

# Python experiments

Robin Venken

## Inhoud

Installeren van pip libraries .....	1
Jupyter notebook .....	2
Install .....	2
Scripts: .....	2
Datetime .....	3
Location .....	4
Location-html .....	4
Python idle .....	4
Install .....	4
Scripts: .....	5
Datetime .....	6
Location .....	7
Location-html .....	8
Visual studio code .....	9
Install: .....	9
Clone git repository: .....	9
Scripts: .....	10
Datetime .....	10
Location: .....	11
Location-html .....	11

## Installeren van pip libraries

Ter voorbereiding installeren we 3 python libraries waar we info uit gaan halen

Datetime, geofy, folium

Om deze te installeren open we een terminal en typen we:

```
[Adevasc@l pip install datetime]
```

We doen dit voor elke library.

# Jupyter notebook

## Install

Op de website van jupyter vinden we de volgende stappen voor de installatie:

<https://jupyter.org/install>

## Jupyter Notebook

Install the classic Jupyter Notebook with:

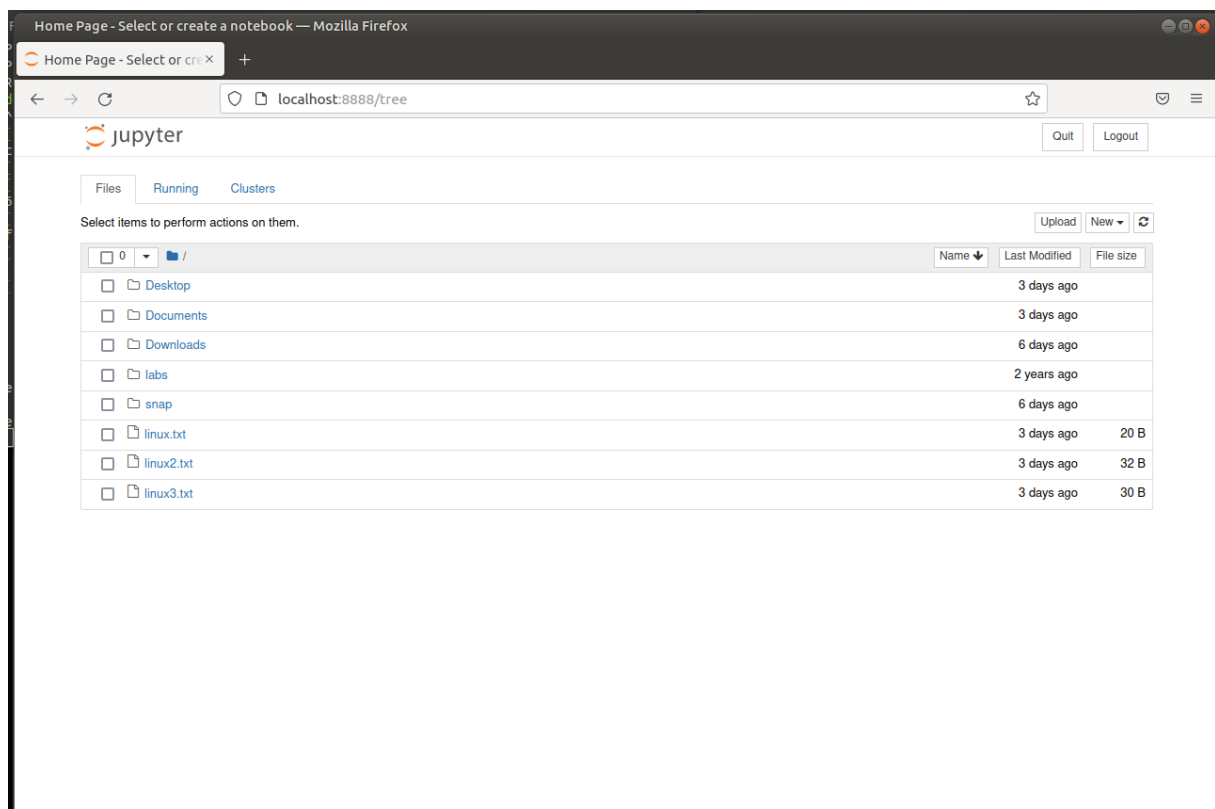
```
pip install notebook
```

To run the notebook:

