



**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

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COURSE CODE	CSDOL8023
PRACTICAL NO.	
DOP	
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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>

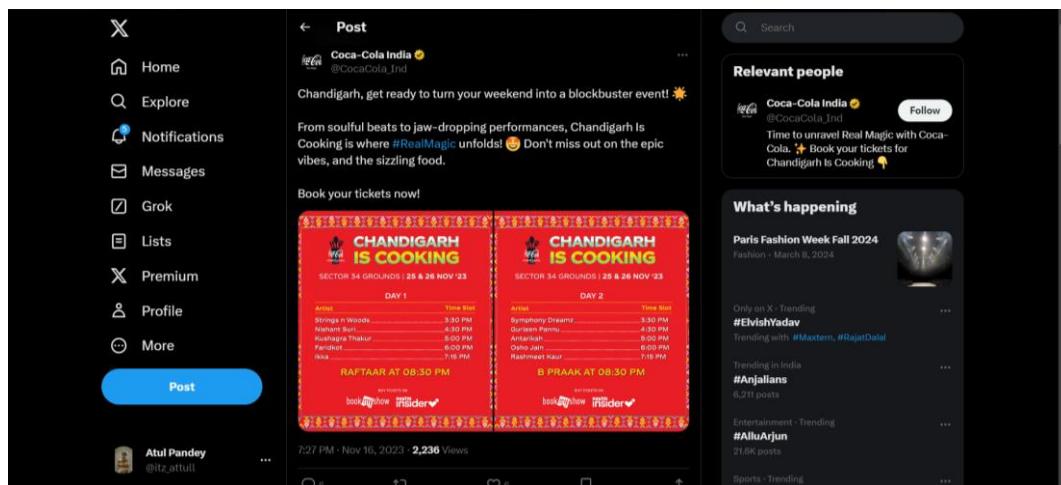
- Find as many counts for each social media account as described in the section on measuring success.

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>

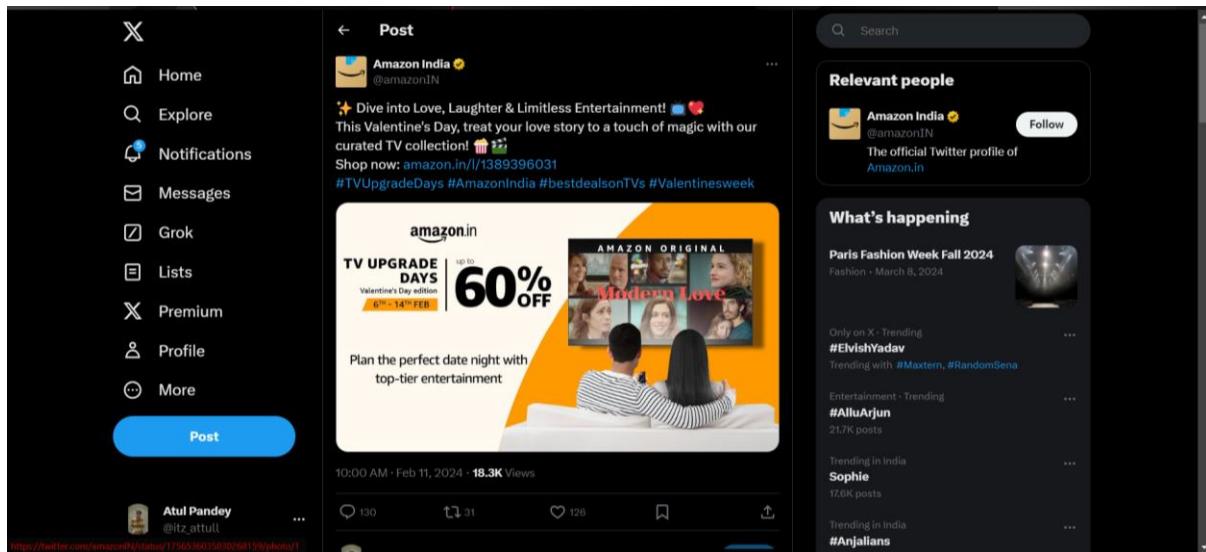
- Find as many counts for each social media account as described in the section on measuring success.

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>

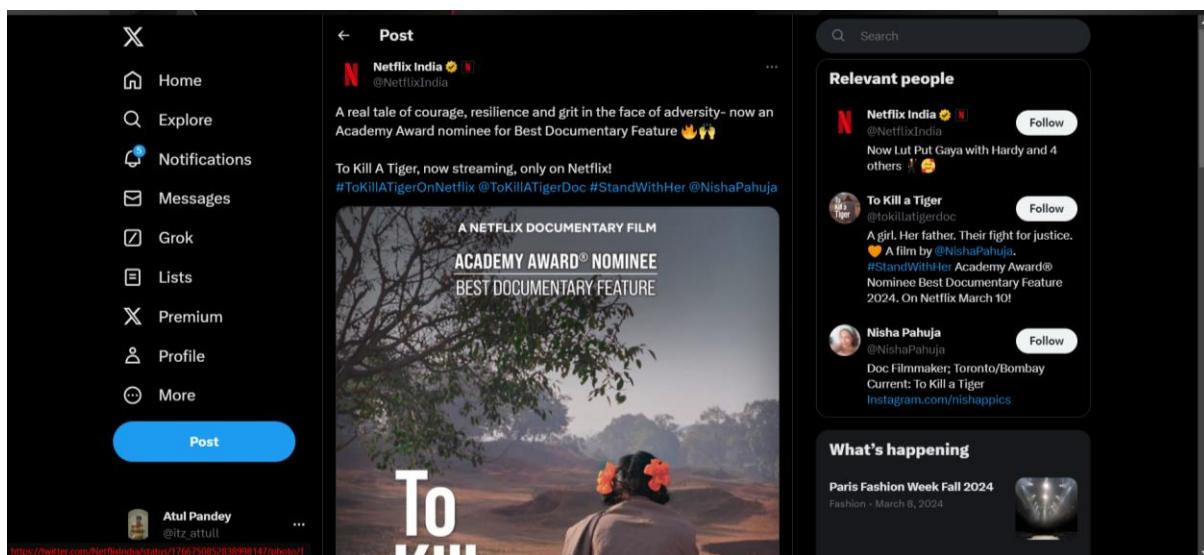
- Find as many counts for each social media account as described in the section on measuring success.

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?

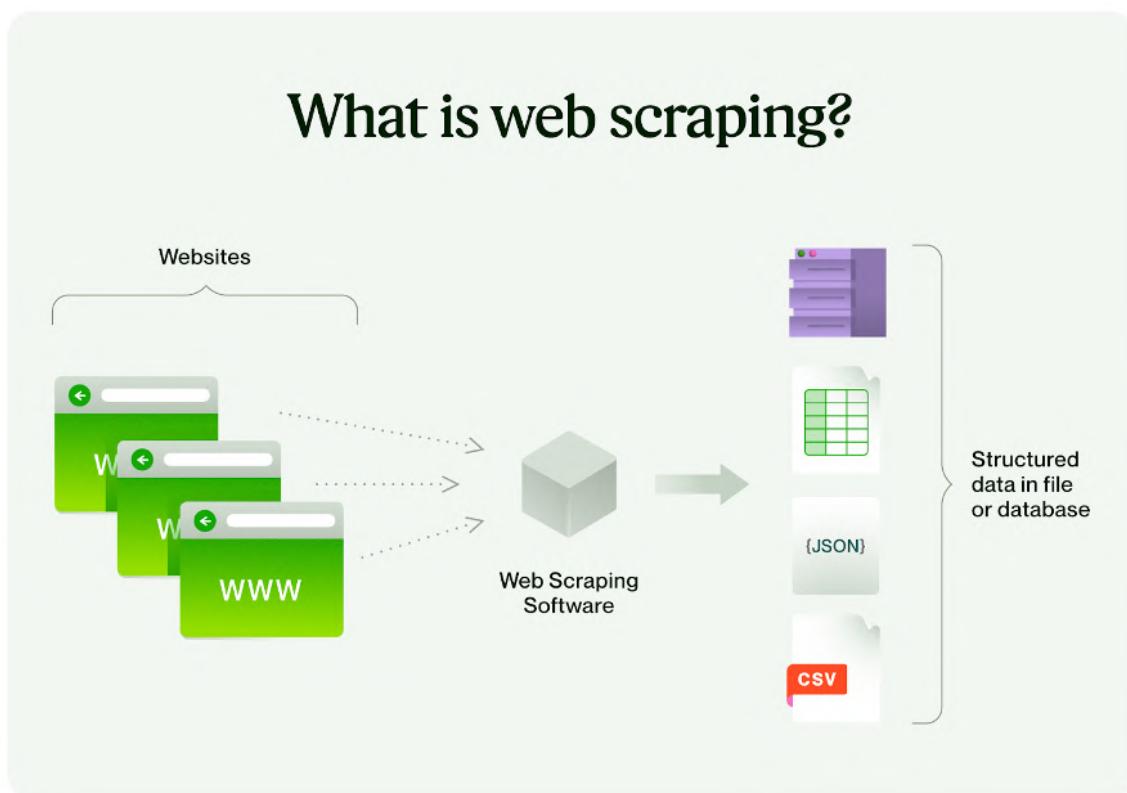
Netflix's social media strategy effectively generates excitement and engagement around its content through captivating posts and interactive features. By utilizing teaser trailers, behind-the-scenes footage, and interactive polls, Netflix builds anticipation and fosters a sense of community among its 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.

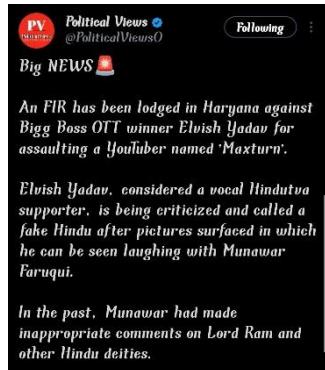
Competitive Analysis: Web scraping allows businesses to monitor competitors' websites and track changes in product offerings, pricing, promotions, and customer reviews. This information can be used to benchmark against competitors and identify opportunities for improvement.

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

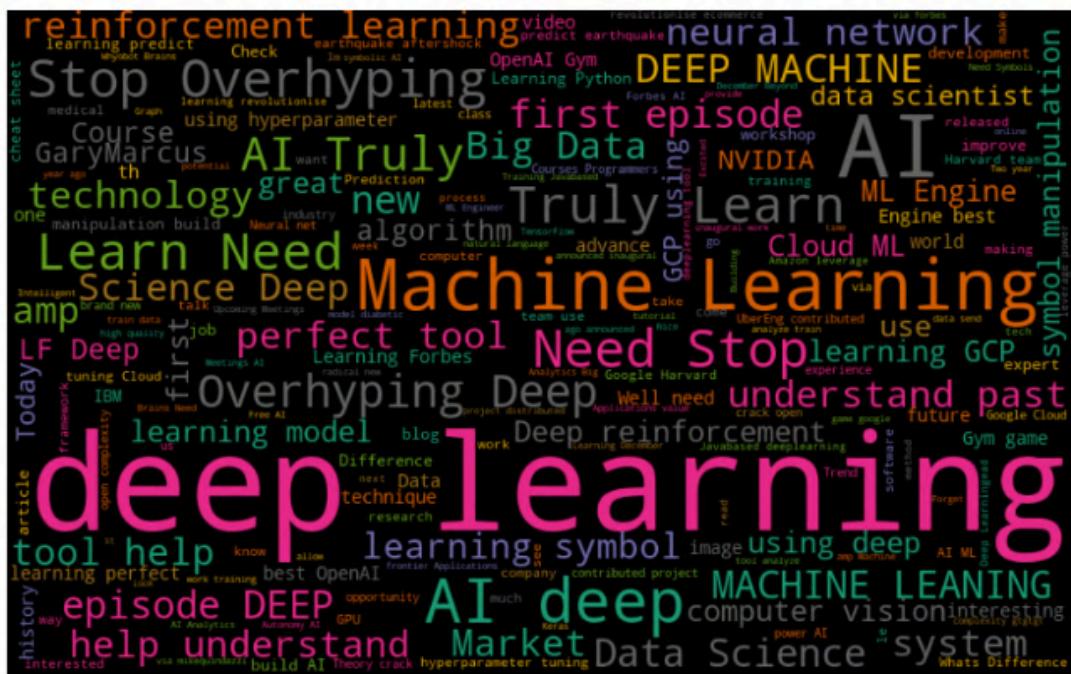
A. Most common words in positive tweets

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.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()

```

```

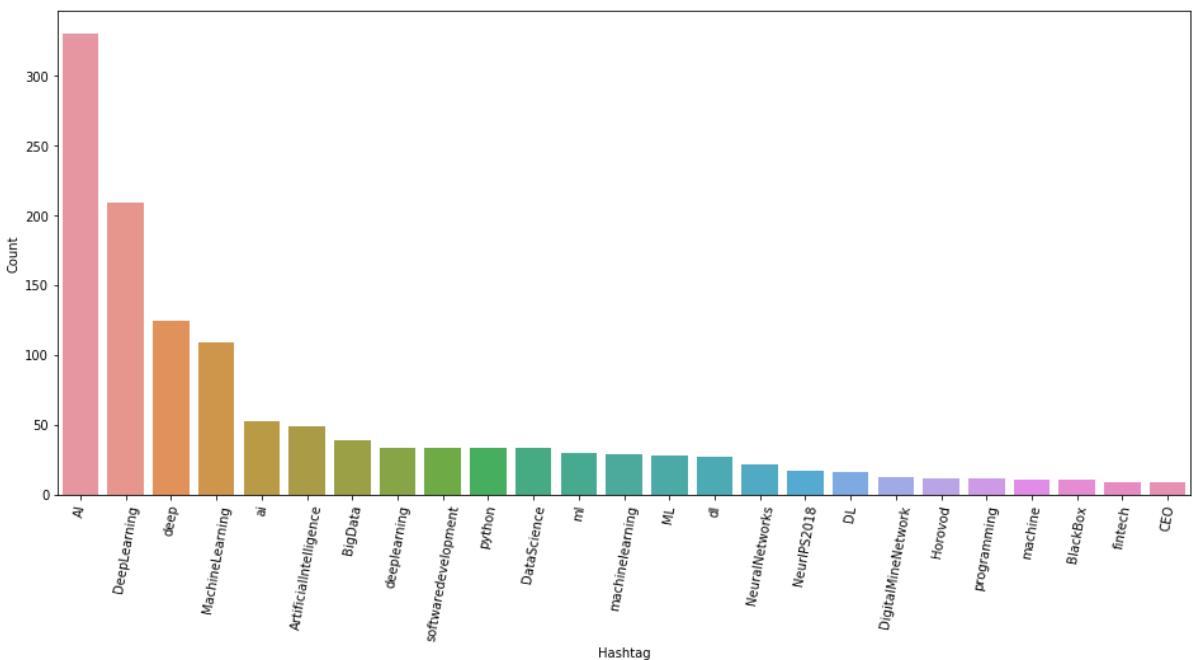
hashtags = hashtag_extract(tweets_df['tidy_tweets'])
hashtags = sum(hashtags, [])

```

