



Furry Friends Forecast

Analyzing the Effect of Breed and Characteristics on Shelter Animal Adoption Rates

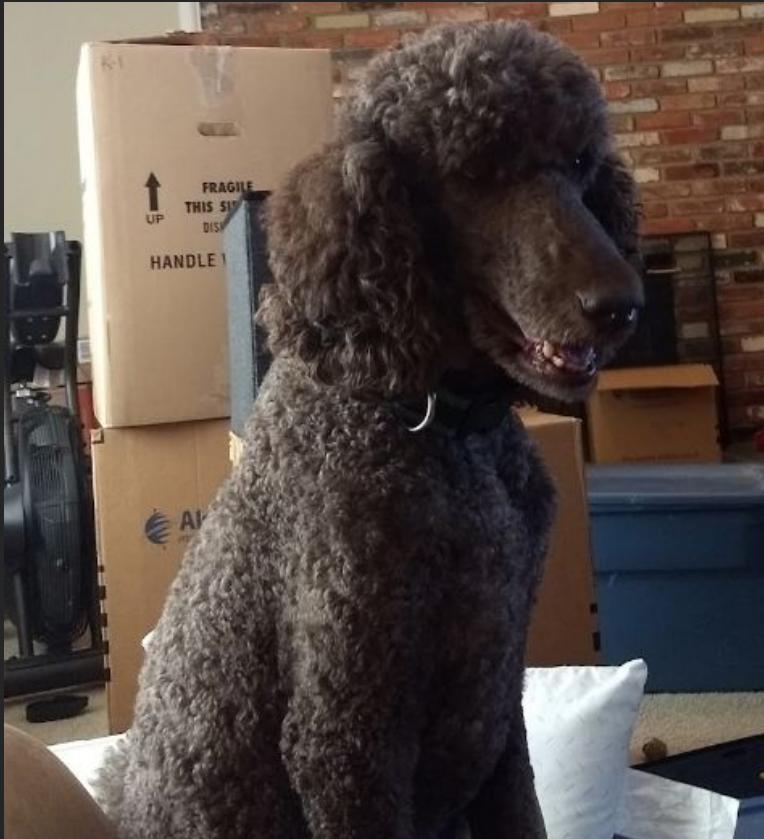
Jimmy Ostler, Teddy Brewer, Alex Bamberger, and Malie Heine

Our Group: Jimmy Ostler

- ⇒ Second year
- ⇒ Math/Computer Science

Furry Friends:

- ⇒ Oscar
- ⇒ ?????



Our Group: Teddy Brewer

- ⇒ Third year
- ⇒ Physics/Computer Science

Furry Friends:

- ⇒ Rusty
- ⇒ Millie
- ⇒ Kona
- ⇒ Yuki



Our Group: Alex Bamberger

- ⇒ Fourth year
- ⇒ Computer Science Major

Furry Friends:

- ⇒ perhaps

Our Group: Malie Heine

- ⇒ Fourth year
- ⇒ Major in CS/Minor in DS

Furry Friends:

- ⇒ Mandi
- ⇒ Uila Bear



Goals



- 🐾 What animals are most likely to be adopted
- 🐾 Converse, least likely to be adopted
- 🐾 How might we be able to help?



Overall Goals

Part 1: Our Data



- Contains data from the Austin Animal Shelter
- Data from October 2013 to February 2018
- Includes data for breed, species, outcome, age, time of adoption, and sex (including spayed and neutered)

kaggle

AARON SCHLEGEL · UPDATED 5 YEARS AGO

▲ 140 New Notebook Download (3 MB) ⚙

Austin Animal Center Shelter Outcomes

30,000 shelter animals



Data Card Code (146) Discussion (5)

About Dataset

Context
The Austin Animal Center is the largest no-kill animal shelter in the United States that provides care and shelter to over 18,000 animals each year and is involved in a range of county, city, and state-wide initiatives for the protection and care of abandoned, at-risk, and surrendered animals.

As part of the City of Austin Open Data Initiative, the Austin Animal Center makes available its collected dataset that contains statistics and outcomes of animals entering the Austin Animal Services system.

Content
The dataset contains shelter outcomes of several types of animals and breeds from 10/1/2013 to the present with a hourly time frequency. The data is updated daily.

The Austin Animal Center's original dataset includes columns for name, date of birth, outcome, animal type, sex and age at time of outcome, breed, and color. Outcomes range widely and include things like adoptions and transfers to other shelters.

