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CS 340

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Project Two: Global Rain Dashboard

About the Project

I created this project as a way to visualize and manage animal data using CRUD (Create,

Read, Update, and Delete) operations on a MongoDB database with Python. This version

extends the backend functionality into an interactive dashboard using the Dash framework. The

dashboard was built for Grazioso Salvare, an organization that identifies rescue animals for

service. It allows users to filter, view, and explore animals based on specific rescue missions.

Motivation

The goal of this project was to expand the database programming skills gained in Project One by

integrating a visual frontend with Dash. This allows users to interact with data from the AAC

MongoDB collection through filters, charts, and maps — making it easier to identify animals

suited for water rescue, disaster tracking, or mountain missions.

Getting Started

This program was originally designed and tested in Spyder and later adapted to a Jupyter

Notebook environment for the frontend dashboard. The MongoDB database (AAC) holds animal

records accessed via the animal shelter.py class. The dashboard displays this data in a user-

friendly format using Dash components.

Installation

For this project, a similar version of Python is required along with a pymongo library, Jupyter Notebook, as well as the correct authorizations (which may be provided ahead of time). Additionally, you will need dash, jupyter-dash, dash-leaflet, and plotly for building the dashboard.

Usage

Once the user successfully launches the dashboard, the interface is shown with interactive widgets which allow said user to filter by animals or by rescue type. These are selected via drop-down menus which then display the filtered results along with a dynamic data table highlighting animal location using the geolocation map. Overall, these elements were implemented to create an easy-to-navigate space for finding specific rescue animals within the AAC database.

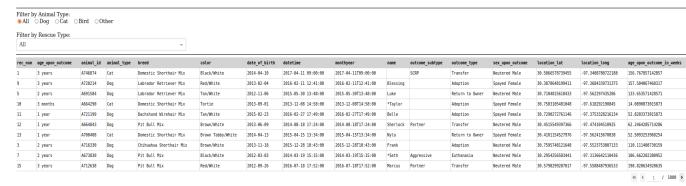
Code for filter options:

Dashboard Interface:

Starting Screen:



Grazioso Salvare Dashboard - Jose Gomez



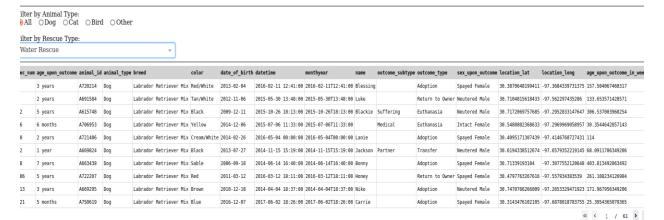
Animal Types in Selection



Water Rescue Animals:



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Mountain or Wilderness Rescue Animals:



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Disaster or Individual Tracking Animals:



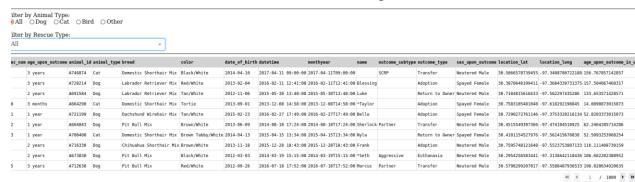
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Reset (All Options Again)



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