COLLEGE PARK
AVIATION MUSEUM

Team Members: Nick Klann, Dagmawe Aychiluhim, Kyle Duong,
Natalie Banzadio, Perkerti Koirala

Project Introduction

Client: Kim Schwartz from College Park Aviation Museum.

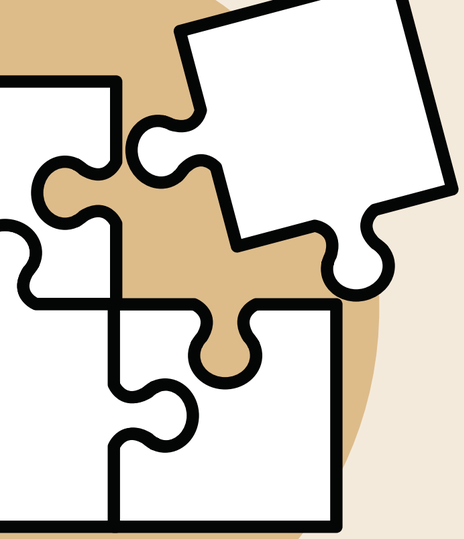
Executive Summary: The museum possesses six years' worth of field trip tour data. However, the data in their Excel spreadsheet lacks organization. Their primary requirement is to clean the data and visualize its components effectively.

Project Objectives:

- Clean, analyze, and visualize data from school field trips hosted by College Park Aviation Museum.
- Heat Map focusing on PG county schools.
- Identifying details about school trips, frequency of visits from schools in each zip code, and expanding outreach to more schools.
- Assist the museum in outreach efforts for school field trips and expand analyses based on collected data.

Team Roles & Responsibilities

Nick	Programming, Data Visualization
Dagmawe	Accountability, Data Visualization
Kyle	Note Taker, Data Organizer
Natalie	Technical Writer, Researcher
Perkerti	Project Manager, Liaison, Documentation



Challenges We Faced

- Creating multiple heat maps was difficult and time consuming, so we decided to create one all encompassing heatmap
- Making sure our product is what you want and expect
- Organizing data, ensuring all information is correct

