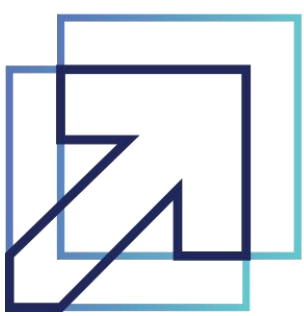
Final Report



Smart Internz

Technology Stack: Data Analytics with Tableau

Project Title: Uncovering the voices of digital age : A social media

Team ID:LTVIP2024TMID12971

Team no.: 2.9

Team Members:4

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INTRODUCTION

In today's digital era, the proliferation of technology has revolutionized the way individuals communicate, interact, and engage with information. The advent of the internet, social media platforms, and mobile devices has ushered in an unprecedented era of connectivity, enabling people to access vast amounts of information, connect with others across geographical boundaries, and express themselves in ways previously unimaginable. This paradigm shift has not only transformed the way we communicate but has also generated a deluge of data, creating new opportunities and challenges for individuals, organizations, and society as a whole.

Against this backdrop, the field of data science has emerged as a pivotal discipline that seeks to harness the power of data to extract actionable insights, drive informed decision-making, and unlock new opportunities for innovation and growth. Data science encompasses a diverse set of methodologies, techniques, and tools for collecting, analyzing, and interpreting data to uncover patterns, trends, and correlations that can inform strategic planning, optimize operations, and enhance performance across various domains and industries.

One of the key pillars of data science is data visualization, which involves the use of graphical representations, charts, and interactive dashboards to visually communicate complex data in a clear, concise, and compelling manner. Data visualization serves as a powerful tool for exploring, analyzing, and communicating insights derived from data, enabling stakeholders to gain a deeper understanding of trends, patterns, and relationships that may not be

immediately apparent through traditional data analysis methods.

In recent years, Tableau has emerged as a leading data visualization platform that empowers users to create stunning visualizations, dashboards, and interactive reports without the need for extensive programming or technical expertise. With its intuitive interface, robust functionality, and versatile capabilities, Tableau has become a preferred choice for organizations and professionals seeking to unlock the value of their data and communicate insights effectively to stakeholders.

This research project, titled "Uncovering the Voices of the Digital Age: A Social Media Analysis using Tableau," aims to leverage the power of data visualization and analytics to explore and understand the dynamics of online conversations, sentiments, and trends across social media platforms. By combining the capabilities of Tableau with Flask, a lightweight web framework for Python, the project seeks to develop an innovative platform for real-time social media analysis and visualization.

The proliferation of social media platforms such as Twitter, Facebook, Instagram, and LinkedIn has transformed the way individuals communicate, share information, and express opinions. These platforms have become virtual hubs of social interaction, enabling users to engage in real-time conversations, share content, and connect with others across diverse interests and communities. As a result, social media data has emerged as a valuable source of information for researchers, marketers, policymakers, and organizations seeking to understand public sentiment, monitor trends, and engage with their target

audience.

However, the sheer volume and complexity of social media data present significant challenges for analysis and interpretation. Traditional methods of data analysis struggle to cope with the scale, variety, and velocity of social media data, making it difficult to extract meaningful insights in a timely manner. Moreover, the unstructured nature of social media content, including text, images, and videos, poses additional challenges for analysis, requiring sophisticated techniques and tools to process and analyze.

In this context, data visualization offers a compelling solution for unlocking the value of social media data and gaining actionable insights. By transforming raw data into visual representations such as charts, graphs, and maps, data visualization enables stakeholders to explore trends, detect patterns, and identify outliers with ease. Moreover, interactive visualization tools such as Tableau empower users to interact with data dynamically, drill down into specific details, and gain deeper insights into complex phenomena.

The proposed research project aims to develop a comprehensive platform for social media analysis and visualization using Tableau and Flask. The platform will leverage the capabilities of Tableau for data visualization, allowing users to create interactive dashboards, charts, and maps that capture key insights from social media data. Additionally, Flask will be used to develop a lightweight web application that facilitates data collection, processing, and integration with Tableau for real-time analysis.

ABSTRACT

"Uncovering the Voices of the Digital Age: A Social Media Analysis" project aims to delve into the dynamics of social media influencers across Instagram, TikTok, and YouTube. Leveraging Tableau, SQL, and Flask, this project spans March to December 2022, exploring various influencer categories and tiers. Through vibrant and interactive visualizations, the dashboard illuminates influencer metrics, audience engagement, and marketing strategies. SQL ensures streamlined data management, while Flask facilitates the creation of an interactive web dashboard for real-time exploration. This endeavor empowers businesses to optimize influencer collaborations and refine marketing strategies in the digital landscape.

Keywords:

Social media, Digital age, Social media analysis, Influencers, Instagram, TikTok, YouTube, Tableau, SQL, Flask, Data visualization, Interactive dashboard, Audience engagement, Marketing strategies, Data management.

BRAINSTORMING AND IDEA PRIORITIZATION

Brainstorming and prioritizing ideas for social media analysis using Tableau can be an exciting process. Here's a step-by-step approach:

Stage-1:Identify Goals and Objectives:

1.What are you aiming to achieve with social media analysis? Increased engagement? Better understanding of your audience? Improved content strategy?

2.Define clear, measurable objectives that align with your organization's goals.

Stage-2:Gather Data:

1.Collect data from various social media platforms relevant to your objectives. This may include engagement metrics (likes, shares, comments), follower demographics, post frequency, etc.

2.Ensure data cleanliness and compatibility with Tableau.

Stage-3:Brainstorm Analysis Ideas:

Generate a list of potential analysis ideas based on your objectives and available data. For example:

1.Audience segmentation analysis to understand demographics and preferences.

2.Trend analysis to identify peak engagement times and popular content types.

3.Sentiment analysis to gauge audience reactions to your brand or campaigns.

4.Competitive analysis to benchmark your performance against competitors.

5.Content performance analysis to assess the effectiveness of your posts.

6.Influencer analysis to identify key influencers in your niche.

7.Network analysis to understand the connections between followers and their interactions.

8.Hash tag analysis to identify trending topics and their impact on engagement.

Stage-4:Prioritize Ideas:

1. Evaluate each idea based on its potential impact on your objectives, feasibility, and resource requirements.

2.Prioritize ideas based on urgency and importance. Some ideas may have immediate value, while others may be more long-term.

Stage-5:Create a Roadmap:

1.Develop a roadmap outlining the sequence of analyses you plan to conduct. Start with foundational analyses that provide essential insights before moving on to more advanced techniques.

2.Consider dependencies between analyses and allocate resources accordingly.

Stage-6:Design Dashboards and Visualizations:

1.Utilize Tableau's capabilities to design interactive dashboards and visualizations that communicate insights effectively.

2.Tailor visualizations to your audience, ensuring they provide actionable insights at a glance.

Stage-7:Iterate and Refine:

1.Social media analysis is an ongoing process. Continuously monitor your performance and iterate on your analyses to adapt to changing trends and objectives.

2.Solicit feedback from stakeholders and incorporate their input to refine your analyses over time.

Stage-8:Stay Updated:

Keep abreast of new features and updates in Tableau and social media platforms. New capabilities may unlock additional analysis opportunities or improve existing processes.

STAGE-1

Title of the Project:- Uncovering the Voices of Digital Age:a social media analysis

Overview:

"Uncovering the Voice of the Digital Age" is an ambitious social media analysis project aimed at gaining deep insights into the trends, sentiments, and preferences prevalent in online discourse.The primary goal is to understand the digital landscape comprehensively, uncovering valuable insights that inform decision-making, content creation, and audience engagement strategies.The project encompasses a wide range of social media platforms, including but not limited to Twitter, Facebook, Instagram, LinkedIn, and YouTube.Analysis will cover various dimensions such as user demographics, content themes, sentiment analysis, engagement metrics, and influencer identification.Comprehensive data collection mechanisms will be employed to gather relevant social media data, including APIs, web scraping, and third-party tools.Data sources will be carefully selected to ensure representativeness across diverse demographics and interests.The project will employ a multi-faceted analysis framework, combining quantitative and qualitative methods to extract actionable insights.Analysis techniques may include but are not limited to:Text mining and natural language processing for sentiment analysis and topic modeling.Network analysis to identify communities, influencers, and information diffusion patterns.Time-series analysis to detect trends and temporal variations in online conversations.Geospatial analysis to understand regional variations in digital discourse.Content analysis to evaluate the effectiveness of different content types and format.Metrics and KPIs will be defined based on project objectives and stakeholder requirements.Key metrics may include engagement rates, sentiment scores, reach, impressions, follower

demographics, and content virality.Insights will be communicated through visually compelling dashboards and reports created using Tableau.Interactive visualizations will facilitate exploration and discovery of insights by stakeholders.The project aims to deliver actionable insights that drive strategic decision-making and tactical execution.Recommendations will be provided for optimizing content strategy, audience targeting, campaign execution, and brand positioning based on data-driven insights.The project will adopt an iterative approach, continuously refining analyses based on feedback and evolving objectives.Regular checkpoints will be established to review progress, assess results, and adjust methodologies as needed.Ethical considerations, including privacy, data security, and responsible use of data, will be paramount throughout the project.Adherence to relevant regulations and guidelines governing data collection and analysis will be ensured.

