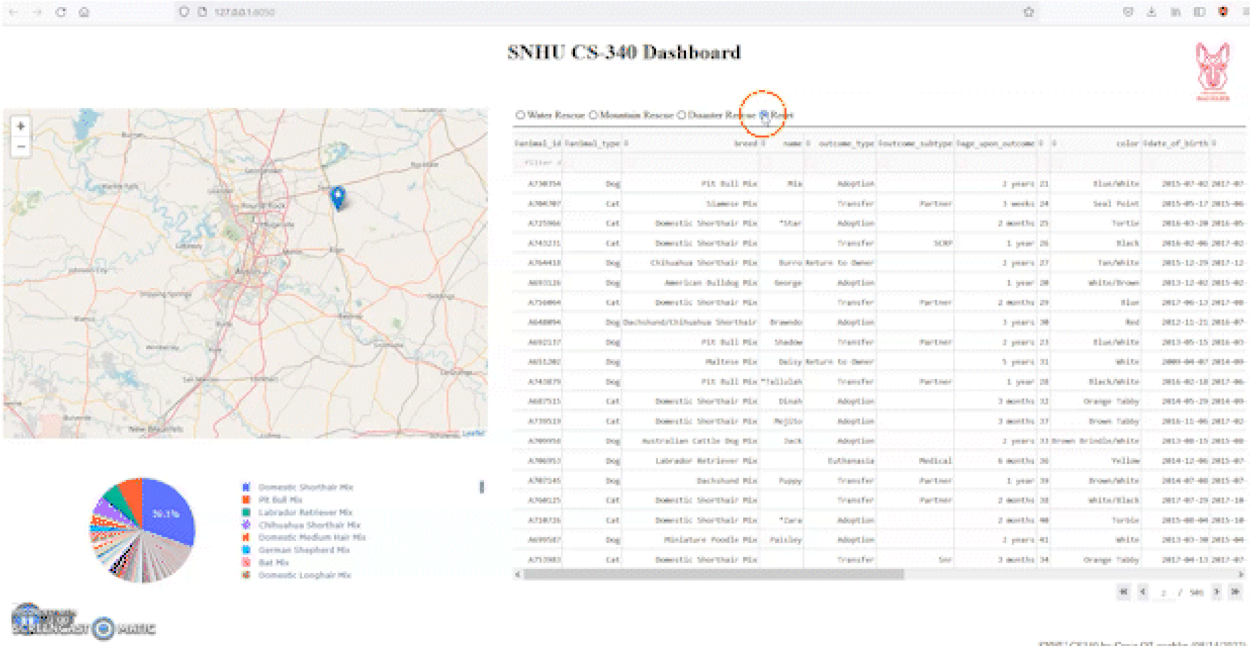
*Version: 1.0*

*Date: 08/14/2022*

# CS 340 GS Dashboard README

## About the Project/Project Title

GS Dashboard – a quick and easy way to visualize animal shelter data!



SNHU CS-340 Dashboard

○ Water Rescue ○ Mountain Rescue ○ Disaster Rescue ● Reset

| animal_id | animal_type | breed | name | outcome_type | outcome_subtype | age_upon_outcome | | color | date_of_birth | |
|---|---|---|---|---|---|---|---|---|---|---|
| A730754 | Dog | Pit Bull Mix | Mia | Adoption | | 2 years | 21 | Blue/White | 2015-07-02 | 2017-07- |
| A704787 | Cat | Siamese Mix | | Transfer | Partner | 3 weeks | 24 | Seal Point | 2015-05-17 | 2015-06- |
| A725966 | Cat | Domestic Shorthair Mix | *Star | Adoption | | 2 months | 25 | Tortie | 2016-03-28 | 2016-05- |
| A743231 | Cat | Domestic Shorthair Mix | | Transfer | SCRP | 1 year | 26 | Black | 2016-02-06 | 2017-02- |
| A764418 | Dog | Chihuahua Shorthair Mix | Burro | Return to Owner | | 2 years | 27 | Tan/White | 2015-12-29 | 2017-12- |
| A693126 | Dog | American Bulldog Mix | George | Adoption | | 1 year | 28 | White/Brown | 2013-12-02 | 2015-02- |
| A756004 | Cat | Domestic Shorthair Mix | | Transfer | Partner | 2 months | 29 | Blue | 2017-06-13 | 2017-08- |
| A648094 | Dog | Dachshund/Chihuahua Shorthair | Bramdo | Adoption | | 3 years | 30 | Red | 2012-11-21 | 2016-07- |
| A692137 | Dog | Pit Bull Mix | Shadow | Transfer | Partner | 2 years | 23 | Blue/White | 2013-05-15 | 2016-03- |
| A651302 | Dog | Maltese Mix | Daisy | Return to Owner | | 5 years | 31 | White | 2009-04-07 | 2014-09- |
| A743879 | Dog | Pit Bull Mix | *Tallulah | Transfer | Partner | 1 year | 28 | Black/White | 2016-02-18 | 2017-06- |
| A687515 | Cat | Domestic Shorthair Mix | Dinah | Adoption | | 3 months | 32 | Orange Tabby | 2014-05-29 | 2014-09- |
| A739519 | Cat | Domestic Shorthair Mix | Mojito | Adoption | | 3 months | 37 | Brown Tabby | 2016-11-06 | 2017-02- |
| A709958 | Dog | Australian Cattle Dog Mix | Jack | Adoption | | 2 years | 33 | Brown Brindle/White | 2013-08-15 | 2015-08- |
| A700913 | Dog | Labrador Retriever Mix | | Euthanasia | Medical | 6 months | 36 | Yellow | 2014-12-06 | 2015-07- |
| A707145 | Dog | Dachshund Mix | Puppy | Transfer | Partner | 1 year | 39 | Brown/White | 2014-07-08 | 2015-07- |
| A760125 | Cat | Domestic Shorthair Mix | | Transfer | Partner | 2 months | 38 | White/Black | 2017-07-29 | 2017-10- |
| A718726 | Cat | Domestic Shorthair Mix | *Zara | Adoption | | 2 months | 40 | Torbie | 2015-08-04 | 2015-10- |
| A699587 | Dog | Miniature Poodle Mix | Paisley | Adoption | | 2 years | 41 | White | 2013-03-30 | 2015-04- |
| A712983 | Cat | Domestic Shorthair Mix | | Transfer | Snr | 3 months | 34 | Orange Tabby | 2017-04-13 | 2017-07- |

