Python experiments

Robin Venken

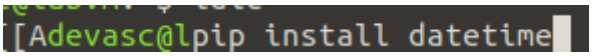
Inhoud

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:



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:

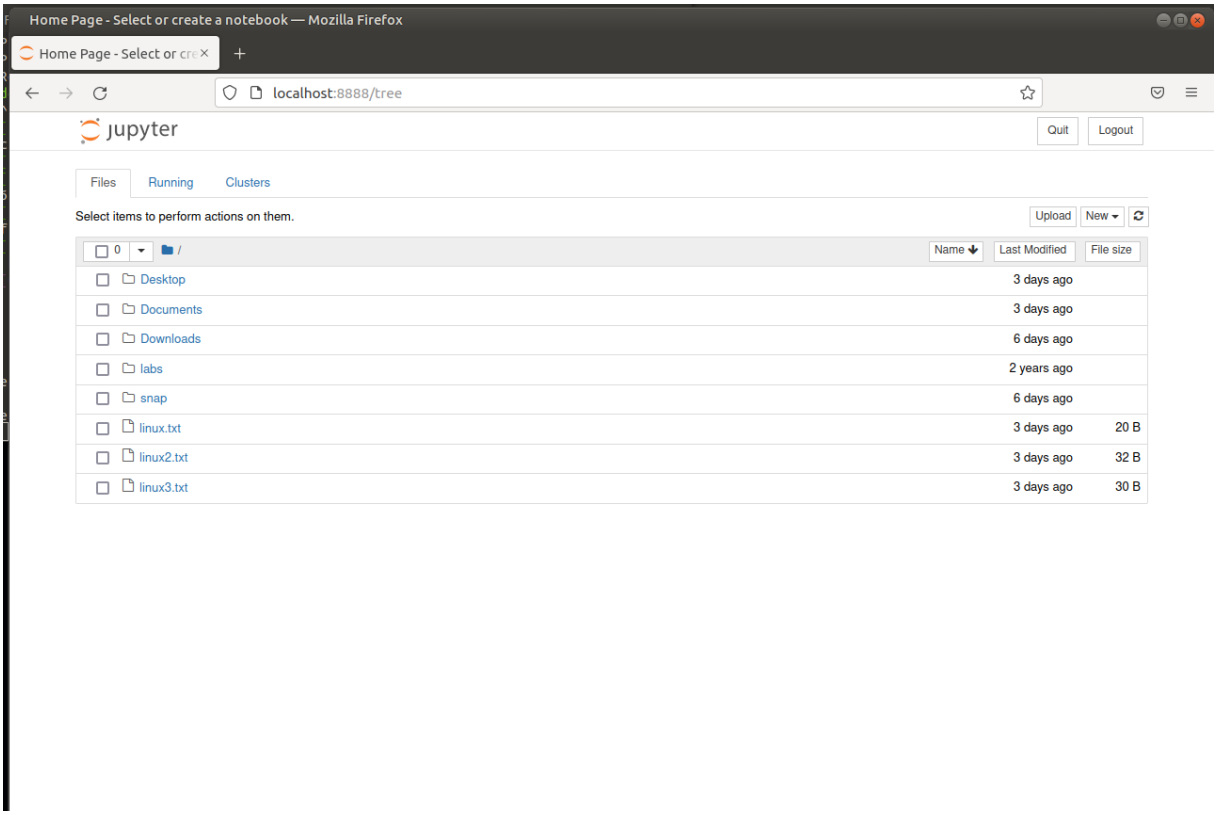
```
pip install notebook
```

To run the notebook:

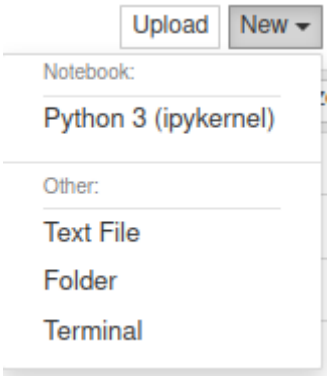
```
jupyter notebook
```

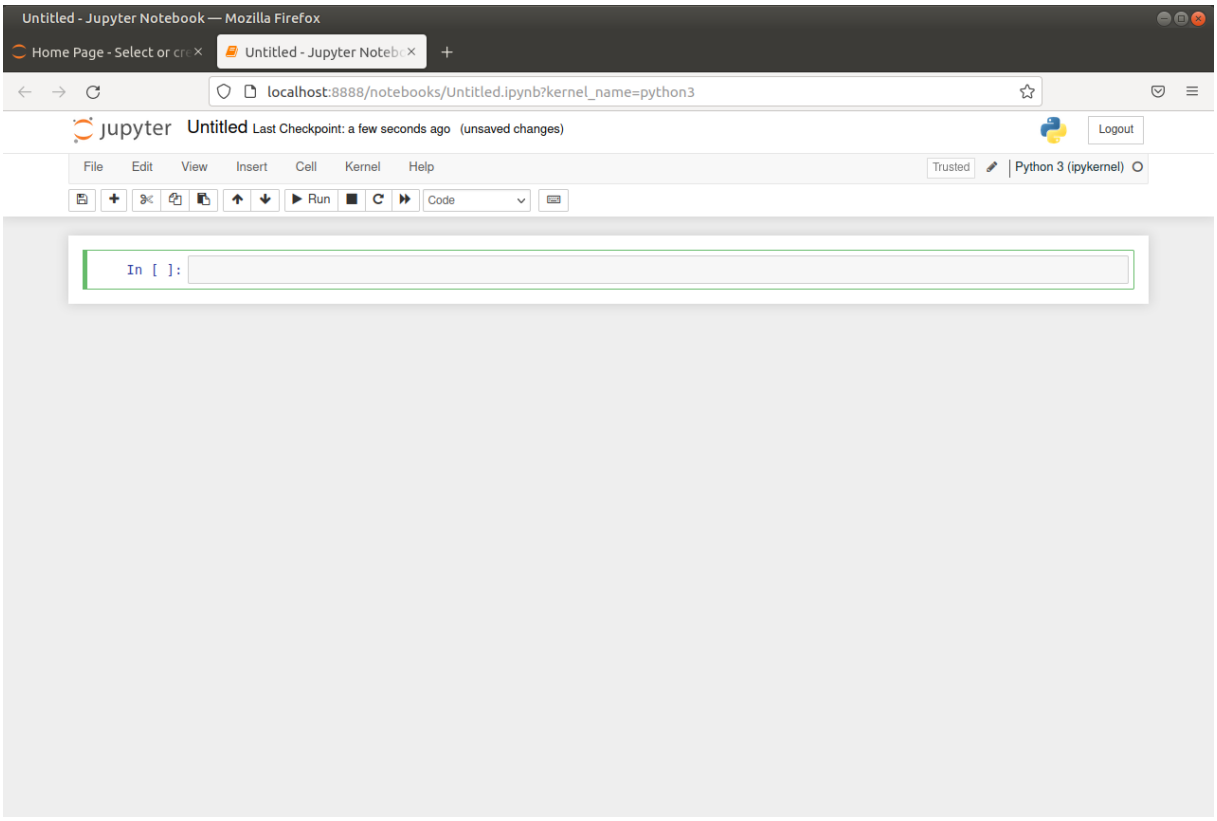
Scripts:

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)
```

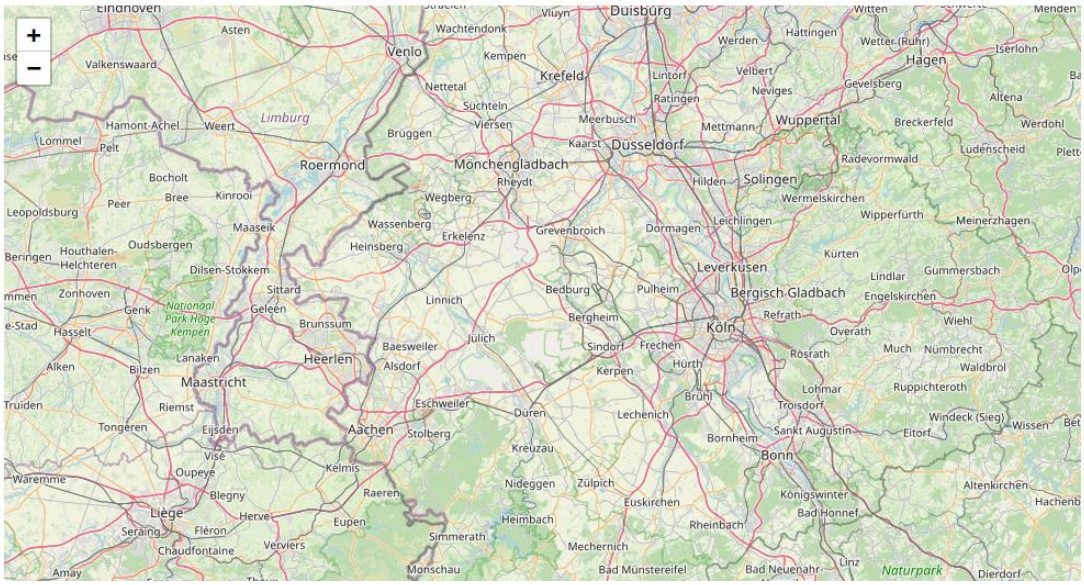
Location-html

