

# Bb REST helper

A python library to make the REST of your life easier.

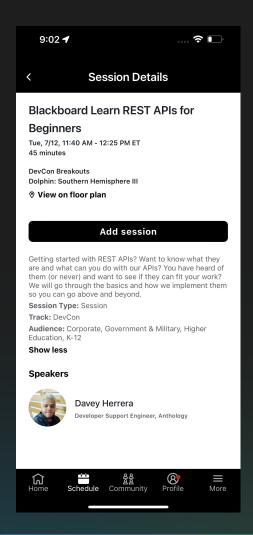
July 2022

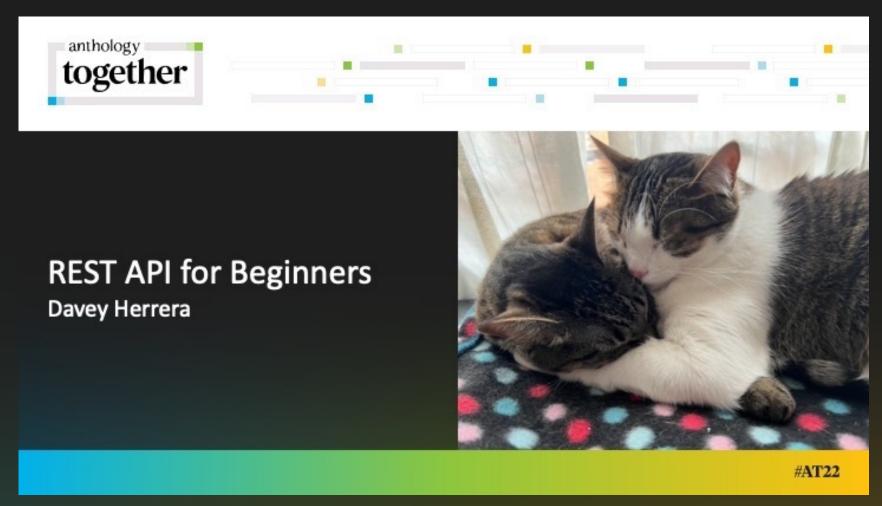
# DISCLAIMER



- This is a personal project.
- It is not endorsed or supported by Anthology.
- It is designed as an education and prototyping tool, and not intented for production usage.
- Use at your own risk!

# IF unfamiliar with APIS (or if you are a cat person)...



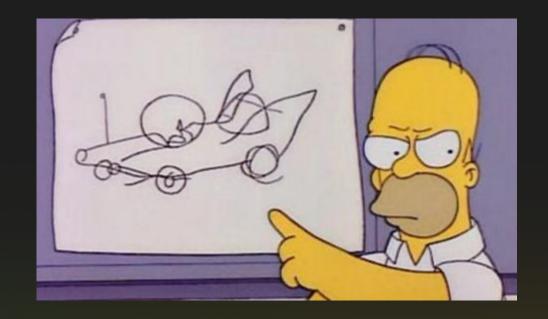


# In this presentation

- 1. Get to know the **Bb REST Helper** library.
- 2. Learn to setup your **Bb REST Helper** dev environment with VSCode and Jupyter Notebooks.
- 3. Get hands on examples of the library.

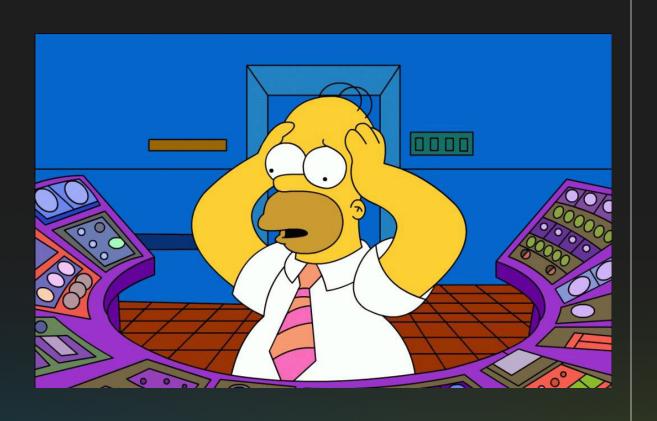
# 3 things about me.

- 1. I am NOT a developer.
- 2. Self-taught Python.
- 3. Love exploring tech and possibilities.



Anthology Together Comment of the Co

# The problem,"XWZ" questions



- Would "XYZ" be supported by the API?
- Can we do "XWZ" in bulk?
- Can we change "XWZ" setting in all courses/users?
- Can we automate "XWZ" task?
- ...

A small POC is often the best way to determine feasibility.

# Why creating my own library?

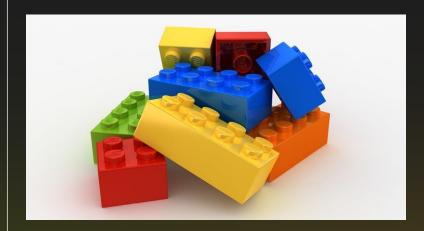
Solutions like **Postman** or **CURL** will allow for testing of APIs, but **NOT** building a working solution or POC.



