

PROYECTO DE SOFTWARE

Cursada 2024

TEMA

- Entornos Virtuales.

ENTORNOS VIRTUALES

- Múltiples versiones de lenguajes (Python 2.X, Python 3.X).
- Múltiples versiones de librerías.
- Requerimientos mínimos.

ENTORNOS VIRTUALES

- Herramienta que nos permite tener un ambiente para un proyecto con sus dependencias y librerías.
- Nos permite trabajar en un mismo equipo con diferentes versiones de lenguaje y paquetes.
- Nos ayuda a replicar el ambiente de desarrollo
- Virtualenv, venv, Conda, poetry, ¿otros?

ENTORNOS VIRTUALES - PIP

- Pip es un sistema de gestión de paquetes.
- Primero, comprobamos si tenemos correctamente instalado pip.

```
sudo apt-get install python3-pip python3-dev build-essential
```

ENTORNOS VIRTUALES - PIP

- Nos facilita conocer cuáles son los paquetes y sus versiones para poder distribuirlo.

```
pip freeze > requirements.txt
```

- Podemos ver cuáles son los paquetes mirando requirements.txt

```
Click==7.0  
Flask==1.1.1  
itsdangerous==1.1.0  
Jinja2==2.10.1  
MarkupSafe==1.1.1  
pkg-resources==0.0.0  
Werkzeug==0.16.0
```

ENTORNOS VIRTUALES - PIP

- Para desplegar el proyecto en otra plataforma ejecutamos el siguiente comando:

```
pip install -r requirements.txt
```

ENTORNOS VIRTUALES

- Instalamos virtualenv

```
pip install virtualenv
```


ENTORNOS VIRTUALES

- Nos posicionamos en la carpeta del proyecto o, en su defecto, la creamos:

```
mkdir miProyecto  
cd miProyecto
```

ENTORNOS VIRTUALES

- Inicializamos el entorno virtual:

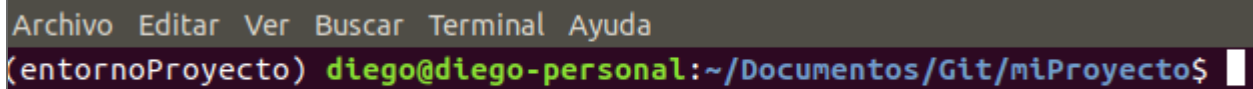
```
virtualenv entornoProyecto
```

```
(base) diego@diego-personal:~/Documentos/Git/miProyecto$ virtualenv entornoProyecto
Running virtualenv with interpreter /usr/bin/python2
New python executable in /home/diego/Documentos/Git/miProyecto/entornoProyecto/bin/python2
Also creating executable in /home/diego/Documentos/Git/miProyecto/entornoProyecto/bin/python
Installing setuptools, pkg_resources, pip, wheel...done.
```

ENTORNOS VIRTUALES

- Activamos el entorno virtual:

```
source entornoProyecto/bin/activate
```

A screenshot of a terminal window with a dark background. The top bar is dark gray with menu items: Archivo, Editar, Ver, Buscar, Terminal, Ayuda. The terminal shows the prompt (entornoProyecto) diego@diego-personal:~/Documentos/Git/miProyecto\$ with a white cursor at the end.

```
Archivo Editar Ver Buscar Terminal Ayuda  
(entornoProyecto) diego@diego-personal:~/Documentos/Git/miProyecto$
```

- Para desactivar el entorno virtual:

```
deactivate
```

ENTORNOS VIRTUALES

- Desde la versión de Python 3.3 contamos con venv

```
python3 -m venv /path/to/new/virtual/environment
```

