act_report

June 27, 2022

0.1 Report: act_report

- Create a **250-word-minimum written report** called "act_report.pdf" or "act_report.html" that communicates the insights and displays the visualization(s) produced from your wrangled data. This is to be framed as an external document, like a blog post or magazine article, for example.

1 Analyzing, and Visualizing Data

We Rate Dogs dataset act_report By Edwin Kihara

```
In [1]: import matplotlib
        import matplotlib.pyplot as plt
        import pandas as pd
        import datetime as dt
        import seaborn as sns

        %matplotlib inline
```

```
In [2]: # Change the style of the plots (http://tonysyu.github.io/raw_content/matplotlib-style-g
        matplotlib.style.use('ggplot')
```

```
In [3]: # Import the clean dataset into dataframe
        df_master = pd.read_csv('twitter_archive_master.csv')
        df_master.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 1994 entries, 0 to 1993
Data columns (total 16 columns):
tweet_id                   1994 non-null int64
tweet_date                 1994 non-null object
tweet_source               1994 non-null object
tweet_text                 1994 non-null object
tweet_url                  1994 non-null object
tweet_picture_predicted    1994 non-null object
tweet_favorites            1994 non-null int64
tweet_retweets             1994 non-null int64
user_followers             1994 non-null int64
```

```
dog_stage                   1994 non-null object
dog_breed                   1686 non-null object
confidence_level            1994 non-null float64
rating_numerator            1993 non-null float64
dogs_count                  1994 non-null int64