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## Motivation

GS Dashboard is an open-source tool created for viewing information about shelter animals as a project for the rescue-animal training company Grazioso Salvare (recommend checking out their work on their website). Thanks to them they have allowed this tool to be open-source to aid anyone looking to do similar things!

## Getting Started

GS Dashboard is built in Python 3 using the Dash framework. It further uses MongoDB, a modern, non-relational database to store and access information. To serve as an API for the database, we are using our own MongoCRUD module which is built on top of the PyMongo library. Finally, this project also relies on the popular Python library pandas for data analysis.

### *Why MongoDB?*

MongoDB is a flexible database with well established APIs to work with many languages. Setup is minimal and much of the backend is taken care of by default without thinking about it. It is a simple and modern solution that is also scalable to the project size.

### *Why Dash?*

Dash makes it easy to create complex tables and other dataviews directly in Python. It also ports out access to Leaflet, a popular open map engine, directly to Python, that is otherwise accessible in JavaScript. Finally, it makes running a new local server instance as simple as a single line of code.

## Installation

venv – *recommended* – create a new environment to isolate projects and avoid version confusion

```
python -m venv PATH
```

pymongo - **required** – use pip to install from pyPI

```
pip install pymongo
or
python -m pip install pymongo
```

mongo_crud – **required** – currently not available on pyPI

Check the documentation here

mongoDB – **required** – database engine

A free local instance of a mongoDB server can be created using MongoDB Community Server
https://www.mongodb.com/try/download/community
and following instructions in the associated documentation

Dash framework – **required** – use pip to install from pyPI

```
pip install dash
```

pandas – **required** – use pip to install from pyPI

```
pip install pandas, numpy
```