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SELECTED METHODOLOGY OR PROCESS MODEL

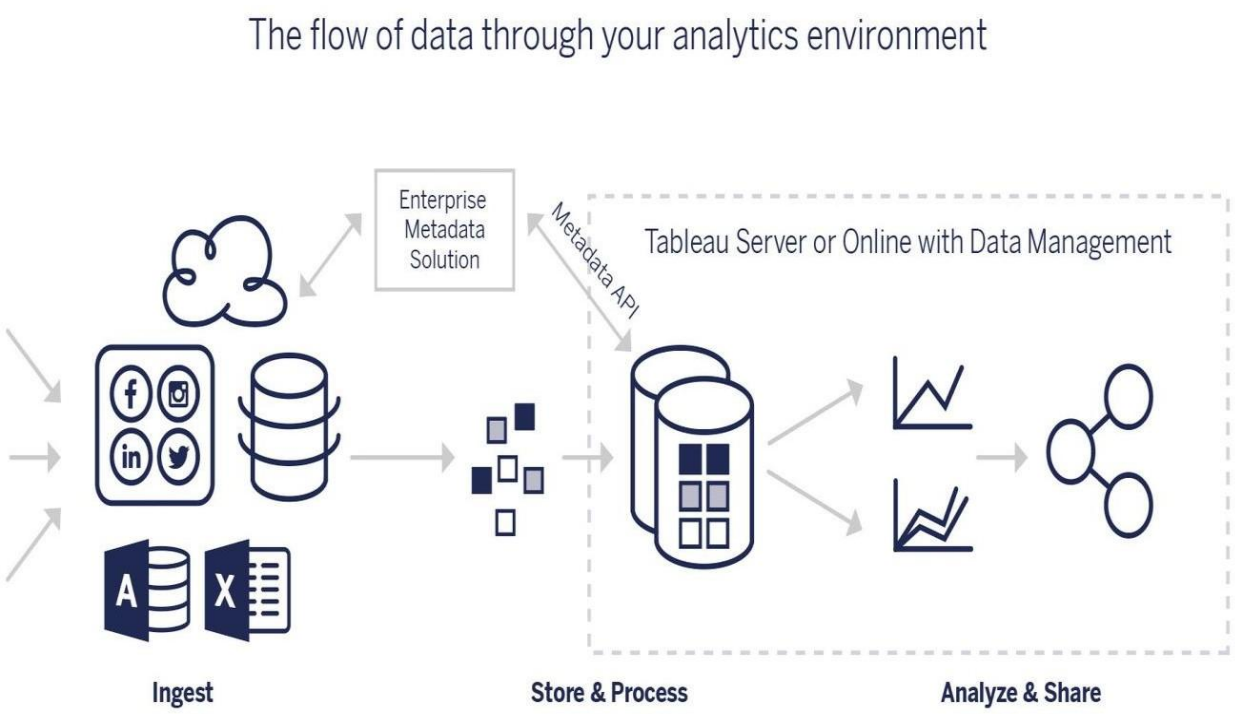
Tableau:

Tableau is a widely used Business Intelligence tool in the current market. Its popularity is due to its capability of handling Big Data and is relatively simple to deploy, learn and use. Tableau generates insights from the raw data and creates a visual masterpiece for businesses to make data-driven decisions.

Here are the most prominent uses of Tableau tool:

- Tableau allows real-time dashboard updates. Offers Secure and reliable connection to your data sources in the cloud or on-premises
- Tableau offers Quick deployment, hybrid configuration,and Secure environment.
- Allows data exploration using natural language query
- Offers feature for dashboard visualization regularly updated with the community.

ARCHITECTURE / OVERALL DESIGN OF PROPOSED SYSTEM



DESCRIPTION OF SOFTWARE FOR IMPLEMENTATION AND TESTING PLANOF THE PROPOSED MODEL/SYSTEM

Visual analysis is a non-linear process. For example, a user might start with an initial task or question in mind, find relevant data, and prepare it for analysis. During analysis, she realizes that she needs additional data, so she goes back a couple of steps to get more data, choose a new visual mapping, and develop a new insight.This example can be repeated for any of the other steps of the cycle of visual analysis.

The flow of analysis is difficult or impossible to achieve in traditional BI. Instead of exploiting the power of visual cues and iteration, it is

heavily milestone-driven. Requirements gathering leads to development, then to testing, and eventually to launch. With visual analysis, the steps become more fluid as the answer to one question often leads to other questions, and new insights are uncovered.

Start with Questions

Whether you are authoring for yourself or for others, the cycle of visual analysis starts with a task or business questions to be answered. When asking data questions, start with a broad topic then add specificity to each question. For example, a call center manager‘s questions from summary to detail might look like the following:

- How many calls are received monthly?
- Where do the calls come from?
- What are the top call types?
- Who answers the most/least calls?

Often the person analyzing the data also understands the underlying business questions. In other cases, someone might come to you with a need for a dashboard and what business questions it needs to address. Regardless of what the process of requesting this kind of assistance is, the steps for success are similar.

- Build rapport for a productive working relationship built on trust. Find out abouttheir experiences and try to speak their language.
- Ask open-ended questions like "What do you want this dashboard to tell you?" or"What question do you want to answer?"
- rather than "Do you want a line graph?" or "Should I make a trend line?"
- Use examples: Show existing dashboards and ask what would make them better.

Get Data

Getting data is a critical step in the process of creating a dynamic visual analytics dashboard on inflation using Tableau. The quality and accuracy of the data used in the project will determine the effectiveness of the dashboard in delivering actionable insights.

There are several ways to obtain data for the dashboard, including publicly available sources, internal company data, and data from third-party providers. Publicly available sources may include government websites, academic research papers, or open data portals. Internal company data can be extracted from various databases, such as financial statements or customer records. Data from third-party providers may come from vendors that specialize in providing data on specific industries or markets.

Once the data sources have been identified, the data must be extracted, transformed, and loaded into Tableau. This process involves cleaning the data, removing duplicates, and restructuring the data into a format that can be easily analyzed in Tableau. This step is crucial because Tableau relies on structured and clean data to create visualizations and dashboards.

Tableau supports a wide range of data sources, including spreadsheets, databases, and cloud-based platforms. It also allows users to connect to multiple data sources and blend them together to create a more comprehensive view of the data. In addition, Tableau has built-in connectors for many popular data sources, which makes it easy to import data directly into the platform.

In summary, getting the right data for the dynamic visual analytics dashboard on inflation using Tableau involves identifying relevant data sources, extracting, transforming and loading the data, and ensuring that the data is clean and structured. This process is critical in delivering accurate and actionable insights from the dashboard.

Your users have questions that can be answered with data, but do they know how to find the right source of data and connect to it? From a variety of structured, semi- structured, and raw sources of data to siloed data within different departments of the organization, knowing where to get the right data is one of greatest barriers to becoming a data-driven organization.

Beyond the initial use cases, content creators should understand how to get data to answer new business questions. Using the Data & Analytics Survey is a repeatable way to discover new use cases and assess whether the needed data exists already in Tableau Server and Tableau Cloud. If it is already available as a Published Data

Source, then content creators can connect to it and begin analyzing it. If it does not exist, authors should collaborate with Data Stewards and work with the data they have—even sample data files—and prototype with the data available, rather than waiting to proceed with a perfect operationalized dataset. Once the full data set is available, the operationalized dataset will replace the sample.

Choose Visual Mapping

After getting data, content creators will start to explore data by adding measures and dimensions to the view, and Tableau presents users with the most effective visualization. At any time in the authoring of content, the type of visualization can be changed. As creators explore the data and visually encode it with the pre-attentive attributes, they will be able to derive insights from it.

