Port scan on MOP website

by

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Target website:

http://127.0.0.1:5000/

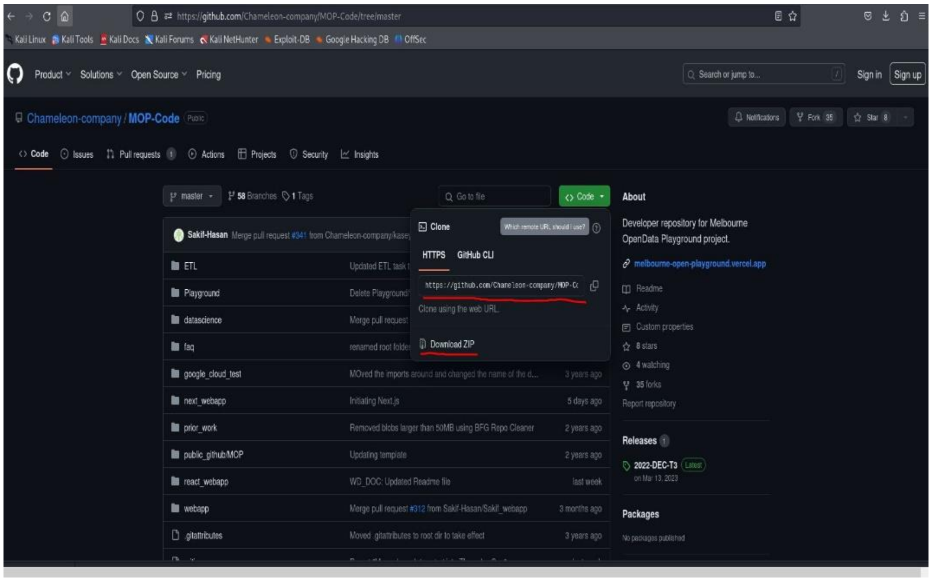
Setting up MOP website locally:

We need to take few steps to run MOP website locally.

1. Go to https://github.com/Chameleon-company/MOP-Code/tree/master
   And import the code. We can do it multiple ways we use this command in the terminal.

   ```
   git clone https://github.com/Chameleon-company/MOP-Code.git
   ```

   Another way of doing it by downloading the ZIP file as shown in the screenshot below



Sakif-Hasan Merge pull request #341 from Chameleon-company/kasey

ETL	Updated ETL task	
Playground	Delete Playground	
datascience	Merge pull request	
faq	renamed root folder	
google_cloud_test	MOved the imports around and changed the name of the d...	3 years ago
next_webapp	Initiating Next.js	5 days ago
prior_work	Removed blobs larger than 50MB using BFG Repo Cleaner	2 years ago
public_github/MOP	Updating template	2 years ago
react_webapp	WD_DOC: Updated Readme file	last week
webapp	Merge pull request #312 from Sakif-Hasan/Sakif_webapp	3 months ago
.gitattributes	Moved .gitattributes to root dir to take effect	3 years ago

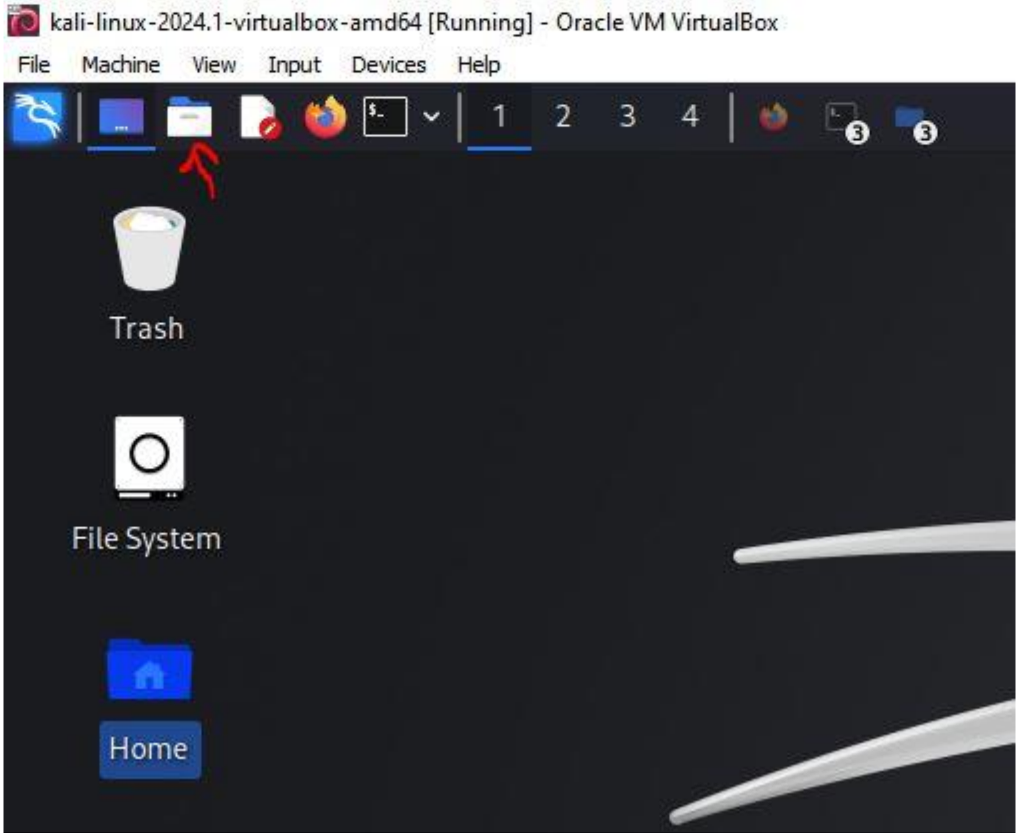
```
https://github.com/Chameleon-company/MOP-Co
```

Clone using the web URL.

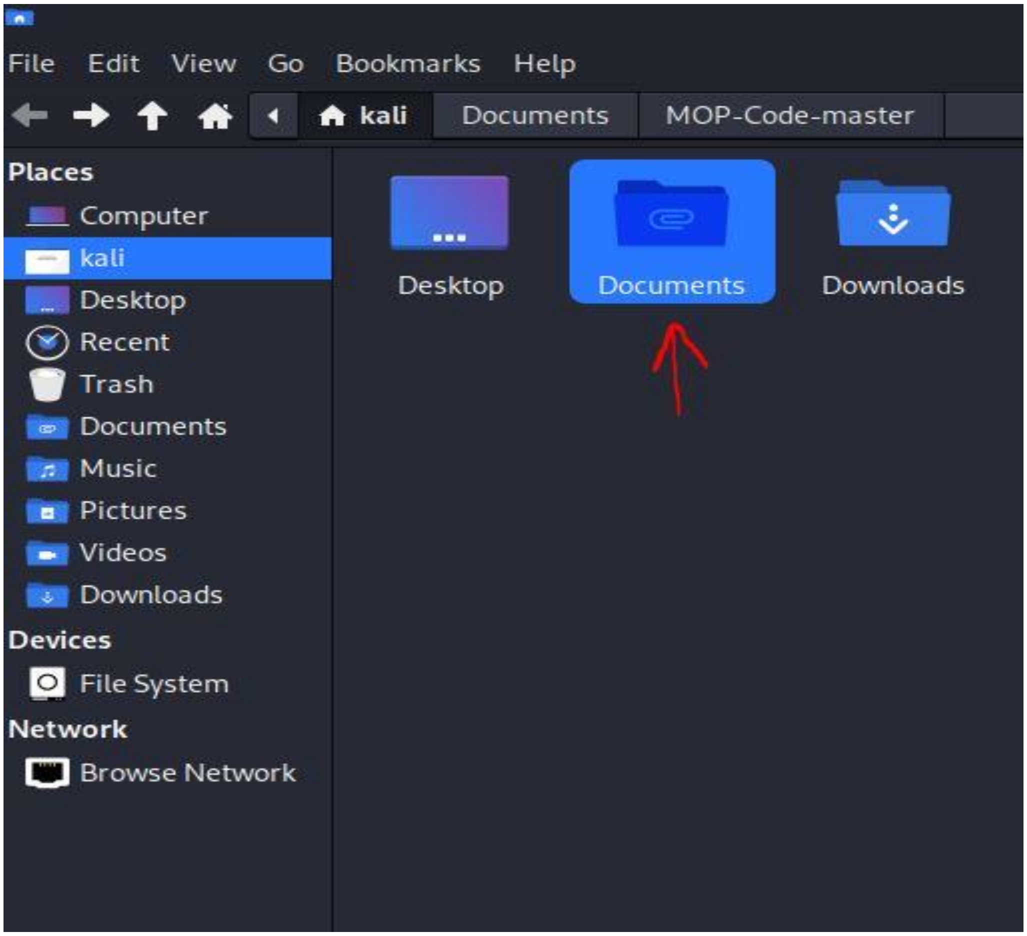
Developer repository for Melbourne OpenData Playground project.

