SmartBridge Data Analytics Project

"DATA VISUALIZATION WITH SNAPCHAT ADS DATA"

[GROUP-6]
Team Members

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Snapchat Ads Data

INTRODUCTION

1.1 Overview

Several important elements come into play when analyzing the spending of Snapchat, a well-known social media firm, as well as its advertising strategies before elections. As political campaigns and other organizations raise their ad expenditure to more efficiently target a bigger audience, Snapchat's budget allocation during this time frequently suffers noticeable swings.

Snapchat uses ad targeting techniques to tailor messaging to specific categories, including young voters who are avid platform users, thanks to its substantial user data collection capabilities. Snapchat enables advertisers to more accurately target their target audience by analyzing variables including age, geography, interests, political affiliations (where accessible), and prior participation with political content.

1.2 Purpose

Political campaigns can interact with voters in key areas by using Snapchat's geotargeting features to target particular electoral districts or swing states. Additionally, Snapchat may collaborate with political parties, charities, or media sources to curate and promote election-related content in order to encourage educated civic engagement. The company's initiatives may include offering tools, details on how to register to vote, biographies of candidates, and organising live events like debates or town halls.

Snapchat aims to improve civic involvement and boost voter turnout by actively encouraging users to register to vote, discover polling places, and provide information on election dates and issues. It is significant to note that Snapchat's precise tactics and spending may vary depending on a range of variables, including the election's nature, the applicable jurisdiction, and changing legislation.

LITERATURE SURVEY

2.1 Existing problem

//Existing approaches or method to solve this problem

After obtaining the datasets from a third party on a csv format, we will use Excel's Power Query in order to perform data pre-processing so that we can structure the dataset to be analytically friendly. After inserting the 3 different datasets into Tableau, we will preview the data and study the different connections between the data.

2.2 Proposed solution

//What is the method or solution suggested by you?

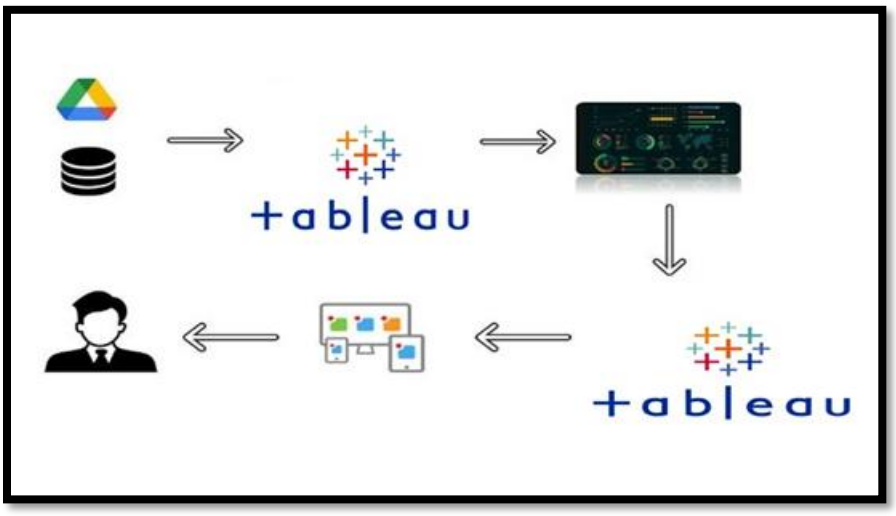
To properly visualize the dashboards and have a better understanding of the study, I encourage you to visit my Tableau profile. The entire analysis is based on numerous social media datapoints that can be regarded as sophisticated. Although it was incredibly difficult to arrange the calculations and queries, the project was very intriguing to design.

It's safe to say that everyone is aware of the fact that, as election time approaches, an increasing number of politically biased and advocacy advertisements target particular demographics using various variables and criteria... You may learn how Snapchat targets its users and adjusts its adverts as political elections draw nearer in this investigation.