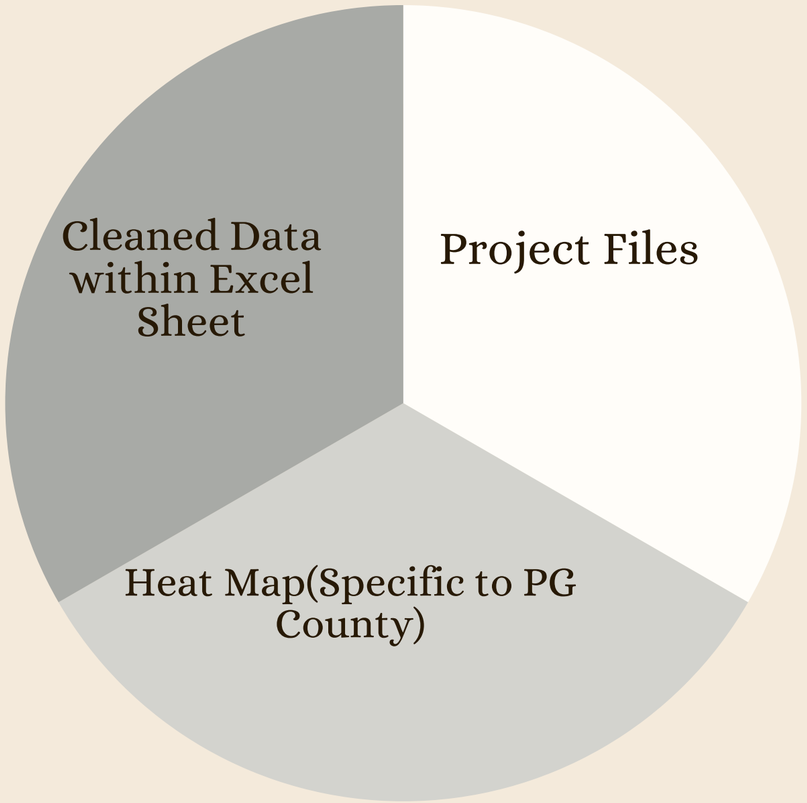
Deliverables/Products

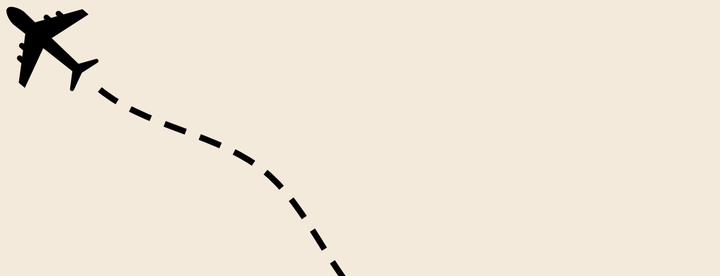
Heat Map of Field Trip Origins
- Displaying geographic distribution of field trip groups focused on PG county schools

Visualizations According to School Type
- Graphs/Visualizations to understand the categories of schools their customers are coming from (public, private, others)

Tailored Data Organization
- Delivering clean data and customized Excel spreadsheet
- Added columns of the counties and the school types

