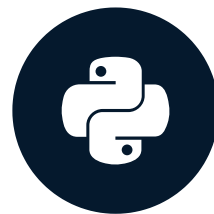


Introduction to APIs and JSONs

INTERMEDIATE IMPORTING DATA IN PYTHON



Hugo Bowne-Anderson
Data Scientist at DataCamp

APIs

- Application Programming Interface
- Protocols and routines
 - Building and interacting with software applications

OMDb API

The Open Movie Database

APIs

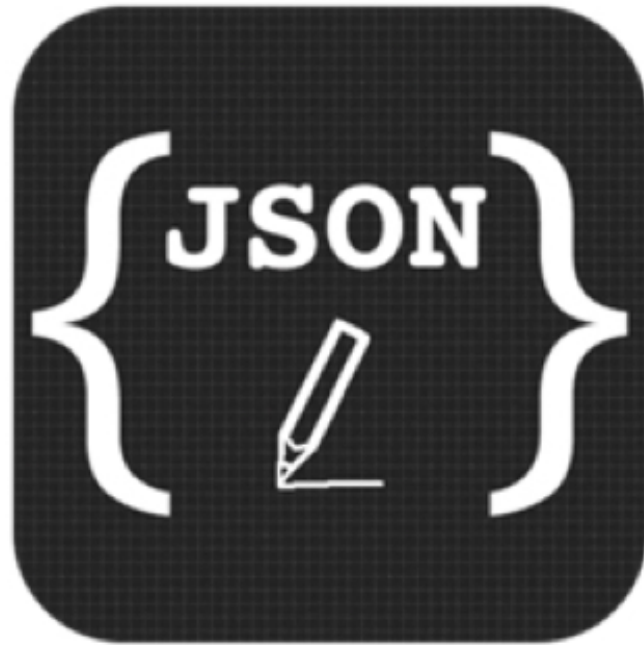
- Application Programming Interface
- Protocols and routines
 - Building and interacting with software applications

OMDb API
The Open Movie Database



JSONs

- JavaScript Object Notation
- Real-time server-to-browser communication
- Douglas Crockford
- Human readable



JSONs

```
{'Actors': 'Samuel L. Jackson, Julianna Margulies, Nathan Phillips, Rachel Blanchard',  
'Awards': '3 wins & 7 nominations.',  
'Country': 'Germany, USA, Canada',  
'Director': 'David R. Ellis',  
'Genre': 'Action, Adventure, Crime',  
'Language': 'English',  
'Rated': 'R',  
'Released': '18 Aug 2006',  
'Runtime': '105 min',  
'Title': 'Snakes on a Plane',  
'Type': 'movie',  
'Writer': 'John Heffernan (screenplay), Sebastian Gutierrez (screenplay), David Dalessandro (story), John Heffernan (story)',  
'Year': '2006',  
'imdbID': 'tt0417148',  
'imdbRating': '5.6',  
'imdbVotes': '114,668'}
```

JSONs

```
{'Actors': 'Samuel L. Jackson, Julianna Margulies, Nathan Phillips, Rachel Blanchard',  
'Awards': '3 wins & 7 nominations.',  
'Country': 'Germany, USA, Canada',  
'Director': 'David R. Ellis',  
'Genre': 'Action, Adventure, Crime',  
'Language': 'English',  
'Rated': 'R',  
'Released': '18 Aug 2006',  
'Runtime': '105 min',  
'Title': 'Snakes on a Plane',    <--  
'Type': 'movie',  
'Writer': 'John Heffernan (screenplay), Sebastian Gutierrez (screenplay), David Dalessandro (story), John Heffernan (story)',  
'Year': '2006',  
'imdbID': 'tt0417148',  
'imdbRating': '5.6',  
'imdbVotes': '114,668'}
```

JSONs

```
{'Actors': 'Samuel L. Jackson, Julianna Margulies, Nathan Phillips,  
Rachel Blanchard',  
'Awards': '3 wins & 7 nominations.',  
'Country': 'Germany, USA, Canada',  
'Director': 'David R. Ellis',  
'Genre': 'Action, Adventure, Crime',  
'Language': 'English',  
'Rated': 'R',  
'Released': '18 Aug 2006',  
'Runtime': '105 min',  
'Title': 'Snakes on a Plane',    <--  
'Type': 'movie',  
'Writer': 'John Heffernan (screenplay), Sebastian Gutierrez (screenplay),  
David Dalessandro (story), John Heffernan (story)',  
'Year': '2006',                <--  
'imdbID': 'tt0417148',  
'imdbRating': '5.6',  
'imdbVotes': '114,668'}
```

