**READ ME:**

**Grazioso Salvare Dashboard**

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**Project Overview**

The Grazioso Salvare Dashboard is a web app that helps analyze animal shelter data for rescue operations. Built using Dash, Plotly, and MongoDB, it allows users to filter and explore data interactively.

**Key Features:**

* **Interactive Filters:** Users can filter by animal type, outcome type, and breed.
* **Rescue Type Selection:** Choose between Water Rescue, Mountain Rescue, and Disaster Tracking.
* **Dynamic Data Table:** Displays filtered results in real-time.
* **Pie Chart Visualization:** Shows breed distribution (top 10 breeds when no filter is applied).
* **Location Mapping:** Displays the locations of selected rescue animals.

**Screenshots of Dashboard Features**

These screenshots show how the dashboard works with different filters:

1. **Dashboard Default View (No filters applied)**

A screenshot of a computer

AI-generated content may be incorrect.

1. **Water Rescue Filter Applied**

A screenshot of a computer

AI-generated content may be incorrect.

1. **Mountain Rescue Filter Applied**

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1. **Disaster Tracking Filter Applied**

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1. **Reset (All Data Shown Again)**

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1. **Drop Down Menu**

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**Tools & Technologies Used**

1. **MongoDB (Database)**

* Stores animal data in a flexible format.
* Allows quick searching and filtering.
* Works well with Python’s Pandas library.

2. **Dash & Plotly (Web Framework & Charts)**

* Makes building interactive web apps easy.
* Works well with data visualization tools like Pie Charts.
* Supports real-time updates when filters change.

3. **Additional Libraries:**

* **Pandas** - Used to organize and filter data.
* **Dash DataTable** - Displays animal shelter data in a user-friendly format.
* **Dash Leaflet** - Plots animal locations on a map.

**Installation & Setup Guide**

Follow these steps to set up and run the dashboard.

Be sure to have a database with the uploaded Austin Animal Center.csv data.

**1. Download the Project**

git clone https://github.com/XxDoomsdayxX/CS-340-Client-Server-Development/blob/main/ProjectTwoDashboard.ipynb

change to the destination of the file

**2. Install Required Libraries**

pip install dash pandas pymongo plotly dash-leaflet

**3. Set Up MongoDB Connection**

Update the AnimalShelter class with your MongoDB login details:

username = "your\_username" # I used aacuser

password = "your\_password" # I used aacuser

db = AnimalShelter(username, password)

**4. Run the Dashboard**

python app.py

Or, if using Jupyter Notebook:

from jupyter\_dash import JupyterDash

app = JupyterDash(\_\_name\_\_)

app.run\_server(mode='inline', debug=True)

**5. Open in Browser**

Go to <http://127.0.0.1:13433/> to view the dashboard, or whatever you use for local host

**Challenges & Fixes**

**1. Slow Filtering Performance**

* Problem: Filters were taking too long to load.
* Fix: Improved MongoDB queries and used Pandas to preprocess data before displaying it.

**2. Pie Chart Too Cluttered**

* Problem: Too many unique breeds made the chart hard to read.
* Fix: Limited the chart to show only the top 10 breeds, unless a rescue filter is applied.

**3. Alignment Issues in Filters**

* Problem: Search box wasn’t aligned properly with other filters.
* Fix: Used CSS Flexbox to properly center and align filters.

**Conclusion**

This dashboard helps Grazioso Salvare analyze animal shelter data for different rescue missions. Future improvements could include live data updates, more filters, and prediction tools for animal rescue trends.

**Resources**

* Dash Docs: https://dash.plotly.com/
* MongoDB Docs: https://www.mongodb.com/docs/
* Pandas Docs: https://pandas.pydata.org/docs/