to try the product.

The ad highlights the benefits of using the company's analytics platform, such as gaining insights into customer feedback, improving online reputation, and making data-driven business decisions.

The target audience for the ad are businesses that are active on social media and care about their online reputation.

To create effective social media content, it's crucial to have a plan. A social media content plan is an integral component of your overall marketing strategy as it enables you to strategize the type of content to share across various social media channels while the advertisement for a business on social media are as follows:

1. **Identify the objective:** Start by identifying the objective of the campaign whether it is to increase brand awareness, drive traffic to a website, generate leads or increase sales.
2. **Identify the target audience:** Determine who the target audience is for the ad campaign, include demographics, interests, and behaviour.
3. **Choose the social media platforms:** Select the social media platform that align with the target audience and campaign objective.
4. **Create ad content:** Create compelling ad content that resonates with the target audience and includes clear call to actions.
5. **Set the budget of duration:** Determine the budget and duration of the ad campaign including total amount of money to spend on the length of ad.
6. **Choose the ad placement:** Select where the ad will be placed within the social media platform.
7. **Analyse results:** Analyse the results of the ad campaign, including metrics such as reach, engagement and conversation rates use this data to optimize future and campaign.



Output:

REVIEWMINDS CO.

EAGER TO BOOST YOUR BUSINESS GROWTH?

YOUR REVIEWS, OUR EXPERTISE.

FIRST 30 DAYS FREE



 **REVIEWS EXTRACTION**

 **SENTIMENT ANALYSIS**

 **BUSINESS INTELLIGENCE**



www.reviewminds.com

REVIEWMINDS CO.

REVIEWS EXTRACTION


7Lab @7labnl
@pandadoc help! we are getting an "authentication error", we were rather busy with an important quote....
1:56 PM - Jul 7, 2017 · Twitter Web Client


Orna McCollum doesn't recommend Stitc.
I received my box today and the stylist did not read my style nc
Everything in the box was not my style, it's all being returned /
have turned off receiving anymore fixes. I am very disappoir
cannot cancel my account but I have been cancelled my paymer
Definitely will not be recommending this subscription.


I'm still waiting for my order to ship. I ordered on 5/2/20
and it almost June and still have not heard or received
anything
Like · Reply · 3w



TRY NOW!

www.reviewminds.com



REVIEWMINDS CO.

SENTIMENT ANALYSIS

- ✓ Classify comments into positive, neutral and negative.
- ✓ Detailed classification of emotions
- ✓ Filter duplicate values
- ✓ Export using date range

TRY NOW!

contact@reviewminds.com
+91-829-875-5189

www.reviewminds.com

7Lab @7labnj 1.56 PM - Jul 7, 2017 - Twitter Web Client @pandadoc help! we are getting an "authentication error", we were rather busy with an important quote....

Orna McCollum @OrnaMcCollum 1 August at 17:57 · Q doesn't recommend Stila. I received my box today and the stylist did not read my style nc Everything in the box was not my style, it's all being returned. I have turned off receiving anymore fixes. I am very disappoir cannot cancel my account but I have cancelled my paymer Definitely will not be recommending this subscription.

Orna McCollum @OrnaMcCollum 1 August at 17:57 · Q I'm still waiting for my order to ship. I ordered on 5/2/20 and it almost June and still have not heard or received anything Like · Reply · 3w

REVIEWMINDS CO.

BUSINESS INTELLIGENCE

- ✓ Uncover trends to understand your audience
- ✓ Perform competitor analysis
- ✓ Track engagement metrics such as likes, shares and comments
- ✓ Identify issues & areas of interests

TRY NOW!

contact@reviewminds.com
+91-829-875-5189

www.reviewminds.com

7Lab @7labnj 1.56 PM - Jul 7, 2017 - Twitter Web Client @pandadoc help! we are getting an "authentication error", we were rather busy with an important quote....

Orna McCollum @OrnaMcCollum 1 August at 17:57 · Q doesn't recommend Stila. I received my box today and the stylist did not read my style nc Everything in the box was not my style, it's all being returned. I have turned off receiving anymore fixes. I am very disappoir cannot cancel my account but I have cancelled my paymer Definitely will not be recommending this subscription.

Orna McCollum @OrnaMcCollum 1 August at 17:57 · Q I'm still waiting for my order to ship. I ordered on 5/2/20 and it almost June and still have not heard or received anything Like · Reply · 3w

Conclusion: Thus, we have learnt about the steps for creating a social media advertisement and have thus created a poster for the promotion of a business on various social media platforms.



EXPERIMENT NO.: 9

Aim: To analyse competitor activities using social media data.

Theory: Analysing competitor activities on social media involves monitoring and evaluating the social media content, engagement and advertising strategies of competing businesses or organisation in the same industry or niche.

By analysing your competitor's social media activities, you can identify their strengths and weakness see what types of content they are posting, which platform they are using, how often they post, and how they engage with their audience. This information can help you develop more effective social media strategies. Such as improving your content, increasing your engagement, identifying opportunities to collaborate with influencers or partners and finding new ways to differentiate your brand.