melbourne-open-playground.vercel.app

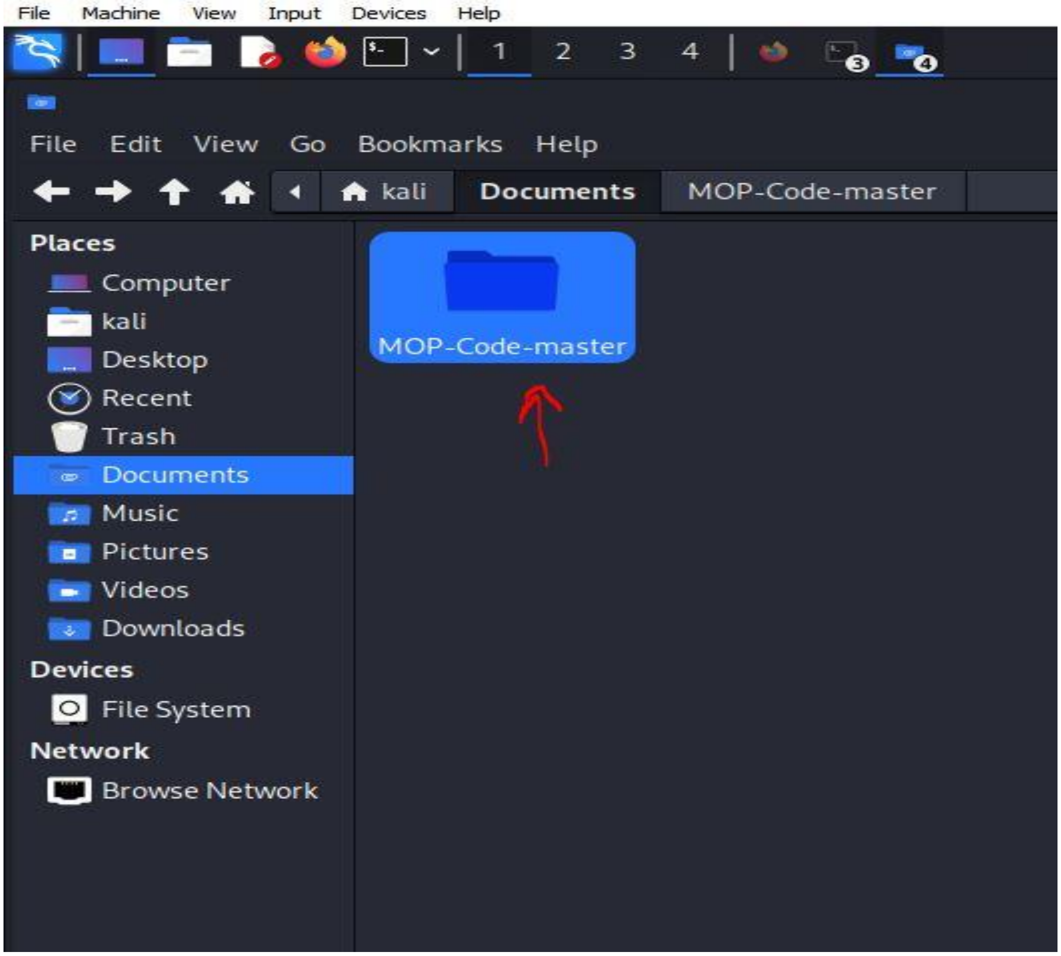
After importing it navigate to the where it’s installed as shown in screenshots below


kali-linux-2024.1-virtualbox-amd64 [Running] - Oracle VM VirtualBox
File
Machine
View
Input
Devices
Help
1
2
3
4
Trash
File System
Home

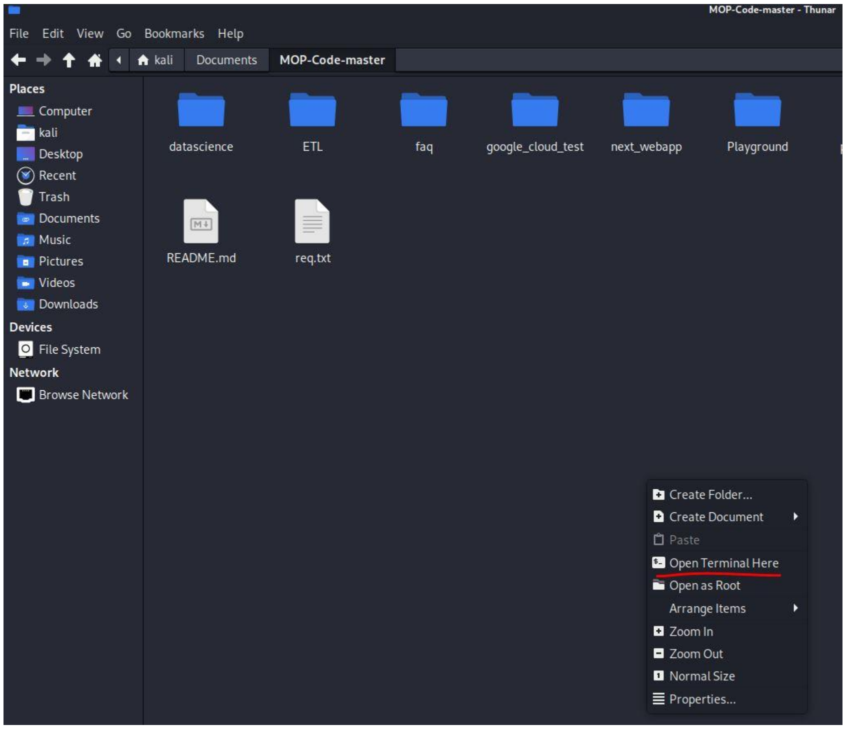
Click on the icon pointed by red arrow. You’ll get the following screen



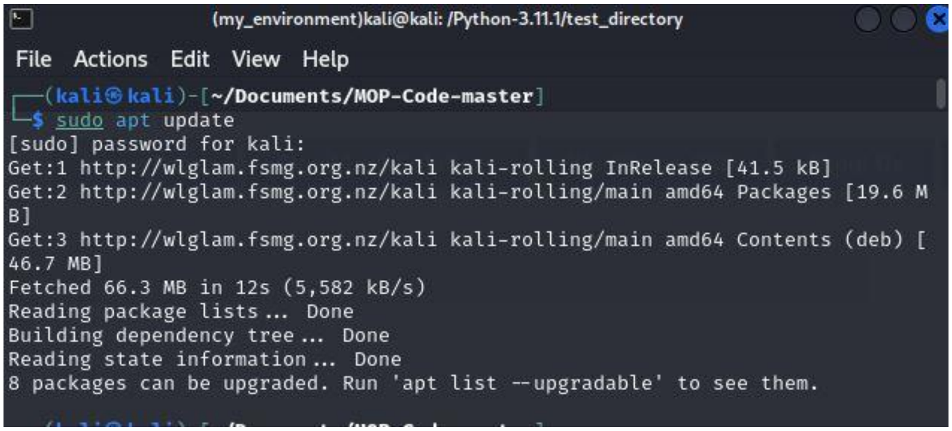
Open the Documents or the location code was downloaded.



