



Create data visualizations in Tableau using snapchat ads data

VIT VELLORE

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1 INTRODUCTION

1.1 Overview

1.2 Purpose

2 LITERATURE SURVEY

2.1 Existing problem

2.2 Proposed solution

3 THEORITICAL ANALYSIS

3.1 Block diagram

3.2 Hardware / Software designing

4 EXPERIMENTAL INVESTIGATIONS

5 FLOWCHART

6 RESULT

7 ADVANTAGES & DISADVANTAGES

8 APPLICATIONS

9 CONCLUSION

10 FUTURE SCOPE

CREATE DATA VISUALIZATIONS IN TABLEAU USING SNAPCHAT ADS DATA

1. Introduction

1.1 Project Overview

The project aims to leverage the power of Tableau, a leading data visualization tool, to analyze and present insights from Snapchat Ads data. Snapchat Ads is a popular advertising platform that allows businesses to reach a large audience and promote their products or services. By extracting, processing, and visualizing data from Snapchat Ads, this project will enable stakeholders to gain actionable insights and make informed decisions regarding their advertising campaigns.

1.2 Purpose

The purpose of this project is to create data visualizations in Tableau using Snapchat Ads data. By leveraging the power of Tableau's advanced analytics and visualization capabilities, we aim to transform raw Snapchat Ads data into meaningful insights and intuitive visual representations.

2. Literature Survey

2.1 Existing Problem

Snapchat's ad targeting options may be more limited compared to other advertising platforms like Facebook or Google. This can make it challenging for advertisers to reach specific demographics or target their ads effectively. Snapchat's analytics and reporting capabilities may not be as robust as those offered by other platforms. Advertisers may have limited access to detailed data and metrics, making it harder to evaluate the effectiveness of their campaigns. Due to limited analytics, tracking the return on investment (ROI) for Snapchat ads can be challenging. Advertisers may struggle to determine the direct impact of their ad spend on conversions or sales. Snapchat has faced criticism in the past regarding privacy and data protection. Advertisers may have concerns about how user data is collected, stored, and utilized for ad targeting purposes.

S.no	Parameter	Description
1.	Problem statement	Snapchat's ad targeting options may be more limited compared to other advertising platforms like Facebook or Google. This can make it challenging for advertisers to reach specific demographics or target their ads effectively. Snapchat's analytics and reporting capabilities may not be as robust as those offered by other platforms. Advertisers may have limited access to detailed data and metrics, making it harder to evaluate the effectiveness of their

		<p>campaigns. Due to limited analytics, tracking the return on investment (ROI) for Snapchat ads can be challenging. Advertisers may struggle to determine the direct impact of their ad spend on conversions or sales.</p>
2.	Idea/Solution description	<p>The proposed solution is to develop a comprehensive data visualization dashboard using Tableau for Snapchat Ads data. This dashboard will allow users to explore and analyze key metrics such as impressions, click-through rates, conversion rates, and demographic insights. It will provide interactive visualizations like charts, graphs, and maps, enabling users to gain valuable insights into campaign performance and audience behavior.</p>
3.	Novelty / Uniqueness	<p>The uniqueness of this solution lies in leveraging Tableau's powerful features and capabilities to create customized and visually appealing data visualizations specifically for Snapchat Ads data. The interactive nature of the dashboard will enable users to interact with the data, drill down into specific metrics, and generate real-time insights. This level of flexibility and interactivity sets this solution apart from static or limited visualization options.</p>
4.	Social Impact/Customer Satisfaction:	<p>By providing advertisers and marketers with an intuitive and visually rich dashboard, this solution aims to enhance customer satisfaction by empowering them to make data-driven decisions. The visualizations will enable stakeholders to optimize their Snapchat ad campaigns, target specific demographics, and improve overall campaign performance. Ultimately, this solution can contribute to better advertising strategies, increased engagement, and improved customer satisfaction on the Snapchat platform.</p>
5.	Business Model (Revenue Model):	<p>The proposed business model for this solution is a subscription-based model, where users pay a recurring fee to access and utilize the data visualization dashboard. Alternatively, it could be</p>

		offered as a value-added service by Snapchat, providing additional features and insights to advertisers as part of their ad campaign packages. Collaboration with Snapchat's advertising platform and data access APIs could create monetization opportunities.
6.	Scalability of the Solution:	The solution's scalability is high, as Tableau is a robust and scalable platform capable of handling large volumes of data. The architecture can be designed to accommodate expanding data sources and increasing user demand. As Snapchat's user base and advertising reach grow, the data visualization solution can easily scale to handle the growing volume of Snapchat Ads data and provide insights to a larger audience without compromising performance.

2.2 Proposed solution

The proposed solution aims to create a comprehensive ads visualization platform that provides valuable insights and analytics for effective ad campaign management. The solution includes the following components:

Data Integration: The solution will integrate data from various sources, such as ad platforms, databases, and user interactions, to gather comprehensive information about ad campaigns, impressions, and spending.