Choosing the appropriate type of visual mapping for the type of analysis is critical for deriving insights and driving towards action. There are five primary types of visual mappings that content creators and consumers should understand:

- Comparison, represented as a bar
- Spatial, represented as a map
- Temporal, represented as a line
- Compare two measures, represented as a scatterplot
- Precise number, represented as a text table

After obtaining the necessary data for the project, the next step is to organize and prepare it for analysis. This involves data cleaning, transformation, and integration to ensure that it is in a format that can be easily analyzed using Tableau. The data cleaning process involves identifying and addressing any inconsistencies, errors, and missing values in the dataset. The transformed data is then integrated into a data model that supports the desired analysis.

Once the data is organized and prepared, it can be loaded into Tableau

for visualization and analysis. Tableau provides an intuitive and interactive environment for exploring and analyzing data using various visualization techniques such as charts, graphs, and maps. The platform also allows users to filter and drill down into

specific subsets of data to gain insights into trends, patterns, and relationships within the data. Overall, Tableau's robust capabilities for data visualization and analysis make it a powerful tool for understanding complex data, including inflation data.

View Data

After connecting to the data source, the next step in using Tableau for dynamic visual analytics on inflation is to view the data. Tableau provides a powerful and intuitive interface for exploring and understanding the structure and content of the data. The view data feature allows users to see the data in a tabular format, similar to a spreadsheet, where each row represents an observation or record, and each column represents a variable or attribute. In addition, Tableau provides options for sorting, filtering, and grouping the data based on specific criteria to facilitate analysis and exploration.

The view data feature in Tableau also includes a preview of the data, which can help users identify any data quality or formatting issues that need to be addressed before creating visualizations. For example, if there are missing or invalid values, or if the data is not in the correct format, these issues can be identified and corrected before proceeding with analysis. Additionally, the view data feature allows users to specify the level of detail and aggregation they want to use in their analysis, such as viewing data at the individual transaction level or at a

higher level of summary, such as by month or year. This flexibility allows users to adjust their analysis to suit their specific needs and objectives.

Tableau visualizations often show the unexpected—relationships, outliers, and trends. A surprise finding stimulates the thought process, encouraging deeper analysis or a different path of exploration. Tableau‘s interaction model is based on the concept of incremental change: Whenever you perform an action (e.g., filter), Tableau instantly shows you the new result.

Why is incremental change important? It lets us intuitively explore a broad space of possible visualizations to find the right one. It allows us to focus on the exploration task, where questions lead not just to answers but also to more questions. It also lets us learn visual analytics at our own pace. We can build sophisticated representations of data slowly and incrementally as we learn how to look at information. Tableau‘s interface is based on the process of incrementally refining a question into an answer. Every Tableau user, not just analysts, to be able to derive meaningful information from data and base their decisions on data.

Develop Insights

Developing insights is the most critical aspect of the dynamic visual analytics project on inflation using Tableau. This phase involves identifying patterns, trends, andrelationships in the data to gain insights and inform decision-making. Tableau's advanced data analysis tools and visualization capabilities make it easier to spot trends and insights in

data.

One way to develop insights is by using Tableau's advanced analytics features such as forecasting, clustering, and trend lines. These features help to identify patternsand trends in the data that may not be visible at first glance. For example, forecasting can be used to predict future inflation rates based on historical data. This information

can be used to develop more accurate inflation projections and inform decision- making by policymakers and businesses.

Another way to develop insights is by using Tableau's interactive visualization capabilities to explore the data and identify trends and patterns. Interactive dashboards and charts allow users to drill down into specific areas of interest and compare data across different time periods and geographic locations. This approach can help to identify correlations between different variables and gain a deeper understanding of the underlying factors driving inflation. Ultimately, developing insights is a critical step in the dynamic visual analytics project on inflation using Tableau as it helps to turn raw data into actionable information that can inform decision-making and drive better outcomes.

Data analysis and data visualization were once separate tasks. An analyst would run queries or write calculations to get answers from a data source, and then export results as a specified chart or graph. But by making the process querying data visual, you explore your data in a richer, more meaningful way. With visual analytics you can build an

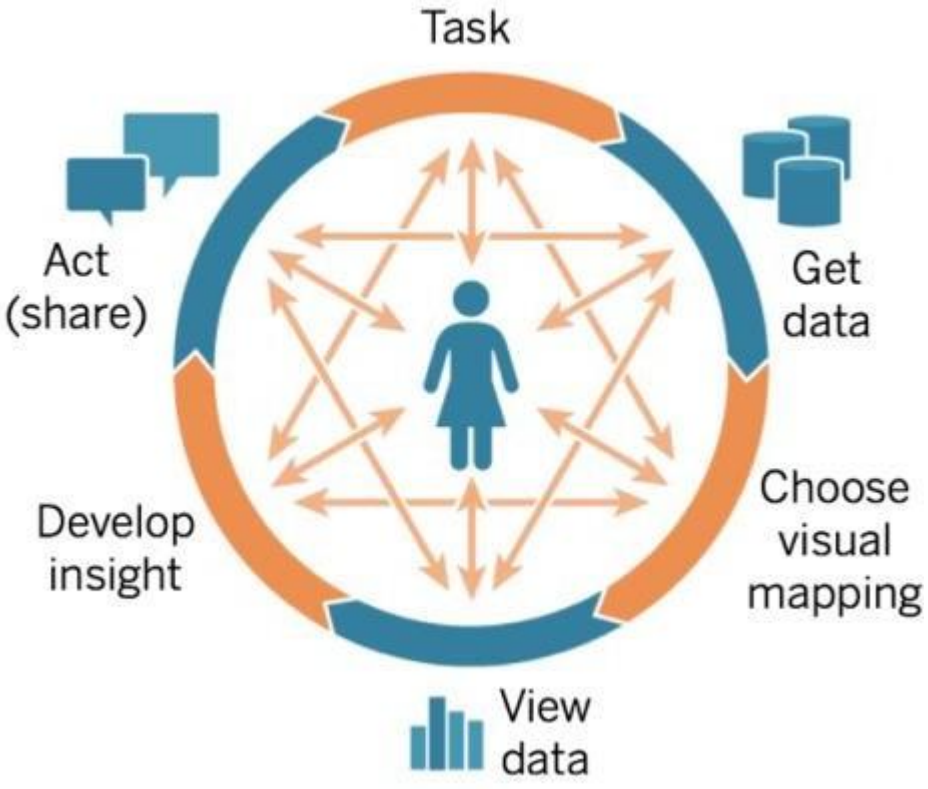
analysis and learn from it simultaneously as opportunities for further investigation present themselves.

Critical thinking with data is about finding insight, and communicating the insights in an optimal, engaging way. Visual analytics makes asking and answering questions of your data intuitive, regardless of whether you are a creator or a consumer—as we continue to ask ―why‖.
Critical thinking with data is important to the decision-making process for both contentcreators (often analysts, developers or data scientists) as well as for information consumers. Both groups should ask themselves these questions as they develop insights

Another important insight that can be derived from this project is identifying the major drivers of inflation. By analyzing the data over time, it is possible to identify the key factors that contribute to inflation. For example, one might observe that inflation tends to rise during periods of economic growth and fall during periods of recession. Additionally, the project could help identify which industries are most affected by inflation and which ones are less vulnerable. This information can be useful for policymakers to understand the root causes of inflation and develop appropriate policies to control it.