Usability 8.53

License Database: Open Database, Cont...

Expected update frequency Not specified

- 🐾 Dropped 5 columns with useless or duplicated information
- 🐾 Didn't remove NaN, simply replaced it as another value that could give useful information

```
df.drop(columns=["animal_id","monthyear","name","date_of_birth","datetime"], inplace=True)  
df.drop_duplicates()
```

- 🐾 Dropped the duplicates
- 🐾 Separated some of the data into different data frames

Part 2: Exploratory Data Analysis



- 🐾 Separated into different data frames (cats, dogs, adopted, euthanized, etc)
- 🐾 Used organized data to get initial numbers (78256 total, 33112 adopted, 23499 transferred, 6080 euthanized, etc.)
- 🐾 Fixed (spayed and neutered) animals were more likely to get adopted

Simple Observations about the Data

🐾 Inconsistencies

- Dog breed mix labels
- Duplicated columns (datetime and monthlyear)

🐾 Some categories we didn't fully understand

- Subcategories we didn't understand (Californians?)
- “Disposal” outcome

A few problems...

Akita
Akita Mix
Akita/Australian Cattle Dog
Akita/Belgian Malinois
Akita/Border Collie
Akita/Chow Chow
Akita/German Shepherd
Akita/Great Pyrenees
Akita/Labrador Retriever

datetime	monthlyear
2014-07-22T16:04:00	2014-07-22T16:04:00
2013-11-07T11:47:00	2013-11-07T11:47:00
2014-06-03T14:20:00	2014-06-03T14:20:00
2014-06-15T15:50:00	2014-06-15T15:50:00
2014-07-07T14:04:00	2014-07-07T14:04:00
...	...
2018-02-01T18:26:00	2018-02-01T18:26:00

animal_type	breed	color
Other	Californian	White/Black
Other	Californian	White
Other	Californian	White/Black

Out[128]: <AxesSubplot:xlabel='outcome_type'>

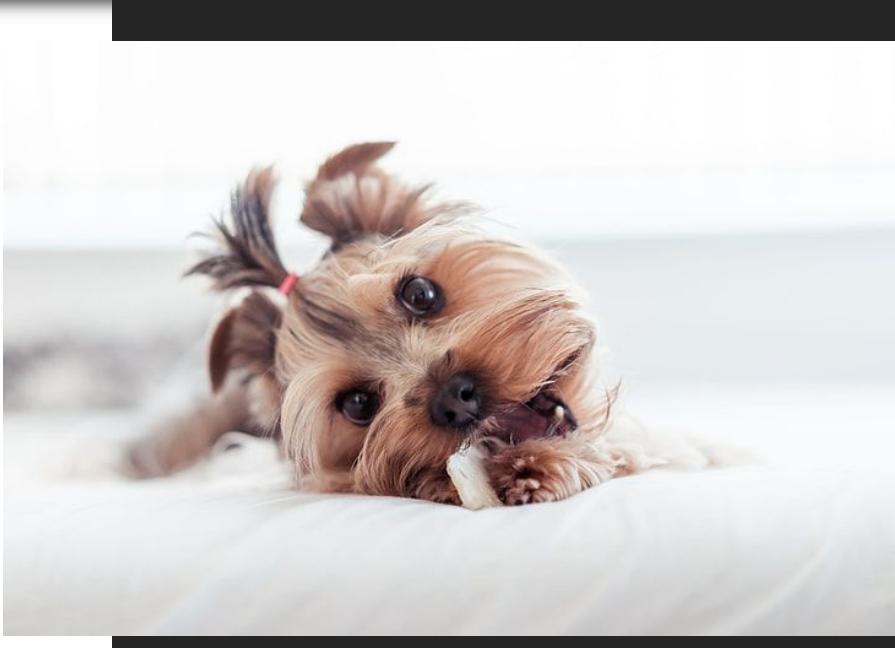
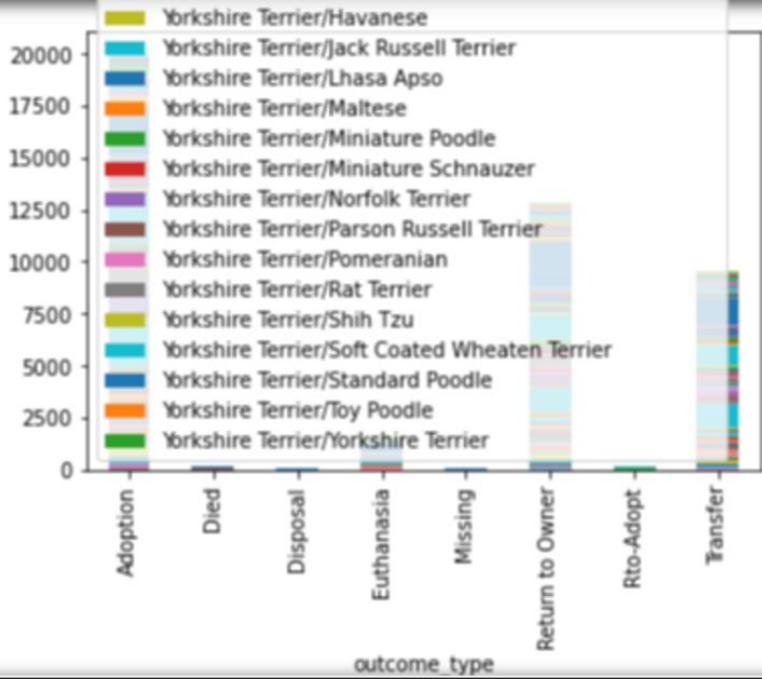