```
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)
```

Out[4]:



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.

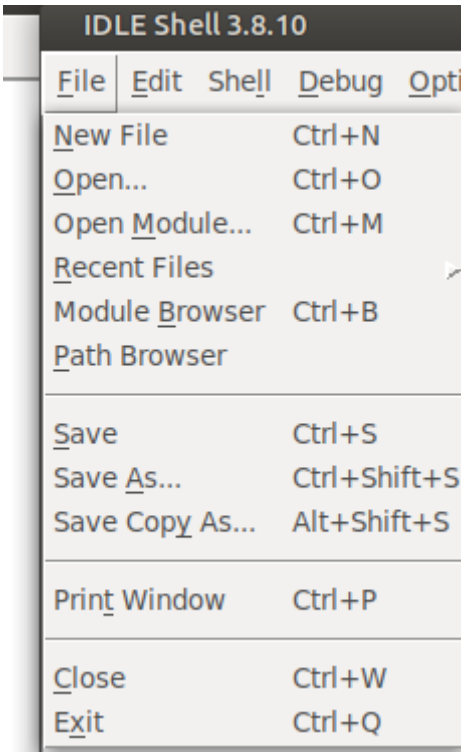
```
$ sudo apt-get install idle3          [On Debian/Ubuntu for Python3]
```

Voor idle te openen gebruiken we het volgende commando:

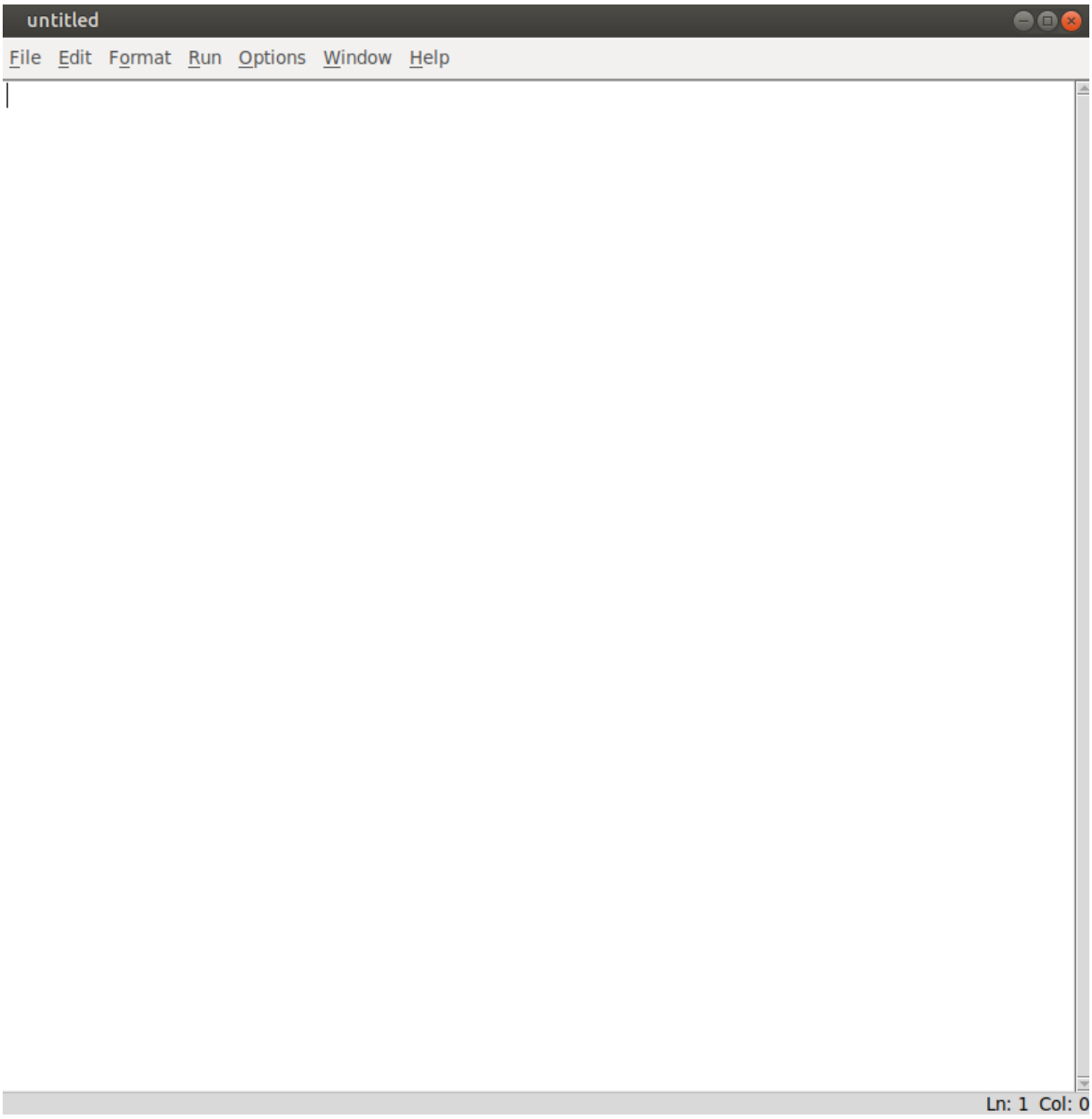
```
$ idle
```

Scripts:

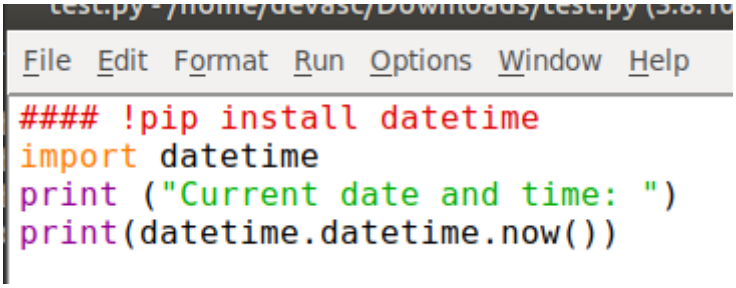