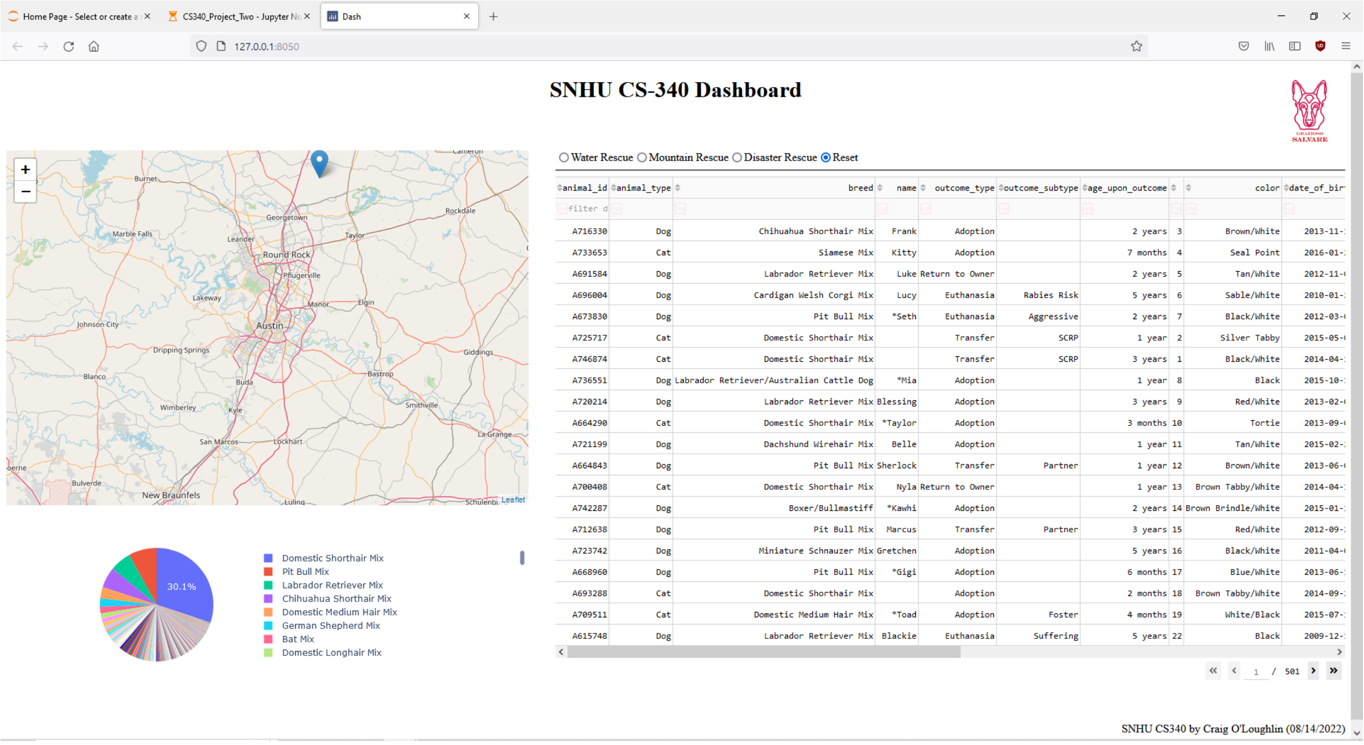
## Usage

GS Dashboard will need a MongoDB server instance with an active database along with configuring the MongoCRUD module to the proper server location and login information. Check out the MongoCRUD documentation for assistance with this.

Afterwards, simply run GS Dashboard to start up a local Dash server.

## Examples

### 1. The default dashboard view upon loading. All database entries are displayed.



SNHU CS-340 Dashboard

○ Water Rescue ○ Mountain Rescue ○ Disaster Rescue ● Reset

| animal_id | animal_type | breed | name | outcome_type | outcome_subtype | age_upon_outcome | | color | date_of_bir |
|---|---|---|---|---|---|---|---|---|---|
| filter d | | | | | | | | | |
| A716330 | Dog | Chihuahua Shorthair Mix | Frank | Adoption | | 2 years | 3 | Brown/White | 2013-11- |
| A733653 | Cat | Siamese Mix | Kitty | Adoption | | 7 months | 4 | Seal Point | 2016-01- |
| A691584 | Dog | Labrador Retriever Mix | Luke | Return to Owner | | 2 years | 5 | Tan/White | 2012-11- |
| A696004 | Dog | Cardigan Welsh Corgi Mix | Lucy | Euthanasia | Rabies Risk | 5 years | 6 | Sable/White | 2010-01- |
| A673830 | Dog | Pit Bull Mix | *Seth | Euthanasia | Aggressive | 2 years | 7 | Black/White | 2012-03- |
| A725717 | Cat | Domestic Shorthair Mix | | Transfer | SCRP | 1 year | 2 | Silver Tabby | 2015-05- |
| A746874 | Cat | Domestic Shorthair Mix | | Transfer | SCRP | 3 years | 1 | Black/White | 2014-04- |
| A736551 | Dog | Labrador Retriever/Australian Cattle Dog | *Mia | Adoption | | 1 year | 8 | Black | 2015-10- |
| A720214 | Dog | Labrador Retriever Mix | Blessing | Adoption | | 3 years | 9 | Red/White | 2013-02- |
| A664290 | Cat | Domestic Shorthair Mix | *Taylor | Adoption | | 3 months | 10 | Tortie | 2013-09- |
| A721199 | Dog | Dachshund Wirehair Mix | Belle | Adoption | | 1 year | 11 | Tan/White | 2015-02- |
| A664843 | Dog | Pit Bull Mix | Sherlock | Transfer | Partner | 1 year | 12 | Brown/White | 2013-06- |
| A700408 | Cat | Domestic Shorthair Mix | Nyla | Return to Owner | | 1 year | 13 | Brown Tabby/White | 2014-04- |
| A742287 | Dog | Boxer/Bullmastiff | *Kawhi | Adoption | | 2 years | 14 | Brown Brindle/White | 2015-01- |
| A712638 | Dog | Pit Bull Mix | Marcus | Transfer | Partner | 3 years | 15 | Red/White | 2012-09- |
| A723742 | Dog | Miniature Schnauzer Mix | Gretchen | Adoption | | 5 years | 16 | Black/White | 2011-04- |
| A668960 | Dog | Pit Bull Mix | *Gigi | Adoption | | 6 months | 17 | Blue/White | 2013-06- |
| A693288 | Cat | Domestic Shorthair Mix | | Adoption | | 2 months | 18 | Brown Tabby/White | 2014-09- |
| A709511 | Cat | Domestic Medium Hair Mix | *Toad | Adoption | Foster | 4 months | 19 | White/Black | 2015-07- |
| A615748 | Dog | Labrador Retriever Mix | Blackie | Euthanasia | Suffering | 5 years | 22 | Black | 2009-12- |

