

PSOSM Assignment 2

Divay Prakash - 2014039

Ans (1)

Present in the form of 2 files titled '**delhipolice.json**' and '**bostonpolice.json**' present in the '**data**' folder. The files contain all tweets (including retweets but excluding replies) made by the handles during 1st August 2017 - 7th September 2017

Ans (2) 1, 2, 4 and (3) 1

Parts 1, 2 and 4 of question 2 and part 1 of question 3 are present in the script logs below. Also time series graphs measuring handle activity using tweet frequency were created and are present in the '**graphs**' folder as two SVG files titled '**delhi.svg**' and '**boston.svg**'.

'@DelhiPolice' logs

```
divay@divay-linux:~/psosm_a2$ python twitter.py
Collecting tweets...
Done!
```

```
No. of tweets by @DelhiPolice: 207
Frequency of tweets by @DelhiPolice: 5.44736842105 tweets per day
No. of ORIGINAL tweets by @DelhiPolice: 60
Frequency of ORIGINAL tweets by @DelhiPolice: 1.57894736842 tweets per day
```

```
IMP: Like/Retweet count is only for original tweets by handle and does not include
retweets as that taints data
```

```
Number of likes on these tweets: 8292
Number of retweets of these tweets: 4244
Engagement score for @DelhiPolice: 87.0
```

```
Number of tweets with text only: 42
Number of likes on these tweets: 6661
Number of retweets of these tweets: 3492
Average number of likes on tweets with text only: 158
Average number of retweets of tweets with text only: 83
```

```
Number of tweets with image: 18
Number of likes on these tweets: 1631
Number of retweets of these tweets: 752
Average number of likes on tweets with image: 90
Average number of retweets of tweets with image: 41
```

```
Number of tweets with video: 0
Number of likes on these tweets: 0
Number of retweets of these tweets: 0
```

```
@DelhiPolice has retweeted tweets from the following 10 user IDs the most -
DCPNEastDelhi 20
DCP_DelhiPolice 17
DCP_Shdc 13
DCPSEastDelhi 13
adcp1_south 10
DCPEastDelhi 9
LtGovDelhi 8
surenderkr_ips 7
DcpNorthDelhi 6
CPDelhi 5
```

'@bostonpolice' logs

```
divay@divay-linux:~/psosm_a2$ python twitter.py
Collecting tweets...
Done!
```

```
No. of tweets by @bostonpolice: 177
Frequency of tweets by @bostonpolice: 4.65789473684 tweets per day
No. of ORIGINAL tweets by @bostonpolice: 175
Frequency of ORIGINAL tweets by @bostonpolice: 4.60526315789 tweets per day
```

IMP: Like/Retweet count is only for original tweets by handle and does not include retweets as that taints data

```
Number of likes on these tweets: 52337
Number of retweets of these tweets: 23850
Engagement score for @bostonpolice: 176.75
```

```
Number of tweets with text only: 150
Number of likes on these tweets: 49351
Number of retweets of these tweets: 23077
Average number of likes on tweets with text only: 329
Average number of retweets of tweets with text only: 153
```

```
Number of tweets with image: 25
Number of likes on these tweets: 2986
Number of retweets of these tweets: 773
Average number of likes on tweets with image: 119
Average number of retweets of tweets with image: 30
```

```
Number of tweets with video: 0
Number of likes on these tweets: 0
Number of retweets of these tweets: 0
```

```
@bostonpolice has retweeted tweets from the following 10 user IDs the most -
NBCNightlyNews 1
MichaelFlaher19 1
```

The function used to create 'Engagement Score' was-

```
#likeCount is number of likes on handle's ORIGINAL tweets
#retweetCount is number of retweets of handle's ORIGINAL tweets
likeAvg = likeCount/originalTweetCount
retweetAvg = retweetCount/originalTweetCount
likeScore = likeAvg * 0.25          #measure of tweet appreciation
retweetScore = retweetAvg * 0.75    #measure of tweet value
engagementScore = likeScore + retweetScore
```

I was not able to obtain replies to any tweets made by the police handles. The various methods I tried included -

- Twitter Search API using the 'to:' parameter. However, very less data was returned.
- Deprecated and undocumented 'related_results' experimental API endpoint
- 'conversation' API endpoint which was found to be blocked to third-party clients and returned JSON: '{"errors":[{"message":"SSL is required","code":92}]}'
- 'mentions_timeline' API endpoint which returns data which needs to be matched to the original posts' 'id' using the 'in_reply_to_status_id' parameter, however data returned was of recent days only so did not represent an accurate picture of the analysis period tweets

Ans (2) 3

The analysis for this was made considering only the ORIGINAL tweets posted by the handle ie. after removing all replies and retweets. Thereafter, I was left with 60 tweets by **@DelhiPolice** and 175 tweets by **@bostonpolice**.

The **@DelhiPolice** handle mostly makes tweets with public safety and awareness announcements such as regarding drunk driving, drug abuse etc. It also regularly makes a #throwbackThursday tweet with old equipment used by the police in the past. It thanks people appreciating their efforts and also showcases the police's achievements and their initiatives such as hiring more women officers, youth initiatives(yuva scheme). They also try to spread awareness of contact numbers where people can contact them regarding various issues.

The most prevalent content posted by the handle is public safety posters etc.

However Boston PD on the other hand posts more content regarding crimes solved, criminals apprehended or guns/drugs etc. recovered. They also post announcements regarding traffic advisories and advise residents on law and order situations if any. The handle tweets about events being organised where it is collaborating or seeking some support from people. They also advise people on criminals who are on the run and may be seen in their communities. They appreciate the efforts made by their officers, singularly and in groups also. They regularly post a public journal regarding all police activities on a weekly basis. It can also be seen that they follow a very structured format for tweets with specific hashtags such as **#update**, **#onelessgun**, **#bpninthenews**, **#bpdparkingadvisory** for specific purposes.

The major concern handled by the department is announcements to the public which are relevant to the people on a daily basis, and also updates regarding its work etc.

Ans (3) 2

Boston Police only made 2 retweets in the analysis time period. One of those was a tweet by **@NBCNightlyNews** which appreciated one of the police force's outreach programs. The other tweet was similar as it was made by a citizen appreciating the help he received from a Boston PD police officer. The handle retweeted only such posts which were appreciating its work.

On the other hand, **@DelhiPolice** retweeted 147 tweets in the analysis period. The top ten user IDs whose tweets were retweeted by the handle are-

- **@DCPNEastDelhi**
- **@DCP_DelhiPolice**
- **@DCP_Sh**
- **@DCPSEastDelhi**
- **@adcp1_south**
- **@DCPEastDelhi**
- **@LtGovDelhi**
- **@surenderkr_ips**
- **@DcpNorthDelhi**
- **@CPDelhi**

As a whole, these organisations represent various high ranking police officials of regional police forces in Delhi. Other than that one of the major users is **@LtGovDelhi**, which is the official handle of the LG of Delhi. The group consists entirely of the law and order machinery of the state. The tweets of these handles being retweeted by Delhi police represent achievements of solving cases or conducting awareness programs etc. Other major category of retweets consisted of

images of functions organised/patrolling etc. Another was public announcements such as posters against drunk driving etc. Why these specific organisations were retweeted is because as a whole they represent the law and order machinery of the state and together the content that they are posting serves as a show of force. They present a positive image of the police and showcase their achievements and successes etc. Retweeting also serves to increase the post reach and visibility to a wider audience as the **@DelhiPolice** handle has the largest number of followers amongst the whole group of users whose tweets it retweets.
