

CS 340 README Template

Use this template to complete your README file. When completing the template, keep the headings as they are so that your document has a clear organization. Remove the italicized prompt text after you have completed each section for a polished final document.

About the Project/Project Title

This project implements a dashboard to view and manipulate data for Grazioso Salvare using databases created by several animal shelters in the Austin, Texas area. This project utilizes the MongoDB structure, driven by a created CRUD module in Python used by a locally hosted, web-based dashboard. This project includes features to analyze and manipulate data such as filters, data point mapping, and data modelling.

Motivation

This project was started by Grazioso Salvare, a company committed to identifying dogs suitable for search-and-rescue training. This project happened in coordination with several non-profit animal shelters in the Austin, Texas area. The purpose of this project was to utilize databases provided by these shelters to create a dashboard that included several data manipulation tools. Grazioso Salvare wanted a way to filter the database based on criteria for the following search and rescue cases: water rescue, mountain/wilderness rescue, and disaster rescue/individual tracking. Additionally, the data table includes selectable rows to show the location of each animal on a map and a graph showing the breakdown of each animal by breed. This allows for easy, usable access to the shelter's database and allows for productive, and efficient animal identification and acquisition.

Getting Started

The first thing that is needed for this project is the .csv file that this data is based on. This data is then added to the MongoDB database using the MongoShell and a created user login. Next, the animalShelter.py file must be downloaded and placed in the same directory as the ProjectTwoDashboard.ipynb file so that the dashboard can access the crud module. Next, the ProjectTwoDashboard.ipynb file must be opened in the Jupyter Notebook environment. From here, press run and click the local host link to access the dashboard. Installation procedures for each external resource is explained in the next section.

Installation

There are several pieces of software that are utilized in this project, they will be listed with their usage justification and steps to acquire the software below:

- MongoDB: This is the database framework utilized in this project. This framework was chosen
 due to the flexibility of schemas for MongoDB databases, the easy scaling potential, and the
 functionality of Python Scripts in conjunction with the database. MongoDB can be installed
 online for several platforms such as Linux, Windows, and Mac. The link to the download
 MongoDB is: https://www.mongodb.com/try/download/community
- **Spyder IDE:** This is the integrated development environment used to create the CRUD module which drives the web-based application. This IDE is great for data analysis scripting and is a great choice for this scenario. The link to download Spyder is: https://www.spyder-ide.org/

Note: This template has been adapted from the following sample templates: <u>Make a README</u>, <u>Best README</u> Template, and A Beginners Guide to Writing a Kickass README.



- Python 3.9.12: This is the version of Python utilized in this project. The Python language is used
 to create the CRUD module and the construction of the dashboard. The link to install Python is:
 https://www.python.org/downloads/release/python-3912/
- **Jupyter Notebook:** Jupyter notebooks are used to create the dashboard and its attributes. It is another Pythond IDE but allows for web-based applications to be hosted from it. Jupyter Notebook can be installed using the following code block in a Python script:

pip install notebook

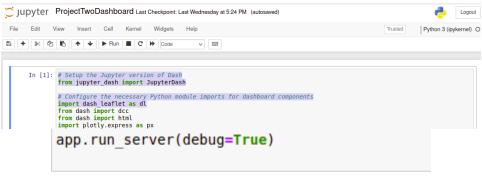
Dash Framework: The Dash Framework is the framework used to control, create, and host the
dashboard. This framework allows for a combination of html code to create the dashboard and
Python code to create the logic of the dashboard. The Dash Framework can be installed from
the following code block in a Python script:

from dash import Dash

Usage

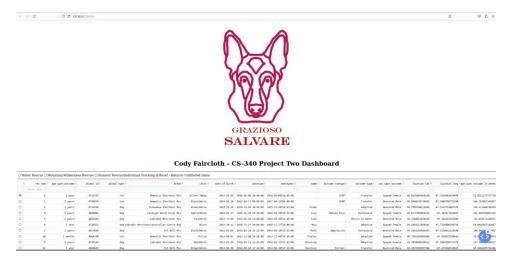
Accessing the Dashboard

To access the dashboard first press the run button then click the local host link. Screenshots of this is shown below:



Dash app running on http://127.0.0.1:20234/

After clicking this link, you should be connected to the dashboard. It should look like the following screenshot:



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Data Filters

This dashboard includes a data filter feature that returns different data frames based on the filters. To select a different data frame, simply click the corresponding button to the filter you would like to select. Currently, there are filters for water rescue, mountain/wilderness rescue, disaster rescue/individual tracking, and a filter to reset the data frame to the full database. Screenshots of each filter is shown below:

Full Database: GRAZIOSO SALVARE

Cody Faircloth - CS-340 Project Two Dashboard **Distance** Recover** Chanader Recover**

	LEC unu o	age_upon_outcome t	animal_id =	animal_type:	breed t	color	date_of_birth	o datetimo	northyear 1	name 1	outcome_subtype =	outcome_type :	sex_upon_outcome :	location_lat:	location_long	tage_upon_outcome_in_week
0	36	6 months	A706953	Dog	Labrador Retriever Mix	Yellow	2014-12-06	2015-07-06 11:33:00	2015-07-06711:33:00		Medical	Euthanasia	Intact Female	39.5466662359533	-97.2999969858957	30.354464285714
0	732	2 years	A749782	Dog	Labrador Matriever Mix	Tan/White	2015-05-10	2817-07-25 34:59:00	2017-07-25T14:59:00	*Catalina		Return to Owner	Intact Female	39.6136218636757	-97.5752164857645	114.00918650793
0	3323	1 year	4757158	Dog	Labrador Retriever Mix	White/Wlack	2016-00-20	2817-08-31 14:12:00	2017-08-31714:12:00	Pirata		Return to Owner	Intact Female	39.5572363697962	-97.5363224263878	52.370238095236
0	3629	9 months	A740473	Dog	Labrador Retriever Mix	Tan/White	2916-03-17	2816-12-23 17:13:00	2016-12-23717:13:00	PERo		Adoption	Intact Female	39.7566243832343	-97.7392549176654	49.245337381587
0	1757	7 months	A742767	Dog	Labrador Metriever Mix	Black	2916-06-27	2817-92-14 15:29:00	2017-02-14T15:20:00	Marley		Return to Owner	Intact Female	39.4868754937324	-97.4299917197358	33.2341269840
0	2988	1 year	A762783	Dog	Labrador Metriever Mix	Black/White	2916 - 11 - 27	2817-12-03 13:99:00	2017-12-03T13:09:00		Partner	Transfer	Intact Female	39.2848111162863	-97.4699542229677	53.07027380952
0	2841	2 years	A702745	Dog	Labrador Matriever Mix	Black	2913-05-22	2815-05-22 11:45:00	2015-05-22711:45:00	Abigail		Return to Owner	Intact Female	39.7157942956301	-97.4523664878572	284.35565476290
0	2225	2 years	A757341	Dog	Labrador Matriever Mix	Black/White	2915-09-01	2817-10-03 12:27:00	2017-10-03712:27:00	19	Partner	Transfer	Intact Female	39.3814182796497	-97.7373217381883	189.87418714285
0	3329	9 months	A687748	Dog	Labrador Matriever Mix	Tellow	2913-12-89	2814-09-09 17:01:00	2014-09-09717:01:00		Suffering	Euthanasia	Intact Female	39.725653449409	-97.3912941889824	39.244146825396
	4222	1 year	A735551	Dog	Labrador Metriever Mix	Black	2915-09-25	2816-09-27 14:10:00	2016-09-27T14:18:00	Daisy		Return to Owner	Intact Female	39.5156783656925	-97.0092509677409	52,65575396825

Mountain/Wilderness Rescue:

Wate	r Rescue @ Mo	untain/Wilderness Re	scue O Disaster F	escue/Individua	al Tracking O Reset -	Returns Unfilter	od State									
	rec_run i	ege_spon_outcome (minst, ad t	animal_type +	breed 1	color	date of borth	detetim	monthywar)	name 1	estcome_subtype	outcome_type ii	sex_spor_extrame i	location_lat =	location_long	age_spon_outcome_in_wee
	filter data															
8	3130	2 years	6723834	Dog	Siberian maky	Brown/Milte	2014-03-05	2010-03-23 36:23:00	2016-83-23716:23:98		Suffering	Guthamasia	Intact Male	39.5660998443099	-97.328559400325	387.497519843
0	5315	2 years	4788726	bug	Alaskas Holomute	Sable/White	2013-87-36	2015-08-02 17:24:00	2615-88-62737:24:88	Paga		Actum to Owner	Intect Male	38.4369339291936	-97.488825836737	364.61285714285
0	6621	2 years	4728165	top	Autheiler	#Lack:	2615-65-31	2817-09-23 31:23:00	2037-09-23713:23:00	Zeke		Agturn to Owner	Intact Male	39.466577298743	97,5873529908426	129-92490079065
C	6093	2 years	A794191	Dog	Siberian Husky	Black/White	2913-86-81	2015-06-02 16:41:00	2015-99-02716:41:99	Labo		Neturn to Owner	Intect Male	39.4263764229275	-97.4309581796886	384.52787696432
2	6652	6 months	4765461	Dog	Seman Shiphers	Sable.	2917-87-29	2818-93-22 33:54:69	2018-01-22711 (54:00	Sargest		Actum to Owner	Intact Male	30.48668993085	-97.485699334264	26.64226190476
C	3130	2 years	4723834	beg	Siberian Hisky	Brown/Milto	2914-83-95	2816-83-23 36:23:66	2016-03-23716-23-00		Suffering	Bythanasla	Intact Male	39,1400998443099	-97.328559498325	187.997519643
	5315	2 years	A788726	Dog	Alaskan Holomote	SebbenWhite	2013-07-30	2015-00-02 17:24:00	2815-88-82717-24:89	Paga		Agturn to Owner.	Intact Male	58.4589339291938	97,488825838737	384.8178571438
	8621	2 years	4728165	treg	Mottweiler	Black	2915-65-31	2817-69-23 11:23:66	2917-99-29711:23:99	Zeke		Neturn to owner	intact Male	39.466577255743	-97.5573328938426	128.5249007556
	6090	2 years	A784191	Dog	Süberüan Musky	Black/White	2013-00-01	2015-00-02 10:41:00	2015-00-02716:41:00	1,000		Naturn to Owner	Intact Male	39.4263764229275	97,4389381796686	164.5278769642
	6557	6 eonths	4785461	Dog	beman Shipherd	Sable	2817-87-28	2818-81-22 11:54:66	2818-81-22711:54:88	Sarpest		Naturn to Owner	Intact Malu	30.40088383000	-97,485688334264	26.64226198476

Disaster Rescue/Individual Tracking:

GRAZIOSO SALVARE

) Wat	er Rescue () Mo	untain/Wilderness Re	escue 🖲 Disaster F	Rescue/Individua	Tracking O Reset -	Returns Unfilter	ed State									
0.1	recown?	age_spee_outcome (intimal; sid it	onimal_type =	breed 1	color =	date_of_birth (detetime	northyear 2	Name 1	estcome_subtype =	extromo_type (sex_upon_outcome I	location_let =	location_long	Tage_spex_outcome_ix_wee
	Til ter data															
9	2967	d years	6694634	Dog	Postweiler	Mack/Brown	2011-01-01	2015-01-03 14:25:00	2015-01-01714:25:00	Striker		Return to Owner	Intact Male	39.329673243411	-97.5092968638502	200.0004992053
	3767	4 years	4712291	Bog	85 cedbourd	Red	2011-09-20	2015-09-22 15:43:00	2015-09-22715:43:00	Sooner		Return to Owner	Intact Male	30.2709983763287	-97.5923934912722	209.0935515073
>	6621	2 years	4728365	909	Rottweller	Black	2015-05-31	2017-09-23 11:23:00	2917-99-25733:23:99	2140		Return to Owner	Intact Male	39.466577298743	-97.5573528938426	129.9249997936
)	6557	6 months	A765461	Dog	German Shepherd	50616	2937-97-26	2018-01-22 11:54:00	2818-81-22711-34:99	Sargest		Meturn to Owner	Intact mate	38.40666965883	97.405688334294	26.64228398476
>	2987	4 years	A694634	Dog	Pottweiler	Slack/Brown	2011-01-01	2015-01-01 14:25:00	2013-01-01714:25:00	Striker		Return to Owner	Dytact Male	38.529873263811	-97.5492568638582	298.8884192963
2	3767	4 years	A712291	Dog	Bleedhound	ted	2011-09-20	2015-09-22 15:43:00	2935-99-22735:43:99	teoner		fature to Diner	Intact male	38.2789983761287	-97.5925918912722	209.0935515873
5	6621	2 years	A728265	Dog	Rottwester	Black	2011-03-31	2017-09-23 11:25:00	2017-09-23711:21:00	Zake		Return to Dyner	Intact Male	39.495577286743	-97.5573528939420	120.9249007936
	6557	6 months	A765461	Dog	German Shaphard	Soble	2017-07-20	2010-01-22 11:54:00	2018-01-22711:54:00	Sargest		feture to Owner	Dytact Male	39.40668983885	-97,405800334264	26.64226299476
	2967	4 years	A694634	Dog	Rottwester	Eleck/Srown	2011-01-01	2015-01-01 14:25:00	2015-01-01714:25:00	Striker		Raturn to Dyner	Intact Sale	39.329073293611	-97.5492968638502	200.0000002053
	3767	4 years	A712291	Dog	#Leedbound	Red	2011-09-20	2015-09-22 15:42:66	2015-09-22715:42:00	Eppner		Asturn to Dener	Intact Male	36.2709963761287	-97.5923918812722	209.0925525073

Data Graphing

This dashboard also features a pie graph showing the breakdown of animals by breed for each selected data frame. This graph is dependent on the selected filters shown above. When a filter is selected the graph will update according to the selected data frame. The graph can be changed by simply selecting a filter as explained in the previous section. Screenshots of the filters and graph changes are shown below:

Full Database:

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○ Water Rescue ○ Mountain/Wilderness Rescue ○ Disaster Rescue/Individual Tracking **⊙** Reset - I

	rec_num	age_upon_outcome	<pre>animal_id</pre>	<pre>animal_type</pre>	*
	Aa filter data				
•	2	1 year	A725717	Cat	Domestic Shortha
0	1	3 years	A746874	Cat	Domestic Shortha
0	3	2 years	A716330	Dog	Chihuahua Shortha
0	6	5 years	A696004	Dog	Cardigan Welsh Cor
0	5	2 years	A691584	Dog	Labrador Retrie
0	8	1 year	A736551	Dog	Labrador Retriever/Australian Catt
0	7	2 years	A673830	Dog	Pit Bu
0	10	3 months	A664290	Cat	Domestic Shortha
0	9	3 years	A720214	Dog	Labrador Retrie
0	12	1 year	A664843	Dog	Pit Bu



● Water Rescue ○ Mountain/Wilderness Rescue ○ Disaster Rescue/Individual Tracking ○ Reset - F

	rec_num	<pre>age_upon_outcome</pre>	<pre>animal_id</pre>	<pre>animal_type</pre>	<pre>preed</pre>	\$
	Aa filter data					
•	36	6 months	A706953	Dog	Labrador Retriever Mix	
0	732	2 years	A749782	Dog	Labrador Retriever Mix	
0	1121	1 year	A757158	Dog	Labrador Retriever Mix	:
0	1628	9 months	A740471	Dog	Labrador Retriever Mix	:
0	1757	7 months	A742767	Dog	Labrador Retriever Mix	:
0	1988	1 year	A762781	Dog	Labrador Retriever Mix	:
0	2041	2 years	A702745	Dog	Labrador Retriever Mix	:
0	2225	2 years	A757341	Dog	Labrador Retriever Mix	:
0	3319	9 months	A687748	Dog	Labrador Retriever Mix	:
0	4222	1 year	A735551	Dog	Labrador Retriever Mix	