dog_name                    1369 non-null object
dog_gender                  862 non-null object
dtypes: float64(2), int64(5), object(9)
memory usage: 249.3+ KB
```

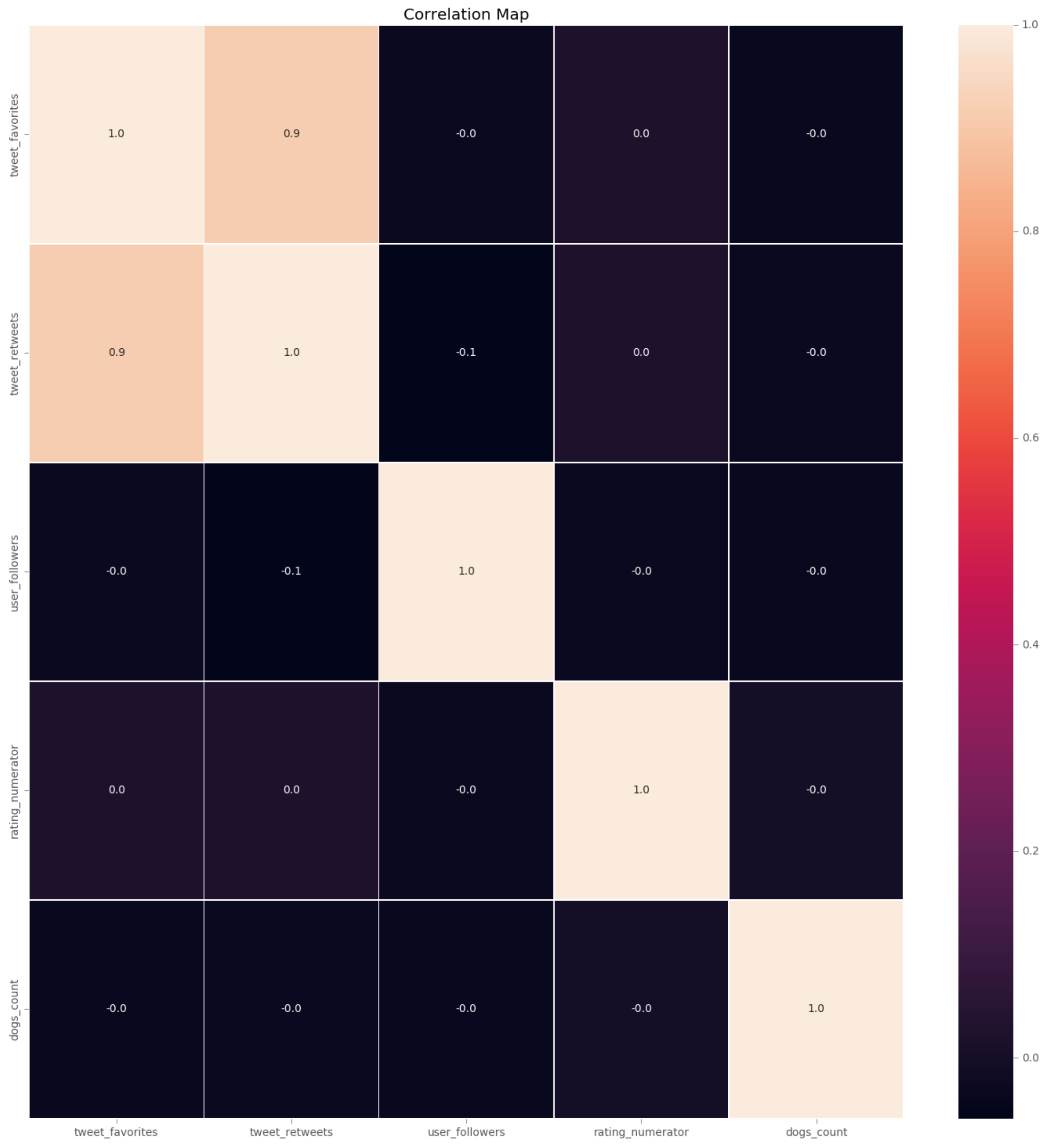
```
In [4]: # Convert columns to their appropriate types and set the tweet_date as an index

        df_master['tweet_id'] = df_master['tweet_id'].astype(object)
        df_master['tweet_date'] = pd.to_datetime(df_master.tweet_date)
        df_master['tweet_source'] = df_master['tweet_source'].astype('category')
        df_master['dog_stage'] = df_master['dog_stage'].astype('category')
        df_master['dog_gender'] = df_master['dog_gender'].astype('category')

        df_master = df_master.set_index('tweet_date')
        df_master.info()
```

```
<class 'pandas.core.frame.DataFrame'>
DatetimeIndex: 1994 entries, 2015-11-19 18:13:27 to 2016-06-16 01:25:36
Data columns (total 15 columns):
tweet_id                    1994 non-null object
tweet_source                1994 non-null category
tweet_text                  1994 non-null object
tweet_url                   1994 non-null object
tweet_picture_predicted     1994 non-null object
tweet_favorites             1994 non-null int64
tweet_retweets              1994 non-null int64
user_followers              1994 non-null int64
dog_stage                   1994 non-null category
dog_breed                   1686 non-null object
confidence_level            1994 non-null float64
rating_numerator            1993 non-null float64
dogs_count                  1994 non-null int64
dog_name                    1369 non-null object
dog_gender                  862 non-null category
dtypes: category(3), float64(2), int64(4), object(6)
memory usage: 208.4+ KB
```