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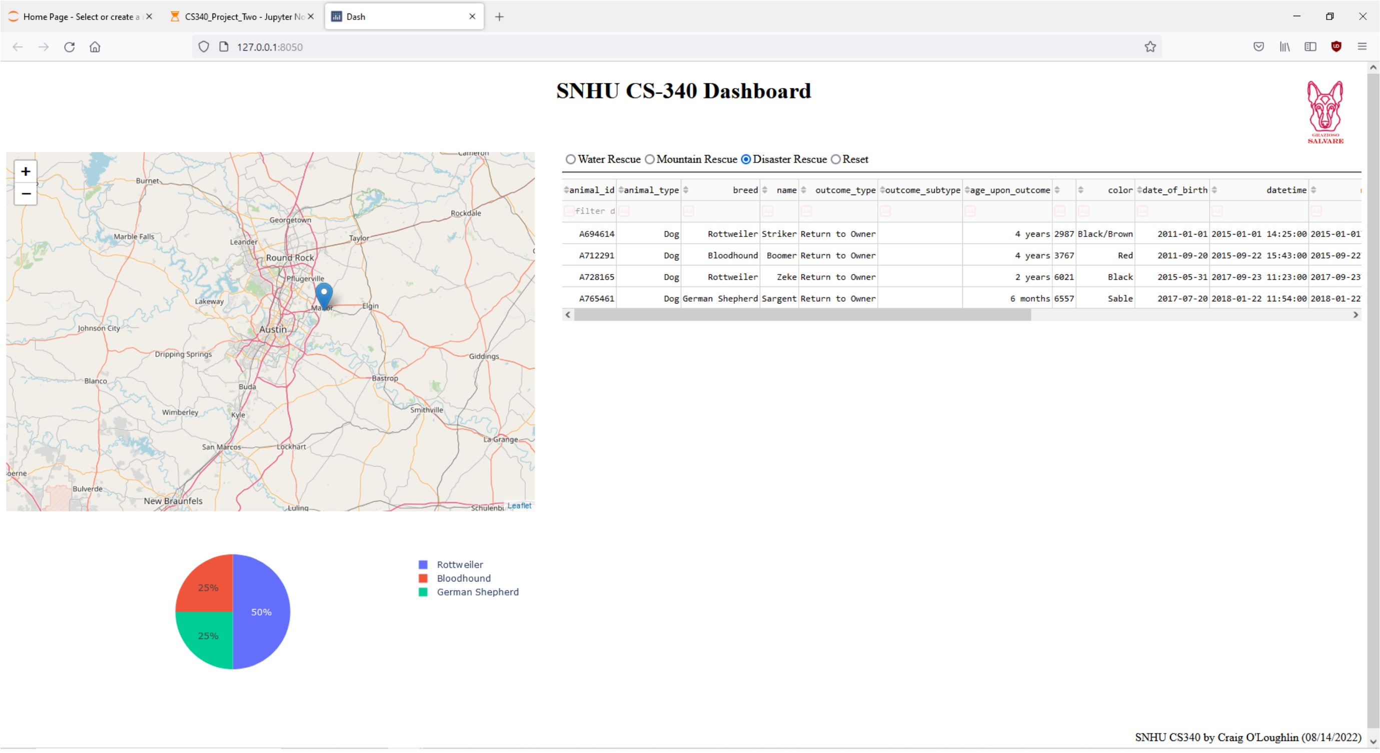
2. **Use the filter radio buttons to sort only the animal information you like. These radio filters are customizable in the dashboard module code if you would like to change search criteria or add more.**