THEORITICAL ANALYSIS

3.1 Block diagram

Technical Architecture:



3.2 Hardware/Software designing

3.2.1 Hardware Requirements

A dependable computer system that can perform data processing, visualisation, and web development tasks. additional requirements:

- Processor: A multi-core processor (e.g., Intel Core i5 or i7) that can efficiently handle data analysis and visualisation tasks.
- Memory (RAM): A minimum of 8 GB of RAM is required to handle large datasets and avoid performance issues.
- Storage: Enough storage space for your dataset, software tools, and project files. For faster data access, consider using a solid-state drive (SSD).
- Graphics Card: A dedicated graphics card with sufficient memory can improve Tableau's performance and provide smoother rendering of visual elements.

3.2.2 Software Requirements

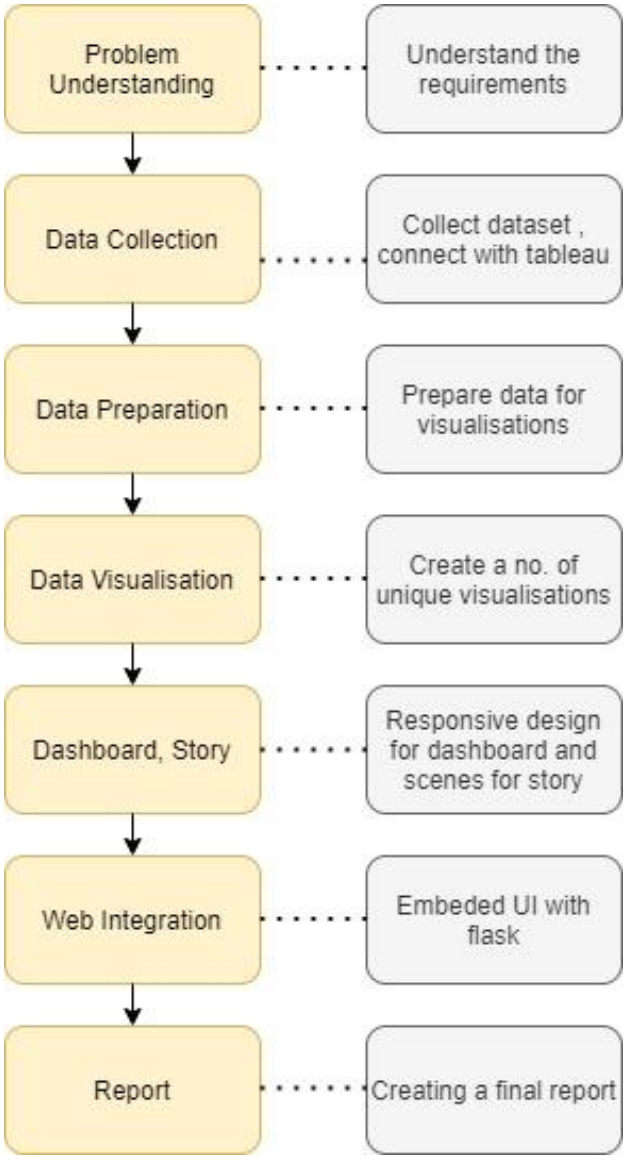
- Microsoft Excel: the software tool for data cleaning, manipulation, and formatting.
- Tableau: Tableau is used for creating interactive and visually appealing visualizations, dashboards and stories.
- Bootstrap: For using pre-designed templates, responsive components, and styling options. It enables you to develop a visually appealing and mobile-friendly user interface for your Flask application.
- HTML, CSS, and JavaScript: Alongside Bootstrap, HTML for structuring web pages, CSS for styling and layout, and JavaScript for interactivity and dynamic behavior.
- Web Development Tools: code editor tools like Visual Studio Code and Git control.

EXPERIMENTAL INVESTIGATIONS

// Analysis or the investigation made while working on the solution.

Flowchart:

// Diagram showing the control flow of the solution.



IMPLEMENTATION/ RESULT

// final findings of the project along with screenshot.

6.1 Data Collection

Data collection is the process of systematically gathering and measuring information on variables of interest in order to answer stated research questions, test hypotheses, evaluate outcomes, and generate insights from the data.

Activity 1: Understand the data.

This dataset is specifically of the UK region obtained from Kaggle. It has over half a million records collected over the time period 2019-2022.

https://drive.google.com/drive/folders/1vuu2yP0G5cfHOgBU2Buggu0I2WUUmNbs?usp=sharing

Activity 2: Connect MySQL and Tableau with the dataset.

