# CS 340 PROJECT TWO README

## About the Project/Project Title

Project Title: Grazioso Salvare Animal Rescue Dashboard

This project is an interactive dashboard designed for Grazioso Salvare to visualize and explore animal rescue data from the Austin Animal Center. The dashboard helps identify suitable dogs for specialized rescue missions, such as Water Rescue, Wilderness Rescue, Disaster or Individual Tracking Rescue. It provides interactive tables, breed distribution charts, and geolocation maps to make data-driven decisions.

## Motivation

Grazioso Salvare requires a user-friendly tool to quickly identify dogs that meet specific criteria for various types of rescue missions. The motivation behind this project is to create a centralized, interactive dashboard that allows staff and volunteers to efficiently filter animals by breed, age, and sex, visualize breed distributions, and locate animals geographically. The dashboard ensures better planning, faster decision-making, and improved rescue outcomes.

## Getting Started

To get a local copy up and running, follow these steps:

1. Clone or download the project files
2. Ensure that MongoDB is running and that you have access credentials
3. Place the Grazioso Salvare Logo PNG in the project folder
4. Install required Python packages

## Installation

This dashboard uses Python and several libraries. To install the necessary tools:

pip install dash jupyter\_dash dash\_leflet plotly pandas numpy matplotlib

* MongoDB: Used as the backend database to store animal records
* JupyterDash: Allows the dashboard to run in JupyterLab or Jupyter Notebook
* Dash & Dash Components: Provides the web-based interface with tables, charts, and maps
* Plotly Express: Generates visualizations such as breed distribution pie charts
* Pandas/NumPy: Handles data manipulation and transformation

## Usage

1. Open the Jupyter Notebook or JupyterLab environment.
2. Run the dashboard script: app.run\_server(mode=’jupyterlab’)
3. Interact with the dashboard:
   1. Select a Rescue Type using radio buttons
   2. View the DataTable to see filtered animals
   3. Click on table rows to update the geolocation map
   4. Observe breed distributions via the pie chart

### Code Example

Filter by different types: A screenshot of a computer code

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Display geolocation for selected animal:

A screenshot of a computer program

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A screenshot of a computer code

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### Tests

* Verify DataTable filtering: Select different rescue types and ensure the table updates correctly
* Verify Charts: The breed distribution pie chart should update according to the table filter
* Verify Map functionality: Selecting a row should display the correct geolocation on the map
* Debug any missing or incorrect values by checking MongoDB query results

### ScreenshotsA screenshot of a computer AI-generated content may be incorrect.

A screenshot of a map

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## Contact

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