Data Processing and Storage: The collected data will be processed and stored in a robust and scalable database or data warehouse, ensuring efficient data management and retrieval for visualization and analysis.

Visualization Dashboards: The solution will provide interactive and visually appealing dashboards that display key metrics and performance indicators in a user-friendly manner. The dashboards will include Vertical Bar Graph, Boxes, Donut Graph, Hover-enabled, GraphLine Graph, Bar Graph and Slope Graph to represent snapchat ads data over time to help visualize and understand data.

Web Integration: The visualization dashboards will be integrated into a web-based platform using modern web technologies such as Bootstrap. This will provide a responsive and user-friendly interface accessible from various devices.

Backend Integration: The web platform will be integrated with a backend server implemented using Flask, which will handle data processing, querying the database, and serving the required data to the visualization dashboards.

The proposed solution will enable advertisers and marketers to gain actionable insights from their ad campaigns, understand targeting strategies, and optimize their advertising efforts. It will provide a user-friendly interface for data exploration, helping users make informed decisions based on comprehensive visualizations and analytics.

3. THEORITICAL ANALYSIS

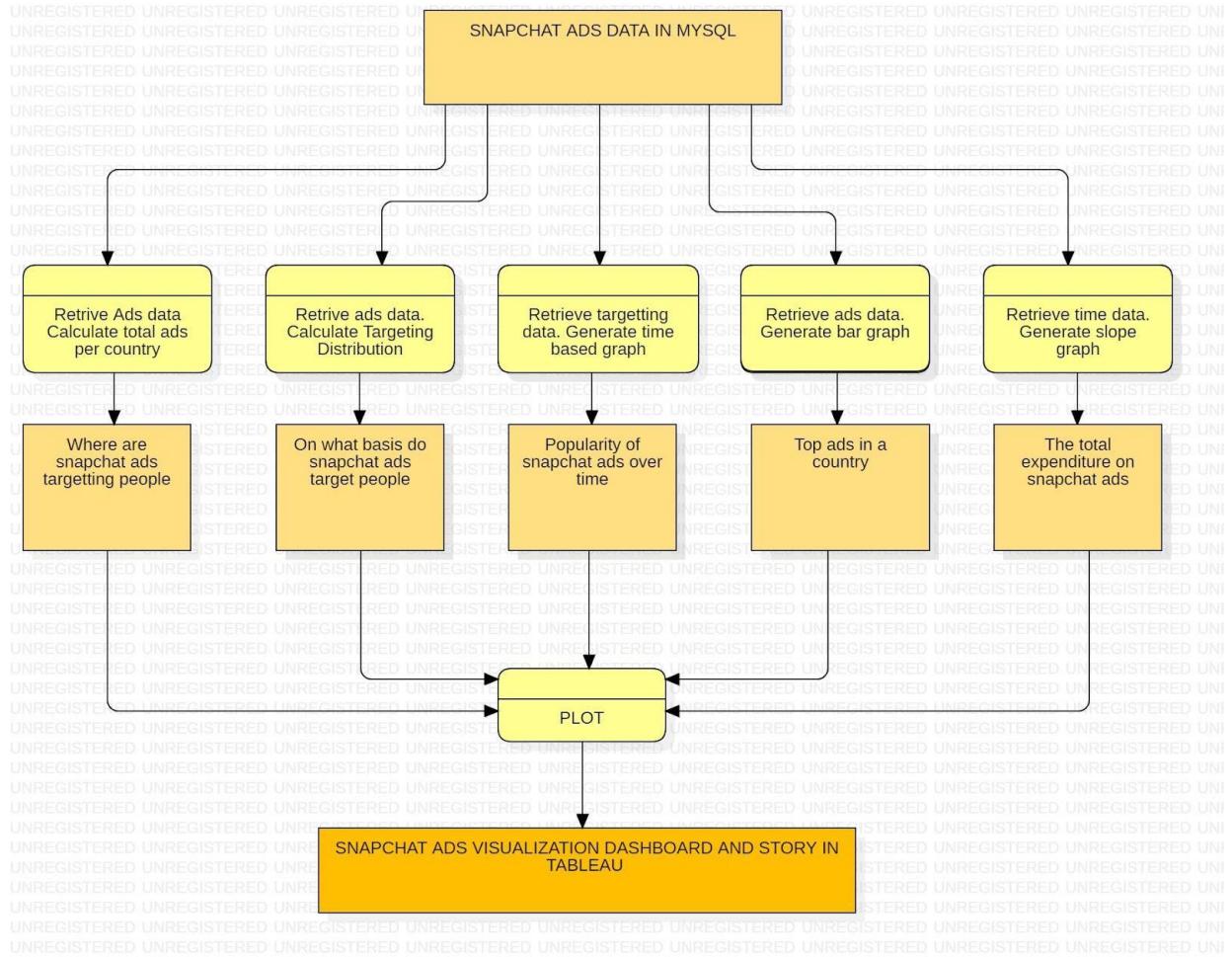
3.1 Block diagram

The data flows in the following sequence:

Retrieve Ads Data: Fetches relevant data about ads, including country details, impressions, money spent, and targeting information.