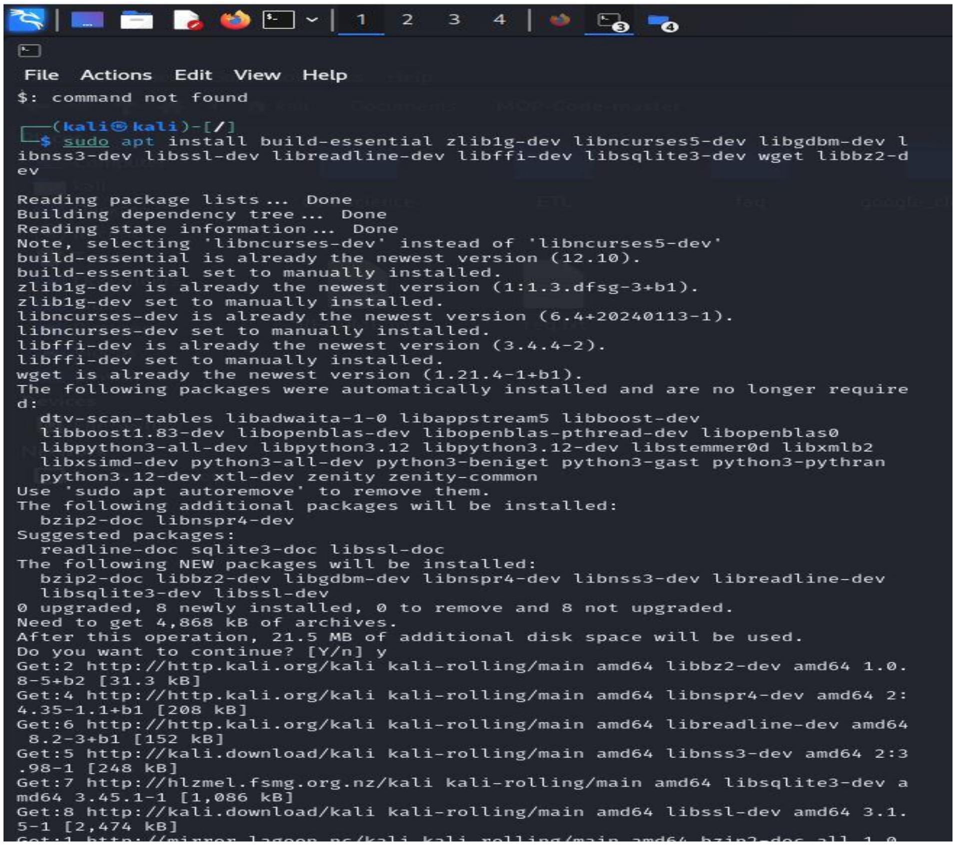
Now open the MOP-Code-master folder. When inside do a right click and click on the 'Open Terminal Here' option from the menu as shown in the following screenshot.



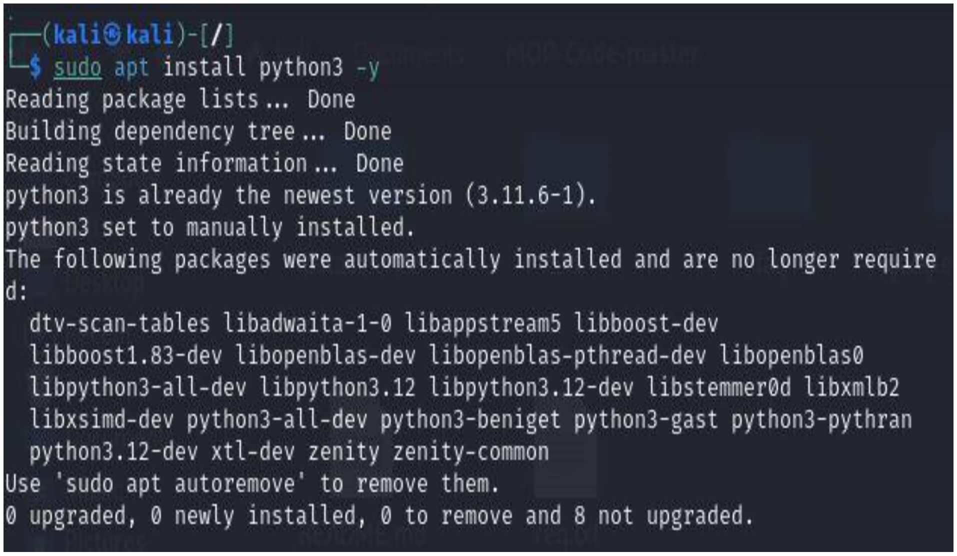
2. The next step is to install Python 3. The full installation guide can be found using the following link https://cloudinfrastructureservices.co.uk/how-to-install-python-3-in-debian-11-10/


(my_environment)kali@kali: /Python-3.11.1/test_directory
File Actions Edit View Help

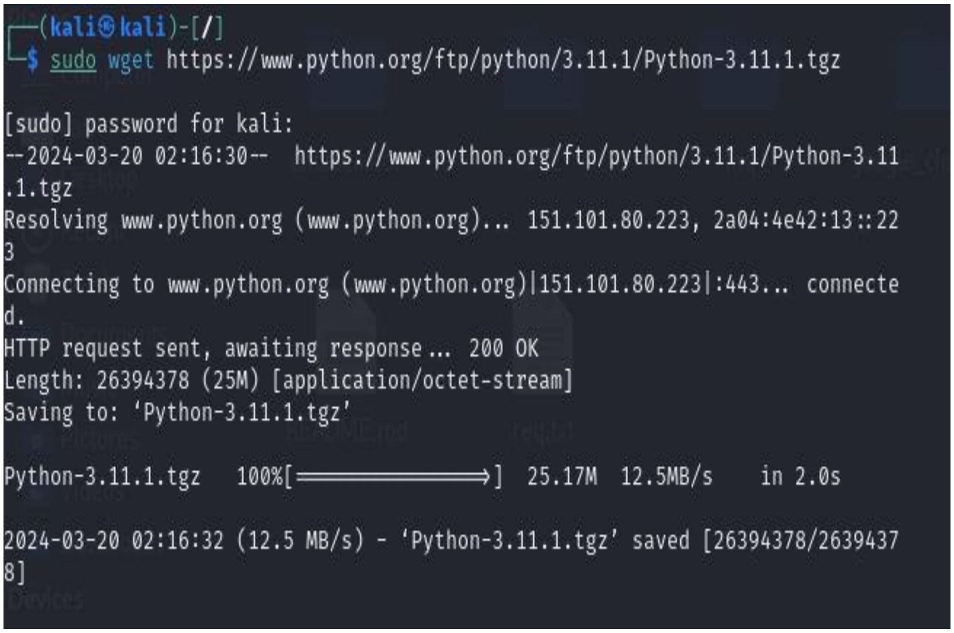
```
┌──(kali㉿kali)-[~/Documents/MOP-Code-master]
└─$ sudo apt update
[sudo] password for kali:
Get:1 http://wlglam.fsmg.org.nz/kali kali-rolling InRelease [41.5 kB]
Get:2 http://wlglam.fsmg.org.nz/kali kali-rolling/main amd64 Packages [19.6 M
B]
Get:3 http://wlglam.fsmg.org.nz/kali kali-rolling/main amd64 Contents (deb) [
46.7 MB]
Fetched 66.3 MB in 12s (5,582 kB/s)
Reading package lists ... Done
Building dependency tree ... Done
Reading state information ... Done
8 packages can be upgraded. Run 'apt list --upgradable' to see them.
```