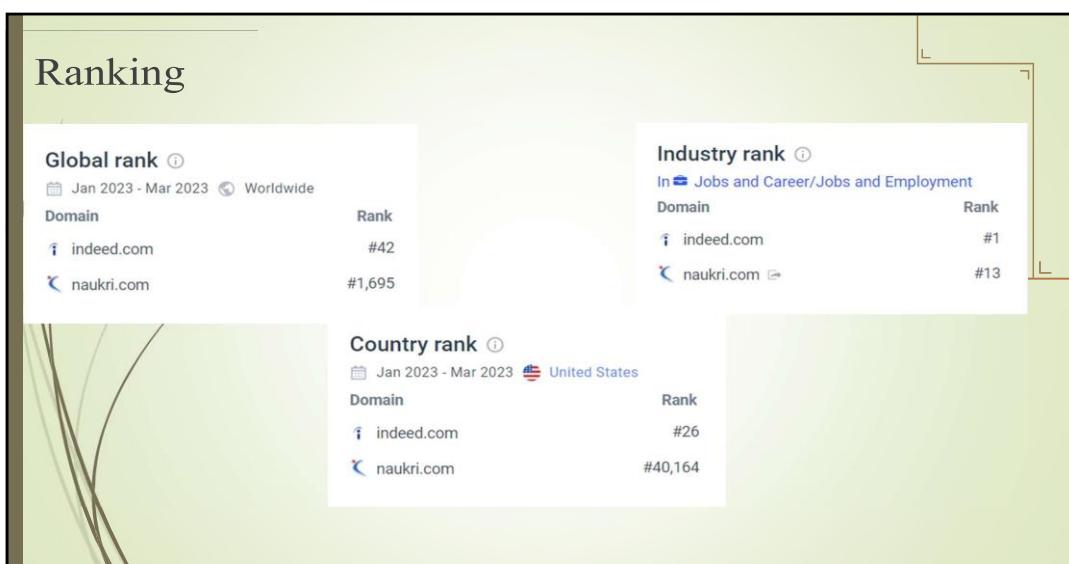
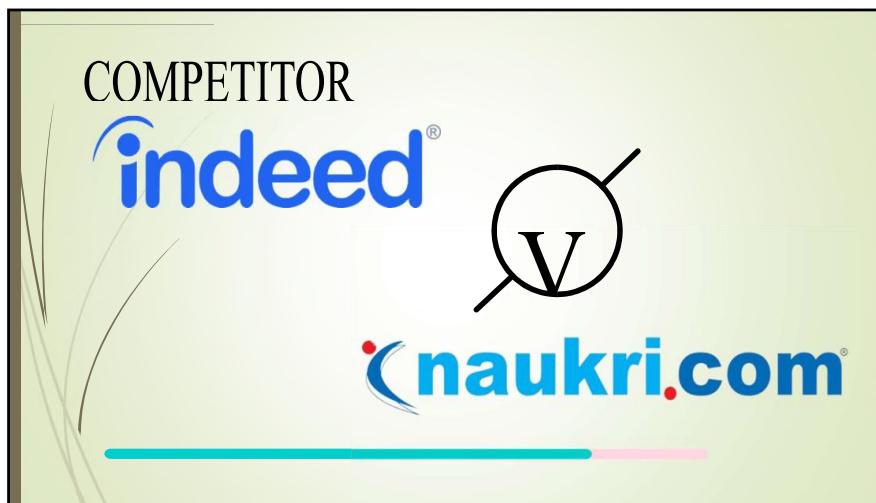
Overall analysing competitor activities on social media is an essential aspect of social media marketing as it provides valuable insights and help you to stay competitive in your industry or niche.

The general Steps are:

1. **Identify your competitors:** Determine who your competitors are in the industry or niche that you operate in.
2. **Select social media channels to analyse:** Decide which social media channels your competitors using and which ones you want to focus on.
3. **Define the metrics to track:** Determine the key you want to track such as follows count, engagement rate, content types.
4. **Monitor their social media activities:** Track your competitors social media activities using social media monitoring tools.
5. **Analyse their content:** Evaluate the type of content they are posting and types of engagement their post receive.
6. **Evaluate their engagement strategies:** Analyse how your competitors engage with their followers including comments.
7. **Compare your performance:** Compare your social media performance with that of your competitor to identify areas where you can improve your strategy.
8. **Draw insights to act:** Use insights gained from your competitor's analysis to adjust your social media strategy, improve your content, or identify opportunities to differentiate brand.



Output:





Engagement

Actively using data insights to inform decision-making and drive business outcomes.

Engagement

Jan 2023 - Mar 2023 Worldwide All traffic

Metric	indeed.com	naukri.com
Monthly visits	591.0M 🎉	26.20M
Monthly unique visitors	173.4M 🎉	9.022M
Visits / Unique visitors	3.41 🎉	2.90
Visit duration	00:06:29	00:06:57 🎉
Pages per visit	8.43 🎉	5.99
Bounce rate	33.4% 🎉	35.46%

Visits over time (Day)

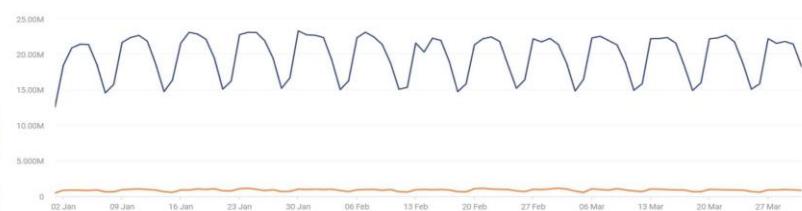
No. of website or social media platform visits, tracked and analysed daily, to identify trends, patterns, and insights into user behaviour and engagement

Visits over time

Jan 2023 - Mar 2023 Worldwide All traffic

D W M 🔍

indeed.com naukri.com
1.773B 78.62M



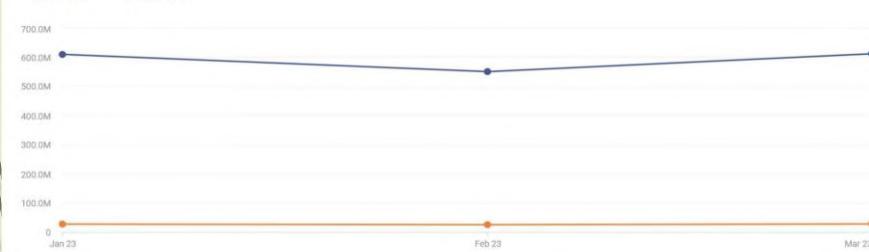
Visits over time (Month)

Visits over time

Jan 2023 - Mar 2023 Worldwide All traffic

D W M 🔍

indeed.com naukri.com
1.773B 78.62M





Geography

Analysing location-based data, such as demographics, purchasing patterns, or user behaviour, to gain insights and inform decision-making in various industries, including marketing, logistics, and real estate.

Top countries ⓘ

Jan 2023 - Mar 2023 Worldwide All traffic



Country	Traffic Share	Group traffic share split
United States	39.90%	99.9%
India	8.41%	53.0% 47.0%
United Kingdom	7.85%	99.8%
Canada	6.27%	99.9%
Japan	4.49%	99.9%

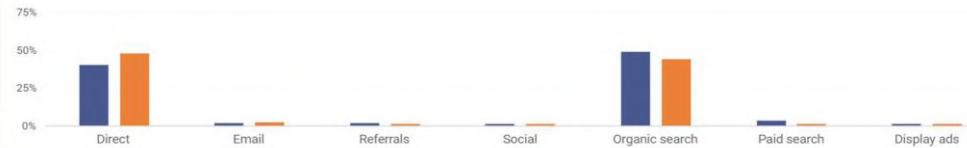
Marketing Channels

The platforms and methods used to promote products or services, including social networks, paid advertising, influencer marketing and email marketing.

