

1. Database and CRUD Module

- **Database:** MongoDB
- **CRUD Python Module File:** CRUD-Python-Module.py
- **CRUD Class Name:** CRUD

The application uses a custom Python module (CRUD-Python-Module.py) to handle all database operations, connecting to MongoDB using the aacuser credentials. The initial data table load uses the db.read({}) method to retrieve the entire collection.

2. Dashboard Interface (ProjectTwoDashboard.ipynb)

The dashboard is built using the Dash framework within a Jupyter environment.

Branding:

- Logo: The Grazioso Salvare logo (Grazioso Salvare Logo.png) is included in the dashboard layout.
- Unique Identifier: The dashboard includes a unique identifier for the creator: **Lyth Hammad**.

Widgets and Functionality:

- **Interactive Data Table:** The table features user-friendly functions including filtering, multi-column sorting, and pagination (10 rows per page).
- **Interactive Filters (Radio Items):** Four radio buttons allow the user to select the desired rescue profile or reset the view.
- **Dynamic Charts:** Both the Geolocation Map (using dash-leaflet) and the Pie Chart (using plotly.express) dynamically update based on the data displayed in the interactive table.

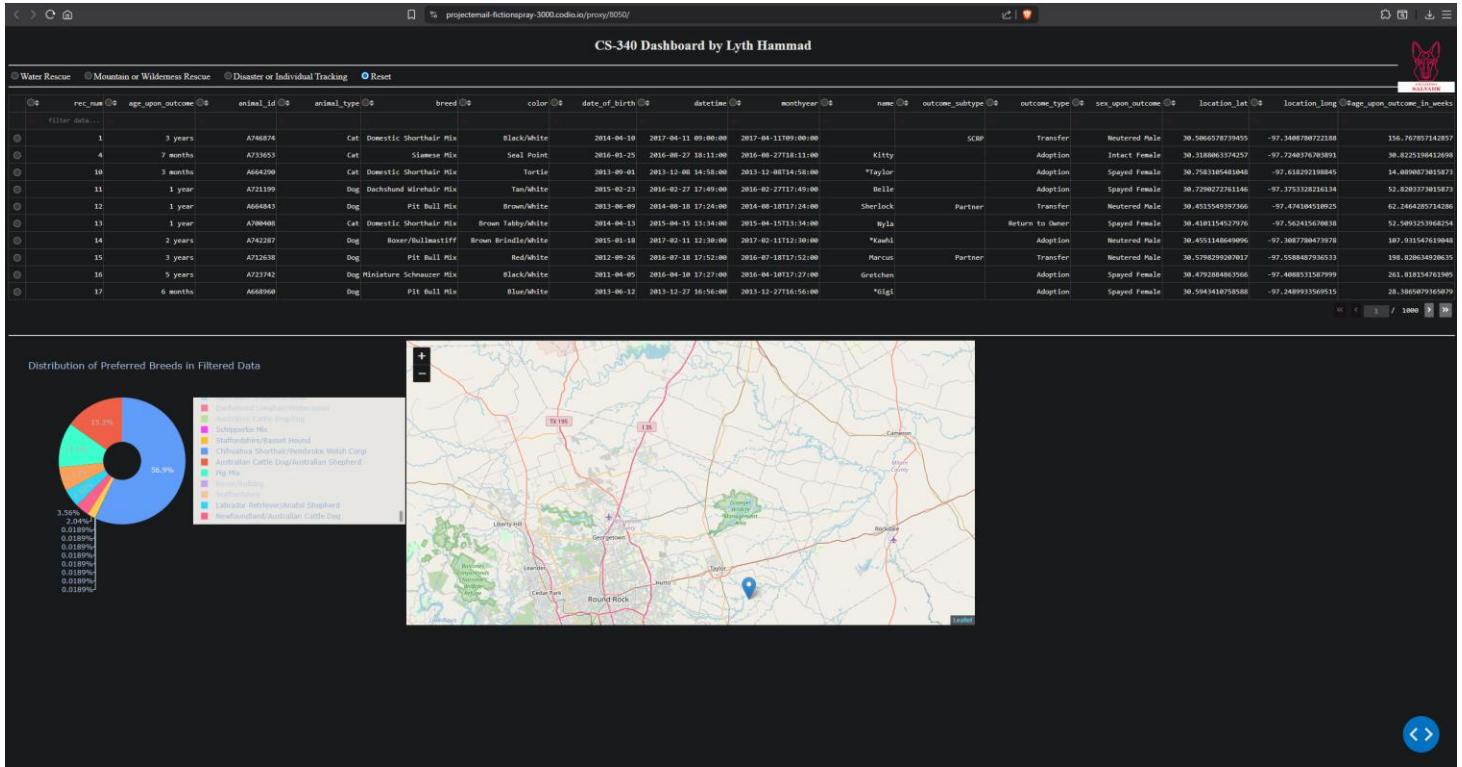
Filter Criteria and MongoDB Queries

The interactive filtering functionality is implemented in the update_dashboard callback, translating the Grazioso Salvare criteria into MongoDB queries.