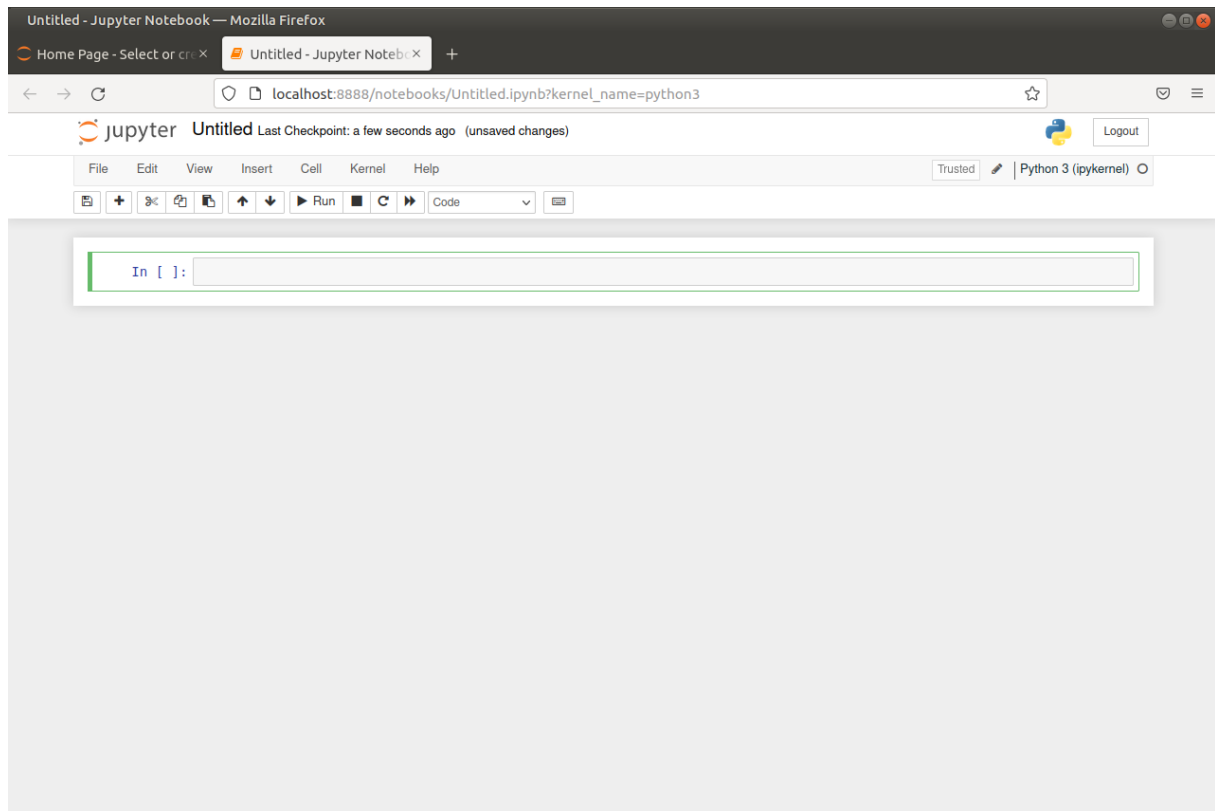
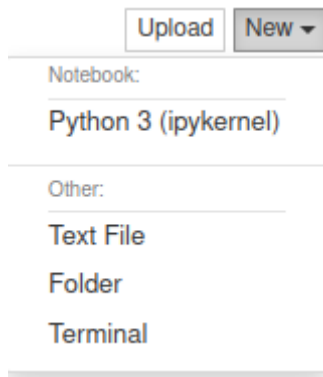
```
jupyter notebook
```