3. **Disaster Rescue selected.**



# SNHU CS-340 Dashboard

○ Water Rescue ○ Mountain Rescue ● Disaster Rescue ○ Reset

| animal_id | animal_type | breed | name | outcome_type | outcome_subtype | age_upon_outcome | | color | date_of_birth | datetime | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| filter d | | | | | | | | | | | |
| A694614 | Dog | Rottweiler | Striker | Return to Owner | | 4 years | 2987 | Black/Brown | 2011-01-01 | 2015-01-01 14:25:00 | 2015-01-01 |
| A712291 | Dog | Bloodhound | Boomer | Return to Owner | | 4 years | 3767 | Red | 2011-09-20 | 2015-09-22 15:43:00 | 2015-09-22 |
| A728165 | Dog | Rottweiler | Zeke | Return to Owner | | 2 years | 6021 | Black | 2015-05-31 | 2017-09-23 11:23:00 | 2017-09-23 |
| A765461 | Dog | German Shepherd | Sargent | Return to Owner | | 6 months | 6557 | Sable | 2017-07-20 | 2018-01-22 11:54:00 | 2018-01-22 |

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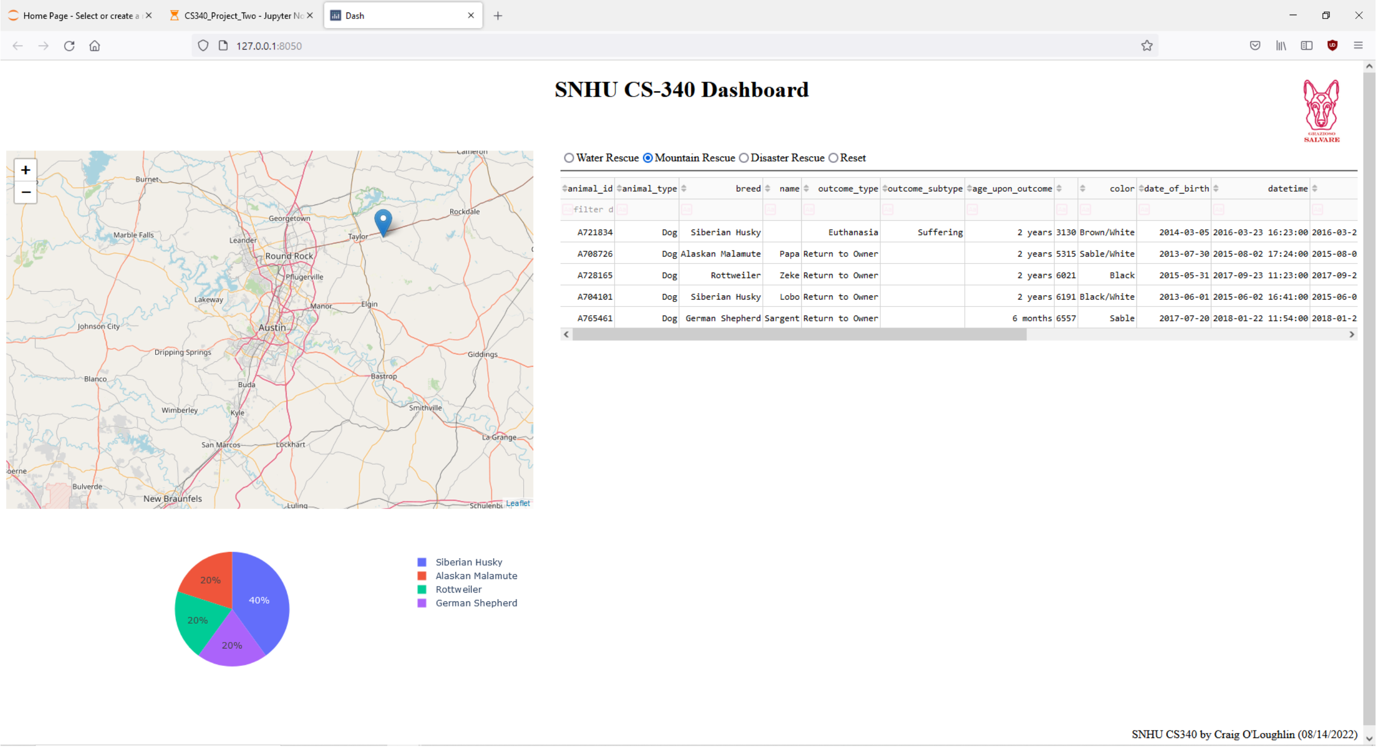
## 4. Mountain Rescue selected.