Data Processing: Various calculations and aggregations are performed based on the specific scenario, such as summing the total number of ads per country, calculating total impressions and money spent, and determining the distribution of ads targeting based on different factors.

Visualization Generation: The processed data is used to generate various visualizations, including vertical bar graphs, donut graphs, line graphs, boxes, and slope graphs.



3.2 Hardware / Software designing

3.2.1 Hardware Designing

The hardware infrastructure for the ads visualization platform would typically include:

Servers: High-performance servers to host the backend application and handle data processing, storage, and retrieval. The server infrastructure should be scalable to accommodate increasing data volumes and user traffic.

Storage: Sufficient storage capacity to store the collected ad data, ensuring fast and reliable access.

Networking: Robust networking infrastructure to support the data flow between the servers, databases, and the web-based front-end.

The hardware design should consider factors such as scalability, reliability, and performance to ensure smooth operation and efficient processing of data.

3.2.2 Software Designing

The software components of the ads visualization platform involve designing the architecture, technologies, and frameworks used for different layers of the system. Key software design considerations include:

Visualization: Softwares like Tableau is used for visualizing data for creating insights of snapchat ads retrieved from the database.

Front-end: The web-based front-end will be designed using HTML, CSS, and JavaScript frameworks such as Bootstrap to ensure a responsive and user-friendly interface.

Back-end: The back-end server application will be designed using Flask, a Python-based web framework. Flask provides a lightweight and flexible architecture for building web applications, allowing for efficient handling of data processing, database queries, and serving data to the front-end.

Database: The choice of a suitable database system will depend on the specific requirements of the application. Options include relational databases like MySQL.

4. EXPERIMENTAL INVESTIGATIONS

During the development and implementation of the Snapchat ads visualization solution, several experimental investigations were conducted to analyze and validate the effectiveness of the solution.

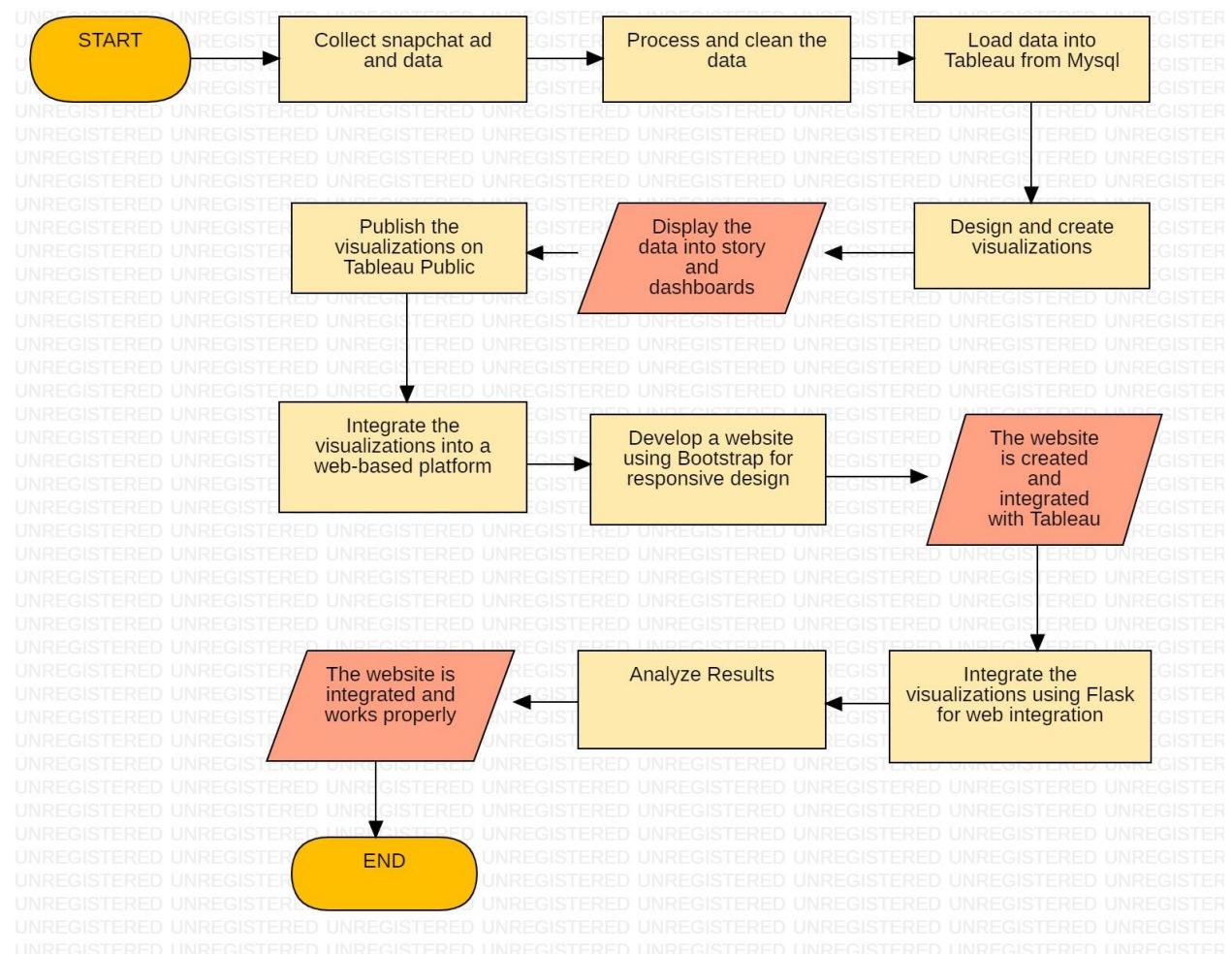
Performance Testing:

- Load Testing: The solution was subjected to simulated high user traffic to assess its performance under peak load conditions. The response time and throughput were measured to ensure the system could handle the expected user load without significant performance degradation.
- Scalability Testing: The solution's scalability was evaluated by increasing the volume of ad data and user traffic. The system demonstrated the ability to scale effectively and handle larger data volumes while maintaining acceptable performance levels.
- Resource Utilization: During performance testing, the system's resource utilization, including CPU, memory, and network usage, was monitored. The investigations identified areas of optimization to improve resource efficiency and ensure optimal system performance.

The experimental investigations conducted during the development of the Snapchat ads visualization solution confirmed its effectiveness in unlocking valuable insights from Snapchat ad data. The solution exhibited robust performance, scalability, and user-friendly features. The findings from the investigations provided valuable insights for further refinement and enhancements to ensure the solution's continuous improvement and alignment with user needs.

5. FLOWCHART

The flowchart provides a summary of the process involved in developing and implementing the Snapchat ads visualization solution, incorporating data collection, preprocessing, visualization creation and web integration.

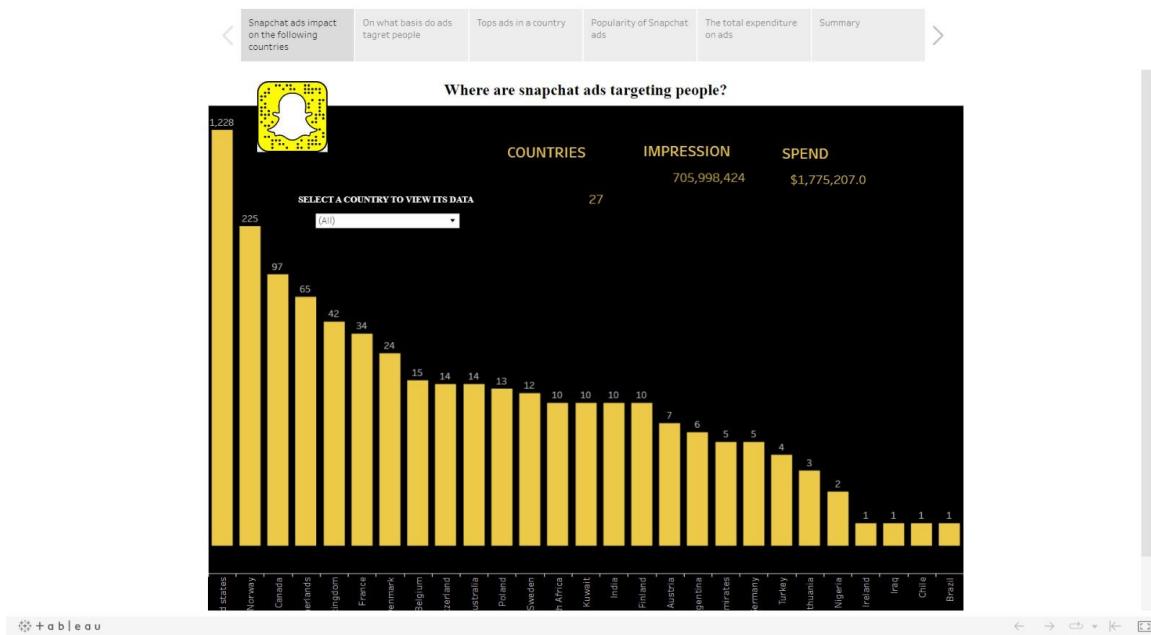


6. RESULT

1. Tablaeu Visualizations: [Ads visualization1 | Tableau Public](#)

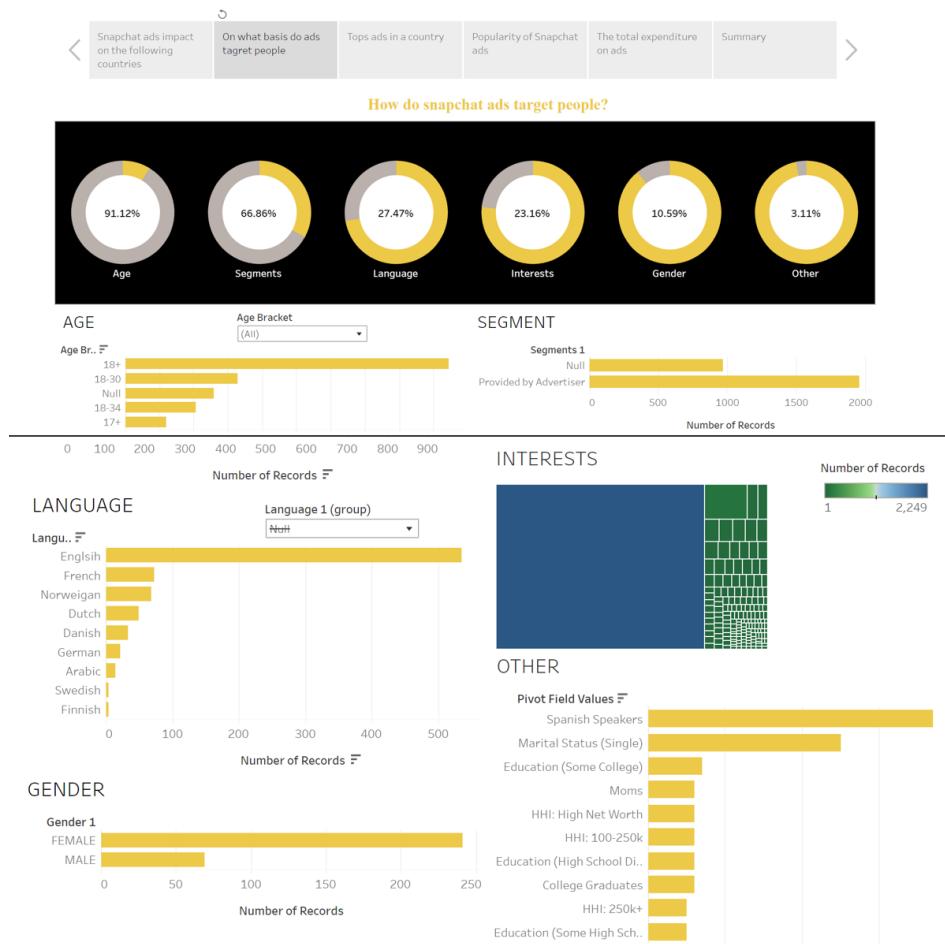
Vertical Bar Graph of Total Ads per Country: The vertical bar graph illustrates the total number of ads for each country.

Boxes of Total Countries, Impressions, and Ad Spend: The boxes display the total count of countries, impressions, and amount spent on ads.

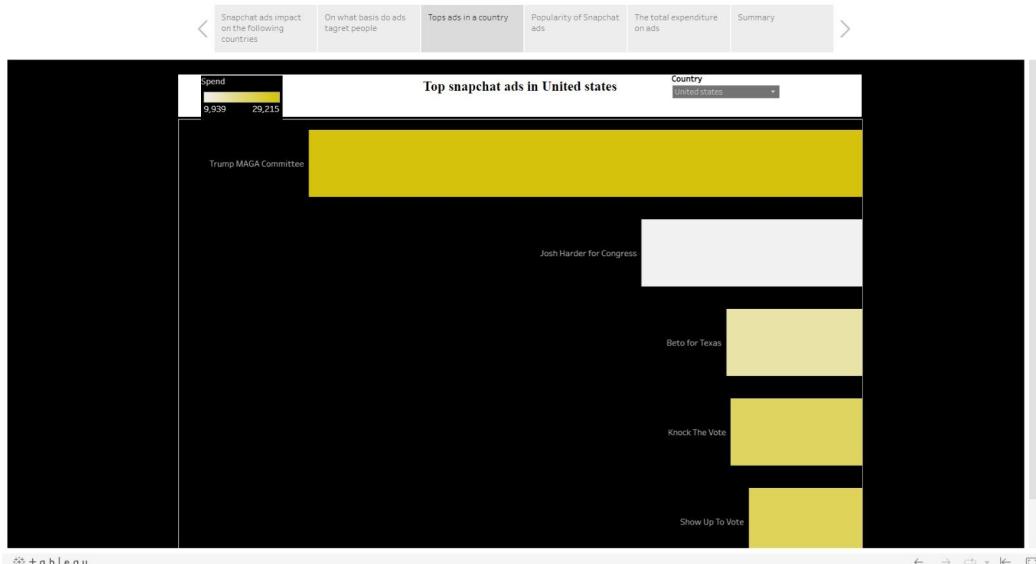


Donut Graph of Ads Targeting by Different Factors:

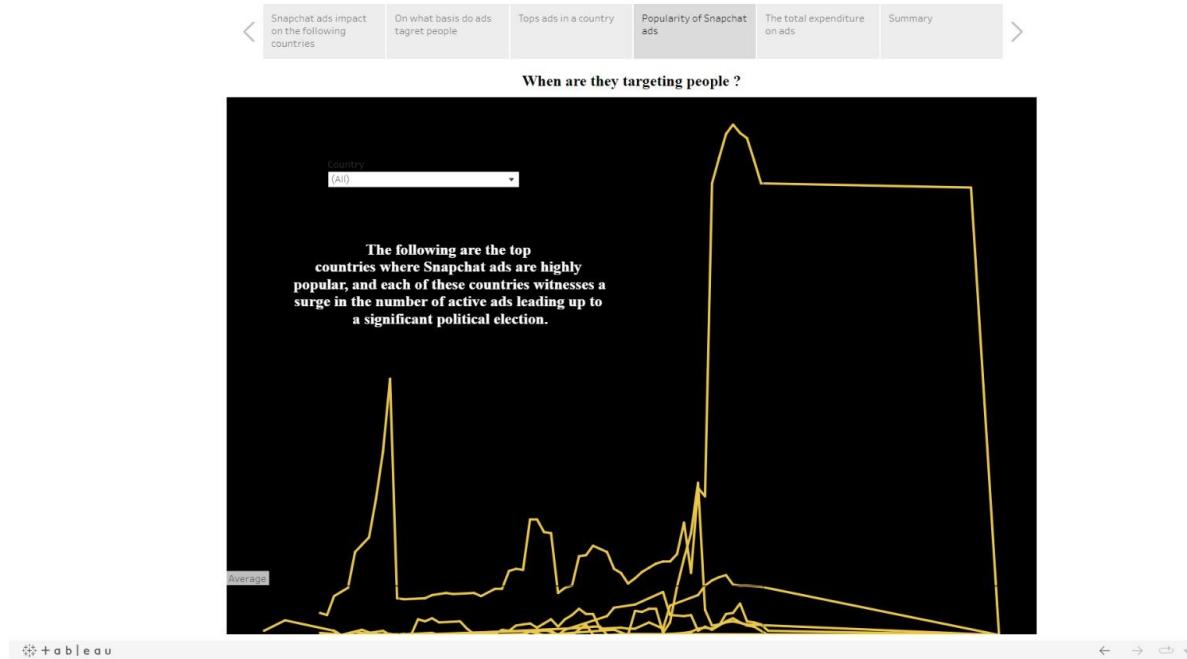
The donut graph presents the distribution of ads targeting based on various factors such as age, segments, language, interests, and gender. The findings highlight that the majority of ads are targeted towards a specific age group.



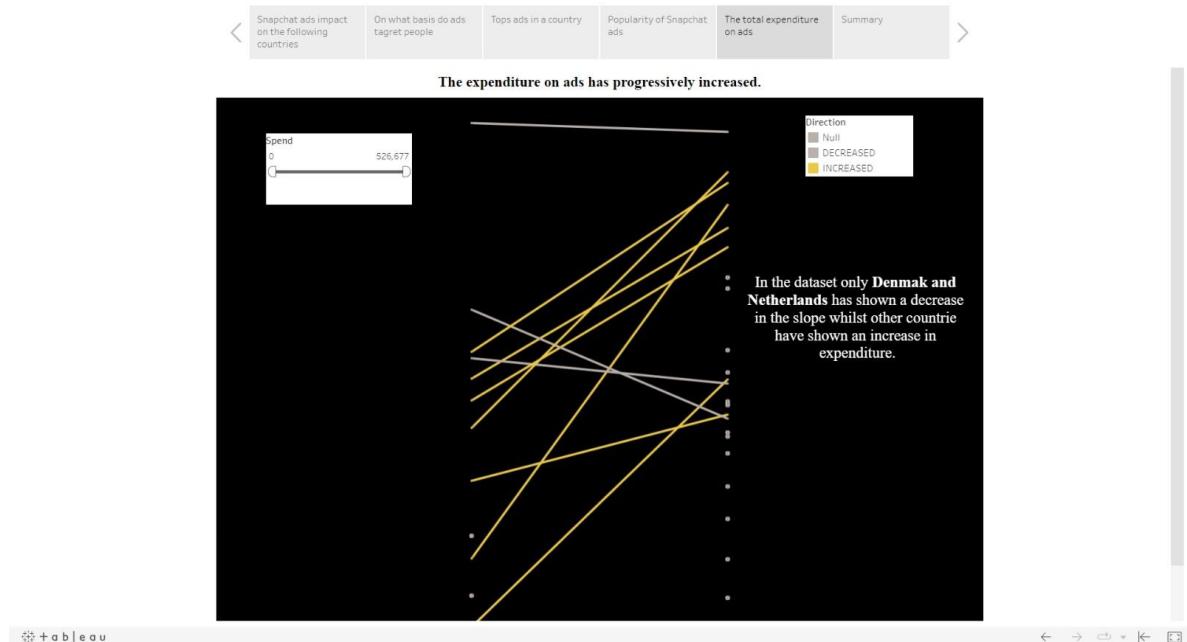
Bar Graph of top snapchat ads: The bar graph compares the total impressions generated with the amount spent on ads by companies.



