

Austin AniML Rescue



Adopt



Foster



Volunteer



Donate

Reason



This project studies data from the [Austin Animal Center](<http://www.austintexas.gov/content/austin-animal-center>) in Austin, TX.

- Help the Austin Animal Center better understand information on their animals



There are two
datasets posted by
the Animal Center
as csv files:

Data Source

Description

Intakes (information on animals brought to the shelter) and outcomes (information on animals when they leave the shelter).

Outcomes



Intakes





We have One main questions that we are interested in answering, along with related subquestions.

Can we predict the outcome for an animal based on other characteristics?

- What are the possible outcomes that we should consider?
- What factors most influence the determination of the outcome?



Intakes

81%

Remained after
duplicate Animal ID's
dropped from dataset



- Initial file contained 130,617 rows data.
- 106,233 remain .
- Duplicated animal ID due to animal recurrinly leaving owner .

Cleaning the data Phase

Outcomes

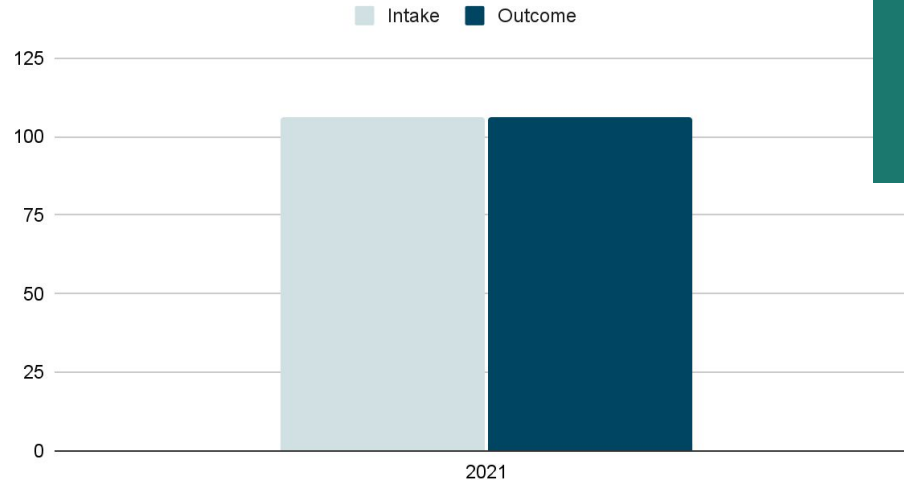
81%

Remained after
duplicate Animal ID's
dropped from dataset



- Initial file contained 130,647 rows data.
- 106,266 remain .

Intake vs Outcome



Preliminary Machine Learning Model

For predicting the animal outcome, our current sketch of our pipeline is to move from the SQL data into Python for cleaning, splitting into the training and testing sets, and then utilize a Random Forest Classifier.

Load in data
output from
SQL server

Clean,
convert, and
scale data

Split data
into training
and testing
sets

Train model
with Random
Forest
Classifier

Test model
and evaluate
performance

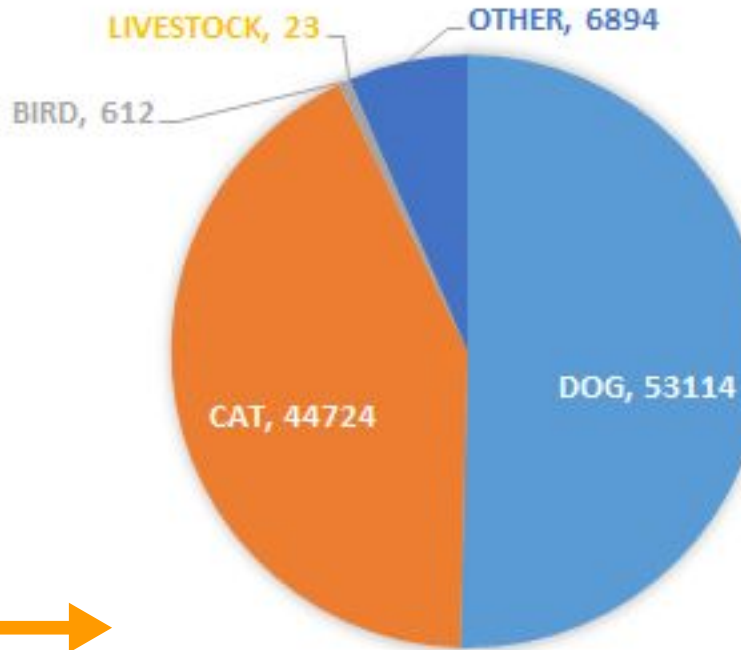
Description of the data exploration phase of the project

