# Grazioso Salvare Rescue Animal Training Software Readme

## About the Project/Project Title

Grazioso Salvare is a rescue animal training company that identifies good candidates for this training. They approached Global Rain, a software engineering company to create an application that could allow them to easily sort through animals in the region from a database of animal shelters, and more aptly locate animals that fit into a set criteria they have created.

## Motivation

We chose to use MongoDB as it is a fast, efficient, and flexible program that works with our backend so we can access the database directly. As Grazioso Salvare was wanting statistical analysis of the animals in the region, using Dash as an open-source framework allowed for the software application to be data driven and provide exactly what the customer needed from this product.

## Getting Started

You will need:

* MongoDB installed on the system
* The latest version of Python
* Installation of software onto device

After the installation of these requirements are complete, access to the database will need to be set up using the terminal:

* Create a new Mongo database
* Import the CSV file (Should contain all the animals in the regions animal shelters for the company)
* Create a new user with access to database with read/write permissions

## Installation

You will need:

* Backend – MongoDB installation tools: <https://docs.mongodb.com/manual/installation/>
* Frontend – Dash Framework: <https://dash.plotly.com/installation>
* Latest version of Python: <https://www.python.org/downloads/>
* JupyterLab: <https://jupyter.org/install>

## Usage

The CRUD application offers the application to work with the Mongo database.

* C🡺Create a new entry in the database, so as new animals and data need to be processed, it is able to do so.
* R🡺Read the database, either all of the animals in its entirety, or through specific queries and functionality in the software application, it can sort through this database and fetch only the necessary information the user needs.
* U🡺Update the database as the information on these animals change.
* D🡺Delete information from the database as required.

The software application has four selections to choose from:

* Water Rescue (Figure A)
* Mountain and Wilderness Rescue (Figure B)
* Disaster Rescue and Individual Tracking (Figure C)
* RESET

These selections filter through specific breeds of animals, their sex, and their age according to the specifications that Grazioso Salvare had given, as these traits are what they have found to be the most successful in their respective fields.

Included below are the specifications provided:

Table

Description automatically generated

The database is interactable, allowing the user to select up to five different animals. If their location information is available, it will be displayed by a token on the geomap at the bottom of the application (Figure H).

A pie chart updates its information of the animal breeds depending on the filters the user has selected, allowing the user to see the ratio of breeds in the region as well as how many there currently are in the database.

\*Before using the Program, ensure that credentials have been entered into the terminal and that the MongoDB is running in the background while using it\*

**Challenges**

Setting up the functionality of filtering through specific breeds and their traits proved more challenging than expected, as originally, I had aimed to make a specific function to call from the CRUD file to do so, and while it worked from my testing script, however, it never worked as intended when calling from the application. So I had to go back and rework how I would call the read function.

Other challenges were making sure the layout was set up correctly and in a manner that was both readable and displayed the application as intended.

## Contact

Your name: Alexandrea Fullwood (Teigeler)

**Resources:**

**Figure A: Water Rescue Filter**

**Graphical user interface, application

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**Figure B: Mountain and Wilderness Rescue FilterGraphical user interface, application

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**Figure C: Disaster Rescue and Individual Tracking Filter**

**Graphical user interface, application

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**Figure D, E, F, G: Pie Chart that updates with each filter and displays total number of specific animal for each piece of the pie**

**Graphical user interface, chart, application, pie chart

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**Graphical user interface, chart, application, pie chart

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**Figure H: GeoMap that shows animal location. Selecting Token will show heads up display that is populated with the animal’s info.**

**Graphical user interface, application

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**Figure I: Grazioso Salvare Logo and Unique Identifier**

**Graphical user interface, application

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