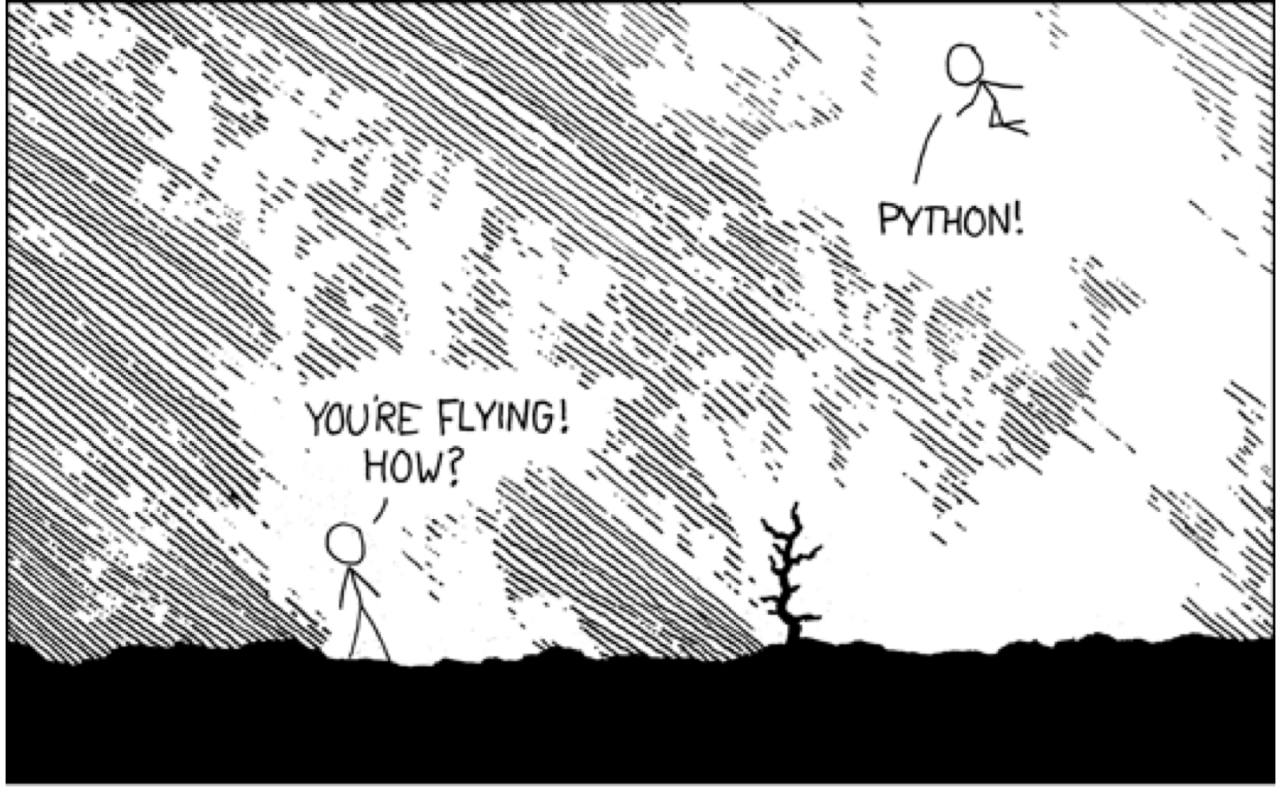
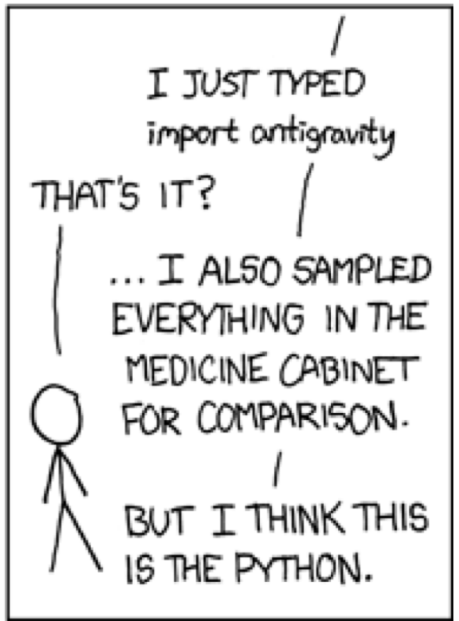
INTRO TO PYTHON

WILLIAM & MARY – APRIL 2018

OUTLINE FOR TODAY

- What is Python?
- Hello world!
- Scraping Twitter with Python
- Parsing JSON in Python





