

# Datafication

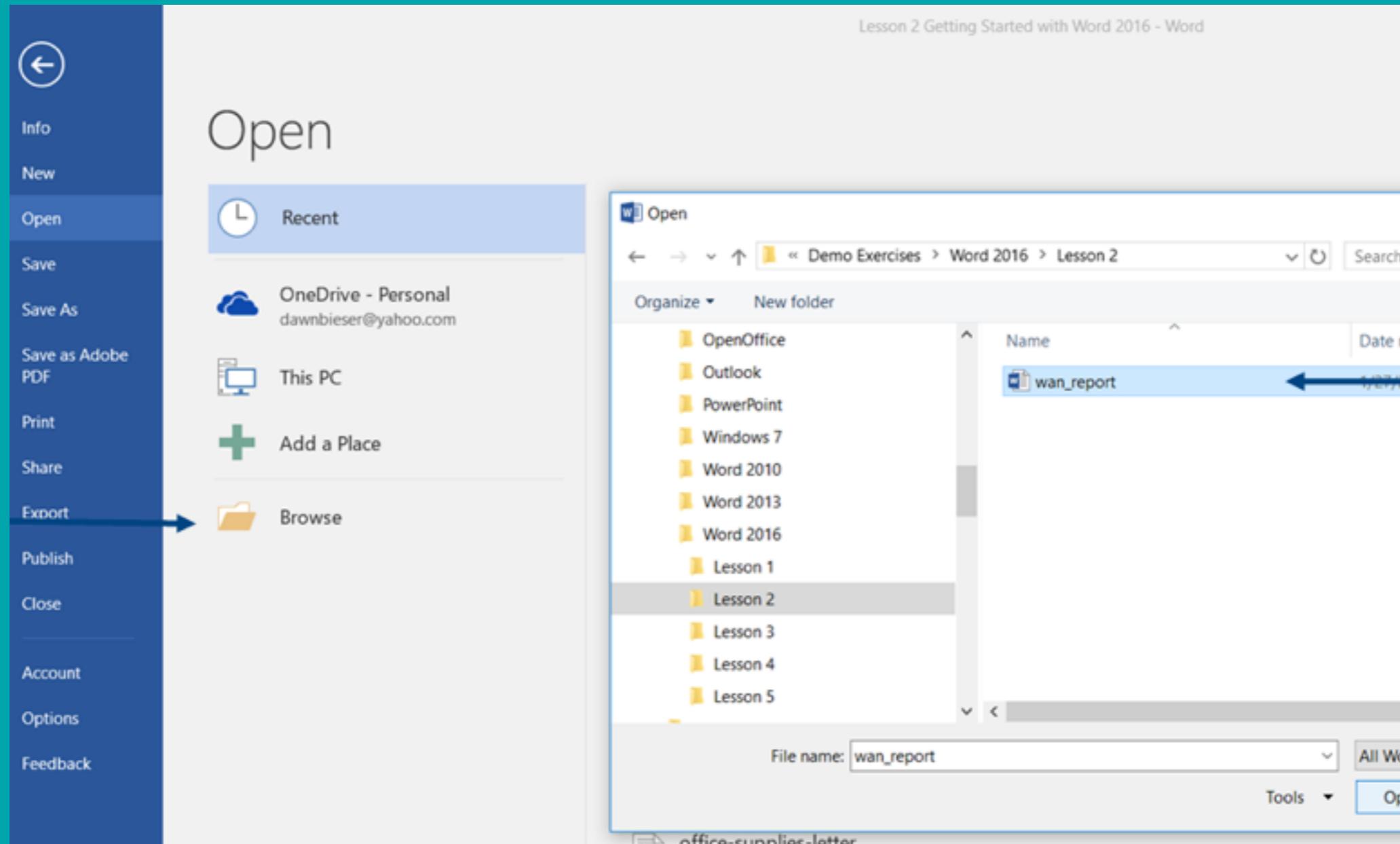
Class 10

# Agenda

- Om API'er
- Sample Code
- Pause
- Tutorial: Twitter API

# API

- Application Programming Interface
- En softwaregrænseflade, som tillader os at interagere med andet software
- Med andre ord: API er en måde at tilbyde tjenester eller data fra ét system til et andet
- Gør det nemmere for os at lave programmer ved at benytte data og funktionalitet fra API'er



# API i styresystemer

der og ting

Valur Zophoniasson har delt et link.  
I går kl. 12:59 ·

Tchaikovsky - 1812 Overture (Full with Cannons)

Se den på youtube.com

0.00 / 15:08

YouTube

Tchaikovsky - 1812 Overture (Full with Cannons)

WARNING: Cannons may make dogs bark, scare your mom, leave your neighbor dumbfounded, make cats panic, wake you up in the middle of the night...

YOUTUBE.COM

Synes godt om Kommenter Del

Frederik Leopold Corneliusen, Una Sússanna Skaalum og 4 andre

Skriv en kommentar ...