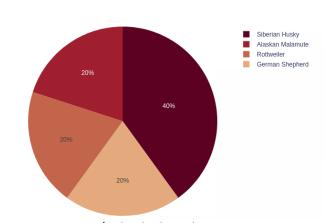


Mountain/Wilderness Rescue:



 $\bigcirc \ Water \ Rescue \ \underline{\bullet} \ Mountain/Wilderness \ Rescue \ \bigcirc \ Disaster \ Rescue/Individual \ Tracking \ \bigcirc \ Reset \ - \ F$

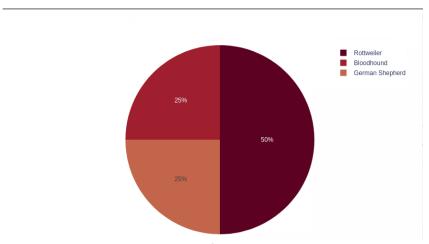
	rec_num	age_upon_outcome	<pre>animal_id</pre>	<pre>animal_type</pre>	breed	\$
	Aa filter data					
0	3130	2 years	A721834	Dog	Siberian Husky	
0	5315	2 years	A708726	Dog	Alaskan Malamute	
0	6021	2 years	A728165	Dog	Rottweiler	
0	6191	2 years	A704101	Dog	Siberian Husky	
0	6557	6 months	A765461	Dog	German Shepherd	
0	3130	2 years	A721834	Dog	Siberian Husky	
0	5315	2 years	A708726	Dog	Alaskan Malamute	
0	6021	2 years	A728165	Dog	Rottweiler	
0	6191	2 years	A704101	Dog	Siberian Husky	
0	6557	6 months	A765461	Dog	German Shepherd	



Disaster Rescue/Individual Tracking:

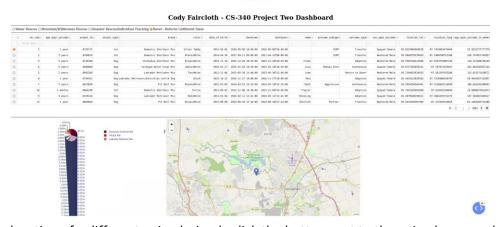


01	Water Rescue ○ Mou	ıntain/Wildernes	s Rescue 🖲 Disas	ter Rescue/Individ	ual Tracking ○Res	et - F
	rec_num	age_upon_outcome	<pre>animal_id</pre>	<pre>animal_type</pre>	breed	\$
	Aa filter data Aa					
0	2987	4 years	A694614	Dog	Rottweiler	
0	3767	4 years	A712291	Dog	Bloodhound	
0	6021	2 years	A728165	Dog	Rottweiler	
0	6557	6 months	A765461	Dog	German Shepherd	
0	2987	4 years	A694614	Dog	Rottweiler	
0	3767	4 years	A712291	Dog	Bloodhound	
0	6021	2 years	A728165	Dog	Rottweiler	
0	6557	6 months	A765461	Dog	German Shepherd	
0	2987	4 years	A694614	Dog	Rottweiler	
0	3767	4 years	A712291	Dog	Bloodhound	



Data Point Map

This dashboard also includes a geographic mapping feature which maps a data point on a local map of Austin, Texas depending on the coordinates set in the database. The map will display the first row of the table by default as shown in the screenshot below:



To view the location of a different animal, simply click the button next to the animal you would like to view. This will update the map and display a point indicating where the animal is located. An example of

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this using the Water Rescue filter and the fourth animal on the list, Marley, is shown in the screenshot below:

SALVARE



Contact

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