What not to do...

- Great Pyrenees/English Setter
- Great Pyrenees/German Shepherd
- Great Pyrenees/Golden Retriever
- Great Pyrenees/Kuvasz
- Great Pyrenees/Labrador Retriever
- Great Pyrenees/Pit Bull
- Great Pyrenees/Plott Hound
- Great Pyrenees/Pointer
- Great Pyrenees/Queensland Heeler
- Great Pyrenees/Rottweiler
- Great Pyrenees/Siberian Husky
- Great Pyrenees/St. Bernard Rough Coat
- Great Pyrenees/Standard Poodle
- Greater Swiss Mountain Dog
- Greater Swiss Mountain Dog Mix
- Greyhound
- Greyhound Mix
- Greyhound/Airedale Terrier
- Greyhound/Border Collie
- Greyhound/Dalmatian
- Greyhound/Great Dane
- Greyhound/Labrador Retriever



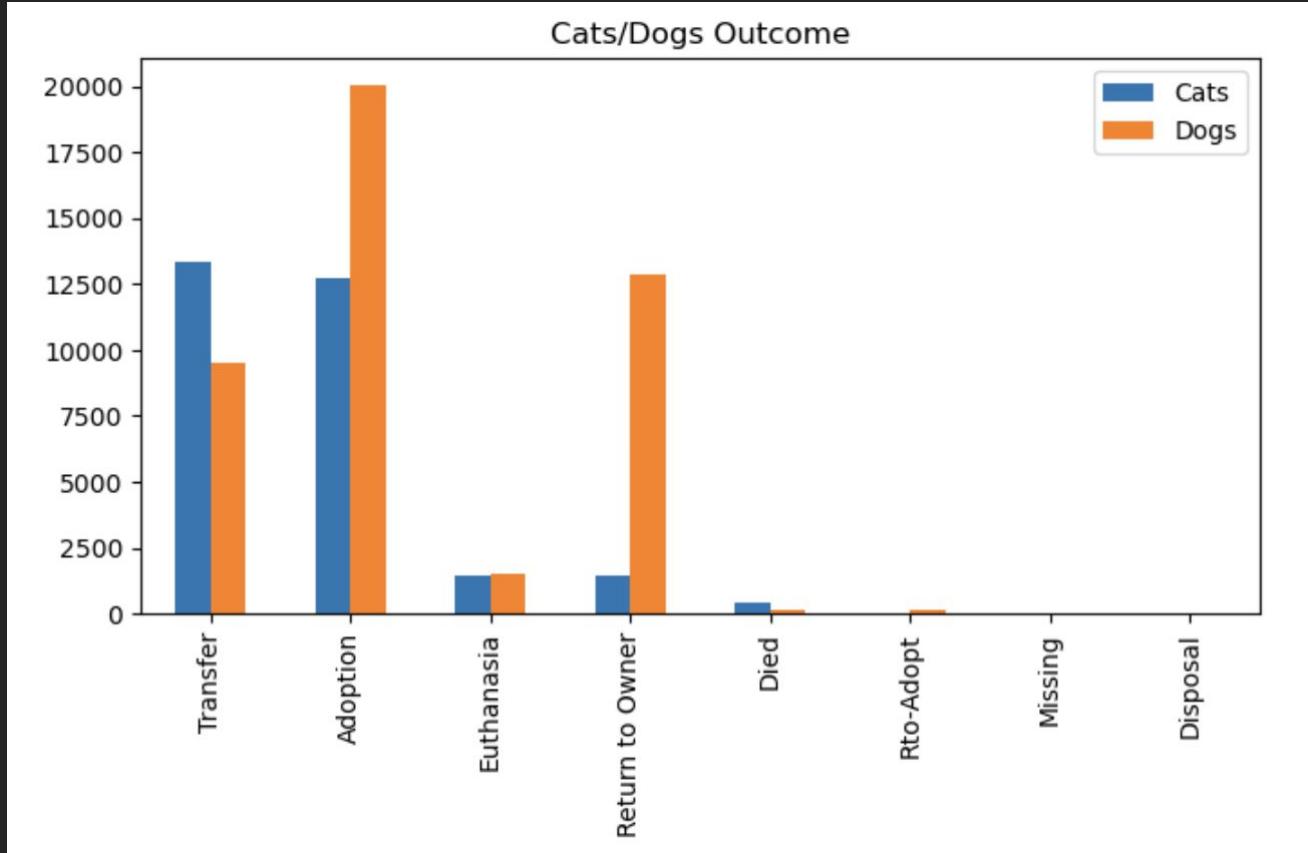
Middle of scrolling...

