College Park Aviation Museum

iConsultancy Student Project

Final Report

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Abstract

The College Park Aviation Museum gallery project is our initiative to significantly enhance educational outreach efforts for school field trips. Kimberly Schwartz, the Education Manager for the museum, serves as the primary contact for this project. We aim to implement a comprehensive data analysis and visualization initiative. Our goal is to improve the overall experience for visiting schools and camps, with a particular focus on those from Prince George's County.

Initially, our project began with a broad goal of simply improving the museum's outreach efforts. However, as we delved deeper into the data, it became apparent that a more nuanced approach was necessary. The project scope expanded to include detailed analysis of school trip patterns, identification of frequently visited locations within the museum, and an exploration of outreach strategies beyond the immediate vicinity of PG County.

To achieve these objectives, we will clean and organize existing data related to school visits, identifying trends and patterns that can inform future outreach efforts. We will create visualizations to make this data more accessible and understandable, allowing museum staff to make informed decisions about programming and marketing strategies.

By the end of our project, the College Park Aviation Museum hopes to have a clear understanding of the impact of school visits on its overall attendance and revenue. By leveraging data-driven insights, the museum aims to improve its outreach efforts, ensuring that it remains a valuable educational resource for schools and camps in Prince George's County and beyond.

Methods

To fulfill the project's goals, we began by reviewing the general requirements provided by our client and then held an initial meeting to obtain the necessary datasets. Afterward, we cleaned and organized the data to prepare for visualization. We chose HTML as our programming language and utilized the Google API to create a heat map, which was one of our deliverables. Another deliverable was to develop graphs and visualizations showcasing the types of schools visiting the museum within PG County from 2020 to 2024, also created using HTML.

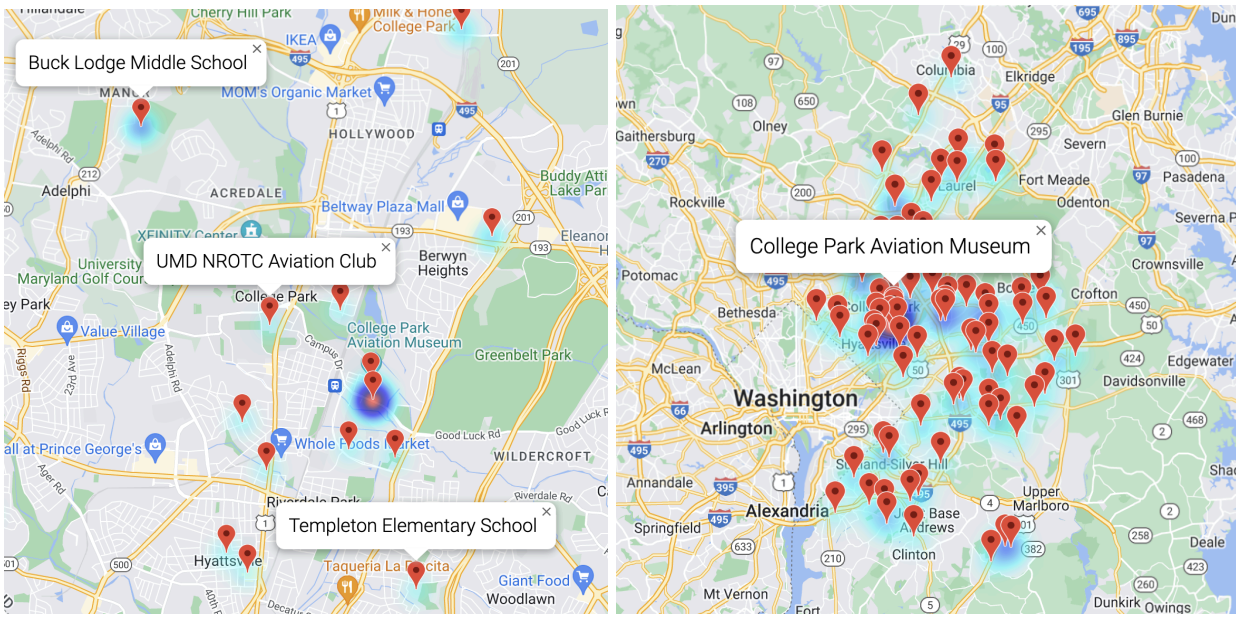
Obstacles:

We encountered several challenges during the project. The data provided required extensive cleaning due to inconsistencies and missing values. We addressed this by implementing data cleaning techniques and consulting with museum staff to clarify any ambiguities. Additionally, creating the heat map presented challenges in terms of selecting the appropriate parameters to represent the data effectively. We overcame this by conducting thorough research and iterative testing to refine our approach.

Descriptions of Deliverables/Findings:

Heat Map of Field Trip Origins:

A visual representation showcasing the geographic distribution of field trip groups focusing on Prince George's County schools (2020 - 2024). This heat map provides a clear, graphical understanding of where these trips originate from within the county.



Tailored Data Organization:

Delivery of clean data in a customized Excel spreadsheet format. This includes added columns detailing the counties and school types associated with each field trip group. The organized data allows for easy analysis and manipulation.