Line Graph of Targeting Trends: The line graph depicts the trends in ad targeting over time. It shows how the targeting strategies have evolved and whether there are any significant shifts in the target audience preferences.



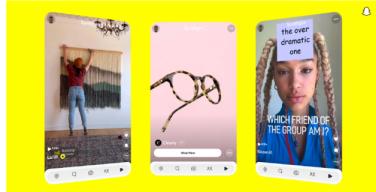
Slope Graph of Money Spent by Country (2018-2019): The slope graph displays the changes in money spent on advertisements by each country from 2018 to 2019.



2. Integrated Website using Bootstrap



About Us



At SnapInsights, we are dedicated to providing you with a comprehensive Snapchat Ads data analysis solution. We understand the importance of leveraging data to make informed decisions and maximize the success of your Snapchat ad campaigns. With the rise of social media advertising, Snapchat has emerged as a powerful platform for reaching and engaging with your target audience. However, navigating through the vast amount of data generated by your ad campaigns can be overwhelming. That's where SnapInsights comes in.

Our mission is to unlock valuable insights hidden within your Snapchat ad data and empower you to make data-driven decisions. We combine advanced analytics, cutting-edge technology, and a user-friendly interface to deliver a seamless and intuitive data analysis experience.

Services

Campaign Comparison: Compare the performance of different ad campaigns side by side to identify what works best for your target audience. Evaluate the effectiveness of different strategies and allocate your advertising budget wisely.



Website Development

Some quick example text to build on the card title and make up the bulk of the card's content. Some quick example text to build on the card title and make up the bulk of the card's content.



Website Design

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Website Deployment

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SEO

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DevOps

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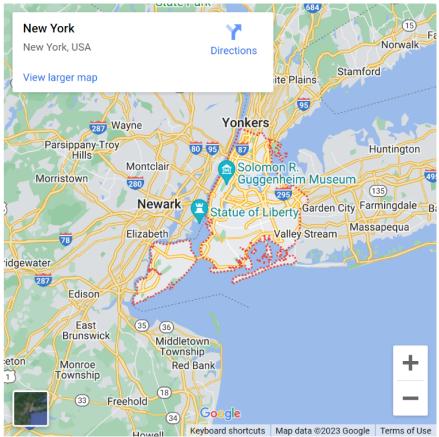


QA

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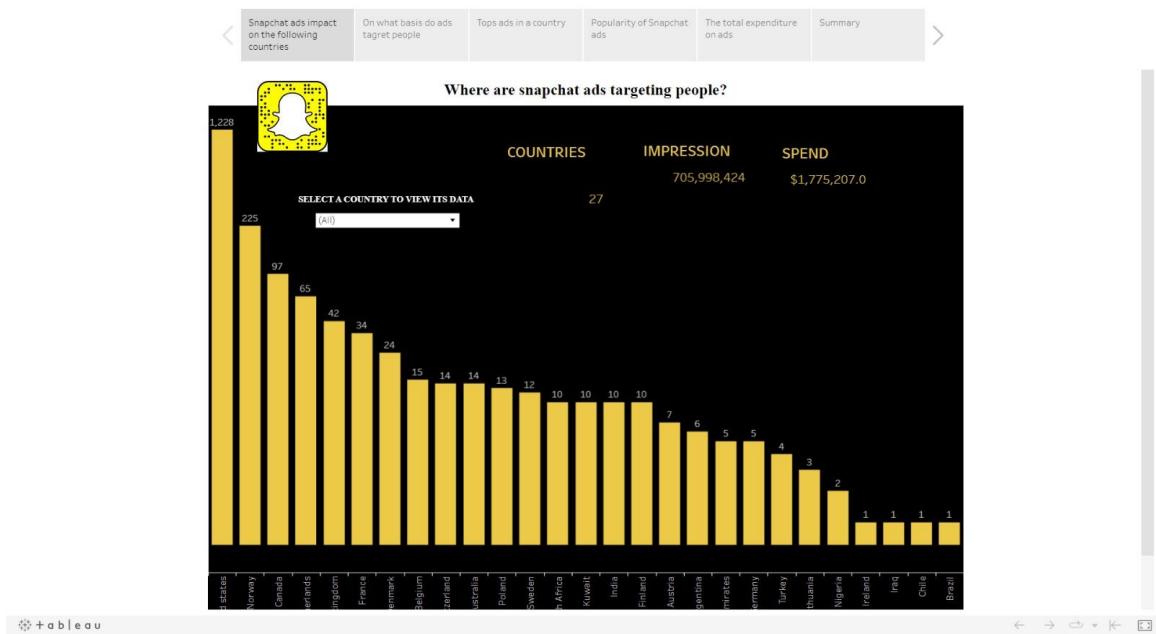
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Project Details