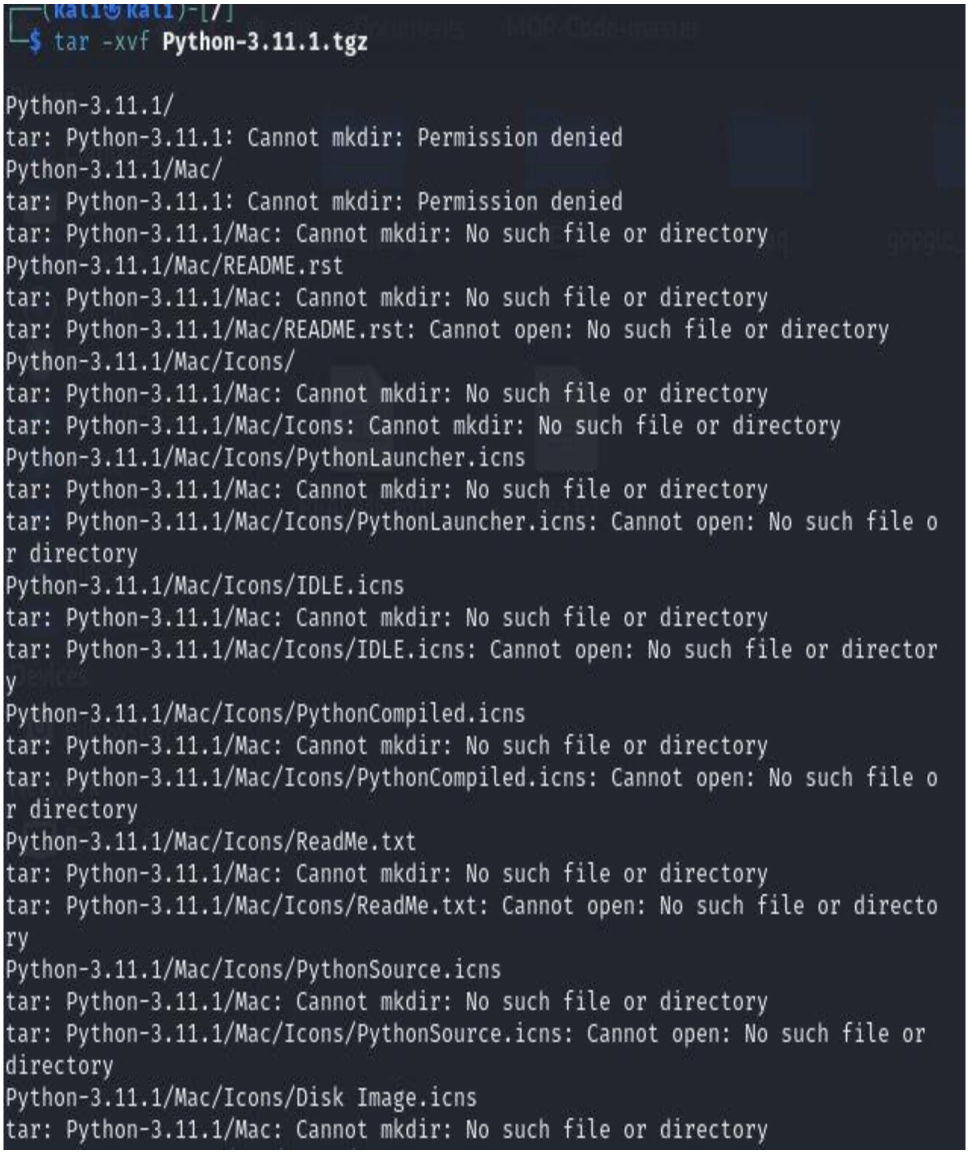
```
$: command not found

┌──(kali㉿kali)-[/]
└─$ sudo apt install build-essential zlib1g-dev libncurses5-dev libgdbm-dev l
ibnss3-dev libssl-dev libreadline-dev libffi-dev libsqlite3-dev wget libbz2-d
ev

Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Note, selecting 'libncurses-dev' instead of 'libncurses5-dev'
build-essential is already the newest version (12.10).
build-essential set to manually installed.
zlib1g-dev is already the newest version (1:1.3.dfsg-3+b1).
zlib1g-dev set to manually installed.
libncurses-dev is already the newest version (6.4+20240113-1).
libncurses-dev set to manually installed.
libffi-dev is already the newest version (3.4.4-2).
libffi-dev set to manually installed.
wget is already the newest version (1.21.4-1+b1).
The following packages were automatically installed and are no longer require
d:
  dtv-scan-tables libadwaita-1-0 libappstream5 libboost-dev
  libboost1.83-dev libopenblas-dev libopenblas-pthread-dev libopenblas0
  libpython3-all-dev libpython3.12 libpython3.12-dev libstemmer0d libxmlb2
  libxsimd-dev python3-all-dev python3-beniget python3-gast python3-pythran
  python3.12-dev xtl-dev zenity zenity-common
Use 'sudo apt autoremove' to remove them.
The following additional packages will be installed:
  bzip2-doc libnspr4-dev
Suggested packages:
  readline-doc sqlite3-doc libssl-doc
The following NEW packages will be installed:
  bzip2-doc libbz2-dev libgdbm-dev libnspr4-dev libnss3-dev libreadline-dev
  libsqlite3-dev libssl-dev
0 upgraded, 8 newly installed, 0 to remove and 8 not upgraded.
Need to get 4,868 kB of archives.
After this operation, 21.5 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:2 http://http.kali.org/kali kali-rolling/main amd64 libbz2-dev amd64 1.0.
8-5+b2 [31.3 kB]
Get:4 http://http.kali.org/kali kali-rolling/main amd64 libnspr4-dev amd64 2:
4.35-1.1+b1 [208 kB]
Get:6 http://http.kali.org/kali kali-rolling/main amd64 libreadline-dev amd64
 8.2-3+b1 [152 kB]
Get:5 http://kali.download/kali kali-rolling/main amd64 libnss3-dev amd64 2:3
.98-1 [248 kB]
Get:7 http://hlzmel.fsmg.org.nz/kali kali-rolling/main amd64 libsqlite3-dev a
md64 3.45.1-1 [1,086 kB]
Get:8 http://kali.download/kali kali-rolling/main amd64 libssl-dev amd64 3.1.
5-1 [2,474 kB]
Get:1 http://mirror.lagoon.nc/kali kali-rolling/main amd64 bzip2-doc all 1.0
```



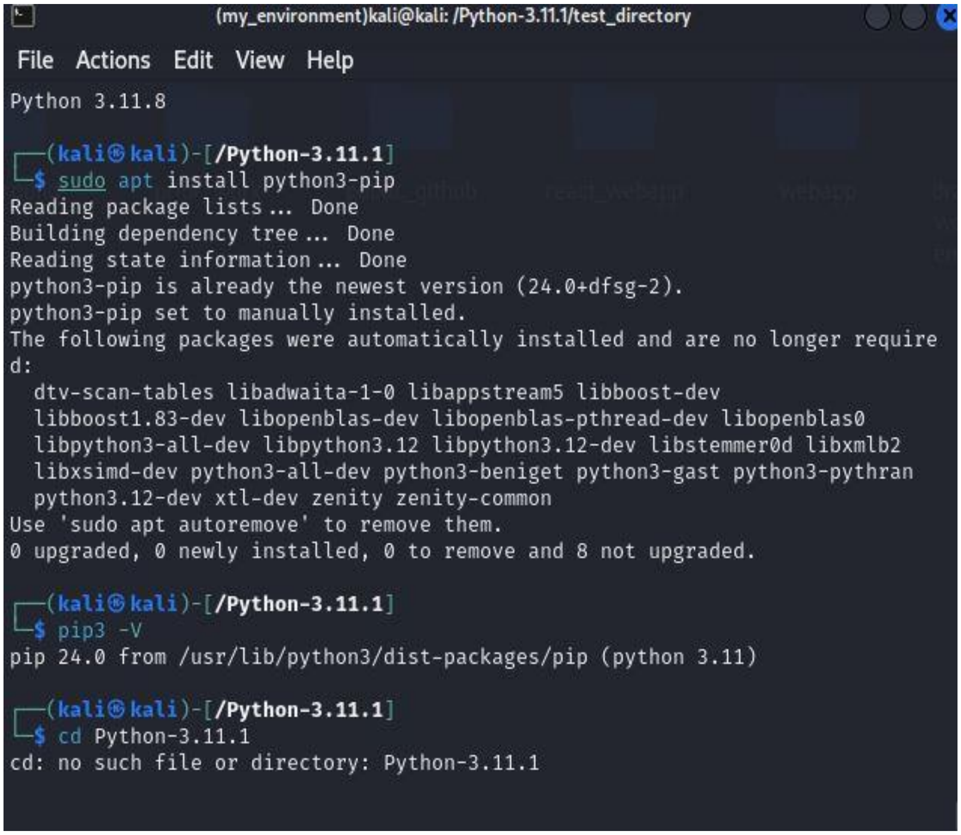
```
┌──(kali㉿kali)-[/]
└─$ sudo apt install python3 -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
python3 is already the newest version (3.11.6-1).
python3 set to manually installed.
The following packages were automatically installed and are no longer require
d:
  dtv-scan-tables libadwaita-1-0 libappstream5 libboost-dev
  libboost1.83-dev libopenblas-dev libopenblas-pthread-dev libopenblas0
  libpython3-all-dev libpython3.12 libpython3.12-dev libstemmer0d libxmlb2
  libxsimd-dev python3-all-dev python3-beniget python3-gast python3-pythran
  python3.12-dev xtl-dev zenity zenity-common
Use 'sudo apt autoremove' to remove them.
0 upgraded, 0 newly installed, 0 to remove and 8 not upgraded.
```