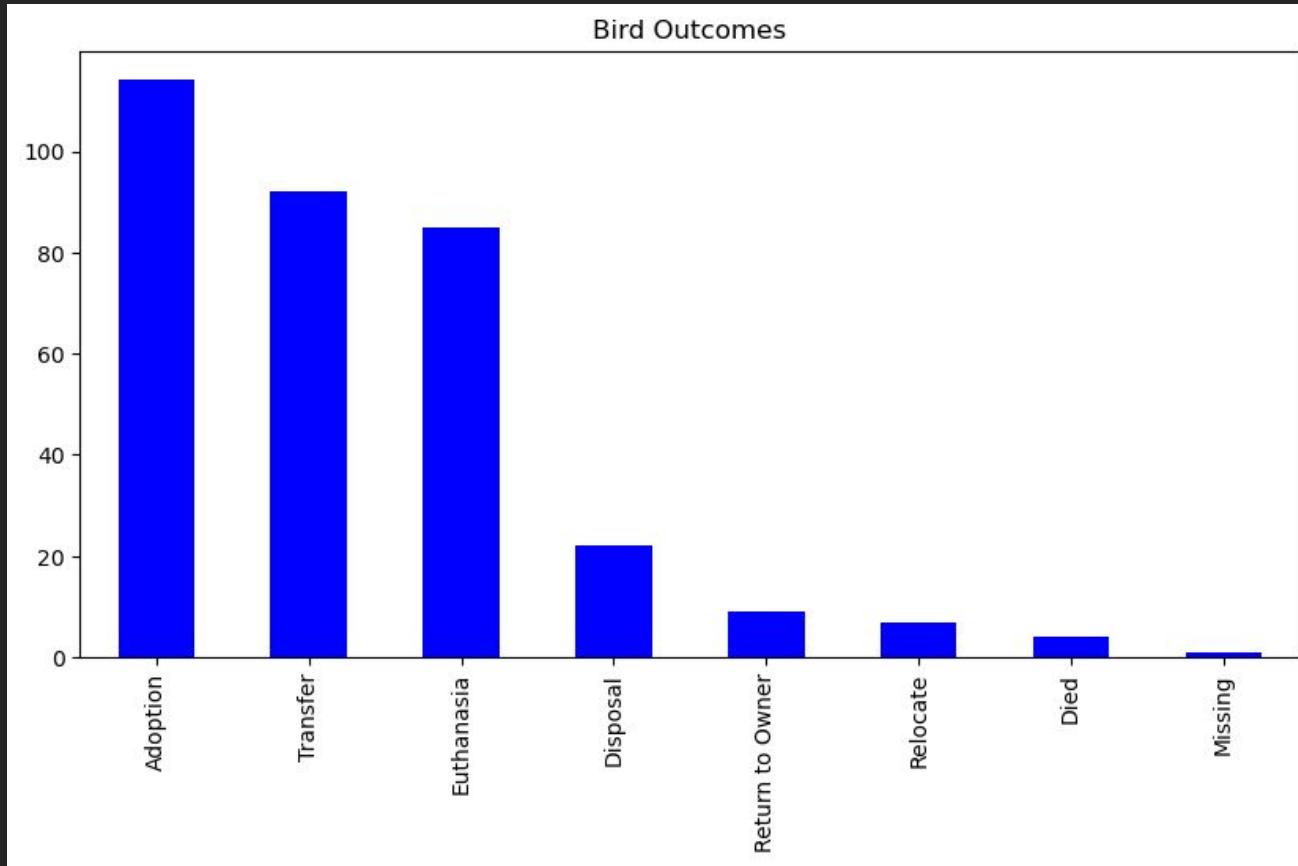


A few hours later...