```

generate_hashtag_freqdist(hashtags)

```





Experiment 4

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

CODE & OUTPUT:

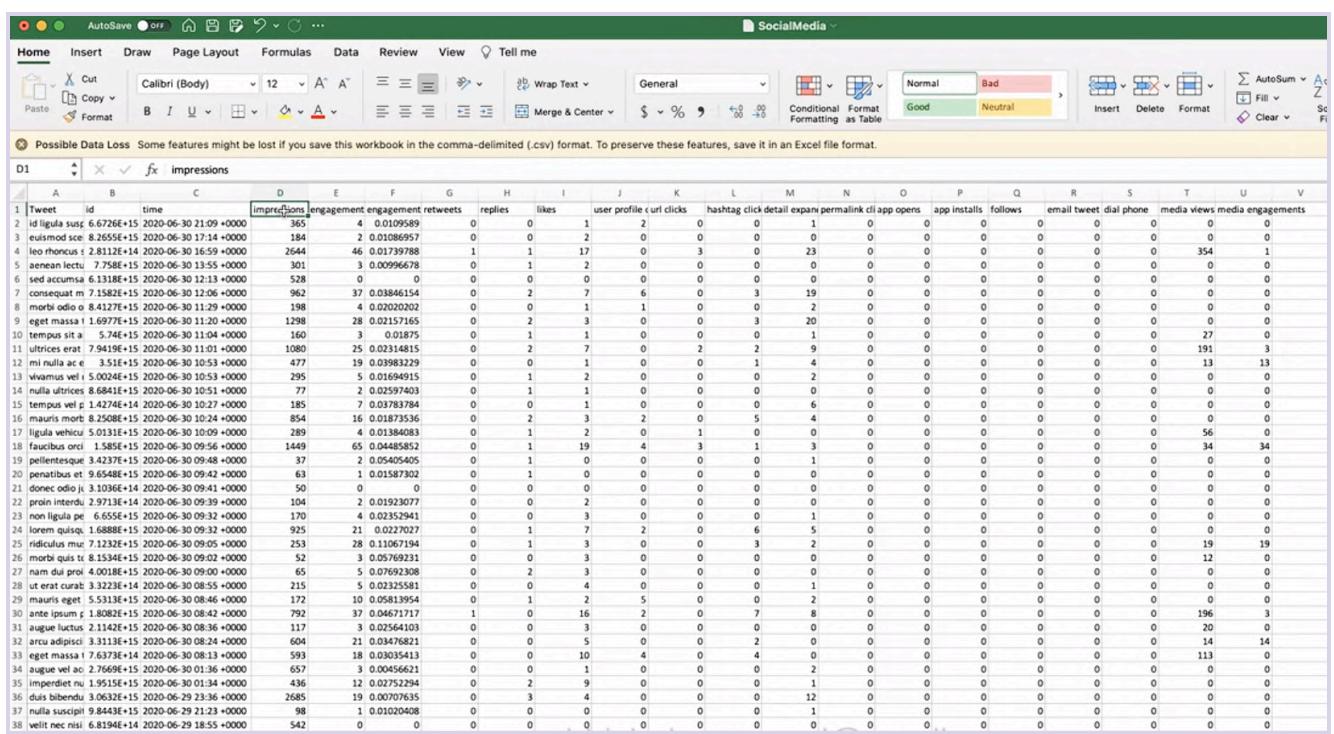
1. Data Acquisition:

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).

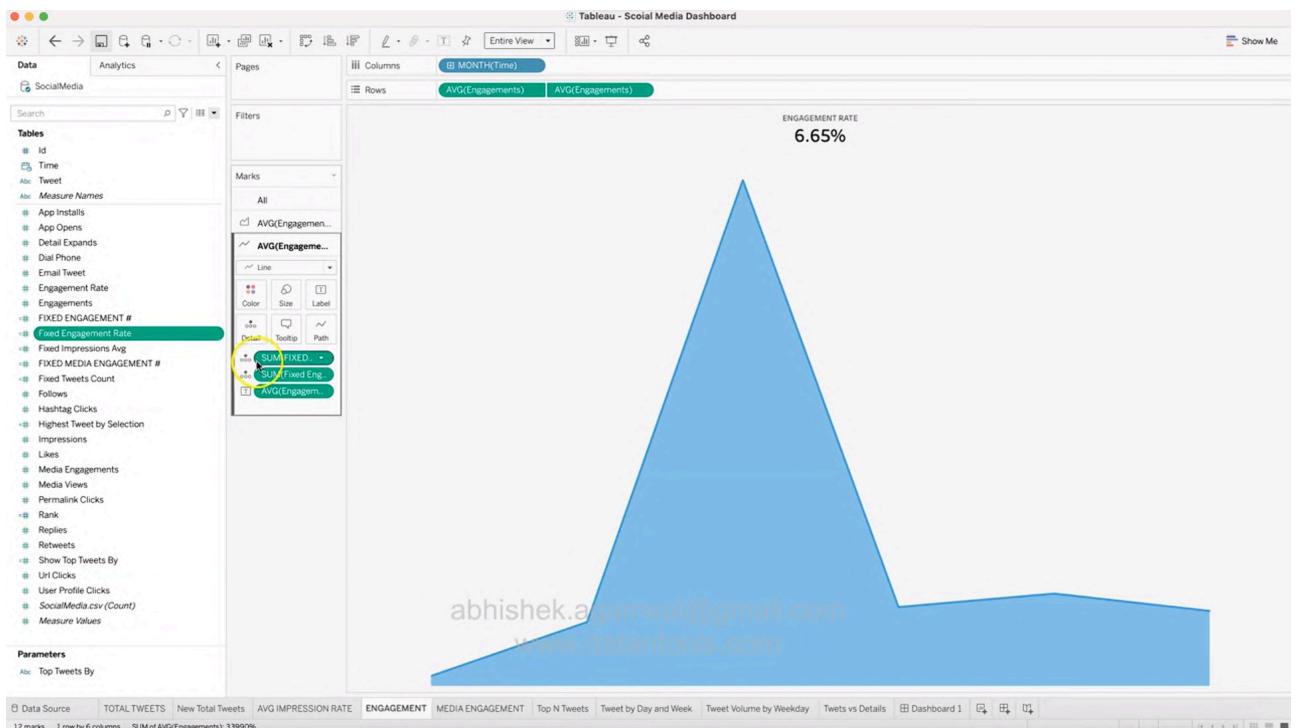


The screenshot shows a Microsoft Excel spreadsheet titled "SocialMedia". The data is contained in a single sheet from row 1 to row 38. The columns are labeled A through V. Column A contains tweet IDs, column B contains user IDs, column C contains dates, and column D contains engagement metrics. Columns 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	7.7586e+15	2020-06-30	13:55	+0000	301	3	0.00996678	0	1	2	0	0	0	0	0	0	0	0	0	0	0
6	sed	accumsan	7.13186e+14	2020-06-30	12:13	+0000	528	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	consequat	in	7.15826e+15	2020-06-30	12:06	+0000	962	37	0.03846154	0	0	2	7	6	0	3	19	0	0	0	0	0	0
8	morti	odio	8.41276e+14	2020-06-30	11:29	+0000	198	4	0.02020202	0	0	1	1	0	0	2	0	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	0
10	tempus	sit	3.5746e+15	2020-06-30	11:04	+0000	160	3	0.01875	0	1	1	0	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	0	191
12	mi	nulla	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	0	13
13	vivamus	vel	5.00246e+15	2020-06-30	10:53	+0000	295	5	0.01694915	0	1	2	0	0	0	0	2	0	0	0	0	0	0
14	nula	ultrices	8.68416e+14	2020-06-30	10:51	+0000	77	2	0.02597403	0	1	1	0	0	0	0	0	0	0	0	0	0	0
15	tempus	vel	1.42746e+14	2020-06-30	10:27	+0000	185	7	0.03783784	0	0	1	0	0	0	0	6	0	0	0	0	0	0
16	mauris	mort	8.32508e+15	2020-06-30	10:24	+0000	854	16	0.01873536	0	2	3	2	0	5	4	0	0	0	0	0	0	0
17	ligula	vehicul	5.01316e+15	2020-06-30	10:09	+0000	289	4	0.01384083	0	1	2	0	1	0	0	0	0	0	0	0	56	
18	fauibus	ord	1.5856e+15	2020-06-30	09:56	+0000	1449	65	0.04485852	0	1	19	4	3	1	3	0	0	0	0	0	0	34
19	pellentesque	3.42376e+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	9.65486e+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	donec	odio	3.10366e+14	2020-06-30	09:41	+0000	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	prin	interd	2.97136e+14	2020-06-30	09:39	+0000	104	2	0.01923077	0	0	2	0	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	0	1	0	0	0	0	0	0
24	lorem	quisq	1.68886e+15	2020-06-30	09:32	+0000	925	21	0.0227027	0	1	7	2	0	6	5	0	0	0	0	0	0	0
25	ridiculus	msu	7.12326e+15	2020-06-30	09:05	+0000	253	28	0.11067194	0	1	3	0	0	0	3	2	0	0	0	0	0	19
26	morts	quis	8.15346e+15	2020-06-30	09:02	+0000	52	3	0.05769231	0	0	3	0	0	0	0	0	0	0	0	0	0	12
27	nam	dui	4.00186e+15	2020-06-30	09:00	+0000	65	5	0.07692308	0	2	3	0	0	0	0	0	0	0	0	0	0	0
28	ut	erat	3.32236e+15	2020-06-30	08:55	+0000	215	5	0.02325581	0	0	4	0	0	0	1	0	0	0	0	0	0	0
29	mauris	egit	5.53136e+15	2020-06-30	08:46	+0000	172	10	0.05873954	0	1	2	5	0	0	2	0	0	0	0	0	0	0
30	ante	ipsum	1.80805e+15	2020-06-30	08:42	+0000	792	37	0.04671717	1	0	16	2	0	7	8	0	0	0	0	0	0	196