## Scripts:

Als we jupyter notebook openen krijgen we het volgende scherm te zien:



Voor een script te maken selecteren we "New" -> Python 3 :



Vervolgens kunnen we beginnen met onze scripts te schrijven

Datetime

```
In [1]: ##### !pip install datetime
import datetime
print ("Current date and time: ")
print(datetime.datetime.now())
```

```
Current date and time:
2022-02-22 10:12:52.231453
```

## Location

```
In [3]: from geopy.geocoders import Nominatim
geolocator = Nominatim(user_agent="http://biasc.be")
city_country = "Dilsen, Belgium"
location = geolocator.geocode(city_country)
print(location.address)
devnet_lat = location.latitude
devnet_lon = location.longitude
print((devnet_lat, devnet_lon))
```

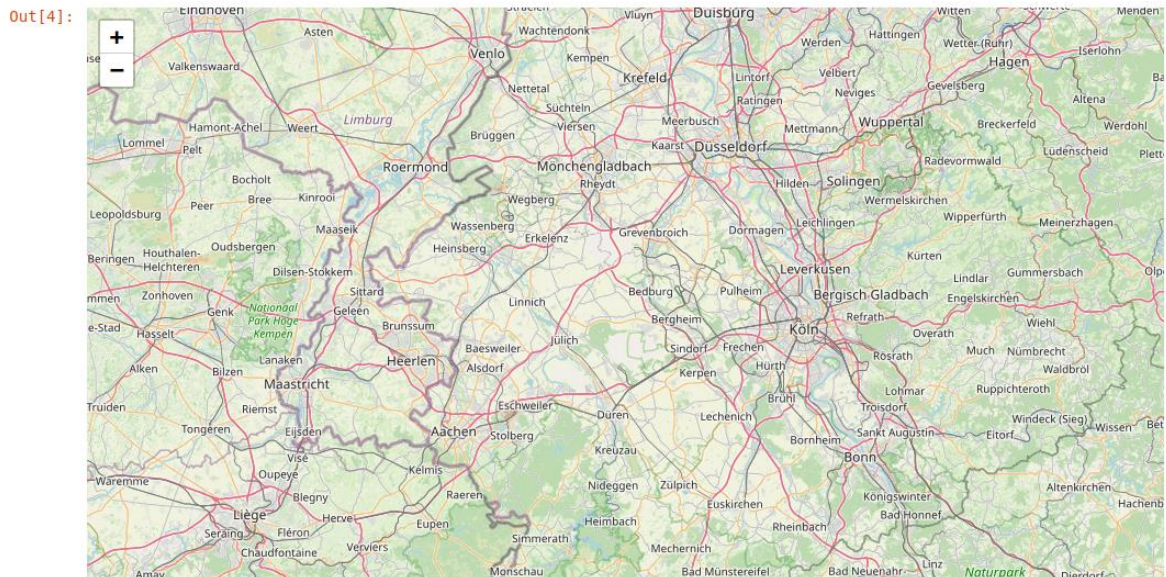
Dilsen, Dilsen-Stokkem, Maaseik, Limburg, Vlaanderen, 3650, België / Belgique / Belgien  
(51.0354657, 5.7246821)

## Location-html

```
from geopy.geocoders import Nominatim
import folium
geolocator = Nominatim(user_agent="http://biasc.be")
#### Enter city and country
city_country = "Dilsen, Belgium"
####
location = geolocator.geocode(city_country)
print(location.address)
devnet_lat = location.latitude
devnet_lon = location.longitude
print((devnet_lat, devnet_lon))
#
coordinates = [devnet_lat, devnet_lon]
map = folium.Map(location=coordinates, tiles='OpenStreetMap', zoom_start=12)
map
```

Hier hebben we het script aangepast zodat men de map in jupyter notebook zelf kan zien:

Dilsen, Dilsen-Stokkem, Maaseik, Limburg, Vlaanderen, 3650, België / Belgique / Belgien  
(51.0354657, 5.7246821)



## Python idle

### Install

<https://www.tecmint.com/install-python-idle-in-linux/>

we gebruiken volgend commando voor de installatie:

we kiezen voor idle3 omdat we met python3 werken.

