wrangle_act

January 30, 2019

0.1 Gather

```
In [2]: import pandas as pd
        import numpy as np
        import requests
        import json
        import tweepy
        import time
        import re
In [3]: Tweet_Arch = pd.read_csv('DataSet/twitter-archive-enhanced.csv')
        Tweet_Arch.head(2)
Out[3]:
                     tweet_id in_reply_to_status_id in_reply_to_user_id \
        0 892420643555336193
                                                  NaN
                                                                       NaN
        1 892177421306343426
                                                  NaN
                                                                       NaN
                           timestamp \
        0 2017-08-01 16:23:56 +0000
        1 2017-08-01 00:17:27 +0000
                                                       source \
          <a href="http://twitter.com/download/iphone" r...</pre>
          <a href="http://twitter.com/download/iphone" r...</pre>
                                                         text retweeted_status_id \
          This is Phineas. He's a mystical boy. Only eve...
                                                                                NaN
          This is Tilly. She's just checking pup on you...
                                                                               NaN
           retweeted_status_user_id retweeted_status_timestamp \
        0
                                {\tt NaN}
                                                            NaN
                                NaN
                                                            NaN
        1
                                                expanded_urls rating_numerator \
        0 https://twitter.com/dog_rates/status/892420643...
                                                                             13
        1 https://twitter.com/dog_rates/status/892177421...
                                                                             13
           rating_denominator
                                  name doggo floofer pupper puppo
```

```
0
                                                       None None
                           10 Phineas None
                                                None
        1
                           10
                                 Tilly None
                                                None
                                                       None None
In [4]: url="https://d17h27t6h515a5.cloudfront.net/topher/2017/August/599fd2ad_image-predictions
        IMG = requests.get(url)
        with open('image-predictions.tsv', 'wb') as file_IMG:
            file_IMG.write(IMG.content)
        Imges_pred = pd.read_csv('image-predictions.tsv', sep = '\t')
        Imges_pred.head(2)
Out[4]:
                     tweet id
                                                                       jpg_url \
        0 666020888022790149 https://pbs.twimg.com/media/CT4udn0WwAA0aMy.jpg
        1 666029285002620928 https://pbs.twimg.com/media/CT42GRgUYAA5iDo.jpg
           img_num
                                             p1_conf p1_dog
                                        p1
                                                                              p2 \
        0
                 1 Welsh_springer_spaniel 0.465074
                                                        True
                                                                          collie
                                   redbone 0.506826
                                                        True miniature_pinscher
           p2_conf p2_dog
                                              рЗ
                                                   p3_conf p3_dog
        0 0.156665
                       True
                               Shetland_sheepdog 0.061428
                                                              True
        1 0.074192
                       True Rhodesian_ridgeback 0.072010
                                                              True
In [4]: import tweepy
        consumer_key = "AKSmr9RTt0MUm9FqtzJpggv41"
        consumer_secret = "PC948j4DItrwtAjf3gjpJmQsfDJOIrLrzytHVlgu3iMmbKnuDu"
        access_token = "757599184778387456-h9kGQDWAQWW63qv5RFB5A6xR9yvL3aS"
        access_secret = "CSKVRr25ijwIT8yJCQReGZgNx9nyANzzGsZOWNlqnbpF8"
        auth = tweepy.OAuthHandler(consumer_key, consumer_secret)
        auth.set_access_token(access_token, access_secret)
        api = tweepy.API(auth, parser=tweepy.parsers.JSONParser())
In [5]:
        json_list = []
        execption = []
        for tweet_id in Tweet_Arch['tweet_id']:
            try:
                line = api.get_status(tweet_id, tweet_mode = 'extended')
                favorite_count = line['favorite_count']
                retweet_count = line['retweet_count']
                created_at = line['created_at']
                json_list.append({'tweet_id': int(tweet_id),
                                'favorite_count': int(favorite_count),
                                'retweet_count': int(retweet_count),
```

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'created_at': pd.to_datetime(created_at)})
            except Exception as e:
                print(str(e) + '->' + str(tweet_id))
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[{'message': 'Rate limit exceeded', 'code': 88}]->669603084620980224
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[{'message': 'Rate limit exceeded', 'code': 88}]->669583744538451968
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[{'message': 'Rate limit exceeded', 'code': 88}]->669567591774625800
[{'message': 'Rate limit exceeded', 'code': 88}]->669564461267722241
[{'message': 'Rate limit exceeded', 'code': 88}]->669393256313184256
[{'message': 'Rate limit exceeded', 'code': 88}]->669375718304980992
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[{'message': 'Rate limit exceeded', 'code': 88}]->669359674819481600
[{'message': 'Rate limit exceeded', 'code': 88}]->669354382627049472
[{'message': 'Rate limit exceeded', 'code': 88}]->669353438988365824
[{'message': 'Rate limit exceeded', 'code': 88}]->669351434509529089
[{'message': 'Rate limit exceeded', 'code': 88}]->669328503091937280
[{'message': 'Rate limit exceeded', 'code': 88}]->669327207240699904
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[{'message': 'Rate limit exceeded', 'code': 88}]->669203728096960512
[{'message': 'Rate limit exceeded', 'code': 88}]->669037058363662336
```

```
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```

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[{'message': 'Rate limit exceeded', 'code': 88}]->667801013445750784
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[{'message': 'Rate limit exceeded', 'code': 88}]->667773195014021121
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[{'message': 'Rate limit exceeded', 'code': 88}]->667517642048163840
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[{'message': 'Rate limit exceeded', 'code': 88}]->667470559035432960
```

```
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[{'message': 'Rate limit exceeded', 'code': 88}]->667453023279554560
[{'message': 'Rate limit exceeded', 'code': 88}]->667443425659232256
[{'message': 'Rate limit exceeded', 'code': 88}]->667437278097252352
[{'message': 'Rate limit exceeded', 'code': 88}]->667435689202614272
[{'message': 'Rate limit exceeded', 'code': 88}]->667405339315146752
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[{'message': 'Rate limit exceeded', 'code': 88}]->667176164155375616
[{'message': 'Rate limit exceeded', 'code': 88}]->667174963120574464
[{'message': 'Rate limit exceeded', 'code': 88}]->667171260800061440
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[{'message': 'Rate limit exceeded', 'code': 88}]->667138269671505920
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[{'message': 'Rate limit exceeded', 'code': 88}]->667090893657276420
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[{'message': 'Rate limit exceeded', 'code': 88}]->667070482143944705
[{'message': 'Rate limit exceeded', 'code': 88}]->667065535570550784
[{'message': 'Rate limit exceeded', 'code': 88}]->667062181243039745
[{'message': 'Rate limit exceeded', 'code': 88}]->667044094246576128
[{'message': 'Rate limit exceeded', 'code': 88}]->667012601033924608
[{'message': 'Rate limit exceeded', 'code': 88}]->666996132027977728
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[{'message': 'Rate limit exceeded', 'code': 88}]->666837028449972224
[{'message': 'Rate limit exceeded', 'code': 88}]->666835007768551424
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[{'message': 'Rate limit exceeded', 'code': 88}]->666817836334096384
[{'message': 'Rate limit exceeded', 'code': 88}]->666804364988780544
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[{'message': 'Rate limit exceeded', 'code': 88}]->666781792255496192
[{'message': 'Rate limit exceeded', 'code': 88}]->666776908487630848
[{'message': 'Rate limit exceeded', 'code': 88}]->666739327293083650
[{'message': 'Rate limit exceeded', 'code': 88}]->666701168228331520
[{'message': 'Rate limit exceeded', 'code': 88}]->666691418707132416
[{'message': 'Rate limit exceeded', 'code': 88}]->666649482315059201
[{'message': 'Rate limit exceeded', 'code': 88}]->666644823164719104
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[{'message': 'Rate limit exceeded', 'code': 88}]->666437273139982337
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```

```
[{'message': 'Rate limit exceeded', 'code': 88}]->666430724426358785
[{'message': 'Rate limit exceeded', 'code': 88}]->666428276349472768
[{'message': 'Rate limit exceeded', 'code': 88}]->666421158376562688
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[{'message': 'Rate limit exceeded', 'code': 88}]->666396247373291520
[{'message': 'Rate limit exceeded', 'code': 88}]->666373753744588802
[{'message': 'Rate limit exceeded', 'code': 88}]->666362758909284353
[{'message': 'Rate limit exceeded', 'code': 88}]->666353288456101888
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[{'message': 'Rate limit exceeded', 'code': 88}]->666293911632134144
[{'message': 'Rate limit exceeded', 'code': 88}]->666287406224695296
[{'message': 'Rate limit exceeded', 'code': 88}]->666273097616637952
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[{'message': 'Rate limit exceeded', 'code': 88}]->666099513787052032
[{'message': 'Rate limit exceeded', 'code': 88}]->666094000022159362
[{'message': 'Rate limit exceeded', 'code': 88}]->666082916733198337
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[{'message': 'Rate limit exceeded', 'code': 88}]->666071193221509120
[{'message': 'Rate limit exceeded', 'code': 88}]->666063827256086533
[{'message': 'Rate limit exceeded', 'code': 88}]->666058600524156928
[{'message': 'Rate limit exceeded', 'code': 88}]->666057090499244032
[{'message': 'Rate limit exceeded', 'code': 88}]->666055525042405380
[{'message': 'Rate limit exceeded', 'code': 88}]->666051853826850816
[{'message': 'Rate limit exceeded', 'code': 88}]->666050758794694657
[{'message': 'Rate limit exceeded', 'code': 88}]->666049248165822465
[{'message': 'Rate limit exceeded', 'code': 88}]->666044226329800704
[{'message': 'Rate limit exceeded', 'code': 88}]->666033412701032449
[{'message': 'Rate limit exceeded', 'code': 88}]->666029285002620928
[{'message': 'Rate limit exceeded', 'code': 88}]->666020888022790149
In [5]: df_tweets = pd.DataFrame(json_list, columns = ['tweet_id', 'favorite_count', 'retweet_co
             df_tweets.to_csv('tweet_json.txt', encoding = 'utf-8', index=False)
             NameError
                                                                                      Traceback (most recent call last)
             <ipython-input-5-88d00bb1a7c2> in <module>()
       ----> 1 df_tweets = pd.DataFrame(json_list, columns = ['tweet_id', 'favorite_count', 'retweet_id', 're
                 2 df_tweets.to_csv('tweet_json.txt', encoding = 'utf-8', index=False)
```

```
In [6]: df_tweets = pd.read_csv('tweet_json.txt', encoding = 'utf-8')
        df tweets.head()
Out[6]:
                     tweet_id favorite_count retweet_count date_time
        0 892420643555336193
                                        37986
                                                         8302
                                                                     NaN
        1 892177421306343426
                                        32617
                                                         6132
                                                                     NaN
        2 891815181378084864
                                                         4058
                                        24554
                                                                     NaN
        3 891689557279858688
                                        41327
                                                         8442
                                                                     NaN
        4 891327558926688256
                                        39507
                                                         9147
                                                                     NaN
0.2 Assess Data
0.2.1 1- Twitter Archive
In [7]: Tweet_Arch.head()
Out[7]:
                     tweet_id in_reply_to_status_id in_reply_to_user_id
        0 892420643555336193
                                                  NaN
                                                                       NaN
        1 892177421306343426
                                                  NaN
                                                                       NaN
        2 891815181378084864
                                                  NaN
                                                                       NaN
        3 891689557279858688
                                                  NaN
                                                                       NaN
        4 891327558926688256
                                                  NaN
                                                                       NaN
                           timestamp \
        0 2017-08-01 16:23:56 +0000
        1 2017-08-01 00:17:27 +0000
        2 2017-07-31 00:18:03 +0000
        3 2017-07-30 15:58:51 +0000
        4 2017-07-29 16:00:24 +0000
                                                       source \
         <a href="http://twitter.com/download/iphone" r...</pre>
        1 <a href="http://twitter.com/download/iphone" r...</pre>
        2 <a href="http://twitter.com/download/iphone" r...</pre>
        3 <a href="http://twitter.com/download/iphone" r...</pre>
        4 <a href="http://twitter.com/download/iphone" r...
                                                         text retweeted_status_id \
          This is Phineas. He's a mystical boy. Only eve...
                                                                               NaN
        1 This is Tilly. She's just checking pup on you...
                                                                              NaN
        2 This is Archie. He is a rare Norwegian Pouncin...
                                                                               NaN
        3 This is Darla. She commenced a snooze mid meal...
                                                                               NaN
        4 This is Franklin. He would like you to stop ca...
                                                                               NaN
```