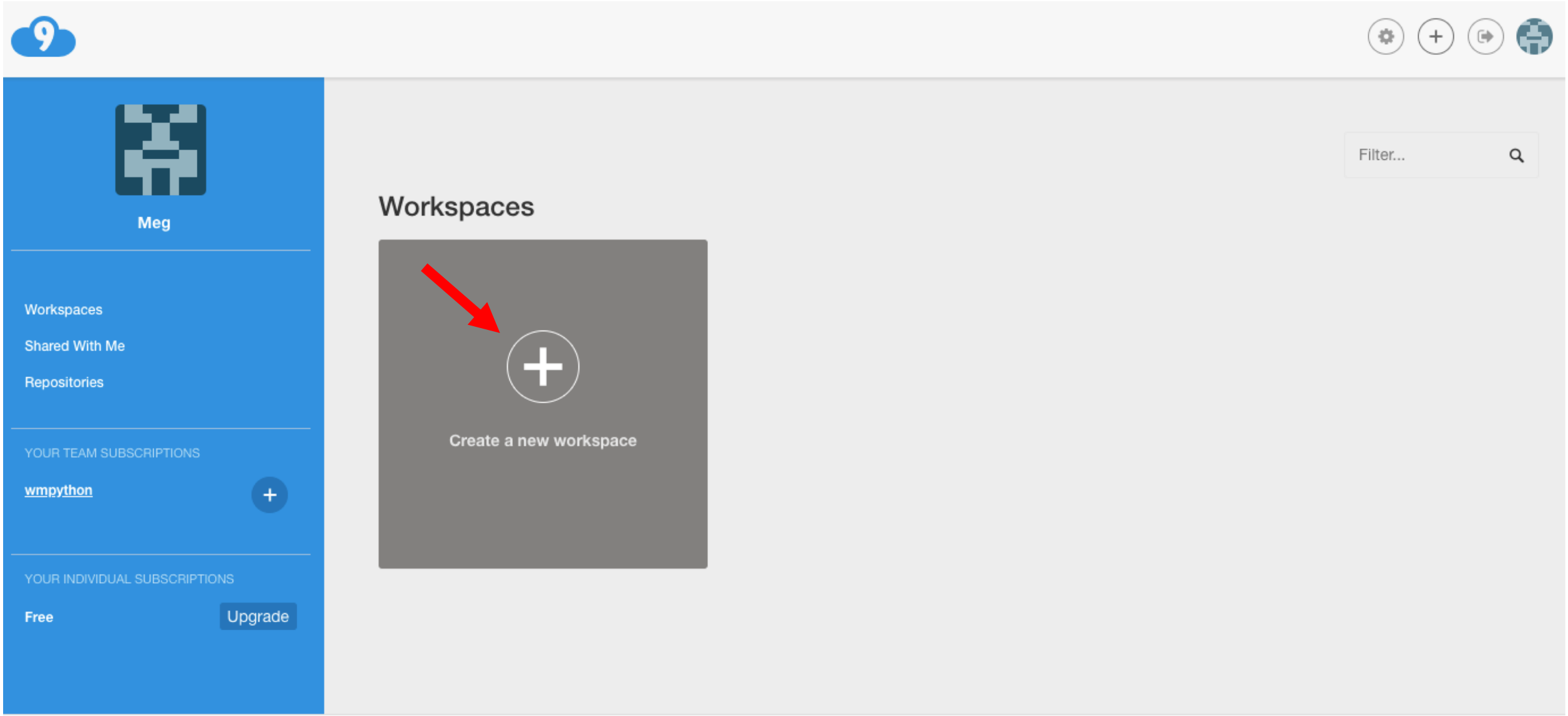
WHAT IS PYTHON?

- "Python is an interpreted, object-oriented, high-level programming language with dynamic semantics."
  - Object-oriented
  - Emphasizes readability
- Used all over the place
  - Data collection – web scraping, churning through files
  - Data analysis – regression, machine learning, visualization
  - Websites – Django, Flask

CLOUD9 – CLOUD PYTHON ENVIRONMENT

- I have instructions on GitHub for how to install/use Python locally
- Cloud9 is just easier for teaching to groups

