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SNHU CS-340

7-2 Project Two Submission

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**Grazioso Salvare Animal Dashboard**

Project Overview:

The Grazioso Salvare Animal Dashboard is an interactive web application designed to assist in the rescue operations of animals. It allows users to filter data based on various rescue types such as Water Rescue, Mountain or Wilderness Rescue, Disaster Rescue or Individual Tracking, and a Reset option to return to the unfiltered state.

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Functionality:

The dashboard includes the following features:

- An interactive data table displaying animal data retrieved from a database.

- Filtering options to view specific animals suited for different rescue operations.

- A pie chart visualization for breed distribution.

- A map view to geolocate animals.A screenshot of a computer

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Description automatically generated A screenshot of a map

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Tools and Technologies

MongoDB

- Chosen as the database solution due to its flexibility with document schemas.

- Facilitates easy integration with Python, allowing for complex queries and data operations.

- Provides scalability and performance benefits for handling large datasets.

Python:

- Core programming language used for the application logic.

- Libraries such as Pandas for data manipulation and Plotly for visualization are employed.

Resources and Applications:

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

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

Reproduction Steps:

1. Install MongoDB and Python.

2. Set up the environment with required Python packages.

3. Initialize the MongoDB database with provided data.

4. Run the Python script to start the Dash server.

5. Use Jupyter to lunch the website

Challenges and Solutions:

Data Conversion: Ensuring that all data matches the expected type in Dash DataTables required careful data type conversions using Pandas.

Database Querying: Formulating the right MongoDB queries to filter data according to user input was initially challenging but was resolved by leveraging MongoDB's powerful querying capabilities.