Channels overview ⓘ

Jan 2023 - Mar 2023 Worldwide All traffic

indeed.com naukri.com
1.772B 78.55M



Organic Search

The process of optimizing social media content to improve its visibility and ranking in search engine results pages (SERPs), without paid promotion.

Top organic search terms ⓘ

Jan 2023 - Mar 2023 Worldwide Desktop

indeed.com naukri.com

Search Term	Traffic Share	Group Share Split	Volume	CPC
indeed	15.06%	99.9%	21,751,690	\$0.65
indeed jobs	1.16%	100%	2,583,880	\$0.62
naukri	0.50%	99.9%	533,770	\$0.08
naukri login	0.23%	100%	206,720	\$0.09
indeed login	0.20%	99.9%	187,250	\$0.88



Paid Search

The process of placing targeted ads on search engine results pages (SERPs) to drive clicks or impressions to increase visibility and drive traffic to a website or landing page.

Top paid search terms ⓘ

Jan 2023 - Mar 2023 Worldwide Desktop

indeed.com naukri.com

Search Term	Traffic Share	Group Share Split	Volume	CPC
indeed	9.32%	100%	21,751,690	\$0.65
naukri	4.06%	99.6%	533,770	\$0.08
naukri login	1.39%	100%	206,720	\$0.09
indeed jobs	1.14%	100%	2,583,880	\$0.62
indeed canada	0.87%	100%	304,160	\$0.48

Referral

Acquiring website traffic or sales through the promotion of products or services by individuals or businesses, typically through word-of-mouth, links, or other forms of recommendation.

Top Referring Websites ⓘ

Jan 2023 - Mar 2023 Worldwide Desktop

Domain	Website Categories	Traffic Share	Group Traffic Share Split
indeed.onelogin.com	Jobs and Employment	14.82%	100%
take.indeedassessments.com	Jobs and Employment	11.76%	100%
jobs.smartrecruiters.com	Jobs and Employment	6.64%	100%
simplyhired.com	Jobs and Employment	5.36%	100%
glassdoor.com	Jobs and Employment	2.35%	100%

Ad Monetization

Generating revenue by displaying advertisements on social media platforms or websites, typically through ppc

Top Ad Destinations ⓘ

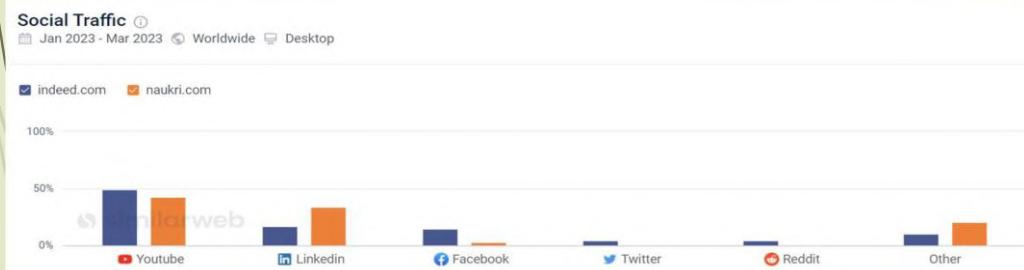
Jan 2023 - Mar 2023 Worldwide Desktop

Domain	Traffic share	Group Traffic Share Split
careers.homedepot.com	9.14%	100%
jobs.coop.co.uk	7.70%	100%
amazon.jobs	7.61%	99.9%
careers.aldi.us	6.14%	100%
adecco.ncoreplat.com	3.98%	100%



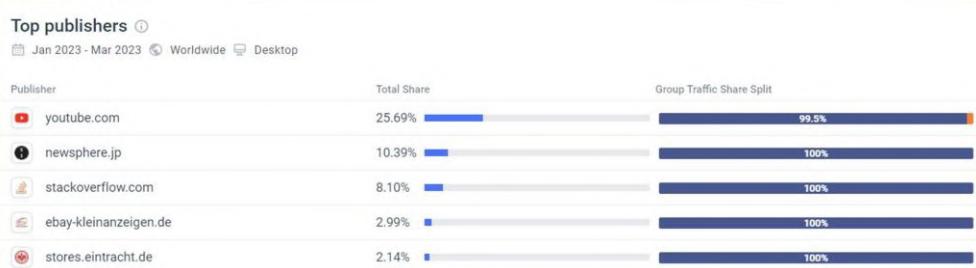
Social Traffic

Flow of website visitors or users that come from social media platforms or social networks, because of social media advertising campaigns or social media content promotion.



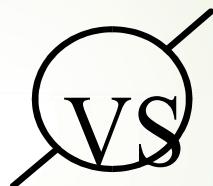
Display Advertising

Use of visual ads, such as banners or videos, on social media platforms or websites, to increase
brand awareness, drive website traffic, and generate leads or sales.