CLOUD9 SETUP



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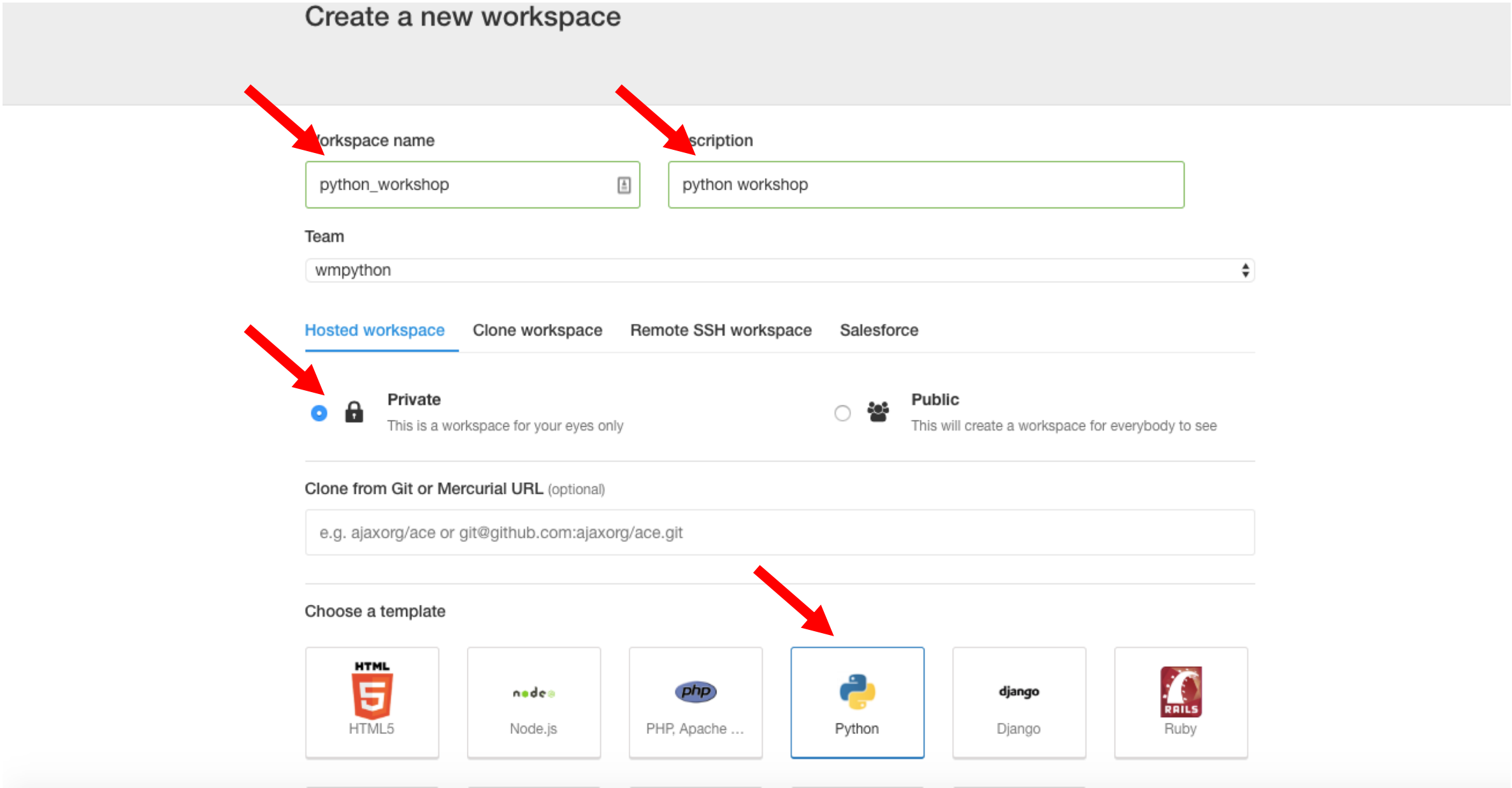

THE WORLD'S SHORTEST COMMAND LINE TUTORIAL

- **pwd** – tells you where you currently are ("Print working directory")
  - Same as getwd() in R
- **cd** – changes the directory
  - Ex: cd ../ Changes the directory one folder up
  - Ex: cd /home/users/meg/python_workshop changes to python workshop folder
- **ls** – lists files in the directory
- **touch** – creates a file
  - Ex: touch helloworld.py – creates a file in the current working directory with that name

bash - "mjschwe

```
mjschwenzfeier:~/workspace $ pwd
/home/ubuntu/workspace
mjschwenzfeier:~/workspace $ ls
README.md  ex50/
mjschwenzfeier:~/workspace $ touch helloworld.py
mjschwenzfeier:~/workspace $ ls
README.md  ex50/  helloworld.py
mjschwenzfeier:~/workspace $
```

HELLOWORLD.PY

- Copy and paste as we work through the code
- https://github.com/schwenzfeier/python_workshop/

TWITTER SCRAPING!

Create a Twitter account, then go to:

apps.twitter.com

Create an application

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.

Application Management

Meg Schwenzfeier

Test OAuth

Details | Settings | Keys and Access Tokens | Permissions

Application Settings

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

Consumer Key (API Key)	[redacted]
Consumer Secret (API Secret)	[redacted]ru
Access Level	Read and write (modify app permissions)
Owner	_Schwenzfeier
Owner ID	225468091

Application Actions

Regenerate Consumer Key and Secret | Change App Permissions

Application Settings

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

Consumer Key (API Key)	[redacted]
Consumer Secret (API Secret)	[redacted]
Access Level	Read and write (modify app permissions)
Owner	_Schwenzfeier
Owner ID	225468091

Application Actions

Regenerate Consumer Key and Secret | Change App Permissions

Your Access Token

You haven't authorized this application for your own account yet.

By creating your access token here, you will have everything you need to make API calls right away. The access token generated will be assigned your application's current permission level.

Token Actions

Create my access token

TWITTERSTREAM.PY

- Copy and paste the entire file into a new file in Cloud9
- https://github.com/schwenzfeier/python_workshop/

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