Boilerplate code gets messy, needs constant refactoring, becomes hard to maintain... there has to be a better way...

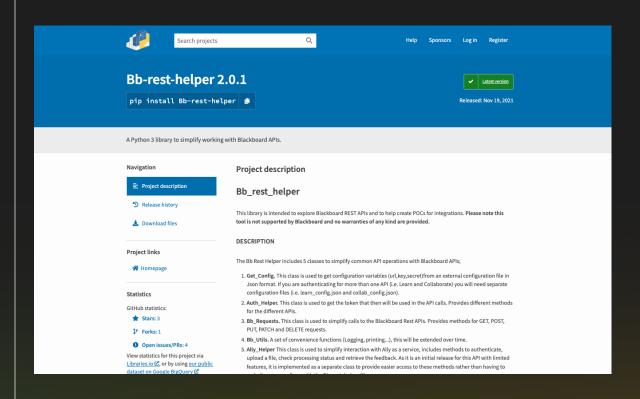


Boost productivity as expedites project setup and abstracts common elements (Auth, logging, parsing...)

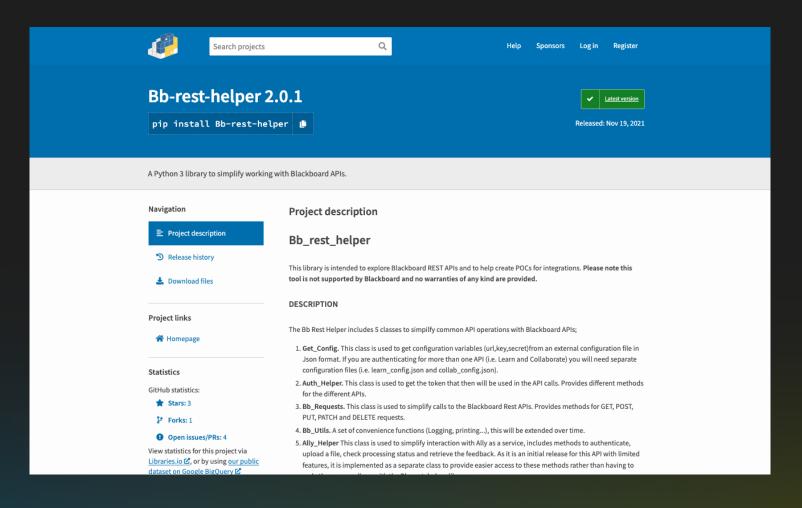


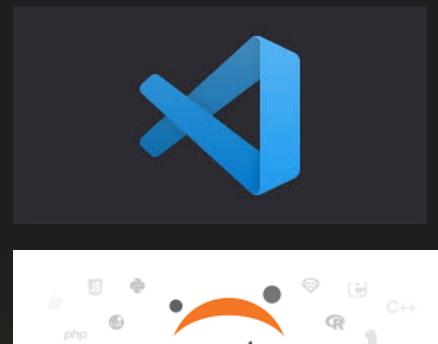
# **Bb REST Helper**

- Python library, works from python 3.7+
- Published in PYPI, installed with PIP
- Designed to work with Learn, Collab and Ally APIs.
- Includes classes to manage
  - Configuration and credentials.
  - API Authentication (OAUTH 2)
  - Requests for GET , POST, PUT, PATCH, DELETE
  - Convenience utilities (Logging, printing results, one liner for auth...)



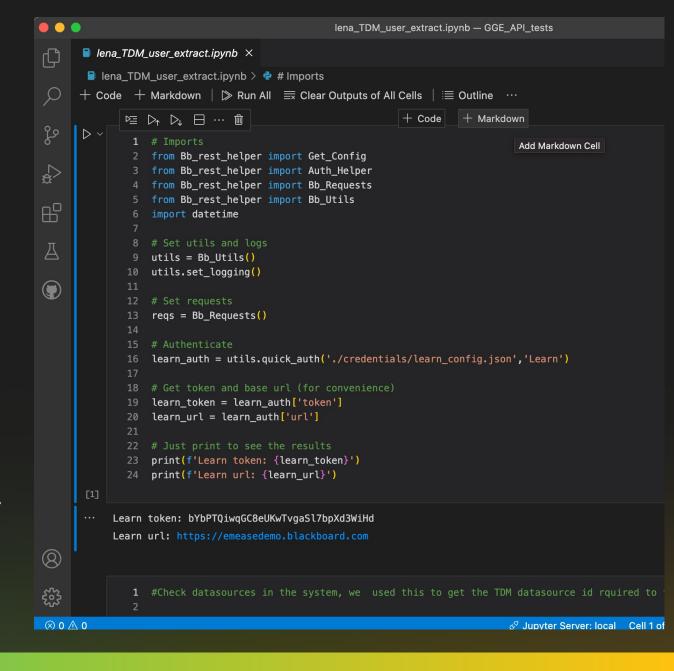
# Making the REST of your life easier.