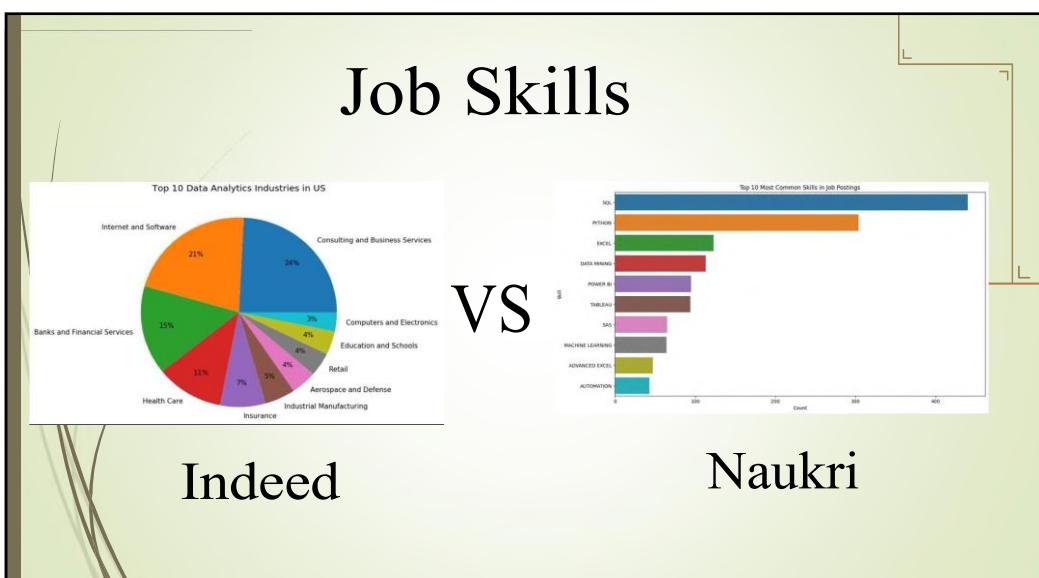
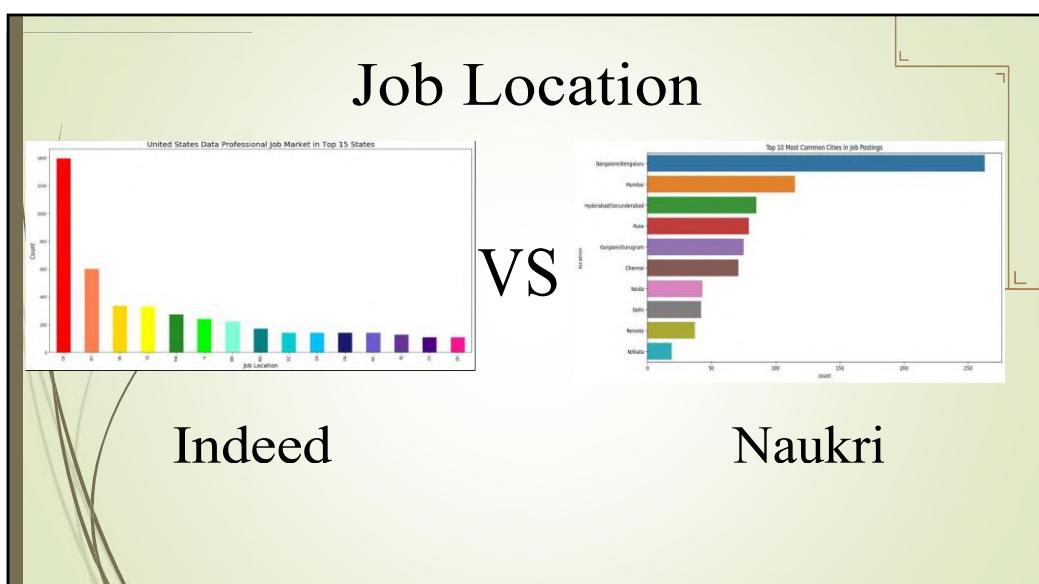


COMPETITOR ANALYSIS by Python

indeed®

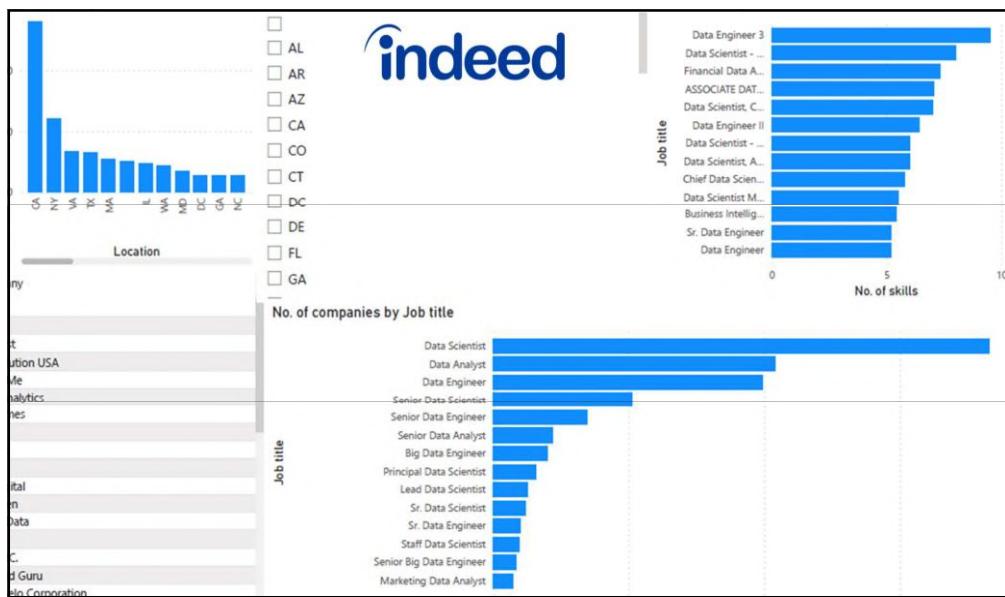
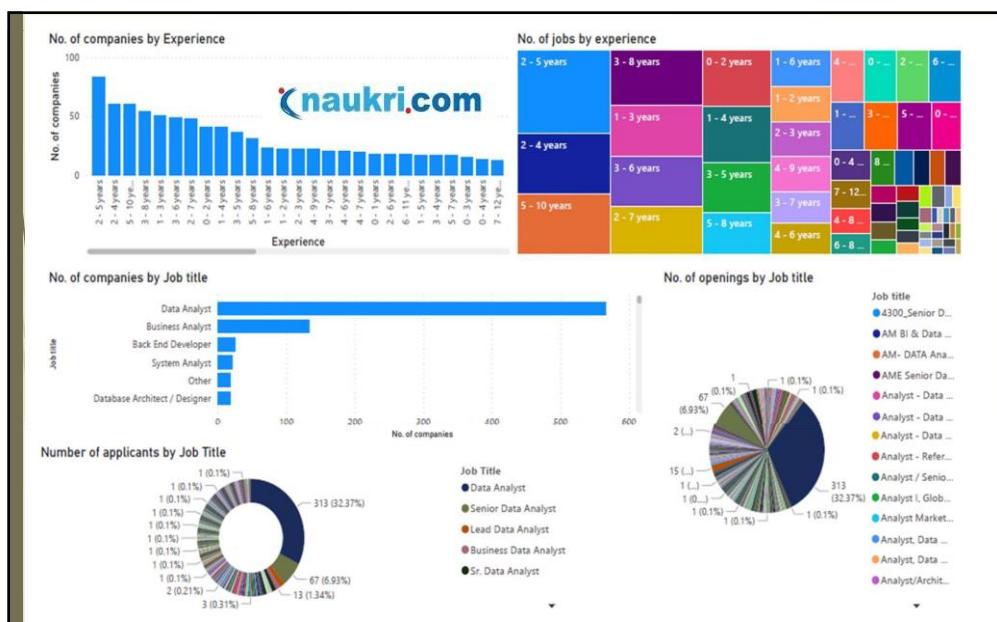


naukri.com®





PowerBI visualizations



Conclusion: Thus, we have successfully performed competitor analysis using social media with the appropriate tools.