SNHU CS-340 Dashboard

○ Water Rescue ● Mountain Rescue ○ Disaster Rescue ○ Reset

| animal_id | animal_type | breed | name | outcome_type | outcome_subtype | age_upon_outcome | | color | date_of_birth | datetime | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| filter d | | | | | | | | | | | |
| A721834 | Dog | Siberian Husky | | Euthanasia | Suffering | 2 years | 3130 | Brown/White | 2014-03-05 | 2016-03-23 16:23:00 | 2016-03-2 |
| A708726 | Dog | Alaskan Malamute | Papa | Return to Owner | | 2 years | 5315 | Sable/White | 2013-07-30 | 2015-08-02 17:24:00 | 2015-08-0 |
| A728165 | Dog | Rottweiler | Zeke | Return to Owner | | 2 years | 6021 | Black | 2015-05-31 | 2017-09-23 11:23:00 | 2017-09-2 |
| A704101 | Dog | Siberian Husky | Lobo | Return to Owner | | 2 years | 6191 | Black/White | 2013-06-01 | 2015-06-02 16:41:00 | 2015-06-0 |
| A765461 | Dog | German Shepherd | Sargent | Return to Owner | | 6 months | 6557 | Sable | 2017-07-20 | 2018-01-22 11:54:00 | 2018-01-2 |

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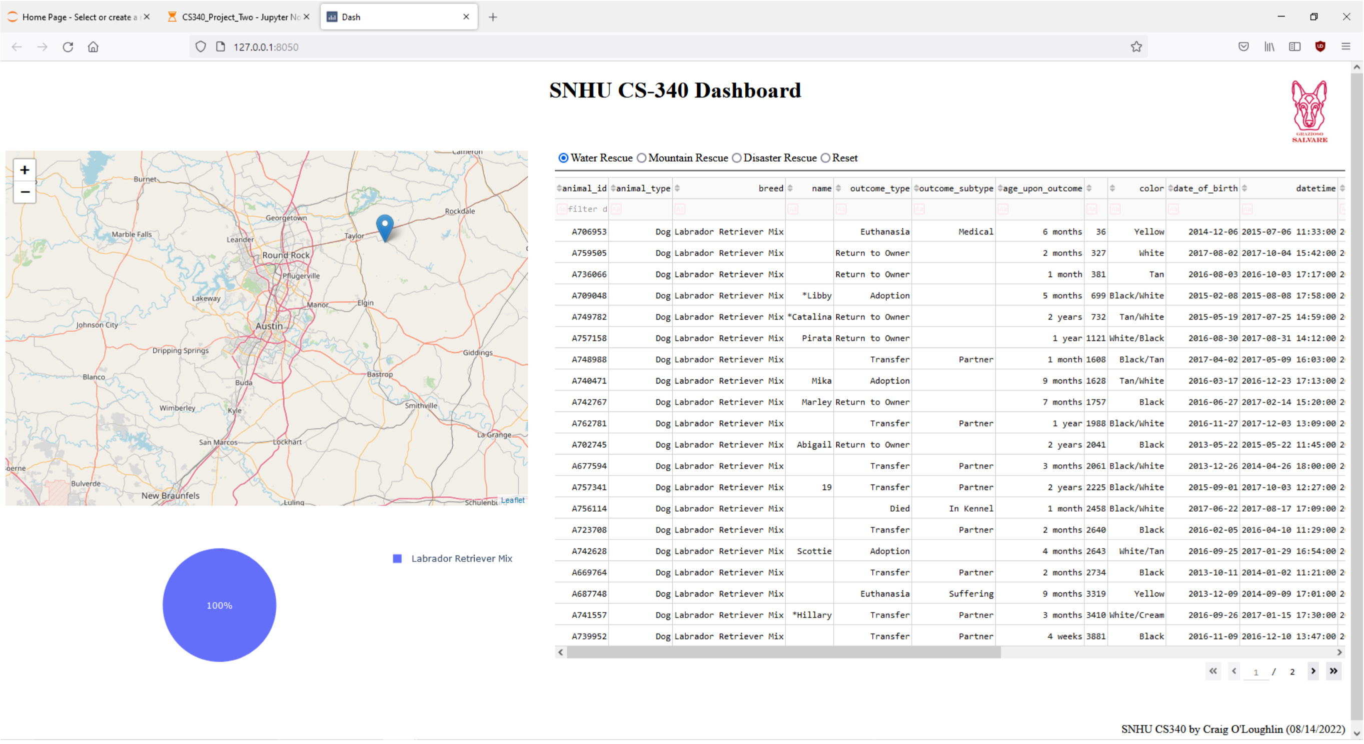
## 5. Water Rescue selected.