Address 10216 99 St NW, Edmonton, AB T5J 4B2, Canada

Map preview:

Map | Satellite

Description GourmetGoodies, get yours before they're all gone!

Display mode Interactive map (iframe)

Map height 450 px

# API på internettet



Data  
~~Knowledge~~ is power.

Francis Bacon

Google

ConfessionBot

Secret obtained

TWEETS 105 FOLLOWERS 4 Following

Tweets Tweets & replies

Confession Bot Retweeted paydirt hits @dirtspouse - May 24 The secret confession is every day I think about post-Another War Karna picking Arjuna up from school on a motorcycle sorry 😊

Confession Bot Retweeted A Pringle. @KaliopaisAtman - May 24 'I am a kitten, @VirileHeroism. I admit it. Sue me for being myself! Is a real dramatic freak today.

Confession Bot Retweeted Tycoon S.G.P. @tycoonago - May 24 "Thriller" to me is probably the greatest album of all time. #HonestHour

Confession Bot Retweeted Michael Aguilera @shh8face666 - May 24 Even as a kid, never have I ever received what I asked for.

Confession Bot Retweeted Bammy Mackay @hammyville - May 24 Well truth be told it's all good to love you and take care of you.. But I

Who to follow · Refresh · View all

- Nitomi hasegawa @nitomi Followed by Ellen Pau and others
- xDrz @xDrz Follow
- Ben Fino-Radin @benfinoradin Follow

Find friends

Vancouver Trends · Change

- #StanleyCup 67K Tweets
- #DolceAmoreTheFarm 213K Tweets
- #BTWW

Secret obtained

Tweet by Amberley□:  
Confession: I like my own selfies

Total secrets obtained: 52

# Eksempel

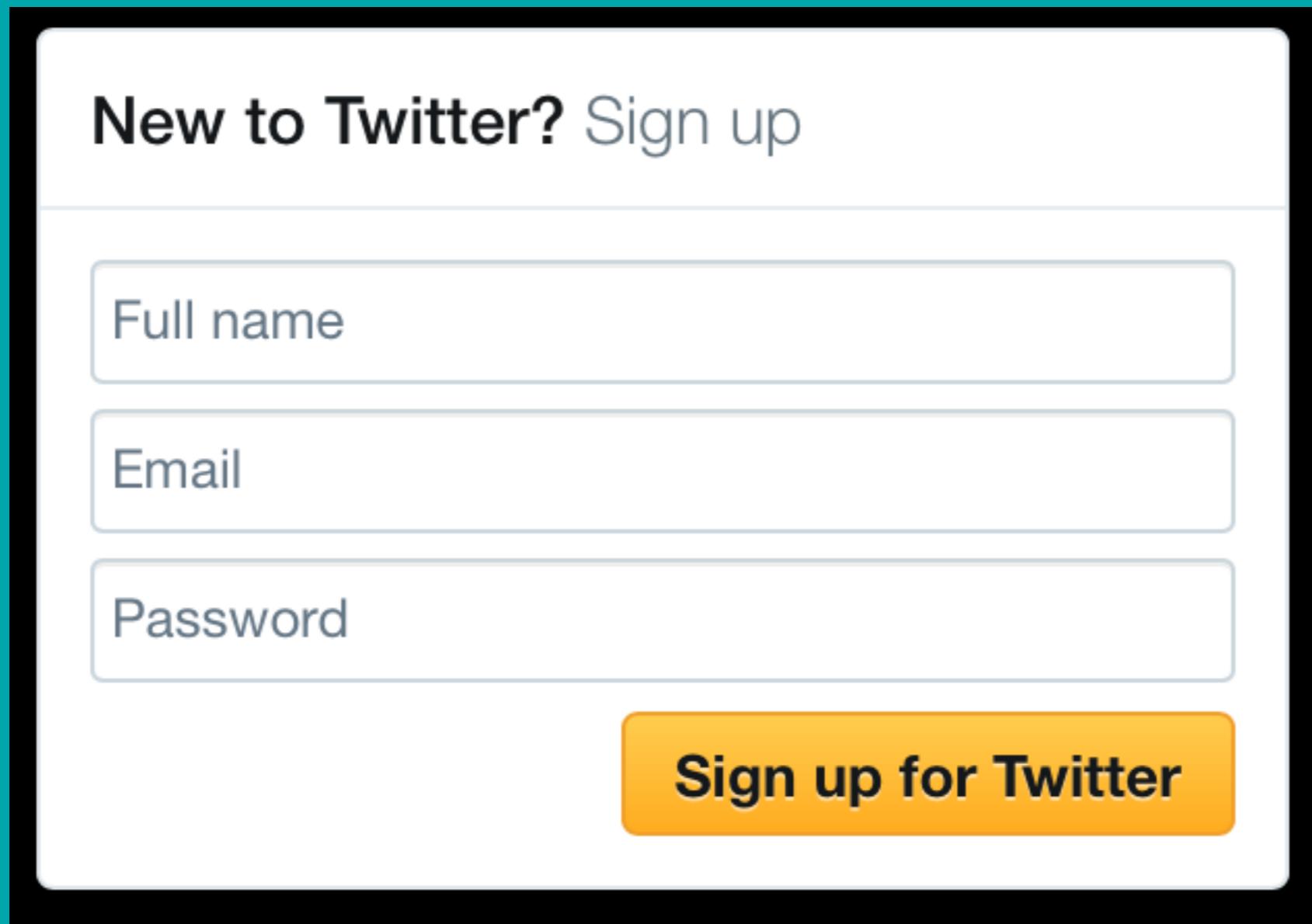
<https://vimeo.com/groups/382805/videos/168807540>