EXPERIMENT NO.: 10

Aim: To develop social media text analytics models for improving existing products / service by analysing customer's reviews / comments.

Theory: Social Media text analytics models are used to analyse and understand customer's reviews and comments on social media platforms. These models utilize NLP techniques to extract relevant information from social media data and provide insights to customers opinions, performances, and sentiments.

There are several social media text analytics models that can be used for analysing customers' reviews and comments industry:

1. **Sentiment Analyst:** This model uses machine learning algorithms to categorize text as positive, negative, or neutral based on the expressed sentiment.
2. **Topic Modelling:** The model identifies topics or themes that are present in a language corpus of text, such as customers reviews or comments and groups them into categories.
3. **Named entity recognition:** This model extracts named entities, such as people, places, and organization.
4. **Emotion detection:** This model identifies emotions expressed in customers reviews on comments, such as happiness, anger, and sadness using NLP techniques.

By applying these models to social media data business and gain valuable insights into customers options and preferences, which can help improve their products or services, develop better marketing strategies and identify area for improvement. These models can also help business to identify potential issues or concerns that customers may have and address them proactively.

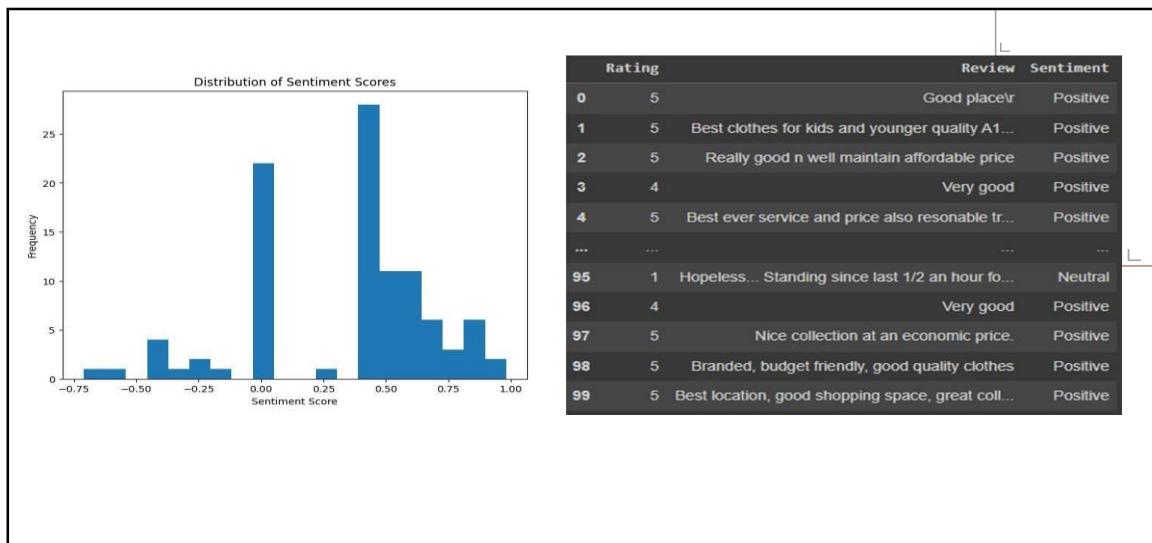
Overall, social media text analytics media provide business with a powerful tool for analysing customer feedback and understanding the sentiment and performances of their target audience.

Output:

REVIEWS/COMMENTS ANALYSIS

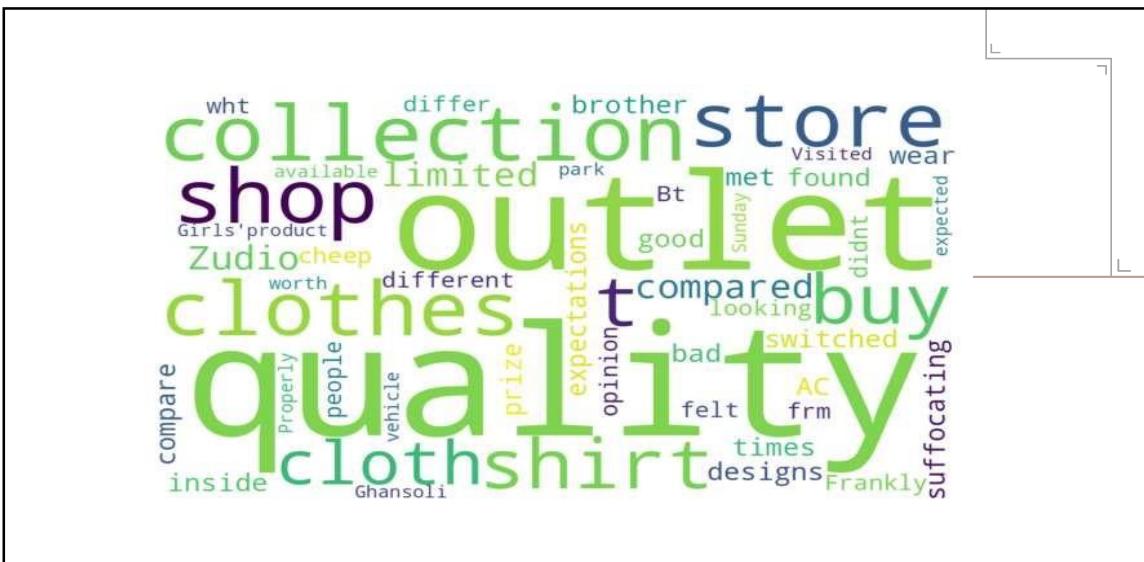
zudio





```
# Filter the dataframe to show only negative sentiment reviews  
negative_reviews = df[df['Sentiment'] == 'Negative']  
  
# Display the negative reviews  
negative_reviews
```

Rating		Review	Sentiment
6	1	No good collection in clothes i found , no qua...	Negative
24	2	Collection didn't met expectations.. Also thei...	Negative
57	2	My brother buy 2 t shirt from this shop very ...	Negative
66	3	Frankly didnt like the quality of the clothes....	Negative
74	3	Girls'product not available Properly as compar...	Negative
78	1		Not worth
84	1		Not That expected!
89	3	Visited Zudio at Ghansoli on Sunday. You can p...	Negative
93	3	Expensive pricing compared to other stores. Wi...	Negative