## The proposed setup.

- Studio VS code with Python and Jupyter extensions.
- Create Python 3- Virtual environment and install dependencies.
  - Pip install Bb-rest-helper
  - Pip install upyter
  - Others as needed
- Create Jupyter Notebook and include starter code.



# **Getting started-Imports**

- Import the classes from the library.
- These will need to be initialized in the code later.

```
#imports.
from Bb_rest_helper import Bb_Utils
from Bb_rest_helper import Get_Config
from Bb_rest_helper import Auth_Helper
from Bb_rest_helper import Bb_Requests

from Bb_rest_helper import Ally_Helper
```

# Getting started- Utils and logging.

```
#logging and utils initialization.
utils = Bb_Utils()
utils.set_logging()
```

```
logs > \( \begin{align*} \text{Bb_helper_log_2022-06-23 22:32:15.070828} \end{align*} \)
      2022-06-23 22:32:15,071 root
                                                       set_logging
                                                                       INF0
                                                                                 Logging has been set up
      2022-06-23 22:32:15,077 root
                                                       init
                                                                       INF0
                                                                                 Configuration file loaded
      2022-06-23 22:32:15.243 urllib3.connectionpool new conn
                                                                       DEBUG
                                                                                Starting new HTTPS connection (1): emeasedemo.blackboard.com
      2022-06-23 22:32:16,183 urllib3.connectionpool make request
                                                                       DEBUG
                                                                                 https://emeasedemo.blackboard.com:443 "POST /learn/api/publi
      2022-06-23 22:32:16,186 root
                                                       learn auth
                                                                       INF0
                                                                                 Learn Authentication successful
      2022-06-23 22:32:16,186 root
                                                       learn_auth
                                                                       INF0
                                                                                 Token expires in: 3599
      2022-06-23 22:32:32,230 root
                                                       set_logging
                                                                       INF0
                                                                                 Logging has been set up
     2022-06-23 22:32:32,233 root
                                                       __init__
                                                                       INF0
                                                                                 Configuration file loaded
      2022-06-23 22:32:32,238 urllib3.connectionpool new conn
                                                                       DEBUG
                                                                                 Starting new HTTPS connection (1): emeasedemo.blackboard.com
      2022-06-23 22:32:32.843 urllib3.connectionpool make request
                                                                       DEBUG
                                                                                 https://emeasedemo.blackboard.com:443 "POST /learn/api/publi
                                                                                 Learn Authentication successful
      2022-06-23 22:32:32,846 root
                                                       learn_auth
                                                                       INF0
      2022-06-23 22:32:32,846 root
                                                       learn auth
                                                                       INF0
                                                                                 Token expires in: 3583
```

# Getting started-Authentication

- V2 of the library provides quick\_auth() methods.
- Key and secret are stored in a separate json file
- The method negociates the autentication and returns the Bearer token and the URL (for convenience)

```
utils = Bb_Utils()
quick_auth_learn = utils.quick_auth('./learn_config.json','Learn')
quick_auth_collab= utils.quick_auth('./collab_config.json','Collaborate')

#With this method you have access to the token and the url for each platform
#So it will not be neccesary to hardcode the url or call Get_Config separately

learn_token = quick_auth_learn['token']
collab_token = quick_auth_collab['token']

learn_url = quick_auth_learn['url']
collab_url = quick_auth_collab['url']

#Authenticate and get the token (Ally).
ally_auth = Ally_Helper(ally_url, ally_clientId, ally_key, ally_secret)
ally_auth = ally_auth.ally_auth()
```

# **Getting Started-example REQUEST**

```
1 # Get all the users that belong to a datasource
2 def get_users(learn_url:str, learn_token:str, datasource_id:str):
      user_url = '/learn/api/public/v1/users'
      params = {
          "dataSourceId":datasource_id,
          "fields":"id,userName,dataSourceId,created,modified,lastLogin,birthDate"
      users = reqs.Bb_GET(learn_url, user_url, learn_token, params)
      return users
  users = get_users(learn_url, learn_token, "_55_1")
  utils.pretty_printer(users, sort_keys = False )
            "id": "_2792_1",
            "dataSourceId": "_55_1",
            "userName": "rabeb67253@iopmail.com",
            "birthDate": "1954-08-09T00:00:00.000Z",
            "created": "2020-05-06T14:20:28.885Z",
            "modified": "2022-03-02T17:16:46.495Z",
            "lastLogin": "2020-05-06T14:22:02.735Z"
        },
```

- Bb\_requests() provides methods for GET, POST, PATCH, PUT, DELETE and a special method to POST files to Learn storage.
- The methods just require to pass arugments for
  - Server URL
  - API endpoint
  - Token
  - Parameters

# Areas for improvement

- Documentation
- Test driven development
- Performance with some requests (pagination).
- Source code can be found here

https://github.com/JgregoriBb/Bb\_rest\_helper



# Questions?

# anthology together