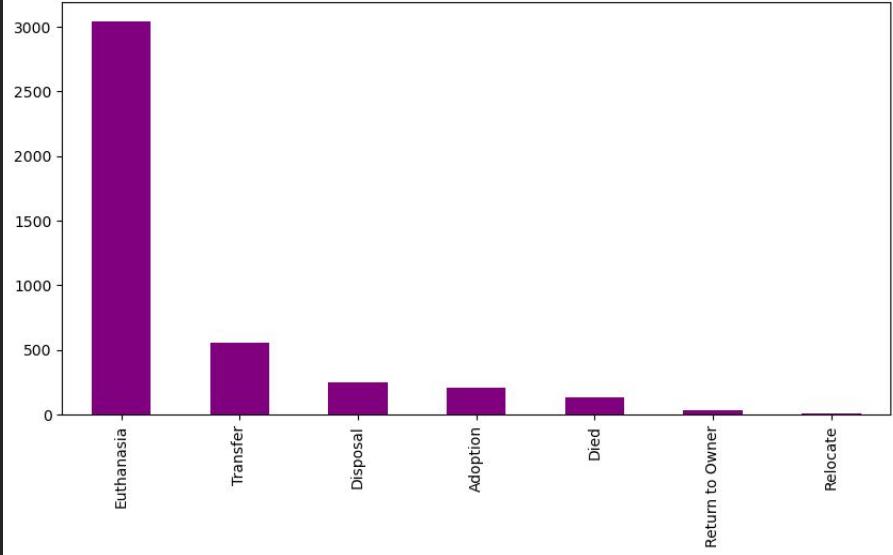
Part 3: Visualizations and Conclusions



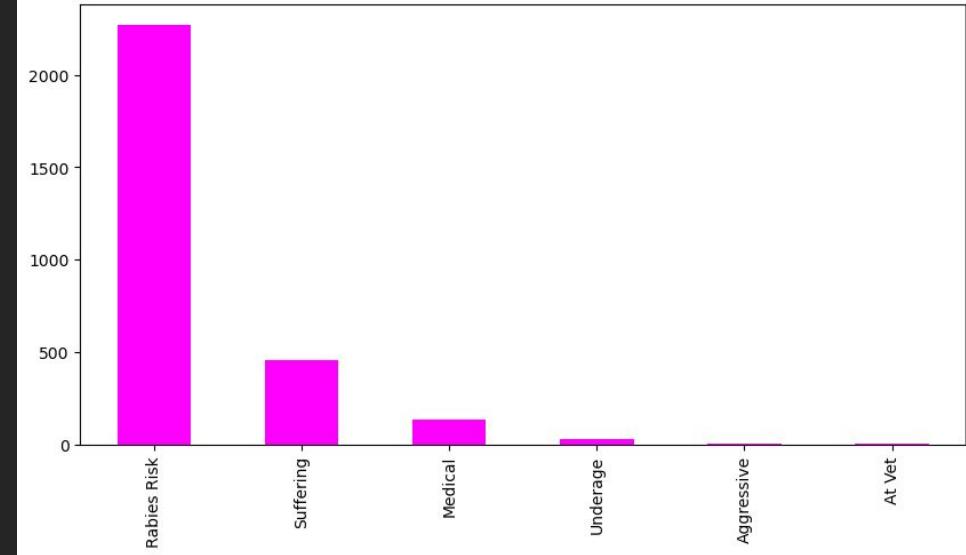




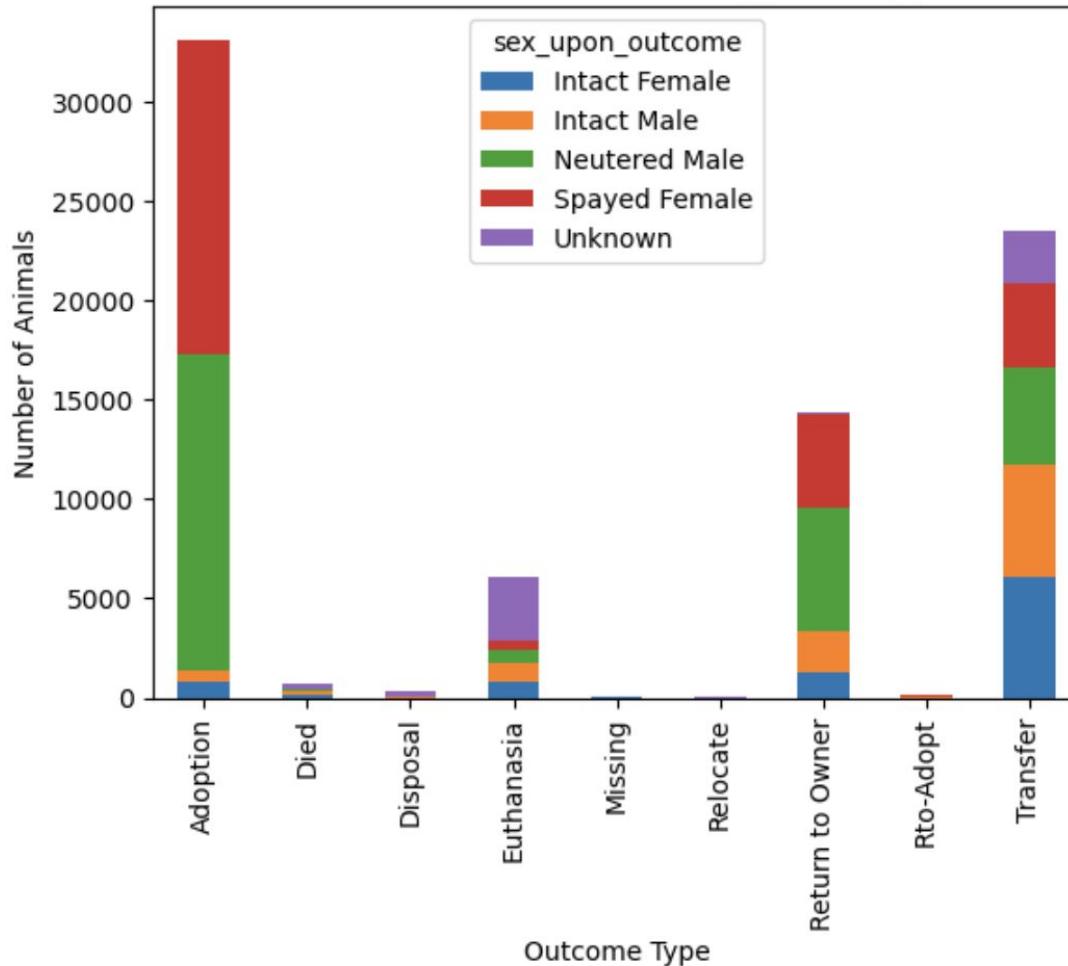
Other Animal Outcomes



Reasons for Euthanization



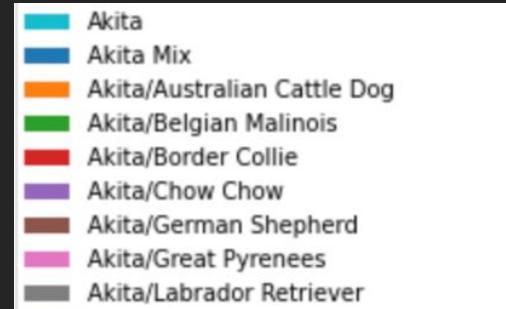