31	augue	lectu	2.11405e+15	2020-06-30	08:36	+0000	113	3	0.05564103	0	0	3	0	0	0	0	0	0	0	0	0	0	0
32	arcu	adjisp	3.31386e+15	2020-06-30	08:24	+0000	604	21	0.03475821	0	0	5	0	0	2	0	0	0	0	0	0	0	14
33	egest	massa	7.63796e+14	2020-06-30	08:13	+0000	593	18	0.03035413	0	0	10	4	0	4	0	0	0	0	0	0	0	113
34	augue	vel	2.02599e+15	2020-06-30	08:06	+0000	657	3	0.04545211	0	0	1	0	0	0	2	0	0	0	0	0	0	0
35	imperdiet	nu	1.95156e+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	3.06326e+15	2020-06-29	23:36	+0000	2685	19	0.00707635	0	3	4	0	0	0	0	12	0	0	0	0	0	0
37	nulla	suscipit	9.84436e+15	2020-06-29	21:23	+0000	98	1	0.01020408	0	0	0	0	0	0	0	1	0	0	0	0	0	0
38	velit	nef	6.81946e+14	2020-06-29	18:55	+0000	542	0	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.

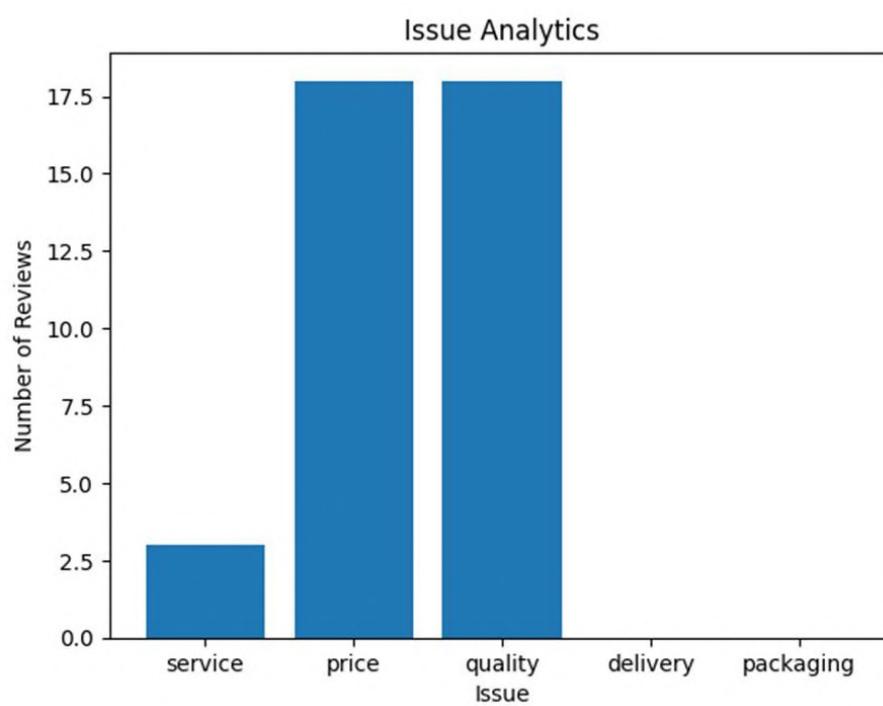
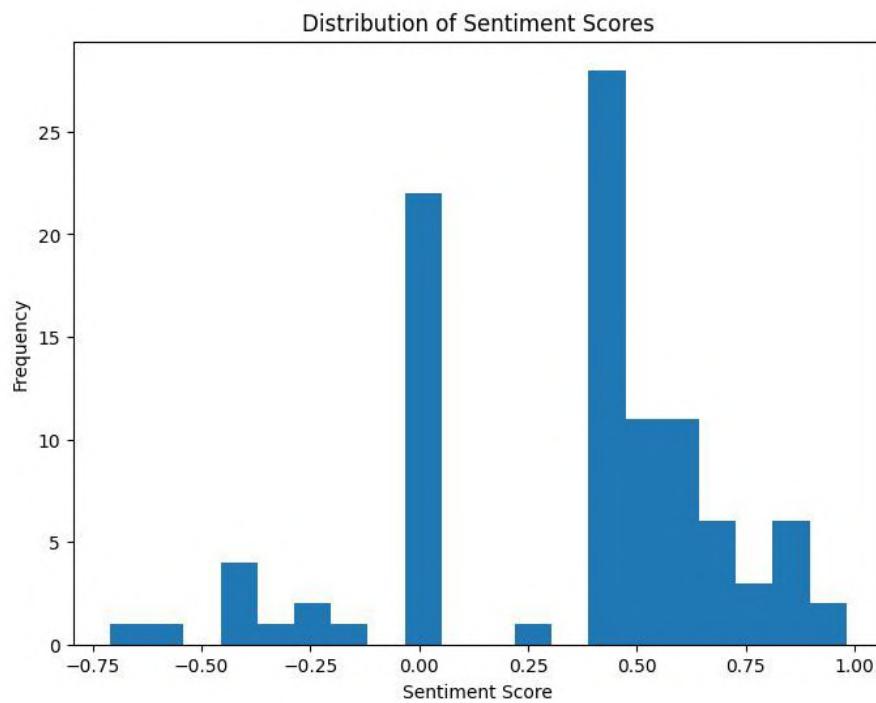
1. **Topic modelling:** Topic modelling is a technique in natural processing (NLP) & machine learning that aims to automatically identify topics present in a collection of documents or texts. The goal of topic modelling is to uncover the underlying themes or topics that are being discussed in a particular 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.

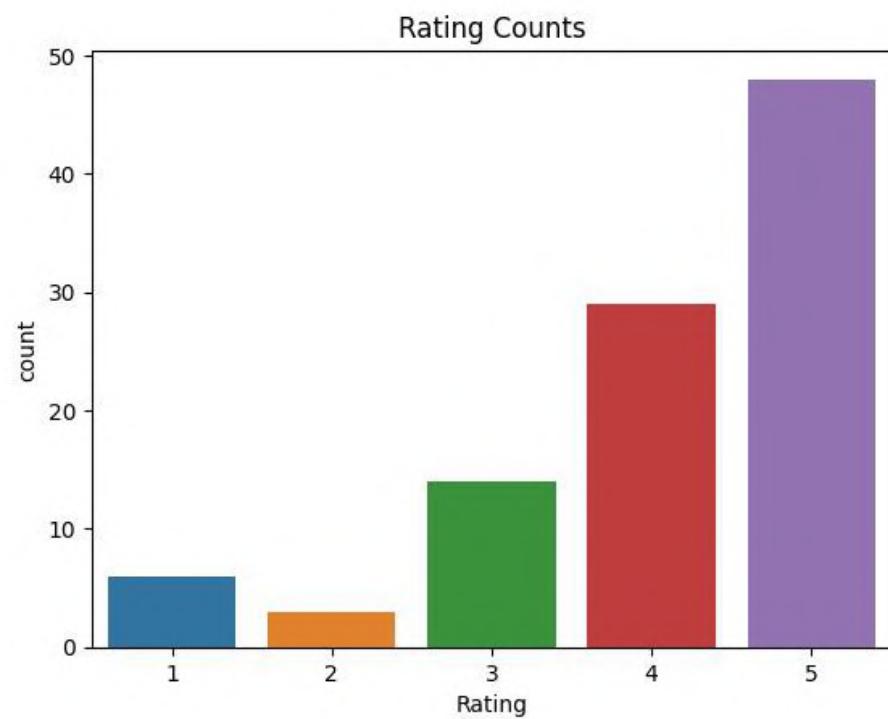
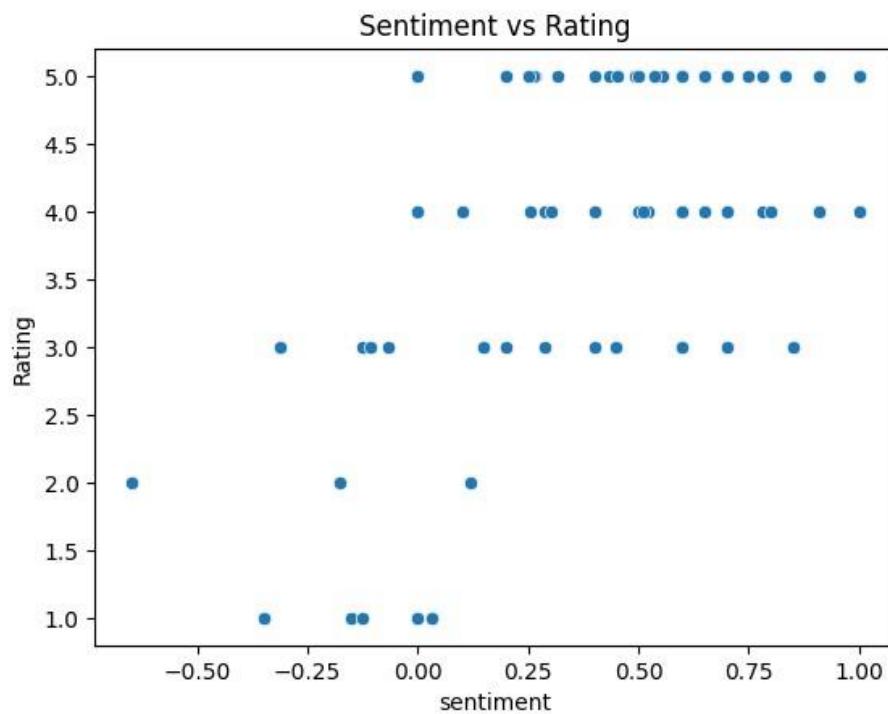
2. **Sentiment analysis:** Sentiment analysis is a type of NLP and ML technique that aims to automatically identify and extract the sentiment or opinion expressed in a piece of text such as social media posts reviews, or news articles. In social media analytics, sentiment analysis is used to understand 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:





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.

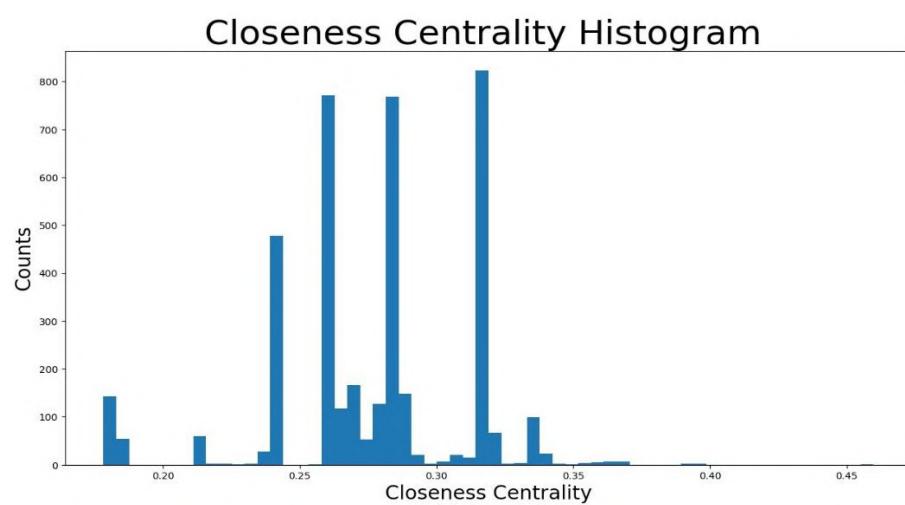
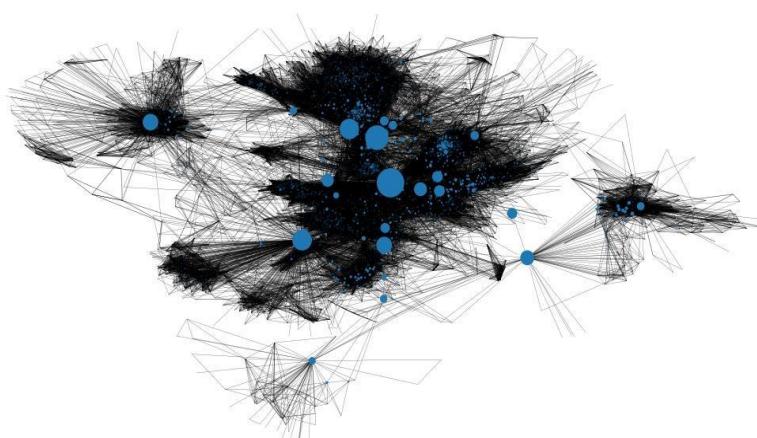
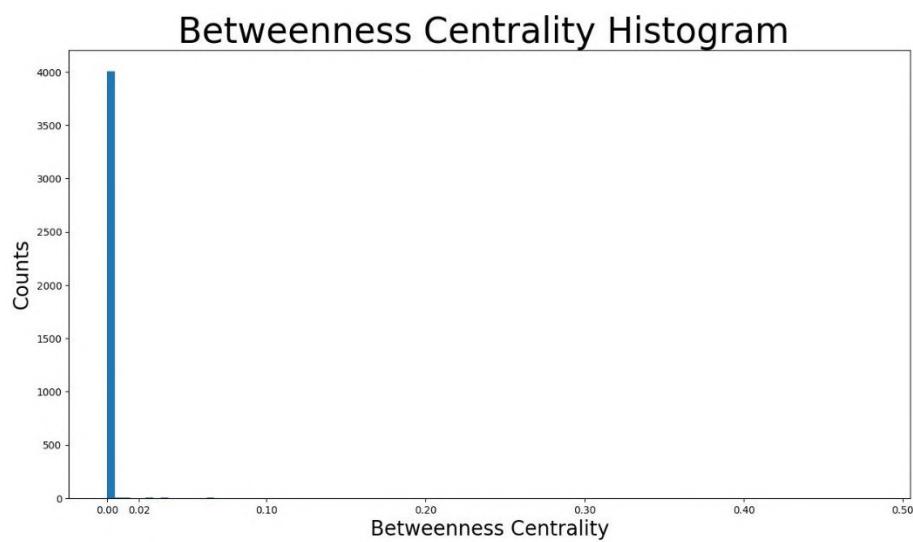
In the context of social media, community detection can be used to identify group of users who are talking about a particular topic or who are a common interest in a brand or product. This info can be used to inform social media marketing strategies, such as targeting specific communities with tailored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

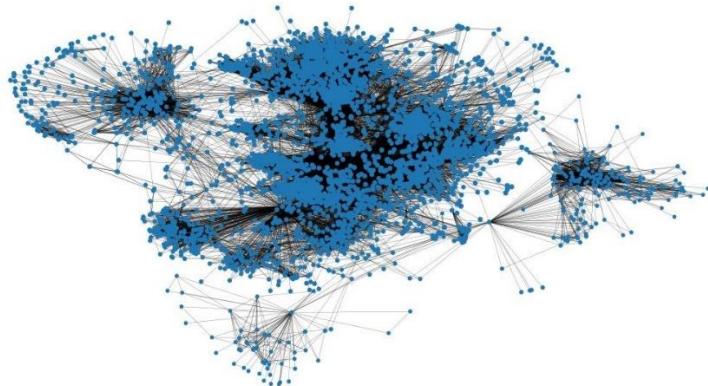
There are several methods for community detection, including modularity optimization, hierarchical clustering, and spectral clustering. These methods involve analysing the structure of the social network, such as the connection between user on the content of their posts, to identify groups of users who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

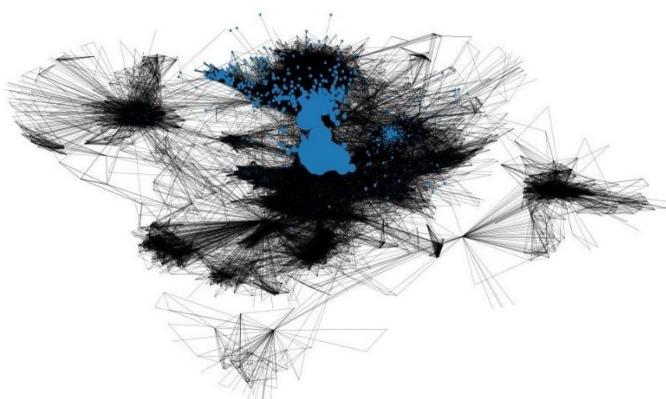
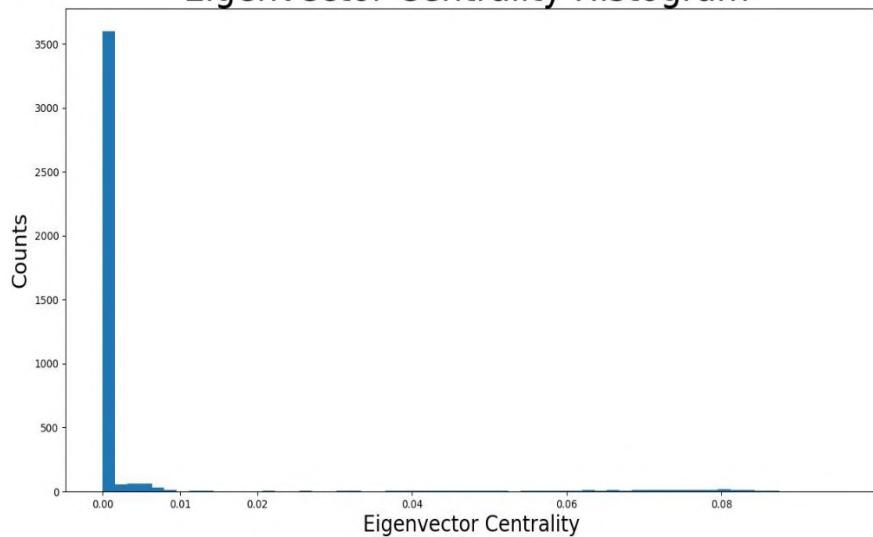
These are several methods for conducting influence analysis, including social network analysis, ML and NLP. These methods involve analysis factors such as the number of followers, the frequency and tone of posts, and the level of engagement and interaction with other users to identify influential users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