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



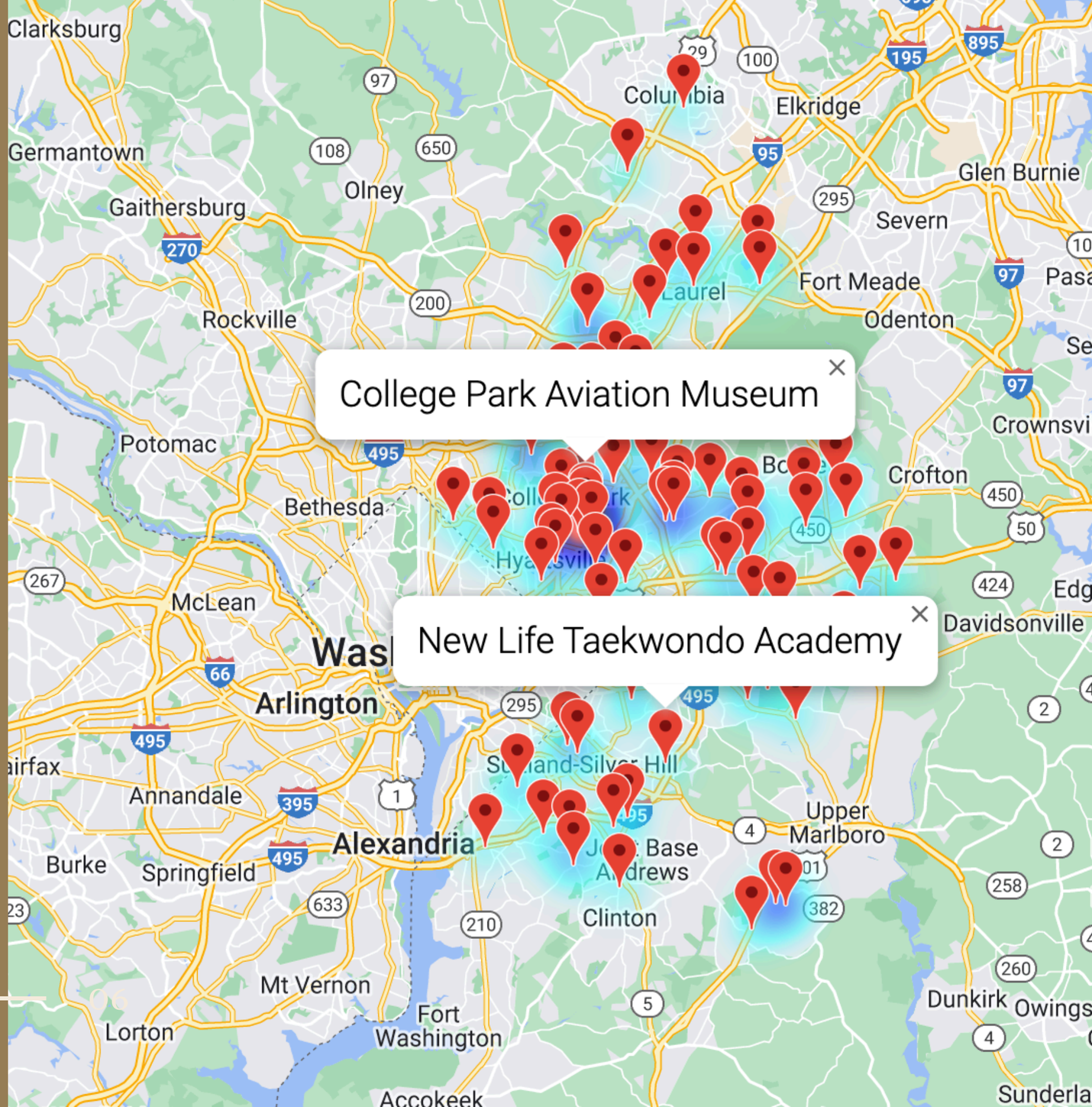


Project Status

- Created Heat Map based on PG county data 2020 - 2024 using Google API & HTML
- Created multiple visualizations/graphs based on all counties visiting the CP aviation museum through the years 2020 - 2024.
- Excluded data from 2021 due to Covid
- Executed cleaning data based on the client's preferences and suggestions
- Currently working on final report and gathering resources for our final submission.

HeatMap

- With the help of HTML and Google API, we were able to tailor our heatmap to the clients needs/wants.
- Decided to limit the amount of heatmaps to just one so that it is more user friendly and less confusing.
- The data used is all PG county organizations in the CPAM excel dataset.



