

Introduction to Requests

Requests is a popular Python module for sending HTTP requests.

Install python library requests .

```
In [1]: !pip install requests
```

```
Requirement already satisfied: requests in c:\users\isszq\anaconda3\lib\site-packages (2.24.0)
Requirement already satisfied: chardet<4,>=3.0.2 in c:\users\isszq\anaconda3\lib\site-packages (from requests) (3.0.4)
Requirement already satisfied: certifi>=2017.4.17 in c:\users\isszq\anaconda3\lib\site-packages (from requests) (2020.6.20)
Requirement already satisfied: urllib3!=1.25.0,!1.25.1,<1.26,>=1.21.1 in c:\users\isszq\anaconda3\lib\site-packages (from requests) (1.25.9)
Requirement already satisfied: idna<3,>=2.5 in c:\users\isszq\anaconda3\lib\site-packages (from requests) (2.10)
```

Import request library and print out its version.

```
In [2]: import requests
requests.__version__
```

```
Out[2]: '2.24.0'
```

1. Joke API

Website <http://www.icndb.com/> (<http://www.icndb.com/>) provides a few APIs which return jokes.

Get Request and Response

The `get()` function sends a GET request to server.

- It returns a `Response` object.
- From the response object, you can retrieve information on `status_code` , `text` , `headers` and others.

```
In [3]: SERVER = 'http://api.icndb.com'
RESOURCE = '/jokes/random'

url = SERVER + RESOURCE
resp = requests.get(url)
print(resp.status_code)
print(resp.text)
print(resp.headers)

200
{ "type": "success", "value": { "id": 284, "joke": "Chuck Norris' first job
was as a paperboy. There were no survivors.", "categories": [] } }
{'Date': 'Wed, 16 Sep 2020 23:35:23 GMT', 'Content-Type': 'application/jso
n', 'Transfer-Encoding': 'chunked', 'Connection': 'keep-alive', 'Set-Cooki
e': '__cfduid=d0190208dc25b5843eb931ccd6f58dafa1600299322; expires=Fri, 16-
Oct-20 23:35:22 GMT; path=/; domain=.icndb.com; HttpOnly; SameSite=Lax', 'A
ccess-Control-Allow-Origin': '*', 'Access-Control-Allow-Methods': 'GET', 'C
ache-Control': 'no-cache, must-revalidate', 'Expires': 'Sat, 26 Jul 1997 0
5:00:00 GMT', 'Vary': 'User-Agent', 'CF-Cache-Status': 'DYNAMIC', 'cf-reque
st-id': '053adee4d60000c38b6f916200000001', 'Server': 'cloudflare', 'CF-RA
Y': '5d3e674e28d5c38b-SIN', 'Content-Encoding': 'gzip'}
```

Since the returned text is in JSON format, we can convert the `text` into JSON object using its `json()` function.

```
In [4]: result = resp.json()
print(result)

{'type': 'success', 'value': {'id': 284, 'joke': "Chuck Norris' first job w
as as a paperboy. There were no survivors.", 'categories': []}}
```

Get joke from the JSON object.

```
In [5]: joke = result['value']['joke']
joke
```

Out[5]: "Chuck Norris' first job was as a paperboy. There were no survivors."

Dynamic Route

Above API returns us only 1 joke.

It also provides us another route `/jokes/random/<count>` where we can specify the number of jokes in `<count>`.

```
In [6]: SERVER = 'http://api.icndb.com'
        RESOURCE = '/jokes/random/3'

        url = SERVER + RESOURCE
        resp = requests.get(url)
        resp.text
```

```
Out[6]: '{ "type": "success", "value": [ { "id": 266, "joke": "Chuck Norris? roundhouse kick is so powerful, it can be seen from outer space by the naked eye.", "categories": [] }, { "id": 43, "joke": "Police label anyone attacking Chuck Norris as a Code 45-11.... A suicide.", "categories": [] }, { "id": 386, "joke": "Chuck Norris once lost the remote, but maintained control of the TV by yelling at it in between bites of his "Filet of Child" sandwich.", "categories": [] } ] }'
```

Process data in Response object to retrieve a list of jokes.

```
In [7]: result = resp.json()
        jokes = [item['joke'] for item in result['value']]
        print(jokes)
```

```
['Chuck Norris? roundhouse kick is so powerful, it can be seen from outer space by the naked eye.', 'Police label anyone attacking Chuck Norris as a Code 45-11.... A suicide.', 'Chuck Norris once lost the remote, but maintained control of the TV by yelling at it in between bites of his "Filet of Child" sandwich.']
```

Query Strings

The jokes are always for someone named "Chuck Norris".

The API allows us to change its first name and last name.

- For example, we can change first name to "Nobody" and last name to "Tan" for the joke.

Try out URL <http://api.icndb.com/jokes/random?firstName=Nobody&lastName=Tan>
(<http://api.icndb.com/jokes/random?firstName=Nobody&lastName=Tan>)

2. Exercise

Website <https://exchangeratesapi.io/> (<https://exchangeratesapi.io/>) provides a free exchange rates API for current and historical foreign exchange rates published by the European Central Bank.

Check out its list APIs.

Exercise:

Fetch list of exchange rates for base currency SGD. Save data in dictionary

In []: ▶

Exercise:

Ask user to input 2 currencies. Find out exchange rate between them using the API.

In []: ▶