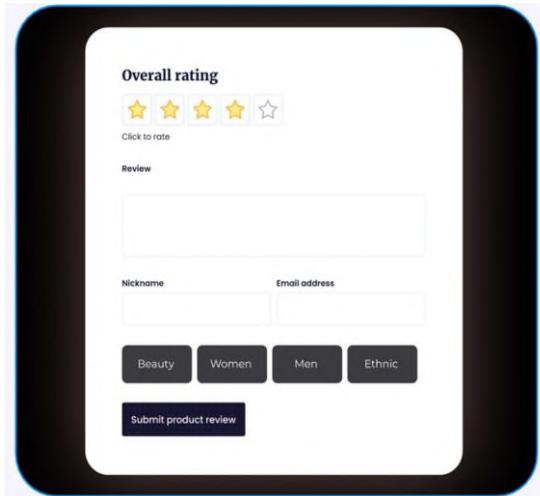




Scope Of Improvement

- Firstly, the store needs to work on its collection of clothes and ensure that they are of good quality and meet the customers' expectations. It is also essential to ensure that the products are available for both men and women and that there is a wide range of options to choose from.
- Secondly, the store needs to work on its pricing strategy. The customers mentioned that the store's prices were high compared to other stores, which makes it less attractive for customers to shop there. The store needs to review its pricing and ensure that it is competitive and fair.
- Thirdly, the store needs to improve its customer service. The customers mentioned that they were not satisfied with the product, and there was no proper assistance provided. The store needs to train its staff to be more helpful, attentive and be able to assist customers with their queries and concerns.
- Lastly, the store needs to actively gather feedback from customers and act upon it to continuously improve their offerings. By implementing these changes, the store can improve its reputation and attract more customers, leading to a more profitable business.

Suggested addition of a customer portal



Conclusion: Thus, we have successfully developed social media text analytics models for improving a service by analysing customers' reviews and comments



Name:- Pruthvirajesh S. Chitamkar

ROLL NO.:- AIML11

BRANCH:- CSE - [AI&ML]

Year:- BE Sem VIII

Subject:- Social media Analytics
(SMA)

Topic:- Assignment No. 01

Date:- 15/01/24

Sign:- Pruthvi



i) Explain SMA.

Social media Analytics (SMA) refers to the process of collecting, analyzing and interpreting data from social media platforms to derive meaningful insights. It involves using various tools and techniques to monitor social media channels, understanding audience behaviour, track brand mentions, measures the effectiveness of marketing campaigns, and identify trends & patterns in online conversations.

What is the Need of SMA?

- i) Increase customer acquisition: Your customers are your brand's lifeblood. Completely managing their journey from early awareness to established customer through social media analytics is vital for retention & for your brand's long-term.
- ii) Protect Brand Health: A brand is collective whole of all the touchpoints & interactions consumer have with a brand, and this includes messaging coming directly from the company.
- iii) Lower customer care costs: Customer care takes dedicated structure and these days customer care is an 'always on' situation. Consumers have no hesitation reaching out to brands when issues arises.
- iv) Righttime product launches: Social media analytics helps brands get in on emerging trends by informing them of products and services that consumers want.
- v) Boost campaign performance: SMA allows brands to learn what their audience care about & influences their purchase.
- vi) Improve crisis management: The insight social media analytics offers brands when crisis hits are worth the price of admission alone, as if we saves both cost and reputation may damage losing speed of reaction.



2) Describe 7 layers of SNA.

Social media at minimum has seven layers of data.

Each layer carries potentially valuable information.

Out of seven layers, some are visible & easily identifiable & others are invisible.

i) Layer one: Text

Social media Text analytics deals with the extract and analysis of business insights from textual outputs of social media content, such as comments, tweets, blog posts, and Facebook status updates.

Text analytics is mostly used to understand social media users sentiments & identify emerging names & topics.

ii) Layer two: Networks.

Social media Ntw analytics extract, analyze and interpret personal and professional social ntw, for example, Facebook & Twitter. Ntw analytics seeks to identify influential nodes (example people & org) & their position in the ntw.

iii) Layer three: Actions.

Social media action analytics deals with extracting, analyzing and interpreting the act performed by social media users, including likes, dislikes, shares, opinions and endorsement. Act analytics are mostly used to measure popularity, influence and predict in social media. (example Twitter mentions)

iv) Layer four: mobile!

Mobile Analytics is the next frontier in the social business landscape. Mobile analytics deals with measurement and opportunity user engagement with mobile app.

v) Layer five: Hyperlinks

Hyperlink analytics is about extracting, analyzing and interpreting



Social media Hyperlink (e.g., in-links and out-links)

Hyperlink analysis, for example, studies traffic patterns and sources of incoming & outgoing traffic to & leaving a source.

vi) Layer six: location

Location analytics, also known as spatial analytics or geospatial analytics, is concerned with regions and mapping the location of social media users, contents and data.

vii) Layer seven: Search engines

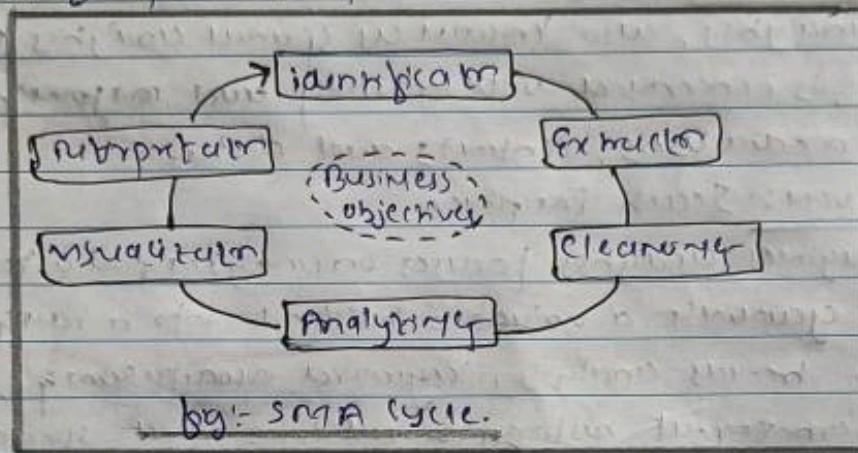
Search engines analytics, focuses on analysing historical search data for gaining a valuable insight into a range of areas, including trends analysis, keyword monitoring, search trend and advertisement history, & advertising spending statistics.