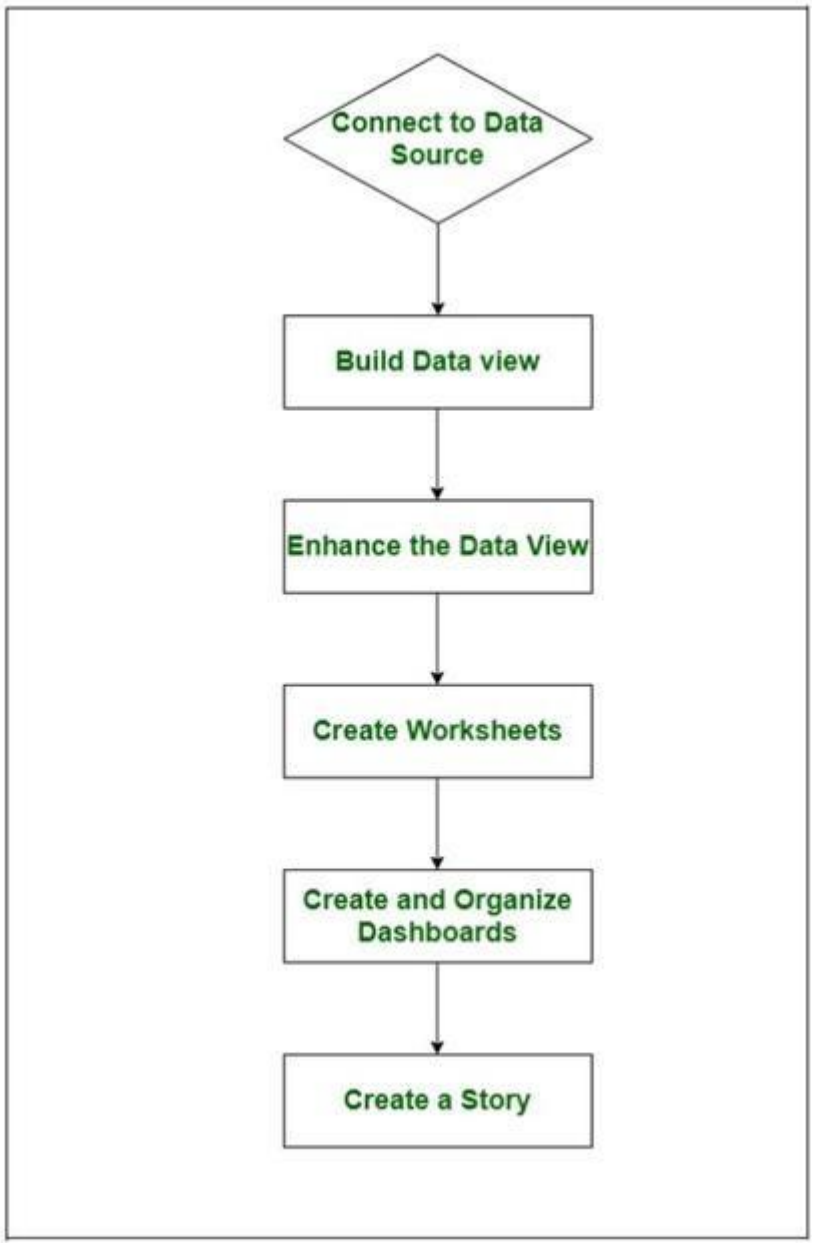
Finally, the project can also provide insights into the behavior of consumers and producers in response to inflation. For instance, during periods of high inflation, consumers may reduce their spending and opt for cheaper substitutes, leading to changes in demand patterns across different product categories. Similarly, producers may adjust their

pricing strategies, production levels, and input costs in response to inflation. By examining these behavioral changes, the project can help in forecasting future inflation trends and predicting the likely impact of policy changes.



The Analysis Cycle

PROJECT MANAGEMENT PLAN



SYSTEM ANALYSIS

System analysis is a critical phase in the development lifecycle of any technological solution, encompassing the thorough examination and evaluation of existing systems, processes, and requirements to identify opportunities for improvement, optimization, and innovation. It serves as the foundation for the design, development, and implementation of new systems or the enhancement of existing ones, ensuring alignment with organizational goals, stakeholder needs, and industry best practices.

At its core, system analysis involves a systematic and methodical approach to understanding the structure, behavior, and functionality of the system under consideration. This includes gathering and analyzing requirements, defining objectives, assessing constraints, and evaluating feasibility to inform decision-making and guide the development process. By employing a variety of techniques, methodologies, and tools, system analysts can gain insights into the current state of the system, identify areas for improvement, and define the scope and goals of the project.

One of the key tasks in system analysis is requirements gathering, which involves eliciting, documenting, and validating the needs and expectations of stakeholders, including end-users, customers, managers, and subject matter experts. This process typically begins with conducting interviews, surveys, and workshops to identify stakeholders and understand their perspectives, priorities, and pain points. Through effective communication and collaboration, system analysts can capture a comprehensive set of functional and non-functional requirements that serve as the basis for system design and development.

Furthermore, system analysis encompasses the identification and documentation of system objectives, which define the desired outcomes, goals, and success criteria for the project. This involves aligning project objectives with organizational goals and stakeholder expectations to ensure that the system delivers tangible value and meets the needs of its intended users. By establishing clear and measurable objectives, system analysts provide a roadmap for project planning, execution, and evaluation, enabling stakeholders to track progress and assess the impact of the system on business outcomes.

SYSTEM DESIGN:

System design is a critical phase in the development lifecycle of any technological solution, encompassing the creation of a comprehensive blueprint that outlines the architecture, components, and functionalities of the system. Through a structured approach that combines analysis, design principles, and best practices, system designers translate stakeholder requirements into a well-defined and scalable solution that meets organizational needs and objectives.

At the core of system design lies the creation of a conceptual model that captures the structure and behavior of the system, providing a high-level overview of its components and their interactions. This involves identifying key system elements, such as modules, interfaces, data structures, and algorithms, and defining their relationships and dependencies. By visualizing the system architecture through techniques such as UML diagrams, flowcharts, and entity-relationship diagrams, designers communicate design decisions and facilitate stakeholder understanding and alignment.

Moreover, system design involves the specification of functional and non-functional requirements that guide the development process and serve as the basis for system validation and verification. Functional requirements define what the system should do, including user interactions, data processing tasks, and system outputs, while non-functional requirements specify quality attributes such as performance, reliability, scalability, and security. By establishing clear and measurable criteria for system behavior and performance, designers ensure that the final solution meets stakeholder expectations and organizational standards.

Furthermore, system design entails the selection and integration of appropriate technologies, tools, and platforms that support the implementation and deployment of the proposed solution. This includes evaluating available options for hardware, software, programming languages, frameworks, and development environments, taking into account factors such as compatibility, performance, cost, and vendor support. By leveraging industry best practices and standards, designers ensure that the chosen technologies align with organizational goals and facilitate future maintenance and scalability.

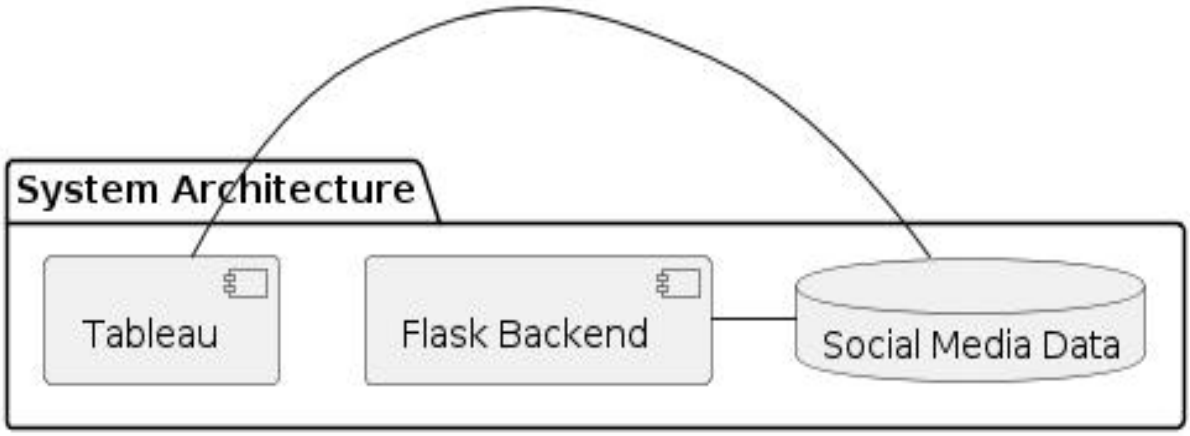
Additionally, system design encompasses the development of detailed design specifications that outline the internal workings and implementation details of the system. This includes designing data models, user interfaces, algorithms, and database schemas that translate functional requirements into actionable design artifacts. Through techniques such as object-oriented design, structured programming, and design patterns, designers create modular, reusable, and maintainable code that promotes code clarity, flexibility, and extensibility.

Moreover, system design involves addressing cross-cutting concerns and design trade-offs that arise during the design process. This includes balancing competing priorities such as performance versus scalability, security versus usability, and flexibility versus simplicity. By conducting design reviews, peer assessments, and risk analysis, designers identify potential design flaws, mitigate technical debt, and optimize system designs to achieve a balance between competing objectives.