NameError: name 'json_list' is not defined

retweeted_status_user_id retweeted_status_timestamp \

```
0
                                 NaN
                                                              NaN
                                                              NaN
        1
                                 NaN
        2
                                 NaN
                                                              NaN
        3
                                 NaN
                                                              NaN
        4
                                 NaN
                                                              NaN
                                                 expanded_urls rating_numerator
           https://twitter.com/dog_rates/status/892420643...
                                                                                13
           https://twitter.com/dog_rates/status/892177421...
                                                                                13
           https://twitter.com/dog_rates/status/891815181...
                                                                                12
           https://twitter.com/dog_rates/status/891689557...
                                                                                13
           https://twitter.com/dog_rates/status/891327558...
                                                                                12
           rating_denominator
                                    name doggo floofer pupper puppo
        0
                                                           None
                            10
                                 Phineas
                                          None
                                                   None
                                                                 None
        1
                            10
                                   Tilly None
                                                   None
                                                           None
                                                                 None
        2
                            10
                                  Archie None
                                                   None
                                                          None
                                                                 None
        3
                                   Darla None
                                                   None
                                                          None None
                            10
        4
                               Franklin None
                                                           None None
                            10
                                                   None
In [8]: Tweet_Arch.shape
Out[8]: (2356, 17)
In [9]: Tweet_Arch.tail()
Out [9]:
                         tweet_id in_reply_to_status_id in_reply_to_user_id
              666049248165822465
        2351
                                                      NaN
                                                                            NaN
        2352
              666044226329800704
                                                      NaN
                                                                            NaN
        2353
              666033412701032449
                                                      NaN
                                                                            NaN
        2354
              666029285002620928
                                                                            NaN
                                                      NaN
              666020888022790149
        2355
                                                      NaN
                                                                            NaN
                               timestamp
        2351
              2015-11-16 00:24:50 +0000
              2015-11-16 00:04:52 +0000
        2352
        2353
              2015-11-15 23:21:54 +0000
        2354
              2015-11-15 23:05:30 +0000
        2355
              2015-11-15 22:32:08 +0000
                                                            source \
              <a href="http://twitter.com/download/iphone" r...</pre>
        2351
              <a href="http://twitter.com/download/iphone" r...</pre>
        2352
        2353
              <a href="http://twitter.com/download/iphone" r...</pre>
              <a href="http://twitter.com/download/iphone" r...</pre>
        2354
              <a href="http://twitter.com/download/iphone" r...
        2355
                                                                    retweeted_status_id
                                                              text
        2351 Here we have a 1949 1st generation vulpix. Enj...
                                                                                     NaN
```

```
2352 This is a purebred Piers Morgan. Loves to Netf...
        2353 Here is a very happy pup. Big fan of well-main...
                                                                                    NaN
        2354
              This is a western brown Mitsubishi terrier. Up...
                                                                                    NaN
        2355
             Here we have a Japanese Irish Setter. Lost eye...
                                                                                    NaN
              retweeted_status_user_id retweeted_status_timestamp
        2351
        2352
                                    NaN
                                                                NaN
        2353
                                    NaN
                                                                NaN
        2354
                                    NaN
                                                                NaN
        2355
                                    NaN
                                                                NaN
                                                    expanded_urls rating_numerator
              https://twitter.com/dog_rates/status/666049248...
                                                                                   5
        2352
              https://twitter.com/dog_rates/status/666044226...
                                                                                   6
              https://twitter.com/dog_rates/status/666033412...
                                                                                   9
        2353
        2354
              https://twitter.com/dog_rates/status/666029285...
                                                                                   7
        2355
              https://twitter.com/dog_rates/status/666020888...
                                                                                   8
              rating_denominator
                                  name doggo floofer pupper puppo
        2351
                                                         None None
                               10
                                   None
                                         None
                                                  None
        2352
                                         None
                                                         None None
                               10
                                                  None
        2353
                               10
                                      а
                                         None
                                                 None
                                                         None None
        2354
                                         None
                                                 None
                                                         None None
                               10
        2355
                               10
                                  None
                                         None
                                                 None
                                                         None None
In [10]: Tweet_Arch.sample(5)
Out[10]:
                                    in_reply_to_status_id in_reply_to_user_id
                          tweet_id
         346
               831926988323639298
                                             8.319030e+17
                                                                     20683724.0
         1440 696886256886657024
                                                       NaN
                                                                             NaN
         1263
              710117014656950272
                                                       NaN
                                                                             NaN
         282
               839239871831150596
                                                       NaN
                                                                             NaN
         2073 670995969505435648
                                                       NaN
                                                                             NaN
                                timestamp
         346
               2017-02-15 18:03:45 +0000
         1440 2016-02-09 02:40:05 +0000
         1263 2016-03-16 14:54:24 +0000
         282
               2017-03-07 22:22:32 +0000
         2073 2015-11-29 16:01:20 +0000
                                                            source \
         346
               <a href="http://twitter.com/download/iphone" r...</pre>
              <a href="http://twitter.com/download/iphone" r...</pre>
         1440
         1263
              <a href="http://twitter.com/download/iphone" r...</pre>
         282
               <a href="http://twitter.com/download/iphone" r...</pre>
         2073 <a href="http://twitter.com/download/iphone" r...
```

NaN

```
346
                                           QUNC can confirm 12/10
                                                                                    NaN
         1440
               Guys I found the dog from Up. 12/10 https://t...
                                                                                   NaN
         1263
               This pupper got her hair chalked for her birth...
                                                                                    NaN
         282
               This is Odie. He's big. 13/10 would attempt to...
                                                                                    NaN
         2073
               Yea I can't handle this job anymore your dogs ...
                                                                                    NaN
               retweeted_status_user_id retweeted_status_timestamp
         346
                                     NaN
                                                                 NaN
         1440
                                     NaN
                                                                 NaN
         1263
                                     NaN
                                                                 NaN
         282
                                     NaN
                                                                 NaN
         2073
                                     NaN
                                                                 NaN
                                                    expanded_urls rating_numerator
         346
                                                               NaN
                                                                                   12
         1440
               https://twitter.com/dog_rates/status/696886256...
                                                                                  12
         1263
               https://twitter.com/dog_rates/status/710117014...
                                                                                  11
         282
               https://twitter.com/dog_rates/status/839239871...
                                                                                   13
         2073
               https://twitter.com/dog_rates/status/670995969...
                                                                                  12
               rating_denominator name doggo floofer
                                                        pupper puppo
         346
                                   None None
                                                  None
                                                          None
                                                               None
                                10
         1440
                                10 None None
                                                  None
                                                          None None
         1263
                                10
                                   None
                                          None
                                                  None
                                                        pupper
                                                                 None
         282
                                10
                                   Odie None
                                                  None
                                                           None
                                                                None
         2073
                                10
                                   None
                                         None
                                                  None
                                                           None
                                                                None
In [11]: Tweet_Arch.info()
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 2356 entries, 0 to 2355
Data columns (total 17 columns):
tweet id
                               2356 non-null int64
in_reply_to_status_id
                               78 non-null float64
                               78 non-null float64
in_reply_to_user_id
timestamp
                               2356 non-null object
source
                               2356 non-null object
                               2356 non-null object
text
retweeted_status_id
                               181 non-null float64
retweeted_status_user_id
                               181 non-null float64
retweeted_status_timestamp
                               181 non-null object
                               2297 non-null object
expanded_urls
                               2356 non-null int64
rating_numerator
rating_denominator
                               2356 non-null int64
                               2356 non-null object
name
                               2356 non-null object
doggo
```

text

retweeted_status_id \

```
2356 non-null object
                               2356 non-null object
pupper
                               2356 non-null object
puppo
dtypes: float64(4), int64(3), object(10)
memory usage: 313.0+ KB
In [12]: Tweet_Arch.dtypes
Out[12]: tweet id
                                          int64
         in_reply_to_status_id
                                        float64
         in_reply_to_user_id
                                        float64
         timestamp
                                         object
         source
                                         object
         text
                                         object
                                        float64
         retweeted_status_id
         retweeted_status_user_id
                                        float64
         retweeted_status_timestamp
                                         object
         expanded_urls
                                         object
         rating_numerator
                                          int64
         rating_denominator
                                          int64
         name
                                         object
                                         object
         doggo
         floofer
                                         object
         pupper
                                         object
         puppo
                                         object
         dtype: object
In [13]: Tweet_Arch['tweet_id'].value_counts()
Out[13]: 749075273010798592
                                1
         741099773336379392
                                1
         798644042770751489
                                1
         825120256414846976
                                1
         769212283578875904
                                1
         700462010979500032
                                1
         780858289093574656
                                1
         699775878809702401
                                1
         880095782870896641
                                1
         760521673607086080
                                1
         776477788987613185
                                1
         691820333922455552
                                1
         715696743237730304
                                1
         714606013974974464
                                1
         760539183865880579
         813157409116065792
                                1
         676430933382295552
                                1
         743510151680958465
                                1
         837012587749474308
                                1
```

floofer

```
833722901757046785
                                1
         818259473185828864
                                1
         670704688707301377
                                1
         667160273090932737
                                1
         674394782723014656
                                1
         672082170312290304
                                1
         670093938074779648
                                1
         759923798737051648
                                1
         809920764300447744
                                1
         805487436403003392
                                1
         838085839343206401
                                1
         763956972077010945
                                1
         870308999962521604
                                1
         720775346191278080
                                1
         785927819176054784
                                1
         783347506784731136
                                1
         775733305207554048
                                1
         834209720923721728
                                1
         825026590719483904
         758405701903519748
                                1
         668986018524233728
                                1
         690938899477221376
                                1
         667911425562669056
                                1
         754482103782404096
                                1
         713175907180089344
                                1
         669015743032369152
                                1
         672068090318987265
                                1
         816829038950027264
                                1
         683773439333797890
                                1
         674291837063053312
                                1
         837482249356513284
                                1
         767500508068192258
                                1
         773922284943896577
                                1
         673342308415348736
                                1
         886054160059072513
                                1
         748307329658011649
                                1
         715360349751484417
                                1
         666817836334096384
                                1
         794926597468000259
                                1
         673705679337693185
                                1
         700151421916807169
                                1
         Name: tweet_id, Length: 2356, dtype: int64
In [14]: Tweet_Arch['name'].value_counts()
Out[14]: None
                            745
                             55
         a
```

Charlie	12
Lucy	11
Cooper	11
Oliver	11
Tucker	10
Penny	10
Lola	10
Winston	9
Bo +ho	9
the	8 8
Sadie	7
Daisy Bailey	7
Buddy	7
Toby	7
an	7
Jack	6
Stanley	6
Dave	6
Bella	6
Oscar	6
Scout	6
Leo	6
Rusty	6
Koda	6
Milo	6
Jax	6
very	5
Chase	1
Dante	1
Dunkin	1
Izzy	1
Kaiya	1
Dex	1
William	1
Sojourner	1
Dallas	1
Barry	1
Amy	1
Kial	1
Berkeley	1
Michelangelope	1
Рорру	1
Sage	1
Rorie	1
Ronnie	1
Pluto	1

```
Ridley
                              1
         Ambrose
                              1
         Augie
                              1
                              1
         Jiminus
         Sailor
                              1
         Kota
                              1
         Chesney
                              1
         Bradley
                              1
         Barclay
                              1
         Trip
                              1
         Name: name, Length: 957, dtype: int64
In [15]:
         Tweet_Arch.loc[(Tweet_Arch['name'].str.islower())]
Out[15]:
                          tweet_id in_reply_to_status_id
                                                             in_reply_to_user_id \
         22
               887517139158093824
                                                        NaN
                                                                              NaN
                                                        NaN
                                                                              NaN
         56
               881536004380872706
         118
               869988702071779329
                                                        NaN
                                                                              NaN
         169
                                                        NaN
               859196978902773760
                                                                              NaN
         193
                                                        NaN
                                                                              NaN
               855459453768019968
         335
               832645525019123713
                                                        NaN
                                                                              NaN
                                                        NaN
         369
               828650029636317184
                                                                              NaN
         542
               806219024703037440
                                                        NaN
                                                                              NaN
         649
                                                        NaN
                                                                              NaN
               792913359805018113
         682
               788552643979468800
                                                        NaN
                                                                              NaN
         759
               778396591732486144
                                                        NaN
                                                                              NaN
         773
               776249906839351296
                                                        NaN
                                                                              NaN
         801
               772581559778025472
                                                        NaN
                                                                              NaN
         819
               770655142660169732
                                                        NaN
                                                                              NaN
         822
               770093767776997377
                                                        NaN
                                                                              NaN
         852
               765395769549590528
                                                        NaN
                                                                              NaN
         924
               755206590534418437
                                                        NaN
                                                                              NaN
         988
               748977405889503236
                                                        NaN
                                                                              NaN
         992
                                                        NaN
               748692773788876800
                                                                              NaN
         993
                                                        NaN
                                                                              NaN
               748575535303884801
         1002 747885874273214464
                                                        NaN
                                                                              NaN
                                                        NaN
         1004
              747816857231626240
                                                                              NaN
         1017 746872823977771008
                                                        NaN
                                                                              NaN
         1025
              746369468511756288
                                                        NaN
                                                                              NaN
         1031 745422732645535745
                                                        NaN
                                                                              NaN
         1040 744223424764059648
                                                        NaN
                                                                              NaN
         1049 743222593470234624
                                                        NaN
                                                                              NaN
         1063 741067306818797568
                                                        NaN
                                                                              NaN
         1071 740214038584557568
                                                        NaN
                                                                              NaN
         1095 736392552031657984
                                                        NaN
                                                                              NaN
                                                        . . .
```

