# **Grazioso Salvare Dashboard**

## **Purpose**

Grazioso Salvare is an innovative international rescue-animal training company. This project involves creating a web application dashboard to help Grazioso Salvare identify dogs from animal shelters around Austin, Texas, that are suitable for search-and-rescue training. The dashboard allows users to filter the data based on various rescue types and provides a dynamic view of the filtered data.

## **Tools Used**

* **Python:** The primary programming language used for development.
* **MongoDB:** Used as the database to store and retrieve animal data.
* **Dash:** A Python framework used to build the web application dashboard.
* **Pandas:** Used for data manipulation and analysis.

### **Rationale for Tools**

* **MongoDB:** Chosen for its flexibility in handling large datasets with varying structures. It allows for easy storage and retrieval of JSON-like documents, which is ideal for the animal shelter data.
* **Dash:** Provides a powerful framework for building interactive web applications with minimal effort. It integrates seamlessly with Plotly for creating dynamic charts and maps.
* **Pandas:** Offers robust data manipulation capabilities, making it easy to transform and filter the data as needed for the dashboard.

## **Steps to Reproduce the Project**

### **Prerequisites**

* Install Python 3.x
* Install MongoDB and set up a database with the animal shelter data

Install required Python packages:  
bash  
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pip install dash

Pip install jupyter\_dash

pip install dash-leaflet

pip install pandas

pip install pymongo

### **Instructions**

1. **Set Up the MongoDB Database:**

Import the animal shelter data into MongoDB:  
bash  
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mongoimport --username="${MONGO\_USER}" --password="${MONGO\_PASS}" --port=${MONGO\_PORT} --host=${MONGO\_HOST} --db AAC --collection animals --authenticationDatabase admin --type csv --headerline ./aac\_shelter\_outcomes.csv

1. **Clone the Repository:**
   * Clone the project repository to your local machine.
2. **Run the Dashboard:**
   * Open the ProjectTwoDashboard.ipynb file in Jupyter Notebook or JupyterLab.
   * Ensure the Grazioso\_Salvare\_Logo.png file is in the same directory as the notebook file.
   * Execute all cells in the notebook to start the Dash server.
   * Open the provided URL (usually http://127.0.0.1:8050/) in your web browser to view the dashboard.

## **Explanation of the Code**

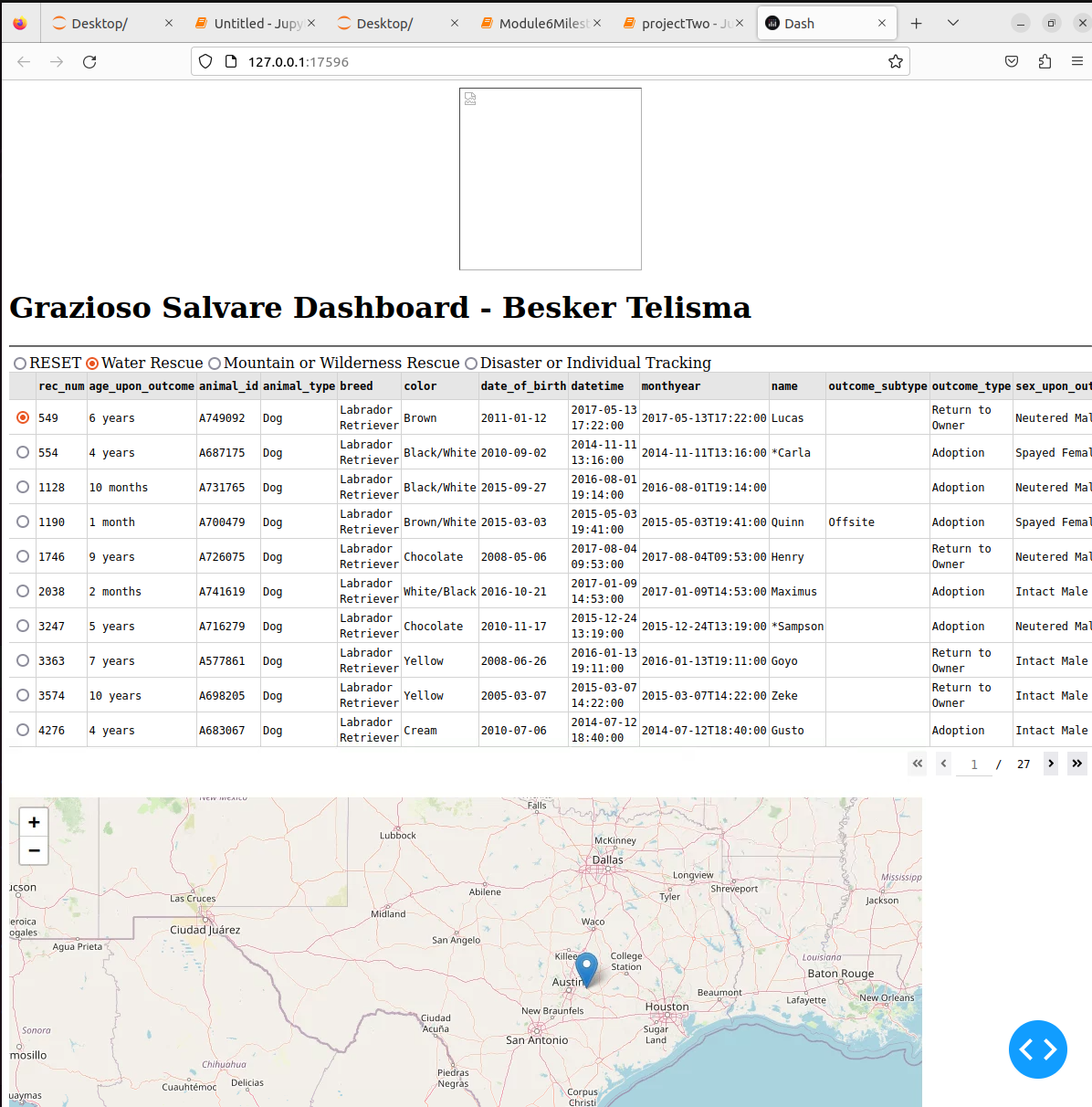
* **MongoDB as the Model Component:**
  + MongoDB is used to store and manage the animal shelter data. It allows for flexible and scalable data storage, making it easy to retrieve and filter the data using Python's PyMongo library.
* **Dash Framework:**
  + Dash provides the view and controller structure for the web application. It allows for the creation of interactive and dynamic web applications using Python. The framework integrates well with Plotly for data visualization and offers a wide range of UI components.