Furthermore, system design encompasses the validation and verification of the design through techniques such as prototyping, simulation, and testing. This involves building proof-of-concept prototypes, conducting usability studies, and performing system testing to validate design assumptions, identify defects, and ensure compliance with requirements. By iteratively refining the design based on feedback from stakeholders and end-users, designers mitigate risks, improve system robustness, and enhance user satisfaction.

In summary, system design is a multifaceted process that requires a systematic and disciplined approach to translate stakeholder requirements into a well-engineered and scalable solution. By leveraging analysis, design principles, and best practices, designers create a conceptual model, specify functional and non-functional requirements, select appropriate technologies, develop detailed design specifications, address design trade-offs, and validate the design through prototyping and testing. Through effective system design, organizations can develop innovative and reliable solutions that meet user needs, support business

objectives, and drive competitive advantage in today's dynamic and evolving technological landscape.



INPUT DESIGN

The input design is the link between the information system and the user. It comprises the developing specification and procedures for data preparation and those steps are necessary to put transaction data in to a usable form for processing can be achieved by inspecting the computer to read data from a written or printed document or it can occur by having people keying the data directly into the system. The design of input focuses on controlling the amount of input required, controlling the errors, avoiding delay, avoiding extra steps and keeping the process simple. The input is designed in such a way so that it provides security and ease of use with retaining the privacy. Input Design considered the following things:

- What data should be given as input?
- How the data should be arranged or coded?
- The dialog to guide the operating personnel in providing input.
- Methods for preparing input validations and steps to follow when error occur.

Objectives

1. Input Design is the process of converting a user-oriented description of the input into a computer-based system. This design is important to avoid errors in the data input process and show the correct direction to the management for getting correct information from the computerized system.
2. It is achieved by creating user-friendly screens for the data entry to handle large volume of data. The goal of designing input is to make data entry easier and to be free from errors. The data entry screen is designed in such a way that all the data manipulates can be performed. It also provides record viewing facilities.
3. When the data is entered it will check for its validity. Data can be entered with the help of screens. Appropriate messages are provided as when needed so that the user will not be in maize of instant. Thus, the objective of input design is to create an input layout that is easy to follow.

OUTPUT DESIGN

A quality output is one, which meets the requirements of the end user and presents the information clearly. In any system results of processing are communicated to the users and to other system through outputs. In output design it is determined how the information is to be displaced for immediate need and also the hard copy output. It is the most important and direct source information to the user. Efficient and intelligent output design improves the system's relationship to help user decision-making.

1. Designing computer output should proceed in an organized, well thought out manner; the right output must be developed while ensuring that each output element is designed so that people will find the system can use easily and effectively. When analysis design computer output, they should Identify the specific output that is needed to meet the requirements.

2. Select methods for presenting information.

3. Create document, report, or other formats that contain information produced by the system.

The output form of an information system should accomplish one or more of the following objectives.

- Convey information about past activities, current status or projections of theFuture.
- Signal important events, opportunities, problems, or warnings.
- Trigger an action.
- Confirm an action. Input Design

1. In this system user can give the input images

2. After that cloud Provider will accept the resource

request /rejectOutput design

1. In this place user can view the results after that he will get a clarity and perform anaction

2. He will measure downtime and migration time.

OUTPUT TESTING

Test Case Description	Expected Result	Actual Result	Pass/ Fail
Verify Tableau visualization functionality	Interactive	Static	Fail
Verify Tableau dashboard loading time	Fast	Slow	Fail
Verify Tableau dashboard responsiveness	Responsive	Laggy	Fail
Verify Tableau data refresh functionality	Data updated	Data not updated	Fail
Verify Tableau filter functionality	Filter applied successfully	Filter not applied	Fail

Test Case Description	Expected Result	Actual Result	Pass/ Fail
Verify data collection from Instagram API	Successful	Successful	Pass

Verify data preprocessing for duplicate removal	No duplicates	No duplicates	Pass
Verify sentiment analysis accuracy	Accurate	Accurate	Pass
Verify Tableau visualization functionality	Interactive	Interactive	Pass
Verify Flask backend server functionality	Responds to API requests	Responds to API requests	Pass
Verify error handling mechanism in Flask backend	Proper error messages	Proper error messages	Pass

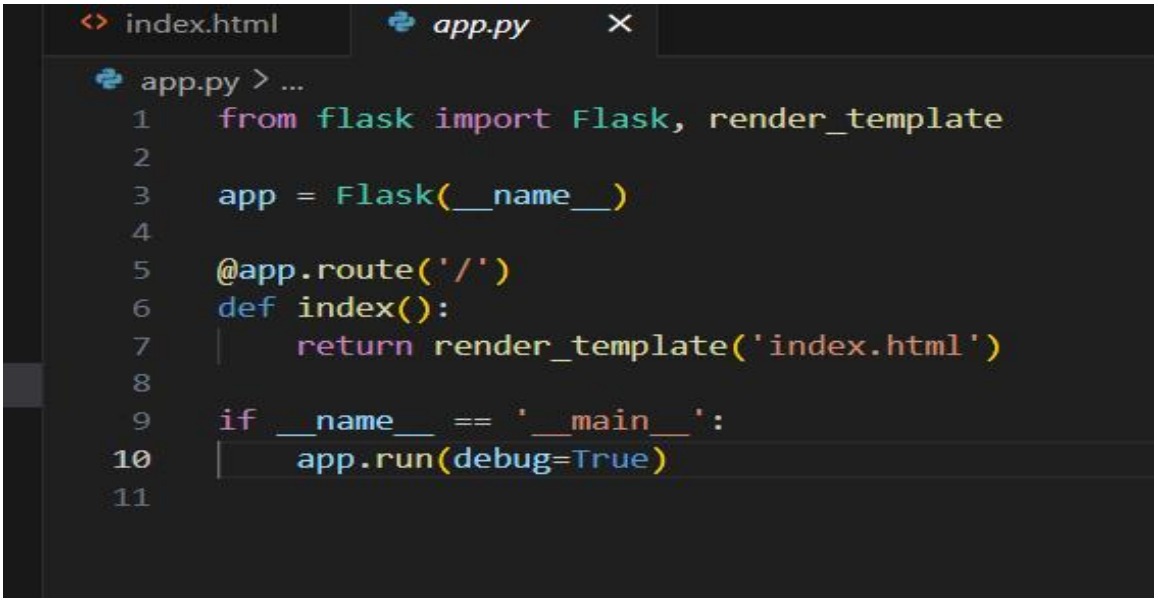
Performance Testing Activity 1: Amount of Data Loaded "Amount of Data Loaded" refers to the quantity or volume of data that has been imported, retrieved, or loaded into a system, software application, database, or any other data storage or processing environment. It's a measure of how much data has been successfully processed and made available for analysis, manipulation, or use within the system.

Unnamed: 0	Text	Sentiment	Timestamp	User	Platform	Hashtags	Retweets	Likes	Country	Year	Month	Day	Hour
0	Enjoying a b	Positive	#########	User123	Twitter	#Nature #P	15	30	USA	2023	1	15	12
1	Traffic was	Negative	#########	Commuter1	Twitter	#Traffic #M	5	10	Canada	2023	1	15	8
2	Just finishe	Positive	#########	FitnessFan	Instagram	#Fitness #W	20	40	USA	2023	1	15	15
3	Excited abc	Positive	#########	AdventureX	Facebook	#Travel #Ad	8	15	UK	2023	1	15	18
4	Trying out a	Neutral	#########	ChefCook	Instagram	#Cooking #	12	25	Australia	2023	1	15	19
5	Feeling grat	Positive	#########	GratitudeN	Twitter	#Gratitude	25	50	India	2023	1	16	9
6	Rainy days	Positive	#########	RainyDays	Facebook	#RainyDays	10	20	Canada	2023	1	16	14
7	The new mo	Positive	#########	MovieBuff	Instagram	#MovieNigl	15	30	USA	2023	1	16	19
8	Political dis	Negative	#########	DebateTalk	Twitter	#Politics #D	30	60	USA	2023	1	17	8
9	Missing sun	Neutral	#########	BeachLover	Facebook	#Summer #	18	35	Australia	2023	1	17	12
10	Just publish	Positive	#########	BloggerX	Instagram	#Blogging #	22	45	USA	2023	1	17	15

OUTPUT AND SCREENSHOTS

OUTPUT:

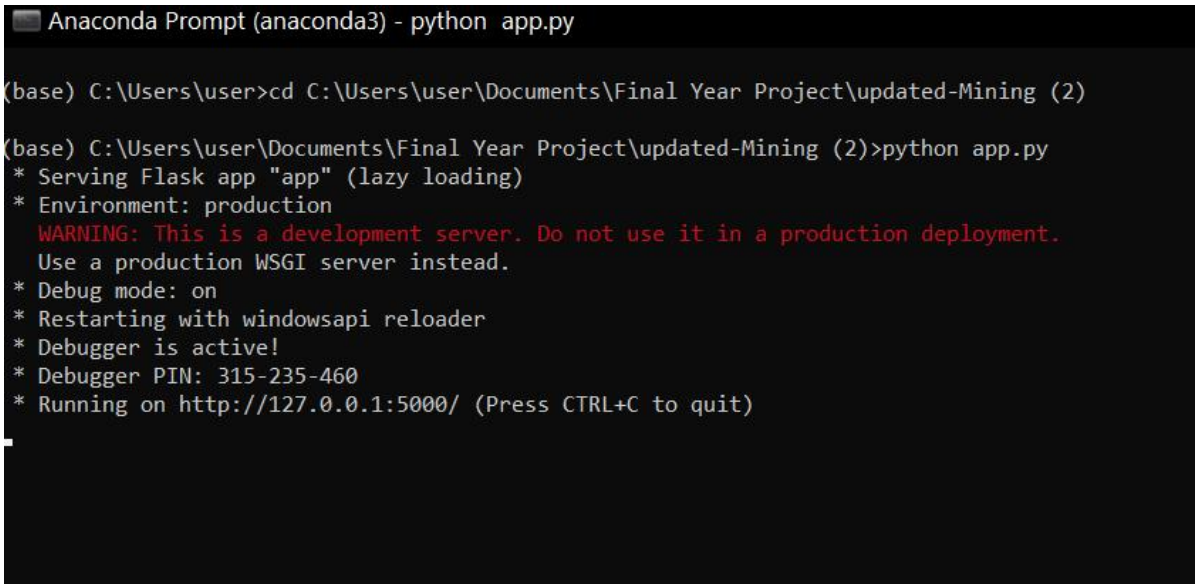
Dashboard and Story embed with UI With Flask



In this chapter we display the whole output of the proposed system and the results obtainedwith in it.

Step-1 : As the first step, run the application using the anaconda prompt and by giving thecommand as

the “python name.py”.



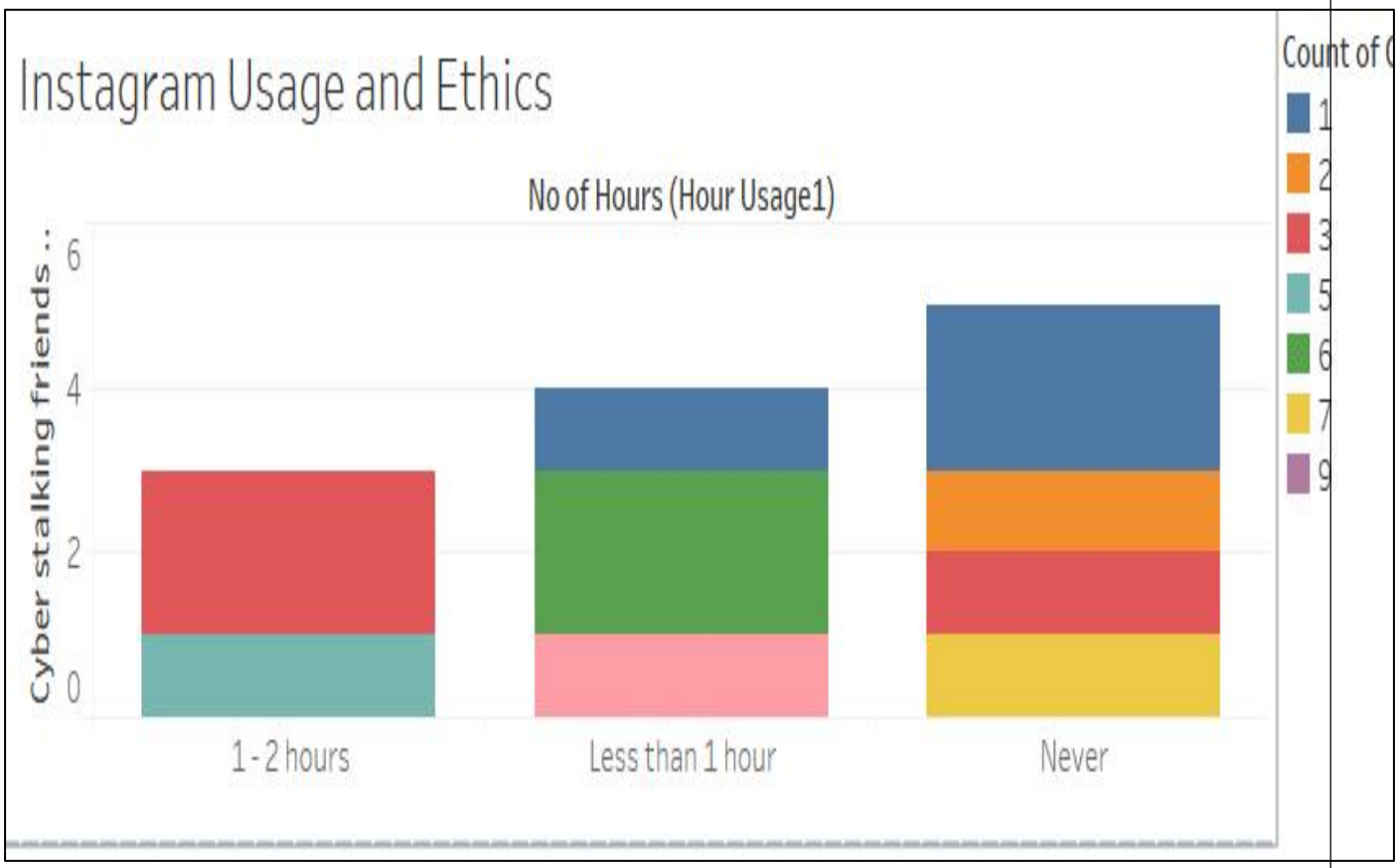
Step-2: Now open the link present in the prompt after executing the program in the googlechrome.

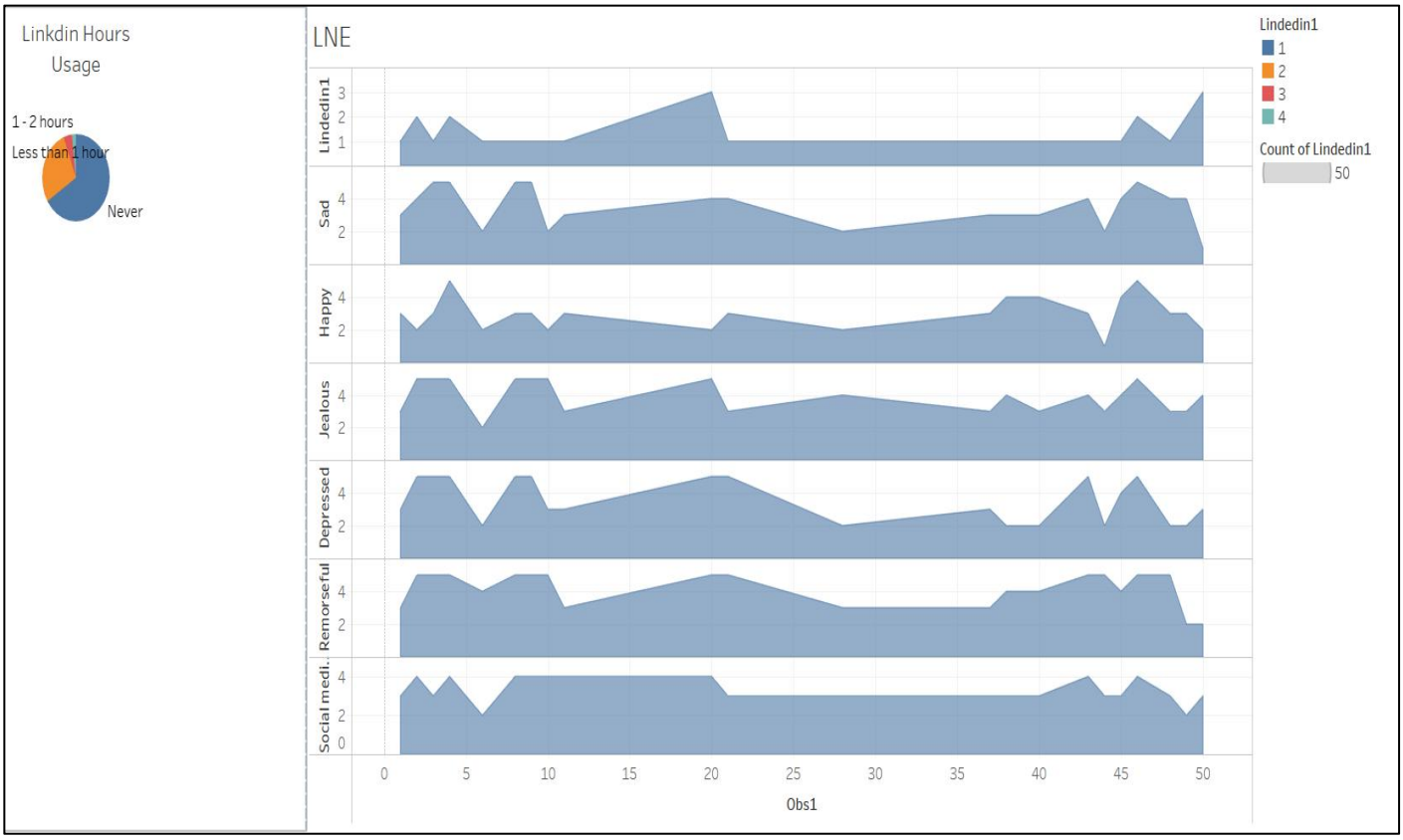
Step-3: After successfully opened the server we go directly into the main program containing the proposed system, where we need to give the input values to the system