Kayla

2191	668955713004314625	NaN	NaN
2198	668815180734689280	NaN	NaN
2204	668636665813057536	NaN	NaN
2211	668614819948453888	NaN	NaN
2212	668587383441514497	NaN	NaN
2218	668507509523615744	NaN	NaN
2222	668466899341221888	NaN	NaN
2235	668171859951755264	NaN	NaN
2249	667861340749471744	NaN	nan NaN
2249	667773195014021121	NaN	nan NaN
2264	667538891197542400		NaN
2273	667470559035432960	NaN NaN	nan NaN
2287	667177989038297088	NaN Nan	NaN N-N
2304	666983947667116034	NaN	NaN
2311	666781792255496192	NaN	NaN
2314	666701168228331520	NaN	NaN
2326	666411507551481857	NaN	NaN
2327	666407126856765440	NaN	NaN
2333	666337882303524864	NaN	NaN
2334	666293911632134144	NaN	NaN
2335	666287406224695296	NaN	NaN
2345	666063827256086533	NaN	NaN
2346	666058600524156928	NaN	NaN
2347	666057090499244032	NaN	NaN
2348	666055525042405380	NaN	NaN
2349	666051853826850816	NaN	NaN
2350	666050758794694657	NaN	NaN
2352	666044226329800704	NaN	NaN
2353	666033412701032449	NaN	NaN
2354	666029285002620928	NaN	NaN
	timestamp	\	
22	2017-07-19 03:39:09 +0000		
56	2017-07-02 15:32:16 +0000		
118	2017-05-31 18:47:24 +0000		
169	2017-05-02 00:04:57 +0000		
193	2017-04-21 16:33:22 +0000		
335	2017-02-17 17:38:57 +0000		
369	2017-02-06 17:02:17 +0000		
542	2016-12-06 19:29:28 +0000		
649	2016-10-31 02:17:31 +0000		
682	2016-10-19 01:29:35 +0000		
759	2016-09-21 00:53:04 +0000		
773	2016-09-15 02:42:54 +0000		
801	2016-09-04 23:46:12 +0000		
819	2016-08-30 16:11:18 +0000		
822	2016-08-29 03:00:36 +0000		
852	2016-08-16 03:52:26 +0000		

```
924
     2016-07-19 01:04:16 +0000
     2016-07-01 20:31:43 +0000
988
992
     2016-07-01 01:40:41 +0000
993
     2016-06-30 17:54:50 +0000
1002 2016-06-28 20:14:22 +0000
1004 2016-06-28 15:40:07 +0000
1017 2016-06-26 01:08:52 +0000
1025 2016-06-24 15:48:42 +0000
1031 2016-06-22 01:06:43 +0000
1040 2016-06-18 17:41:06 +0000
1049 2016-06-15 23:24:09 +0000
1063 2016-06-10 00:39:48 +0000
1071 2016-06-07 16:09:13 +0000
1095
    2016-05-28 03:04:00 +0000
2191 2015-11-24 00:54:05 +0000
2198 2015-11-23 15:35:39 +0000
2204 2015-11-23 03:46:18 +0000
2211 2015-11-23 02:19:29 +0000
2212 2015-11-23 00:30:28 +0000
2218 2015-11-22 19:13:05 +0000
2222 2015-11-22 16:31:42 +0000
2235 2015-11-21 20:59:20 +0000
2249 2015-11-21 00:25:26 +0000
2255 2015-11-20 18:35:10 +0000
2264 2015-11-20 03:04:08 +0000
2273 2015-11-19 22:32:36 +0000
2287
     2015-11-19 03:10:02 +0000
2304 2015-11-18 14:18:59 +0000
2311 2015-11-18 00:55:42 +0000
2314
     2015-11-17 19:35:19 +0000
2326 2015-11-17 00:24:19 +0000
2327
     2015-11-17 00:06:54 +0000
2333 2015-11-16 19:31:45 +0000
2334 2015-11-16 16:37:02 +0000
2335 2015-11-16 16:11:11 +0000
2345 2015-11-16 01:22:45 +0000
2346 2015-11-16 01:01:59 +0000
2347 2015-11-16 00:55:59 +0000
2348 2015-11-16 00:49:46 +0000
2349 2015-11-16 00:35:11 +0000
2350 2015-11-16 00:30:50 +0000
2352 2015-11-16 00:04:52 +0000
2353 2015-11-15 23:21:54 +0000
     2015-11-15 23:05:30 +0000
2354
                                                source \
22
     <a href="http://twitter.com/download/iphone" r...</pre>
```

```
56
      <a href="http://twitter.com/download/iphone" r...</pre>
118
      <a href="http://twitter.com/download/iphone" r...</pre>
169
      <a href="http://twitter.com/download/iphone" r...</pre>
193
      <a href="http://twitter.com/download/iphone" r...</pre>
      <a href="http://twitter.com" rel="nofollow">Tw...
335
      <a href="http://twitter.com/download/iphone" r...</pre>
369
542
      <a href="http://twitter.com/download/iphone" r...</pre>
649
      <a href="http://twitter.com/download/iphone" r...</pre>
      <a href="http://twitter.com/download/iphone" r...</pre>
682
759
      <a href="http://twitter.com/download/iphone" r...</pre>
773
      <a href="http://twitter.com/download/iphone" r...</pre>
      <a href="http://twitter.com/download/iphone" r...</pre>
801
819
      <a href="http://twitter.com/download/iphone" r...</pre>
      <a href="http://twitter.com/download/iphone" r...</pre>
822
852
      <a href="http://twitter.com/download/iphone" r...</pre>
924
      <a href="http://twitter.com/download/iphone" r...</pre>
988
      <a href="http://twitter.com/download/iphone" r...</pre>
992
      <a href="http://twitter.com/download/iphone" r...</pre>
993
      <a href="http://twitter.com/download/iphone" r...</pre>
1002
      <a href="http://twitter.com/download/iphone" r...</pre>
      <a href="http://twitter.com/download/iphone" r...</pre>
1004
1017
      <a href="http://twitter.com/download/iphone" r...
1025
      <a href="http://twitter.com/download/iphone" r...</pre>
1031
      <a href="http://twitter.com/download/iphone" r...</pre>
1040
      <a href="http://twitter.com/download/iphone" r...</pre>
      <a href="http://twitter.com/download/iphone" r...
1049
1063
      <a href="http://twitter.com/download/iphone" r...</pre>
      <a href="http://twitter.com/download/iphone" r...
1071
1095
      <a href="http://vine.co" rel="nofollow">Vine -...
. . .
      <a href="http://twitter.com/download/iphone" r...</pre>
2191
2198
      <a href="http://twitter.com/download/iphone" r...</pre>
2204
      <a href="http://twitter.com/download/iphone" r...</pre>
2211
      <a href="http://twitter.com/download/iphone" r...</pre>
2212
      <a href="http://vine.co" rel="nofollow">Vine -...
2218
      <a href="http://twitter.com/download/iphone" r...
      <a href="http://twitter.com/download/iphone" r...</pre>
2222
2235
      <a href="http://twitter.com/download/iphone" r...</pre>
      <a href="http://twitter.com/download/iphone" r...</pre>
2249
      <a href="http://twitter.com" rel="nofollow">Tw...
2255
2264
      <a href="http://twitter.com" rel="nofollow">Tw...
2273
      <a href="http://twitter.com" rel="nofollow">Tw...
2287
      <a href="http://twitter.com/download/iphone" r...</pre>
2304
      <a href="http://twitter.com/download/iphone" r...</pre>
2311
      <a href="http://twitter.com/download/iphone" r...</pre>
2314
      <a href="http://twitter.com/download/iphone" r...</pre>
2326
      <a href="http://twitter.com/download/iphone" r...</pre>
2327
      <a href="http://twitter.com/download/iphone" r...</pre>
```

```
2333
      <a href="http://twitter.com/download/iphone" r...
2334
      <a href="http://twitter.com/download/iphone" r...</pre>
2335
      <a href="http://twitter.com/download/iphone" r...
2345
      <a href="http://twitter.com/download/iphone" r...</pre>
2346
      <a href="http://twitter.com/download/iphone" r...</pre>
2347
      <a href="http://twitter.com/download/iphone" r...</pre>
2348
      <a href="http://twitter.com/download/iphone" r...
2349
      <a href="http://twitter.com/download/iphone" r...</pre>
2350
      <a href="http://twitter.com/download/iphone" r...</pre>
2352
      <a href="http://twitter.com/download/iphone" r...</pre>
2353
      <a href="http://twitter.com/download/iphone" r...</pre>
2354
      <a href="http://twitter.com/download/iphone" r...
                                                     text retweeted_status_id \
22
      I've yet to rate a Venezuelan Hover Wiener. Th...
                                                                            NaN
56
      Here is a pupper approaching maximum borkdrive...
                                                                            NaN
118
      RT @dog_rates: We only rate dogs. This is quit...
                                                                   8.591970e+17
169
      We only rate dogs. This is quite clearly a smo...
                                                                            NaN
193
      Guys, we only rate dogs. This is quite clearly...
                                                                            NaN
335
      There's going to be a dog terminal at JFK Airp...
                                                                            NaN
369
      Occasionally, we're sent fantastic stories. Th...
                                                                            NaN
542
      We only rate dogs. Please stop sending in non-...
                                                                            NaN
649
      Here is a perfect example of someone who has t...
                                                                            NaN
                                                                   7.363926e+17
682
      RT @dog_rates: Say hello to mad pupper. You kn...
759
      RT @dog_rates: This is an East African Chalupa...
                                                                   7.030419e+17
773
      RT @dog_rates: We only rate dogs. Pls stop sen...
                                                                   7.007478e+17
801
      Guys this is getting so out of hand. We only r...
                                                                            NaN
819
      We only rate dogs. Pls stop sending in non-can...
                                                                            NaN
822
      RT @dog_rates: This is just downright precious...
                                                                   7.410673e+17
852
      This is my dog. Her name is Zoey. She knows I'...
                                                                            NaN
924
      This is one of the most inspirational stories ...
                                                                            NaN
988
      What jokester sent in a pic without a dog in i...
                                                                            NaN
992
      That is Quizno. This is his beach. He does not...
                                                                            NaN
993
      This is one of the most reckless puppers I've ...
                                                                            NaN
1002
      This is a mighty rare blue-tailed hammer sherk...
                                                                            {\tt NaN}
      Viewer discretion is advised. This is a terrib...
1004
                                                                            NaN
      This is a carrot. We only rate dogs. Please on...
                                                                            NaN
1025
      This is an Iraqi Speed Kangaroo. It is not a d...
                                                                            NaN
                                                                            NaN
1031
      We only rate dogs. Pls stop sending in non-can...
1040
      This is actually a pupper and I'd pet it so we...
                                                                            NaN
      This is a very rare Great Alaskan Bush Pupper...
                                                                           NaN
1049
1063
      This is just downright precious af. 12/10 for ...
                                                                            NaN
1071
      This is getting incredibly frustrating. This i...
                                                                            NaN
1095
      Say hello to mad pupper. You know what you did...
                                                                            NaN
                                                                            . . .
. . .
2191
      This is a Slovakian Helter Skelter Feta named ...
                                                                            {\tt NaN}
2198
      This is a wild Toblerone from Papua New Guinea...
                                                                            NaN
2204
      This is an Irish Rigatoni terrier named Berta...
                                                                           NaN
```

```
NaN
2211 Here is a horned dog. Much grace. Can jump ove...
2212 Never forget this vine. You will not stop watc...
                                                                           NaN
2218
      This is a Birmingham Quagmire named Chuk. Love...
                                                                           NaN
2222
      Here is a mother dog caring for her pups. Snaz...
                                                                           NaN
2235
      This is a Trans Siberian Kellogg named Alfonso...
                                                                           NaN
2249
      This is a Shotokon Macadamia mix named Cheryl...
                                                                          NaN
2255
      This is a rare Hungarian Pinot named Jessiga. ...
                                                                           NaN
2264
     This is a southwest Coriander named Klint. Hat...
                                                                           NaN
2273
      This is a northern Wahoo named Kohl. He runs t...
                                                                           NaN
2287
      This is a Dasani Kingfisher from Maine. His na...
                                                                           NaN
2304
      This is a curly Ticonderoga named Pepe. No fee...
                                                                           NaN
2311
      This is a purebred Bacardi named Octaviath. Ca...
                                                                           NaN
2314
      This is a golden Buckminsterfullerene named Jo...
                                                                           NaN
2326
     This is quite the dog. Gets really excited whe...
                                                                           NaN
2327
      This is a southern Vesuvius bumblegruff. Can d...
                                                                           NaN
2333
     This is an extremely rare horned Parthenon. No...
                                                                           NaN
2334
      This is a funny dog. Weird toes. Won't come do...
                                                                           NaN
      This is an Albanian 3 1/2 legged Episcopalian...
2335
                                                                           NaN
2345
      This is the happiest dog you will ever see. Ve...
                                                                           NaN
2346
     Here is the Rand Paul of retrievers folks! He'...
                                                                           NaN
2347
      My oh my. This is a rare blond Canadian terrie...
                                                                           NaN
2348
     Here is a Siberian heavily armored polar bear ...
                                                                           NaN
      This is an odd dog. Hard on the outside but lo...
                                                                           NaN
2350
     This is a truly beautiful English Wilson Staff...
                                                                           NaN
2352 This is a purebred Piers Morgan. Loves to Netf...
                                                                           NaN
2353
      Here is a very happy pup. Big fan of well-main...
                                                                           NaN
2354
      This is a western brown Mitsubishi terrier. Up...
                                                                           NaN
      retweeted_status_user_id retweeted_status_timestamp
22
                                                       NaN
56
                            NaN
                                                       NaN
118
                  4.196984e+09
                                 2017-05-02 00:04:57 +0000
169
                           NaN
                                                       NaN
193
                           NaN
                                                       NaN
335
                           NaN
                                                       NaN
369
                           NaN
                                                       NaN
542
                           NaN
                                                       NaN
649
                            NaN
                                                       NaN
                  4.196984e+09
                                 2016-05-28 03:04:00 +0000
682
                  4.196984e+09
759
                                 2016-02-26 02:20:37 +0000
773
                  4.196984e+09
                                 2016-02-19 18:24:26 +0000
801
                           NaN
                                                       NaN
819
                           NaN
                                                       NaN
                  4.196984e+09
                                 2016-06-10 00:39:48 +0000
822
852
                            NaN
                                                       NaN
924
                           NaN
                                                       NaN
988
                           NaN
                                                       NaN
```

NaN

NaN

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993
                               NaN
                                                               NaN
1002
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1004
                               {\tt NaN}
                                                               NaN
1017
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1071
                               NaN
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1095
                               {\tt NaN}
                                                               NaN
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2191
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2198
                               NaN
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2204
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                               NaN
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2212
                               {\tt NaN}
                                                               NaN
2218
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                                                               NaN
2222
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                                                               NaN
2235
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2249
                               NaN
                                                               NaN
2255
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2264
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2273
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2287
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2304
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2311
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2314
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2326
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2333
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2334
                               {\tt NaN}
                                                               NaN
2335
                               {\tt NaN}
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2352
                               NaN
                                                               NaN
2353
                                                               NaN
                               NaN
2354
                               NaN
                                                               NaN
                                                 expanded_urls rating_numerator
22
       https://twitter.com/dog_rates/status/887517139...
                                                                                   14
56
       https://twitter.com/dog_rates/status/881536004...
                                                                                   14
       https://twitter.com/dog_rates/status/859196978...
118
                                                                                   12
                                                                                   12
169
       https://twitter.com/dog_rates/status/859196978...
```