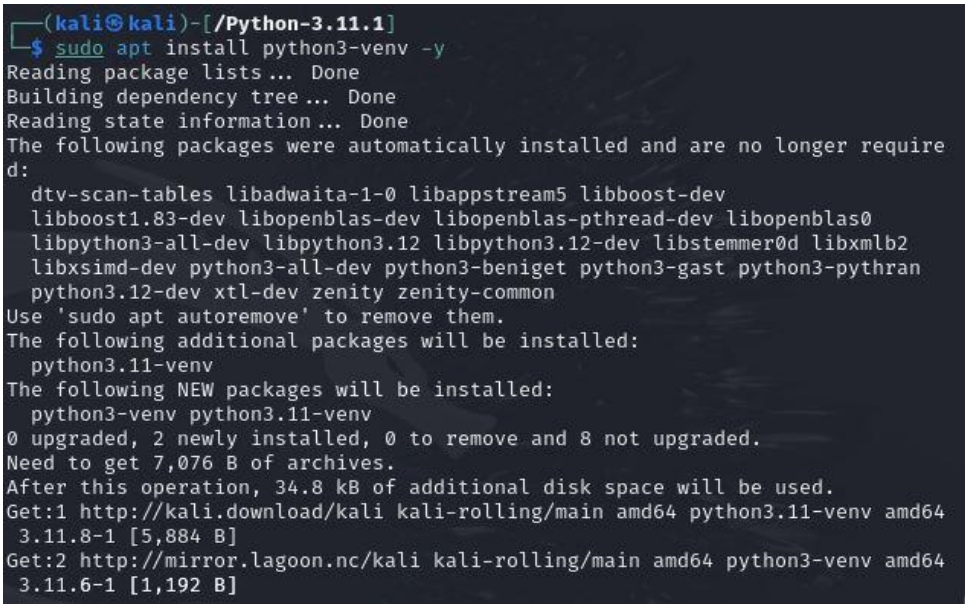
```
┌──(kali㉿kali)-[/]
└─$ sudo wget https://www.python.org/ftp/python/3.11.1/Python-3.11.1.tgz

[sudo] password for kali:
--2024-03-20 02:16:30--  https://www.python.org/ftp/python/3.11.1/Python-3.11
.1.tgz
Resolving www.python.org (www.python.org)... 151.101.80.223, 2a04:4e42:13::22
3
Connecting to www.python.org (www.python.org)|151.101.80.223|:443... connecte
d.
HTTP request sent, awaiting response... 200 OK
Length: 26394378 (25M) [application/octet-stream]
Saving to: ‘Python-3.11.1.tgz’

Python-3.11.1.tgz   100%[==================>]  25.17M  12.5MB/s    in 2.0s

2024-03-20 02:16:32 (12.5 MB/s) - ‘Python-3.11.1.tgz’ saved [26394378/2639437
8]
```



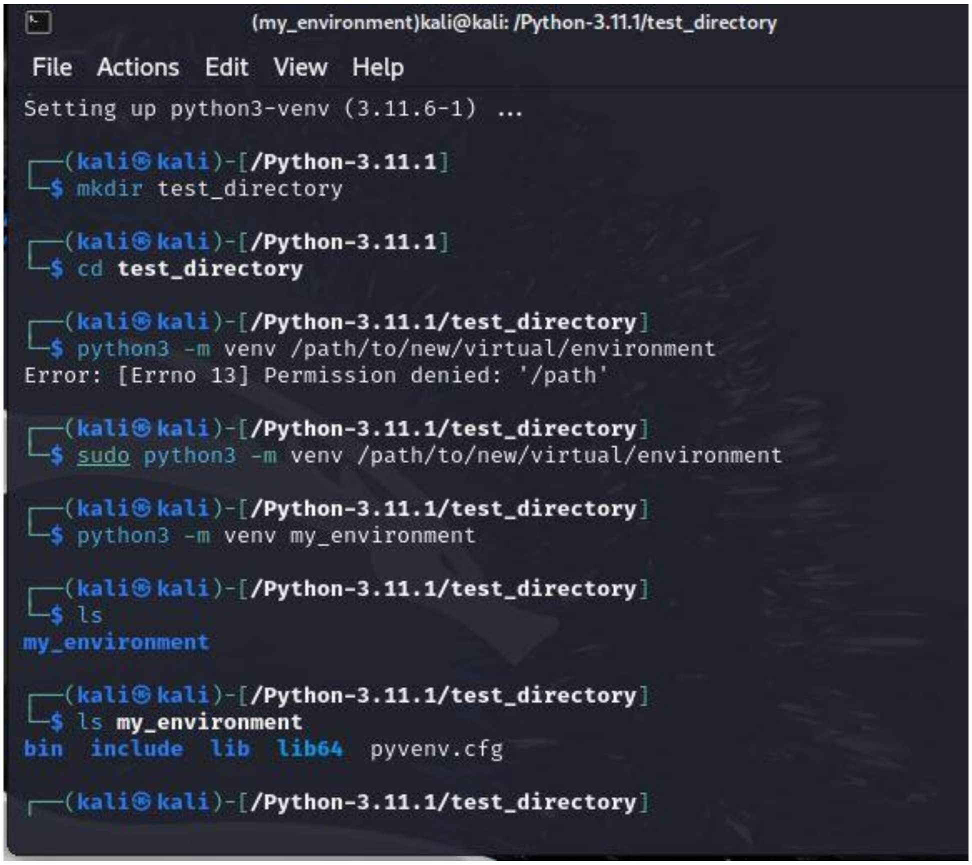
```
┌──(kali㉿kali)-[/]
└─$ tar -xvf Python-3.11.1.tgz

Python-3.11.1/
tar: Python-3.11.1: Cannot mkdir: Permission denied
Python-3.11.1/Mac/
tar: Python-3.11.1: Cannot mkdir: Permission denied
tar: Python-3.11.1/Mac: Cannot mkdir: No such file or directory
Python-3.11.1/Mac/README.rst
tar: Python-3.11.1/Mac: Cannot mkdir: No such file or directory
tar: Python-3.11.1/Mac/README.rst: Cannot open: No such file or directory
Python-3.11.1/Mac/Icons/
tar: Python-3.11.1/Mac: Cannot mkdir: No such file or directory
tar: Python-3.11.1/Mac/Icons: Cannot mkdir: No such file or directory
Python-3.11.1/Mac/Icons/PythonLauncher.icns
tar: Python-3.11.1/Mac: Cannot mkdir: No such file or directory
tar: Python-3.11.1/Mac/Icons/PythonLauncher.icns: Cannot open: No such file o
r directory
Python-3.11.1/Mac/Icons/IDLE.icns
tar: Python-3.11.1/Mac: Cannot mkdir: No such file or directory
tar: Python-3.11.1/Mac/Icons/IDLE.icns: Cannot open: No such file or director
y
Python-3.11.1/Mac/Icons/PythonCompiled.icns
tar: Python-3.11.1/Mac: Cannot mkdir: No such file or directory
tar: Python-3.11.1/Mac/Icons/PythonCompiled.icns: Cannot open: No such file o
r directory
Python-3.11.1/Mac/Icons/ReadMe.txt
tar: Python-3.11.1/Mac: Cannot mkdir: No such file or directory
tar: Python-3.11.1/Mac/Icons/ReadMe.txt: Cannot open: No such file or directo
ry
Python-3.11.1/Mac/Icons/PythonSource.icns
tar: Python-3.11.1/Mac: Cannot mkdir: No such file or directory
tar: Python-3.11.1/Mac/Icons/PythonSource.icns: Cannot open: No such file or
directory
Python-3.11.1/Mac/Icons/Disk Image.icns
tar: Python-3.11.1/Mac: Cannot mkdir: No such file or directory
```