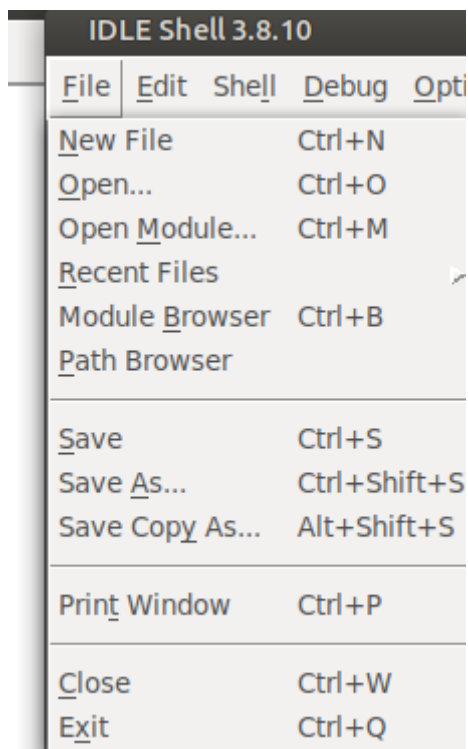
```
$ sudo apt-get install idle3 [On Debian/Ubuntu for Python3]
```

Voor idle te openen gebruiken we het volgende commando:

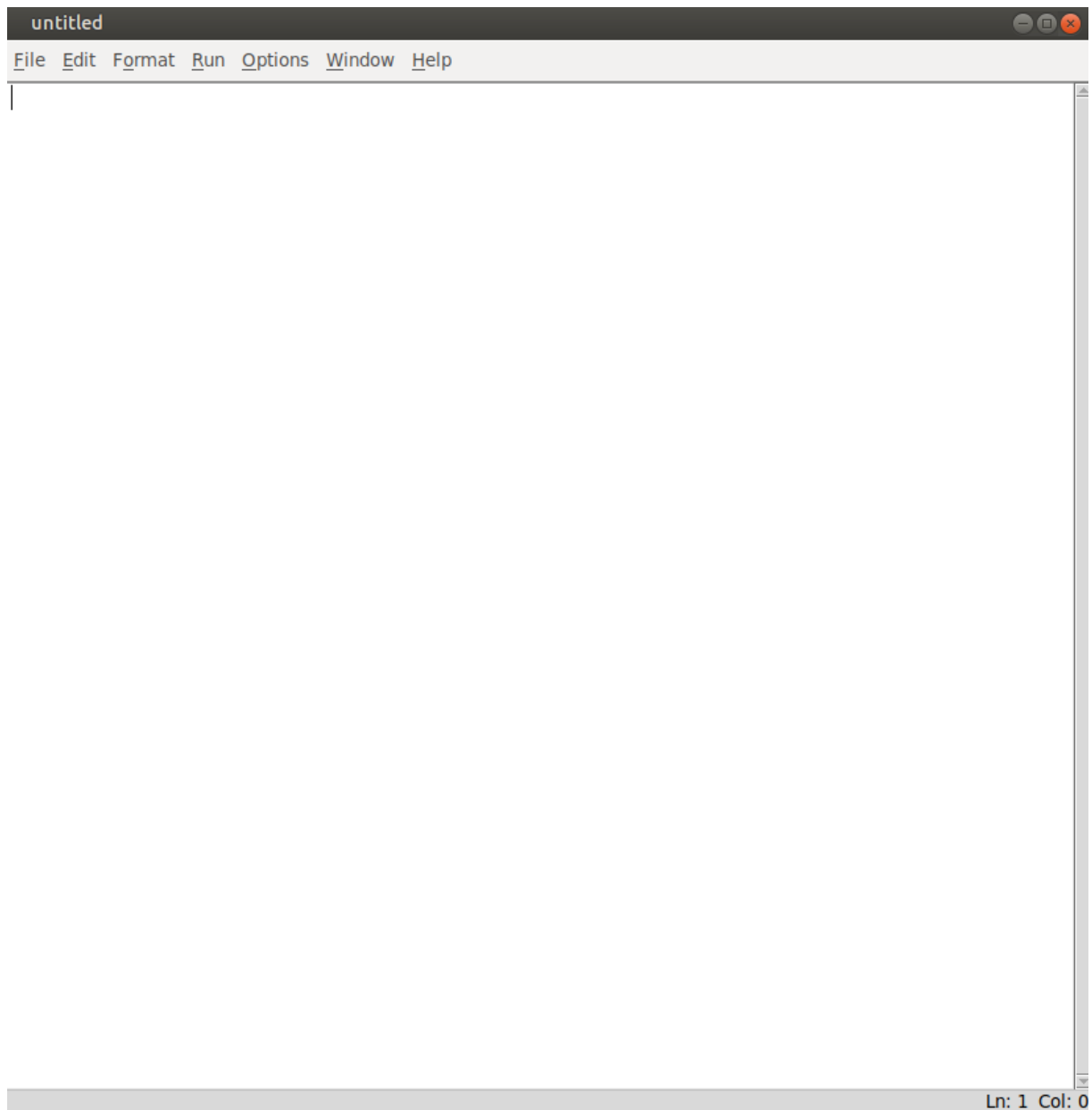
```
$ idle
```

Scripts:

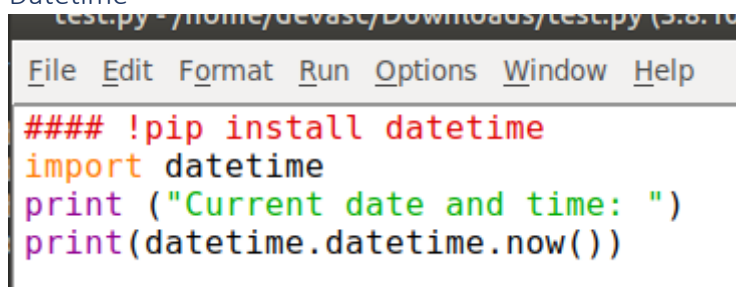
Voor een nieuw script te maken klikken we op “file” -> “New file”



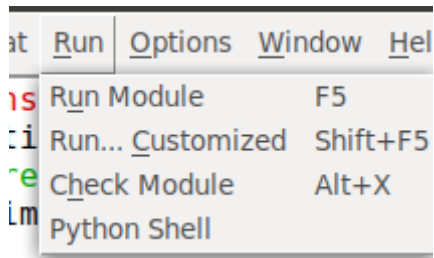
Nu krijgen we een nieuw venster waar we ons script in kunnen schrijven



Datetime



Voor het script te runnen klikken we op "run" -> "run module"



De output wordt dan weergegeven in IDLE:

```
IDLE Shell 3.8.10
File Edit Shell Debug Options Window Help
Python 3.8.10 (default, Nov 26 2021, 20:14:08)
[GCC 9.3.0] on linux
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: /home/devasc/Downloads/test.py =====
Current date and time:
2022-02-22 10:29:58.363572
```

Location

```
*test.py - /home/devasc/Downloads/test.py (3.8.10)*
File Edit Format Run Options Window Help
from geopy.geocoders import Nominatim
geolocator = Nominatim(user_agent="http://biasec.be")
city_country = "Brussels, Belgium"
location = geolocator.geocode(city_country)
print(location.address)
devnet_lat = location.latitude
devnet_lon = location.longitude
print((devnet_lat, devnet_lon))
```

Output:

```
===== RESTART: /home/devasc/Downloads/test.py =====
Ville de Bruxelles - Stad Brussel, Brussel-Hoofdstad - Bruxelles-Capitale, Région de Bruxelles-Capitale - Brussels Hoofdstedelijk Gewest, België / Belgique / Belgien
(50.8465573, 4.351697)
```



