Project Two README

**Project Name**

Animal Rescue Dashboard

**Description**

This application was developed for Grazioso Salvare, a rescue-animal training organization to help identify and categorize potential search-and-rescue dogs from regional animal shelters. The dashboard connects to a MongoDB database and provides an intuitive, user-friendly interface for filtering dogs based on key traits helping staff quickly find candidates for different types of rescue scenarios.

Developed by Global Rain this full stack application supports CRUD operations, real-time filtering, and seamless integration with shelter data provided by non-profit agencies around Austian, Texas. It is designed to be easily adaptable to other animal rescue organizations.

The application provides 4 distinct sorting modes tailored to find the best possible candidates for rescue scenarios based on research conducted by Grazioso Salvare

**Filter 1: All**

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**Filter 2: Water Rescues**

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**Filter 3: Mountain / Wilderness Rescues**

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**Filter 4: Disaster / Individual Tracking Rescues**

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**Development Tools and Frameworks**

[MongoDB](https://www.mongodb.com/docs/)

We chose to use MongoDB as the solution for our database due to its flexibility in handling both structured and unstructured data, which is ideal for varying formats like you would see in animal shelter records. Its documentation-based structure integrates with python using the pymongo library that enables the use of CRUD operations through python allowing us to easily filter and manipulate data in our database. MongoDB also allows for quick scaling and agile development which were key points in the needs of Grazioso Salvare

[Dash Framework](https://dash.plotly.com/)

The user interface was developed using the Dash framework by Ploty, which is a python-based web application framework ideal for building data-driven applications. Dash provides built-in components for graphs, tables, and user controls which allow for the rapid development of a clean and interactive dashboard.

These tools were selected to keep the nature of this project open-source and easily maintainable while also being very user friendly for non-technical users.

**Development Process**

Database Setup – we created a MongoDB database and populated it with the animal rescue data provided by our non-profit partners.

API Development – we created an API in python to perform CRUD operations on our MongoDB database using pymongo

Data Queries – we curated queries based on research done by Grazioso Salvare in order to identify potential candidates for various rescue scenarios

User Interface – we created a user interface using the Dash Framework in order to create an intuitive display to help aid Grazioso Salvare in their goal of identifying potential rescue dogs.

**Challenges Encountered**

Learning the Dash Framework – as we were new to the dash framework the learning curve proved to have a slight learning curve causing us to have problems with certain layouts and components of the framework. We were able to overcome this challenge by studying the Dash documentation and exploring examples posted by the community in places such as Stack Overflow.