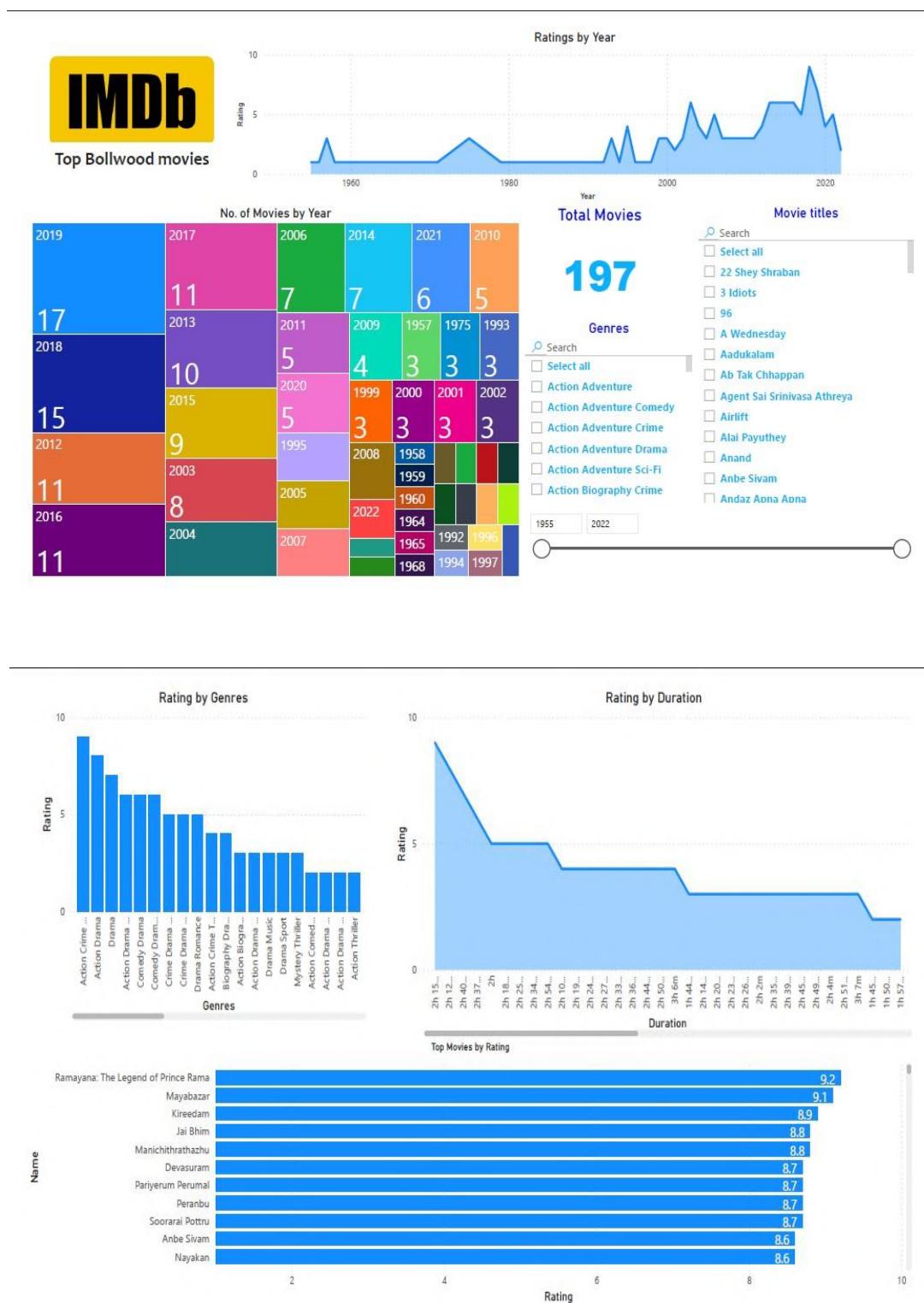
A Power BI dashboard can be created by connecting to various data sources and then creating visuals such as charts, graphs and tables which represent the data in a meaningful way. These visuals can be customised and arranged on the dashboard to provide a clear and concise user of the most important information.

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**



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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!

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REVIEWMINDS CO.

SENTIMENT ANALYSIS

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

TRY NOW!

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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!

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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.

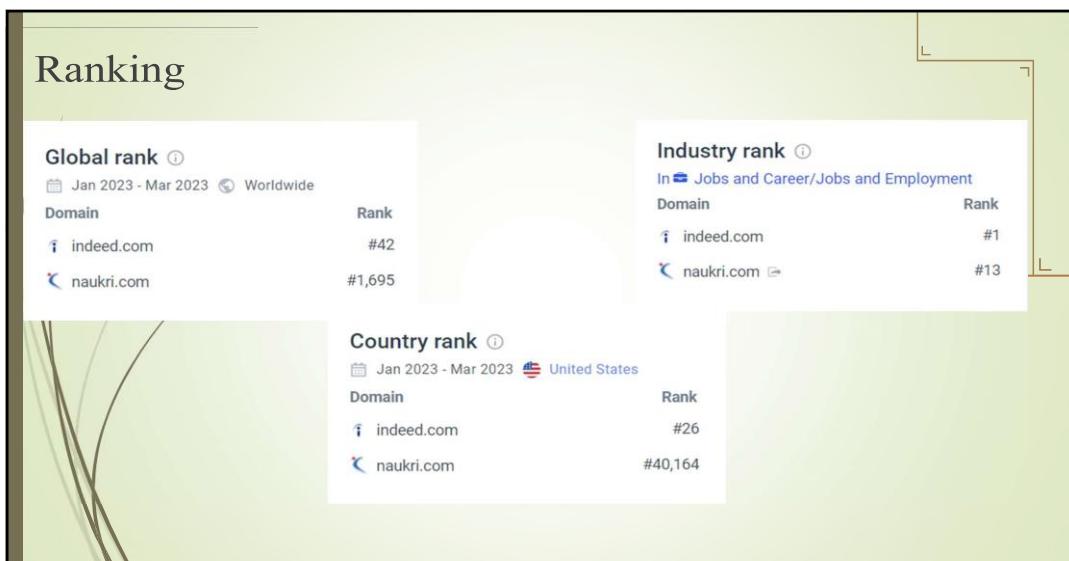
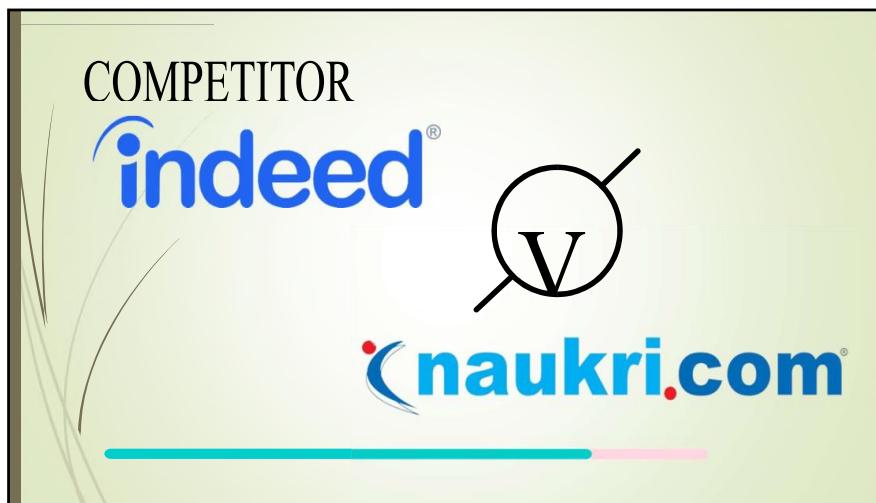
Overall analysing competitor activities on social media is an essential aspect of social media marketing as it provides valuable insights and help you to stay competitive in your industry or niche.

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)

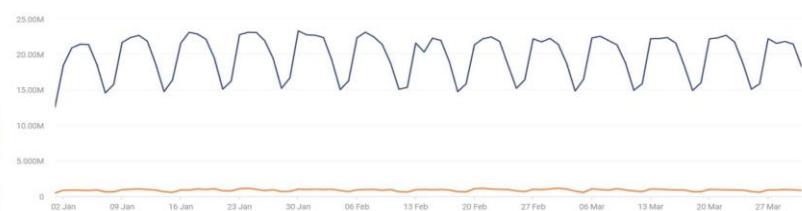
No. of website or social media platform visits, tracked and analysed daily, to identify trends, patterns, and insights into user behaviour and engagement

Visits over time

Jan 2023 - Mar 2023 Worldwide All traffic

D W M 🔍

indeed.com naukri.com
1.773B 78.62M



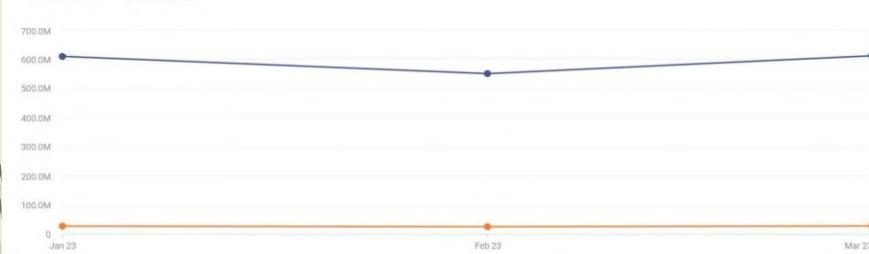
Visits over time (Month)

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%

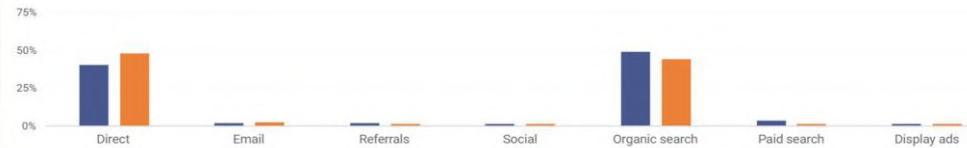
Marketing Channels

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 ⓘ

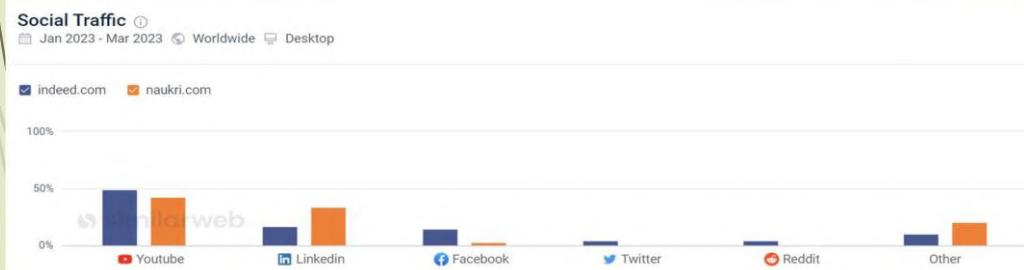
Jan 2023 - Mar 2023 Worldwide Desktop

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%



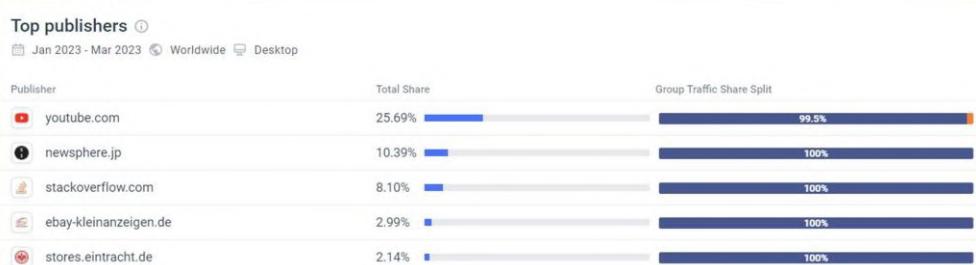
Social Traffic

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.



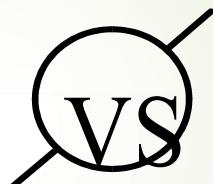
Display Advertising

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.

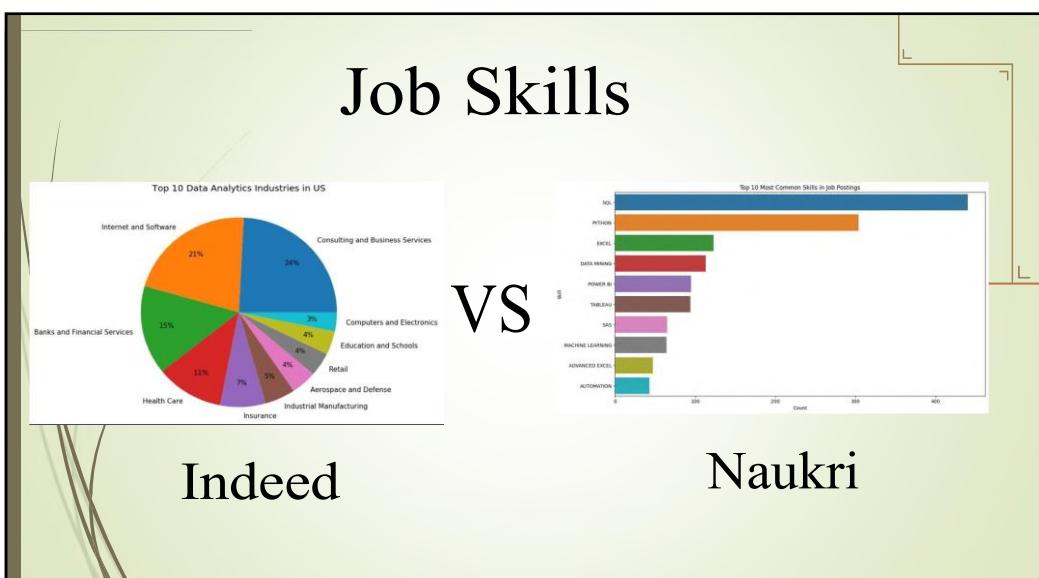
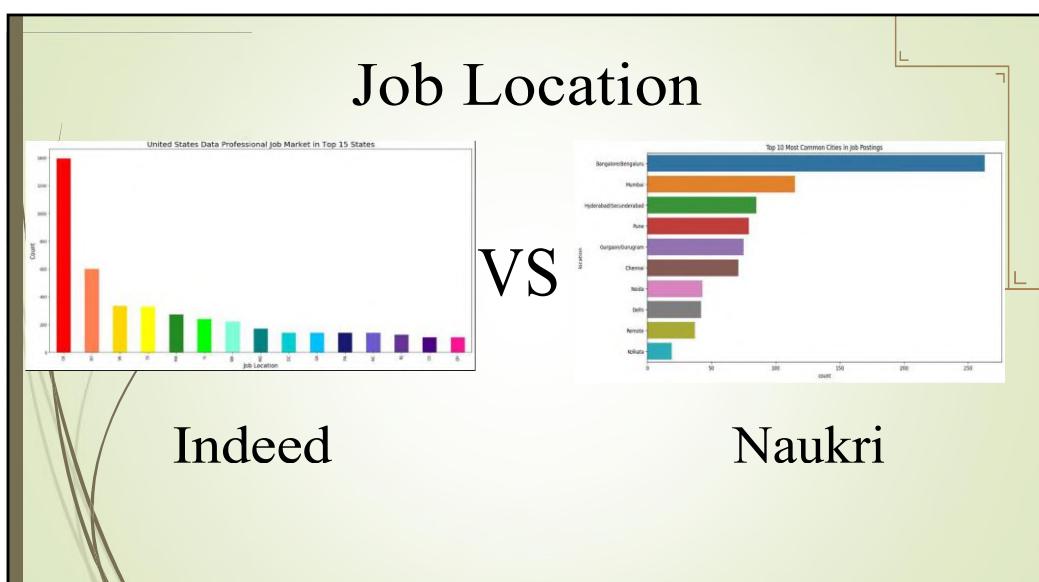


COMPETITOR ANALYSIS by Python

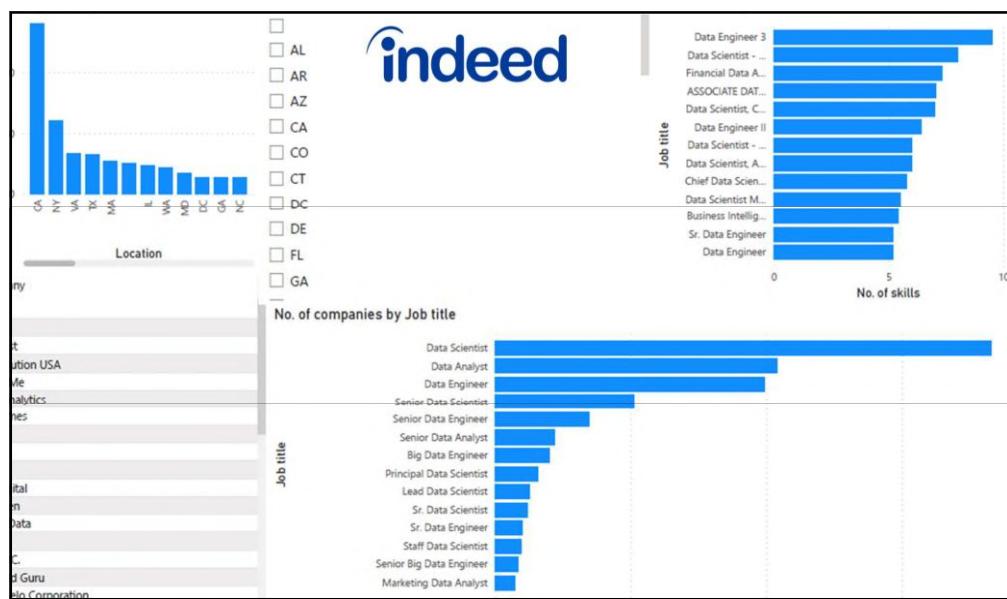
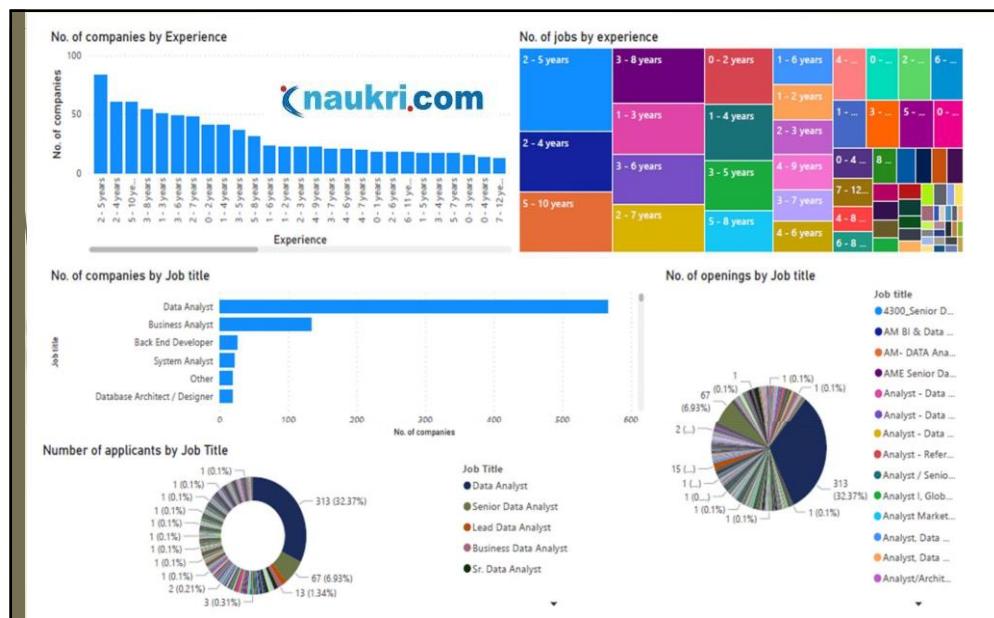
indeed®



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.

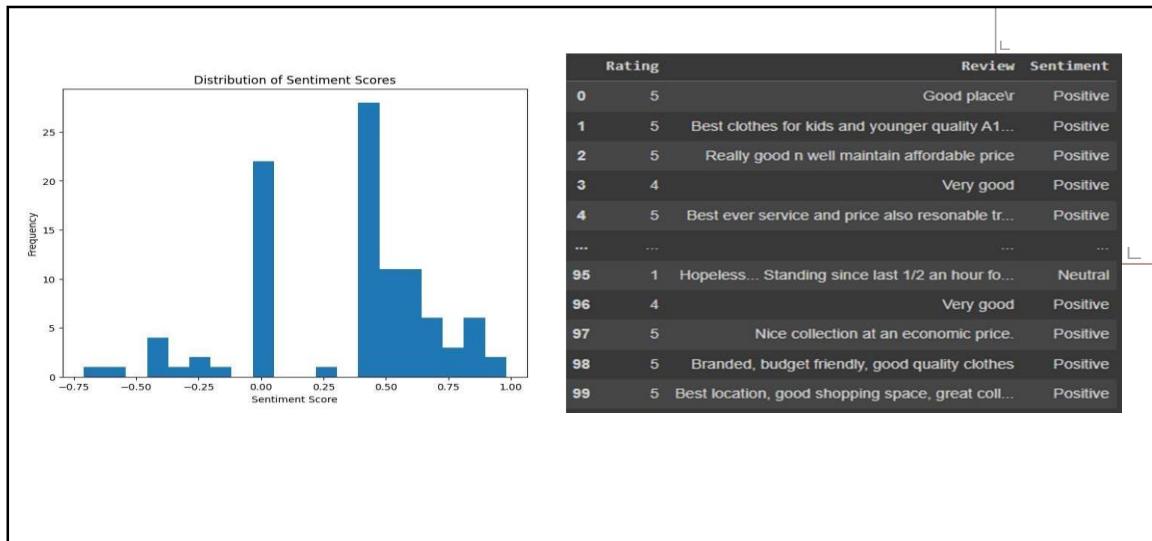
Overall, social media text analytics media provide business with a powerful tool for analysing customer feedback and understanding the sentiment and performances of their target audience.

Output:

REVIEWS/COMMENTS ANALYSIS

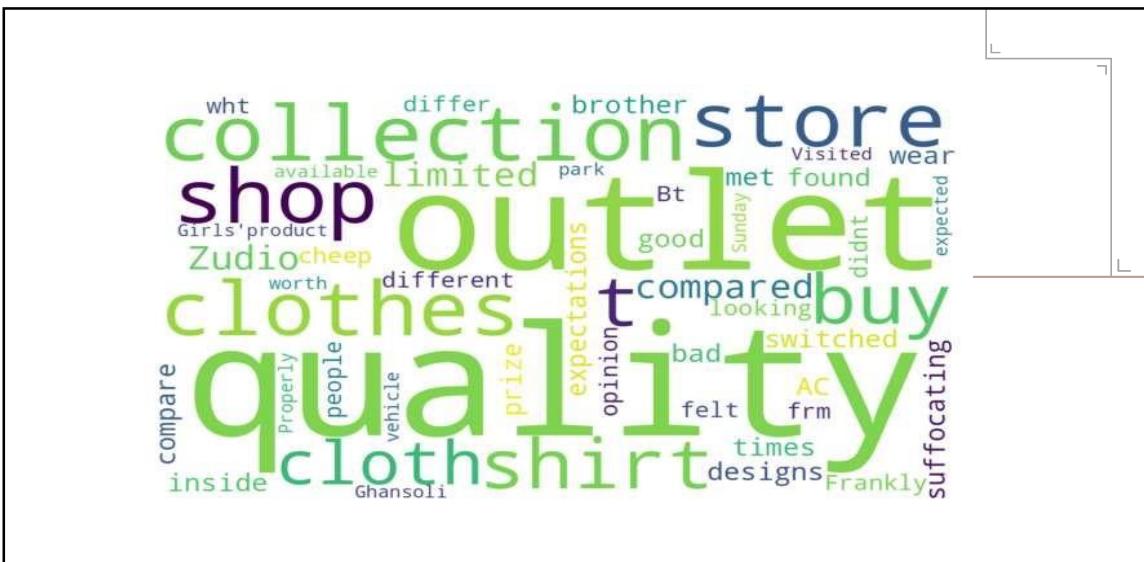
zudio