Voor een nieuw script te maken klikken we op “file” -> “New file”



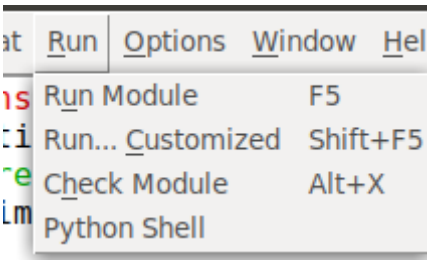
Nu krijgen we een nieuw venster waar we ons script in kunnen schrijven



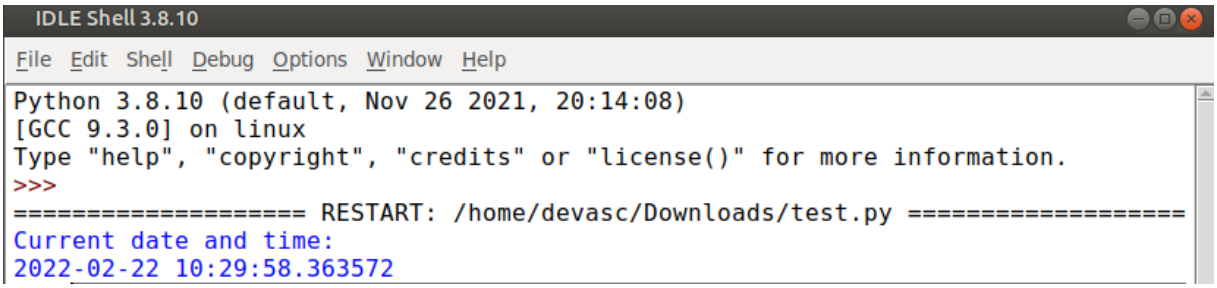
Datetime



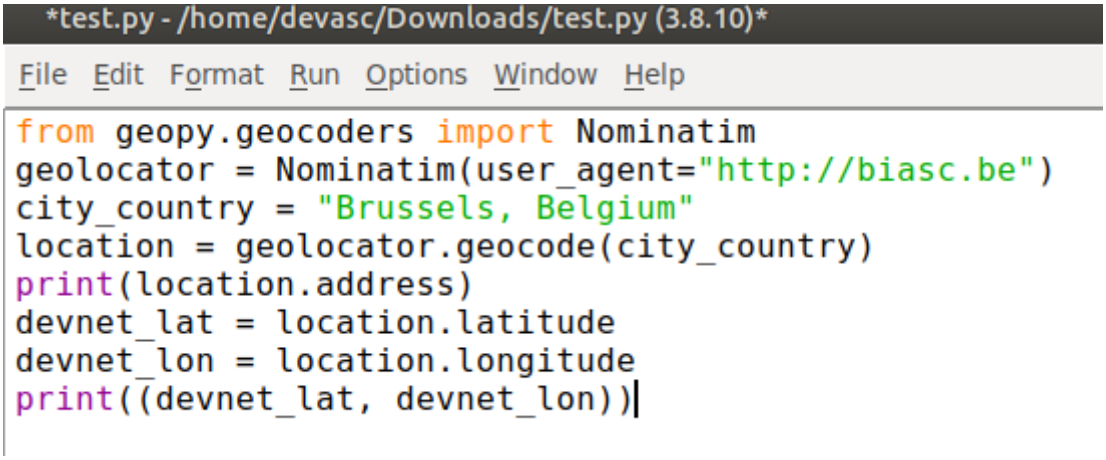
Voor het script te runnen klikken we op “run” -> “run module”



De output wordt dan weergegeven in IDLE:



Location



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)
```