Loading JSONs in Python

```
import json
with open('snakes.json', 'r') as json_file:
    json_data = json.load(json_file)
```

```
type(json_data)
```

```
dict
```


Exploring JSONs in Python

```
for key, value in json_data.items():  
    print(key + ': ', value)
```

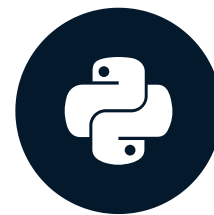
```
Title: Snakes on a Plane  
Country: Germany, USA, Canada  
Response: True  
Language: English  
Awards: 3 wins & 7 nominations.  
Year: 2006  
Actors: Samuel L. Jackson, Julianna Margulies  
Runtime: 105 min  
Genre: Action, Adventure, Crime  
imdbID: tt0417148  
Director: David R. Ellis  
imdbRating: 5.6  
Rated: R  
Released: 18 Aug 2006
```

Let's practice!

INTERMEDIATE IMPORTING DATA IN PYTHON

APIs and interacting with the world wide web

INTERMEDIATE IMPORTING DATA IN PYTHON



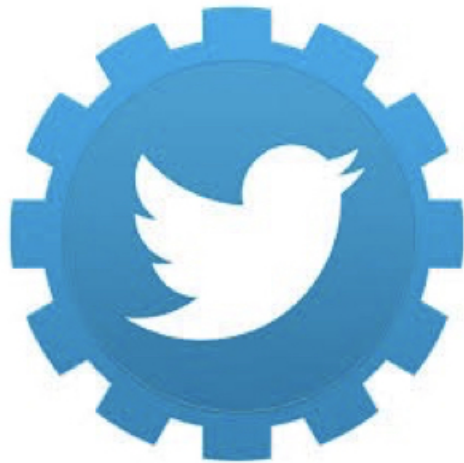
Hugo Bowne-Anderson
Data Scientist at DataCamp

Herein, you'll learn

- What APIs are
- Why APIs are important
- In the exercises:
 - Connecting to APIs
 - Pulling data from APIs
 - Parsing data from APIs

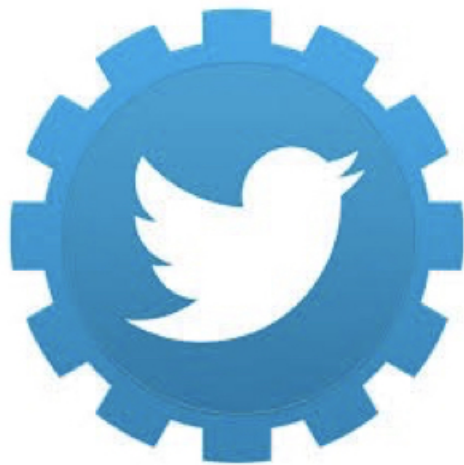
What is an API?

- Set of protocols and routines
- Bunch of code
 - Allows two software programs to communicate with each other



What is an API?

- Set of protocols and routines
- Bunch of code
 - Allows two software programs to communicate with each other



APIs are everywhere



APIs are everywhere



UBER Developers

APIs are everywhere



UBER Developers



APIs are everywhere



UBER Developers



Instagram
API

Connecting to an API in Python

```
import requests
url = 'http://www.omdbapi.com/?t=hackers'
r = requests.get(url)
json_data = r.json()
for key, value in json_data.items():
    print(key + ': ', value)
```

What was that URL?

- http - making an HTTP request
- www.omdbapi.com - querying the OMDB API
- `?t=hackers`
 - Query string
 - Return data for a movie with title (t) 'Hackers'

```
'http://www.omdbapi.com/?t=hackers'
```

OMDb API

Usage

Send all data requests to:

`http://www.omdbapi.com/?`

OMDb API

Usage

Send all data requests to:

http://www.omdbapi.com/?

Parameters

By ID or Title

Parameter	Required	Valid Options	Default Value	Description
i	Optional*		<empty>	A valid IMDb ID (e.g. tt1285016)
t	Optional*		<empty>	Movie title to search for.
type	No	movie, series, episode	<empty>	Type of result to return.

It's a regular URL!



Let's practice!

INTERMEDIATE IMPORTING DATA IN PYTHON