Explanation video link:

https://drive.google.com/file/d/1Fy3s1G-ruc_0pcRbYxgvlYXtaUAfzr-e/view?usp=sharing

Data Preparation

Data analytics must begin with data preparation, commonly referred to as data pretreatment. It entails converting unorganised, unstructured raw data into an organised, clean, and structured format that can be analysed. Real-world data is frequently disorganised, lacking, or inconsistent, and it's possible that it contains errors, outliers, or irrelevant information. This makes data preparation vital. Analysts can enhance data quality, ensure consistency, and increase the precision and dependability of subsequent analysis by doing data preparation.

Typically, the data preparation process involves the following crucial steps: Data collection, cleaning, integration, transformation, aggregation and its splitting

Data Visualization

Data visualization involves the creation of graphical representations that aid in understanding and exploring data. Its purpose is to make complex datasets more accessible and intuitive. Visual elements like charts, graphs, and maps are used to help users identify patterns, trends, and outliers quickly. Common data visualizations include bar charts, line charts, heat maps, scatter plots, pie charts, and maps. These visualizations enable comparison, tracking changes over time, displaying distribution, and illustrating variable relationships. The created visualizations effectively present the data in a visually engaging and informative manner.

Activity 1: Creating Current Year and previous Year Parameters for filtering. Explanation video link:

https://drive.google.com/file/d/1BM1JVidmbgWeboZiPvXEou74GTZ6HO7f/view?usp=sharing

Activity 2: Creating Accident Severity Parameter for filtering. Explanation video link:

https://drive.google.com/file/d/1GzpDH1SLzDZQd6Kkcpv8Oj0peVxQFMZS/view?usp=sharing

Activity 3: Creating a KPI for total no. of accidents per year. Explanation video link:

https://drive.google.com/file/d/1X6UGviJfMrqEqSvhsHQ09wRakc7DJoXX/view?usp=sharing

Activity 4: Creating a KPI for total no. of Casualties per year. Explanation video link:

https://drive.google.com/file/d/1U0WMuOMw-1wdDaPSyttcT5YWtfK7UYAd/view?usp=sharing

Activity 5: Creating a KPI for each accident severity (fatal, slight, serious) per year.
Explanation video link:

https://drive.google.com/file/d/1APJDTGVylF-tHPpOj0UzXu-fsLLbMugQ/view?usp=sharing

Activity 6: Total no. of accidents versus months sparkline.
Explanation video link:

https://drive.google.com/file/d/1Z4DkqI97TCEixWz1rvCm5LjBITGeOudI/view?usp=sharing

Activity 7: Total no. of casualties versus months sparkline.
Explanation video link:

https://drive.google.com/file/d/1beo5p4A-LnwJr6Zzvh7j6-0Jf4-HwZEf/view?usp=sharing

Activity 8: Accident Severity versus Months sparkline (fatal , serious , slight).
Explanation video link:

https://drive.google.com/file/d/1rxb6ryIkY0x0Zd_1ltnJI_1JAD1DjRGr/view?usp=sharing

Activity 9: Creating a KPI based on vehicle type vs casualties per year.
Explanation video link:

https://drive.google.com/file/d/1M45vhls_MReW9Aq8Iq7ILjknmV_UXDHP/view?usp=sharing

Activity 10: Weather Conditions versus no. of casualties pie chart.
Explanation video link:

https://drive.google.com/file/d/1XoLEFTLa4WDwhjoplExvCXntAyDJJ_3Z/view?usp=sharing

Activity 11: Road surface conditions versus no. of casualties pie chart.
Explanation video link:

https://drive.google.com/file/d/1DXtGPDRqbr1-sT7bxloq2UHxWmrsRABc/view?usp=sharing

Activity 12: Road Type versus no. of casualties bar chart.
Explanation video link:

https://drive.google.com/file/d/1pj5192Q6xX8uRHI6uemu3xvCnWqiVlHi/view?usp=sharing

Activity 13: Map Visualization of the UK.
Explanation video link:

https://drive.google.com/file/d/1sH3zpj2pDBiocFJ6F3QtG8v-kslAM5WH/view?usp=sharing

Dashboard

A dashboard is an interactive visual interface that presents information and data in a user-friendly format. It serves as a central hub for real-time monitoring and data analysis, tailored to specific needs and objectives. Dashboards find applications in diverse industries such as business, finance, manufacturing, and healthcare. They enable users to track KPIs, monitor performance metrics, and showcase data through various visual representations like charts, graphs, and tables.