```
193
      https://twitter.com/dog_rates/status/855459453...
                                                                         12
335
      http://us.blastingnews.com/news/2017/02/jfk-an...
                                                                         10
369
      https://twitter.com/dog_rates/status/828650029...
                                                                         14
542
      https://twitter.com/dog_rates/status/806219024...
                                                                         11
      https://twitter.com/dog_rates/status/792913359...
649
                                                                         13
      https://vine.co/v/iEggaEOiLO3,https://vine.co/...
682
                                                                         13
759
      https://twitter.com/dog_rates/status/703041949...
                                                                         10
773
      https://twitter.com/dog_rates/status/700747788...
                                                                         11
      https://twitter.com/dog_rates/status/772581559...
801
                                                                         10
819
      https://twitter.com/dog_rates/status/770655142...
                                                                         11
822
      https://twitter.com/dog_rates/status/741067306...
                                                                         12
852
      https://twitter.com/dog_rates/status/765395769...
                                                                         13
      https://twitter.com/dog_rates/status/755206590...
924
                                                                         14
      https://twitter.com/dog_rates/status/748977405...
988
                                                                         10
      https://twitter.com/dog_rates/status/748692773...
992
                                                                         10
993
      https://twitter.com/dog_rates/status/748575535...
                                                                          6
1002
      https://twitter.com/dog_rates/status/747885874...
                                                                          8
1004
      https://twitter.com/dog_rates/status/747816857...
                                                                          4
1017
      https://twitter.com/dog_rates/status/746872823...
                                                                         11
1025
     https://twitter.com/dog_rates/status/746369468...
                                                                          9
1031
      https://twitter.com/dog_rates/status/745422732...
                                                                          9
      https://twitter.com/strange_animals/status/672...
                                                                         12
1040
      https://twitter.com/dog_rates/status/743222593...
                                                                         12
1063
      https://twitter.com/dog_rates/status/741067306...
                                                                         12
1071
      https://twitter.com/dog_rates/status/740214038...
                                                                         10
1095
                          https://vine.co/v/iEggaE0iL03
                                                                         13
. . .
                                                                        . . .
      https://twitter.com/dog_rates/status/668955713...
2191
                                                                         10
      https://twitter.com/dog_rates/status/668815180...
                                                                          7
2198
2204
      https://twitter.com/dog_rates/status/668636665...
                                                                         10
2211
      https://twitter.com/dog_rates/status/668614819...
                                                                          7
                          https://vine.co/v/ea00wvPTx91
2212
                                                                        13
     https://twitter.com/dog_rates/status/668507509...
2218
                                                                         10
2222
     https://twitter.com/dog_rates/status/668466899...
                                                                          4
2235
      https://twitter.com/dog_rates/status/668171859...
                                                                          7
      https://twitter.com/dog_rates/status/667861340...
2249
                                                                          9
2255
      https://twitter.com/dog_rates/status/667773195...
                                                                          8
2264
      https://twitter.com/dog_rates/status/667538891...
                                                                          9
2273
      https://twitter.com/dog_rates/status/667470559...
                                                                         11
2287
      https://twitter.com/dog_rates/status/667177989...
                                                                          8
2304
      https://twitter.com/dog_rates/status/666983947...
                                                                         11
      https://twitter.com/dog_rates/status/666781792...
2311
                                                                         10
2314
      https://twitter.com/dog_rates/status/666701168...
                                                                          8
2326
      https://twitter.com/dog_rates/status/666411507...
                                                                          2
      https://twitter.com/dog_rates/status/666407126...
                                                                          7
2327
2333
      https://twitter.com/dog_rates/status/666337882...
                                                                          9
2334
      https://twitter.com/dog_rates/status/666293911...
                                                                          3
2335
      https://twitter.com/dog_rates/status/666287406...
                                                                          1
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2345
      https://twitter.com/dog_rates/status/666063827...
2346
      https://twitter.com/dog_rates/status/666058600...
2347
      https://twitter.com/dog_rates/status/666057090...
2348
      https://twitter.com/dog_rates/status/666055525...
2349
      https://twitter.com/dog_rates/status/666051853...
2350
      https://twitter.com/dog_rates/status/666050758...
      https://twitter.com/dog_rates/status/666044226...
2352
2353
      https://twitter.com/dog_rates/status/666033412...
2354
      https://twitter.com/dog_rates/status/666029285...
      rating_denominator
                                          doggo floofer
                                                          pupper puppo
                                   name
22
                        10
                                   such
                                           None
                                                    None
                                                             None None
56
                        10
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                                                    None
                                                          pupper
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                                   very
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822
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                                   just
                                          doggo
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                                                          pupper
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                                          doggo
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988
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                                    not
                                           None
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992
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                                    his
                                          doggo
993
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1063
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                                          doggo
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                                                                   None
                                   just
                                                          pupper
1071
                        10
                                getting
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                                    mad
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9

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2222
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         2235
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                                                                   None None
                                              a
                                                  None
         2249
                                                                   None None
                                10
                                                  None
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                                              a
         2255
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                                                                   None None
                                              a
         2264
                                                           None
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                                10
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         2273
                                10
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                                                                   None
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         2287
                                10
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         2304
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         2311
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                                                  None
                                              a
         2314
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                                              а
                                                  None
                                                           None
                                                                   None None
         2326
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                                10
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                                                           None
                                          quite
         2327
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                                                           None
                                                                   None None
                                            the
         2346
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                                                                   None None
         2347
                                10
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                                              a
         2348
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                                                           None
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                                10
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                                                           None
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                                             an
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                                              a
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                                                           None
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                                              a
         2353
                                10
                                              a
                                                  None
                                                           None
                                                                   None None
         2354
                                10
                                                           None
                                                                   None None
                                                  None
         [109 rows x 17 columns]
In [16]: Tweet_Arch['doggo'].value_counts()
                   2259
         doggo
                     97
         Name: doggo, dtype: int64
```

Out [16]: None In [17]: Tweet_Arch['floofer'].value_counts() Out[17]: None 2346 floofer 10 Name: floofer, dtype: int64 In [18]: Tweet_Arch['pupper'].value_counts() Out [18]: None 2099 257 pupper Name: pupper, dtype: int64 In [19]: Tweet_Arch['puppo'].value_counts() Out[19]: None 2326

30

Name: puppo, dtype: int64

puppo

0.2.2 2- tweet image predictions

```
In [20]: Imges_pred.head()
Out [20]:
                       tweet_id
                                                                           jpg_url \
            666020888022790149
                                 https://pbs.twimg.com/media/CT4udnOWwAAOaMy.jpg
         1
            666029285002620928
                                 https://pbs.twimg.com/media/CT42GRgUYAA5iDo.jpg
                                 https://pbs.twimg.com/media/CT4521TWwAEvMyu.jpg
         2
            666033412701032449
            666044226329800704
                                 https://pbs.twimg.com/media/CT5Dr8HUEAA-1Eu.jpg
         3
            666049248165822465
                                 https://pbs.twimg.com/media/CT5IQmsXIAAKY4A.jpg
                                                                                  p2
            img_num
                                               p1_conf p1_dog
                     Welsh_springer_spaniel
         0
                  1
                                               0.465074
                                                           True
                                                                              collie
         1
                  1
                                     redbone
                                               0.506826
                                                           True
                                                                 miniature_pinscher
         2
                  1
                             German_shepherd
                                              0.596461
                                                           True
                                                                            malinois
         3
                  1
                         Rhodesian_ridgeback
                                               0.408143
                                                           True
                                                                             redbone
                          miniature_pinscher
                                                                          Rottweiler
                  1
                                               0.560311
                                                           True
                                                               p3_dog
             p2_conf
                      p2_dog
                                                 рЗ
                                                      p3_conf
           0.156665
                         True
                                 Shetland_sheepdog
                                                     0.061428
                                                                 True
         1 0.074192
                         True
                               Rhodesian_ridgeback
                                                     0.072010
                                                                 True
         2 0.138584
                         True
                                        bloodhound
                                                     0.116197
                                                                 True
         3
           0.360687
                         True
                                miniature_pinscher
                                                     0.222752
                                                                 True
           0.243682
                         True
                                          Doberman
                                                    0.154629
                                                                 True
In [21]: Imges_pred.shape
Out[21]: (2075, 12)
In [22]: Imges_pred.tail()
Out [22]:
                          tweet_id
                                                                              jpg_url \
         2070 891327558926688256
                                    https://pbs.twimg.com/media/DF6hr6BUMAAzZgT.jpg
         2071 891689557279858688
                                    https://pbs.twimg.com/media/DF_q7IAWsAEuuN8.jpg
         2072 891815181378084864
                                    https://pbs.twimg.com/media/DGBdLU1WsAANxJ9.jpg
         2073
              892177421306343426
                                    https://pbs.twimg.com/media/DGGmoV4XsAAUL6n.jpg
         2074
               892420643555336193
                                    https://pbs.twimg.com/media/DGKD1-bXoAAIAUK.jpg
                                       p1_conf
                                                                          p2
                                                                               p2_conf
               img_num
                                  р1
                                                 p1_dog
         2070
                     2
                                      0.555712
                                                           English_springer
                              basset
                                                   True
                                                                              0.225770
         2071
                         paper_towel
                                      0.170278
                                                  False
                                                        Labrador_retriever
                                                                              0.168086
                     1
         2072
                     1
                                      0.716012
                           Chihuahua
                                                   True
                                                                   malamute
                                                                              0.078253
         2073
                     1
                           Chihuahua
                                     0.323581
                                                                   Pekinese
                                                                              0.090647
                                                   True
         2074
                     1
                              orange 0.097049
                                                  False
                                                                              0.085851
                                                                       bagel
               p2_dog
                                                       p3_conf
                                                  рЗ
                                                                p3_dog
                        German_short-haired_pointer
         2070
                 True
                                                      0.175219
                                                                  True
         2071
                 True
                                            spatula
                                                      0.040836
                                                                 False
         2072
                 True
                                             kelpie 0.031379
                                                                  True
```

```
2073
                 True
                                           papillon 0.068957
                                                                  True
         2074
                                                      0.076110
                False
                                             banana
                                                                 False
In [23]: Imges_pred.sample(5)
Out [23]:
                          tweet_id
                                                                              jpg_url
         906
               700167517596164096
                                    https://pbs.twimg.com/media/Cbd-o8hWwAE40Fm.jpg
         1443
               775729183532220416
                                    https://pbs.twimg.com/media/CsPxk85XEAAeMQj.jpg
                                    https://pbs.twimg.com/media/CkNjahBXAAQ2kWo.jpg
         1349
               759566828574212096
         257
                                    https://pbs.twimg.com/media/CU8VFhuVAAAQW8B.jpg
               670778058496974848
         587
               679062614270468097
                                    https://pbs.twimg.com/media/CWyD2HGUYAQ1Xa7.jpg
               img_num
                                         р1
                                              p1_conf
                                                        p1_dog
                                                                                 p2
                                                                                    \
                                                                           Pembroke
         906
                     1
                                     beagle
                                             0.162585
                                                          True
         1443
                     1
                                   web_site
                                             0.989407
                                                         False
                                                                hand-held_computer
         1349
                     1
                         Labrador_retriever
                                                          True
                                                                  golden_retriever
                                             0.967397
         257
                     1
                                             0.776612
                                                          True
                                                                 Brabancon_griffon
                                        pug
                     2
         587
                               cash_machine
                                             0.802333
                                                         False
                                                                         schipperke
                p2_conf
                         p2_dog
                                               рЗ
                                                     p3_conf
                                                              p3_dog
         906
               0.120481
                            True
                                   Siberian_husky
                                                    0.110284
                                                                True
         1443
               0.002139
                           False
                                                    0.002115
                                             menu
                                                               False
         1349
               0.016641
                            True
                                         ice_bear
                                                    0.014858
                                                               False
         257
               0.112032
                            True
                                                    0.039051
                                                                True
                                             boxer
         587
               0.045519
                            True
                                  German_shepherd
                                                    0.023353
                                                                True
In [24]: img_dup = Imges_pred["jpg_url"]
         Imges_pred[img_dup.isin(img_dup[img_dup.duplicated()])]
Out [24]:
                          tweet_id
                                                                                jpg_url
         85
               667509364010450944
                                      https://pbs.twimg.com/media/CUN40r5UAAAa5K4.jpg
                                      https://pbs.twimg.com/media/CU1zsMSUAAASOqW.jpg
         224
               670319130621435904
                                      https://pbs.twimg.com/media/CU3mITUWIAAfyQS.jpg
         241
               670444955656130560
         327
               671896809300709376
                                      https://pbs.twimg.com/media/CVMOlMiWwAA4Yxl.jpg
                                      https://pbs.twimg.com/media/CVgdFjNWEAAxmbq.jpg
         382
               673320132811366400
                                      https://pbs.twimg.com/media/CVuQ2LeUsAAIe3s.jpg
         432
               674291837063053312
         480
               675354435921575936
                                    https://pbs.twimg.com/ext_tw_video_thumb/67535...
         487
               675501075957489664
                                      https://pbs.twimg.com/media/CV_cnjHWUAADc-c.jpg
                                      https://pbs.twimg.com/media/CWyD2HGUYAQ1Xa7.jpg
         587
               679062614270468097
                                      https://pbs.twimg.com/media/CWza7kpWcAAdYLc.jpg
         591
               679158373988876288
                                      https://pbs.twimg.com/media/CW88XN4WsAAlo8r.jpg
         602
               679828447187857408
         713
                                      https://pbs.twimg.com/media/CYLDikFWEAAIy1y.jpg
               685325112850124800
                                      https://pbs.twimg.com/media/CZhn-QAWwAASQan.jpg
         800
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         915
                                      https://pbs.twimg.com/media/Cbs3DOAXIAAp3Bd.jpg
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                                      https://pbs.twimg.com/media/CcGO7BYWOAErrC9.jpg
         930
               703041949650034688
         985
                                      https://pbs.twimg.com/media/CdHwZdOVIAA4792.jpg
               707610948723478529
         1033
               711694788429553666
                                    https://pbs.twimg.com/tweet_video_thumb/CeBym7...
         1045
               712809025985978368
                                      https://pbs.twimg.com/media/CeRoBaxWEAABiOX.jpg
```

1118

725842289046749185

https://pbs.twimg.com/media/ChK1tdBWwAQ1flD.jpg