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7. ADVANTAGES & DISADVANTAGES

Advantages:

- Improved data visualization: The use of visualizations, such as bar graphs, donut graphs, and line graphs, enhances the understanding and interpretation of data, making it easier to identify trends and patterns.
- Enhanced decision-making: The visual representation of data allows for quick and informed decision-making based on insights gained from the visualizations.
- User-friendly interface: By integrating the visualization into a website, users can interact with the data more intuitively and explore different aspects of the information.
- Efficient resource allocation: The visualization of total impressions, amount spent on ads, and targeting factors allows for better resource allocation and optimization of advertising strategies.
- Performance measurement: Performance metrics and testing ensure that the system functions smoothly, meets performance requirements, and provides a satisfactory user experience.

Disadvantages:

- Potential complexity: Developing and integrating various visualizations and functionalities can be complex, requiring expertise in data visualization, web development, and integration technologies.
- Technical challenges: There may be technical challenges in handling and processing large volumes of data, ensuring real-time updates, and maintaining system performance.
- User acceptance: The effectiveness of the visualizations and user interface may vary among different users, and some users may require additional training or support to fully utilize the features.
- Maintenance and updates: Continuous maintenance and updates may be required to address any issues, bugs, or compatibility problems that arise with the visualization tools, web framework, or data sources.

8. APPLICATIONS

1. Brands and Businesses: Brands and businesses running Snapchat ad campaigns can utilize the solution to track and analyze the performance of their ads. They can monitor impressions, engagement, and conversion metrics to make data-driven decisions and refine their advertising strategies. The solution helps them understand the effectiveness of their campaigns and optimize their ad spending.
2. Data Analysts and Marketers: Data analysts and marketers can utilize the solution to uncover valuable insights from Snapchat ad data. They can explore trends, identify target audience preferences, and discover patterns to improve targeting and messaging strategies. The solution provides them with visualizations and analytics tools to derive actionable insights and measure the success of their campaigns.

3. Social Media Managers: Social media managers responsible for managing Snapchat ad campaigns can utilize the solution to monitor campaign performance in real-time. They can track key metrics, such as impressions, click-through rates, and demographic information, to optimize targeting and adjust campaign parameters as needed. The solution provides them with a comprehensive view of the campaign performance, allowing them to make data-driven decisions for better results.
4. Advertisers and Influencers: Advertisers and influencers leveraging Snapchat for advertising purposes can benefit from the solution to track and analyze the effectiveness of their sponsored content. They can evaluate the reach, engagement, and conversion metrics of their ad campaigns and measure the return on investment (ROI) of their advertising efforts.

9. CONCLUSION

In conclusion, the implementation of data visualization using Tableau, Bootstrap-based website, and Flask integration provides numerous benefits for analyzing and understanding advertising data. The team has successfully planned, developed, and integrated visualizations such as bar graphs, donut graphs, and line graphs to represent various aspects of the advertising data. The solution allows for efficient resource allocation, improved decision-making, and a user-friendly interface.

10. FUTURE SCOPE

The future scope for this project includes:

- Continuous improvement: Regular updates and enhancements to the visualizations and website interface based on user feedback and evolving business requirements.
- Integration with additional data sources: Integration with additional data sources can provide a more comprehensive view of advertising metrics, allowing for deeper analysis and insights.
- Advanced analytics: Incorporating advanced analytics techniques, such as predictive modeling or machine learning algorithms, can enable more sophisticated analysis and predictions.
- Mobile optimization: Optimizing the visualization and website for mobile devices to ensure accessibility and a seamless user experience on smartphones and tablets.
- Integration with data management platforms: Integrating with data management platforms or APIs can enable real-time data synchronization, expanding the capabilities of the visualization solution.

By considering these future prospects, the project can continue to evolve and provide valuable insights for advertising analysis and decision-making.