## **Functionality**

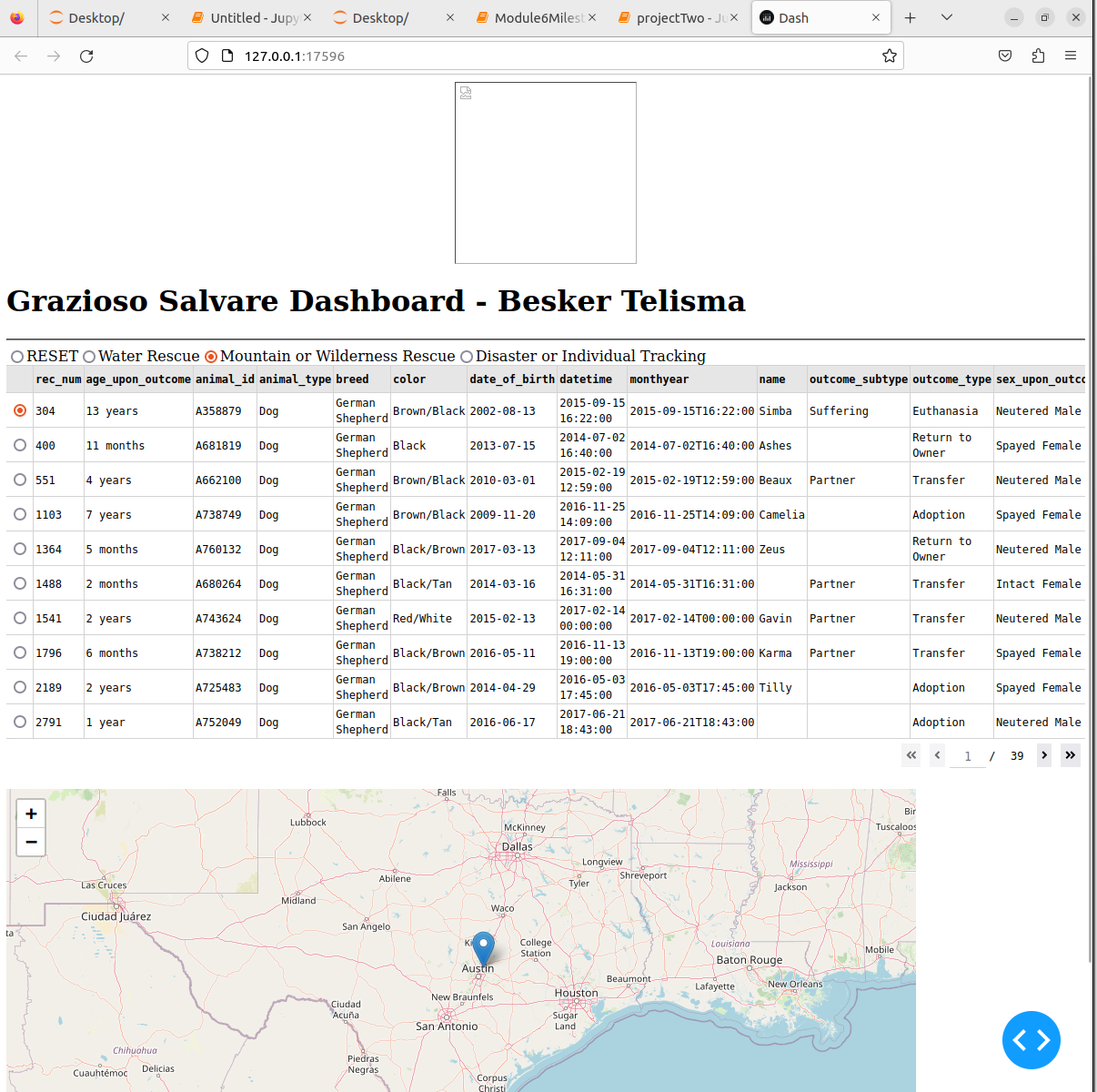
The dashboard provides the following functionalities:

1. **Display an Unfiltered Data Table:** Shows all available data from the animal shelters.
2. **Interactive Filters:** Users can filter the data based on:
   * Water Rescue
   * Mountain or Wilderness Rescue
   * Disaster or Individual Tracking
   * Reset (to return to the original, unfiltered state)
3. **Dynamic Data Table:** The data table updates based on the selected filter.
4. **Geolocation Chart:** Displays the location of the selected animal on a map.
5. **Unique Identifier:** The dashboard includes the Grazioso Salvare logo and the developer's name.

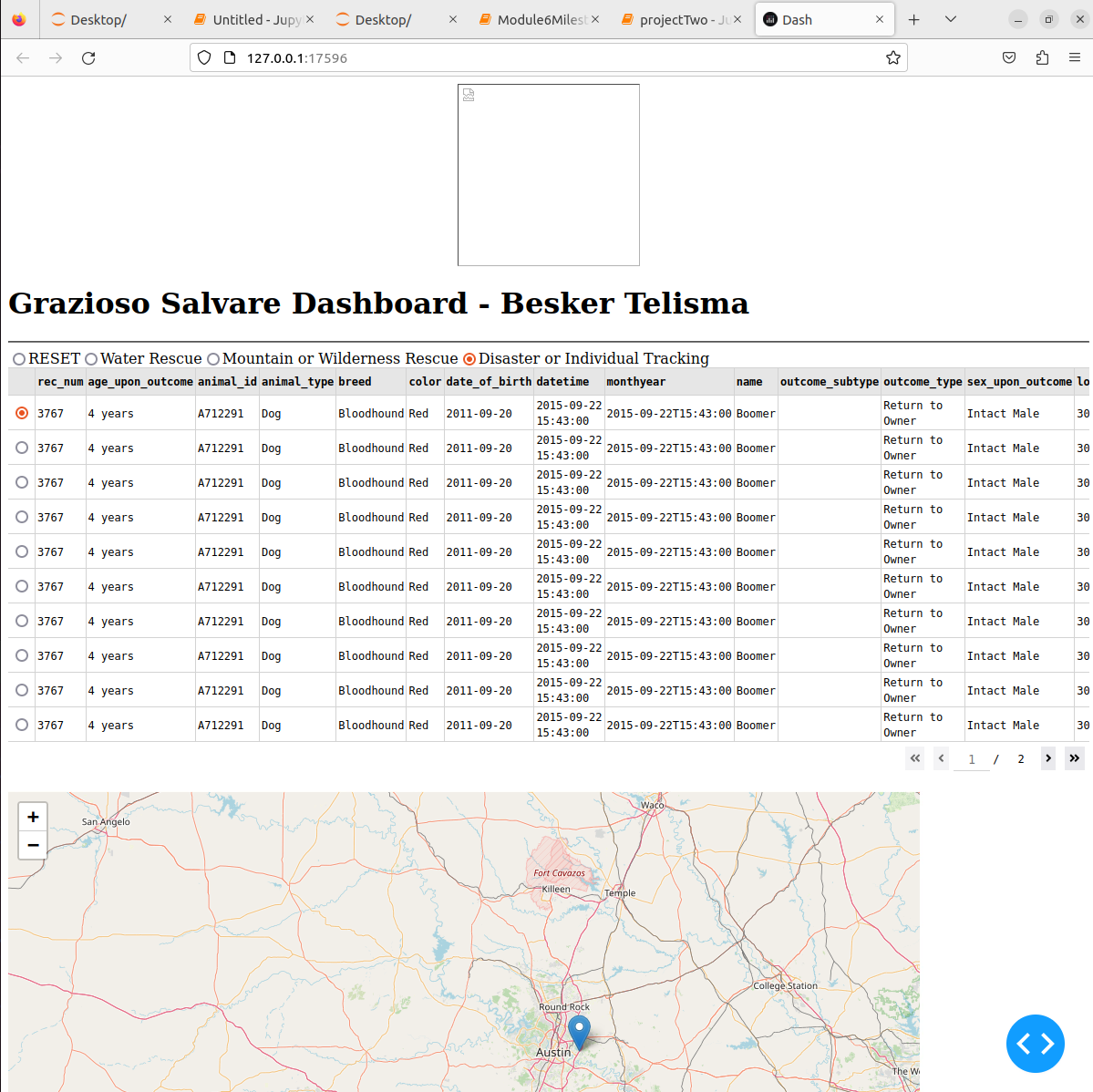
**Water Rescue**

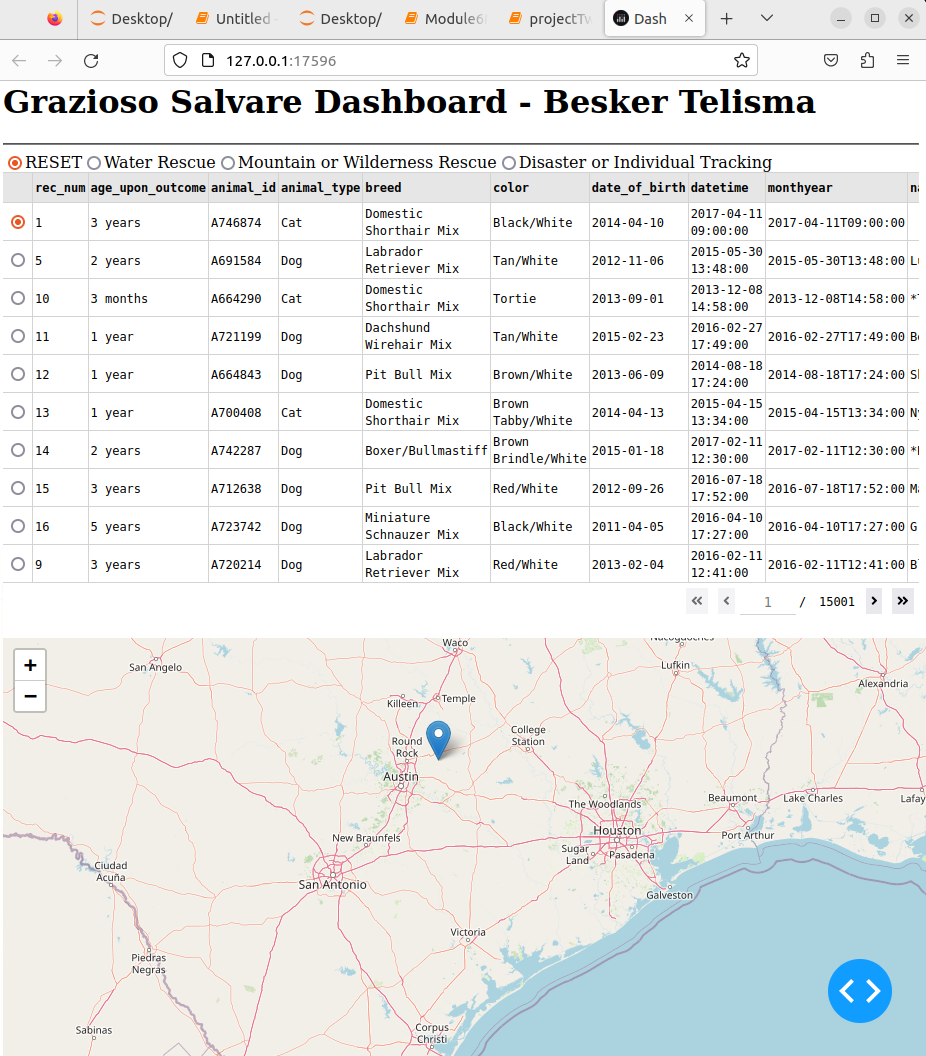
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**Mountain or Wilderness Rescue**

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**Disaster or Individual Tracking**

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**Reset:  
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