# Sample Code

# Pause



# Step 1: Opret bruger



New to Twitter? Sign up

Full name

Email

Password

**Sign up for Twitter**

The image shows a screenshot of the Twitter sign-up page. It features a white background with a black border. At the top, the text "New to Twitter? Sign up" is displayed. Below this are three input fields: "Full name", "Email", and "Password", each enclosed in a light gray rounded rectangle. At the bottom right is a large yellow button with the text "Sign up for Twitter" in bold black font.

# Step 2: Tilføj mobilnummer

The screenshot shows the Twitter mobile application interface. At the top, there is a navigation bar with icons for Home, Notifications, Messages, a search bar labeled "Search Twitter", and user profile information for "Simone Morrison". Below the navigation bar is a sidebar on the left containing links: Account, Privacy and safety, Password, Cards and shipping, Order history, and Mobile. The "Mobile" link is highlighted with a red box. The main content area is titled "Mobile" and contains the sub-section "Add your phone number". It asks the user to add a phone number to receive a verification code. The "Country/region" is set to "Denmark" and the "Phone number" is "+45 88888888". A blue "Continue" button is at the bottom of this form. To the right of the main content is a vertical sidebar with links: Lists, Moments, Help Center, Keyboard shortcuts, Settings and privacy (which is also highlighted with a red box), and Log out.

Home Notifications Messages Search Twitter

Simone Morrison View profile

Lists Moments Fee may apply.

Keyboard shortcuts

Settings and privacy

Log out

Simone Morrison  
View profile

Mobile

Expand your experience, get closer, and stay current.

Add your phone number

We will text a verification code to this number. Standard SM:

Country/region Denmark

Phone number +45 88888888

Continue

Account >

Privacy and safety >

Password >

Cards and shipping >

Order history >

Mobile > Mobile app

# Step 3: Opret App

<https://apps.twitter.com>

## Twitter Apps

You don't currently have any Twitter Apps.

Create New App

# Step 3: Opret App

## Application Details

**Name \***

Your application name. This is used to attribute the source of a tweet and in user-facing authorization screens. 32 characters max.

**Description \***

Your application description, which will be shown in user-facing authorization screens. Between 10 and 200 characters max.

**Website \***

Your application's publicly accessible home page, where users can go to download, make use of, or find out more information about your application. This fully-qualified URL is used in the source attribution for tweets created by your application and will be shown in user-facing authorization screens.  
(If you don't have a URL yet, just put a placeholder here but remember to change it later.)

**Callback URL**

Where should we return after successfully authenticating? OAuth 1.0a applications should explicitly specify their oauth\_callback URL on the request token step, regardless of the value given here. To restrict your application from using callbacks, leave this field blank.

# Step 4: Get Keys

**Twitter Apps**

 DD4eva  
DD4eva API

[Create New App](#)

**DD4eva**

[Details](#) [Settings](#) [Keys and Access Tokens](#) [Permissions](#) [Test OAuth](#)

**Application Settings**

Keep the "Consumer Secret" a secret. This key should never be human-readable in your application.

Consumer Key (API Key)	z61TZgwcRRJVQIOx49tL0KwQU
Consumer Secret (API Secret)	SLiGQ8SVlbQIZIMO9EHgTNOMJ30UABQRuJgWVoaSsdvm39mvvZ

Access Level: Read and write ([modify app permissions](#))

Owner: DD4eva

Owner ID: 720233022679871488

# Step 4: Get Keys

## Your Access Token

*This access token can be used to make API requests on your own account's behalf. Do not share your access token secret with anyone.*

Access Token 720233022679871488-IF9CdVSTtb79Mf78wlEglvz33WXcDg

Access Token Secret 2ZO5ICOrLahzu2tPnC64yC0DTQooVdAHeF5CtReBtMzr7

Access Level Read and write

Owner DD4eva

Owner ID 720233022679871488

## Token Actions

[Regenerate My Access Token and Token Secret](#)

[Revoke Token Access](#)

# Step 5: Install Node.js

<https://nodejs.org>

The screenshot shows the official Node.js website. At the top is a dark navigation bar with the Node.js logo and links to HOME, ABOUT, DOWNLOADS, DOCS, FOUNDATION, GET INVOLVED, SECURITY, and NEWS. Below the bar is a large banner for "Node.js Interactive NORTH AMERICA Vancouver, Canada October 4 - 6, 2017". The main content area features a photograph of a city skyline at sunset with sailboats in the foreground. Text on the page explains what Node.js is and highlights its package ecosystem, npm. It also provides download links for macOS (x64) in two versions: v6.10.2 LTS (Recommended For Most Users) and v7.8.0 Current (Latest Features). At the bottom, there are links for Other Downloads, Changelog, and API Docs.