3) Compare Social media & traditional Business analytics.	
Social media analytics	Business data analytics
- Sma is semi-structured & unstructured	Business data analytics contains structured data.
- sma dealing mainly public data	Business DA deals historical target data (private) data.
- sma having highly diverse data	found within business data.
- In sma no business control over the data.	It contains unique data.
- data is Njomgai data in sma	In business data analytics it is controlled by business (firmly) data is jomgai in nature.
- data is stored in third-party database storage in sma	Here data is stored in the business own database
- widely share the over internet	Data shared within organization
- sma contains two-way communication	It contains one-way communication
- open system & bottom-up strategy	Closed-system & top-down strategy.



4) EXPLAIN SMA cycle.

Social media analysis is a six step iterative process (involving both the science and art) of mining the desired business insights from social media data.



Step 1: Identification.

The identification stage is the first part of SMA and is concerned with securing & identifying the right source of information for analytical purposes.

The no. and types of users and info. (such as text, comment, and MW) available over social media are huge, diverse, redundant and noisy.

Step 2: Extraction.

Once a reliable and reusable source of data is identified, now comes the science of extraction step stage.

The type (e.g. text, nongeneral, ② MW) and size of data will determine the method and tools suitable for extraction.

Step 3: Cleaning

This step involves removing the unwanted data from the automatically extracted data. Some data may need a lot of cleaning, and others can go into analyses directly.

Coding & labeling can be performed by machines (i.e. automated).



or can be performed manually by humans.

Step 4: Analyze

At this stage the clean data is analyzed for business insights. Depending on the layer of SMA under consideration and the tools and algorithms employed, the steps and approach you take will greatly vary. For example, nodes in a social media network can be clustered & visualized in a variety of ways depending on algorithm.

Step 5: Visualize

In addition to interpretive results, most of the seven layers of social media analysis will also result in visual outcomes.

Text analytics, for instance, can result in a word co-occurrence cloud; by person tracking will provide visual hypothesis flows; & location analysis can produce interactive maps.

Step 6: Interpret

Interpreting and translating analytic results into a language of business problem is the art of part of social media analysis.

The first approach requires training data scientists and analysts to produce interactive and easy-to-use visual results.

5)

Explain SMA tools

To keep up with the growing need for analyzing the vast amount of data, social media analytic tools are also coming to market at a great price. SMA tools come in a variety of forms.

Layers of social media & example of tools.

- text :
 - Discourse
 - Metalytic
 - Lexalytics
 - LIWC
 - Twitter
 - Voyant
 - Taxonomy



- Analytics:
 - utmwaq
 - twitonomy
 - google analytics
 - sourgewaqr iner
- HW:
 - Hadoop
 - UCINET
 - pajeR
 - Netwone
 - blocking
 - Netlytic
 - RealiH reputationmapp
- mobile:
 - countly
 - minpanel
 - google mobile analytics
- locum:
 - google fusion
 - Table locom
 - google fusion table
 - tweeps map
 - windsmap
 - followmotic
 - Esri maps
 - Agos
- Hypervisuality:
 - webometrics Analyst
 - VOSOT
- Research Engineers:
 - Google Trends

6) Explain challenges to SNA.

Social media is high volume, high velocity, and highly diverse, which in a sense, is a blessing in terms of insights it carries; however, analyzing and interpreting its present several challenges.

> volume and velocity as a challenge:
Social media data is large in size and is swiftly generated, capturing and analyzing millions of records that appear every second is a major challenge. For example on Twitter, three-hundred forty-two thousand tweets appear every minute, and on FB, one-million likes are shared every twenty minutes.

> Diversity as challenge:

Social media users and the content they generate are extremely diverse, multilingual, and vary across time and space. Not every tweet, like @ user is worth looking at.



A tweet @ minimum containing from an influential source media user is more important than a tweet from non-influential user.

> Unstructuredness as a challenge!

Unlike the data stored in the corporate databases, which are mostly numbers, social media data is highly unstructured & consists of text, graphics, audio and video.

Short social media text, such as tweets and comments, has dubious grammatical structure, and is laden with abbreviations, acronyms, and emoticons.

7) Explain Social media Network types.

i) Friendship Nw:

The most common types of social media Nw are friendship Nw such as FB, Google+, friend Nw etc people maintain social ties and share content with people they are closely associated with such as family and friends.

ii) Follow-following Nw:

In the follow-following Nw, users follow other users of interest. Twitter is a good example of follow-following Nw where users follow influential people, brands and organizations.

iii) Fan-Network:

A fan-Nw is formed by social media fans @ supporters of someone or something, such as product, service, brand, business or other entity. e.g:- user subscribed to your BB fan page.

iv) Group Nw:

Group Nw are formed by people who share common interests and activities. most social media platforms allow the creation of groups where members can post, comment, and manage in-group activities.

v) Professional Nw:



LinkedIn is a good example of professional NIN where people manage their professional identity by creating a profile that lists their achievements, education, work history and interests.

v) Content NIN:

Content NIN are formed by content posted by society members. A NIN among YT videos is an example of a content NIN.

vi) Dating NIN:

Dating NIN (such as matrim.com & Jeetu's) are focused on matching & creating a dating partner based on information.

vii) Co-occurrence NIN:

Co-occurrence NIN are formed where two more entities (e.g. key words, people, ideas, and brands) co-occur over social media outlets.

8)

Write a short note on social media NIN structure w.r.t.

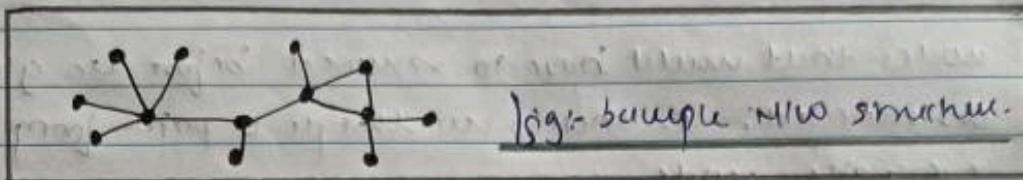
nodes: In NIN science, nodes are treated as actors (the dots on circle on the graph) & edges as relationships (the lines on graph). Several actors can be represented by nodes. For example, web pages are treated as nodes in internet NIN and in case of any social NIN people are treated as nodes.

edge: In mathematical terms, edge refers to the lines that connect more than one node.

tie: the edge that exist b/w nodes is called a tie. For example, in the case of FB NIN friendship b/w two peoples is a relationship edge. Two types of tie are:

undirected: represent relationship b/w nodes (two nodes) which is the same in both directions. Example: FB friends.

