

DS 420 Network Analytics

Intro. to Twitter API

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What is Twitter API

- The Twitter API is simply a set of URLs that take parameters.
- The URLs let you access many features of Twitter, such as posting a tweet or finding tweets that contain a keyword, etc.
- The API is documented here : [Documentation | Twitter Developers](#)

What We Can Do with Twitter API

Search Tweets

Use the Search API to find historical Tweets. Free to enterprise versions available.

[Learn more](#)

Account Activity API

Have 15+ account activities delivered to you in realtime via a webhook connection.

[Learn more](#)

Twitter for websites

Embed Tweets, Timelines, and more within your website.

[Learn more](#)

Filter realtime Tweets

Get only the Tweets you need by using advanced filtering tools with the realtime streaming API.

[Learn more](#)

Direct Message API

Build personalized customer experiences with our Direct Message platform.

[Learn more](#)

Ads API

Programmatically create and manage your ad campaigns.

[Learn more](#)

What We Can Do with Twitter API: Account Activity

Accounts and users

Subscribe to account activity

Manage account settings and profile

Mute, block and report

Follow, search, and

Create and manage

User Profile Images

Follow, search, and get users

Overview

API Reference

The following API endpoints can be used to programmatically follow users, search for users, and get user information:

Friends and followers		POST friendships	Get user info
<ul style="list-style-type: none">• GET followers/ids• GET followers/list• GET friends/ids• GET friends/list• GET friend• GET friend		<ul style="list-style-type: none">• POST friendships/create• POST friendships/destroy• POST friendships/update	<ul style="list-style-type: none">• GET users/lookup• GET users/search• GET users/show• GET users/suggestions
Rate limited?		Yes	
• GET friendships	Requests / 15-min window (user auth)	15	
• GET friend	Requests / 15-min window (app auth)	15	

What We Can Do with Twitter API: Tweets

Tweets

Post, retrieve and engage with Tweets

Get T **Overview**

Curat

Optin

Standard

Search Returns public statuses that match one or more filter predicates. Multiple parameters may be specified which allows most clients to use a single connection to the Streaming API. Both GET and POST requests are supported, but GET requests with too many parameters may cause the request to be rejected for excessive URL length. Use a POST request to avoid long URLs.

Get b The track, follow, and locations fields should be considered to be combined with an OR operator. track=foo&follow=1234 returns Tweets matching “foo” OR created by user 1234.

Data The default access level allows up to 400 track keywords, 5,000 follow userids and 25 0.1-360 degree location boxes. If you need elevated access to the Streaming API, please use the enterprise streaming API, [PowerTrack](#).

Tweet compliance

Tweet updates

What We Can Do with Twitter API: Example

Example Requests

```
$ curl --request GET
  --url 'https://api.twitter.com/1.1/search/tweets.json?q=nasa&result_type=popular'
  --header 'authorization: OAuth oauth_consumer_key="consumer-key-for-app",
  oauth_nonce="generated-nonce", oauth_signature="generated-signature",
  oauth_signature_method="HMAC-SHA1", oauth_timestamp="generated-timestamp",
  oauth_token="access-token-for-authed-user", oauth_version="1.0"'

$ twurl /1.1/search/tweets.json?q=nasa&result_type=popular
```

Example Response

```
{
  "statuses": [
    {
      "created_at": "Sun Feb 25 18:11:01 +0000 2018",
      "id": 967824267948773377,
      "id_str": "967824267948773377",
      "text": "From pilot to astronaut, Robert H. Lawrence was the first African-American to be selected as an astronaut by any na... https://t.co/FjPEWnh804",
      "truncated": true,
      "entities": {
        "hashtags": [],
        "symbols": [],
        "user_mentions": [],
        "urls": [
          {
            "url": "https://t.co/FjPEWnh804",
            "expanded_url": "https://twitter.com/i/web/status/967824267948773377",
            "display_url": "twitter.com/i/web/status/9...",

```

Authentication with Twitter APIs

- Can I directly access Twitter Data with Twitter API?
 - No, you need permission/authentication

Authentication methods

OAuth 1.0a User Context

OAuth 1.0a allows an authorized Twitter developer App to access private account information or perform a Twitter action on behalf of a Twitter account.

[Learn more](#)

OAuth 2.0 Bearer Token

OAuth 2.0 Bearer Token allows a Twitter developer app to access information publicly available on Twitter.

[Learn more](#)

Basic authentication

Many of Twitter's enterprise APIs require the use of HTTP Basic Authentication.

[Learn more](#)

- What's authentication
 - Essentially tokens/keys that let Twitter know that you have the permission/are authorized to access the data
 - <https://developer.twitter.com/en/docs/basics/authentication/overview/oauth>

How to Obtain Auth/Access key/token

- Register a Twitter Account
 - <https://twitter.com/>
- Apply for a Twitter Developer Account
 - <https://developer.twitter.com/en/apply-for-access.html>
- Create a Twitter app
 - <https://developer.twitter.com/en/portal/projects-and-apps>
- Generate Access Token for the app
- See slides ``Introduction to Introduction to Twitter Developer Account’’

- The Twitter API is simply a set of URLs that take parameters.

```
$ curl --request GET
--url 'https://api.twitter.com/1.1/search/tweets.json?q=nasa&result_type=popular'
--header 'authorization: OAuth oauth_consumer_key="consumer-key-for-app",
oauth_nonce="generated-nonce", oauth_signature="generated-signature",
oauth_signature_method="HMAC-SHA1", oauth_timestamp="generated-timestamp",
oauth_token="access-token-for-authed-user", oauth_version="1.0"'
```

- Do you want to send the URL to access Twitter data? We need a more convenient way of doing this
- Tweepy is an easy-to-use Python library for accessing the Twitter API, which wraps the URLs into functions
- Documentation:
 - <https://tweepy.readthedocs.io/en/latest/api.html#tweepy-api-twitter-api-wrapper>

Tweepy Example

```
import tweepy
```

```
# Authenticate to Twitter
```

```
auth = tweepy.OAuthHandler(consumer_key=CONSUMER_KEY, consumer_secret=CONSUMER_SECRET)  
auth.set_access_token(ACCESS_TOKEN, ACCESS_TOKEN_SECRET)
```

```
# build a api object, and the introduction about the rate limit will be cover in next lab
```

```
api = tweepy.API(auth, wait_on_rate_limit=True, wait_on_rate_limit_notify=True)
```

```
# You can also input other user's id/user_id/screen_name to get their profile using this function
```

```
profile = api.get_user("juventusfcpt")  
print(profile.screen_name)
```

```
# get firends with user_id/screen_name, the max count you can set is 200
```

```
screen_name = "juventusfcpt" # You can replace the id/user_id/screen_name to any user's screen_name  
friends = api.friends(screen_name=screen_name, count=200)  
print("The number of the collected friends profiles is: {}".format(len(friends)))
```

```
# show the first 10 screen_name of the friends of juventus  
print("The first 10 collected friends' screen names are:")  
for friend in friends[:10]:  
    print(friend.screen_name)
```