Location-html

test.py - /home/devasc/Downloads/test.py (3.8.10)

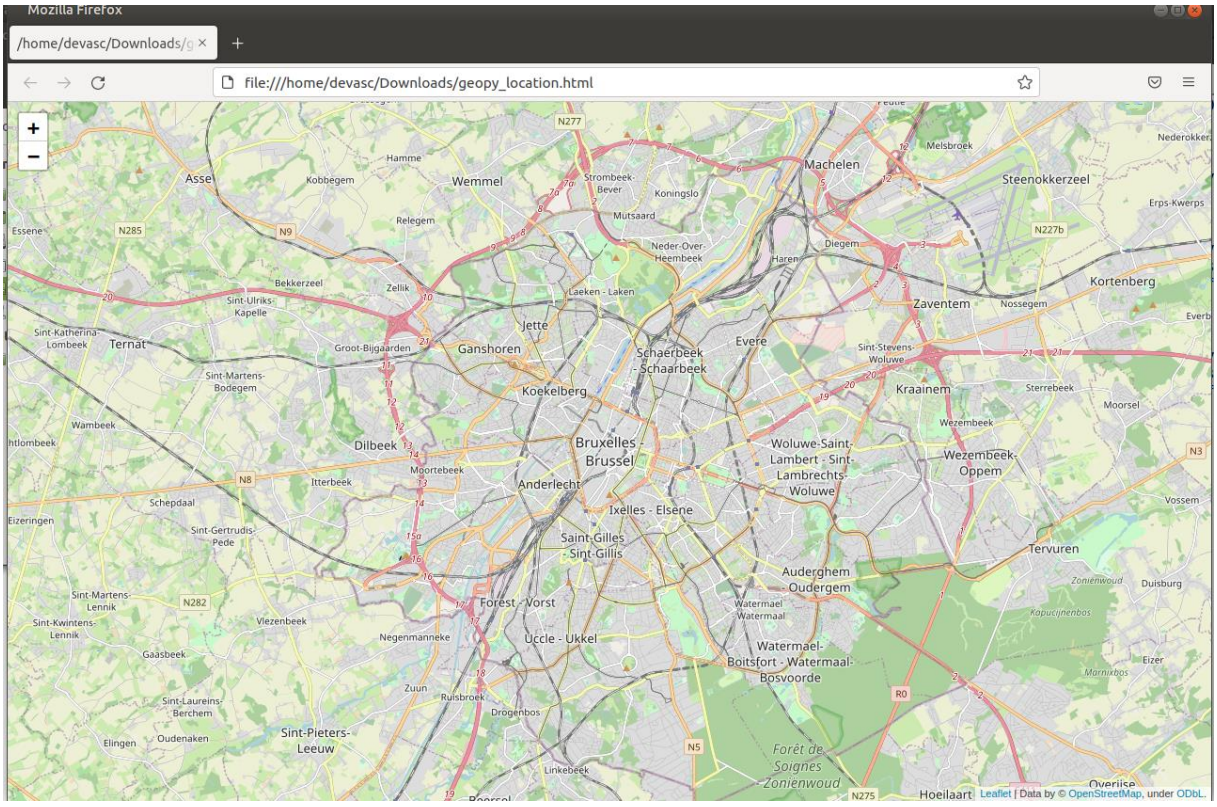
File Edit Format Run Options Window Help

```
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

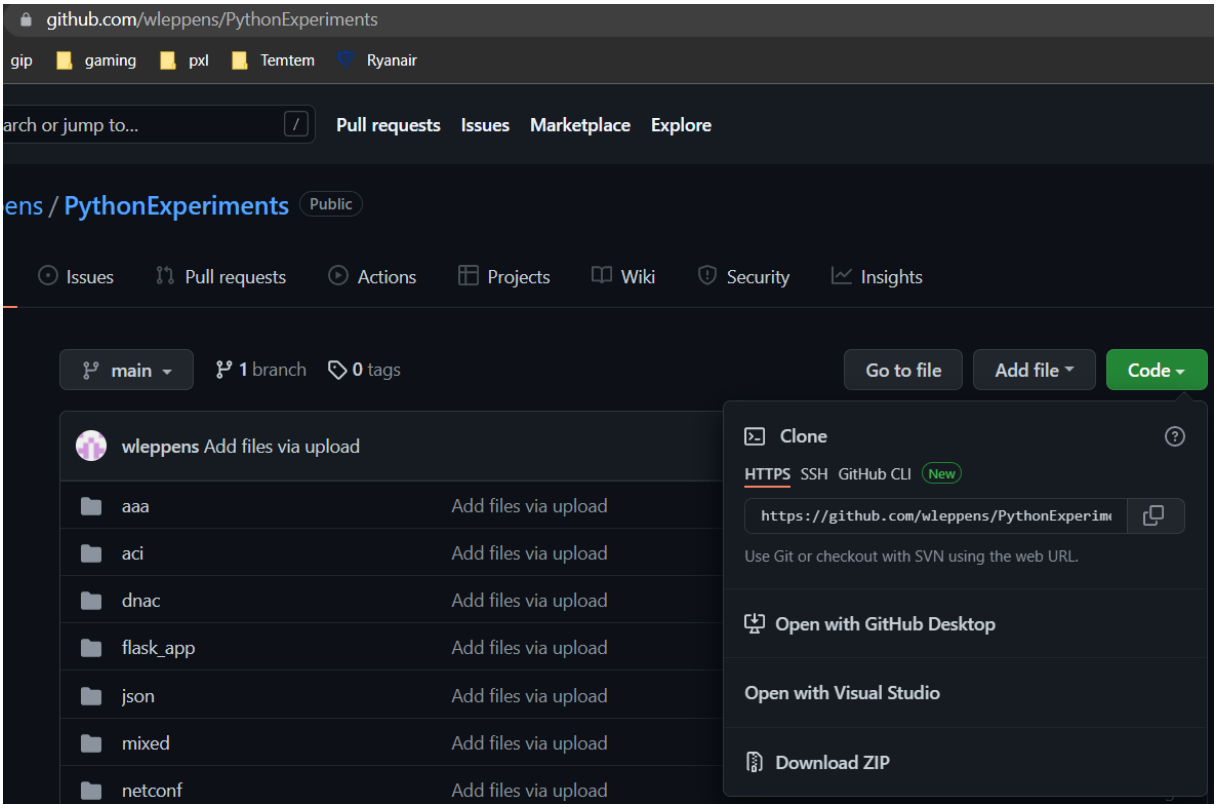
Install:

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

Clone git repository:

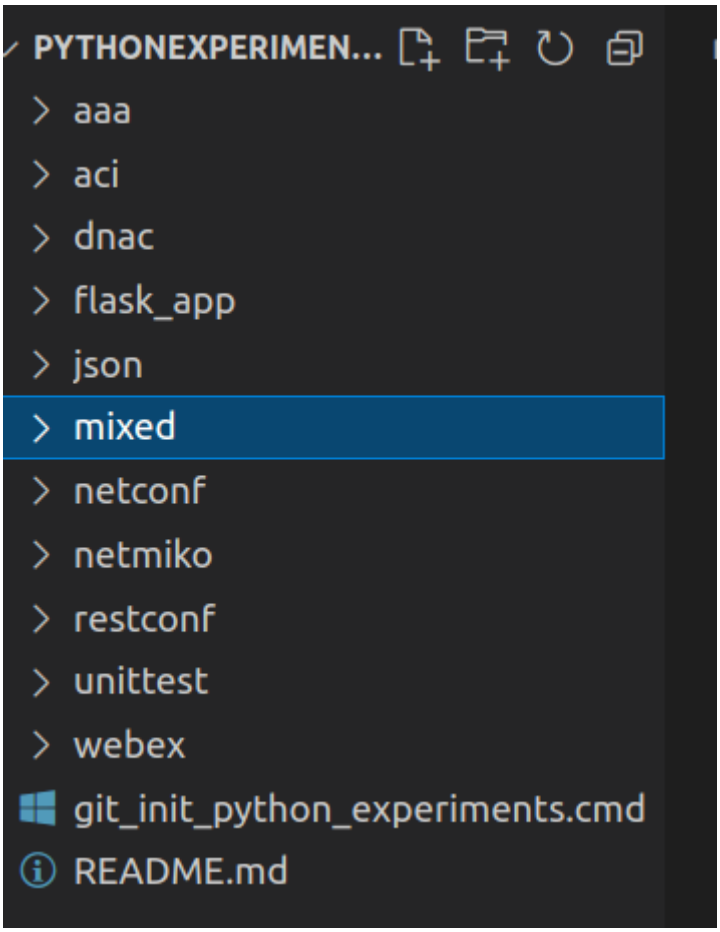
We kopiëren de link van de repository die we willen clonen:

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.

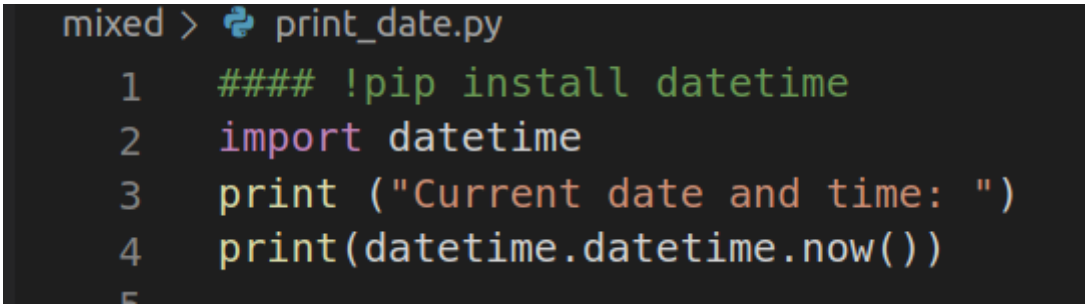


Scripts:

We kunnen de scripts gewoon runnen vanuit de geclonede repository.

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

Datetime



Location:

mixed > location.py

```python
from geopy.geocoders import Nominatim
geolocator = Nominatim(user_agent="http://biasc.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))
```

Location-html

mixed > location-html.py

```python
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")
```