```
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1155
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                            https://pbs.twimg.com/media/CiyHLocU4AI2pJu.jpg
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                            https://pbs.twimg.com/media/CkNjahBXAAQ2kWo.jpg
1201
                            https://pbs.twimg.com/media/CkjMx99UoAM2B1a.jpg
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                            https://pbs.twimg.com/media/Ck2d7tJWUAEPTL3.jpg
1209
      742423170473463808
1283
                            https://pbs.twimg.com/media/CmoPdmHW8AAi8BI.jpg
      750429297815552001
1297
      752309394570878976
                          https://pbs.twimg.com/ext_tw_video_thumb/67535...
      754874841593970688
1315
                            https://pbs.twimg.com/media/CWza7kpWcAAdYLc.jpg
1333
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                            https://pbs.twimg.com/media/CWyD2HGUYAQ1Xa7.jpg
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      759159934323924993
                            https://pbs.twimg.com/media/CU1zsMSUAAASOqW.jpg
1349
      759566828574212096
                            https://pbs.twimg.com/media/CkNjahBXAAQ2kWo.jpg
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      816829038950027264
                            https://pbs.twimg.com/media/CvoBPWRWgAA4het.jpg
                          https://pbs.twimg.com/ext_tw_video_thumb/81596...
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      817181837579653120
1705
      817423860136083457
                          https://pbs.twimg.com/ext_tw_video_thumb/81742...
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                            https://pbs.twimg.com/media/Crwxb5yWgAAX5P_.jpg
1715
      819004803107983360
                            https://pbs.twimg.com/media/C12whDoVEAALRxa.jpg
1716
      819006400881917954
                            https://pbs.twimg.com/media/C12x-JTVIAAzdfl.jpg
1717
      819015331746349057
                            https://pbs.twimg.com/media/C12x-JTVIAAzdfl.jpg
1718
      819015337530290176
                            https://pbs.twimg.com/media/C12whDoVEAALRxa.jpg
1727
      820446719150292993
                            https://pbs.twimg.com/media/CxqsX-8XUAAEvjD.jpg
1736
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                            https://pbs.twimg.com/media/CtVAvX-WIAAcGTf.jpg
1738
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                            https://pbs.twimg.com/media/C2kzTGxWEAEOpPL.jpg
1740
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                            https://pbs.twimg.com/media/C2oRbOuWEAAbVS1.jpg
1742
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                            https://pbs.twimg.com/media/C2oRbOuWEAAbVS1.jpg
1746
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                            https://pbs.twimg.com/media/C2kzTGxWEAEOpPL.jpg
1755
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1785
                            https://pbs.twimg.com/media/C4KHj-nWQAA3poV.jpg
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1789
      829878982036299777
                            https://pbs.twimg.com/media/C3nygbBWQAAjwcW.jpg
1791
      830583320585068544
                            https://pbs.twimg.com/media/C4bTH6nWMAAX_bJ.jpg
1803
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                            https://pbs.twimg.com/media/Cq9guJ5WgAADfpF.jpg
1804
      832215726631055365
                            https://pbs.twimg.com/media/CwJR1okWIAA6XMp.jpg
1858
      841833993020538882
                          https://pbs.twimg.com/ext_tw_video_thumb/81742...
                          https://pbs.twimg.com/ext_tw_video_thumb/80710...
1864
      842892208864923648
1903
      851953902622658560
                            https://pbs.twimg.com/media/C4KHj-nWQAA3poV.jpg
1944
      861769973181624320
                            https://pbs.twimg.com/media/CzG425nWgAAnP7P.jpg
1970
      868880397819494401
                            https://pbs.twimg.com/media/DA7iHL5UOAA10Qo.jpg
1992
      873697596434513921
                            https://pbs.twimg.com/media/DA7iHL5UOAA10Qo.jpg
2041
      885311592912609280
                            https://pbs.twimg.com/media/C4bTH6nWMAAX_bJ.jpg
2051
                            https://pbs.twimg.com/media/DFDw2tyUQAAAFke.jpg
      887473957103951883
2055
      888202515573088257
                            https://pbs.twimg.com/media/DFDw2tyUQAAAFke.jpg
      img_num
                                       р1
                                            p1_conf
                                                     p1_dog
85
                                  beagle
                                           0.636169
                                                       True
            1
224
            1
                           Irish_terrier
                                           0.254856
                                                       True
241
            1
                        English_springer
                                           0.403698
                                                       True
327
            1
                                           0.243529
                                     chow
                                                       True
```

382	3	Samoyed	0.978833	True
432	1	Cardigan	0.611525	True
480	1	upright	0.303415	False
487	1	dough	0.806757	False
587	2	cash_machine	0.802333	False
591	1	pug	0.272205	True
602	3	Chihuahua	0.346545	True
713	1	golden_retriever	0.586937	True
800	1	Lakeland_terrier	0.530104	True
915	1	Chihuahua	0.615163	True
930	1	hippopotamus	0.581403	False
985	1	golden_retriever	0.383223	True
1033	1	brown_bear	0.713293	False
1045	1	Labrador_retriever	0.868671	True
1118	1	toy_poodle	0.420463	True
1150	1	English_setter	0.677408	True
1155	1	golden_retriever	0.945523	True
1188	1	Labrador_retriever	0.967397	True
1201	1	golden_retriever	0.843799	True
1209	1	pug	0.997310	True
1283	1	golden_retriever	0.964929	True
1297	1	upright	0.303415	False
1315	1	pug	0.272205	True
1333	2	cash_machine	0.802333	False
1345	1	Irish_terrier	0.254856	True
1349	1	_ Labrador_retriever	0.967397	True
		-		
1699	1	dishwasher	0.700466	False
1703	1	Tibetan_mastiff	0.506312	True
1705	1	ice_bear	0.336200	False
1712	1	Norwegian_elkhound	0.372202	True
1715	1	standard_poodle	0.351308	True
1716	4	prison	0.907083	False
1717	4	prison	0.907083	False
1718	1	standard_poodle	0.351308	True
1727	3	golden_retriever	0.938048	True
1736	1	Saint_Bernard	0.995143	True
1738	1	Samoyed	0.585441	True
1740	1	Samoyed	0.416769	True
1742	1	Samoyed	0.416769	True
1746	1	Samoyed	0.585441	True
1755	2	gas_pump	0.676439	False
1767	1	golden_retriever	0.617389	True
1785	1	Staffordshire_bullterrier	0.757547	True
1789	1	golden_retriever	0.617389	True
1791	1	Labrador_retriever	0.908703	True
1803	1	${ t miniature_pinscher}$	0.796313	True
1804	1	Afghan_hound	0.274637	True

```
1858
            1
                                            0.336200
                                 ice_bear
                                                        False
1864
            1
                                Chihuahua
                                            0.505370
                                                         True
1903
            1
               Staffordshire_bullterrier
                                            0.757547
                                                         True
            2
                            Arabian_camel
1944
                                            0.366248
                                                        False
            1
1970
                                    laptop
                                            0.153718
                                                        False
1992
            1
                                    laptop
                                            0.153718
                                                        False
2041
            1
                       Labrador_retriever
                                            0.908703
                                                         True
2051
                                 Pembroke
                                            0.809197
                                                         True
2055
            2
                                 Pembroke
                                            0.809197
                                                         True
                                         p2_conf
                                                  p2_dog
                                    p2
85
                                        0.119256
                                                     True
                   Labrador_retriever
224
                                        0.227716
                                                     True
                               briard
241
                     Brittany_spaniel
                                        0.347609
                                                     True
327
                              hamster
                                        0.227150
                                                    False
382
                           Pomeranian 0.012763
                                                     True
432
                             Pembroke
                                        0.368566
                                                     True
480
                                                     True
                     golden_retriever
                                        0.181351
487
                                                   False
                               bakery
                                        0.027907
587
                           schipperke
                                        0.045519
                                                     True
591
                         bull_mastiff
                                        0.251530
                                                     True
602
                            dalmatian 0.166246
                                                     True
713
                   Labrador_retriever
                                        0.398260
                                                     True
800
                        Irish_terrier
                                                     True
                                        0.197314
915
                             Pembroke
                                        0.159509
                                                     True
930
                                        0.152445
                                                    False
                              doormat
                       cocker_spaniel
985
                                        0.165930
                                                     True
1033
                      Indian_elephant
                                        0.172844
                                                    False
                                                    False
1045
                                carton
                                        0.095095
1118
                     miniature_poodle 0.132640
                                                     True
1150
                        Border collie 0.052724
                                                     True
1155
                   Labrador_retriever
                                        0.042319
                                                     True
1188
                     golden_retriever
                                        0.016641
                                                     True
1201
                   Labrador_retriever
                                        0.052956
                                                     True
                    Brabancon_griffon
1209
                                        0.001186
                                                     True
1283
                   Labrador_retriever
                                        0.011584
                                                     True
1297
                     golden_retriever
                                        0.181351
                                                     True
1315
                         bull_mastiff
                                        0.251530
                                                     True
1333
                           schipperke
                                        0.045519
                                                     True
1345
                               briard
                                        0.227716
                                                     True
1349
                     golden_retriever
                                        0.016641
                                                     True
. . .
                                                      . . .
1699
                     golden_retriever
                                        0.245773
                                                     True
1703
                      Tibetan_terrier
                                        0.295690
                                                     True
1705
                              Samoyed
                                        0.201358
                                                     True
1712
            Chesapeake_Bay_retriever
                                        0.137187
                                                     True
1715
                           toy_poodle
                                        0.271929
                                                     True
1716
                               palace 0.020089
                                                   False
```

```
1717
                               palace 0.020089
                                                  False
                           toy_poodle
1718
                                       0.271929
                                                    True
1727
                               kuvasz 0.025119
                                                    True
1736
                             Cardigan
                                                    True
                                       0.003044
                           Pomeranian 0.193654
                                                    True
1738
                             malamute
                                       0.252706
                                                    True
1740
1742
                             malamute
                                       0.252706
                                                    True
1746
                           Pomeranian
                                       0.193654
                                                    True
1755
                            harvester
                                       0.049995
                                                  False
                                                    True
1767
                  Labrador_retriever
                                       0.337053
      American_Staffordshire_terrier
1785
                                       0.149950
                                                    True
1789
                  Labrador_retriever
                                                    True
                                       0.337053
1791
                            seat_belt
                                       0.057091
                                                   False
1803
                                                    True
                            Chihuahua 0.155413
1804
                               borzoi
                                       0.142204
                                                    True
1858
                              Samoyed 0.201358
                                                    True
1864
                           Pomeranian 0.120358
                                                    True
1903
      American_Staffordshire_terrier
                                       0.149950
                                                    True
1944
                          house_finch 0.209852
                                                  False
1970
                      French_bulldog 0.099984
                                                    True
1992
                      French_bulldog
                                       0.099984
                                                    True
                            seat_belt
                                                   False
2041
                                       0.057091
2051
                 Rhodesian_ridgeback
                                       0.054950
                                                    True
2055
                 Rhodesian_ridgeback 0.054950
                                                    True
                                p3
                                     p3_conf
                                              p3_dog
85
                 golden_retriever 0.082549
                                                 True
224
      soft-coated_wheaten_terrier
                                    0.223263
                                                 True
241
                                                 True
           Welsh_springer_spaniel
                                    0.137186
327
                       Pomeranian
                                    0.056057
                                                 True
382
                       Eskimo_dog
                                    0.001853
                                                 True
432
                         Chihuahua 0.003330
                                                 True
480
                 Brittany_spaniel
                                    0.162084
                                                 True
487
                      French_loaf
                                    0.018189
                                               False
                                                 True
587
                  German_shepherd 0.023353
591
                        bath_towel
                                    0.116806
                                               False
                                                 True
602
                      toy_terrier 0.117502
713
                            kuvasz 0.005410
                                                 True
800
                          Airedale 0.082515
                                                 True
915
                           basenji 0.084466
                                                 True
930
                          sea_lion 0.026364
                                               False
         Chesapeake_Bay_retriever
                                                 True
985
                                    0.118199
1033
                    water_buffalo
                                    0.038902
                                               False
1045
                                                 True
                               pug
                                    0.007651
         Chesapeake_Bay_retriever
1118
                                    0.121523
                                                 True
1150
                   cocker_spaniel
                                    0.048572
                                                 True
                                    0.003956
1155
                           doormat
                                               False
1188
                          ice_bear 0.014858
                                               False
```

