数据分析和可视化

在wrangle_act.ipynb中，我们已经处理了tweet_json.txt和twitter-archive-enhanced.csv的数据，且生成到twitter_archive_master.csv文件中。

In [8]:

```
# -*- coding=utf-8 -*-
%matplotlib inline
import pandas as pd
import matplotlib.pyplot as plt

# 读取twitter_archive_master.csv
twitter_archive_master = pd.read_csv("twitter_archive_master.csv")
twitter_archive_master.info()
twitter_archive_master.head(3)
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 1438 entries, 0 to 1437
Data columns (total 14 columns):
tweet_id              1438 non-null int64
name                  1438 non-null object
rating_numerator      1438 non-null int64
rating_denominator    1438 non-null int64
timestamp             1438 non-null object
text                  1438 non-null object
source_text           1438 non-null object
expanded_urls_one     1398 non-null object
doggo                 1438 non-null object
floofer               1438 non-null object
pupper                1438 non-null object
puppo                 1438 non-null object
retweet_count         890 non-null float64
favorite_count        890 non-null float64
dtypes: float64(2), int64(3), object(9)
memory usage: 157.4+ KB
```

Out[8]:

	tweet_id	name	rating_numerator	rating_denominator	timestamp	
0	892420643555336193	Phineas	13	10	2017-08-01 16:23:56	T P H r b e
1	892177421306343426	Tilly	13	10	2017-08-01 00:17:27	T T j c P y
2	891815181378084864	Archie	12	10	2017-07-31 00:18:03	T A i M P

In [9]:

```
twitter_archive_master.describe()
```

Out[9]:

	tweet_id	rating_numerator	rating_denominator	retweet_count	favorite_
count	1.438000e+03	1438.000000	1438.0	890.000000	890.0000
mean	7.706092e+17	14.479833	10.0	4020.047191	10822.89
std	6.864808e+16	52.108159	0.0	5617.016301	13021.12
min	6.661022e+17	11.000000	10.0	2.000000	0.000000
25%	7.031264e+17	11.000000	10.0	1028.500000	2381.000
50%	7.774056e+17	12.000000	10.0	2304.000000	6398.500
75%	8.283699e+17	13.000000	10.0	4899.500000	14694.50
max	8.924206e+17	1776.000000	10.0	56373.000000	106634.0

通过上面的describe()可以得知，retweet_count的最大值是56373，favorite_count的最大值是106634，平均分值约为14.48。它们是哪些小狗的推文产生的呢?

In [46]:

```
twitter_archive_master[twitter_archive_master.retweet_count==56373]
```

Out[46]:

	tweet_id	name	rating_numerator	rating_denominator	timestamp
254	842892208864923648	Stephan	13	10	2017-03-18 00:15:37
508	807106840509214720	Stephan	13	10	2016-12-09 06:17:20

In [11]:

```
twitter_archive_master[twitter_archive_master.favorite_count==106634]
```

Out[11]:

	tweet_id	name	rating_numerator	rating_denominator	timestamp
508	807106840509214720	Stephan	13	10	2016-12-09 06:17:20

可以推测这个创造最大的转发量、收藏量的小狗Stephan，很可能是同一条小狗，可以通过expanded_urls_one确认下。

这些推文，通过什么渠道发出的？我们通过source_text来分析下：

In [26]:

```
twitter_archive_master.source_text.value_counts()
```

Out[26]:

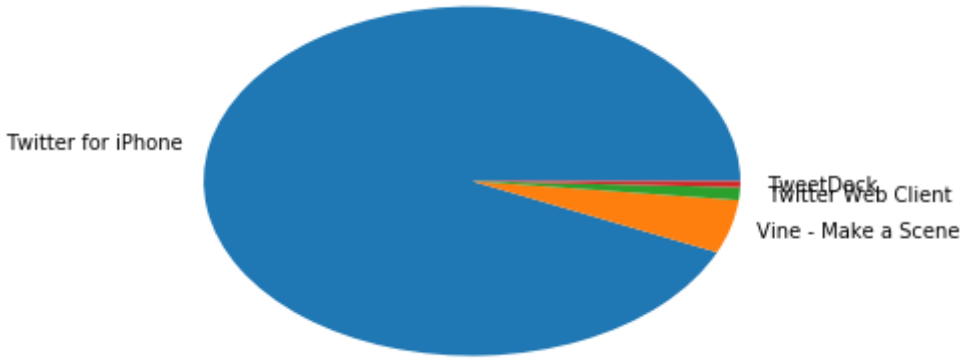
```
Twitter for iPhone     1342
Vine - Make a Scene      71
Twitter Web Client       17
TweetDeck                 8
Name: source_text, dtype: int64
```

In [28]:

```
# 画图
plt.pie(by_source, labels=['Twitter for iPhone', 'Vine - Make a Scene', 'Twitter Web Client', 'TweetDeck'])
```

Out[28]:

```
([<matplotlib.patches.Wedge at 0xb7be860>,
  <matplotlib.patches.Wedge at 0xbecf710>,
  <matplotlib.patches.Wedge at 0xb555978>,
  <matplotlib.patches.Wedge at 0xb069828>],
 [<matplotlib.text.Text at 0xbecf9b0>,
  <matplotlib.text.Text at 0xbecfcf8>,
  <matplotlib.text.Text at 0xb555e80>,
  <matplotlib.text.Text at 0xb069630>])
```



可以得知Twitter for iPhone渠道的推特数据是最多的。

小狗的历史最高分值排名是怎么样的？ （这里用name值来区别小狗）

In [42]:

```
# 按照name分组后，求 rating_numerator 的最大值
names = twitter_archive_master.groupby(['name'])['rating_numerator'].max()
names['None']=0
names.sort_values(ascending=False)[:9]
```

Out[42]:

```
name
Atticus    1776
Logan        75
Sophie       27
Smiley       14
a            14
Kuyu         14
Cermet       14
Iggy         14
Doobert      14
Name: rating_numerator, dtype: int64
```

通过上面的结果得知(None没有名字的忽略)，分值排前3的狗分别是Atticus(1776/10)、Logan(75/10)、Sophie(27/10)