The data exploration for the Austin Animal Rescue on this phase of the project started by focusing on the database.

	animal_id	animal_name	animal_type	breed	color	intake_type	date_of_birth	intake_date	found_location	intake_condition	sex_upon_inta
0	A786884	*Brock	Dog	Beagle Mix	Tricolor	Stray	2017-01-03	2019-01-03	2501 Magin Meadow Dr in Austin (TX)	Normal	Neutered Male
1	A682524	Rio	Dog	Doberman Pinsch/Australian Cattle Dog	Tan/Gray	Stray	2010-06-29	2014-06-29	800 Grove Blvd in Austin (TX)	Normal	Neutered Male
2	A696408	*Pearl	Dog	Chihuahua Shorthair	Tricolor	Stray	2013-02-04	2015-02-04	9705 Thaxton in Austin (TX)	Normal	Intact Female
3	A736287	*Twilight	Cat	Domestic Shorthair Mix	Torbie	Stray	2016-08-08	2016-10-08	South First And Stassney in Austin (TX)	Normal	Intact Female
4	A810994	NaN	Other	Bat	Brown	Wildlife	2017-12-24	2019-12-25	7900 Rm 1826 Rd in Travis (TX)	Normal	Unknown

This informations helps to see what data was available to explore deeper.

Description of the data exploration phase of the project



The data contains 5 animal types:

- Cat
- Dog
- Bird
- Livestock
- other

We decided to make a model for just *cats & dogs*

Description of the analysis phase of the project

		outcome_subtype
outcome_type	outcome_subtype	
Adoption	Foster	9975
	Offsite	309
	Barn	3
Died	In Kennel	605
	In Foster	281
	At Vet	87
	Enroute	86
	In Surgery	24

Euthanasia	Rabies Risk	3845
	Suffering	3265
	Aggressive	403
	Medical	305
	At Vet	177
	Behavior	124
	Underage	36
	Court/Investigation	13
Missing	In Foster	21
	In Kennel	14
	Possible Theft	7
Return to Owner	Field	45
	Prc	9
	Customer S	7
Transfer	Partner	29595
	SCRIP	2942
	Snr	2612
	Out State	14
	Barn	7
	Emer	5

The data show the outcome type of the animals : Adoption, die, euthanasia, missing, return to the owner and transfer .

There are 9975 animals that ended being adopted .

The data show the income type of the animals Abandoned, Euthanasia requested, owner surrender, public assist, stray and wildlife, however 34046 animals were take back from being adopted

Description of the analysis phase of the project

	intake_type	outcome_type	outcome_type
Abandoned		Adoption	216
		Transfer	172
		Return to Owner	41
		Euthanasia	5
		Died	4
		Rto-Adopt	3
		Disposal	2
Euthanasia Request		Euthanasia	190
		Transfer	28
		Adoption	8
		Return to Owner	4
		Died	3
		Disposal	2
Owner Surrender		Adoption	9804
		Transfer	5744
		Return to Owner	734
		Euthanasia	610
		Died	154
		Rto-Adopt	142
		Disposal	14
		Missing	7
Public Assist		Return to Owner	3509
		Transfer	886
		Adoption	838
		Euthanasia	323
		Disposal	57
		Died	45