Directed graph: represents edge b/w two nodes in which the relationship is unidirectional. Example: X person follows Y person on Instagram.



a graph or simply graph consists of set of (V, E) where,
 $V \rightarrow$ set of nodes or actors &
 $E \rightarrow$ set of edges/links.

origin	actors	Relationship
mathematics	vertex	Edge
Sociology	node	Tie/Link

Q) Explain the following N/W majors.

Degree Distribution: Degree of a node is how many nodes are connected to a particular node in a N/W. The degree distribution $p(k)$ of a N/W is then defined to be fraction of nodes in N/W with degree k . Thus if there are n nodes in total in a N/W and n_k of them have degree k , we have $p(k) = n_k/n$.

$$p_{\text{deg}}(k) = \text{fraction of nodes in graph with degree } k$$

Density: Density refers to connection b/w nodes. Density can be defined as, total no. of edges divided by total possible no. of edges in graph.

$$\text{Density} = \frac{\text{total no. of edges}}{\text{total possible no. of edges}}$$

No. of possible edges are calculated as

$$\text{total possible no. of edges} = N(N-1)/2$$

where, $N \rightarrow$ total no. of nodes in graph

Density will be 100%, if all possible connections made in a graph.

Connectivity: Density measures the percentage of possible edge in a graph. Connectivity, also known as cohesion, measures how these edges are distributed. Connectivity is a count of the minimum no. of



node that would have to removed before the graph becomes disconnected; i.e. there's no longer a path from each node to every other node.

centrality: Graph representation is used while mining mining social media. This representation describes the leadership @ the interaction over social media.

importance of a node in a net is defined by centrality.

Types:

degree centrality: no. of connections a node has with others.

closeness centrality: indicates how close a node is to all other nodes.

The strength: To analyze the strength in social net analysis, the net must include relationship information. In small net, especially if data is hand-collected it may be feasible to give each person to rate the strength of their tie to each person.

Strength is measured with several characteristics:

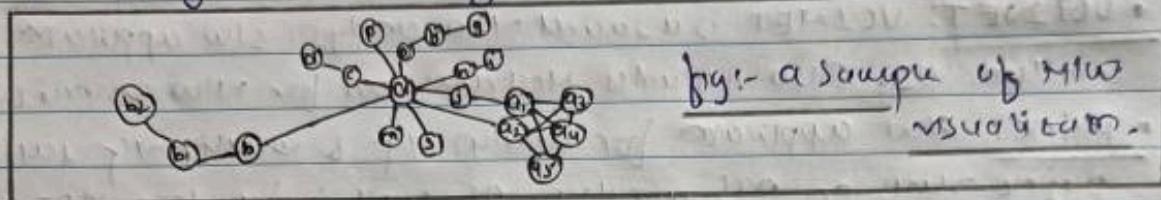
i) the length of links, ii) the intensity of relation, iii) the attacking, hit and reward assistance.

trust: The person being trusted is expected to do the "right" things. This usually means she will act with the other person's best interests in mind and/or take care that benefits others person. The person making decision about whether @ not to trust someone is considering more than just his expectation about other person's act.

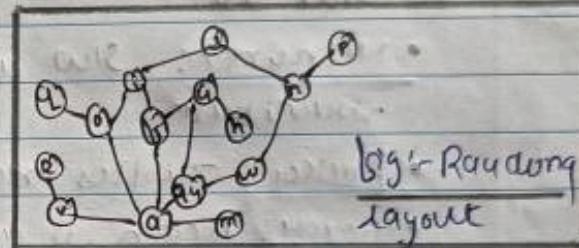
10) Explain in detail MHW visualization.

> Graph layout: each node in a graph must be visible, count the degree of each node, each link must be easily followed

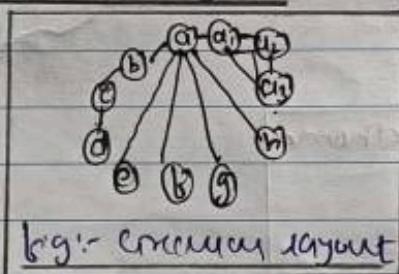
From one node source to destination, clusters and if any outliers are there they must be easily identified.



> Random layout: When the visualiser tool takes the data, it is placed randomly. This technique is called random layout and does not provide much insights as data is placed randomly.



> Circular layout:



Circular layout connects the nodes in circular pattern. When the no. of nodes increases in Mlw it is placed closer to each other.

Circular pattern nodes are turn connected by the edges. Another way is to place nodes in the grid manner.

> Grid layout: figure shows an eg. of grid layout. the degree of node a is clearly high, the clusters of nodes a1 through a10 are obvious & many nodes through by one clear across the top.

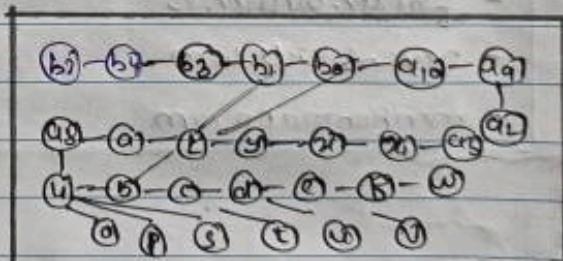


fig:- Grid layout

Explain Mlw analytic tools.

• NodeXL: NodeXL (an add-in for ms Excel) is free tool for social



Now analysis and visualization. It can help you construct and analyze BB Ntw (based on Twitter), Twitter Ntw & YT Ntw, among others.

- UCINET: UCINET is a social Ntw analysis SW app for windows OS. Also includes Network tool for Ntw visualization.
- Pajek: SW app for analyzing & visualizing large Ntw. Pajek runs on MS windows OS and is free for non-commercial use.
- NetMiner: SW app for large social Ntw analysis and visualization.
- Blocker: Twitter multi-stage network and monitoring Ntw analytic.
- Reach: Reach is an outline plugin to map the tool. hash-tag Ntw and identify the most influential account in the Twitter conversation.
- mentionmapp: the outline tool is used to investigate Twitter mentions Ntw.

- <https://sites.google.com/site/lininetsoftware/home>
- <http://www.fdv.uni-dj.si/pajek>
- netminer.com
- blocker.outlier.es
- reachsocial.com
- mentionmapp.com

bg:- bulk
for tools..