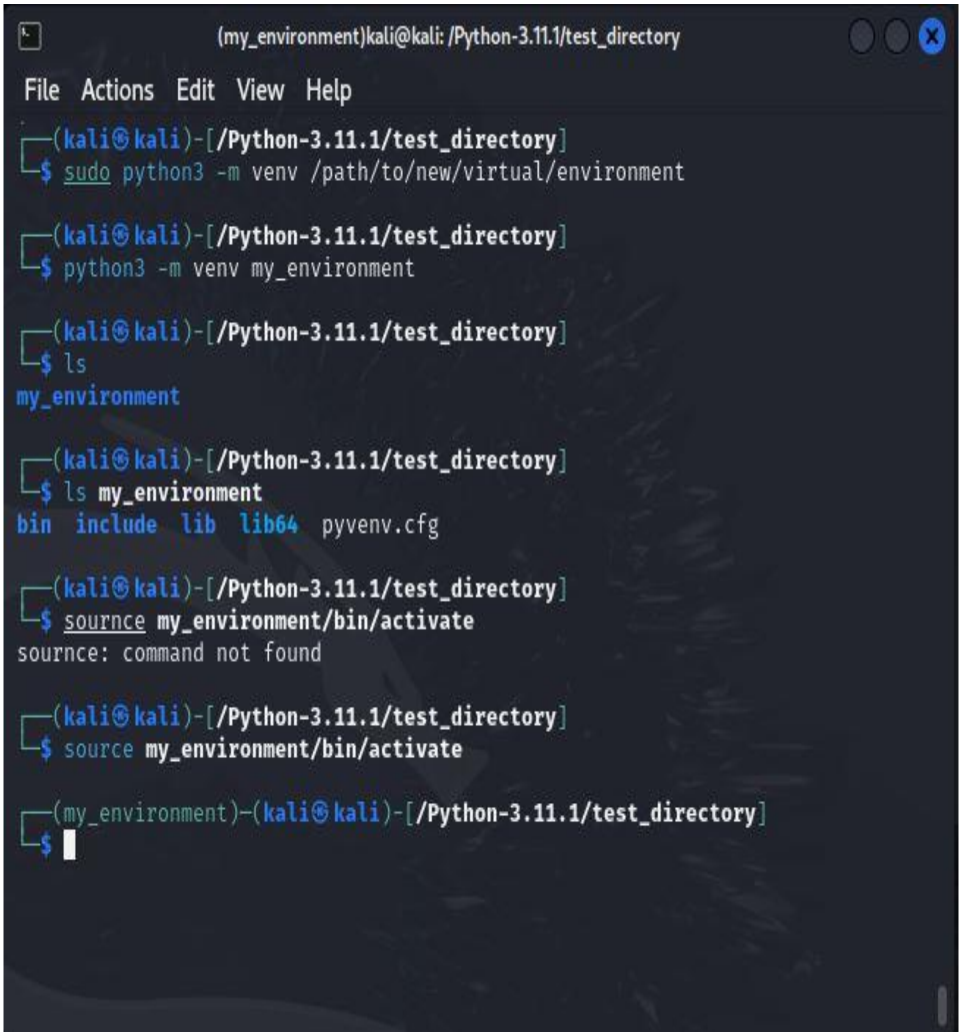
```
Python 3.11.8

┌──(kali㉿kali)-[/Python-3.11.1]
└─$ sudo apt install python3-pip
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
python3-pip is already the newest version (24.0+dfsg-2).
python3-pip set to manually installed.
The following packages were automatically installed and are no longer require
d:
  dtv-scan-tables libadwaita-1-0 libappstream5 libboost-dev
  libboost1.83-dev libopenblas-dev libopenblas-pthread-dev libopenblas0
  libpython3-all-dev libpython3.12 libpython3.12-dev libstemmer0d libxmlb2
  libxsimd-dev python3-all-dev python3-beniget python3-gast python3-pythran
  python3.12-dev xtl-dev zenity zenity-common
Use 'sudo apt autoremove' to remove them.
0 upgraded, 0 newly installed, 0 to remove and 8 not upgraded.

┌──(kali㉿kali)-[/Python-3.11.1]
└─$ pip3 -V
pip 24.0 from /usr/lib/python3/dist-packages/pip (python 3.11)

┌──(kali㉿kali)-[/Python-3.11.1]
└─$ cd Python-3.11.1
cd: no such file or directory: Python-3.11.1
```



```
┌──(kali㉿kali)-[/Python-3.11.1]
└─$ sudo apt install python3-venv -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following packages were automatically installed and are no longer require
d:
  dtv-scan-tables libadwaita-1-0 libappstream5 libboost-dev
  libboost1.83-dev libopenblas-dev libopenblas-pthread-dev libopenblas0
  libpython3-all-dev libpython3.12 libpython3.12-dev libstemmer0d libxmlb2
  libxsimd-dev python3-all-dev python3-beniget python3-gast python3-pythran
  python3.12-dev xtl-dev zenity zenity-common
Use 'sudo apt autoremove' to remove them.
The following additional packages will be installed:
  python3.11-venv
The following NEW packages will be installed:
  python3-venv python3.11-venv
0 upgraded, 2 newly installed, 0 to remove and 8 not upgraded.
Need to get 7,076 B of archives.
After this operation, 34.8 kB of additional disk space will be used.
Get:1 http://kali.download/kali kali-rolling/main amd64 python3.11-venv amd64
 3.11.8-1 [5,884 B]
Get:2 http://mirror.lagoon.nc/kali kali-rolling/main amd64 python3-venv amd64
 3.11.6-1 [1,192 B]
```



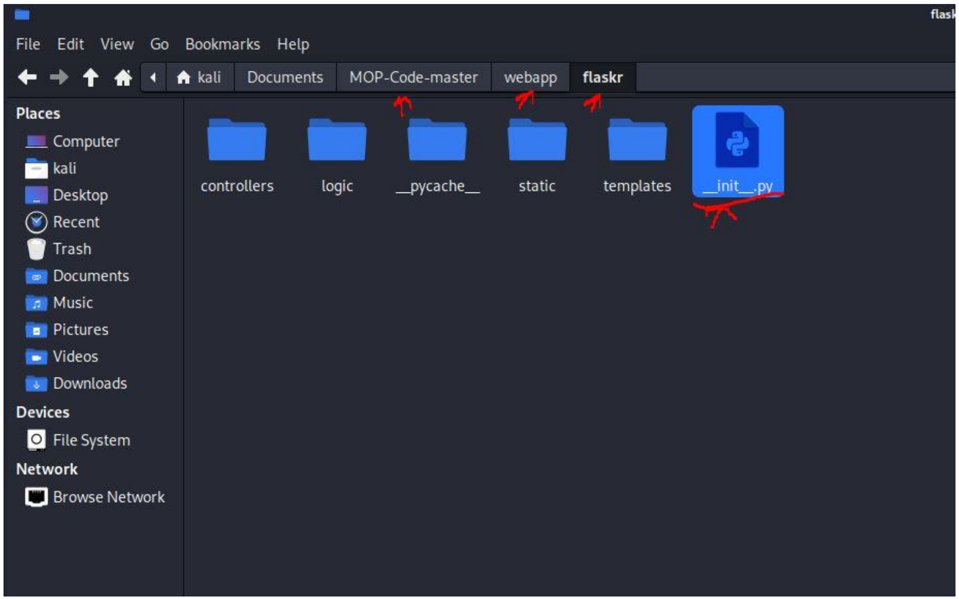
```
Setting up python3-venv (3.11.6-1) ...

┌──(kali㉿kali)-[/Python-3.11.1]
└─$ mkdir test_directory

┌──(kali㉿kali)-[/Python-3.11.1]
└─$ cd test_directory

┌──(kali㉿kali)-[/Python-3.11.1/test_directory]
└─$ python3 -m venv /path/to/new/virtual/environment
Error: [Errno 13] Permission denied: '/path'

┌──(kali㉿kali)-[/Python-3.11.1/test_directory]
└─$ sudo python3 -m venv /path/to/new/virtual/environment

┌──(kali㉿kali)-[/Python-3.11.1/test_directory]
└─$ python3 -m venv my_environment

┌──(kali㉿kali)-[/Python-3.11.1/test_directory]
└─$ ls
my_environment

┌──(kali㉿kali)-[/Python-3.11.1/test_directory]
└─$ ls my_environment
bin  include  lib  lib64  pyvenv.cfg

┌──(kali㉿kali)-[/Python-3.11.1/test_directory]
```

