

Python y venv

Crear la carpeta del proyecto y movernos a la misma

```
ango@tos:~/PPS/bloque_01$ mkdir prj-test
ango@tos:~/PPS/bloque_01$ cd prj-test/
```

Crear el entorno virtual

```
ango@tos:~/PPS/bloque_01/prj-test$ python3 -m venv venv
ango@tos:~/PPS/bloque_01/prj-test$ ls -l
total 4
drwxrwxr-x 6 ango ango 4096 nov 18 15:56 venv
ango@tos:~/PPS/bloque_01/prj-test$
```

Activar el entorno virtual

```
ango@tos:~/PPS/bloque_01/prj-test$ source venv/bin/activate
(venv) ango@tos:~/PPS/bloque_01/prj-test$
```

Ver los módulos instalados

```
(venv) ango@tos:~/PPS/bloque_01/prj-test$ pip freeze
(venv) ango@tos:~/PPS/bloque_01/prj-test$
```

Instalar alguno y comprobar los instalados con `pip freeze`

```
(venv) ango@tos:~/PPS/bloque_01/prj-test$ pip install requests
Collecting requests
  Downloading requests-2.26.0-py2.py3-none-any.whl (62 kB)
    |██████████████████████████████████████| 62 kB 527 kB/s
Collecting idna<4,>=2.5; python_version >= "3"
  Downloading idna-3.3-py3-none-any.whl (61 kB)
    |██████████████████████████████████████| 61 kB 1.4 MB/s
Collecting charset-normalizer~=2.0.0; python_version >= "3"
  Downloading charset_normalizer-2.0.7-py3-none-any.whl (38 kB)
Collecting urllib3<1.27,>=1.21.1
  Downloading urllib3-1.26.7-py2.py3-none-any.whl (138 kB)
    |██████████████████████████████████████| 138 kB 10.7 MB/s
Collecting certifi>=2017.4.17
  Downloading certifi-2021.10.8-py2.py3-none-any.whl (149 kB)
    |██████████████████████████████████████| 149 kB 22.5 MB/s
Installing collected packages: idna, charset-normalizer, urllib3, certifi, requests
Successfully installed certifi-2021.10.8 charset-normalizer-2.0.7 idna-3.3 requests-2.26.0
urllib3-1.26.7
(venv) ango@tos:~/PPS/bloque_01/prj-test$ pip freeze
certifi==2021.10.8
charset-normalizer==2.0.7
idna==3.3
requests==2.26.0
urllib3==1.26.7
```

```
(venv) angot@tos:~/PPS/bloque_01/prj-test$
```

Salir del entorno con `deactivate`

```
(venv) angot@tos:~/PPS/bloque_01/prj-test$ deactivate
angot@tos:~/PPS/bloque_01/prj-test$
```

Si volvemos a activarlo se mantiene los módulos

```
angot@tos:~/PPS/bloque_01/prj-test$ source venv/bin/activate
(venv) angot@tos:~/PPS/bloque_01/prj-test$ pip freeze
certifi==2021.10.8
charset-normalizer==2.0.7
idna==3.3
requests==2.26.0
urllib3==1.26.7
(venv) angot@tos:~/PPS/bloque_01/prj-test$
```

Si quisiéramos borrar el entorno virtual basta con borrar el directorio `venv` creado dentro del proyecto