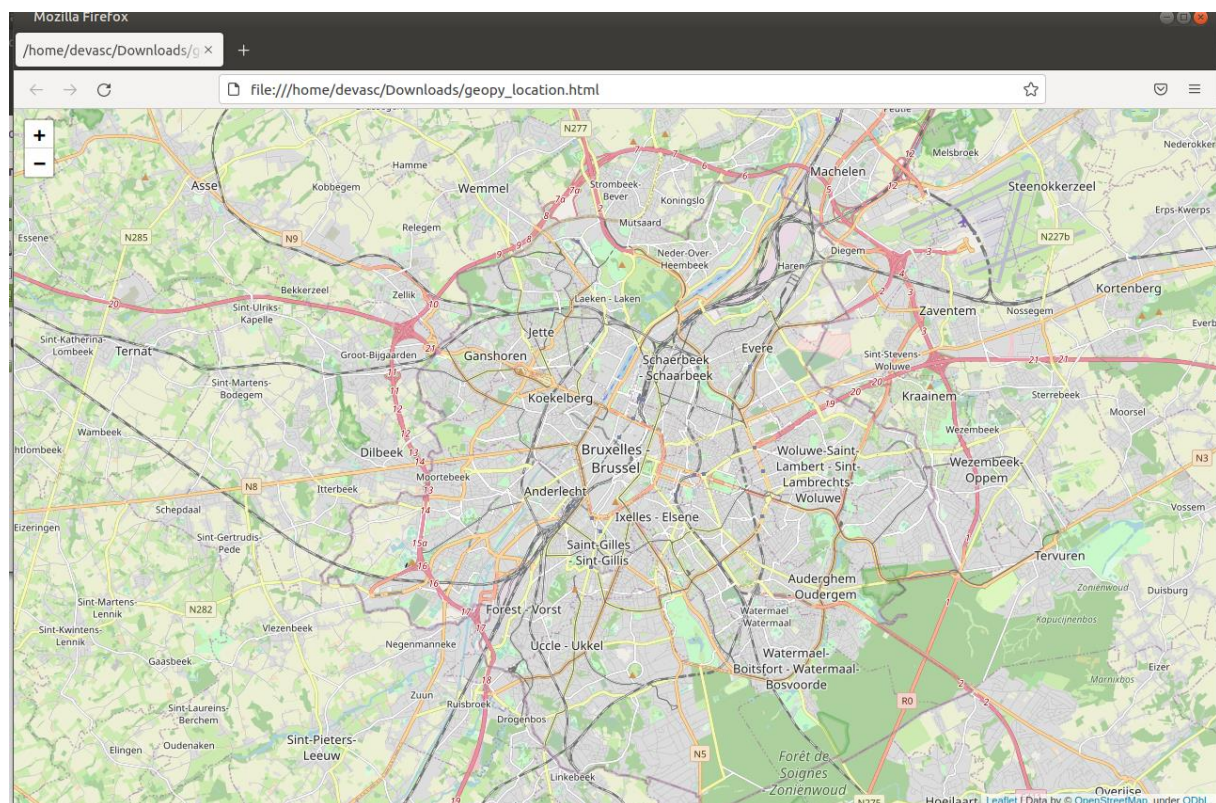
## Location-html

```
test.py - /home/devasc/Downloads/test.py (3.8.10)
File Edit Format Run Options Window Help
from geopy.geocoders import Nominatim
import folium
geolocator = Nominatim(user_agent="http://biasc.be")
#### Enter city and country
city_country = "Brussels, Belgium"
####
location = geolocator.geocode(city_country)
print(location.address)
devnet_lat = location.latitude
devnet_lon = location.longitude
print((devnet_lat, devnet_lon))
#
coordinates = [devnet_lat, devnet_lon]
map = folium.Map(location=coordinates, tiles='OpenStreetMap', zoom_start=12)
map
# save method of Map object will create a map
# saved in Downloads
map.save("geopy_location.html")
|
```