- Por lo general:

```
python3 -m venv venv
```

ENTORNOS VIRTUALES

- Una herramienta útil para gestionar entornos virtuales es **virtualenvwrapper**:

```
pip install virtualenvwrapper
```

```
diego@diego-personal:~/Documentos/Git/miProyecto$ pip install virtualenvwrapper
Collecting virtualenvwrapper
  Downloading https://files.pythonhosted.org/packages/c1/6b/2f05d73b2d2f2410b48b90d3783a0034c26afa534a4a95ad5f1178d61191/virtualenvwrapper-4.8.4.tar.gz (334kB)
    100% |#####| 337kB 1.1MB/s
Collecting virtualenv (from virtualenvwrapper)
  Downloading https://files.pythonhosted.org/packages/8b/12/8d4f45b8962b03ac9efefe5ed5053f6b29334d83e438b4fe379d21c0cb8e/virtualenv-16.7.5-py3-none-any.whl (3.3MB)
    100% |#####| 3.3MB 204kB/s
Collecting virtualenv-clone (from virtualenvwrapper)
  Downloading https://files.pythonhosted.org/packages/ba/f8/50c2b7dbc99e05f5e5b9d9a31f37c988c99acd4e8dedd720b7b8d4011d/virtualenv_clone-0.5.3-py2.py3-none-any.whl
Collecting stevedore (from virtualenvwrapper)
  Downloading https://files.pythonhosted.org/packages/b1/e1/f5ddb83f60b03f522f173c03e406c1bff8343f0232a292ac96aa633b47a/stevedore-1.31.0-py2.py3-none-any.whl (43kB)
    100% |#####| 51kB 1.6MB/s
Collecting pbr!=2.1.0,>=2.0.0 (from stevedore->virtualenvwrapper)
  Downloading https://files.pythonhosted.org/packages/46/a4/d5c83831a3452713e4b4f126149bc4fbd170f7cb16a86a00ce57ce0e9ad/pbr-5.4.3-py2.py3-none-any.whl (110kB)
    100% |#####| 112kB 1.3MB/s
Collecting six>=1.10.0 (from stevedore->virtualenvwrapper)
  Cache entry deserialization failed, entry ignored
  Using cached https://files.pythonhosted.org/packages/73/fb/00a976f728d0d1fecfe898238ce23f502a721c0ac0ecfedb80e0d88c64e9/six-1.12.0-py2.py3-none-any.whl
Building wheels for collected packages: virtualenvwrapper
  Running setup.py bdist_wheel for virtualenvwrapper ... done
  Stored in directory: /home/diego/.cache/pip/wheels/70/d7/39/a522e494b0e145a1bec42f45a6e542f097c20d0be3ec26866e
Successfully built virtualenvwrapper
Installing collected packages: virtualenv, virtualenv-clone, pbr, six, stevedore, virtualenvwrapper
Successfully installed pbr-5.4.3 six-1.12.0 stevedore-1.31.0 virtualenv-16.7.5 virtualenv-clone-0.5.3 virtualenvwrapper-4.8.4
```

POETRY

- Gestor de paquetes
- Gestor de dependencias
- Entornos virtuales

POETRY

```
curl -sSL https://install.python-poetry.org |  
python3 -
```

Retrieving Poetry metadata

Welcome to Poetry!

This will download and install the latest version of Poetry,
a dependency and package manager for Python.

It will add the `poetry` command to Poetry's bin directory, located at:

`/home/diego/.local/bin`

You can uninstall at any time by executing this script with the `--uninstall` option,
and these changes will be reverted.

Installing Poetry (1.1.15): Done

Poetry (1.1.15) is installed now. Great!

You can test that everything is set up by executing:

```
`poetry --version`
```

POETRY

poetry init

```
Compatible Python versions [^3.8]: 3.10.4

Would you like to define your main dependencies interactively? (yes/no) [yes]
You can specify a package in the following forms:
- A single name (requests)
- A name and a constraint (requests<2.23.0)
- A git url (git+https://github.com/python-poetry/poetry.git)
- A git url with a revision (git+https://github.com/python-poetry/poetry.git#develop)
- A file path (../my-package/my-package.whl)
- A directory (../my-package/)
- A url (https://example.com/packages/my-package-0.1.0.tar.gz)

Search for package to add (or leave blank to continue): flask
Found 20 packages matching flask

Enter package # to add, or the complete package name if it is not listed:
[0] Flask
[1] Flask-Zipper
[2] Flask-DB
[3] flask-beans
[4] Flask-Sessions
[5] Flask-SimpleACL
[6] Flask-Monitoring
[7] Flask-Charts
[8] Flask-SimpleMDE
[9] Flask-GoogleReCaptcha
```


POETRY

```
Add a package:

Would you like to define your development dependencies interactively? (yes/no) [yes]
Search for package to add (or leave blank to continue): pytest
Found 20 packages matching pytest

Enter package # to add, or the complete package name if it is not listed:
[0] pytest
[1] pytest123
[2] 131228_pytest_1
[3] pytest-symbols
[4] pytest-circleci
[5] pytest-parallel
[6] sphinx_pytest
[7] pytest-vcrpandas
[8] pytest-briefcase
[9] pytest-black
> 0

Enter the version constraint to require (or leave blank to use the latest version):
Using version ^7.1.2 for pytest

Add a package:
```

POETRY

Generated file

```
[tool.poetry]
name = "ejemplo-proyecto-2022"
version = "0.1.0"
description = "Ejemplo Proyecto de Software"
authors = ["Diego Vilches <dvilches@linti.unlp.edu.ar>"]

[tool.poetry.dependencies]
python = "3.10.4"
Flask = "^2.2.2"

[tool.poetry.dev-dependencies]
pytest = "^7.1.2"

[build-system]
requires = ["poetry-core>=1.0.0"]
build-backend = "poetry.core.masonry.api"

Do you confirm generation? (yes/no) [yes]
```

POETRY

Algunos comandos útiles

```
poetry self update
poetry env info
poetry new admin
poetry add flask=2.2.2
poetry add pytest --group dev
poetry run flask --version
poetry build
```

ENLACES ÚTILES

```
https://pypi.org/project/virtualenv/  
https://virtualenv.pypa.io/en/stable/  
https://github.com/pyenv/pyenv#simple-python-  
version-management-pyenv  
https://docs.conda.io/projects/conda/en/latest/comm  
ands.html#conda-vs-pip-vs-virtualenv-commands  
https://python-poetry.org  
https://www.paradigmadigital.com/dev/poetry-gestor-  
paquetes-python/  
https://www.jetbrains.com/help/pycharm/poetry.html
```

Speaker notes