```
1201
                            kelpie 0.035711
                                                 True
1209
                   French_bulldog 0.000428
                                                 True
1283
                     refrigerator
                                    0.007499
                                                False
1297
                 Brittany_spaniel
                                                 True
                                    0.162084
1315
                        bath_towel
                                    0.116806
                                                False
                  German_shepherd
                                                 True
1333
                                    0.023353
1345
      soft-coated_wheaten_terrier
                                    0.223263
                                                 True
1349
                          ice_bear
                                    0.014858
                                                False
. . .
                                                  . . .
1699
                              chow
                                    0.039012
                                                 True
1703
                        otterhound 0.036251
                                                 True
1705
                                                 True
                        Eskimo_dog 0.186789
1712
                          malamute
                                    0.071436
                                                 True
                                                 True
1715
                  Tibetan_terrier 0.094759
1716
                          umbrella 0.007850
                                                False
1717
                          umbrella 0.007850
                                                False
1718
                  Tibetan_terrier 0.094759
                                                 True
1727
               Labrador_retriever 0.022977
                                                 True
1736
                 English_springer
                                                 True
                                    0.001050
1738
                        Arctic_fox 0.071648
                                                False
1740
                            kuvasz 0.157028
                                                 True
                                                 True
1742
                            kuvasz 0.157028
1746
                        Arctic_fox 0.071648
                                                False
1755
                                                False
                             swing 0.044660
1767
                      tennis_ball
                                    0.008554
                                                False
1785
                                                 True
         Chesapeake_Bay_retriever
                                    0.047523
1789
                      tennis_ball
                                    0.008554
                                                False
1791
                               pug
                                    0.011933
                                                 True
1803
        Staffordshire bullterrier
                                                 True
                                    0.030943
1804
                           doormat
                                    0.109677
                                                False
1858
                       Eskimo_dog 0.186789
                                                 True
1864
                      toy_terrier
                                    0.077008
                                                 True
         Chesapeake_Bay_retriever
1903
                                    0.047523
                                                 True
1944
                   cocker_spaniel
                                    0.046403
                                                 True
1970
                                                False
                           printer
                                    0.077130
1992
                           printer
                                    0.077130
                                                False
2041
                                    0.011933
                                                 True
                               pug
2051
                            beagle
                                    0.038915
                                                 True
2055
                            beagle 0.038915
                                                 True
```

[132 rows x 12 columns]

0.2.3 3- JSON tweets

In [25]: df_tweets.head(5)

	1 892177421306343426 2 891815181378084864 3 891689557279858688		32617 24554 41327	6132 4058 8442	NaN NaN NaN	
		91327558926688256	39507	9147	NaN	
<pre>In [26]: df_tweets.tail(5)</pre>						
Out[26]:		tweet_id	favorite_count	retweet_count	date_time	
	881	759159934323924993	0	1250	NaN	
	882	759099523532779520	15335	4498	NaN	
	883	759047813560868866	6871	2178	NaN	
		758854675097526272	3744	963	NaN	
	885	758828659922702336	11799	4133	NaN	
In [27]:	df_t	weets.sample(5)				
Out[27]:		tweet_id	favorite_count	retweet_count	date_time	
	721	781308096455073793	7586	2774	NaN	
	580	798933969379225600	14077	4903	NaN	
	345	831262627380748289	12538	2208	NaN	
	14	889531135344209921	14816	2194	NaN	
	405	822647212903690241	0	6958	NaN	
<pre>In [28]: df_tweets.info()</pre>						
<pre><class 'pandas.core.frame.dataframe'=""> RangeIndex: 886 entries, 0 to 885 Data columns (total 4 columns): tweet_id</class></pre>						

0.2.4 Assessment Issues

0.2.5 Quality

1-Twitter Archive (Tweet_Arch data)

- comparing weet_Arch data with Imges_pred data 2356 compare to 2075 it same there is missing rows i belive this tweet without imeges.
- I notic in name column there is value like (a, an, the, such ,o,etc ..) is not realy names is seem like exracting issue
- some of colums or varibles not usefull and not give me relly information like as text,in_reply_to_status_id in_reply_to_user_id some of thim contain NAN value which is not usefull data
- There is some rows have more than one dog.

- name varible have some values None it must be change to NAN.
- Missing data in column(expanded_urls)
- Erroneous datatypes weet_id, in_reply_to_status_id, in_reply_to_user_id, timestamp, retweeted_status_id, retweeted_status_user_id, retweeted_status_timestamp, floofer, pupper, puppo

2- tweet image predictions (Imges_pred data)

some of jpg_url is duplicated

3- JSON tweets (df_tweets)

convert retweets_count and favorite_count to float.

0.2.6 Tidiness

- Dog stage column is seperated in three columns.
- we need to join and combined all datasets in one dataset

0.3 Clean

First we need to copy our data set to new data frame

```
In [29]: Tweet_Arch_clean = Tweet_Arch.copy()
         Imges_pred_clean = Imges_pred.copy()
         df_tweets_clean = df_tweets.copy()
```

0.3.1 Tidiness: Join all datasets

Define we need to combined all dataset in one data set.

```
In [30]: Tweet_Arch_clean = pd.merge(left=Tweet_Arch_clean, right=df_tweets_clean, left_on='twee
         Tweet_Arch_clean = Tweet_Arch_clean.merge(Imges_pred_clean, on='tweet_id', how='inner')
  Test
In [31]: Tweet_Arch_clean.head()
```

```
Out[31]:
                      tweet_id in_reply_to_status_id in_reply_to_user_id \
         0 892420643555336193
                                                    NaN
                                                                         NaN
         1 892177421306343426
                                                   NaN
                                                                         NaN
         2 891815181378084864
                                                   NaN
                                                                         NaN
         3 891689557279858688
                                                   {\tt NaN}
                                                                         NaN
         4 891327558926688256
                                                   NaN
                                                                         NaN
```

```
timestamp \
0 2017-08-01 16:23:56 +0000
```

```
1 2017-08-01 00:17:27 +0000
2 2017-07-31 00:18:03 +0000
3 2017-07-30 15:58:51 +0000
4 2017-07-29 16:00:24 +0000
                                               source \
  <a href="http://twitter.com/download/iphone" r...</pre>
  <a href="http://twitter.com/download/iphone" r...</pre>
2 <a href="http://twitter.com/download/iphone" r...</pre>
3 <a href="http://twitter.com/download/iphone" r...</pre>
4 <a href="http://twitter.com/download/iphone" r...
                                                       retweeted_status_id \
                                                 text
  This is Phineas. He's a mystical boy. Only eve...
                                                                       NaN
  This is Tilly. She's just checking pup on you...
                                                                      NaN
2 This is Archie. He is a rare Norwegian Pouncin...
                                                                       NaN
3 This is Darla. She commenced a snooze mid meal...
                                                                       NaN
4 This is Franklin. He would like you to stop ca...
                                                                       NaN
   retweeted_status_user_id retweeted_status_timestamp
0
                        NaN
1
                        NaN
                                                    NaN
2
                        NaN
                                                    NaN
3
                        NaN
                                                    NaN
4
                        NaN
                                                    NaN
                                        expanded_urls
                                                               img_num
  https://twitter.com/dog_rates/status/892420643...
1 https://twitter.com/dog_rates/status/892177421...
                                                                     1
2 https://twitter.com/dog_rates/status/891815181...
                                                                     1
3 https://twitter.com/dog_rates/status/891689557...
                                                                     1
4 https://twitter.com/dog_rates/status/891327558...
                                                                     2
                 p1_conf p1_dog
                                                       p2_conf p2_dog \
        orange 0.097049 False
0
                                                     0.085851 False
                                               bagel
1
     Chihuahua 0.323581
                           True
                                            Pekinese 0.090647
                                                                 True
2
     Chihuahua 0.716012
                           True
                                            malamute 0.078253
                                                                 True
  paper_towel 0.170278 False Labrador_retriever 0.168086
                                                                 True
3
        basset 0.555712
                           True
                                   English_springer 0.225770
                                                                 True
                            рЗ
                                 p3_conf
                                          p3_dog
                        banana 0.076110
                                            False
0
1
                      papillon 0.068957
                                             True
2
                                             True
                        kelpie 0.031379
3
                       spatula 0.040836
                                            False
  German_short-haired_pointer 0.175219
                                             True
```

[5 rows x 31 columns]

```
In [32]: Tweet_Arch_clean.info()
<class 'pandas.core.frame.DataFrame'>
Int64Index: 728 entries, 0 to 727
Data columns (total 31 columns):
tweet id
                               728 non-null int64
                               4 non-null float64
in_reply_to_status_id
                               4 non-null float64
in_reply_to_user_id
timestamp
                               728 non-null object
                               728 non-null object
source
                               728 non-null object
text
                               68 non-null float64
retweeted_status_id
                               68 non-null float64
retweeted_status_user_id
retweeted\_status\_timestamp
                               68 non-null object
expanded_urls
                               728 non-null object
rating_numerator
                               728 non-null int64
rating_denominator
                               728 non-null int64
name
                               728 non-null object
                               728 non-null object
doggo
                               728 non-null object
floofer
                               728 non-null object
pupper
                               728 non-null object
puppo
                              728 non-null int64
favorite_count
                              728 non-null int64
retweet_count
                              0 non-null float64
date_time
                              728 non-null object
jpg_url
img_num
                               728 non-null int64
                              728 non-null object
р1
                              728 non-null float64
p1_conf
                               728 non-null bool
p1_dog
                              728 non-null object
p2
p2_conf
                              728 non-null float64
                              728 non-null bool
p2_dog
рЗ
                               728 non-null object
p3_conf
                               728 non-null float64
p3_dog
                               728 non-null bool
dtypes: bool(3), float64(8), int64(6), object(14)
memory usage: 167.1+ KB
```

0.3.2 Tidiness: Make doges column as one column

Define After we join all dataset we need to merged dog columns as one column by create new variable

```
In [33]: Tweet_Arch_clean['dog_type'] = Tweet_Arch_clean['text'].str.extract('(puppo|pupper|floodog_stage_columns = ['doggo', 'floofer', 'pupper', 'puppo']
```

```
Tweet_Arch_clean = Tweet_Arch_clean.drop(dog_stage_columns, axis=1)
   Test
In [59]: Tweet_Arch_clean['dog_type'].value_counts()
Out[59]: doggo
                    52
         pupper
                     41
                     22
         puppo
         floofer
         Name: dog_type, dtype: int64
In [34]: Tweet_Arch_clean.head()
Out [34]:
                      tweet_id in_reply_to_status_id in_reply_to_user_id
         0 892420643555336193
                                                   {\tt NaN}
                                                                         NaN
         1 892177421306343426
                                                   NaN
                                                                         NaN
         2 891815181378084864
                                                   NaN
                                                                         NaN
         3 891689557279858688
                                                   NaN
                                                                         NaN
         4 891327558926688256
                                                   NaN
                                                                         NaN
                             timestamp \
         0 2017-08-01 16:23:56 +0000
         1 2017-08-01 00:17:27 +0000
         2 2017-07-31 00:18:03 +0000
         3 2017-07-30 15:58:51 +0000
         4 2017-07-29 16:00:24 +0000
                                                         source \
         0 <a href="http://twitter.com/download/iphone" r...</pre>
         1 <a href="http://twitter.com/download/iphone" r...</pre>
         2 <a href="http://twitter.com/download/iphone" r...</pre>
         3 <a href="http://twitter.com/download/iphone" r...</pre>
         4 <a href="http://twitter.com/download/iphone" r...
                                                                retweeted_status_id \
                                                           text
         O This is Phineas. He's a mystical boy. Only eve...
                                                                                  NaN
         1 This is Tilly. She's just checking pup on you...
                                                                                 NaN
         2 This is Archie. He is a rare Norwegian Pouncin...
                                                                                  NaN
         3 This is Darla. She commenced a snooze mid meal...
                                                                                  NaN
         4 This is Franklin. He would like you to stop ca...
                                                                                  NaN
            retweeted_status_user_id retweeted_status_timestamp
         0
                                  NaN
                                                              NaN
         1
                                  NaN
                                                              NaN
         2
                                  NaN
                                                              NaN
         3
                                  NaN
                                                              NaN
         4
                                  NaN
                                                              NaN
```

```
expanded_urls
                                                                                    р1
         0 https://twitter.com/dog_rates/status/892420643...
                                                                                orange
         1 https://twitter.com/dog_rates/status/892177421...
                                                                             Chihuahua
         2 https://twitter.com/dog_rates/status/891815181...
                                                                             Chihuahua
                                                                   . . .
         3 https://twitter.com/dog_rates/status/891689557...
                                                                           paper_towel
                                                                   . . .
         4 https://twitter.com/dog_rates/status/891327558...
                                                                                basset
                                                                  . . .
             p1_conf p1_dog
                                                   p2_conf
                                                            p2_dog \
                                              р2
         0 0.097049 False
                                           bagel
                                                  0.085851
                                                             False
         1 0.323581
                       True
                                        Pekinese 0.090647
                                                              True
         2 0.716012
                       True
                                        malamute 0.078253
                                                              True
         3 0.170278 False Labrador_retriever 0.168086
                                                              True
         4 0.555712
                       True
                               English_springer 0.225770
                                                              True
                                           p3_conf p3_dog dog_type
         0
                                 banana 0.076110 False
                                                                NaN
         1
                               papillon 0.068957
                                                     True
                                                                NaN
         2
                                 kelpie 0.031379
                                                     True
                                                                NaN
         3
                                spatula 0.040836
                                                    False
                                                                NaN
           German_short-haired_pointer 0.175219
                                                     True
                                                                NaN
         [5 rows x 28 columns]
In [35]: Tweet_Arch_clean.info()
<class 'pandas.core.frame.DataFrame'>
Int64Index: 728 entries, 0 to 727
Data columns (total 28 columns):
tweet id
                              728 non-null int64
in_reply_to_status_id
                              4 non-null float64
in_reply_to_user_id
                              4 non-null float64
timestamp
                              728 non-null object
                              728 non-null object
source
                              728 non-null object
text
                              68 non-null float64
retweeted_status_id
retweeted_status_user_id
                              68 non-null float64
retweeted_status_timestamp
                              68 non-null object
expanded_urls
                              728 non-null object
                              728 non-null int64
rating_numerator
rating_denominator
                              728 non-null int64
                              728 non-null object
name
favorite_count
                              728 non-null int64
retweet_count
                              728 non-null int64
                              0 non-null float64
date time
jpg_url
                              728 non-null object
                              728 non-null int64
img_num
                              728 non-null object
р1
```

