Question 1

```
In [1]:  ▶ import tweepy
           from tweepy import StreamingClient, StreamRule
           import os
           bearer_token='AAAAAAAAAAAAAAAAAAAAAMURQQEAAAAACUCg%2BQO0plPdQIDVTqGxoIOAYxk%3D0YU†
           class TweetPrinterV2(tweepy.StreamingClient):
               def on_tweet(self, tweet):
                   print(f"{tweet.id} {tweet.created_at} ({tweet.author_id}): {tweet.text}")
                   print("-"*50)
           printer=TweetPrinterV2(bearer_token)
           location_box=[-87.6298,41.8781,-86.6298,40.8781]
           r= StreamRule(value='("p")bounding_box:[-87.6298,41.8781,-86.6298,40.8781]')
           printer.add_rules(r)
           r1= StreamRule(value='("python") place:Chicago has:geo')
           printer.add_rules(r1)
```

```
Out[1]:  Response(data=None, includes={}, errors=[{'value': '("python") place:Chicago ha
         s:geo', 'id': '1640175429523742720', 'title': 'DuplicateRule', 'type': 'https://
         api.twitter.com/2/problems/duplicate-rules'}], meta={'sent': '2023-03-27T02:18:4
         7.983Z', 'summary': {'created': 0, 'not_created': 1, 'valid': 0, 'invalid': 1}})
```

Question 2

```
In [2]:  ▶ import tweepy
           consumer_key='VXzRzW62biX8KW7A4XycqIeCL'
           consumer_secret='Dr1ak1sdfL2CdpGCp2IWYg3xbOYFWmJ2H3Tm6ZkgMPo5ejqBrY'
           access_token='78477561-2SitfsaoG4zvrq5jk1oMGahSgtBvQ9b7noe1XNNSX'
           access_token_secret='vYNqoq4IrLpRINUQdn06aAWaeoSz7G3PNNSSt23XIlx1F'
           auth = tweepy.OAuthHandler(consumer_key, consumer_secret)
           auth.set_access_token(access_token, access_token_secret)
```

In [3]:
```python
geocode = "41.8781,-87.6298,100km"
api = tweepy.API(auth, wait_on_rate_limit=True)
q=""
tweets = api.search_tweets(q, geocode=geocode)
import json
f = open('./Data.json', 'w')
for tweet in tweets:
    json_tweet = tweet._json
    f.write(json.dumps(json_tweet))
    f.write('\n')
for tweet in tweets:
    print(tweet.text)
```

@ResisterSis20 @gingerly_is They need to get his fat ass off the street and stop this constant incitement to violen… https://t.co/ws9WtOTkQ2 (https://t.co/ws9WtOTkQ2)
30 seconds into the new season and everyone is attractive like they might as well just see each other and do speed dating
I'm going to start doing this at work.
I've been lacking gym motivation I need my heart broken or something
We got this. Put them away, Hawks!
@Nasty__Plot As it should 😌 🤙
@LoveAndyC Lo all I can say then is buckle up....
I'm ready for the aliens. If you know you know. https://t.co/sfmoU44QDs (https://t.co/sfmoU44QDs)
https://t.co/uRD2vhYMoe (https://t.co/uRD2vhYMoe)
There's no greater feminist cause than the climate fight – and saving each other https://t.co/rw0xqzPxtw (https://t.co/rw0xqzPxtw)
No one asked for this https://t.co/eLj1uLntYM (https://t.co/eLj1uLntYM)
@PlayWithJambo Jambo after the Gravy shot like https://t.co/TED1CZbj6f (https://t.co/TED1CZbj6f)
@kellymroz25 @Ozymetsdias @infieldflygrl I cannot remember a night gane at Wrigley ending before 10:30pm the past f… https://t.co/hf521awh49 (https://t.co/hf521awh49)

Question 3

In [4]:
```python
import json
data=[]
with open('./Data.json', 'r') as File:
    for i in File:
        data.append(json.loads(i))
print(data[0].keys())
```

dict_keys(['created_at', 'id', 'id_str', 'text', 'truncated', 'entities', 'metadata', 'source', 'in_reply_to_status_id', 'in_reply_to_status_id_str', 'in_reply_to_user_id', 'in_reply_to_user_id_str', 'in_reply_to_screen_name', 'user', 'geo', 'coordinates', 'place', 'contributors', 'is_quote_status', 'retweet_count', 'favorite_count', 'favorited', 'retweeted', 'lang'])

In [5]:
```python
for i in data:
    print(i["text"])
```

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this constant incitement to violen… https://t.co/ws9WtOTkQ2 (https://t.co/ws9WtO
TkQ2)
30 seconds into the new season and everyone is attractive like they might as wel
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I'm ready for the aliens. If you know you know. https://t.co/sfmoU44QDs (http
s://t.co/sfmoU44QDs)
https://t.co/uRD2vhYMoe (https://t.co/uRD2vhYMoe)

Question 4

In [6]:
```python
d={"name":"aaryan","major":"ds","track":"computational"}
```

In [7]:
```python
d["degree"]
```

```
---------------------------------------------------------------------------
KeyError                                  Traceback (most recent call last)
~\AppData\Local\Temp\ipykernel_29136\2097192716.py in <module>
----> 1 d["degree"]

KeyError: 'degree'
```

In [8]:
```python
print(str(d))
print(len(d))
print(d.keys())
print(d.items())
print(d.values())
print(d.get("name"))
```

```
{'name': 'aaryan', 'major': 'ds', 'track': 'computational'}
3
dict_keys(['name', 'major', 'track'])
dict_items([('name', 'aaryan'), ('major', 'ds'), ('track', 'computational')])
dict_values(['aaryan', 'ds', 'computational'])
aaryan
```

In [9]:
```python
#dictionaries are used for quick lookups for example in a big data set
#instead of traversing through the whole list it is better to use the key
#for the dictionary it is in to get the value
#it can also be used to interpret the json format of data which
#is not possible in tuples and lists
```

Question 5

In [10]: ▶| ort nltk
t = nltk.word_tokenize("They wind back the clock, while we chase after the wind")

In [11]: ▶| text

Out[11]: ['They',
 'wind',
 'back',
 'the',
 'clock',
 ',',
 'while',
 'we',
 'chase',
 'after',
 'the',
 'wind']

In [12]: ▶| nltk.pos_tag(text)

Out[12]: [('They', 'PRP'),
 ('wind', 'VBP'),
 ('back', 'RB'),
 ('the', 'DT'),
 ('clock', 'NN'),
 (',', ','),
 ('while', 'IN'),
 ('we', 'PRP'),
 ('chase', 'VBP'),
 ('after', 'IN'),
 ('the', 'DT'),
 ('wind', 'NN')]

In [13]: ▶|
```python
import cmudict
d = cmudict.dict()
for word in text:
    pronunciation = d.get(word.lower())
    if pronunciation:
        print(f'{word}:{pronunciation[0]}')
```

```
They:['DH', 'EY1']
wind:['W', 'AY1', 'N', 'D']
back:['B', 'AE1', 'K']
the:['DH', 'AH0']
clock:['K', 'L', 'AA1', 'K']
while:['W', 'AY1', 'L']
we:['W', 'IY1']
chase:['CH', 'EY1', 'S']
after:['AE1', 'F', 'T', 'ER0']
the:['DH', 'AH0']
wind:['W', 'AY1', 'N', 'D']
```

In [ ]: ▶|