**Gravioso Salvare README**

**Project Overview**

Developed by Global Rain, this project is part of the ongoing collaboration between us and Gravioso Salvare, an international rescue-animal training company. The goal of this module is to provide a comprehensive dashboard that allows Gravioso Salvare to easily identify dogs that are good candidates for their training programs. This tool works with data from a MongoDB database and visualizes it in a clean interface that also has tailored filtering options for specific types of rescue preferences.

**Dashboard Functionality**

* **Dynamic Data Table –** Displays relevant shelter entries. Dynamically updates based on applied filters.   
    
  A screen shot of a white sheet with a red logo

  Description automatically generated
* **Interactive Filter Options –** Buttons at the top of the dashboard allow users to filter the presented data based on the preferences of the selected rescue type (Water Rescue, Mountain or Wilderness Rescue, and Disaster or Individual Tracking).

A screenshot of a computer

Description automatically generatedA screen shot of a dog

Description automatically generatedA screenshot of a calendar

Description automatically generated

* **Geolocation Chart –** Map that shows the pinpoint locations of the currently selected animal within the data table.   
    
  A screenshot of a computer screen

  Description automatically generated

* **Data Chart -** Pie chart shows the breakdown of the breeds within the currently applied filters. This chart only represents the first 50 entries in order to prevent an illegible chart when no filter is applied.  
    
  A screenshot of a computer

  Description automatically generated  
  A screenshot of a computer

  Description automatically generated

**Installation Requirements**

**Python –** The language this module is coded in.

**Dash Framework** – Allows for the creation of interactive, web-based dashboards.

**MongoDB Database** **–** Database management system this dashboard is designed to work with.

**CRUD Python Module –** Also developed by Global Rain, this module facilitates the Create, Read, Update, and Delete operations for the MongoDB database. Allows for dynamic data retrieval and user manipulation.

**Getting Started**

1. Ensure Python and relevant libraries (Dash, Pandas, and Plotly) are installed.
2. Ensure MongoDB database is installed and configured with relevant shelter data.
3. Clone both the CRUD and Dashboard modules from the GitHub.
4. Configure CRUD module with connection parameters for MongoDB database
5. Run the Dashboard module to start the debug Dash server and access the dashboard through the local URL.

**Challenges and Solutions**

* **Filter Specificity –** Due to the many different factors that make up Gravioso Salvare’s preferred dog breed for each rescue type, specialized queries were used to ensure every requirement was accounted for.
* **Illegible Chart –** When many different breeds are represented in the pie chart, it becomes illegible and runs off the page. To combat this, I first researched a way to categorize breeds with low representation into an “other” category. After some testing, I found that this would have required too many resources, so I opted to utilize Pandas’ iloc function to only represent the first 50 entries in the data table.

**Development History**

This dashboard’s development comes after multiple weeks of work on the CRUD module, which was designed to be used in tandem with this dashboard and a MongoDB database. Once the CRUD module was completed, the dashboard to represent the data was developed. First, the user interface and buttons for the dashboard were deployed. Then, filtering functionality for each button was implemented. The final functionalities to be added to the dashboard were the pie chart and geolocation map.

**Conclusion**

Global Rain hopes this dashboard will become a crucial tool for Gravioso Salvare in their efforts to find suitable animals for rescue training. This project is also being developed and released as open source as per Gravioso Salvare’s request to allow similar organizations to adapt the technology. We hope this commitment to open source encourages other organizations to use this tool to address their needs and help foster a community of collaboration in rescue operations.