```
# 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

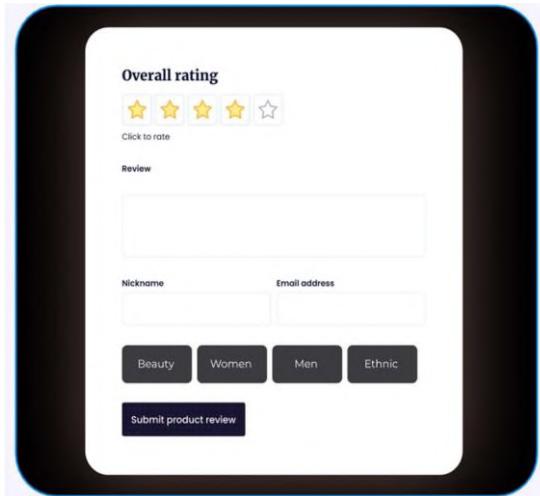




Scope Of Improvement

- 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

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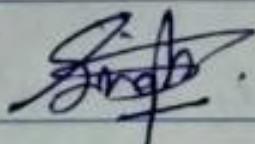
Branch :- CSE (AIML)

Roll no :- AIML

Subject :- Social Media Analytics

Topic :- Assignment No :- ①

Date of submission :-

Signature :- 

Q.1] Explain SMA. What is the need of SMA.

→ 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 behaviours, track brand mentions, measures the effectiveness of marketing campaigns, and identify trends or patterns in ^{online} conversation.

Need of SMA :-

- ① Increase Customer Acquisition: Your customers are your brand's lifeblood. Carefully managing their journey from easily awareness to established customer through social media analytics is vital for retention & for your brand's long-term.
- ② Protect brand Health: A brand is collective whole of all the touchpoints and interactions consumer have with a brand, and this includes messaging coming directly from the company.
- ③ Lower customer care costs: Customer care take dedicated situation and these days customer care is an always on situation. Consumers have no hesitation reaching out to brand when issues arises.
- ④ Maximize Product Launches: Social Media Analytics helps brand get in on emerging trends by informing them of products and services that consumers want.
- ⑤ Boost Campaign Performance: SMA allows brands to learn what their audience care about & influences their purchasing.
- ⑥ Improve crisis Management: The insight social media analysis offers brands when crisis hits are worth the price of admission alone, as if we saves both cost and reputational damage from speed of reaction.

Q.2) Describe 7 layers of SMA.