1.0.1 Plot the correlation map to see the relationship between our variables

```
In [5]: f,ax = plt.subplots(figsize=(18, 18))
        sns.heatmap(df_master[['tweet_source', 'tweet_favorites',
                                    'tweet_retweets', 'user_followers',
                                    'rating_numerator', 'dogs_count']].corr(), annot=True, linewidths
        plt.title('Correlation Map')
```

```
Out[5]: <matplotlib.text.Text at 0xb0661d0>
```



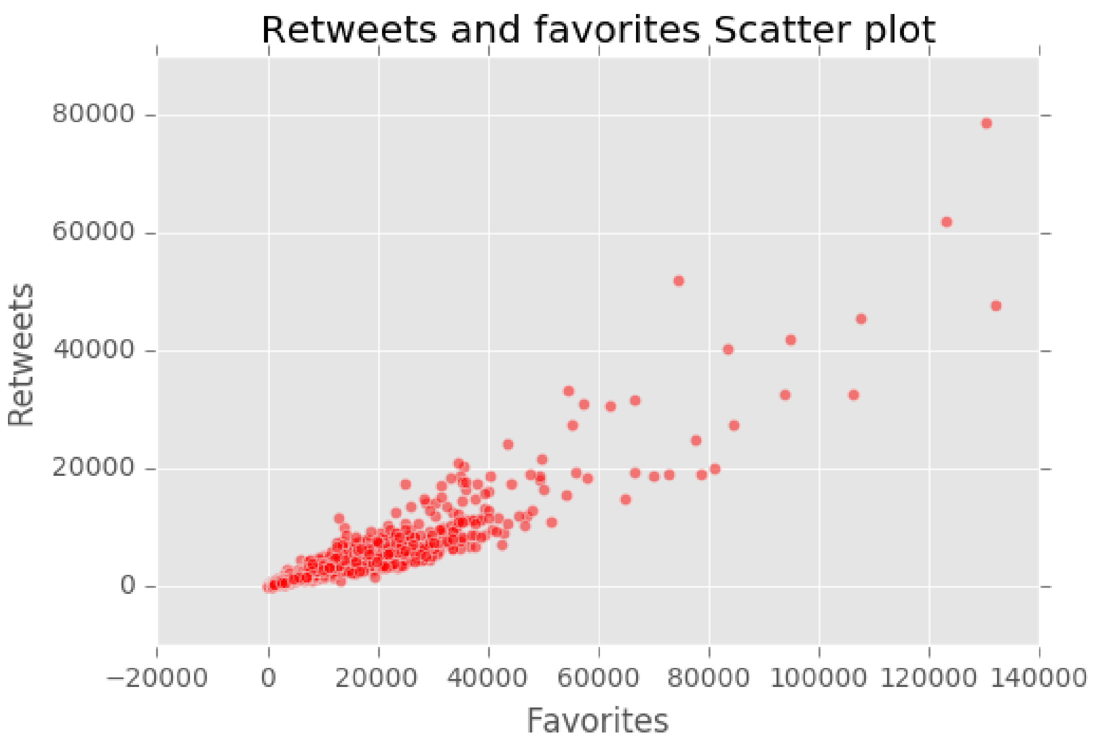
- The only strong correlation we see here is between tweet_favorites and tweet_retweet, this is normal (more favorites mean more retweets)
- User followers and retweet have a weak negative correlation of -0.1 (this seems the opposite of normal prediction)

- More dogs in the picture doesn't mean high rating
- Rating don't get affected with any other variable from the ones we ploted

let's dig more starting with the relation between tweet_favorites and tweet retweet

1.0.2 tweet_favorites and tweet_retweet

```
In [6]: df_master.plot(kind = 'scatter', x = 'tweet_favorites', y = 'tweet_retweets', alpha = 0.
        plt.xlabel('Favorites')
        plt.ylabel('Retweets')
        plt.title('Retweets and favorites Scatter plot')

Out[6]: <matplotlib.text.Text at 0xb7d52b0>
```