Story

A data story is a compelling and narrative-driven approach to presenting data and analysis, aiming to captivate the audience and enhance comprehension. It typically comprises three main sections: a concise introduction to establish context and relevance, a well-structured body to present data and analysis coherently, and a conclusive summary of key findings with their implications. Various mediums, such as reports, presentations, interactive visualizations, and videos, can be employed to effectively convey data stories and engage the audience in the storytelling process.

Activity 14: Design of our story and dashboard.
Explanation video link:

https://drive.google.com/drive/folders/1bLbpylp28rhoBT0TWQfV0t3mwes2AJj_?usp=sharing

Performance Testing

Performance testing in Tableau aims to evaluate how well the platform responds and performs in various situations. It encompasses assessing scalability, load handling, concurrent user performance, dashboard rendering speed, data source performance, and network impact. The objective is to ensure that Tableau operates efficiently, delivering quick and dependable analytics experiences. Through performance testing, bottlenecks can be identified, configurations can be optimized, and overall user satisfaction can be enhanced.

Web Integration

The process of integrating Tableau visualizations or dashboards into web applications, websites, or portals is known as web integration. It enables people to access and engage with analytics powered by Tableau with ease in a web environment. The presentation of real-time data, interactive filtering, and drill-down capabilities immediately within the web interface are made possible by web integration, which improves the user experience and offers insightful data. It gives programmers the freedom to include Tableau visualizations into unique apps or web portals, expanding the audience for Tableau analytics and its influence.

Activity 15: Integrating with the web.

Explanation video link:

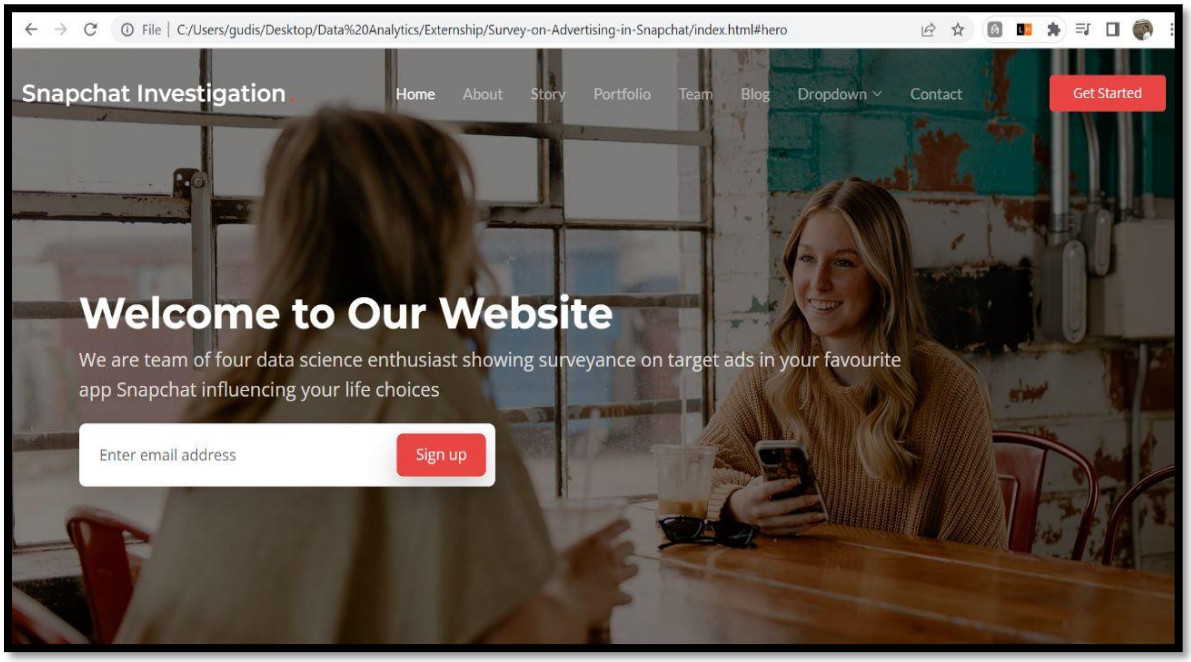
https://drive.google.com/file/d/1PU-TO_FuzugRjpd8NsXXHrZ0zJiLRInA/view?usp=sharing