Node.js® is a JavaScript runtime built on [Chrome's V8 JavaScript engine](#). Node.js uses an event-driven, non-blocking I/O model that makes it lightweight and efficient. Node.js' package ecosystem, [npm](#), is the largest ecosystem of open source libraries in the world.

Download for macOS (x64)

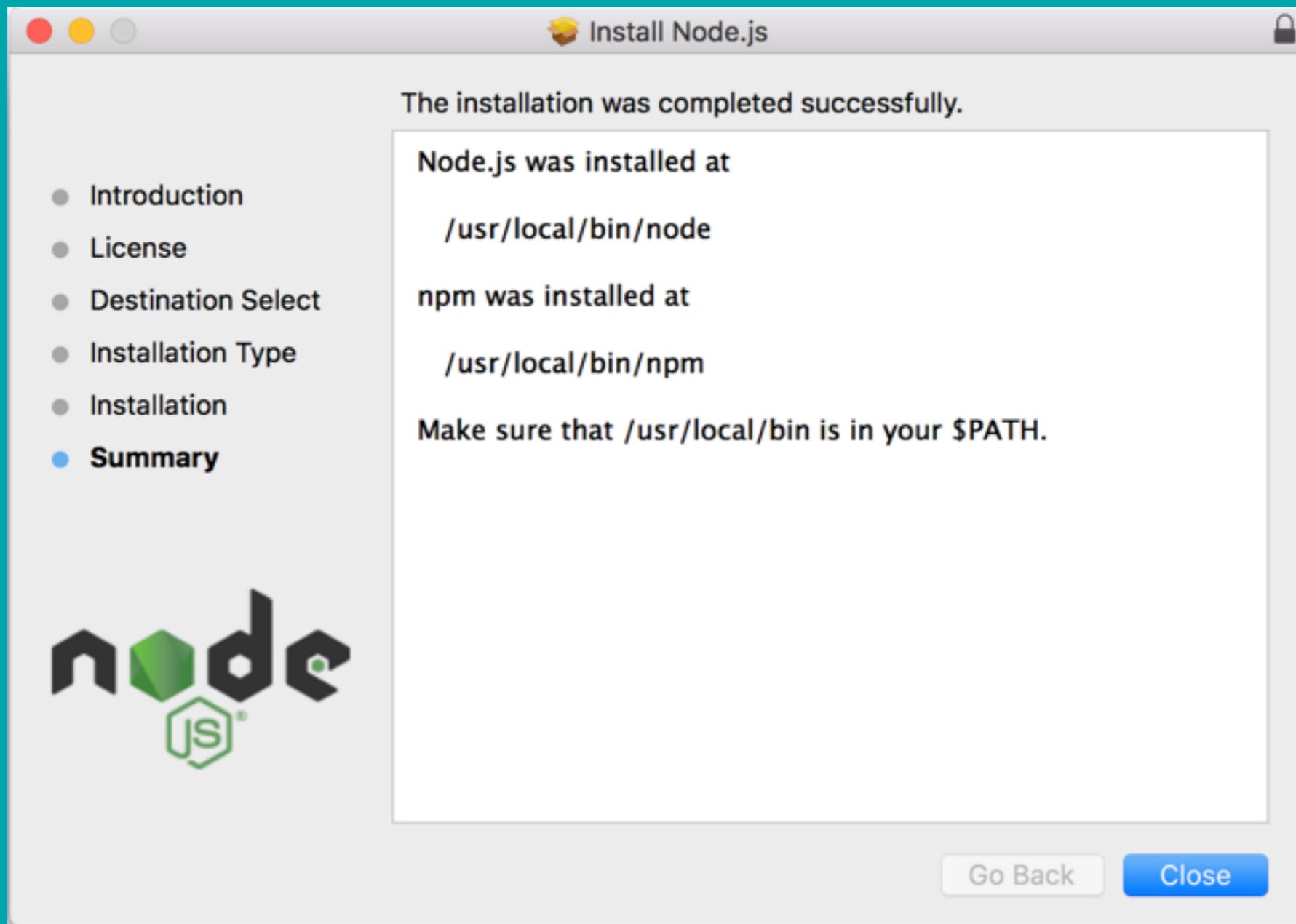
v6.10.2 LTS  
Recommended For Most Users

v7.8.0 Current  
Latest Features

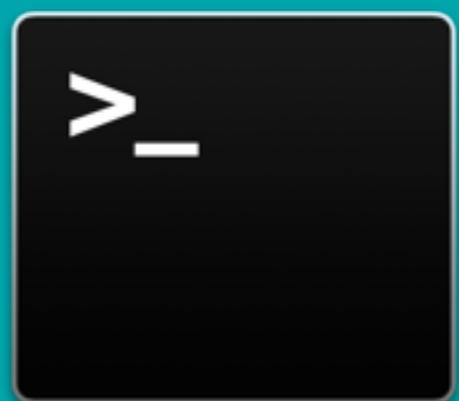
Other Downloads | Changelog | API Docs    Other Downloads | Changelog | API Docs