Ejemplo de uso con jupyter

Activamos el entorno e instalamos Jupyter

```
angot@tos:~/PPS/bloque_01/prj-test$ source venv/bin/activate
(venv) angot@tos:~/PPS/bloque_01/prj-test$ pip install jupyter
Collecting jupyter
  Using cached jupyter-1.0.0-py2.py3-none-any.whl (2.7 kB)
Collecting ipykernel
  Using cached ipykernel-6.5.0-py3-none-any.whl (125 kB)
Collecting qtconsole
  Using cached qtconsole-5.2.0-py3-none-any.whl (120 kB)
Collecting nbconvert
...
Successfully installed MarkupSafe-2.0.1 Send2Trash-1.8.0 argon2-cffi-21.1.0 attrs-21.2.0
backcall-0.2.0 bleach-4.1.0 cffi-1.15.0 debugpy-1.5.1 decorator-5.1.0 defusedxml-0.7.1
entrypoints-0.3 importlib-resources-5.4.0 ipykernel-6.5.0 ipython-7.29.0 ipython-genutils-
0.2.0 ipywidgets-7.6.5 jedi-0.18.1 jinja2-3.0.3 jsonschema-4.2.1 jupyter-1.0.0 jupyter-
client-7.0.6 jupyter-console-6.4.0 jupyter-core-4.9.1 jupyterlab-pygments-0.1.2
jupyterlab-widgets-1.0.2 matplotlib-inline-0.1.3 mistune-0.8.4 nbclient-0.5.8 nbconvert-
6.3.0 nbformat-5.1.3 nest-asyncio-1.5.1 notebook-6.4.6 packaging-21.3 pandocfilters-1.5.0
parso-0.8.2 pexpect-4.8.0 pickleshare-0.7.5 prometheus-client-0.12.0 prompt-toolkit-3.0.22
ptyprocess-0.7.0 pycparser-2.21 pygments-2.10.0 pyparsing-3.0.6 pyrsistent-0.18.0 python-
dateutil-2.8.2 pyzmq-22.3.0 qtconsole-5.2.0 qtpy-1.11.2 six-1.16.0 terminado-0.12.1
testpath-0.5.0 tornado-6.1 traitlets-5.1.1 wcwidth-0.2.5 webencodings-0.5.1
widgets-nbextension-3.5.2 zipp-3.6.0
(venv) angot@tos:~/PPS/bloque_01/prj-test$
```

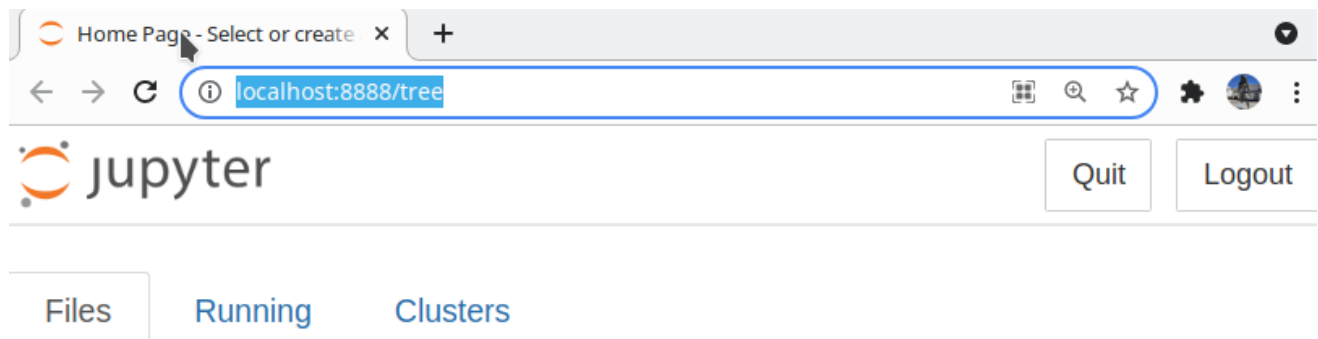
Una vez instalado, para lanzar la aplicación `jupyter notebook`

```
(venv) angot@tos:~/PPS/bloque_01/prj-test$ jupyter notebook
[I 16:10:00.998 NotebookApp] Serving notebooks from local directory:
/home/angot/PPS/bloque_01/prj-test
```