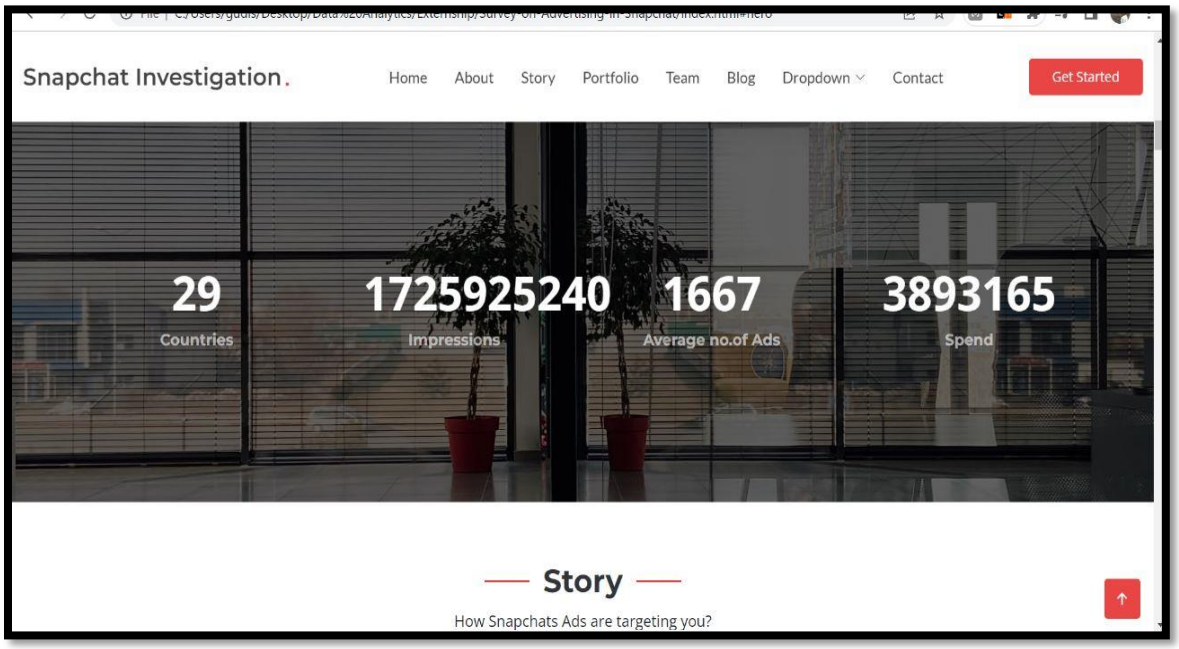
Activity 16: Implementing Flask.