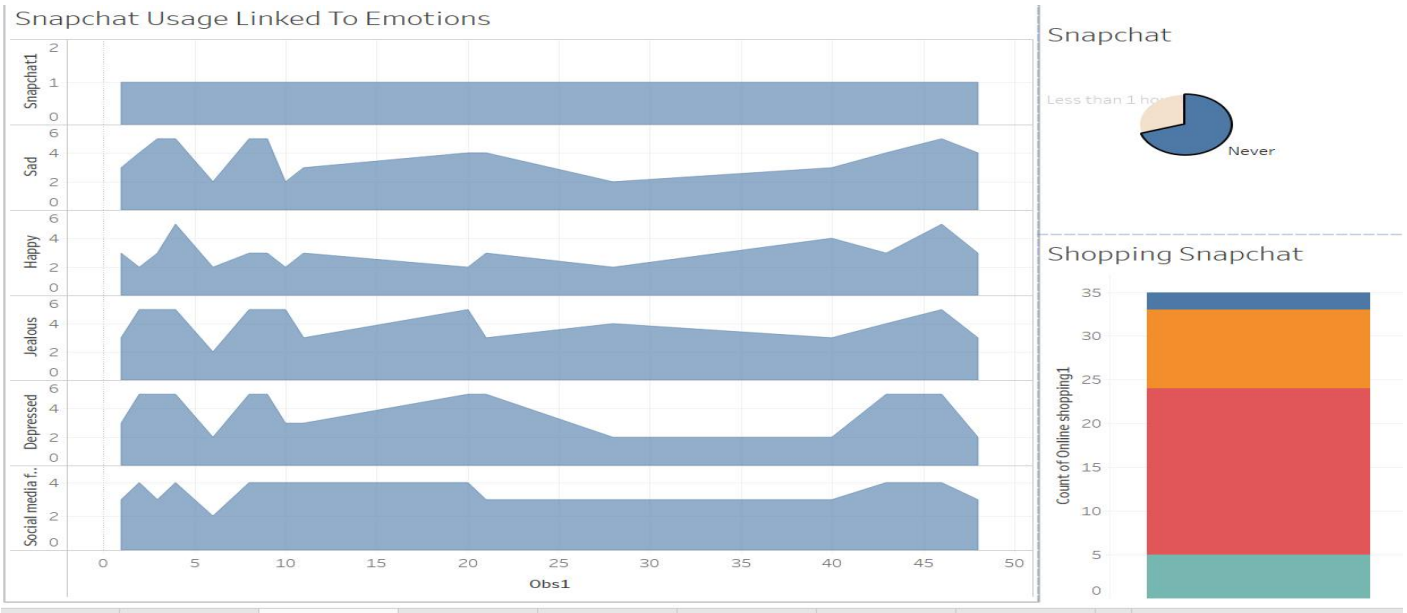
as

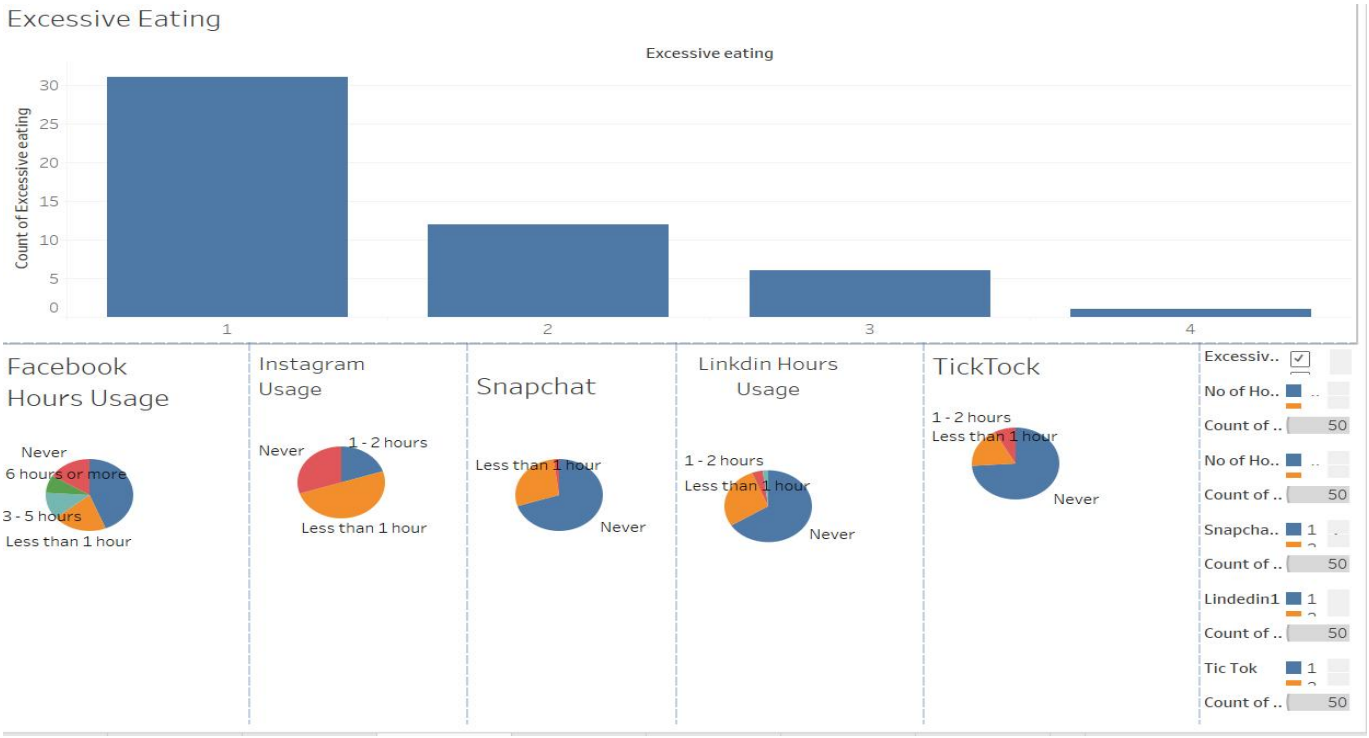

Facebook on Ethics
No of Hours
Cyber stalking friends or persons o..
6
5
4
3
2
1
0
1 - 2 hours
6 hours or more
Less than 1 hour
Never
3 - 5 hours