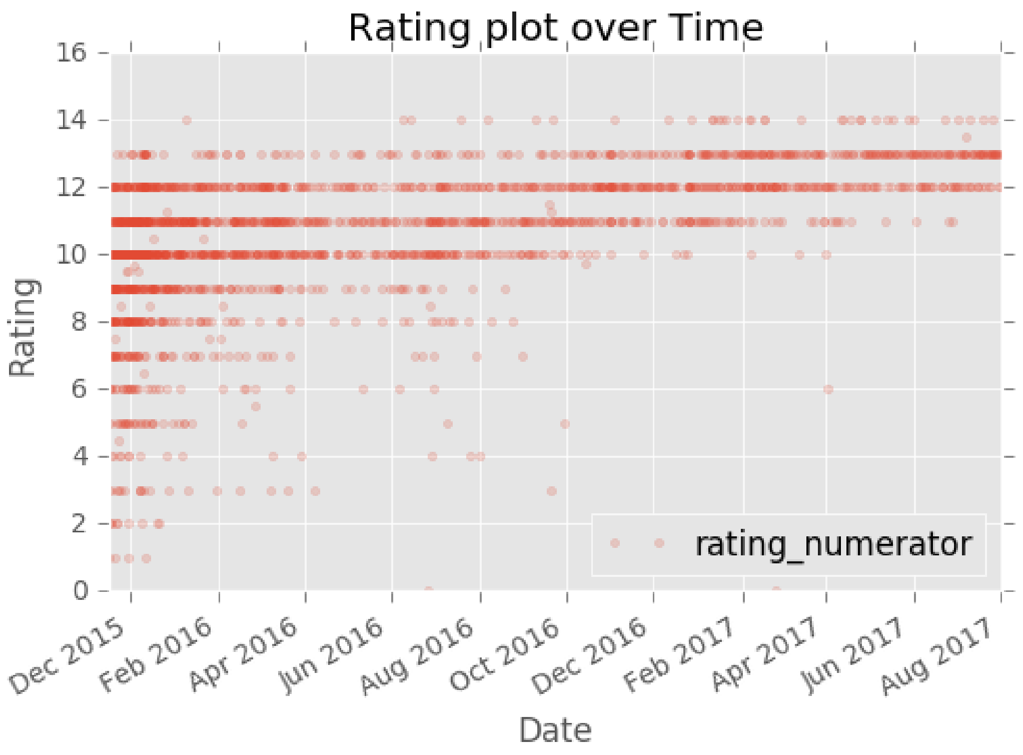


- As the correlation map shows if the count of retweet is high the count of favorites go high

```
In [7]: top_retweet_count_url = df_master.tweet_url[df_master.tweet_retweets == max(df_master.tw
        print("The maximum number of retweet is: {}, for the tweet: {}".format(max(df_master.twe

        top_favorites_count_url = df_master.tweet_url[df_master.tweet_favorites == max(df_master
        print("The maximum number of favorites is: {}, for the tweet: {}".format(max(df_master.t

The maximum number of retweet is: 78809, for the tweet: https://twitter.com/dog_rates/status/744
The maximum number of favorites is: 131903, for the tweet: https://twitter.com/dog_rates/status/
```

1.0.3 Rating System

```
In [8]: # Our range will be [0,16] taking of the two ouliers (1776 and 420)
        df_master.plot(y ='rating_numerator', ylim=[0,16], style = '.', alpha = .2)
        plt.title('Rating plot over Time')
        plt.xlabel('Date')
        plt.ylabel('Rating')

Out[8]: <matplotlib.text.Text at 0xb848a20>
```



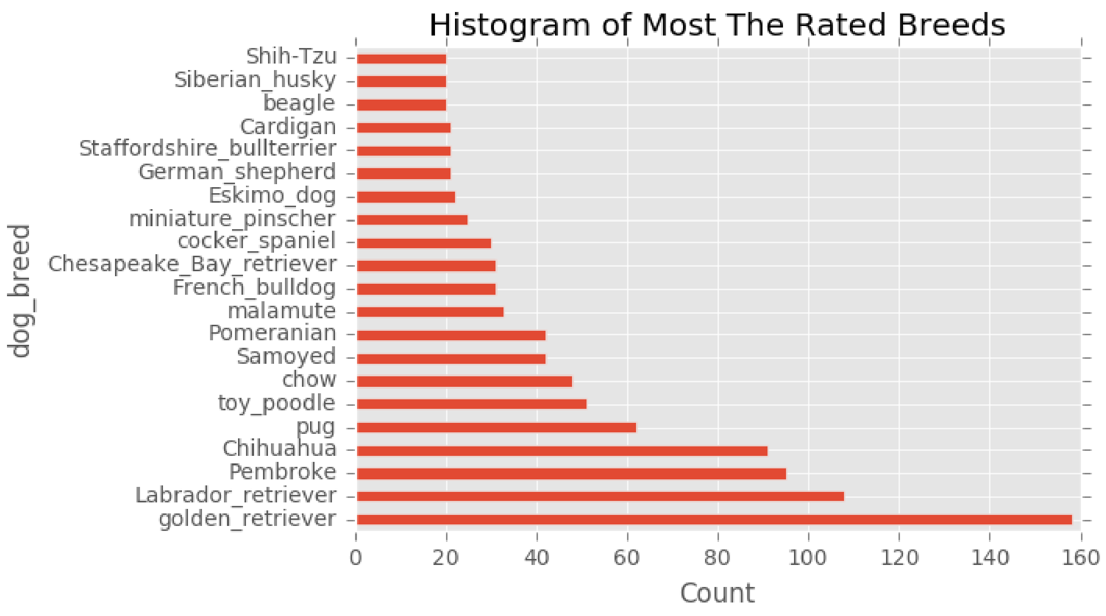
```
In [9]: df_master[df_master['rating_numerator'] <= 14]['rating_numerator'].describe()

Out[9]: count    1991.000000
        mean       10.550701
        std         2.178563
        min         0.000000
        25%        10.000000
        50%        11.000000
        75%        12.000000
        max        14.000000
        Name: rating_numerator, dtype: float64
```

- More than 75% of the data has more than 12/10 as rating
- The page start with small rating than they adopt the system of rating numerator more than the denominator
- Brent has all the right to get mad (ratings getting higher with no specific reason)

1.0.4 Famous Breeds

```
In [11]: # Without specify the lengh we don't get good result so we will subset our data on the
         df_by_breed = df_master.groupby('dog_breed').filter(lambda x: len(x) >= 20)

         df_by_breed['dog_breed'].value_counts().plot(kind = 'barh')
         plt.title('Histogram of Most The Rated Breeds')
         plt.xlabel('Count')
         plt.ylabel('dog_breed')
```

```
Out[11]: <matplotlib.text.Text at 0xbfb8940>
```