Social Media at minimum has seven layers of data. Each layer carries potentially valuable information. Out of seven layers, some are visible or easily identifiable & others are invisible.

① Layer one : Text

Social Media Text analytics deals with the extraction and analysis of business insights from textual elements 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 or identify emerging themes & topics.

② Layer two : Networks

Social Media N/w analytics extract, analyze and interpret personal and professional social N/w, for example, Facebook & Twitter N/w analytics seeks to identify influential nodes [example - people & org] and their position in the N/w.

③ Layer Three : Actions

Social media action analytics deals with extracting, analyzing & interpreting the action performed by social media users, including likes, dislikes, shares, mentions & endorsement. Action analytics are mostly used to measure popularity, influence and prediction in social media [example : Twitter mentions].

④ Layer Four : Mobile

Mobile analytics is the next frontier in the social business landscapes. Mobile analytics deals with measuring and optimizing user engagement with mobile application.

⑤ Layer five : Hyperlinks

Hyperlinks analytics is about extracting, analyzing & interpreting social media hyperlinks [eg: in-links & out-links]. Hyperlinks analysis for example, internet traffic patterns and sources of incoming or outgoing traffic to & from a source.

⑥ Layer six : Location

Location analytics, also known as spatial analytics or geospatial analytics, is concerned with ~~minimizing~~ mining & mapping the location of social media users, contents & data.

⑦ Layer seven : Search Engines

Search Engines analytics focuses on analyzing historical search data for gaining valuable insights into a range of areas, including - trends analysis, keyword monitoring, search results and advertisements history, & advertisement spending statistics.

Q.3 Compare Social Media ~~&~~ traditional business analytics.

Social Media Analytics	Traditional Business Analytics
① Social Media analytics is semi-structured & unstructured	① Business data analytics containing structured data.
② SMA utilizes real-time data	② Business data utilizes historical ^{data}
③ public data	③ target data (private)
④ SMA having contiguous data	④ Found within business data
⑤ SMA contains highly diverse data	⑤ It contains uniform data.
⑥ In SMA - no business control over the data	⑥ In business data analytics it is controlled by business (tightly)
⑦ Data is informal in nature.	⑦ Data is formal in nature.
⑧ Data is stored in third-party database storage in SMA	⑧ Data is stored in the business own database.
⑨ Widely share over the internet	⑨ Data share within organization.
⑩ SMA contains two-way conversation	⑩ It contains one-way conversation
⑪ Open system & bottom-up strategy.	⑪ Closed-system & Top-down strategy.

Explain SMA Cycle.

Social Media Analytics is a six step iterative process [involving both the science & art] of mining the desired business insights from social media data.

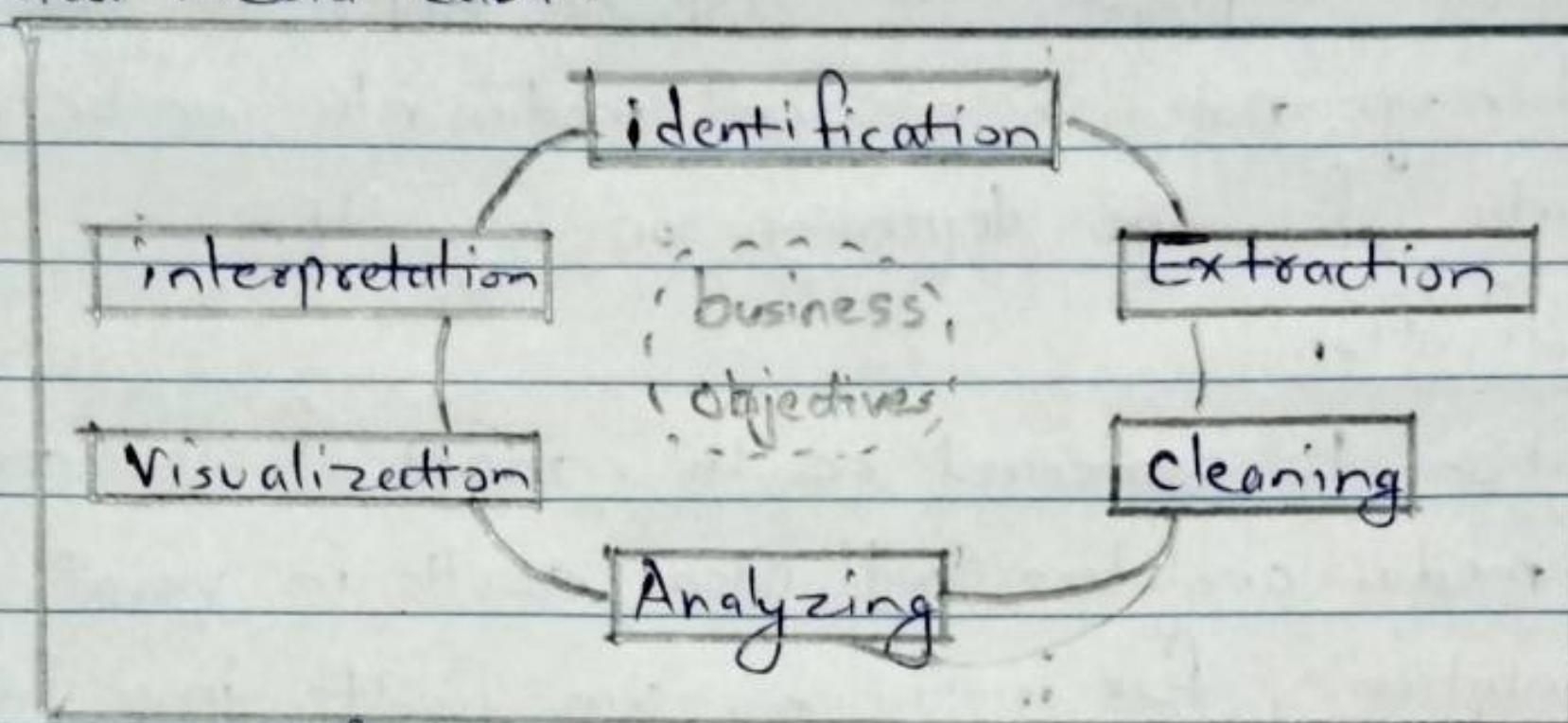


Fig. SMA cycle.

→] Step 1: identification:

The identification stage is the art part of SMA and is concerned with searching & identifying the right source of information for analytical purposes. The number of types of users & information [such as text, conversation & network] available over social media are huge, diverse, multi-lingual and noisy.

Step 2: Extraction

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

The type [e.g. text, numerical, or Nlu] and size of data will determine. The methods & 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 cleansing, and others can go into analysis directly.

Coding & filtering can be performed by machine [i.e., automated] or can be performed manually by humans.



Step 4: Analyzing

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 & approach you take will greatly vary. For eg. nodes in a social media nw can be clustered & visualized in a variety of ways depending on algorithm.

Step 5: Visualization:

In addition to numerical results, most of the seven layers of Social media analytics will also result in visual outcomes.

Text analytics, for instance, can result in a word co-occurrence cloud; hyperlink analytics will provide visual hyperlink nw & location analytics can produce interactive ways.

Step 6: Interpretation:

Interpreting and translating analytics results into a meaningful business problem is the art of part of social media analytics.

The first appropriate requires training data scientists and analysts.

- to produce interactive and easy-to-use visual results.

Q.5) Explain SMA tools.

→ To keep up with the growing need for analyzing the vast amount of data, social media analytics 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.

- ① Text: (i) Discovertext (ii) Lexalytics (iii) Tweet Archivist
(iv) Twitonomy (v) Netlytic (vi) LIWC
(vii) Voyant

- ② Actions: (i) Lithium (ii) Twitonomy - (iii) Google Analytics.
(iv) Social Media Miner



- ③ Networks : (i) NodeXL (ii) UCINET (iii) Pajek
 (iv) Netminer (v) Flockster (vi) Netlytic
 (vii) Reach Motion mapp.
- ④ Mobile : (i) Countly (ii) Mixpanel (iii) Google Mobile Analytics.
- ⑤ Location : (i) Google Fusion (ii) Table location (iii) Google Fusion Table
 (iv) Tweep Smap (v) Trendsmap (vi) Followers work
 (vii) Esri Maps (viii) Agos
- ⑥ Hyperlinks : (i) Webometrics Analyst (ii) VOSON
- ⑦ Research Engines : (i) Google trends

Q. 6 Explain challenges to SMA

→ Social Media is high volume, high velocity & high diverse which in a sense is blessing in terms of insights it carries; however, analyzing and interpreting it present several challenges :-

(i) Volume & velocity as a challenge :

Social data is large in size and is ~~selfishly~~ generated. capturing & analyzing millions of records that appear every second is a real challenge. For eg, on twitter, three hundred forty-two thousand tweets appear every minutes, and on FB, one-million likes are shared every twenty minutes.

(ii) Diversity as challenge :

Social Media users and the content they generate are extremely diverse, multilingual, and vary across time & space. Not every tweet, like or user is worth looking at. A tweet or mention coming from an influential social media user is more important than a tweet from non-influential user.

(iii) Unstructuredness as a challenge :

Unlike the data stored in the corporate databases, which are mostly numbers, Social media data is highly unstructured & consist of text, graphs, action & relation. Various aspects has dubious grammatical structure which is loaded with abbreviations, acronyms & emoticons.

Q.7] Explain Social Media network types

① Friendship N/w:

The most common type of social media N/w or friendship N/w such as: FB, google, friendship N/w let people maintain social ties & share content with people they are closely associated with such as family & friends.

② Follow - Following N/w:

In follow - following N/w users, follow other users of interest. Twitter is a good example of follow - following N/w where users follow influential people, brands & organizations.

③ Fan - Network:

A fan - N/w is formed by social media fans or supporters of someone or something such as product, service, brand, business or other entities. e.g:- user subscribed to your FB fan page.

④ Group N/w:

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

⑤ Professional N/w:

LinkedIn is a good example of professional N/w where people manage their professional identity by creating a profile that lists their achievement, education, work history & interests.

⑥ Content N/w:

Content N/w are formed by content posted by social media users. A N/w among YT videos is an example of a content N/w.

⑦ Dating N/w: Dating N/w (such as match.com & tinder) are focused on matching & orienting a dating partner based on information.

⑧ Co-occurrence N/w:

Co-occurrence N/w are formed when two more entities [e.g keywords, people, ideas & brands] co-occur over social media outlets.



Q. 8] Innote a short note on Social Media Network ~~and~~ structure w.r.t nodes, edges, tie.

① Nodes: In nlu science, nodes are treated as actors (the dots or article in the graph) & edges are relationship (the lines or groups) several actors can be represented by nodes. For eg:- web pages are treated as nodes in internet nlu and in case of any social nlu people are treated as nodes.

② Edge: In mathematical terms, edge refers to the lines that connect more than one nodes.

③ Tie: The edge that exist b/w nodes is called a tie. - for eg, in the case of FB Nlu friendship b/w two peoples is represented by edge. Two types of tie are:

(i) Undirected: represent relationship between nodes (two nodes) which is the same in both directions. eg. FB friends.

(ii) Directed graph: represent edge b/w two nodes in which the relationship is uneven. eg, x person follows y person on instagram.

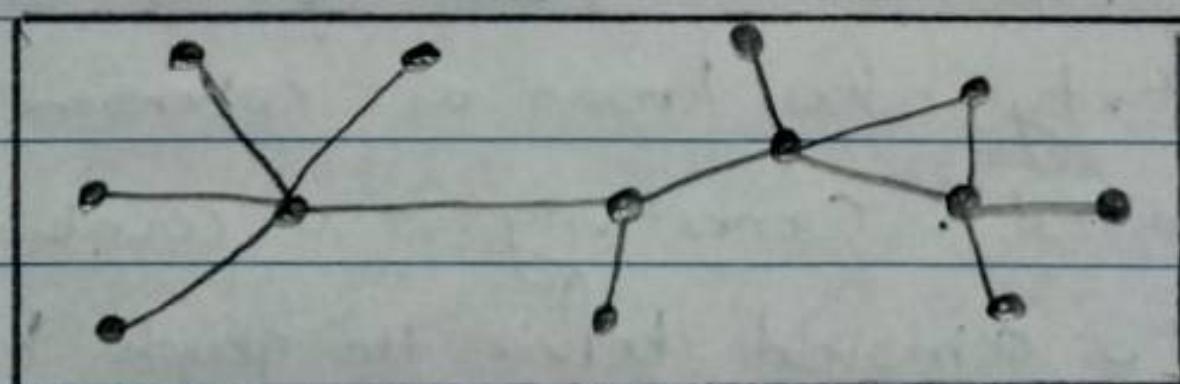


fig. Simple nlu structure

a sociogram or simply graph consist of set of (V, E) where
 $V \rightarrow$ set of nodes or actors &
 $E \rightarrow$ set of edges/ties / likes

Origin	actors	Relationship
Mathematics	Vertex	Edge
Sociogram	node	Tie/link

Explain the following N/w metrics:-

① 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 N/w and $n(k)$ of them have degree k, we have $p(k) = n(k)/n$

$$P \cdot deg (k) = \text{Fraction of nodes in graphs with degree } k.$$

② 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 → total no. of nodes in graph.

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

③ Connectivity:- Density measures the percentage of possible edge in a graph. Connectivity, also known as cohesion, measures how those edges are distributed. Connectivity is a count of the minimum nodes that would have to be removed before the graph becomes disconnected; i.e. there is no longer a path from each node to every other node.

④ Centralization:- Graph representation is used while mining social media. This representation describes the friendship or the interaction over social media.

importance of a node in a N/w is defined by centrality.

Types:

degree centrality: no. of connections a node has with a N/w

Closeness Centrality: indicates how close a node is to all other nodes.

⑤ Tie strength:- To analyse tie strength in social Nlw analysis, the Nlw must include relationship information. In small Nlw, especially if data is hand-collected it may be feasible to ask each person to rate the strength of their tie to each person.