Rescue Type	Animal Type	Age (Weeks)	Sex Condition	Breeds (MongoDB \$in array)
Water Rescue	Dog	26 to 156	Intact Female	Labrador Retriever Mix, Chesapeake Bay Retriever, Newfoundland
Mountain/Wilderness	Dog	26 to 156	Intact Male	German Shepherd, Alaskan Malamute, Old English Sheepdog, Siberian Husky, Rottweiler
Disaster/Tracking	Dog	20 to 300	Intact Male	Doberman Pinscher, German Shepherd, Golden Retriever, Bloodhound, Rottweiler
Reset	ALL	ALL	ALL	ALL

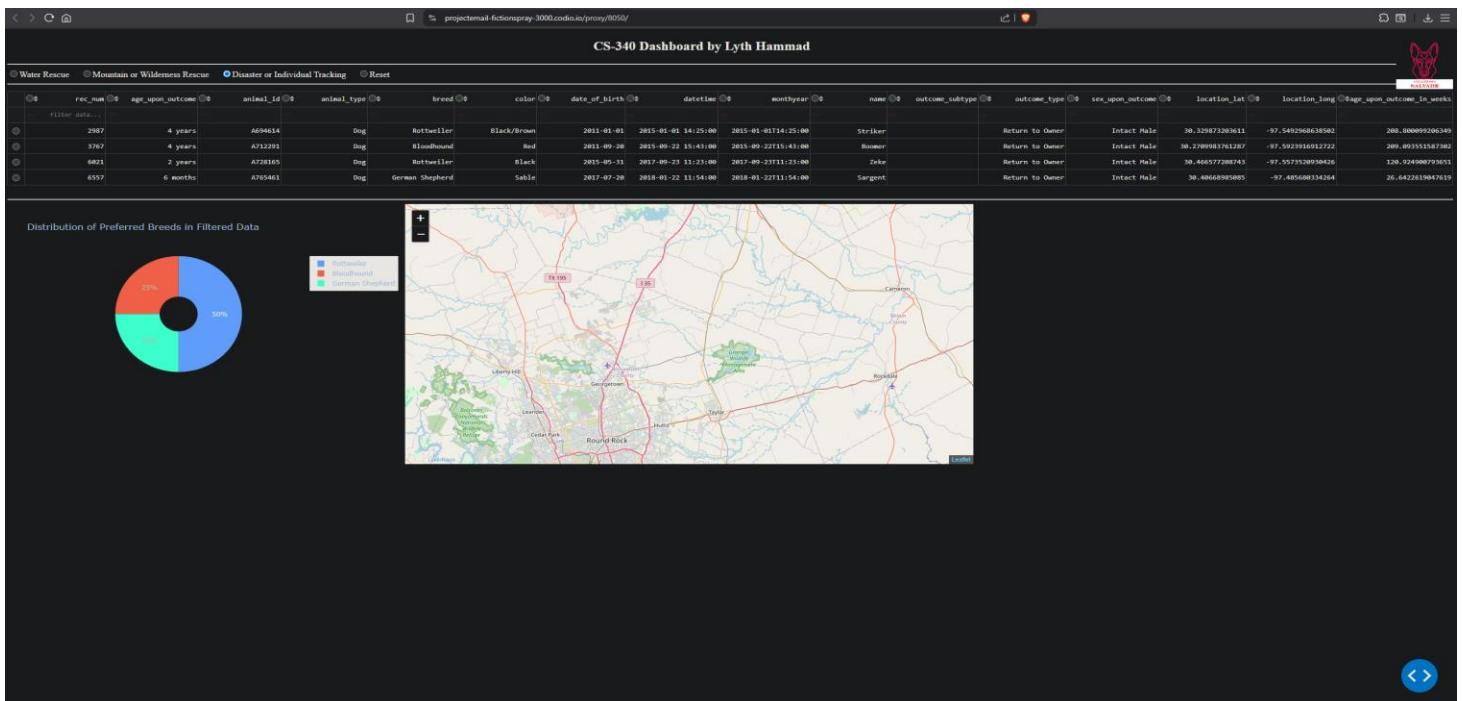
1. Dashboard Starting State (Reset Filter Applied)

- Screenshot showing the dashboard with the 'Reset' filter selected, displaying all animal types, the logo, and the identifier.



2. Water Rescue Filter Applied

- Screenshot showing the dashboard with the 'Water Rescue' filter selected, displaying only dogs matching the criteria, and showing the updated charts.



3. Mountain or Wilderness Rescue Filter Applied

- Screenshot showing the dashboard with the 'Mountain or Wilderness Rescue' filter selected, displaying only dogs matching the criteria, and showing the updated charts.