Output:

```
----- RESTART: /home/devasc/Downloads/test.py -----
Ville de Bruxelles - Stad Brussel, Brussel-Hoofdstad - Bruxelles-Capitale, Régio
n de Bruxelles-Capitale - Brussels Hoofdstedelijk Gewest, België / Belgique / Be
lgien
(50.8465573, 4.351697)
```

Ook wordt de map html opgeslagen in dezelfde folder waar het script opgeslagen staat en we kunnen deze ook openen:





## Visual studio code

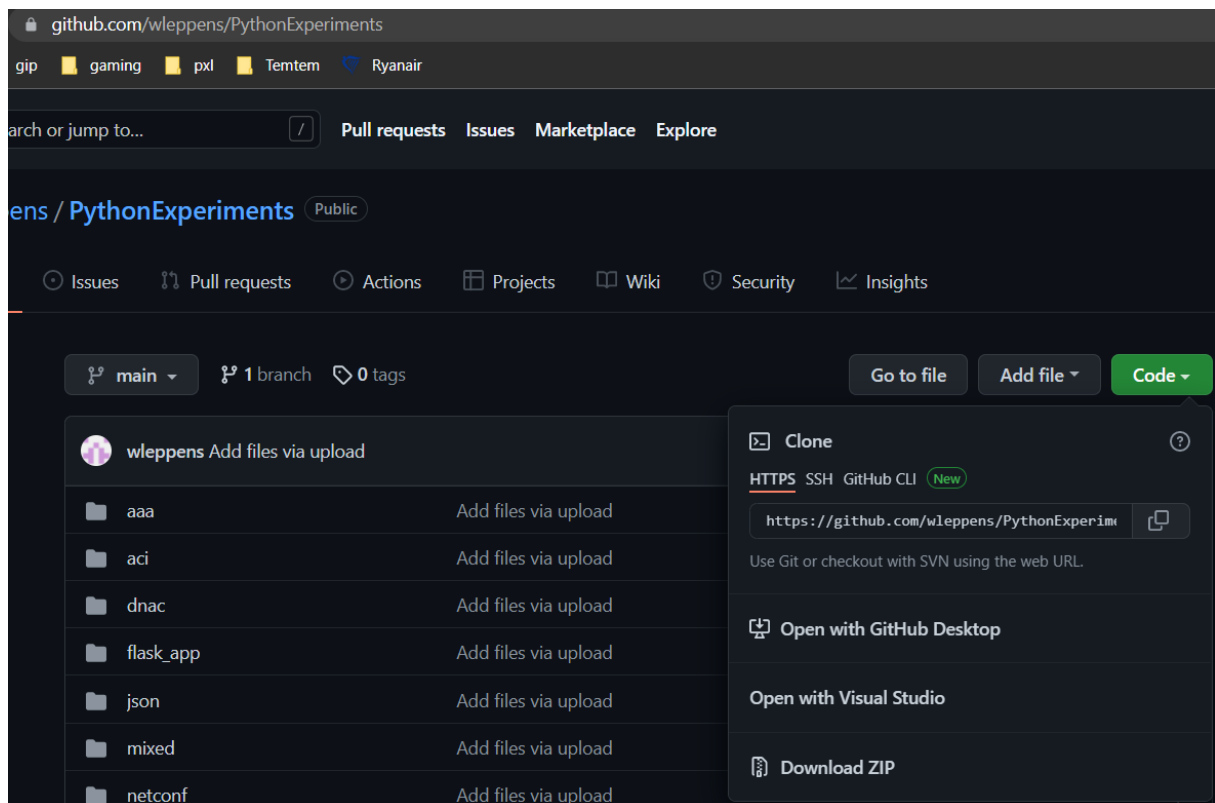
Install:

VS code stond al geïnstalleerd op de devasc vm dus deze stap slaan we over.