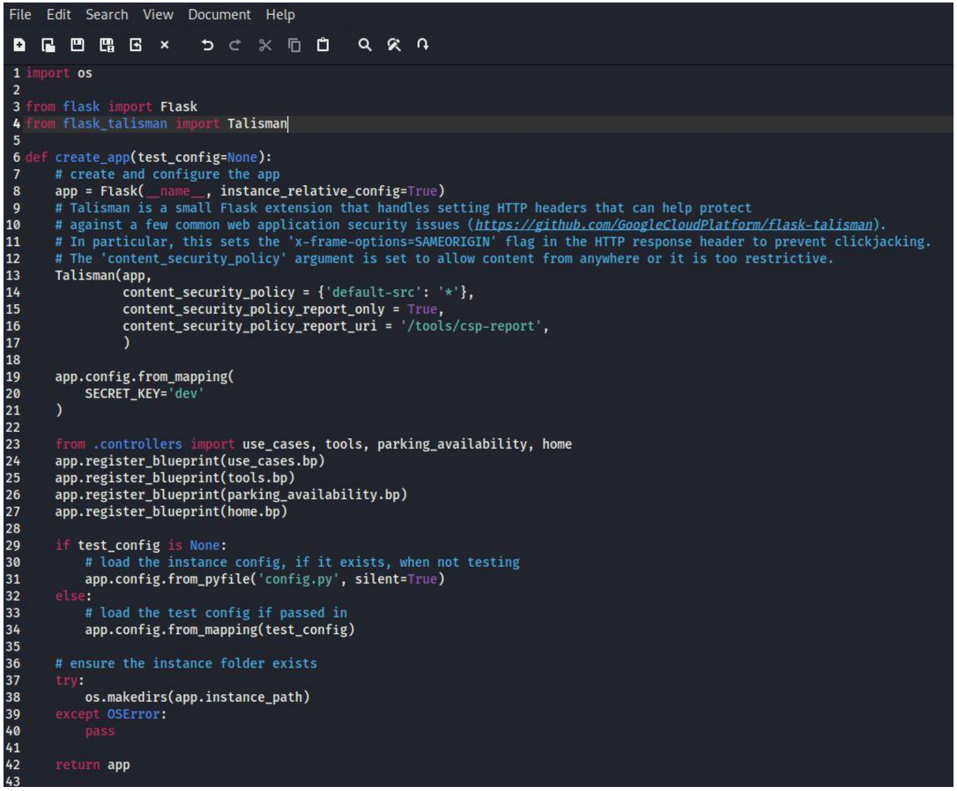


```
┌──(kali㉿kali)-[/Python-3.11.1/test_directory]
└─$ sudo python3 -m venv /path/to/new/virtual/environment

┌──(kali㉿kali)-[/Python-3.11.1/test_directory]
└─$ python3 -m venv my_environment

┌──(kali㉿kali)-[/Python-3.11.1/test_directory]
└─$ ls
my_environment

┌──(kali㉿kali)-[/Python-3.11.1/test_directory]
└─$ ls my_environment
bin  include  lib  lib64  pyvenv.cfg

┌──(kali㉿kali)-[/Python-3.11.1/test_directory]
└─$ sournce my_environment/bin/activate
sournce: command not found

┌──(kali㉿kali)-[/Python-3.11.1/test_directory]
└─$ source my_environment/bin/activate

┌──(my_environment)─(kali㉿kali)-[/Python-3.11.1/test_directory]
└─$ 
```

3. Now we need to install gunicorn by going to following link https://docs.gunicorn.org/en/latest/install.html
   follow the instructions on the above link to install gunicorn which is required to run the MOP website.

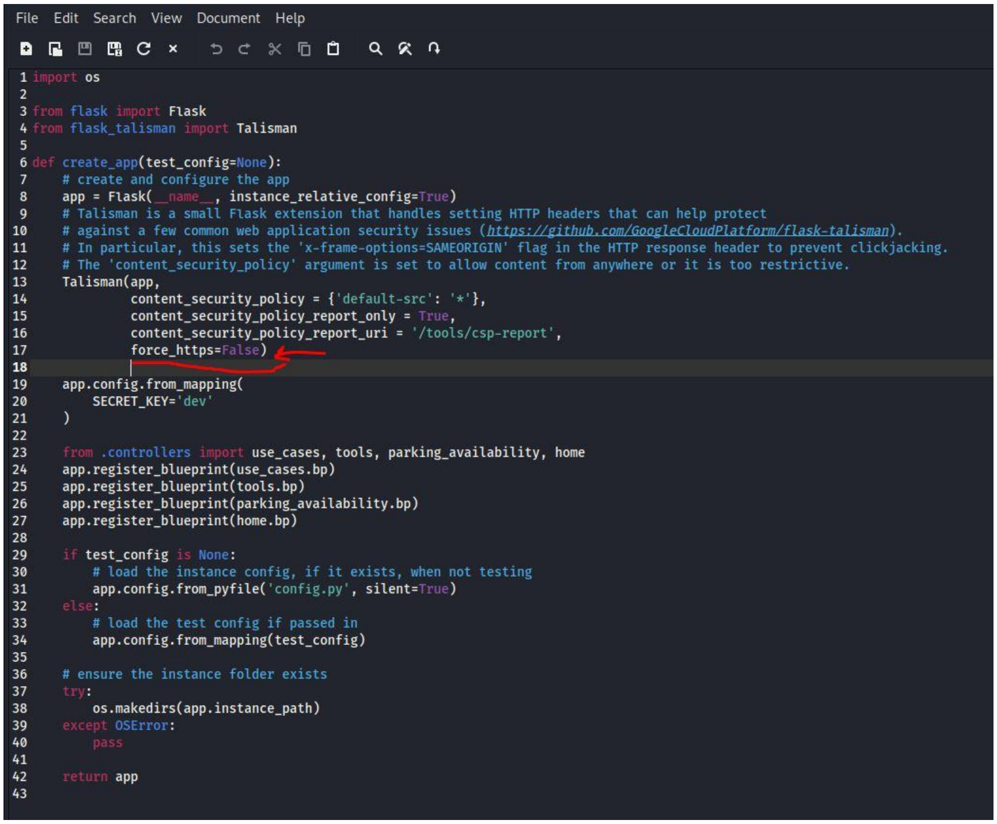
4. The next is to make changes to **_init_.py** file which is located inside the flaskr folder as shown in below screenshot.





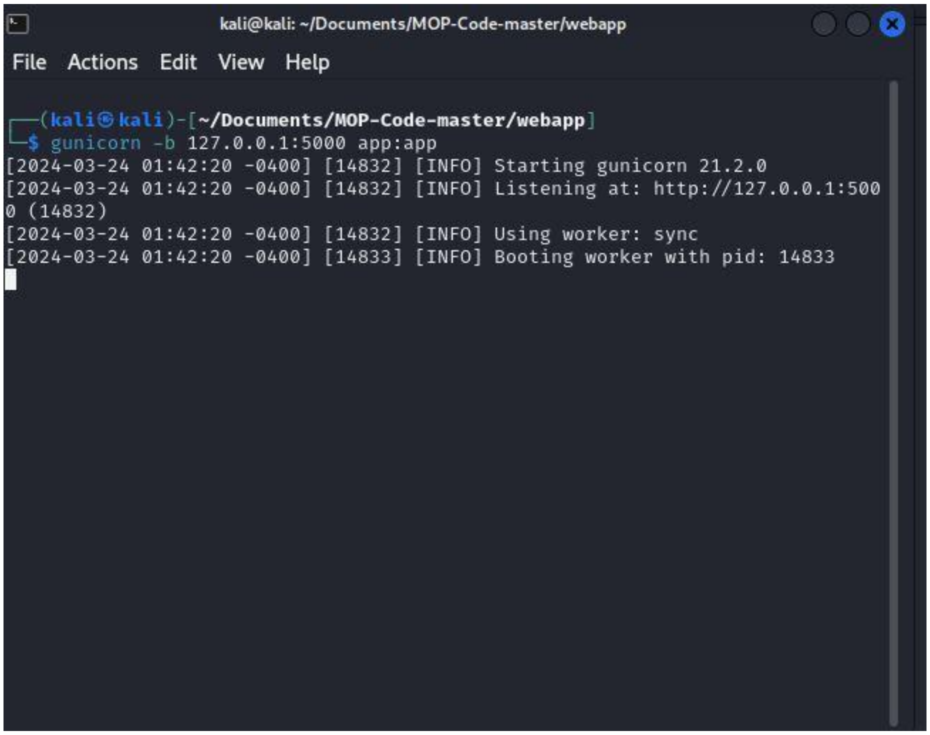
```python
import os

from flask import Flask
from flask_talisman import Talisman

def create_app(test_config=None):
    # create and configure the app
    app = Flask(__name__, instance_relative_config=True)
    # Talisman is a small Flask extension that handles setting HTTP headers that can help protect
    # against a few common web application security issues (https://github.com/GoogleCloudPlatform/flask-talisman).
    # In particular, this sets the 'x-frame-options=SAMEORIGIN' flag in the HTTP response header to prevent clickjacking.
    # The 'content_security_policy' argument is set to allow content from anywhere or it is too restrictive.
    Talisman(app,
             content_security_policy = {'default-src': '*'},
             content_security_policy_report_only = True,
             content_security_policy_report_uri = '/tools/csp-report',
             )

    app.config.from_mapping(
        SECRET_KEY='dev'
    )

    from .controllers import use_cases, tools, parking_availability, home
    app.register_blueprint(use_cases.bp)
    app.register_blueprint(tools.bp)
    app.register_blueprint(parking_availability.bp)
    app.register_blueprint(home.bp)

    if test_config is None:
        # load the instance config, if it exists, when not testing
        app.config.from_pyfile('config.py', silent=True)
    else:
        # load the test config if passed in
        app.config.from_mapping(test_config)

    # ensure the instance folder exists
    try:
        os.makedirs(app.instance_path)
    except OSError:
        pass

    return app

```

Changes are highlighted by an arrow in the following screenshot.