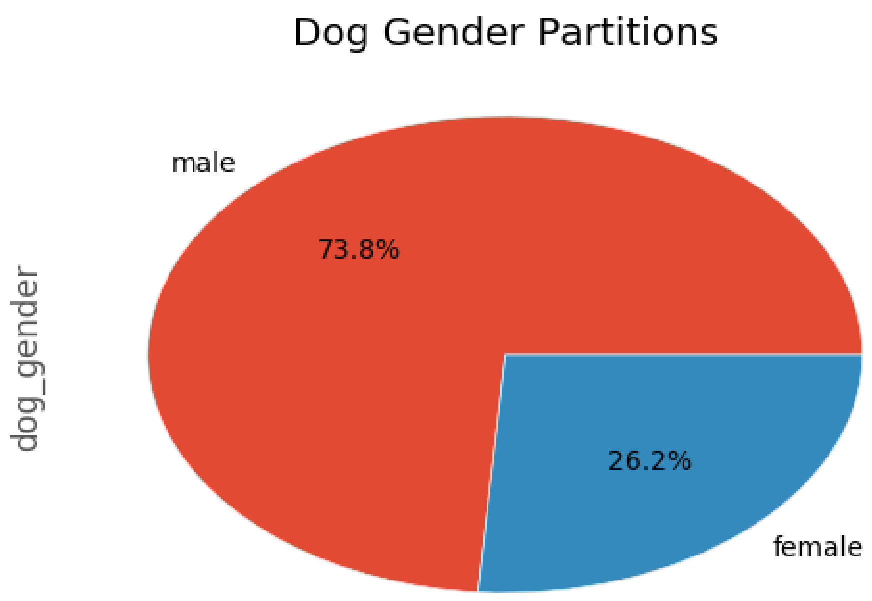


- Top two famous breeds are : Golden_retriver and Labrador_retriver according to a meural network that can classify breeds of dogs

1.0.5 Famous dog gender

```
In [12]: # Plot the data partitioned by dog gender
         df_master[df_master['dog_gender'].notnull()]['dog_gender'].value_counts().plot(kind = '
         plt.title('Dog Gender Partitions')
```

```
Out[12]: <matplotlib.text.Text at 0x978ad30>
```



```
In [13]: # Which gender had high ratings
         df_master[['dog_gender', 'rating_numerator']][df_master.dog_gender.notnull()].groupby('
```

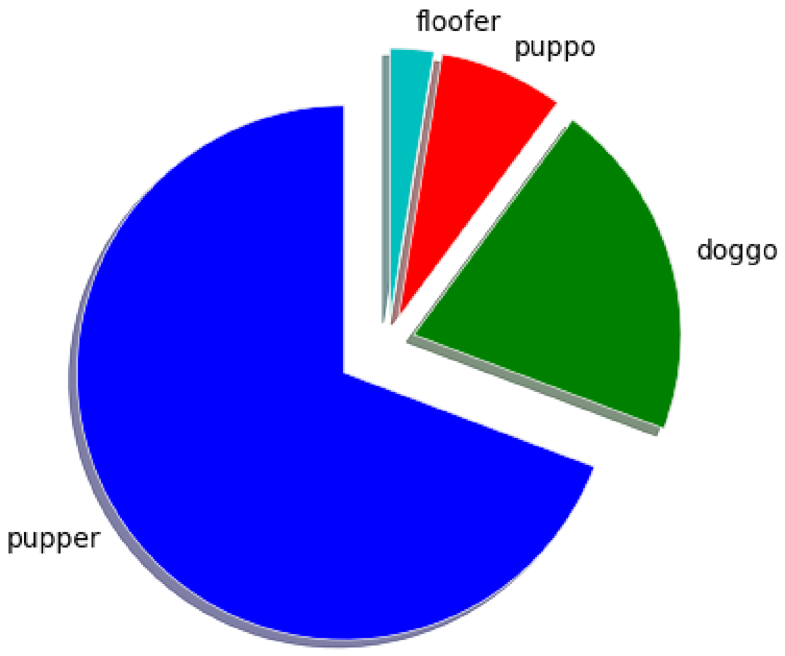
```
Out[13]:             rating_numerator
         dog_gender
         female             11.353333
         male               10.652123
```