# Step 5: Install Node.js

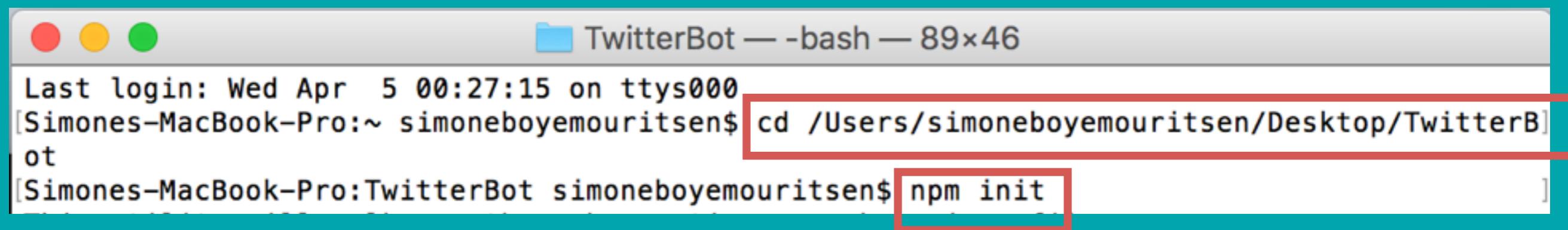
<https://nodejs.org>



# Step 6: Lav package.json



Terminal



A screenshot of a Mac OS X terminal window titled "TwitterBot — -bash — 89x46". The window shows a command-line session:

```
Last login: Wed Apr  5 00:27:15 on ttys000
[Simones-MacBook-Pro:~ simoneboyemouritsen$ cd /Users/simoneboyemouritsen/Desktop/TwitterB]
ot
[Simones-MacBook-Pro:TwitterBot simoneboyemouritsen$ npm init
```

The command `cd /Users/simoneboyemouritsen/Desktop/TwitterB` and the subsequent prompt `npm init` are highlighted with a red box.

# Step 6: Lav package.json

```
This utility will walk you through creating a package.json file.
It only covers the most common items, and tries to guess sensible defaults.

See `npm help json` for definitive documentation on these fields
and exactly what they do.

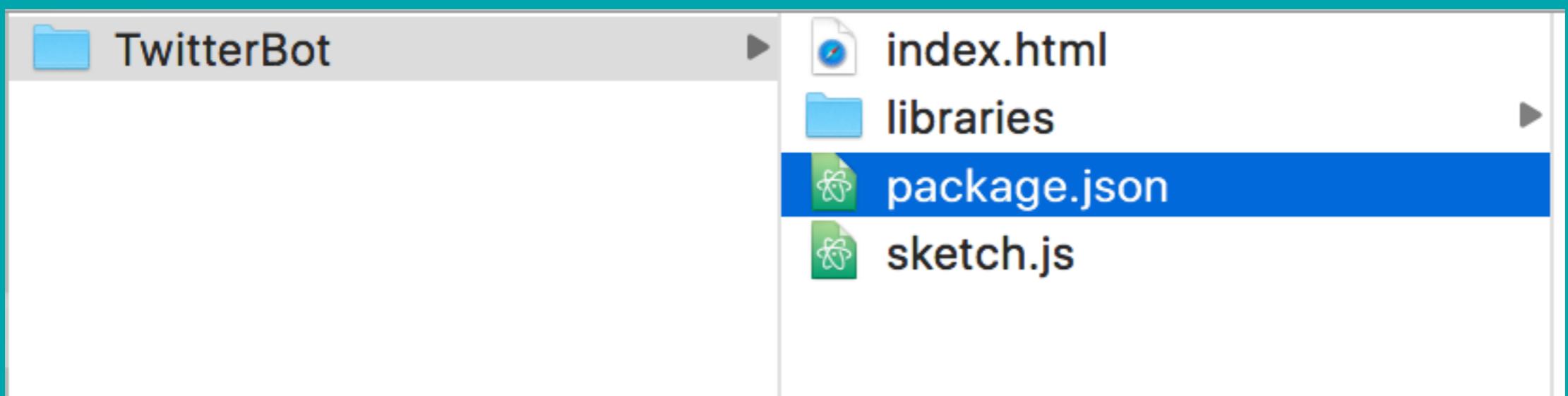
Use `npm install <pkg> --save` afterwards to install a package and
save it as a dependency in the package.json file.

Press ^C at any time to quit.
[name: (TwitterBot) test
[version: (1.0.0)
[description: testing
[entry point: (sketch.js)
[test command:
[git repository:
[keywords: test twitter
[author: mouritsen
[license: (ISC)
About to write to /Users/simoneboyemouritsen/Desktop/TwitterBot/package.json:

{
  "name": "test",
  "version": "1.0.0",
  "description": "testing",
  "main": "sketch.js",
  "scripts": {
    "test": "echo \\\"Error: no test specified\\\" && exit 1"
  },
  "keywords": [
    "test",
    "twitter"
  ],
  "author": "mouritsen",
  "license": "ISC"
}

[Is this ok? (yes) yes
```