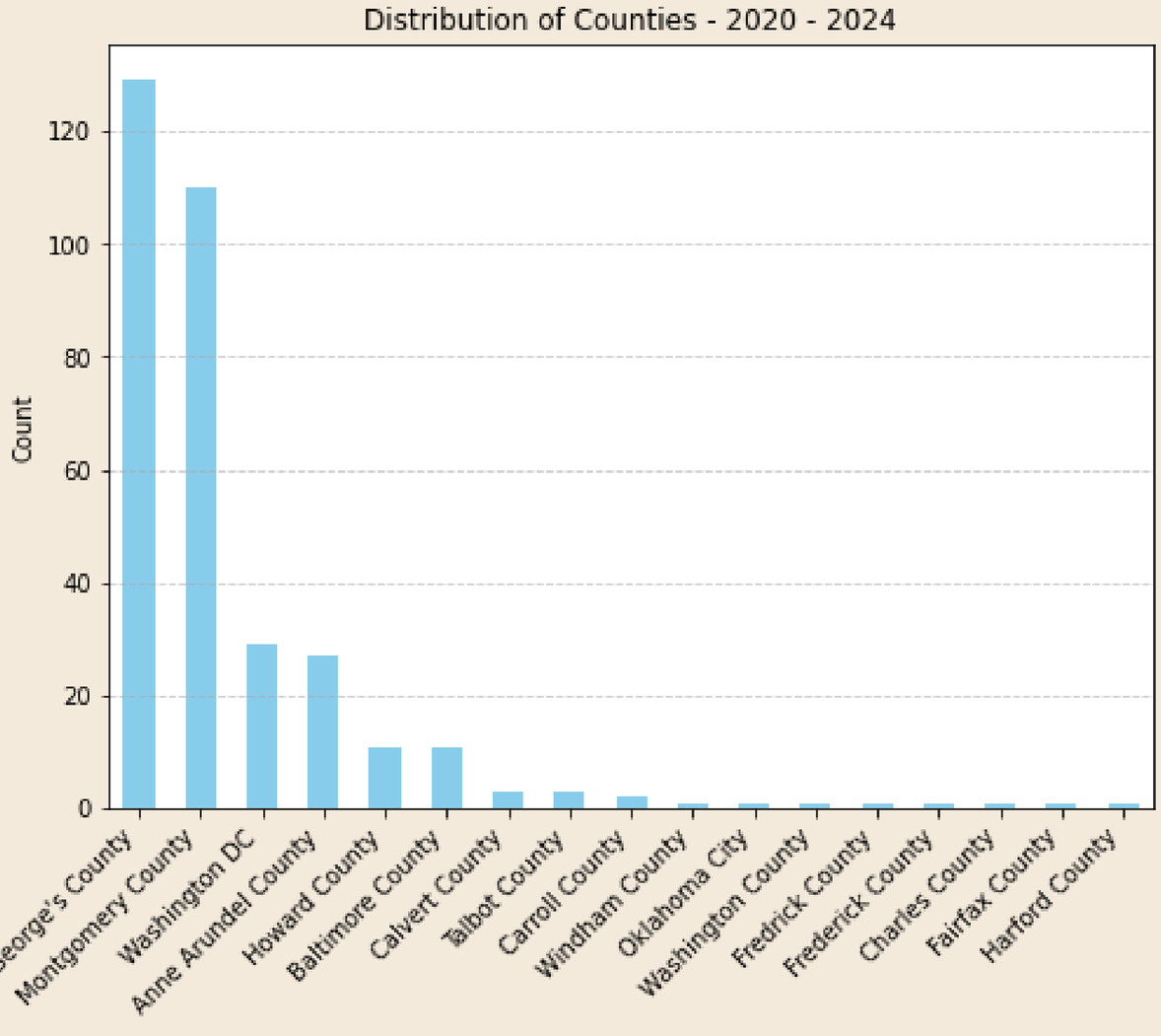
HeatMap Code Snippets

- Code to the right: This is the code that we used to design the actual heatmap, add the markers, and customize it to our liking
- Code to the bottom: This is how we added each of the locations, added the street address to google API and found the coordinates
- For our duplicate organizations, we still added the location and that would change the color on the map and show how often that organization visits the museum.