Animals Based On Outcome Type/Sex Type



New Findings since SSRD

Specific Breed Data

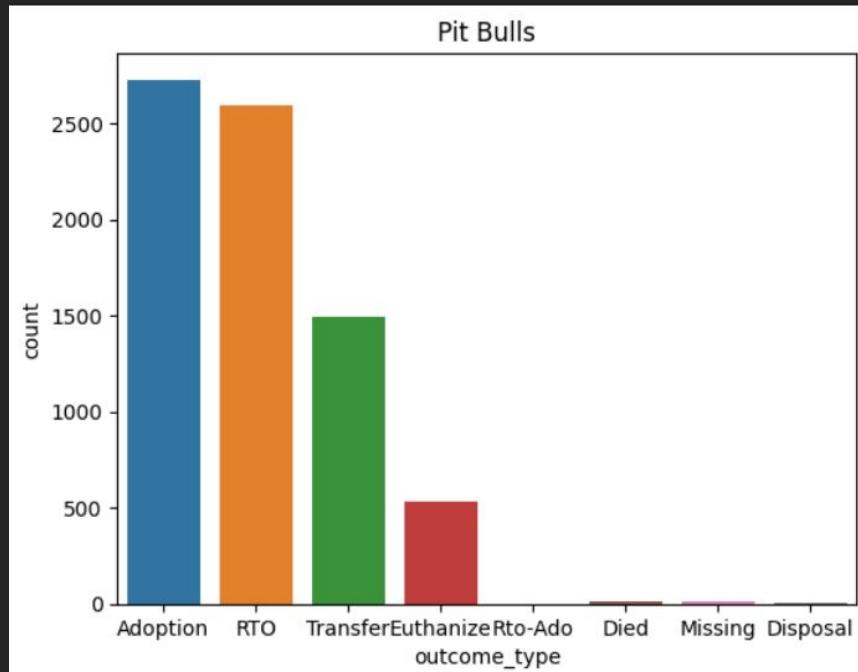
- Breed data sorted by using data from all purebred dogs and mixes
- Not ideal, but makes sure we aren't losing possibly important data
- Ex: Every Akita would be included, as well as any */Akita'