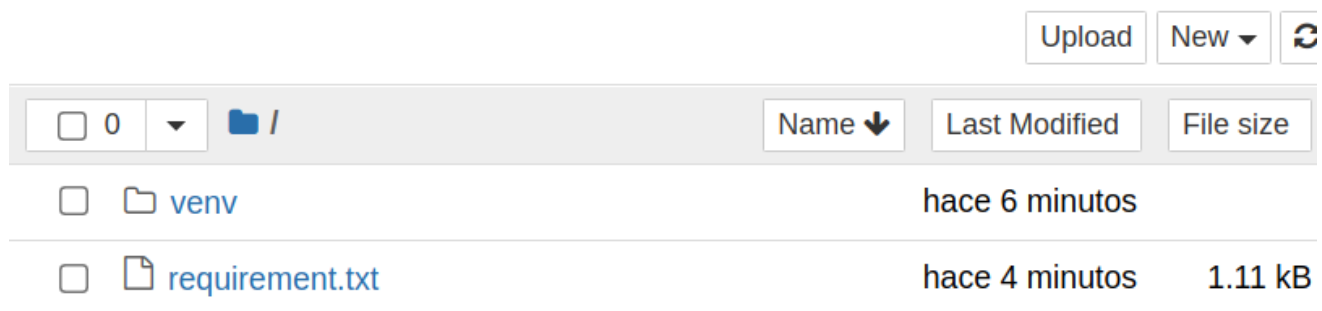
```
[I 16:10:00.998 NotebookApp] Jupyter Notebook 6.4.6 is running at:
[I 16:10:00.998 NotebookApp] http://localhost:8888/?
token=56dc9fb070d5427dec986a899b8ef91872874d50cfdc65cf
[I 16:10:00.998 NotebookApp] or http://127.0.0.1:8888/?
token=56dc9fb070d5427dec986a899b8ef91872874d50cfdc65cf
[I 16:10:00.998 NotebookApp] Use Control-C to stop this server and shut down all kernels
(twice to skip confirmation).
[C 16:10:01.018 NotebookApp]
```

To access the notebook, open this file in a browser:
 file:///home/ango/.local/share/jupyter/runtime/nbserver-46425-open.html
 Or copy and paste one of these URLs:
 http://localhost:8888/?token=56dc9fb070d5427dec986a899b8ef91872874d50cfdc65cf
 or http://127.0.0.1:8888/?token=56dc9fb070d5427dec986a899b8ef91872874d50cfdc65cf

Nos muestras los mensajes para acceder a Jupyter, aunque lo normal es que nos abra el navegador ya con esa URL, etc:



Select items to perform actions on them.



Y ya podemos crear un bloc de notas, etc.

Testing

```
In [1]: print("Hola desde Jupyter")
```

Hola desde Jupyter

```
In [ ]:
```

Uso de requirements

Genero un fichero con las módulos y versiones instaladas

```
(venv) ang@tos:~/PPS/bloque_01/prj-test$ pip freeze > requirements.txt
(venv) ang@tos:~/PPS/bloque_01/prj-test$
```

Si creo un nuevo entorno en otro proyecto y quiero recrear los mismos módulos basta, una vez creado el nuevo entorno, ejecutar la instalación a partir del fichero `requirements.txt` generado con `pip3 install -r requirements.txt`

```
(venv) ang@tos:~/PPS/bloque_01/prj-test$ deactivate
ang@tos:~/PPS/bloque_01/prj-test$ cd ..
ang@tos:~/PPS/bloque_01$ mkdir prj-new
ang@tos:~/PPS/bloque_01$ cd prj-new/
ang@tos:~/PPS/bloque_01/prj-new$ cp ../prj-test/requirements.txt .
ang@tos:~/PPS/bloque_01/prj-new$ python3 -m venv venv
ang@tos:~/PPS/bloque_01/prj-new$ source venv/bin/activate
(venv) ang@tos:~/PPS/bloque_01/prj-new$ ls
requirements.txt  venv
(venv) ang@tos:~/PPS/bloque_01/prj-new$ pip install -r requirements.txt
Collecting argon2-cffi==21.1.0
  Using cached argon2_cffi-21.1.0-cp35-abi3-manylinux_2_5_x86_64.manylinux1_x86_64.whl (96 kB)
Collecting attrs==21.2.0
  Using cached attrs-21.2.0-py2.py3-none-any.whl (53 kB)
```

```
Collecting backcall==0.2.0
  Using cached backcall-0.2.0-py2.py3-none-any.whl (11 kB)
Collecting bleach==4.1.0
...
(venv) ang@tos:~/PPS/bloque_01/prj-new$
```