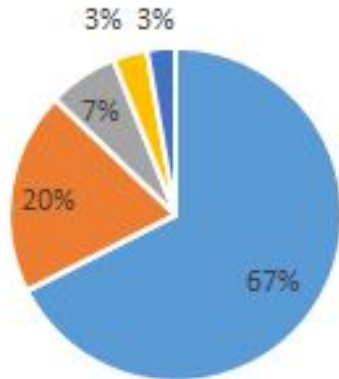
Stray	Adoption	34046
	Transfer	28285
	Return to Owner	10238
	Euthanasia	2772
	Died	849
	Rto-Adopt	288
	Disposal	121
	Missing	45
	Relocate	10
Wildlife	Euthanasia	4501
	Disposal	397
	Died	140
	Transfer	60
	Relocate	14
	Adoption	7
	Missing	2
	Return to Owner	1



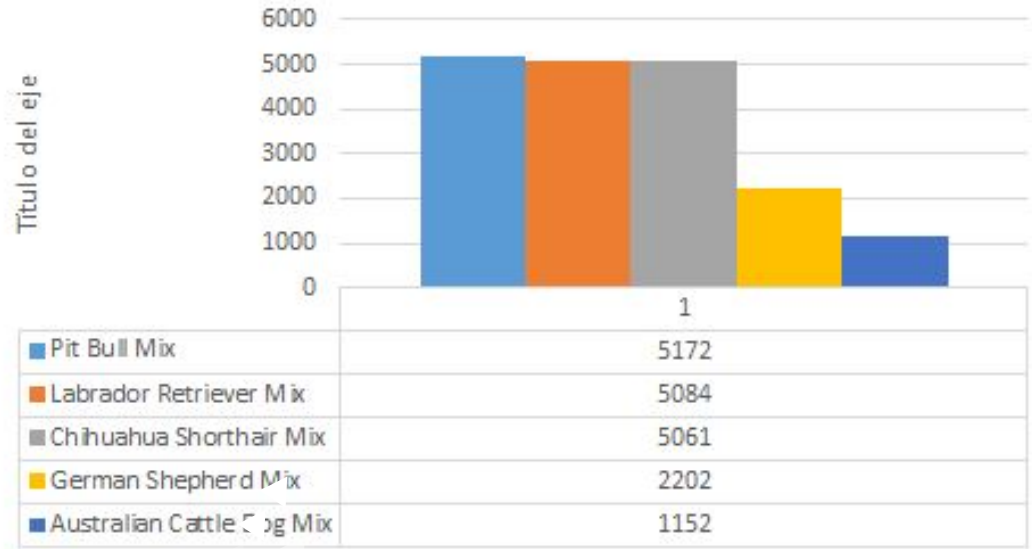
Graph Analysis per Animal breed

Cat Breed

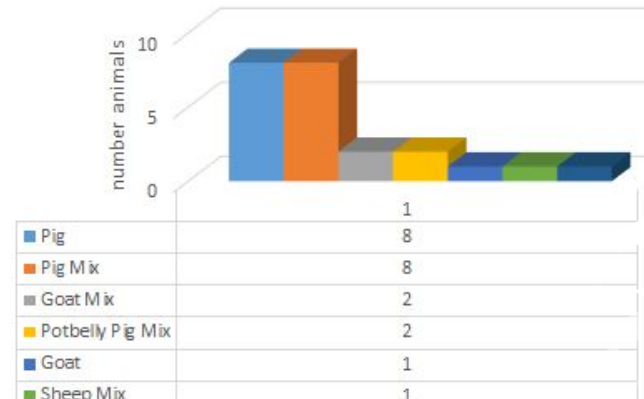
- Domestic Shorthair Mix
- Domestic Shorthair
- Domestic Medium Hair Mix
- Domestic Longhair Mix
- Siamese Mix



Dogs breeds



Livestock Breed

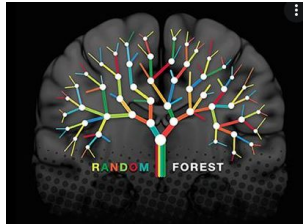


Analysis

The image features a vibrant background composed of overlapping geometric shapes in shades of orange and light blue. Two large, white, rectangular squares are positioned in the lower half of the frame, overlapping each other and the background. In the upper right, the word "Analysis" is written in a bold, black, cursive script. Several white arrows of varying lengths are scattered across the orange background, all pointing towards the left, creating a sense of flow and direction.