- This method separates them into new dataframes
- These separate dataframes may contain duplicates



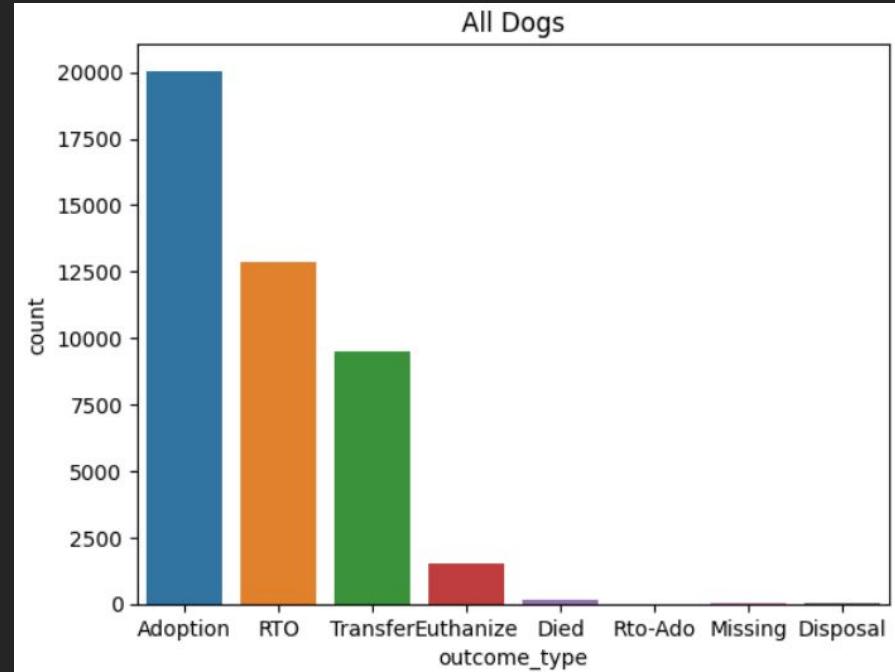
```
dogs = df[df.animal_type == 'Dog']
pit_bull = dogs.loc[dogs['breed'].str.contains("Pit Bull", case=False)]
```