Strength of tie is measured with several characteristics:

- (i) the length of time
- (ii) the intensity of emotions
- (iii) the attachment
- (iv) Mutual assistance.

⑥ Trust:- The person being trusted is expected to do the "right" thing. This usually means she will act with the other person's best interests in mind and/or take action that benefit other person. The person making decision about whether or not to trust someone in considering more than just her expectation about other person's act.

Q. 10] Explain in detail network visualization.

- • Graph layout: each node in a graph must be visible, count the degree of each ~~value~~ node, each link must be easily followed from source to destination, clusters and if any outliers are there they must be easily identified.

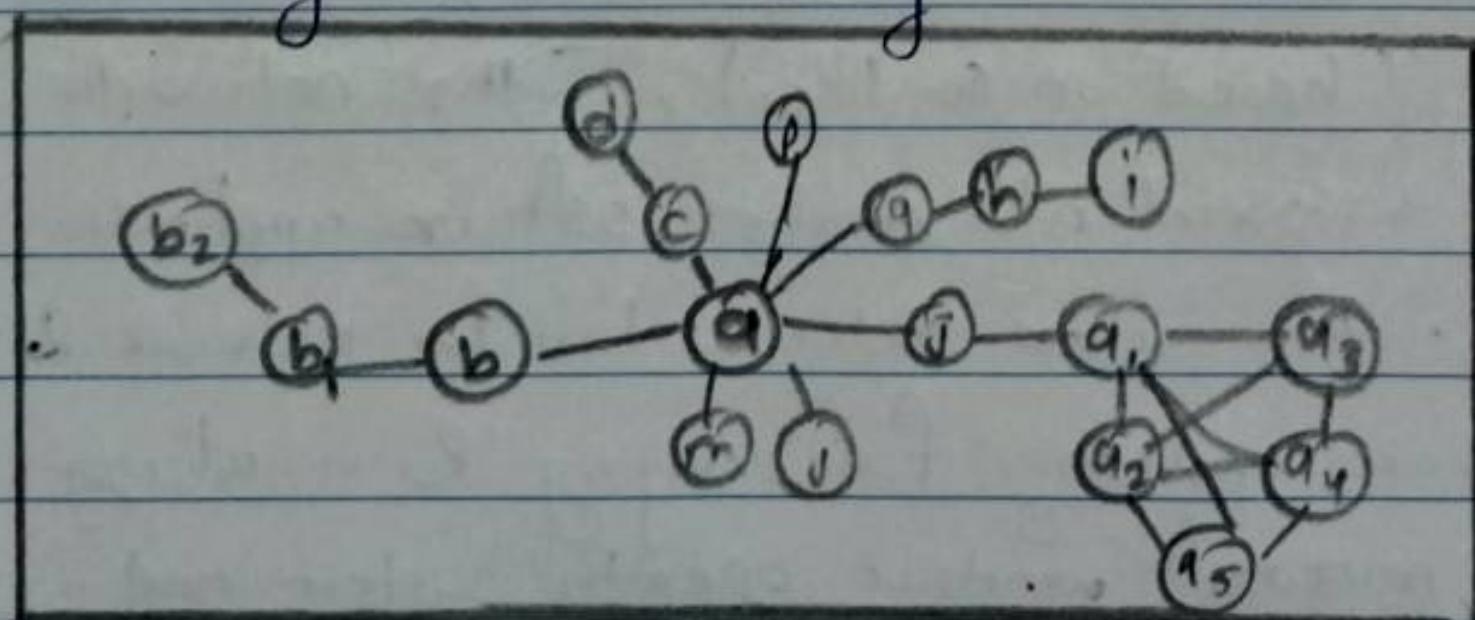


Fig. a sample of network visualization

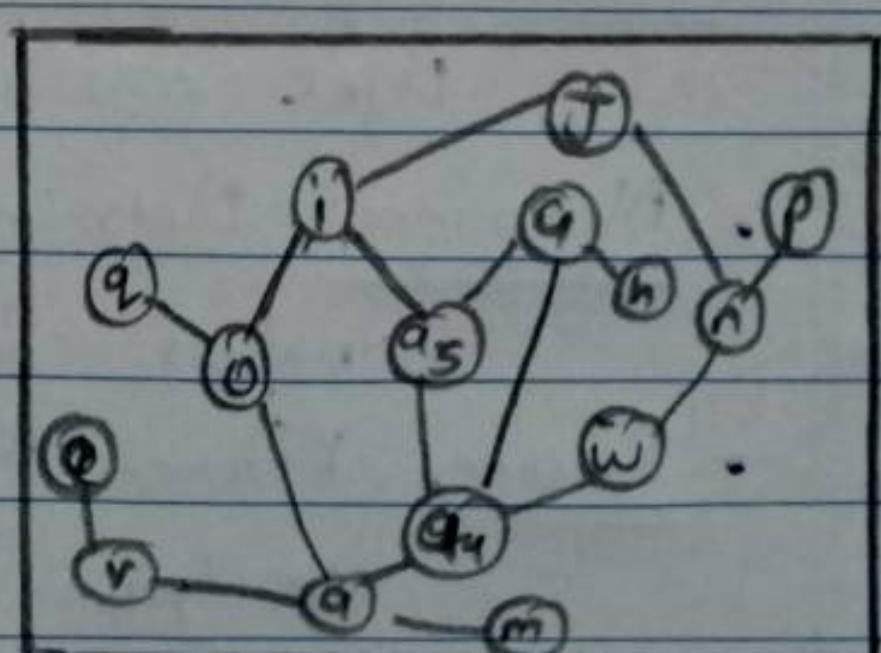


Fig. Random layout

- Circular layout :-

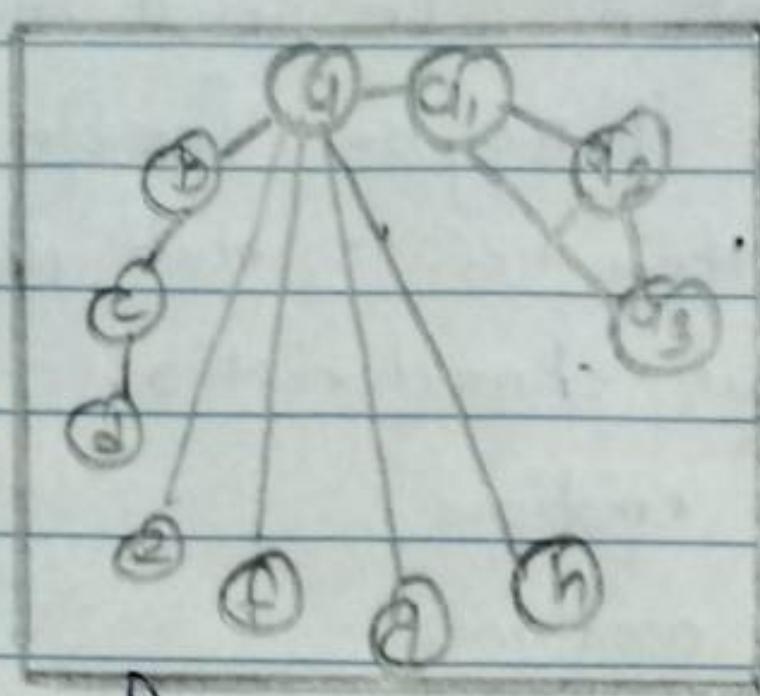


Fig: Circular layout.

Circular layout connects the nodes in circular pattern when the no. of nodes are greater in Nlw it is placed close to each other.

Circular position nodes are then connected by the edges. another way is to place nodes in the grid manner.

- Grid layout :-

Figures shows an eg. of grid layout. the degree of node a is clearly high, the clusters of nodes a, through a_{10} are obvious and chain nodes through b_4 are clear across the top.

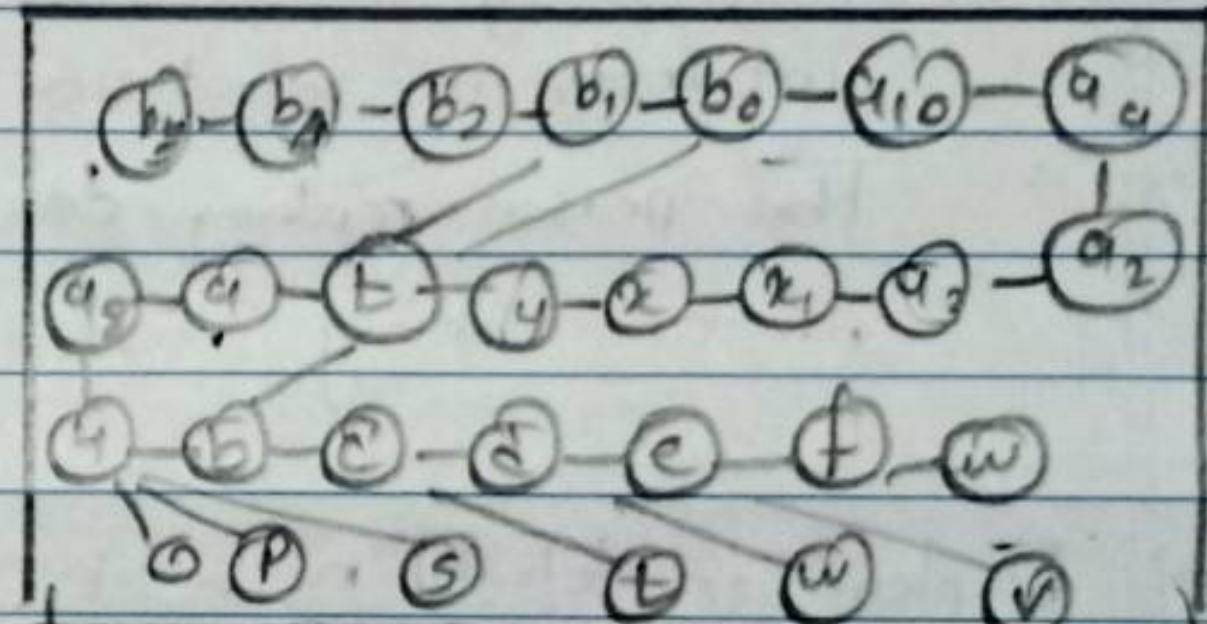


Fig: Grid layout.

Q.17] Explain Network Analytics Tools:-

- • NodeXL : - NodeXL [an add-in for Ms Excel] is free tool for social Nlw analysis. FB Nlw (based on no likes), Twitter networks & YT Nlw, others
- UCINET : - UCINET is a social Nlw analysis software application for windows operating system. Also includes Netdraw tool for network & visualization.
- Pajek: Pajek is software application for analyzing & visualizing large networks. Pajek runs on microsoft windows operating system and is free for use.
- Netminer: - Netminer is software application for large social network analysis & visualization. It can be used for free for 28 days.
- Flocker: Flocker is a twitter real-time retweets & mentions Nlw analytics tools.
- Peach: It is an online platform to map hosting Nlw & identify the most influential accounts in the twitter conversation.
- Mention map: - Online tool to investigate twitter mention's network.

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Branch :- CSE (AIML)

Roll no :- AIML57

Subject :- Social Media Analytics.

Assignment :- Assignment No :- ②

Date of Submission :-

Signature :- Singh

D.1) Explain Sources of location data .

Location information can come from a variety of sources , including the following :-

(i) Postal address :

Most business analytics application rely on address information of their customers , including city names , locality names and postal or zip code .

(ii) latitude & longitude :

In Geography , latitude (shown as a horizontal line on a globe) and longitude (shown as vertical line on globe) are used to find exact location on earth .

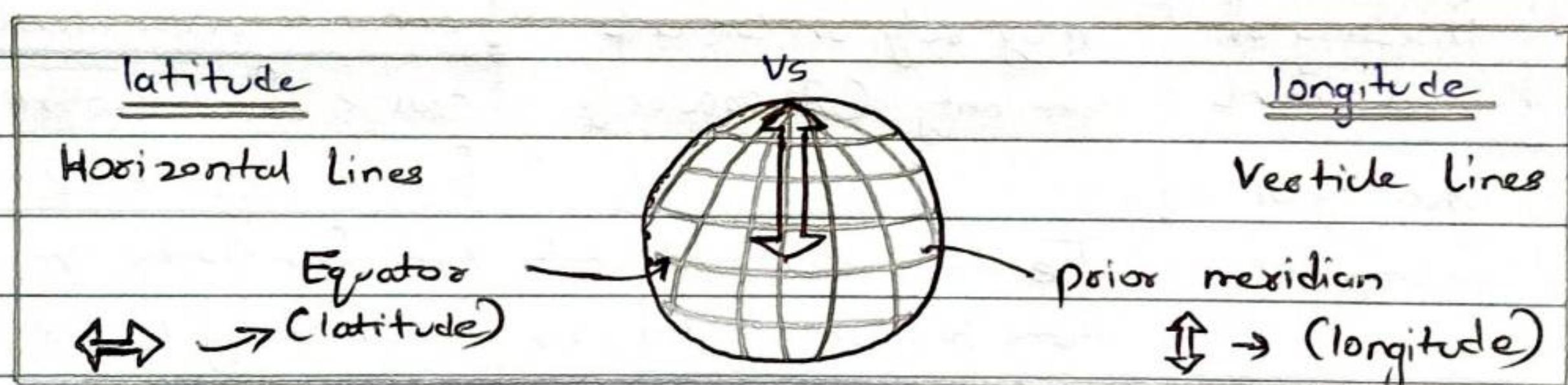


fig. Latitude & longitude

(iii) GPS - Based Navigation System :

GPS is a satellite based navigation system that can be used to find exact location people & resources . Mobile analytics mostly rely on GPS - based location data .

(iv) IP - based :

Public IP (internet protocol) can be used to determine the location of internet users . A public IP address is an exclusive numerical address [like a home address] assigned to a device connected to the internet .

Q.2] Explain Traditional vs Social recommendation System.