```
p1_conf
                              728 non-null float64
                              728 non-null bool
p1_dog
                              728 non-null object
p2
p2_conf
                              728 non-null float64
                              728 non-null bool
p2_dog
                              728 non-null object
рЗ
p3_conf
                              728 non-null float64
p3_dog
                              728 non-null bool
                              124 non-null object
dog_type
dtypes: bool(3), float64(8), int64(6), object(11)
memory usage: 150.0+ KB
```

0.3.3 Quality: Tweets without images

comparing weet_Arch data with mges_pred data it same there is missing rows

Define Delete the rows of tweets that not have image because it may be retweet or not tweet for rating purpose

```
In [36]: Tweet_Arch_clean = Tweet_Arch_clean.dropna(subset=['expanded_urls'])
   Test
In [37]: Tweet_Arch_clean.head()
Out[37]:
                      tweet_id in_reply_to_status_id in_reply_to_user_id \
         0 892420643555336193
                                                   NaN
                                                                         NaN
                                                   NaN
         1 892177421306343426
                                                                         NaN
         2 891815181378084864
                                                   NaN
                                                                         NaN
         3 891689557279858688
                                                   NaN
                                                                        NaN
         4 891327558926688256
                                                   NaN
                                                                         NaN
                            timestamp \
         0 2017-08-01 16:23:56 +0000
         1 2017-08-01 00:17:27 +0000
         2 2017-07-31 00:18:03 +0000
         3 2017-07-30 15:58:51 +0000
         4 2017-07-29 16:00:24 +0000
                                                        source \
         0 <a href="http://twitter.com/download/iphone" r...</pre>
         1 <a href="http://twitter.com/download/iphone" r...</pre>
         2 <a href="http://twitter.com/download/iphone" r...</pre>
         3 <a href="http://twitter.com/download/iphone" r...</pre>
         4 <a href="http://twitter.com/download/iphone" r...
```

```
O This is Phineas. He's a mystical boy. Only eve...
                                                                                NaN
         1 This is Tilly. She's just checking pup on you...
                                                                               NaN
         2 This is Archie. He is a rare Norwegian Pouncin...
                                                                                NaN
         3 This is Darla. She commenced a snooze mid meal...
                                                                                NaN
         4 This is Franklin. He would like you to stop ca...
                                                                                NaN
            retweeted_status_user_id retweeted_status_timestamp
         0
                                 NaN
                                                             NaN
         1
                                 NaN
                                                             NaN
         2
                                 NaN
                                                             NaN
         3
                                                             NaN
                                 NaN
         4
                                 NaN
                                                             NaN
                                                expanded_urls
                                                                                   р1
         0 https://twitter.com/dog_rates/status/892420643...
                                                                               orange
         1 https://twitter.com/dog_rates/status/892177421...
                                                                            Chihuahua
         2 https://twitter.com/dog_rates/status/891815181...
                                                                            Chihuahua
         3 https://twitter.com/dog_rates/status/891689557...
                                                                          paper_towel
         4 https://twitter.com/dog_rates/status/891327558...
                                                                               basset
             p1_conf p1_dog
                                             p2
                                                  p2_conf
                                                           p2_dog \
         0 0.097049 False
                                          bagel 0.085851
                                                            False
                                       Pekinese 0.090647
         1 0.323581
                       True
                                                              True
         2 0.716012
                       True
                                       malamute 0.078253
                                                              True
         3 0.170278 False Labrador_retriever 0.168086
                                                              True
         4 0.555712
                       True
                               English_springer 0.225770
                                                              True
                                          p3_conf p3_dog dog_type
         0
                                 banana 0.076110 False
                                                                NaN
         1
                               papillon 0.068957
                                                    True
                                                                NaN
         2
                                 kelpie 0.031379
                                                    True
                                                                NaN
         3
                                spatula
                                                                NaN
                                        0.040836
                                                   False
            German_short-haired_pointer
                                        0.175219
                                                    True
                                                                NaN
         [5 rows x 28 columns]
In [38]: sum(Tweet_Arch_clean['expanded_urls'].isnull())
Out[38]: 0
In [39]: Tweet_Arch_clean.info()
<class 'pandas.core.frame.DataFrame'>
Int64Index: 728 entries, 0 to 727
Data columns (total 28 columns):
tweet_id
                              728 non-null int64
in_reply_to_status_id
                              4 non-null float64
```

text retweeted_status_id \

```
4 non-null float64
in_reply_to_user_id
timestamp
                               728 non-null object
                               728 non-null object
source
                               728 non-null object
text
retweeted_status_id
                               68 non-null float64
retweeted_status_user_id
                               68 non-null float64
retweeted_status_timestamp
                               68 non-null object
expanded_urls
                               728 non-null object
                               728 non-null int64
rating_numerator
rating_denominator
                               728 non-null int64
                               728 non-null object
name
favorite_count
                              728 non-null int64
                               728 non-null int64
retweet_count
                               0 non-null float64
date_time
                               728 non-null object
jpg_url
                              728 non-null int64
img_num
                              728 non-null object
р1
                              728 non-null float64
p1_conf
                              728 non-null bool
p1_dog
                              728 non-null object
p2
                              728 non-null float64
p2_conf
p2_dog
                              728 non-null bool
рЗ
                              728 non-null object
                               728 non-null float64
p3_conf
                               728 non-null bool
p3_dog
                               124 non-null object
dog_type
dtypes: bool(3), float64(8), int64(6), object(11)
memory usage: 150.0+ KB
```

Name Issue (a, an, the, such ,o,etc ..) is not real names is seem like extracting issue

Define I notice in name column there is value like (a, an, the, such ,o,etc ..) is not really names is seem like extracting issue.

```
all.append(df['txt_splt'][3].strip('.').strip(','))
             elif df['text'].startswith('This is ') and re.match(r'[A-Z].*', df['txt_splt'][2]):
                     all.append(df['txt_splt'][2].strip('.').strip(','))
             elif df['text'].startswith('Say hello to ') and re.match(r'[A-Z].*', df['txt_splt']
                     all.append(df['txt_splt'][3].strip('.').strip(','))
             elif df['text'].startswith('Meet ') and re.match(r'[A-Z].*', df['txt_splt'][1]):
                     all.append(df['txt_splt'][1].strip('.').strip(','))
             else:
                 all.append('Not_Provide')
         Tweet_Arch_clean.apply(check_relly_name, axis=1)
         Tweet_Arch_clean['Extracted_name'] = all
In [45]: Tweet_Arch_clean['name'].replace('None', np.nan, inplace = True)
In [46]: Tweet_Arch_clean['name'].replace('0', "0'Malley", inplace = True)
In [47]: Tweet_Arch_clean['name'].replace(lowercase_names,np.nan,inplace = True)
In [48]: Tweet_Arch_clean.loc[Tweet_Arch_clean['Extracted_name'] == 'Not_Provide', 'Extracted_n
         Tweet_Arch_clean.loc[Tweet_Arch_clean['dog_type'] == 'None', 'dog_type'] = None
  Test
In [49]: Tweet_Arch_clean.info()
<class 'pandas.core.frame.DataFrame'>
Int64Index: 728 entries, 0 to 727
Data columns (total 30 columns):
tweet_id
                              728 non-null int64
in_reply_to_status_id
                              4 non-null float64
in_reply_to_user_id
                              4 non-null float64
timestamp
                              728 non-null object
                              728 non-null object
source
                              728 non-null object
text
retweeted\_status\_id
                              68 non-null float64
                              68 non-null float64
retweeted_status_user_id
                              68 non-null object
retweeted_status_timestamp
expanded_urls
                              728 non-null object
                              728 non-null int64
rating_numerator
rating_denominator
                              728 non-null int64
                              575 non-null object
                              728 non-null int64
favorite_count
retweet count
                              728 non-null int64
                              0 non-null float64
date_time
                              728 non-null object
jpg_url
                              728 non-null int64
img_num
```

728 non-null object

р1

```
728 non-null float64
p1_conf
p1_dog
                               728 non-null bool
                               728 non-null object
p2
                               728 non-null float64
p2_conf
p2_dog
                              728 non-null bool
                               728 non-null object
рЗ
p3_conf
                               728 non-null float64
p3_dog
                               728 non-null bool
                               124 non-null object
dog_type
                               728 non-null object
txt_splt
                               533 non-null object
Extracted_name
dtypes: bool(3), float64(8), int64(6), object(13)
memory usage: 161.4+ KB
```

some of colums or varibles not usefull

Define some of colums or varibles not usefull and not give me relly information like as 'retweeted_status_id', 'retweeted_status_user_id', 'retweeted_status_timestamp','p1', 'p1_conf', 'p1_dog', 'p2', 'p2_conf', 'p2_dog', 'p3', 'p3_conf', 'p3_dog' some of thim contain NAN value which is not usefull data

Code

jpg_url

img_num

```
In [50]: unusefull_column = ['retweeted_status_id', 'retweeted_status_user_id', 'date_time' , 'retweeted_status_user_id', 'retweeted_status_us
                                   Tweet_Arch_clean = Tweet_Arch_clean.drop(unusefull_column, axis=1)
           Test
In [51]: Tweet_Arch_clean.info()
<class 'pandas.core.frame.DataFrame'>
Int64Index: 728 entries, 0 to 727
Data columns (total 17 columns):
tweet_id
                                                                                                 728 non-null int64
in_reply_to_status_id
                                                                                                  4 non-null float64
in_reply_to_user_id
                                                                                                  4 non-null float64
                                                                                                  728 non-null object
timestamp
                                                                                                  728 non-null object
source
                                                                                                  728 non-null object
text
                                                                                                  728 non-null object
expanded_urls
                                                                                                 728 non-null int64
rating_numerator
                                                                                                  728 non-null int64
rating_denominator
                                                                                                  575 non-null object
favorite_count
                                                                                                  728 non-null int64
retweet_count
                                                                                                 728 non-null int64
```

728 non-null object

728 non-null int64

dog_type124 non-null objecttxt_splt728 non-null objectExtracted_name533 non-null object

dtypes: float64(2), int64(6), object(9)

memory usage: 102.4+ KB

In [52]: Tweet_Arch_clean

Out[52]:		tweet_id	in_reply_to_status_id	in_reply_to_user_id	\
C)	892420643555336193	NaN	NaN	
1	1	892177421306343426	NaN	NaN	
2	2	891815181378084864	NaN	NaN	
3	3	891689557279858688	NaN	NaN	
4	4	891327558926688256	NaN	NaN	
5	5	891087950875897856	NaN	NaN	
ϵ	6	890971913173991426	NaN	NaN	
7	7	890729181411237888	NaN	NaN	
8	3	890609185150312448	NaN	NaN	
S	9	890240255349198849	NaN	NaN	
1	10	890006608113172480	NaN	NaN	
1	11	889880896479866881	NaN	NaN	
1	12	889665388333682689	NaN	NaN	
1	13	889638837579907072	NaN	NaN	
1	14	889531135344209921	NaN	NaN	
1	15	889278841981685760	NaN	NaN	
1	16	888917238123831296	NaN	NaN	
1	17	888804989199671297	NaN	NaN	
1	18	888554962724278272	NaN	NaN	
1	19	888078434458587136	NaN	NaN	
2	20	887705289381826560	NaN	NaN	
2	21	887517139158093824	NaN	NaN	
2	22	887473957103951883	NaN	NaN	
2	23	887343217045368832	NaN	NaN	
2	24	887101392804085760	NaN	NaN	
2	25	886983233522544640	NaN	NaN	
2	26	886736880519319552	NaN	NaN	
2	27	886680336477933568	NaN	NaN	
2	28	886366144734445568	NaN	NaN	
2	29	886258384151887873	NaN	NaN	
			• • •		
	698	762035686371364864	NaN	NaN	
	699	761976711479193600	NaN	NaN	
	700	761750502866649088	NaN	NaN	
	701	761745352076779520	NaN	NaN	
	702	761672994376806400	NaN	NaN	
	703	761599872357261312	NaN	NaN	
7	704	761371037149827077	NaN	NaN	

705	761334018830917632	NaN	NaN
706	761292947749015552	NaN	NaN
707	761227390836215808	NaN	NaN
708	761004547850530816	NaN	NaN
709	760893934457552897	NaN	NaN
710	760656994973933572	NaN	NaN
711	760641137271070720	NaN	NaN
712	760539183865880579	NaN	NaN
713	760290219849637889	NaN	NaN
714	760252756032651264	NaN	NaN
715	760190180481531904	NaN	NaN
716	759923798737051648	NaN	NaN
717	759846353224826880	NaN	NaN
718	759793422261743616	NaN	NaN
719	759566828574212096	NaN	NaN
720	759557299618865152	NaN	NaN
721	759447681597108224	NaN	NaN
722	759197388317847553	NaN	NaN
723	759159934323924993	NaN	NaN
724	759099523532779520	NaN	NaN
725	759047813560868866	NaN	NaN
726	758854675097526272	NaN	NaN
727	758828659922702336	NaN	NaN
	timestamp	\	
0	2017-08-01 16:23:56 +0000		
1	2017-08-01 00:17:27 +0000		
2	2017-07-31 00:18:03 +0000		
3	2017-07-30 15:58:51 +0000		
4	2017-07-29 16:00:24 +0000		
5	2017-07-29 00:08:17 +0000		
6	2017-07-28 16:27:12 +0000		
7	2017-07-28 00:22:40 +0000		
8	2017-07-27 16:25:51 +0000		
9	2017-07-26 15:59:51 +0000		
10	2017-07-26 00:31:25 +0000		
11	2017-07-25 16:11:53 +0000		
12	2017-07-25 01:55:32 +0000		

13

14

15

16 17

18 19

20

21 22 2017-07-25 00:10:02 +0000

2017-07-24 17:02:04 +0000

2017-07-24 00:19:32 +0000 2017-07-23 00:22:39 +0000

2017-07-22 16:56:37 +0000 2017-07-22 00:23:06 +0000

2017-07-20 16:49:33 +0000

2017-07-19 16:06:48 +0000 2017-07-19 03:39:09 +0000

2017-07-19 00:47:34 +0000

