# CS 340 README

## About the Project/Project Title

The purpose of this project is to develop software for Grazioso Salvare, which is an innovative rescue animal training company. This application gives the user the opportunity to access a database of animals. Within this database, the user can either create, read, update, or delete information about the animals that are currently stored in the database. Additionally, this project gives users a user-friendly web application that users can benefit from different search and filter capabilities, a geolocation map feature, and charts to assist with finding specific animals for search and rescue.

## Motivation

The motivation behind this project is to increase and grow the company’s ability to find dogs that are available for adoption. Also, this project exists to demonstrate my ability to manipulate data within a database.

## Getting Started

To get a local copy up and running, follow these simple example steps:

1. Within your terminal, import the “aac\_shelter\_outcomes.csv” CSV file.
2. Next, parsing the data within the document by creating a simple and complex index.
3. To be able to authenticate, a user would need to open a new terminal(separate from the root) and create a new “aacuser” account.
4. Next, each user would need some form of Python installed on their devices or utilize Python Jupyter Notebook
5. Finally, once the program is running successfully, an IP address will be provided for access to the application.

## Installation

Below is a list of tools and libraries with a link to their resources. This list is necessary to utilize this application successfully.

1. **Python**: is an interpreted, object-oriented, high-level programming language with dynamic semantics. **Link:** <https://www.python.org/downloads/>
2. **MongoDB**: is a document database with the scalability and flexibility that you want with the querying and indexing that you need. **Pricing:** <https://www.mongodb.com/pricing>
3. **Jupyter Notebook:** is the latest web-based interactive development environment for notebooks, code, and data. Jupyter Notebook can be used either in a browser or installed. **Link:** <https://jupyter.org/>
4. **Dash & Plotly:** is a Python framework for building web applications. You can import the Dash Core Components into your Jupyter Notebook. A plotly library must be installed to utilize the charts. **Link:** <https://plotly.com/dash/>
5. **Pandas**: is a fast, powerful, flexible, and easy-to-use open-source data analysis and manipulation tool, built on top of the [Python](https://www.python.org/) programming language. **Link:** <https://pandas.pydata.org/>

## Usage

Use this space to show useful examples of how your project works and how it can be used. Be sure to include examples of your code, tests, and screenshots.

### Code Example

The code within this application allows users to manipulate data within a dashboard environment by using widgets that have different functionality. All code examples can be seen below for visual understanding.

* Radio buttons implemented.

A computer code with red text

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* Histogram graph implemented.

A screenshot of a computer code

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* Interactive data table implemented

A screenshot of a computer program

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* Geolocation Chart implemented

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### Tests

Within this application, there are four functions that can be tested. The first two are the create and read functionalities and the last two functions execute these functions. Once the application obtains input from the user, it is able to run the create function. While the read function requests specific data that has to be within the database to generate a result.

All tests can be seen below for visual understanding within the “Screenshots” category

### Screenshots

* Running Dash: Water Rescue

A screenshot of a computer

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* Running Dash: Mountain/Wilderness Rescue

A screenshot of a computer

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* Running Dash: Disaster Rescue and Individual Tracking

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**Challenges**

The main issue I kept running into was the default code that was given to me would not run correctly because this line of code, “df.drop(columns=['\_id'],inplace=True).” I would have to comment this code out for my application to run. Most of my issues came from implementing the CRUD functionalities from previous assignments. I resolved these issues by reaching out to my instructor and implementing his feedback into my assignments.

## Contact

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