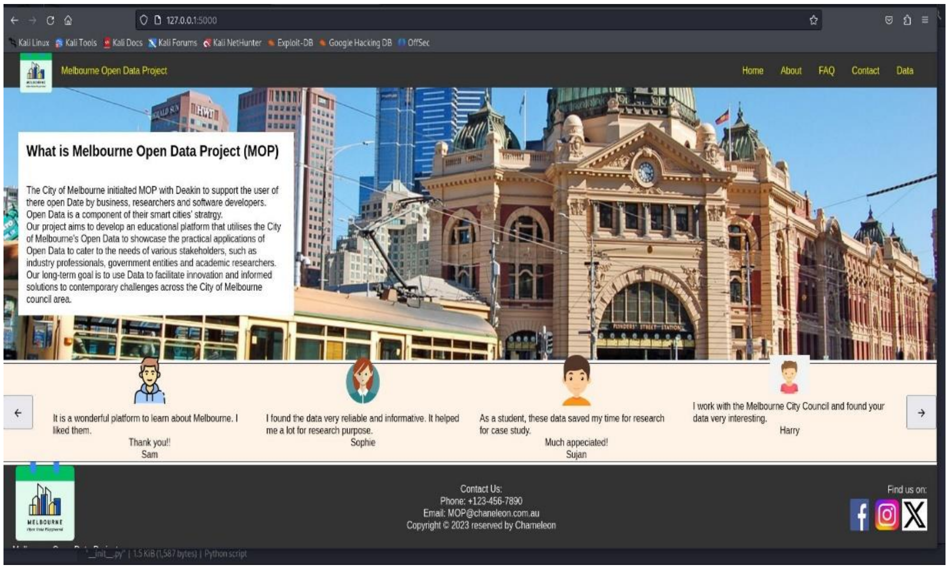
```python
import os

from flask import Flask
from flask_talisman import Talisman

def create_app(test_config=None):
    # create and configure the app
    app = Flask(__name__, instance_relative_config=True)
    # Talisman is a small Flask extension that handles setting HTTP headers that can help protect
    # against a few common web application security issues (https://github.com/GoogleCloudPlatform/flask-talisman).
    # In particular, this sets the 'x-frame-options=SAMEORIGIN' flag in the HTTP response header to prevent clickjacking.
    # The 'content_security_policy' argument is set to allow content from anywhere or it is too restrictive.
    Talisman(app,
             content_security_policy = {'default-src': '*'},
             content_security_policy_report_only = True,
             content_security_policy_report_uri = '/tools/csp-report',
             force_https=False)

    app.config.from_mapping(
        SECRET_KEY='dev'
    )

    from .controllers import use_cases, tools, parking_availability, home
    app.register_blueprint(use_cases.bp)
    app.register_blueprint(tools.bp)
    app.register_blueprint(parking_availability.bp)
    app.register_blueprint(home.bp)

    if test_config is None:
        # load the instance config, if it exists, when not testing
        app.config.from_pyfile('config.py', silent=True)
    else:
        # load the test config if passed in
        app.config.from_mapping(test_config)

    # ensure the instance folder exists
    try:
        os.makedirs(app.instance_path)
    except OSError:
        pass

    return app

```

5. Next step is to run the following command gunicorn -b 127.0.0.1:5000 app:app


kali@kali: ~/Documents/MOP-Code-master/webapp
File Actions Edit View Help

```
┌──(kali㉿kali)-[~/Documents/MOP-Code-master/webapp]
└─$ gunicorn -b 127.0.0.1:5000 app:app
[2024-03-24 01:42:20 -0400] [14832] [INFO] Starting gunicorn 21.2.0
[2024-03-24 01:42:20 -0400] [14832] [INFO] Listening at: http://127.0.0.1:500
0 (14832)
[2024-03-24 01:42:20 -0400] [14832] [INFO] Using worker: sync
[2024-03-24 01:42:20 -0400] [14833] [INFO] Booting worker with pid: 14833
```

As we can see in the next screenshot MOP website is running successfully.



What is Melbourne Open Data Project (MOP)

The City of Melbourne initialted MOP with Deakin to support the user of there open Date by business, researchers and software developers. Open Data is a component of their smart cities' stratrgy.
Our project aims to develop an educational platform that utilises the City of Melbourne's Open Data to showcase the practical applications of Open Data to cater to the needs of various stakeholders, such as industry professionals, government entities and academic researchers. Our long-term goal is to use Data to facilitate innovation and informed solutions to contemporary challenges across the City of Melbourne council area.

It is a wonderful platform to learn about Melbourne. I liked them.
Thank you!!
Sam

I found the data very reliable and informative. It helped me a lot for research purpose.
Sophie

As a student, these data saved my time for research for case study.
Much appeciated!
Sujan

I work with the Melbourne City Council and found your data very interesting.
Harry

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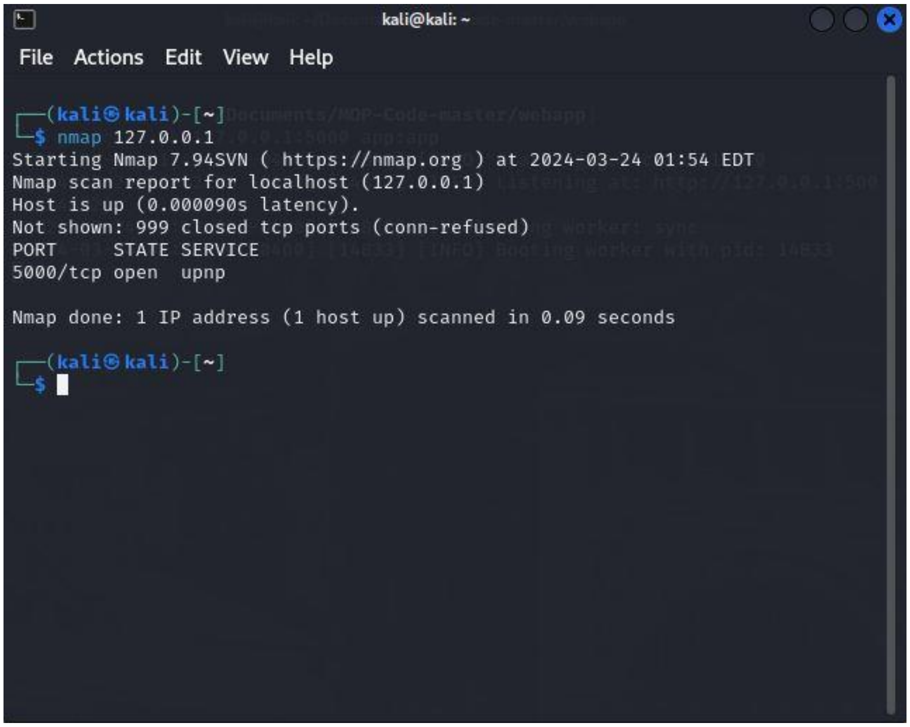
At first my code wasn't running because I was getting an error that following modules and libraries needs to be installed
pip install flask-talisman
pip install boto3
pip install seaborn
pip install geopy
pip install sodapy

if you still encountered any error just read what it is and install what is missing.

6. **Run a port scan on 127.0.0.1:**
Nmap 127.0.0.1
We'll get the following screenshot which clearly shows the open port named **upnp**



```
┌──(kali㉿kali)-[~]
└─$ nmap 127.0.0.1
Starting Nmap 7.94SVN ( https://nmap.org ) at 2024-03-24 01:54 EDT
Nmap scan report for localhost (127.0.0.1)
Host is up (0.000090s latency).
Not shown: 999 closed tcp ports (conn-refused)
PORT     STATE SERVICE
5000/tcp open  upnp

Nmap done: 1 IP address (1 host up) scanned in 0.09 seconds

┌──(kali㉿kali)-[~]
└─$ 
```