Pit Bulls vs Other Dogs

7.1% of all pitbulls/mixes were euthanized

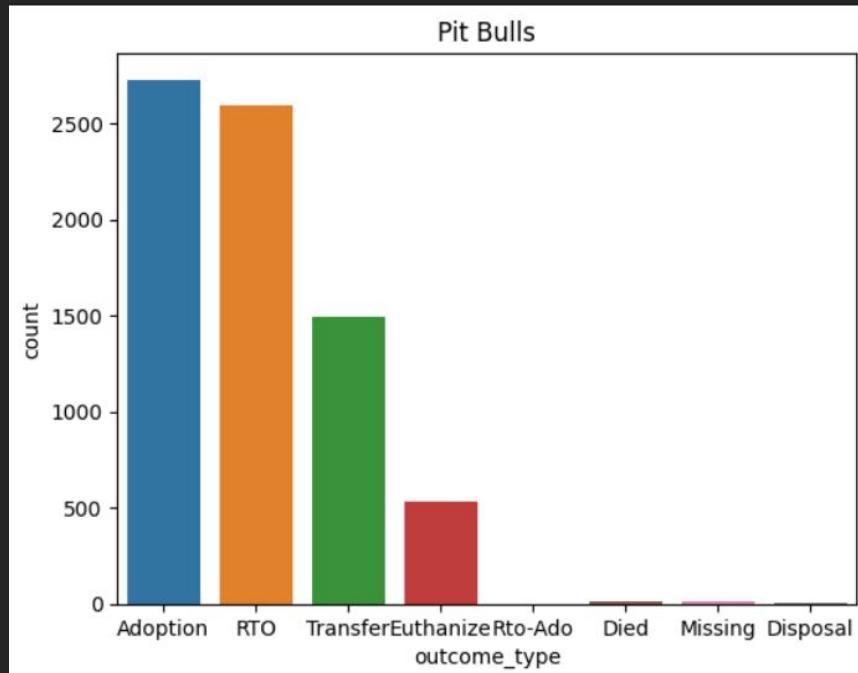


3.3% of all dogs were euthanized

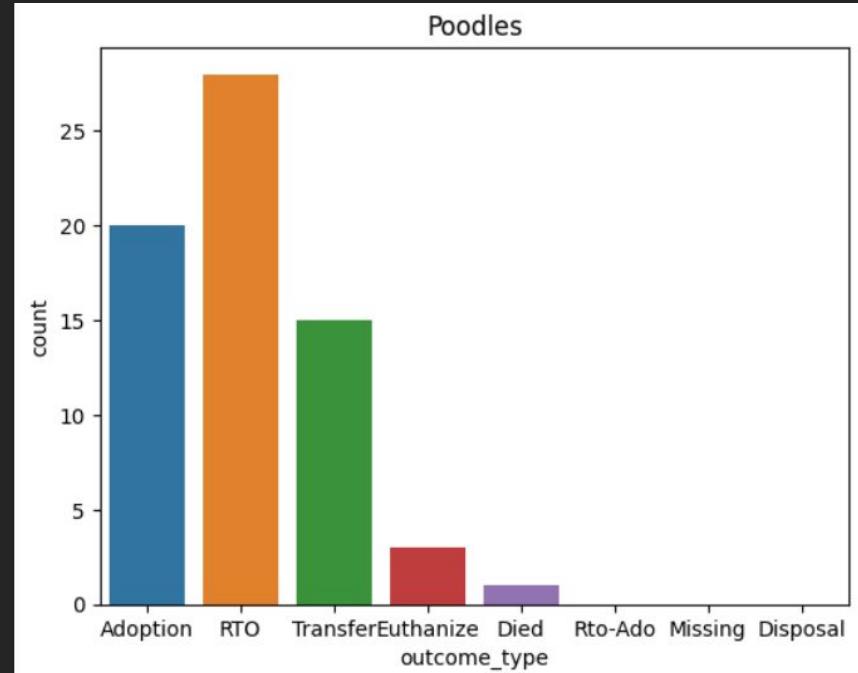


Pit Bulls vs Other Dogs

7.1% of all pitbulls/mixes were euthanized



2.2% of all poodles were euthanized



Conclusions

- 🐾 Fixed (spayed and neutered) animals were more likely to get adopted
- 🐾 Birds & Bats are very likely to be euthanized
- 🐾 Dogs are often returned to their owners
- 🐾 When they aren't returned to their owners, dogs and cats are usually transferred or adopted
- 🐾 Breed *does* make a significant difference in outcome



P.S. Mistakes Were made...

- 🐾 While attempting to get data from the Oregon Humane Society Salem Camps



Data and Links

https://www.kaggle.com/datasets/aaronschlegel/austin-animal-center-shelter-outcomes-and?select=aac_shelter_outcomes.csv



Acknowledgements

Professor Haiyan Cheng

Our Furry Friends

Austin Animal Shelter



Questions?