Clone git repository:

We kopiëren de link van de repository die we willen clonen:

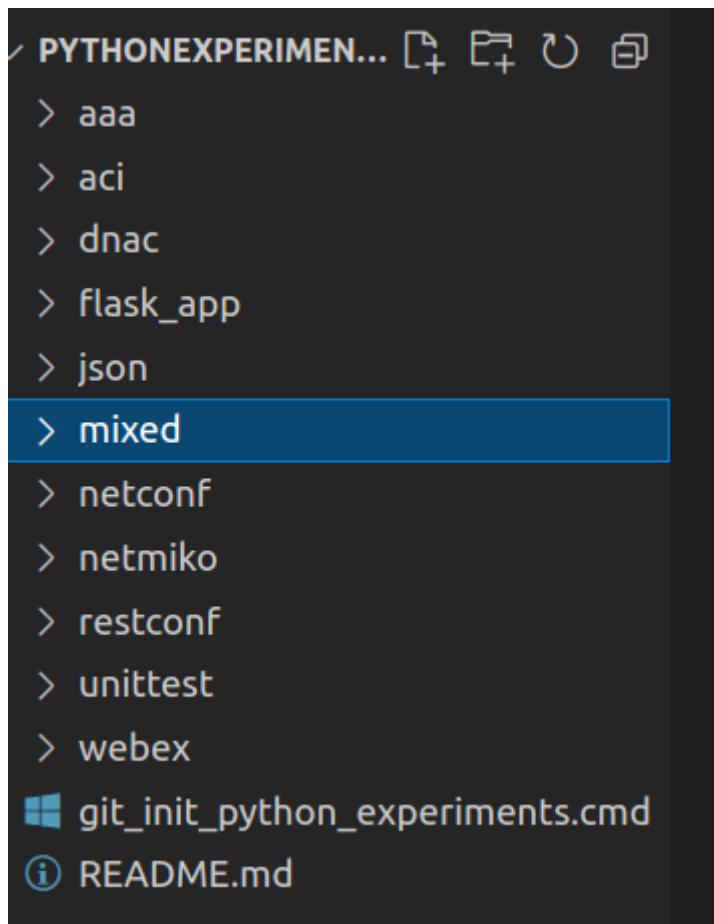
<https://github.com/wleppens/PythonExperiments>



In VS code klikken we op dit symbool en dan plak je de URL in de balk:



Nu is de repository gecloned en kunnen we aan alle files.



### Scripts:

We kunnen de scripts gewoon runnen vanuit de gecloneerde repository.

Door een probleem met VS code kon ik de scripts niet runnen vanuit VS code zelf.

### Datetime

```
mixed > python print_date.py
1  ##### !pip install datetime
2  import datetime
3  print ("Current date and time: ")
4  print(datetime.datetime.now())
5
```

Location:

```
mixed > location.py
1 from geopy.geocoders import Nominatim
2 geolocator = Nominatim(user_agent="http://biasc.be")
3 city_country = "Brussels, Belgium"
4 location = geolocator.geocode(city_country)
5 print(location.address)
6 devnet_lat = location.latitude
7 devnet_lon = location.longitude
8 print((devnet_lat, devnet_lon))
9
```

Location-html

```
mixed > location-html.py
1 from geopy.geocoders import Nominatim
2 import folium
3 geolocator = Nominatim(user_agent="http://biasc.be")
4 ##### Enter city and country
5 city_country = "Brussels, Belgium"
6 #####
7 location = geolocator.geocode(city_country)
8 print(location.address)
9 devnet_lat = location.latitude
10 devnet_lon = location.longitude
11 print((devnet_lat, devnet_lon))
12 #
13 coordinates = [devnet_lat, devnet_lon]
14 map = folium.Map(location=coordinates, tiles='OpenStreetMap', zoom_start=12)
15 map
16 # save method of Map object will create a map
17 # saved in Downloads
18 map.save(["geopy_location.html"])
```