→

Aspect	Traditional Recommendation	Social Recommendation Systems.
Data Source	User's past behaviors & item characteristics	User's social interaction, preferences & connection
Recommendation Generation	Based on user's history & item attributes	Considers social network, likes, & interaction
Personalization	Promises personalized based on individual behaviour	Incorporates social context & connection for personalization
Examples	Netflix suggesting movies based on viewing history	Facebook recommending friends based on mutual connection
Influence of social factors	Limited user preferences and historical data	Leverages Social Media relationship & interaction to enhance recommendation
Discovery of new content	May rely on content similarity & popularity	Showcase content based on friend's activities & interests
Diversity of recommendation	Tends to recommend similar items based on user preferences	Can offer diverse recommendations influenced by local network interaction

Q.3] Explain issues with privacy policy in SMA.

- ① Lack of Transparency: Privacy Policies of SMA tools & platforms may be complex & difficult for users to understand, leading to confusion about how their data is collected & used.
- ② Data Security Concerns: SMA involves handling large amount of personal data, raising concerns about data breaches & unauthorized access.
- ③ Consent and Control: Users may not have sufficient control over their data and consent mechanisms might not be clear & adequate.
- ④ Third Party Sharing: SMA tools often share data with third party vendors or partners for analysis or advertising purposes, raising privacy concerns.



Q.4) Explain **Common** social media risk mitigation strategies.

→ Social Media gives brands the tools to easily communicate with a global audience, but ~~there~~ are few things things can go wrong leading to unauthorized brand communication.

- User authorization :- Refers to what a user is able to do on a platform, essentially a permission layer that dictates if someone can view or make changes (and to what extent) on social media, it's important to make each individual with account access has right authorization level.
- Phising :- Phising can occur when a malicious third-party attempts to impersonate a brand & communicate with customers to get them to reveal sensitive personal information
- Non-secured password : LMG Security notes that an 5 character password can be cracked in under 8 hours, a 10-character password takes 8 years and a 12-character password takes 77,000 years.

To develop & implement a social media risk management plan:

- ① Develop a social media risk management policy committee.
 - ② Formalize the policy objective & communicate it to everyone company-wide.
 - ③ Perform an audit of all social media accounts & identify all users with past or present access credentials.
 - ④ Formally outline how often you will provide a formal audit of your organization's social media accounts & users.
 - ⑤ Develop the internal rules which will allow users access to specific accounts.
 - ⑥ Educate each user on which networks they have access to and the timeline to access associated.
- inefficient social media strategies - lack of resources.

Q.5] Explain two main categories of search engine analytics.

- ① Search Engine Category Optimization
② Search Engine Trend Analysis

① Search Engine Optimization [SEO]

- techniques to improve a website's ranking in a search engine result page [SERP]
- A SERP is the list of result returned by a search engine in response to a user's query. SERPs generally have two types of result:
 - organic & non-organic search results.
 - organic result appear mainly because of their relevance.
 - non-organic include paid advertisement
- The websites that rank higher are displayed on top of search result page. Google's page rank algorithm predominantly relies on quality of incoming hyperlinks to rank websites.
- Page rank example:

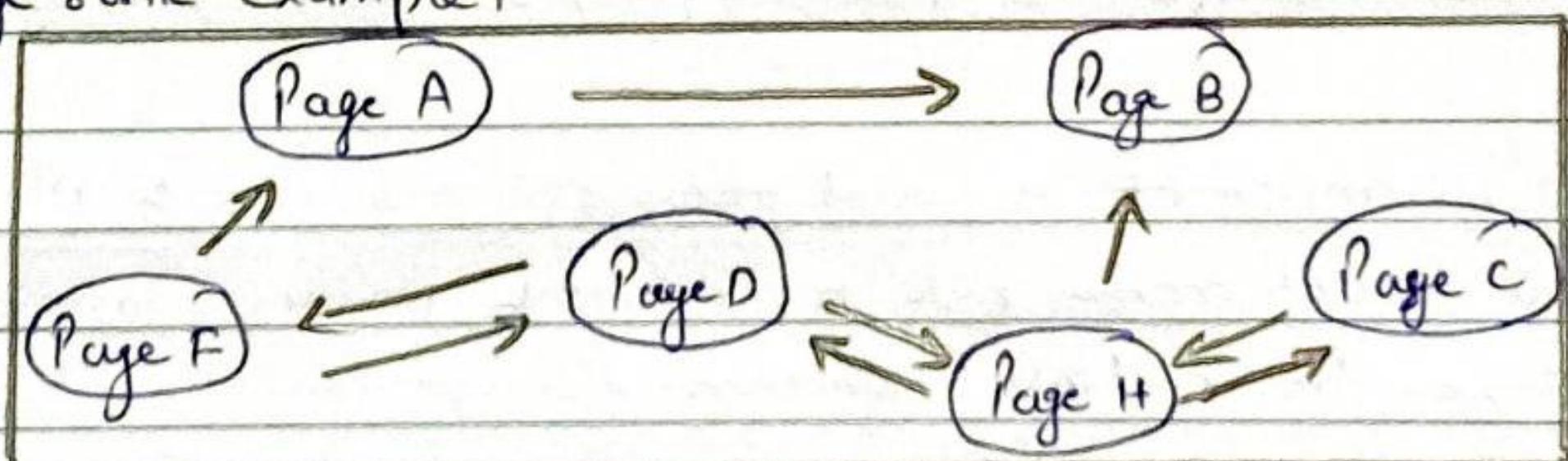


Fig. Page rank alg. ranking example.

② Search Trend Analytics:-

- Search Trend analytics deals with analyzing & understanding keywords people use in search engine. Search engine data are gateways into minds of customers.
- Through search engines, customers search for what they want thus search trends analytics can provide valuable information to the social marketers, when it comes to trends analytics.

- Google Trends (<http://www.google.com/trends>) is one of the most content & comprehensive search engine trend analytics tool.
- Engines at google.org for instance, using Google Trends data found on strong correlation among the searches for ~~flu~~ related topics and the no. of actual flu cases circulating in different countries and regions around world.
- In the health sector, Google trends data has helped determine world Flu epidemics

Q.6] Explain Business data driven location analytics & social media data driven location analytics.

→ Business data driven location analytics :-

Business data driven location analytics deals with mapping, visualizing and maintaining mining location data to reveal patterns, trends & relationship hidden in tabular data.

- Capitalizing on the data stored in business, database, location analytics, for example, can map & capture vast amount of geo-specific data to provide information, products & service based on where customers are.
- Using location of customer, for instance, if it possible to recommend the nearest convenience store, coffee shop, hotel or even probable social relation.

Benefits of location Analytics for business :-

- Hypers-local intelligence: Companies can use location analytics to transform data into location-based insights for GIS.
- Real-world context: A map links data to real data world which clearly demonstrates how location relates to other data aspects.

Application of Business :-

- Powerful intelligence: Simple maps have been widely used but they are limited in providing insightful ~~charts~~.
- Geo-Environment - simple data maps can be enriched with the customer data.

- Social media data driven location analytics:-
relies on social media location data to mine and map location of social media users, content & data.
 - ① Recommendation plan: organization can harvest location data to recommend products, service & social events to potential customer in real time as they approach certain locations.
 - ② Customer segmentation: Social media location data can be used to segment customers based on their geographic location.
 - ③ Advertisement :- location based advertisement allows targeted marketing and promotional campaign mostly derived through devices
 - key reasons: ① increase immediate foot traffic
 - ② deliver more relevant ads
 - ③ create a better user experience
 - ④ Information request : based on their current location, customers can request a product services or resources. [eg - restaurant or parking]
 - ⑤ Navigation :- Mobile & GPS based navigation services & apps assist in finding the addresses associated.

- Q.7 Explain the purpose of search engine optimization.
-
- The primary purpose of SEO is to improve a website's visibility and ranking on search engine results pages [SERPs] thereby increasing organic [non-paid] traffic to the site.
 - By optimizing various aspects of a website such as content, keywords, and meta tags, SEO aims to make the site more relevant to authorized engines of search like Google, leading to higher rankings for relevant search engine queries.
 - For social media marketers, it is important to understand the mechanism behind the SERP ranking. There may be variety of factors search engines takes into account to rank websites, such as keywords and relevance. However, the most important factor that determines

SERP ranking is the PageRank. Page rank mechanism or an algorithm, to be more precise used by Google search engines to rank websites SERPs.

- Ultimately the goal of SEO is to attract more qualified traffic to the websites, improve user experience, and achieve business objectives such as increased conversions & revenue.

(Q8) What are the benefits of Social Media users who use social media.

- Connection & Networking:

Users can connect with friends, family, colleagues and communities of interest regardless of geographical boundaries.

- Information Sharing:

Users can share personal updates, photos, videos & news in real time with their social networks.

- Entertainment & Engagement:

Social media platform offer a wide range of content including names, videos & games, providing entertainment and opportunities for engagement.

- access to news & information:

Users can access news & information on various topics from around the world, often tailored to their interests & preferences.

- Community Building:

Social Media platform facilitate formation of online communities, based on interests, hobbies or identities.

- Expression & Creativity:

Social media provides users with a platform to express themselves creativity & showcase their talents, ideas, etc.

- Support & resources:

Social media platform can be valuable sources of support & resources for users facing challenges or seeking assistance.

Q.9] Explain two ways to measure the success of a company having social media

- Social media metrics are data points that measure the impact of social media activity on your company's revenue and help you determine whether you're achieving your social media goals with your current strategies.
- Here are 3 major metric on which we can measure success of social media :

(i) Set your social media goals:

- The main goal is to learn how to use old social media campaign reports, how to measure social media success in the long run and how to search for the right answers before launching new social campaigns.
- Planning is key to a successful social media campaign & every social media measurement should start with one.

(ii) Choose the right social media measurement tools for you:

- We must do our research to see what's better suited for your needs, what type of information will help us to optimize our efforts & social media campaigns and tools that will help us to measure social media easier.

(iii) Determine what KPI's you'll measure:

- Setting KPI's for social media is crucial.
- Engagement, reach, fans, or followers evaluation and growth in numbers are the top metrics that social media professionals are measuring.
- Having quick access to KPI's across all social media platforms is time-saver.

Q.10] Explain Social Media KPI.

- - KPI stands for key performance indicators.
- In Social Media & Business sector we use KPIs to determine performance over time, see if goals are being met & analyze whether changes need to be made.
- It is a metrics used to determine if a business's social media marketing strategy is effective.
- Basically, they tracked data related to a company's presence on individual platforms like Facebook, Twitter or Instagram, or across all social media platforms collectively.
- Social media metrics are no. of you look at to see if your strategy is working and meeting your goals.
- Specific
- Measurable
- Attainable
- Relevant
- Timely
- To set & monitor effective social media KPIs:-

 - (i) State the KPI's objective
 - (ii) Name your KPI.
 - (iii) Share the KPI.
 - (iv) Analyze your current performance.
 - (v) Understanding industry benchmarks.

Q.11] Explain Search Engine Analytics tools.

- - Google Trends: Google Trends [<http://trends.google.com/>] is a search engine analytics tool. It is a website by Google that analyzes the popularity of top search queries in Google search across various regions & languages. The websites uses graphs to compare the search volume of different queries over time.
- Google Hot Trends - It is an addition to Google Trends which displays the

top 20 hot, i.e., fastest-rising searches of the past hour in various countries. It is for suddenly experiencing a surge in popularity.

- Canopy :- It suite of visual analytic tools designed to support deep investigation of large multimedia collections.
- Google Alerts : It is a content detection & notification service that automatically notifies users when new content over Internet is posted.
- Icecat :- It is an internet search engine, specialize in real-time search. Based in Dallas, Texas, it launched in 2004.

Q. 12] Explain Automated Recommendation Systems.

- - Recommender System are designed to recommend things to the user based on many different factors.

Types of Recommendation System:-

① Popularity Based Recommendation System:-

It is type of system which works on principle of popularity and/or anything which is in trend.

e.g.:- Google news, YouTube.

② Classification Model:-

It is that uses features of both products as well as user to predict whether a user will like a product or not.

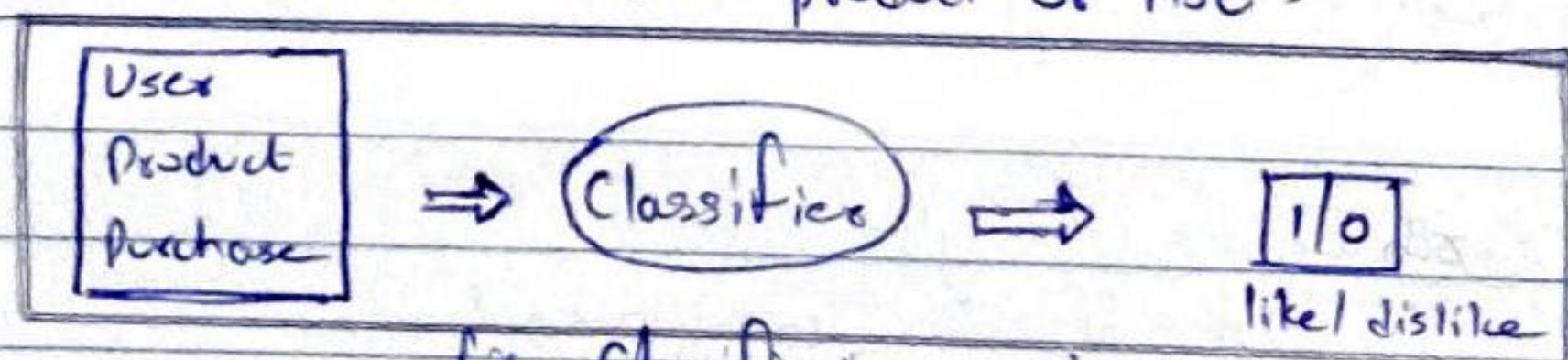


fig. Classification model.

③ Content-based Recommendation System:-

- It works on the principle of similar content.
- If a user is watching a movie, then the system will check about other movies of similar content or the same genre of movie.
- One of the model that suites well for this system is Netflix.