CS-340 Dashboard by Lyth Hammad

Water Rescue Mountain or Wilderness Rescue Disaster or Individual Tracking Reset

Filter data... rec_num age_upon_outcome animal_id animal_type breed color date_of_birth datetime monthyear name outcome_subtype outcome_type sex_upon_outcome location_lat location_long age_upon_outcome_in_weeks

3330	2 years	A721834	Dog	Siberian Husky	Brown/White	2014-03-05	2016-03-23 16:23:00	2016-03-23T16:23:00		Suffering	Euthanasia	Intact Male	30.5688998448899	-97.3209504880325	167.499751984127
5315	2 years	A787276	Dog	Alaskan Malamute	Tan/White	2013-07-30	2015-08-02 17:24:00	2015-08-02T17:24:00	Papa	Return to Owner	Intact Male	30.4399352919398	-97.488925656737	104.817875142857	
6821	2 years	A728165	Dog	Rottweiler	Black	2013-05-31	2017-09-23 11:23:00	2017-09-23T11:23:00	Zeke	Return to Owner	Intact Male	30.46657208745	-97.55753589390426	126.9249807939051	
6191	2 years	A794181	Dog	Siberian Husky	Black/White	2013-06-01	2015-06-02 16:41:00	2015-06-02T16:41:00	Lobo	Return to Owner	Intact Male	30.4283764229275	-97.438958176686	104.527876084127	
6557	6 months	A754561	Dog	German Shepherd	Sable	2017-07-20	2018-01-22 11:54:00	2018-01-22T11:54:00	Sargent	Return to Owner	Intact Male	30.496688985	-97.485408343664	26.6422610897639	

Distribution of Preferred Breeds in Filtered Data

Legend: Siberian Husky, Alaskan Malamute, Rottweiler, German Shepherd

Map showing the locations of the filtered animals in the area around Georgetown, Texas.

4. Disaster or Individual Tracking Filter Applied

- Screenshot showing the dashboard with the 'Disaster or Individual Tracking' filter selected, displaying only dogs matching the criteria, and showing the updated charts.

CS-340 Dashboard by Lyth Hammad

Water Rescue Mountain or Wilderness Rescue Disaster or Individual Tracking Reset

Filter data... rec_num age_upon_outcome animal_id animal_type breed color date_of_birth datetime monthyear name outcome_subtype outcome_type sex_upon_outcome location_lat location_long age_upon_outcome_in_weeks

36	6 months	A786953	Dog	Labrador Retriever Mix	Yellow	2014-12-06	2015-07-06 11:33:00	2015-07-06T11:33:00		Medical	Euthanasia	Intact Female	30.548880368653	-97.2969969858957	30.354464285743
732	2 years	A749782	Dog	Labrador Retriever Mix	Tan/White	2015-05-19	2017-07-25 14:59:00	2017-07-25T14:59:00	*Catalina	Return to Owner	Intact Female	30.6318310636757	-97.5752164857665	114.889186567237	
1321	1 year	A757158	Dog	Labrador Retriever Mix	White/Black	2016-06-30	2017-08-31 14:12:00	2017-08-31T14:12:00	Pirata	Return to Owner	Intact Female	30.5572161697962	-97.536324263878	52.3792388952381	
1628	9 months	A786871	Dog	Labrador Retriever Mix	Tan/White	2013-01-17	2013-12-23 17:13:00	2013-12-23T17:13:00	Mika	Adoption	Intact Female	30.759243803241	-97.392591976654	48.24537378193873	
1757	7 months	A742767	Dog	Labrador Retriever Mix	Black	2013-06-27	2017-02-14 15:20:00	2017-02-14T15:20:00	Merley	Return to Owner	Intact Female	30.466974597324	-97.4288017197358	33.254126084227	
1988	1 year	A7862781	Dog	Labrador Retriever Mix	Black/White	2013-11-27	2017-12-03 13:09:00	2017-12-03T13:09:00		Partner	Transfer	Intact Female	30.2840111602863	-97.4680442219677	51.472738895238
2841	2 years	A787245	Dog	Labrador Retriever Mix	Black	2013-09-22	2015-09-22 11:45:00	2015-09-22T11:45:00	Abigail	Return to Owner	Intact Female	30.7157941956301	-97.4523664078572	104.355654763905	
2225	2 years	A757341	Dog	Labrador Retriever Mix	Black/White	2015-09-01	2017-08-03 12:27:00	2017-08-03T12:27:00	19	Partner	Transfer	Intact Female	30.354162796497	-97.373217391805	109.0738742857
3319	9 months	A687748	Dog	Labrador Retriever Mix	Yellow	2013-12-09	2014-09-09 17:01:00	2014-09-09T17:01:00		Suffering	Euthanasia	Intact Female	30.72953440489	-97.3912941009824	39.244146625968
4222	1 year	A735551	Dog	Labrador Retriever Mix	Black	2015-09-25	2016-09-27 14:10:00	2016-09-27T14:10:00	Daisy	Return to Owner	Intact Female	30.5150703656925	-97.6092509677449	52.655753968254	

Distribution of Preferred Breeds in Filtered Data

Legend: Labrador Retriever Mix

Map showing the locations of the filtered animals in the area around Georgetown, Texas.