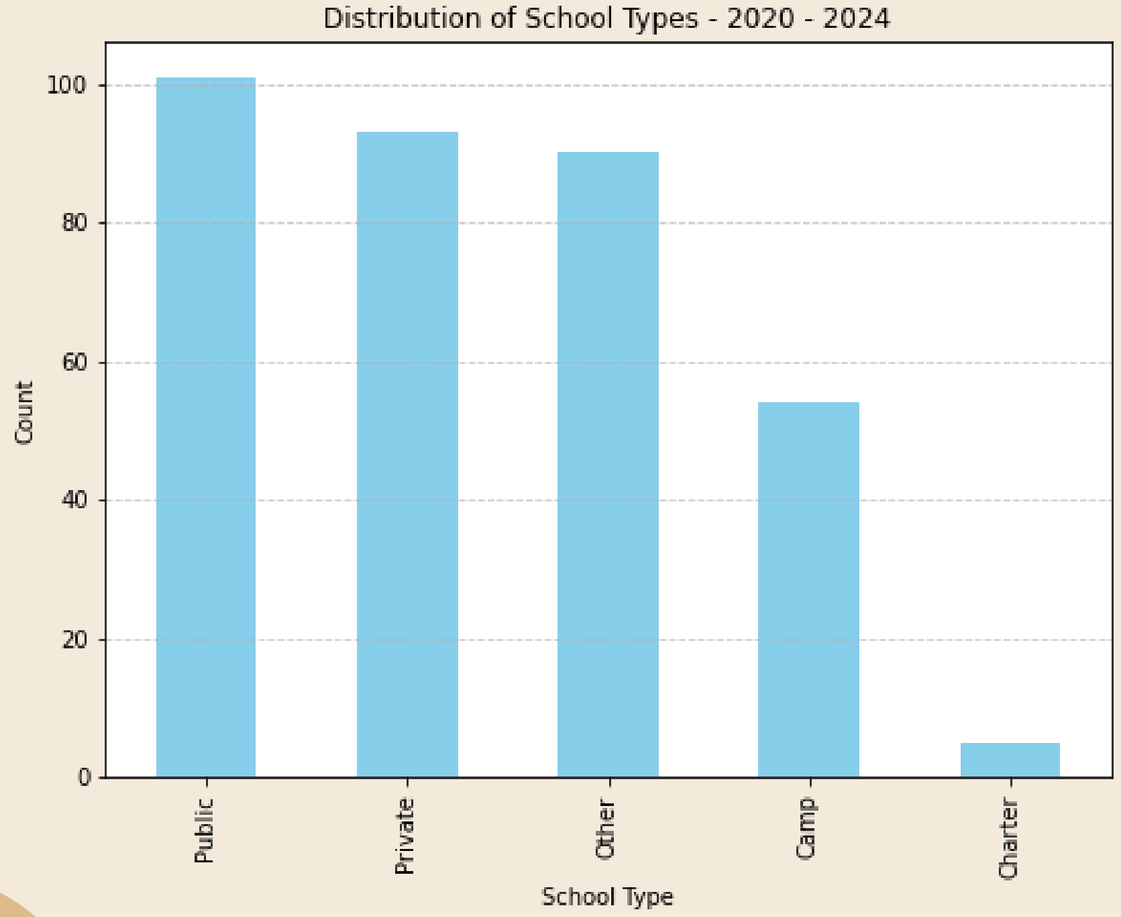
```
var heatmap = new google.maps.visualization.HeatmapLayer({
  data: heatmapData,
  gradient: gradient,
  radius: radius = 30
});

heatmap.setMap(map);

var markerIcon = {
url: 'https://maps.gstatic.com/mapfiles/api-3/images/spotlight-poi2_hdpi.p
scaledSize: new google.maps.Size(18, 28),

};

heatmapData.forEach(function(item) {
  var marker = new google.maps.Marker({
    position: item.location,
    map: map,
    icon: markerIcon
  });

  marker.addListener('click', function() {
    var infowindow = new google.maps.InfoWindow({
      content: '<div style="font-size: 18px;">' + item.label + '</div>'
    });
    infowindow.open(map, marker);
});
});

}
```