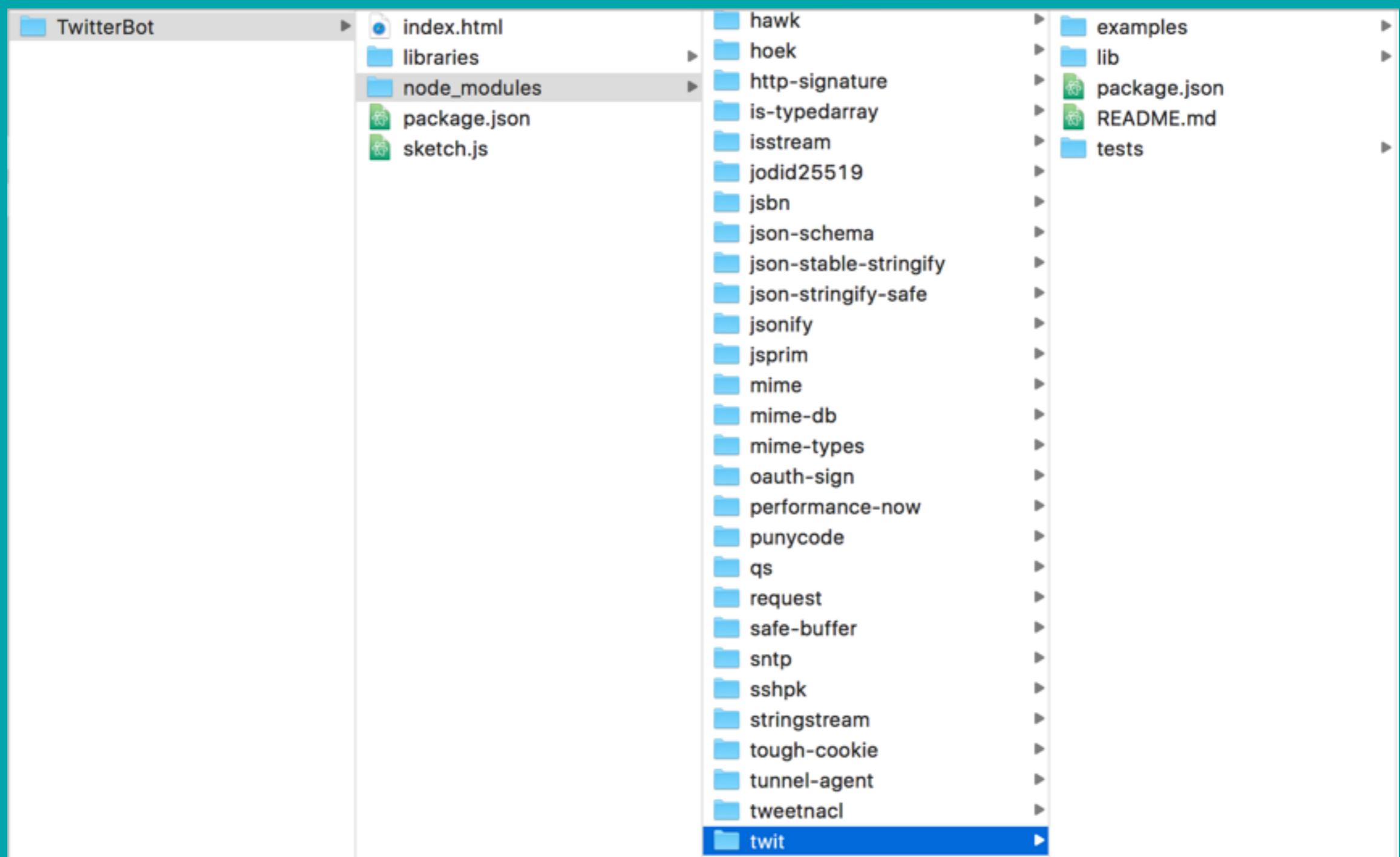
# Step 6: Lav package.json



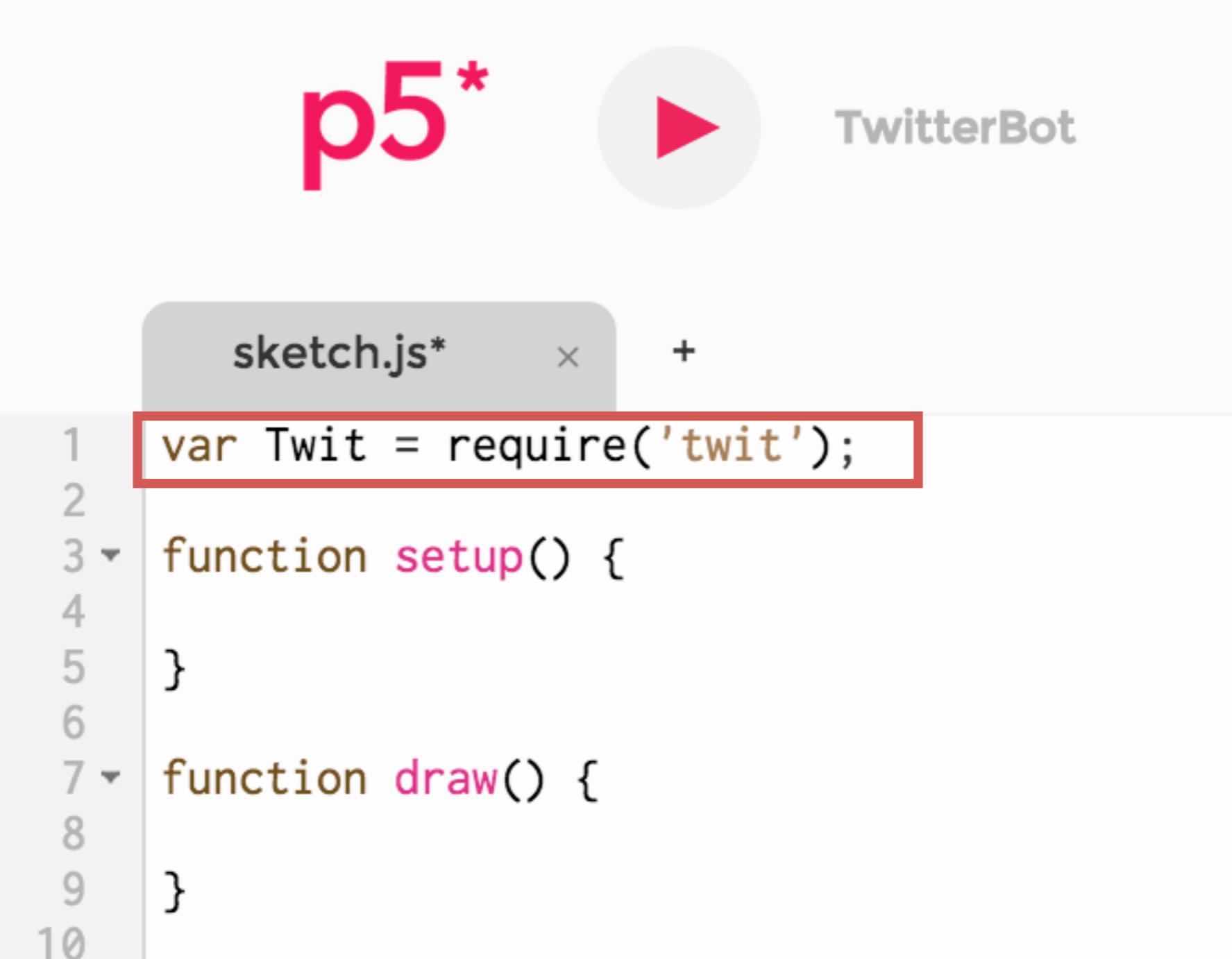
# Step 7: Install Twit

```
Last login: Wed Apr  5 00:00:38 on ttys000
[Simones-MacBook-Pro:~ simoneboyemouritsen$ pwd
/Users/simoneboyemouritsen
[Simones-MacBook-Pro:~ simoneboyemouritsen$ cd /Users/simoneboyemouritsen/Desktop/TwitterBot
[Simones-MacBook-Pro:TwitterBot simoneboyemouritsen$ npm install Twit --save
((██████████)) :: extract:assert-plus: sill gunzTarPerm extractEntry lib/k
```