SNHU CS-340 Dashboard

● Water Rescue ○ Mountain Rescue ○ Disaster Rescue ○ Reset

| animal_id | animal_type | breed | name | outcome_type | outcome_subtype | age_upon_outcome | | color | date_of_birth | datetime | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| filter d | | | | | | | | | | | |
| A706953 | Dog | Labrador Retriever Mix | | Euthanasia | Medical | 6 months | 36 | Yellow | 2014-12-06 | 2015-07-06 11:33:00 | 2 |
| A759505 | Dog | Labrador Retriever Mix | | Return to Owner | | 2 months | 327 | White | 2017-08-02 | 2017-10-04 15:42:00 | 2 |
| A736066 | Dog | Labrador Retriever Mix | | Return to Owner | | 1 month | 381 | Tan | 2016-08-03 | 2016-10-03 17:17:00 | 2 |
| A709048 | Dog | Labrador Retriever Mix | *Libby | Adoption | | 5 months | 699 | Black/White | 2015-02-08 | 2015-08-08 17:58:00 | 2 |
| A749782 | Dog | Labrador Retriever Mix | *Catalina | Return to Owner | | 2 years | 732 | Tan/White | 2015-05-19 | 2017-07-25 14:59:00 | 2 |
| A757158 | Dog | Labrador Retriever Mix | Pirata | Return to Owner | | 1 year | 1121 | White/Black | 2016-08-30 | 2017-08-31 14:12:00 | 2 |
| A748988 | Dog | Labrador Retriever Mix | | Transfer | Partner | 1 month | 1608 | Black/Tan | 2017-04-02 | 2017-05-09 16:03:00 | 2 |
| A740471 | Dog | Labrador Retriever Mix | Mika | Adoption | | 9 months | 1628 | Tan/White | 2016-03-17 | 2016-12-23 17:13:00 | 2 |
| A742767 | Dog | Labrador Retriever Mix | Marley | Return to Owner | | 7 months | 1757 | Black | 2016-06-27 | 2017-02-14 15:20:00 | 2 |
| A762781 | Dog | Labrador Retriever Mix | | Transfer | Partner | 1 year | 1988 | Black/White | 2016-11-27 | 2017-12-03 13:09:00 | 2 |
| A702745 | Dog | Labrador Retriever Mix | Abigail | Return to Owner | | 2 years | 2041 | Black | 2013-05-22 | 2015-05-22 11:45:00 | 2 |
| A677594 | Dog | Labrador Retriever Mix | | Transfer | Partner | 3 months | 2061 | Black/White | 2013-12-26 | 2014-04-26 18:00:00 | 2 |
| A757341 | Dog | Labrador Retriever Mix | 19 | Transfer | Partner | 2 years | 2225 | Black/White | 2015-09-01 | 2017-10-03 12:27:00 | 2 |
| A756114 | Dog | Labrador Retriever Mix | | Died | In Kennel | 1 month | 2458 | Black/White | 2017-06-22 | 2017-08-17 17:09:00 | 2 |
| A723708 | Dog | Labrador Retriever Mix | | Transfer | Partner | 2 months | 2640 | Black | 2016-02-05 | 2016-04-10 11:29:00 | 2 |
| A742628 | Dog | Labrador Retriever Mix | Scottie | Adoption | | 4 months | 2643 | White/Tan | 2016-09-25 | 2017-01-29 16:54:00 | 2 |
| A669764 | Dog | Labrador Retriever Mix | | Transfer | Partner | 2 months | 2734 | Black | 2013-10-11 | 2014-01-02 11:21:00 | 2 |
| A687748 | Dog | Labrador Retriever Mix | | Euthanasia | Suffering | 9 months | 3319 | Yellow | 2013-12-09 | 2014-09-09 17:01:00 | 2 |
| A741557 | Dog | Labrador Retriever Mix | *Hillary | Transfer | Partner | 3 months | 3410 | White/Cream | 2016-09-26 | 2017-01-15 17:30:00 | 2 |
| A739952 | Dog | Labrador Retriever Mix | | Transfer | Partner | 4 weeks | 3881 | Black | 2016-11-09 | 2016-12-10 13:47:00 | 2 |