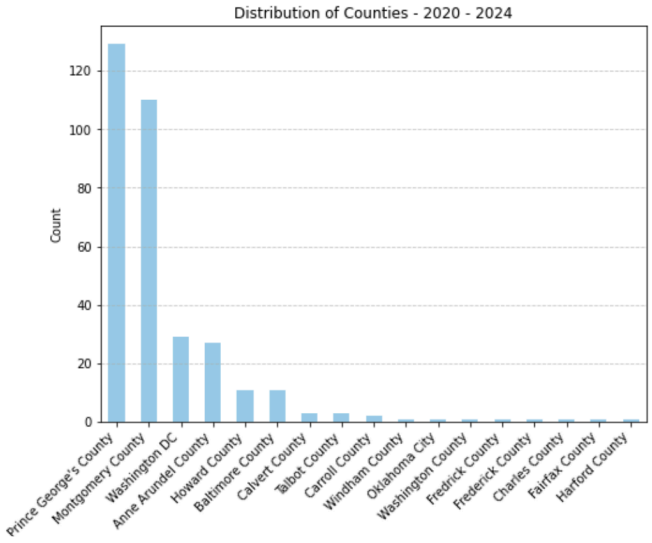
Project Files:

- All of our project files (including presentation recording, presentation file, project final report)
- HTML file/code base of the Heat Map
- HTML file/ code base of other visualizations
- Spreadsheet file of the clean/organized data

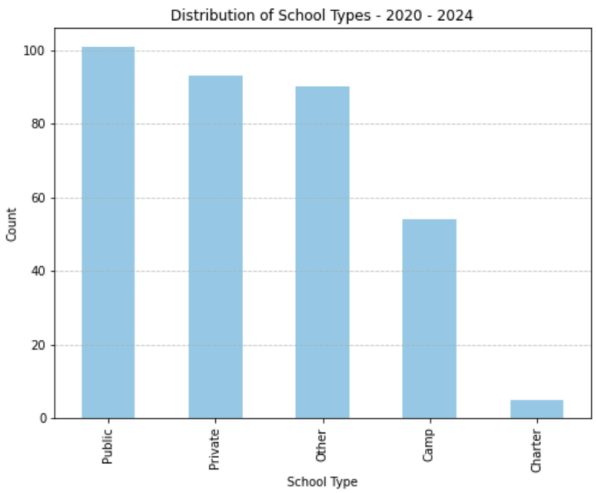
Further Visualizations:

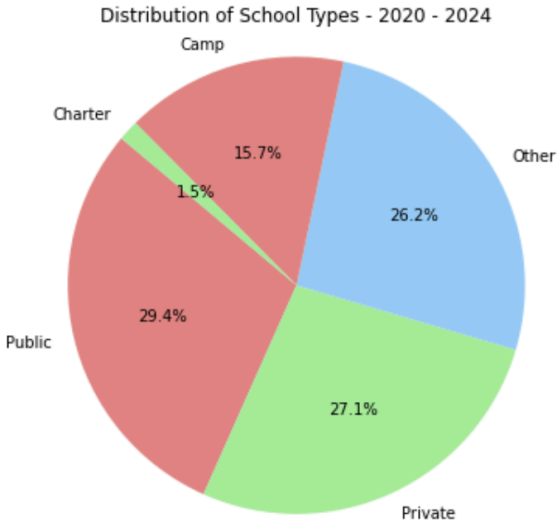
Graphs and visualizations designed to elucidate the categories of schools from which customers originate. These categories include public, private, and other types of schools. These visuals provide insights into the distribution and preferences of different school types for field trips.

# of Visits in CP Aviation Museum by County (2020 - 2024)



PG County Distribution of School Type (2020-2024)





Each deliverable is aligned with the project goals by providing actionable insights into the field trip origins and preferences of different school types. The heat map and visualizations offer a visual understanding of the data, while the tailored data organization ensures that the information is easily accessible and interpretable. Overall, these deliverables contribute to the project's goal of understanding and improving the field trip experience for Prince George's County schools, with the potential for further exploration and refinement in future work.

Recommendations

Enhance Heat Map: Consider adding filters and more features to the Heat Map to gain a more detailed understanding. This could involve segmenting the data by different categories or adding interactive elements to allow for deeper exploration.

Create Additional Visualizations: Develop visualizations for various columns to extract more valuable information for the CP Aviation Museum. For example, you could use the revenue column to analyze how income is generated and which school types contribute the most income. This could help the museum understand their revenue streams better and make informed decisions for the future.

Conclusion

In conclusion, the College Park Aviation Museum gallery project has successfully achieved its primary goal of enhancing educational outreach efforts for school field trips, with a focus on schools from Prince George's County. Through comprehensive data analysis and visualization, we have provided valuable insights into school trip patterns, frequently visited locations within the museum and outreach strategies.

Our project has highlighted the importance of data-driven decision-making in improving the museum's outreach efforts. By leveraging the insights gained from our analysis, the museum can make informed decisions about programming and marketing strategies to enhance the overall experience for visiting schools and camps.

Looking ahead, there are several opportunities for future work. Enhancing the existing heat map with filters and additional features could provide a more detailed understanding of field trip origins. Creating additional visualizations for various columns, such as revenue, could further enhance the museum's understanding of its revenue streams and inform future decisions.

For further questions or to discuss future work, please feel free to contact our team project manager, at pkoiral2@terpmail.umd.edu. We are excited about the potential impact of this project and look forward to further collaboration with the College Park Aviation Museum.

Deliverables:

- Project Write Ups
- HTML File of all the visualizations
- HTML File of the heat map
- Project Final Report