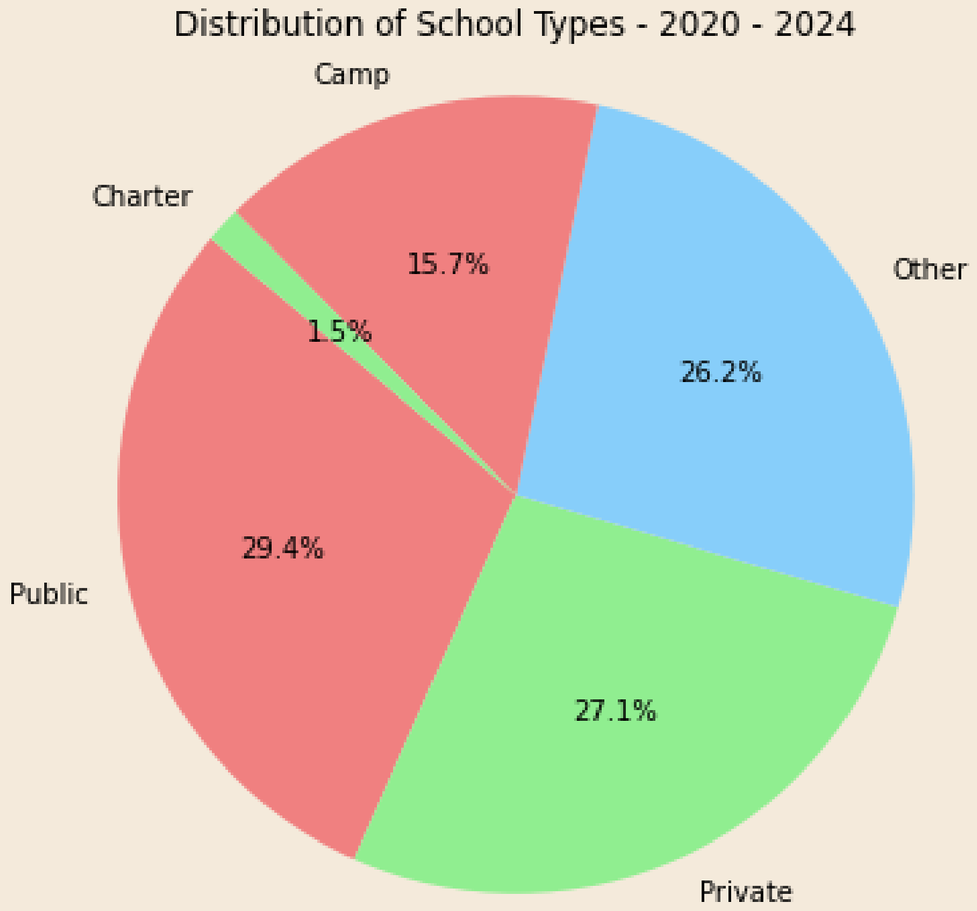
```
var map = new google.maps.Map(document.getElementById('map-canvas'),
    mapOptions);

var heatmapData = [
    {location: new google.maps.LatLng(38.97647,-76.921931), label: 'JTCC'},
    {location: new google.maps.LatLng(39.103672,-76.867228), label: 'Kiddie Academy'},
    {location: new google.maps.LatLng(38.973789,-76.771535), label: 'Celebree of Bowie'},
    {location: new google.maps.LatLng(39.08046,-76.920253), label: 'Watkins Tennis Buuble Camp'},
    new google.maps.LatLng(38.97647,-76.921931),
    {location: new google.maps.LatLng(39.101766,-76.847336), label: 'Nias Early Learning Center'},
    {location: new google.maps.LatLng(38.771853,-76.791649), label: 'St Pauls Christian Childrens Center'},
```

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



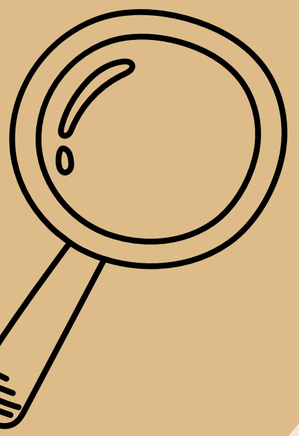
PG County (Distribution of School Type 2020-2024)





Successes

- Created a specific format for our data organization
- Added the “School Type” column to recognize Private, Public, Camp and Other categories
- Used available software and tools to create quality visualizations (Google API)
- Communication between our team and client and getting suggestions and specific ideas of expectations
- Completed visualizations and cleaned excel data



Findings

- The Junior Tennis Champions Center (JTCC) is the most reoccurring visitor of the museum
- The closest visitor is the Junior Tennis Champions Center (JTCC) in College Park, MD
- The farthest visitors are the St. Pauls' Christian Children's Center in Marlton, MD
- Besides schools and camps, the museum is regularly visited by over 36 diverse groups, including home schools, senior citizens, Boy/Girl Scouts, and aviation enthusiasts
- In 2023, the museum experienced its peak year with 119 tours
- Elementary school students comprise the largest demographic of museum visitors

Future Plans “Next Steps”

- Given access to the current project's code base for reference and continuation
- Expected to modify location coordinates to fit their specific dataset
- Required to update the year database used for analysis
- Tasked with reproducing similar visualizations using the new data


Thank You!