Technologies, languages, tools, and algorithms used throughout the project

Technologies



Languages



Tools & algorithms



Result of analysis

Result 02

Result 01

Recommendation 01

- For future analysis it is important to define the problem and the goal from the beginning to be able to build a model that will identify the data flowing in the system .
- It is important to have a clear targets and create a clear metric for the project .

Recommendation 02

- It is important to fully understand the data, by making sure that the data is accurate as you want your model to be also.

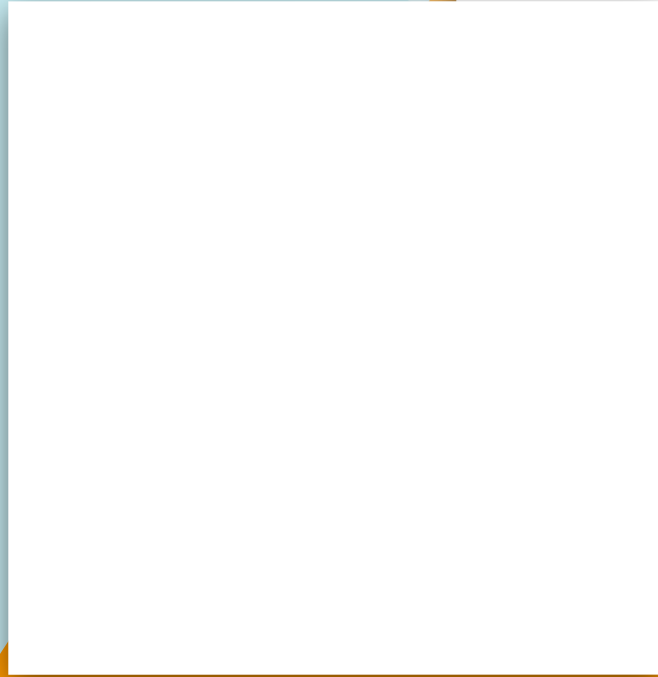
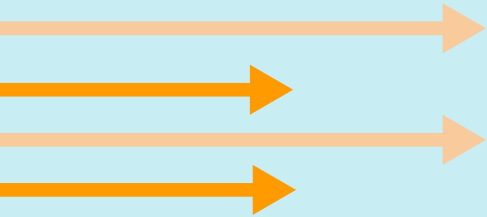
Recommendation 03

- Usually simple solutions are more valuable when the time invested is taken into account, it is better to solve the problem with a simple solution and move forward to move complex solutions , if is needed .

**Recommendation
for future
analysis**



*Anything the team
would have done
differently ?*



The roles will change during the final project so that each member has the opportunity to learn about each piece of the project and practice the related skills.

- **Role 1:** Repository management. This team member leads efforts to maintain the GitHub repository, including resolving merge conflicts, and help keep the main branch as the source of our most recent working code. This person also updates the Readme.md file on the main branch as changes are made to the GitHub repo.

Communication Protocol

- **Role 2 :** Project management. This team member leads the efforts for knowing what deliverables are required for the UT Bootcamp at each stage and assuring that the work the team is doing leads to successful fulfillment of the deliverables. This includes comparing the work to the rubric requirements as posted for class and helping to decide which technologies are used at each step of the project.

Communication Protocol

- **Role 3:** ML modeling. This team member works on the coding aspect of the ML model as well as data cleaning and exploratory data analysis.
- **Role 4:** Database & Dashboard management. This team member maintains and updates the database (PgAdmin 4) as needed and leads the efforts for creating and maintaining our final dashboard.
- **Role 5:** Presentation management. This team member writes the presentation files and helps other team members as needed.

