

CS 340 README - Grazioso Salvare Rescue Dog Finder Dashboard

About the Dog Finder Dashboard

This project is a full-stack web dashboard application developed for Grazioso Salvare, an international rescue animal training company. The dashboard integrates with a MongoDB database containing animal shelter data from Austin, Texas, and provides an intuitive interface for identifying potential rescue dogs based on specific criteria for different types of rescue operations.

Motivation

Grazioso Salvare trains dogs for search-and-rescue operations, including water rescue, mountain or wilderness rescue, and disaster or individual tracking. They require a tool to efficiently search through animal shelter data to identify dogs that match specific criteria for each rescue type. This dashboard application was created to streamline this selection process by providing an interactive interface with filtering capabilities and data visualizations that help Grazioso Salvare quickly identify and categorize available dogs for training.

Getting Started

To get a local copy up and running, follow these simple steps outlined in the Installation and Usage sections below.

Installation

List the tools you need to use the software and how to install them.

1. Python 3.8 or higher
2. MongoDB 4.4 or higher
3. Required Python packages:

bash

Install required packages

```
pip install dash dash-leaflet plotly pandas pymongo jupyter-dash
```

Database setup:

bash

Import the dataset into MongoDB

```
mongoimport --db AAC --collection animals --type csv --headerline  
--file aac_sh
```

Usage

The dashboard provides an intuitive interface for filtering animal data based on rescue type criteria and visualizing the results.

Code Example

Example of MongoDB query for Water Rescue dogs

Note: This template has been adapted from the following sample templates: [Make a README](#), [Best README Template](#), and [A Beginners Guide to Writing a Kickass README](#).

```
def update_dashboard(filter_type):
    # Water Rescue filter
    if filter_type == 'water':
        # Use the specifications for Water Rescue: Labrador Retriever Mix, Chesapeake Bay
Retriever,
        # Newfoundland, Intact Female, 26 weeks to 156 weeks
        query = {
            'breed': {
                '$regex': 'Labrador Retriever Mix|Chesapeake Bay Retriever|Newfoundland',
                '$options': 'i'
            },
            'sex_upon_outcome': 'Intact Female',
            'age_upon_outcome_in_weeks': {
                '$gte': 26,
                '$lte': 156
            }
        }
        df = pd.DataFrame.from_records(db.read(query))
        df.drop(columns=['_id'], inplace=True)
        return df.to_dict('records')
```

Tests

To run the application and test its functionality:

1. Launch Jupyter Notebook:

```
bash
```

```
jupyter notebook
```

2. Open the `ProjectTwoDashboard.ipynb` file and run all cells.
3. Access the dashboard at the URL displayed in the notebook output (typically <http://127.0.0.1:8050/>).
4. Test the filtering functionality by selecting different rescue types:
 - Water Rescue
 - Mountain or Wilderness Rescue
 - Disaster Rescue or Individual Tracking
 - Reset (returns to unfiltered view)
5. Verify that the data table, breed distribution chart, and geolocation map update correctly based on the selected filter.

Screenshots

Jupyter Notebook Running Dashboard Server

Note: This template has been adapted from the following sample templates: [Make a README](#), [Best README Template](#), and [A Beginners Guide to Writing a Kickass README](#).

```

if index is None:
    row = 0
else:
    row = index[0]

# Austin TX is at [30.75,-97.48]
return [
    dl.Map(style={'width': '1000px', 'height': '500px'}, center=[30.75,-97.48], zoom=10, children=[
        dl.TileLayer(id="base-layer-id"),
        # Marker with tool tip and popup
        # Column 13 and 14 define the grid-coordinates for the map
        # Column 4 defines the breed for the animal
        # Column 9 defines the name of the animal
        dl.Marker(position=[dff.iloc[row,13],dff.iloc[row,14]], children=[
            dl.Tooltip(dff.iloc[row,4]),
            dl.Popup([
                html.H1("Animal Name"),
                html.P(dff.iloc[row,9])
            ])
        ])
    ])
]

app.run_server(debug=True)

Connecting to MongoDB at nv-desktop-services.apporto.com:33270
Connected to MongoDB successfully
Dash app running on http://127.0.0.1:30420/

```

(Screenshot Description: Screenshot showing Jupyter Notebook with the running server address visible at <http://127.0.0.1:30420>)

Dashboard Data Table View

CS-340 Dashboard - Joseph Klenk

Grazioso Salvare - Rescue Dog Finder

Created by Joseph Klenk

Filter by Rescue Type:

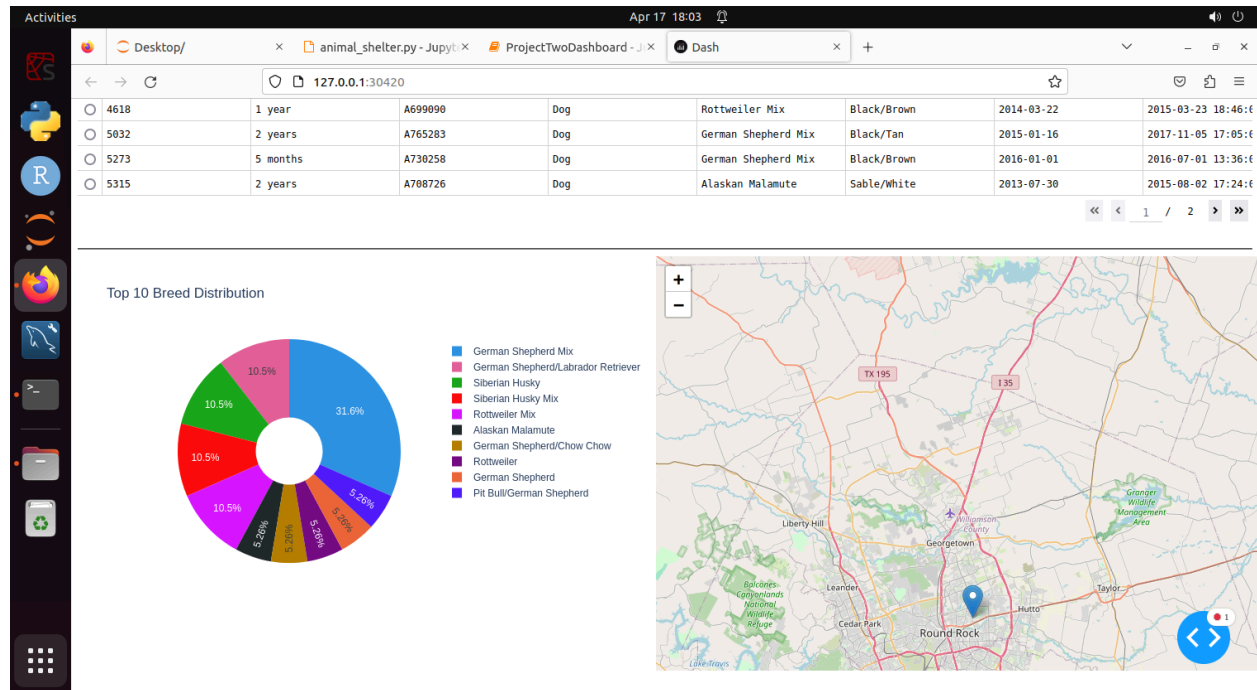
☐ Water Rescue ☒ Mountain or Wilderness Rescue ☐ Disaster Rescue or Individual Tracking ☐ Reset

#	age_upon_outcome	animal_id	animal_type	breed	color	date_of_birth	datetime
1233	7 months	A722362	Dog	German Shepherd/Labrador Retriever	Tan/White	2015-08-25	2016-03-25 12:11:6
2275	1 year	A668767	Dog	German Shepherd Mix	Black/Tan	2012-11-09	2013-12-09 18:29:6
3100	1 year	A742163	Dog	German Shepherd/Labrador Retriever	Tan	2016-03-17	2018-01-18 17:50:6
3130	2 years	A721834	Dog	Siberian Husky	Brown/White	2014-03-05	2016-03-23 16:23:6
3244	7 months	A692441	Dog	Siberian Husky Mix	Red/White	2014-04-07	2014-11-20 18:07:6
3930	10 months	A743413	Dog	Siberian Husky Mix	Black/White	2016-04-11	2017-02-11 13:18:6
4618	1 year	A699090	Dog	Rottweiler Mix	Black/Brown	2014-03-22	2015-03-22 16:16:6
5032	2 years	A765283	Dog	German Shepherd Mix	Black/Tan	2015-01-16	2017-01-16 13:05:6
5273	5 months	A730258	Dog	German Shepherd Mix	Black/Brown	2016-01-01	2016-07-01 13:36:6

Note: This template has been adapted from the following sample templates: [Make a README](#), [Best README Template](#), and [A Beginners Guide to Writing a Kickass README](#).

(Screenshot Description: Screenshot showing the dashboard with the Grazioso Salvare logo, title, filtering options, and interactive data table displaying animal data)

Dashboard Visualizations (Breed Distribution and Geolocation Map)



(Screenshot Description: Screenshot showing the pie chart of breed distribution and geolocation map visualization of animal locations)

Roadmap/Features

Future enhancements could include:

- Additional filter criteria for more specialized rescue operations
- Advanced analytics on rescue dog success rates
- Integration with shelter APIs for real-time data updates
- Mobile optimization for field use

Contact

Your name: Joseph Klenk

Note: This template has been adapted from the following sample templates: [Make a README](#), [Best README Template](#), and [A Beginners Guide to Writing a Kickass README](#).