# Step 7: Install Twit



# Step 8: Include Twit in code

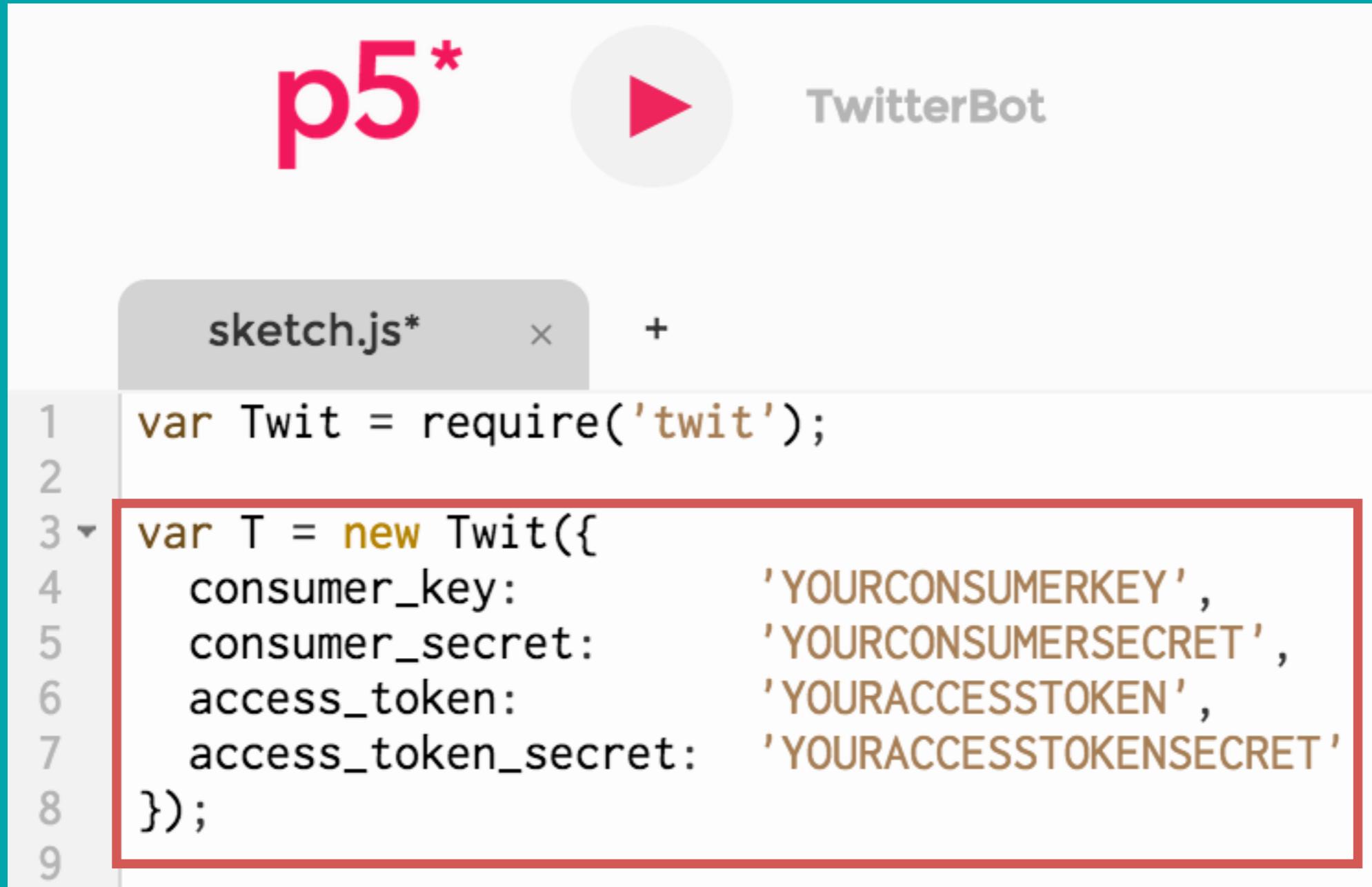


The image shows a screenshot of the p5.js sketch editor. At the top, there's a logo for "p5\*" in red, a play button icon, and the text "TwitterBot". Below the header, there's a tab labeled "sketch.js\*" with an "x" and a "+" sign. The main area contains a code editor with the following content:

```
1 var Twit = require('twit');
2
3 function setup() {
4
5 }
6
7 function draw() {
8
9 }
10
```

The first line of code, "var Twit = require('twit');", is highlighted with a red rectangular box.

# Step 9: Use Keys



The image shows a screenshot of a p5.js sketch titled "TwitterBot". The sketch file is named "sketch.js\*". The code in the sketch is as follows:

```
1 var Twit = require('twit');
2
3 var T = new Twit({
4   consumer_key:      'YOURCONSUMERKEY',
5   consumer_secret:   'YOURCONSUMERSECRET',
6   access_token:       'YOURACCESSTOKEN',
7   access_token_secret: 'YOURACCESSTOKENSECRET'
8 });
9
```

A red rectangular box highlights the configuration object for the Twit API, specifically the consumer key, consumer secret, access token, and access token secret fields, which are represented by placeholder strings: 'YOURCONSUMERKEY', 'YOURCONSUMERSECRET', 'YOURACCESSTOKEN', and 'YOURACCESSTOKENSECRET'.

# Step 10: CODING

Reference:

<https://github.com/ttezel/twit>

# Mini ex 09: APIs

A photograph of a sunset over a calm sea. The sky is filled with warm orange and yellow hues. In the distance, a small traditional wooden boat with a sail is visible on the horizon. The water reflects the colors of the sky.

# Step 1

BREATHE  
DEEPLY

# Mini ex 09: APIs

- 2) Design a program that utilizes a web API. You need to pay attention to your process of acquiring, processing, using and representing data.
- 3) Upload your sketch in a directory called "miniex9". Create a README file and upload to the same directory. The readme file should address the following:
  - Which API have you chosen? and Why?
  - Can you describe your process of making this mini exercise in terms of acquiring, processing, using and representing data?
  - What is your reflection on the aesthetics of (big) data?