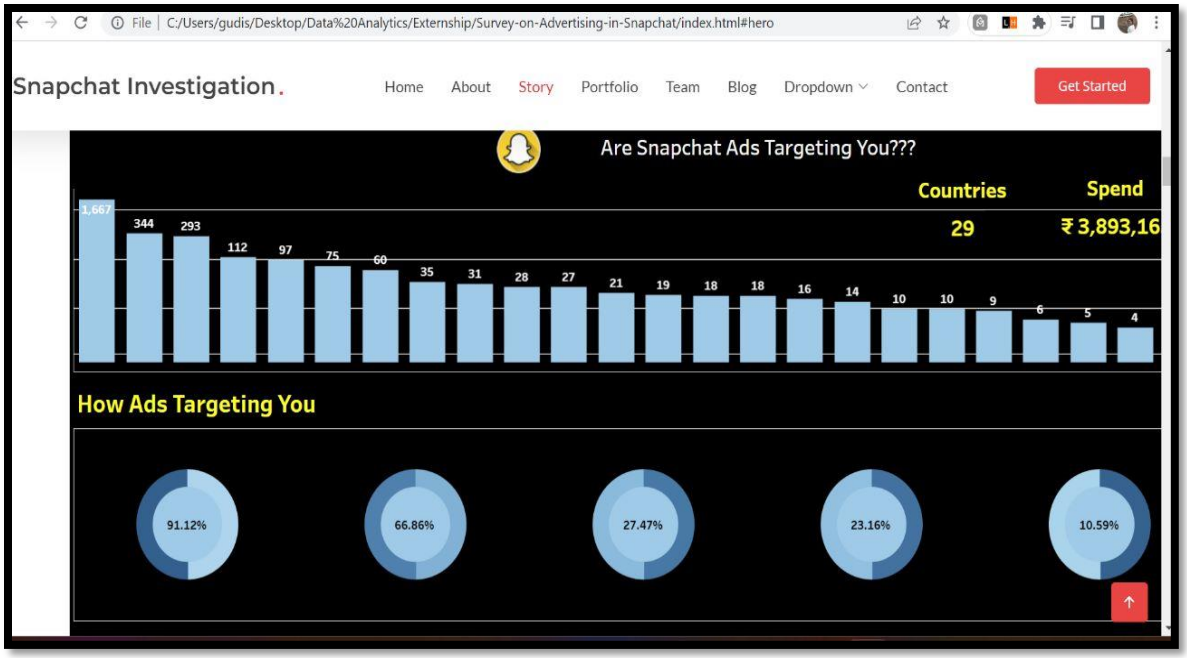
Explanation video link:

https://drive.google.com/file/d/1HPxK6F9l6fkLd_1ZkF45L_ckguIufbYb/view?usp=sharing

Web Implementation Snips:






File | C:/Users/gudis/Desktop/Data%20Analytics/Externship/Survey-on-Advertising-in-Snapchat/index.html#hero
Snapchat Investigation.
Home
About
Story
Portfolio
Team
Blog
Dropdown
Contact
Get Started
Are Snapchat Ads Targeting You???
Countries
29
Spend
₹ 3,893,16
1,667
344
293
112
97
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21
19
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14
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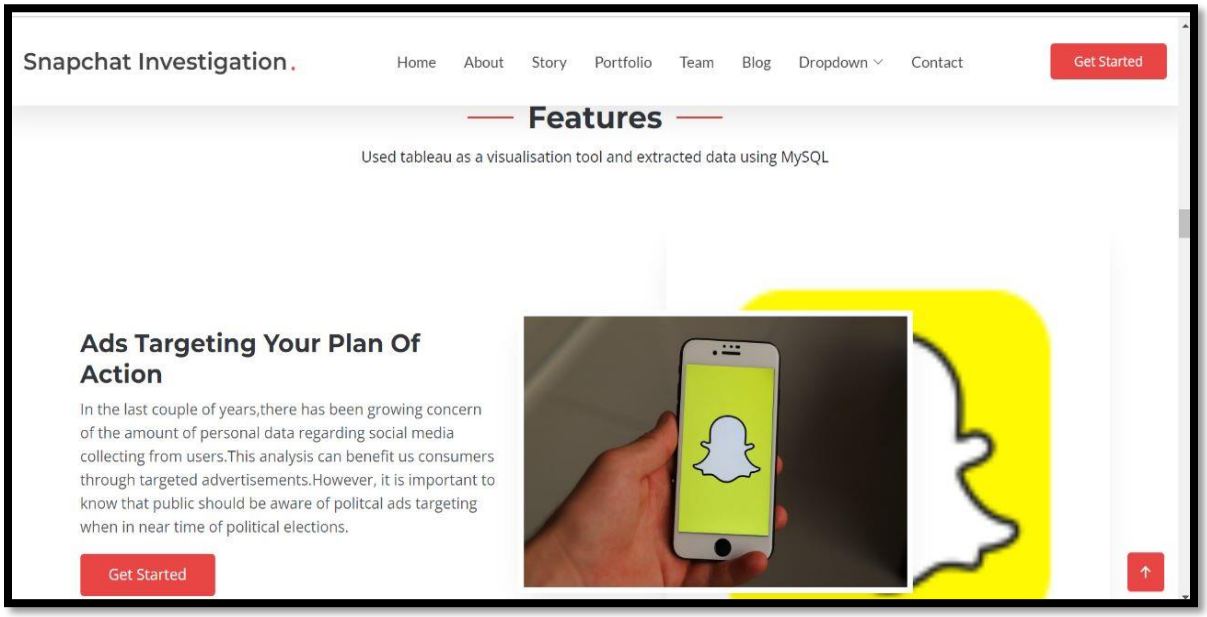
10
9
6
5
4
How Ads Targeting You
91.12%
66.86%
27.47%
23.16%
10.59%