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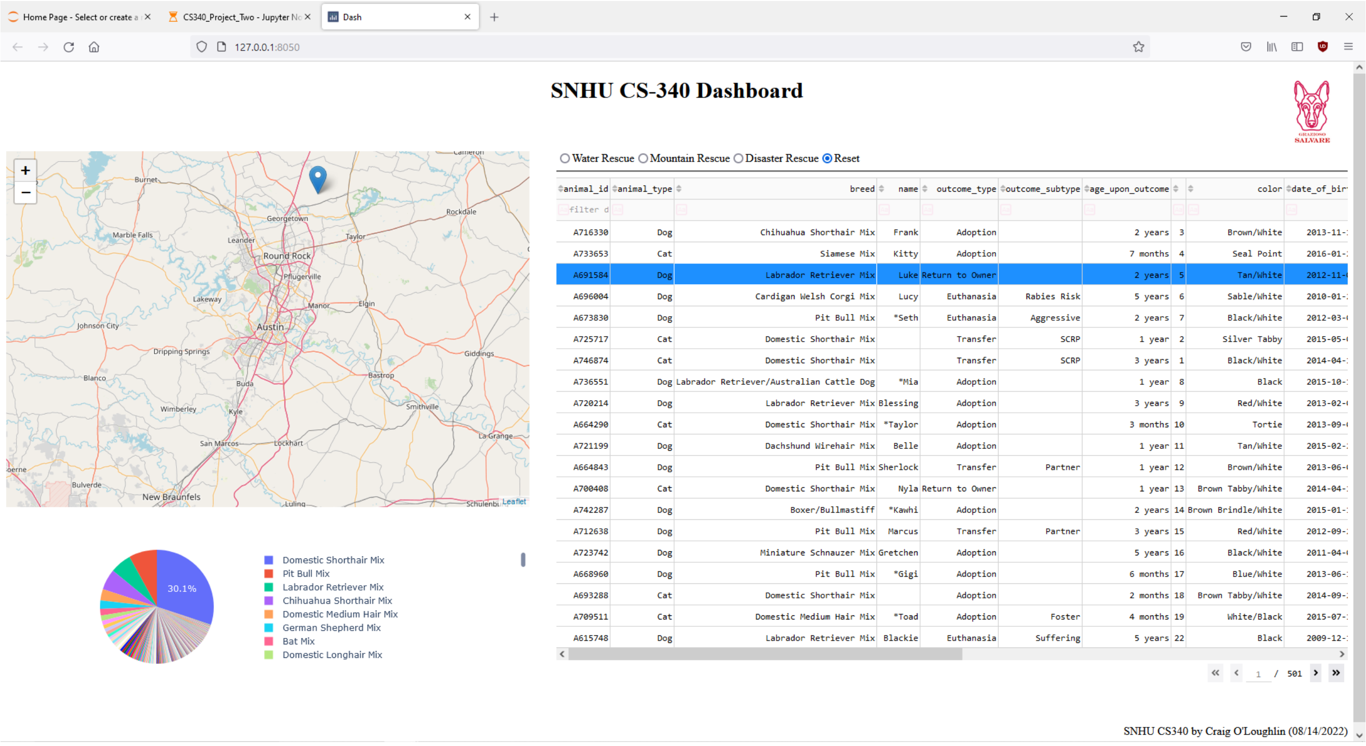
6. **Click anywhere on a row of data to select it. This animal's geolocation appears on the map. If no row is selected, by default the first animal on that page appears on the map instead.**



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| A691584 | Dog | Labrador Retriever Mix | Luke | Return to Owner | | 2 years | 5 | Tan/White | 2012-11- |
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| A673830 | Dog | Pit Bull Mix | *Seth | Euthanasia | Aggressive | 2 years | 7 | Black/White | 2012-03- |
| A725717 | Cat | Domestic Shorthair Mix | | Transfer | SCRP | 1 year | 2 | Silver Tabby | 2015-05- |
| A746874 | Cat | Domestic Shorthair Mix | | Transfer | SCRP | 3 years | 1 | Black/White | 2014-04- |
| A736551 | Dog | Labrador Retriever/Australian Cattle Dog | *Mia | Adoption | | 1 year | 8 | Black | 2015-10- |
| A720214 | Dog | Labrador Retriever Mix | Blessing | Adoption | | 3 years | 9 | Red/White | 2013-02- |
| A664290 | Cat | Domestic Shorthair Mix | *Taylor | Adoption | | 3 months | 10 | Tortie | 2013-09- |
| A721199 | Dog | Dachshund Wirehair Mix | Belle | Adoption | | 1 year | 11 | Tan/White | 2015-02- |
| A664843 | Dog | Pit Bull Mix | Sherlock | Transfer | Partner | 1 year | 12 | Brown/White | 2013-06- |
| A700408 | Cat | Domestic Shorthair Mix | Nyla | Return to Owner | | 1 year | 13 | Brown Tabby/White | 2014-04- |
| A742287 | Dog | Boxer/Bullmastiff | *Kawhi | Adoption | | 2 years | 14 | Brown Brindle/White | 2015-01- |
| A712638 | Dog | Pit Bull Mix | Marcus | Transfer | Partner | 3 years | 15 | Red/White | 2012-09- |
| A723742 | Dog | Miniature Schnauzer Mix | Gretchen | Adoption | | 5 years | 16 | Black/White | 2011-04- |
| A668960 | Dog | Pit Bull Mix | *Gigi | Adoption | | 6 months | 17 | Blue/White | 2013-06- |
| A693288 | Cat | Domestic Shorthair Mix | | Adoption | | 2 months | 18 | Brown Tabby/White | 2014-09- |
| A709511 | Cat | Domestic Medium Hair Mix | *Toad | Adoption | Foster | 4 months | 19 | White/Black | 2015-07- |
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**Development Process**

Development of this project was done primarily using the Dash framework with the documentation available at https://dash.plotly.com/. We also used MongoDB and our own CRUD module to build and access a database of animals. Development started simple with one widget at a time and making sure that each feature was working correctly before moving to the next.

Any comments or additional info, or collab requests, find me at:

**Contact**
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https://github.com/oloughlinc