- According to our treatment (getting the gender from the text of the tweet) we have male dogs more than female dogs in our dataset, whatever the female rating mean more than the male rating mean

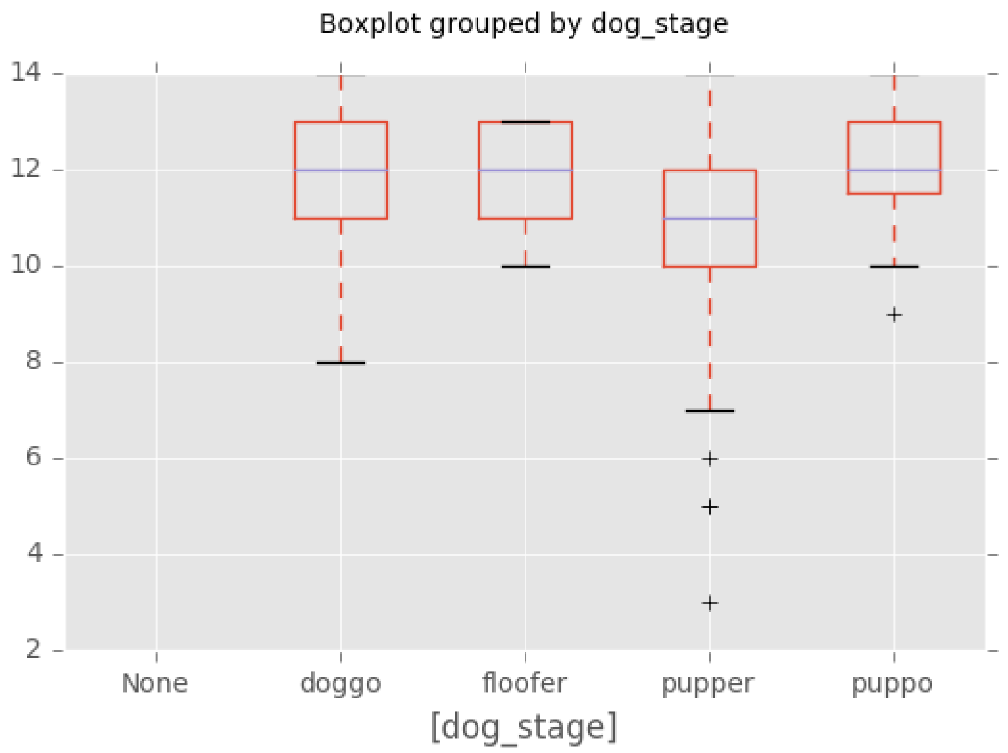
1.0.6 Famous dog Stages

```
In [16]: # Plot the data partitioned by dog stages

         dog_stage_count = list(df_master[df_master['dog_stage'] != 'None']['dog_stage'].value_c
         dog_stages = df_master[df_master['dog_stage'] != 'None']['dog_stage'].value_counts().in
         explode = (0.2, 0.1, 0.1, 0.1)

         fig1, ax1 = plt.subplots()
         ax1.pie(dog_stage_count, explode = explode, labels = dog_stages, shadow = True, startan
         ax1.axis('equal')  # Equal aspect ratio ensures that pie is drawn as a circle.
```

```
Out[16]: (-1.1737546111107124,
          1.116516995666861,
-1.1287190256412241,
 1.0996629023294362)
```



```
In [17]: # Plot the dog stages with ratings
         df_master[df_master['dog_stage'] != 'None'].boxplot(column = ['rating_numerator'], by =
         plt.title('')

Out[17]: <matplotlib.text.Text at 0x9aea7b8>
```



```
In [18]: #df_master[df_master['dog_stage'] == None].groupby('dog_stage')['rating_numerator'].des
         df_master[df_master['dog_stage'] != 'None'].groupby('dog_stage')['rating_numerator'].me

Out[18]: dog_stage
         None              NaN
         doggo       11.888889
         floofer     11.875000
         pupper      10.645142
         puppo       12.043478
         Name: rating_numerator, dtype: float64
```

- Puppers represent the big number of our pie, but it has the lowest mean rating

2 Conclusion

The Twitter account WeRateDogs ([@dog_rates](https://twitter.com/dog_rates)) is devoted to humorously reviewing pictures of dogs doing adorable poses. Dogs are rated on a scale of one to ten, but are invariably given ratings in excess of the maximum, such as "13/10". It has acquired over 4.50 million followers since its debut.