Snapchat Investigation.
Home
About
Story
Portfolio
Team
Blog
Dropdown
Contact
Get Started
Features
Used tableau as a visualisation tool and extracted data using MySQL
Ads Targeting Your Plan Of Action
In the last couple of years,there has been growing concern of the amount of personal data regarding social media collecting from users.This analysis can benefit us consumers through targeted advertisements.However, it is important to know that public should be aware of politcal ads targeting when in near time of political elections.
Get Started

APPLICATIONS

// the areas where this solution can be applied.

- **Candidate Promotion**: Political candidates can utilize Snapchat's geotargeting features to deliver targeted advertisements or sponsored content specifically to users within specific electoral districts or swing states. This allows them to reach potential voters in those areas and communicate their campaign messages directly.
- **Grassroots Activism**: Geotargeting can be used to organize and mobilize grassroots activists within specific districts or swing states. Snapchat's Geo filters, which are location-based overlays for photos and videos, can be designed to promote local rallies, events, or volunteer opportunities. By engaging local communities, campaigns can drive voter participation and enthusiasm.
- **Voter Education**: Content can be used to educate voters about important election-related information specific to their district or state. This could include details about polling locations, voter registration deadlines, candidate profiles, and issue-oriented content. By providing localized information, campaigns can encourage voter awareness and engagement.
- **Get-Out-the-Vote (GOTV) Efforts**: Snapchat's geotargeting features can aid in effective GOTV campaigns. By delivering location-specific reminders, countdowns, and incentives, political campaigns can encourage Snapchat users in targeted districts or states to cast their votes. This can help increase voter turnout among key demographics and potentially influence election outcomes.
- **Fundraising and Donor Engagement**: Geotargeted Snapchat ads can be used to reach potential donors within specific electoral districts or swing states. Campaigns can deliver personalized messages to users in these areas, highlighting the importance of supporting a candidate or cause and providing easy ways to contribute financially.

It's worth noting that the specific use of Snapchat's features for political campaigns may be subject to legal and ethical considerations, such as campaign finance regulations and privacy policies. Campaigns should ensure compliance with relevant laws and regulations while employing these strategies.

CONCLUSION

// conclusion summarizing the entire work and findings.

To properly visualize the dashboards and have a better understanding of the study, I encourage you to visit the Tableau profile and website. The entire analysis is based on numerous social media datapoints that can be regarded as sophisticated. Although it was incredibly difficult to arrange the calculations and queries, the project was very intriguing to design.

Through this data, we were able to determine how Snapchat targets its users and modifies its adverts as elections draw nearer.

FUTURE SCOPE

// enhancements that can be made in the future.

We see opportunities in real-time monitoring and predictive analytics, leveraging machine learning and encouraging collaborative data sharing among stakeholders, improving data visualization and user-friendly interfaces. These developments will allow us to make even more progress in letting users realize how ads influence a particular social media wave, their impact on our daily life, our opinions and collectively a nation's decision or a global wave. This also helps in undoing the blindfolds tied to certain sections of people and brings in some evidence to some ongoing propaganda.

BIBLIOGRAPHY

// references of previous work or websites visited for analysis about the project.

References:

Data Set Link:
https://drive.google.com/drive/folders/16tSvNebv9LNGvAxnckMxKWAHAeifPPP0

APPENDIX

Source Codes

HTML File:
https://github.com/ankitpriyadarshii/SmartBridge_Project/blob/main/index.html

CSS File:
https://github.com/ankitpriyadarshii/SmartBridge_Project/blob/main/assets/css/main.css

JavaScript File:
https://github.com/ankitpriyadarshii/SmartBridge_Project/blob/main/assets/js/main.js

Flask Integration File:
https://github.com/ankitpriyadarshii/SmartBridge_Project/blob/main/FlaskIntegration/app.py

GitHub Repository:
https://github.com/codexer-25aditi/Survey-on-Advertising-in-Snapchat