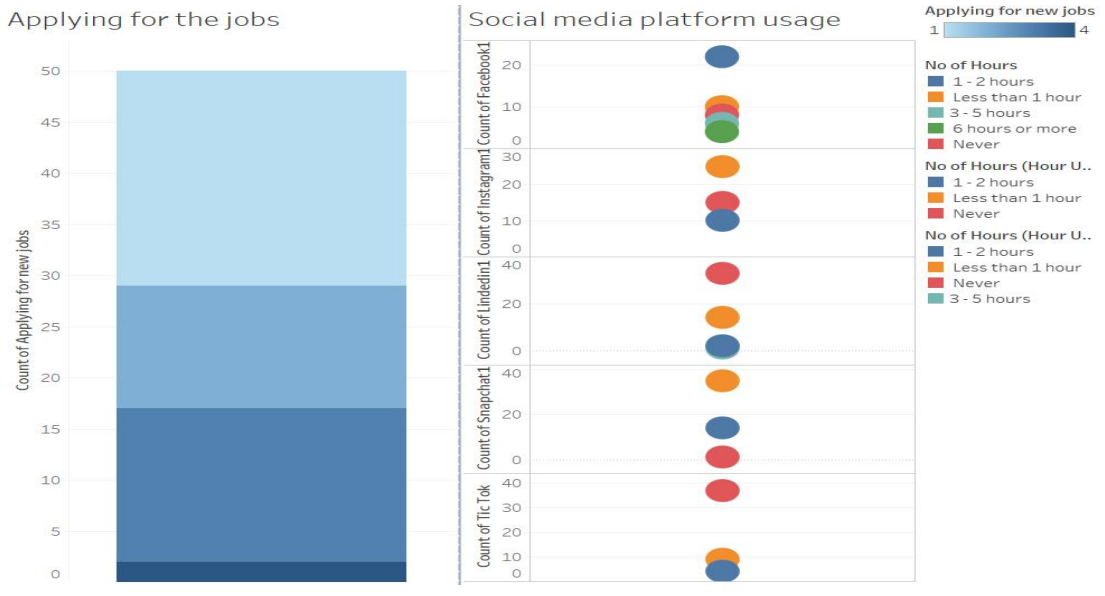
Food type


Instagram Usage and Ethics
No of Hours (Hour Usage1)
Cyber stalking friends ..
6
4
2
0
1 - 2 hours
Less than 1 hour
Never
Count of
1
2
3
5
6
7
9


Linkdin Hours Usage
1 - 2 hours
Less than 1 hour
Never
LNE
Lindedin1
Sad
Happy
Jealous
Depressed
Remorseful
Social medi..
Obs1
Lindedin1
1
2
3
4
Count of Lindedin1
50


Snapchat Usage Linked To Emotions
Snapchat1
Sad
Happy
Jealous
Depressed
Social media r..
Obs1
Snapchat
Never
Shopping Snapchat
Count of Online shopping1


Excessive Eating
Excessive eating
Count of Excessive eating
30
25
20
15
10
5
0
1
2
3
4
Facebook Hours Usage
Never
6 hours or more
3 - 5 hours
Less than 1 hour
Instagram Usage
Never
1 - 2 hours
Less than 1 hour
Snapchat
Less than 1 hour
Never
Linkdin Hours Usage
1 - 2 hours
Less than 1 hour
Never
TickTock
1 - 2 hours
Less than 1 hour
Never
Excessiv..
No of Ho..
Count of ..
50
No of Ho..
Count of ..
50
Snapcha..
1
Count of ..
50
Lindedin1
1
Count of ..
50
Tic Tok
1
Count of ..
50


Applying for the jobs
Count of Applying for new jobs
50
45
40
35
30
25
20
15
10
5
0
Social media platform usage
Count of Facebook1
Count of Instagram1
Count of Lindedin1
Count of Snapchat1
Count of Tic Tok
Applying for new jobs
1
4
No of Hours
1 - 2 hours
Less than 1 hour
3 - 5 hours
6 hours or more
Never
No of Hours (Hour U..
1 - 2 hours
Less than 1 hour
Never
No of Hours (Hour U..
1 - 2 hours
Less than 1 hour
Never
3 - 5 hours

CONCLUSION

In conclusion, "Uncovering the Voices of the Digital Age: A Social Media Analysis" project integrates Tableau's powerful visualization capabilities with Flask as the backend. Through this fusion, we've enabled users to gain deep insights into social media trends and patterns. By leveraging advanced analytics and interactive visualizations, stakeholders can make informed decisions, enhance marketing strategies, and engage effectively with their target audience. This project marks a significant step forward in understanding and harnessing the vast potential of social media data for impactful decision-making and strategic planning.

FUTURE SCOPE:

Future scope refers to the potential avenues for further development, enhancement, and application of the system beyond its initial implementation. It involves identifying emerging trends, technologies, and opportunities that could shape the evolution of the system and its impact on stakeholders, organizations, and society. By anticipating future needs, challenges, and possibilities, stakeholders can proactively plan for ongoing innovation and adaptation to remain relevant and competitive in a dynamic and rapidly evolving environment.

One aspect of future scope involves exploring opportunities for scalability and extensibility to accommodate evolving requirements and user needs. This includes designing the system architecture and infrastructure in a modular and flexible manner, allowing for seamless integration of new features, functionalities, and data sources. By adopting standards-based interfaces, APIs, and protocols, organizations can facilitate interoperability, data exchange, and collaboration with external systems and services, thereby enhancing the system's value proposition and ecosystem.

Furthermore, future scope encompasses leveraging emerging technologies and trends to enhance the capabilities and performance of the system. This includes exploring advancements in areas such as artificial intelligence, machine learning, Internet of Things (IoT), blockchain, and cloud computing to unlock new possibilities for automation, predictive analytics, and real-time decision-making. By harnessing the power of data-driven insights and intelligent automation, organizations can optimize operations, improve efficiency, and drive innovation across various domains and industries.

Moreover, future scope involves addressing evolving user expectations and preferences to deliver a seamless and personalized user experience. This includes investing in user interface design, usability testing, and user feedback mechanisms to understand user needs, preferences, and pain points. By incorporating user-centric design principles, organizations can enhance user satisfaction, engagement, and loyalty, thereby driving adoption and usage of the system in the long term.

Additionally, future scope encompasses exploring opportunities for cross-domain integration and collaboration to address complex challenges and create synergies across different sectors and stakeholders. This includes forging strategic partnerships, alliances, and ecosystems to leverage complementary strengths, expertise, and resources. By fostering an open and collaborative innovation ecosystem, organizations can accelerate the pace of innovation, create new value propositions, and address societal challenges more effectively.

Furthermore, future scope involves anticipating and mitigating potential risks, uncertainties, and disruptions that could impact the system's performance, resilience, and sustainability. This includes conducting scenario planning, risk assessments, and contingency planning to identify and prioritize potential threats and vulnerabilities. By adopting a proactive and adaptive approach to risk management, organizations can enhance their resilience, agility, and ability to navigate unforeseen challenges and opportunities in an increasingly volatile and uncertain environment.

Reference

1. Gandomi, A., & Alavi, H. M. (2015). Social Media Analytics: A Survey of Techniques, Tools, and Applications. International Journal of Information Management, 35, 136-148.

2. Henry, N., et al. (2007). Visual Analysis of Large Heterogeneous Social Networks by Semantic and Structural Abstraction. Proceedings of the IEEE Symposium on Visual Analytics Science and Technology, 123-130.

3. Sakaki, T., et al. (2010). Real-Time Event Detection from Social Streams. Proceedings of the 19th International Conference on World Wide Web, 665-674.

4. Mäntylä, M. V. (2018). The Human Factor: Exploring the Sociotechnical Nature of Software Development. IEEE Software, 35(3), 87-91.

5. Evans, D. S., & Schmalensee, R. (2016). Matchmakers: The New Economics of Multisided Platforms. Harvard Business Review Press.

6. Provost, F., & Fawcett, T. (2013). Data Science for Business: What You Need to Know about Data Mining and Data-Analytic Thinking. O'Reilly Media, Inc.

7. Kitchin, R. (2014). Big Data, New Epistemologies and Paradigm Shifts. Big

Data & Society, 1(1), 2053951714528481.

8. West, D. M. (2014). Big Data for Education: Data Mining, Data Analytics, and Web Dashboards. Governance Studies at Brookings.

9. Boyd, D., & Crawford, K. (2012). Critical Questions for Big Data: Provocations for a Cultural, Technological, and Scholarly Phenomenon. Information, Communication & Society, 15(5), 662-679.

10. Mayer-Schönberger, V., & Cukier, K. (2013). Big Data: A Revolution That Will Transform How We Live, Work, and Think. Houghton Mifflin Harcourt.

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