```
23
     2017-07-18 16:08:03 +0000
24
     2017-07-18 00:07:08 +0000
25
     2017-07-17 16:17:36 +0000
26
     2017-07-16 23:58:41 +0000
27
     2017-07-16 20:14:00 +0000
28
     2017-07-15 23:25:31 +0000
29
     2017-07-15 16:17:19 +0000
    2016-08-06 21:20:40 +0000
698
699
    2016-08-06 17:26:19 +0000
700
    2016-08-06 02:27:27 +0000
701
    2016-08-06 02:06:59 +0000
702
    2016-08-05 21:19:27 +0000
703
    2016-08-05 16:28:54 +0000
704 2016-08-05 01:19:35 +0000
    2016-08-04 22:52:29 +0000
706
    2016-08-04 20:09:17 +0000
707
    2016-08-04 15:48:47 +0000
708
    2016-08-04 01:03:17 +0000
709
    2016-08-03 17:43:45 +0000
710
    2016-08-03 02:02:14 +0000
711 2016-08-03 00:59:13 +0000
712 2016-08-02 18:14:06 +0000
713
    2016-08-02 01:44:48 +0000
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727
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    This is Phineas. He's a mystical boy. Only eve...
     This is Tilly. She's just checking pup on you...
1
    This is Archie. He is a rare Norwegian Pouncin...
2
3
     This is Darla. She commenced a snooze mid meal...
4
    This is Franklin. He would like you to stop ca...
5
     Here we have a majestic great white breaching ...
    Meet Jax. He enjoys ice cream so much he gets ...
6
7
    When you watch your owner call another dog a g...
8
     This is Zoey. She doesn't want to be one of th...
9
    This is Cassie. She is a college pup. Studying...
10
    This is Koda. He is a South Australian decksha...
11
    This is Bruno. He is a service shark. Only get...
12
     Here's a puppo that seems to be on the fence a...
    This is Ted. He does his best. Sometimes that'...
13
    This is Stuart. He's sporting his favorite fan...
14
15
    This is Oliver. You're witnessing one of his m...
16
    This is Jim. He found a fren. Taught him how t...
17
    This is Zeke. He has a new stick. Very proud o...
    This is Ralphus. He's powering up. Attempting ...
18
19
    This is Gerald. He was just told he didn't get...
20
    This is Jeffrey. He has a monopoly on the pool...
21
     I've yet to rate a Venezuelan Hover Wiener. Th...
22
    This is Canela. She attempted some fancy porch...
23
    You may not have known you needed to see this ...
24
    This... is a Jubilant Antarctic House Bear. We...
25
    This is Maya. She's very shy. Rarely leaves he...
26
    This is Mingus. He's a wonderful father to his...
27
    This is Derek. He's late for a dog meeting. 13...
28
     This is Roscoe. Another pupper fallen victim t...
     This is Waffles. His doggles are pupside down...
29
    This left me speechless. 14/10 heckin heroic a...
698
699
    This is Shelby. She finds stuff to put on her ...
700
    RT @dog_rates: "Tristan do not speak to me wit...
    Guys.. we only rate dogs. Pls don't send any m...
701
702
     Ohboyohboyohboyohboyohboyohboyohboyo...
    This is Sephie. According to this picture, she...
703
704 RT @dog_rates: Oh. My. God. 13/10 magical af h...
    This is Bruce. I really want to hear the joke ...
706 Meet Bonaparte. He's pupset because it's cloud...
707 This is Albert. He just found out that bees ar...
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This is Bo and Ty. Bo eats paper and Ty felt 1...
    This is Wishes. He has the day off. Daily stru...
710 This is Rose. Her face is stuck like that. 11/...
711
    This is Theo. He can walk on water. Still comi...
712 This is Atlas. Swinging is his passion. 12/10 ...
713
    This is Rocco. He's doing his best. 13/10 some...
714
    This is Fido. He can tell the weather. Not goo...
715 Meet Sadie. She's addicted to balloons. It's t...
716 We only rate dogs... this is a Taiwanese Guide...
    This is Kirby. He's a Beneblip Cumberpat. Pret...
717
718 Meet Maggie & Dila. Maggie is the doggo, L...
719
    RT @dog_rates: This... is a Tyrannosaurus rex...
720
    This is Emma. She can't believe her last guess...
721
    This is Oakley. He has no idea what happened h...
    This is Luna. She's just heckin precious af I ...
723 RT @dog_rates: AT DAWN...\nWE RIDE\n\n11/10 ht...
724 Meet Toby. He has a drinking problem. Inflatab...
725 This is Spencer. He's part of the Queen's Guar...
726 This is Lilli Bee & amp; Honey Bear. Unfortunat...
727
    This doggo is just waiting for someone to be p...
                                         expanded_urls rating_numerator
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14	10	Stuart	14816	2194
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                                                                        {\tt NaN}
                                                                 1
724
       https://pbs.twimg.com/media/Cojc_QOWcAAqi_K.jpg
                                                                        NaN
725
       https://pbs.twimg.com/media/Coit84_VYAEMtLi.jpg
                                                                 1
                                                                        NaN
726
       https://pbs.twimg.com/media/Cof-SuqVYAAs4kZ.jpg
                                                                 4
                                                                        NaN
727
       https://pbs.twimg.com/media/Cofmom_VUAA4dRO.jpg
                                                                 1
                                                                      doggo
                                                txt_splt Extracted_name
0
     [This, is, Phineas., He's, a, mystical, boy., ...
                                                                 Phineas
1
     [This, is, Tilly., She's, just, checking, pup,...
                                                                   Tilly
2
     [This, is, Archie., He, is, a, rare, Norwegian...
                                                                  Archie
3
     [This, is, Darla., She, commenced, a, snooze, ...
                                                                   Darla
4
     [This, is, Franklin., He, would, like, you, to...
                                                                Franklin
5
     [Here, we, have, a, majestic, great, white, br...
                                                                    None
6
     [Meet, Jax., He, enjoys, ice, cream, so, much,...
                                                                     Jax
7
     [When, you, watch, your, owner, call, another,...
                                                                    None
8
     [This, is, Zoey., She, doesn't, want, to, be, ...
                                                                    Zoey
9
     [This, is, Cassie., She, is, a, college, pup.,...
                                                                  Cassie
10
     [This, is, Koda., He, is, a, South, Australian...
                                                                    Koda
11
     [This, is, Bruno., He, is, a, service, shark.,...
                                                                   Bruno
12
     [Here's, a, puppo, that, seems, to, be, on, th...
                                                                    None
13
     [This, is, Ted., He, does, his, best., Sometim...
                                                                     Ted
14
     [This, is, Stuart., He's, sporting, his, favor...
                                                                  Stuart
15
     [This, is, Oliver., You're, witnessing, one, o...
                                                                  Oliver
     [This, is, Jim., He, found, a, fren., Taught, ...
16
                                                                     Jim
17
     [This, is, Zeke., He, has, a, new, stick., Ver...
                                                                    Zeke
18
     [This, is, Ralphus., He's, powering, up., Atte...
                                                                 Ralphus
19
     [This, is, Gerald., He, was, just, told, he, d...
                                                                  Gerald
20
     [This, is, Jeffrey., He, has, a, monopoly, on,...
                                                                 Jeffrey
21
     [I've, yet, to, rate, a, Venezuelan, Hover, Wi...
                                                                    None
     [This, is, Canela., She, attempted, some, fanc...
22
                                                                  Canela
23
     [You, may, not, have, known, you, needed, to, ...
                                                                    None
24
     [This..., is, a, Jubilant, Antarctic, House, B...
                                                                    None
     [This, is, Maya., She's, very, shy., Rarely, 1...
25
                                                                    Maya
26
     [This, is, Mingus., He's, a, wonderful, father...
                                                                  Mingus
27
     [This, is, Derek., He's, late, for, a, dog, me...
                                                                   Derek
28
     [This, is, Roscoe., Another, pupper, fallen, v...
                                                                  Roscoe
```

```
29
     [This, is, Waffles., His, doggles, are, pupsid...
                                                              Waffles
                                                                  . . .
     [This, left, me, speechless., 14/10, heckin, h...
698
                                                                 None
     [This, is, Shelby., She, finds, stuff, to, put...
699
                                                               Shelby
700
     [RT, @dog_rates:, "Tristan, do, not, speak, to...
                                                                 None
     [Guys.., we, only, rate, dogs., Pls, don't, se...
701
                                                                 None
702
     None
703
     [This, is, Sephie., According, to, this, pictu...
                                                               Sephie
704
     [RT, @dog_rates:, Oh., My., God., 13/10, magic...
                                                                 None
705
     [This, is, Bruce., I, really, want, to, hear, ...
                                                                Bruce
     [Meet, Bonaparte., He's, pupset, because, it's...
706
                                                            Bonaparte
707
     [This, is, Albert., He, just, found, out, that...
                                                               Albert
     [This, is, Bo, and, Ty., Bo, eats, paper, and,...
708
                                                                   Во
709
     [This, is, Wishes., He, has, the, day, off., D...
                                                               Wishes
710
     [This, is, Rose., Her, face, is, stuck, like, ...
                                                                 Rose
711
     [This, is, Theo., He, can, walk, on, water., S...
                                                                 Theo
712
     [This, is, Atlas., Swinging, is, his, passion...
                                                               Atlas
713
     [This, is, Rocco., He's, doing, his, best., 13...
                                                                Rocco
714
     [This, is, Fido., He, can, tell, the, weather...
                                                               Fido
715
     [Meet, Sadie., She's, addicted, to, balloons.,...
                                                                Sadie
716
     [We, only, rate, dogs..., this, is, a, Taiwane...
                                                                 None
717
     [This, is, Kirby., He's, a, Beneblip, Cumberpa...
                                                               Kirby
718
     [Meet, Maggie, &, Lila., Maggie, is, the, ...
                                                               Maggie
719
     [RT, @dog_rates:, This..., is, a, Tyrannosauru...
                                                                 None
720
     [This, is, Emma., She, can't, believe, her, la...
                                                                 Emma
721
     [This, is, Oakley., He, has, no, idea, what, h...
                                                               Oakley
722
     [This, is, Luna., She's, just, heckin, preciou...
                                                                 Luna
723
     [RT, @dog_rates:, AT, DAWN..., WE, RIDE, 11/10...
                                                                 None
724
     [Meet, Toby., He, has, a, drinking, problem., ...
                                                                 Toby
725
     [This, is, Spencer., He's, part, of, the, Quee...
                                                              Spencer
726
     [This, is, Lilli, Bee, &, Honey, Bear., Un...
                                                               Lilli
727
     [This, doggo, is, just, waiting, for, someone,...
                                                                 None
```

[728 rows x 17 columns]

Name varible have some values None it must be change to NAN.

 $\label{eq:Define} \textbf{Define} \quad \text{Name varible have some values None it must be change to NAN so we want to repace them to NAN}$

Code

Test

```
In [54]: Tweet_Arch_clean[Tweet_Arch_clean['tweet_id'] == 891087950875897856]
```

```
Out[54]:
                     tweet_id in_reply_to_status_id in_reply_to_user_id \
        5 891087950875897856
                                                                      NaN
                           timestamp \
        5 2017-07-29 00:08:17 +0000
                                                      source \
        5 <a href="http://twitter.com/download/iphone" r...
                                                        text
        5 Here we have a majestic great white breaching ...
                                               expanded_urls rating_numerator \
        5 https://twitter.com/dog_rates/status/891087950...
                                                                            13
           rating_denominator name favorite_count retweet_count \
        5
                           10 NaN
                                             19847
                                                             3042
                                                   jpg_url img_num dog_type \
        5 https://pbs.twimg.com/media/DF3HwyEWsAABqE6.jpg
                                                                         NaN
                                                    txt_splt Extracted_name
        5 [Here, we, have, a, majestic, great, white, br...
                                                                        NaN
```

Erroneous datatypes

Define Erroneous datatypes tweet_id,in_reply_to_status_id, rating_numerator, rating_denominator,source, timestamp ,source,dog_type

Code

Test

```
source
                                category
text
                                  object
                                  object
expanded_urls
rating_numerator
                                 float64
rating_denominator
                                 float64
                                  object
favorite_count
                                   int64
retweet_count
                                   int64
                                  object
jpg_url
img_num
                                   int64
dog_type
                                category
txt_splt
                                  object
Extracted_name
                                  object
dtype: object
```

Remove Dublicated by img_url

Define as we see in previous we find there is dublicated img wich is mean duplicated tweets so we need to remove it

```
In [57]: Tweet_Arch_clean.drop_duplicates(subset ="jpg_url", keep = 'first', inplace = True)
  Test
In [58]: Tweet_Arch_clean[Tweet_Arch_clean['jpg_url'] == 'https://pbs.twimg.com/media/Cq9guJ5WgA
Out [58]:
                       tweet_id in_reply_to_status_id in_reply_to_user_id \
         266 832040443403784192
                                                  nan
                                                                      nan
                                                                            source \
                      timestamp
         266 2017-02-16 01:34:34 <a href="http://twitter.com/download/iphone" r...
                                                          text \
         266 RT @dog_rates: This is Klein. These pics were ...
                                                  expanded_urls rating_numerator \
         266 https://twitter.com/dog_rates/status/769940425...
                                                                            12.0
             rating_denominator
                                  name favorite_count retweet_count \
                                                                10454
         266
                            10.0 Klein
                                                     0
                                                     jpg_url img_num dog_type \
         266 https://pbs.twimg.com/media/Cq9guJ5WgAADfpF.jpg
                                                                           NaN
                                                      txt_splt Extracted_name
             [RT, @dog_rates:, This, is, Klein., These, pic...
                                                                        Klein
```

0.3.4 Save DataSet As csv file

In [80]: Tweet_Arch_clean.to_csv('twitter_archive_master.csv')