Software Packaging

Npm’s “Left-pad problem”

11 lines of code
downloaded 2.5 million times the moth before

Why PyPI?

- Copy & paste is **not** the way to share your code
- Developers can put tests and help improve the code
- Hopefully get developers depend on it

Publish code
make python better

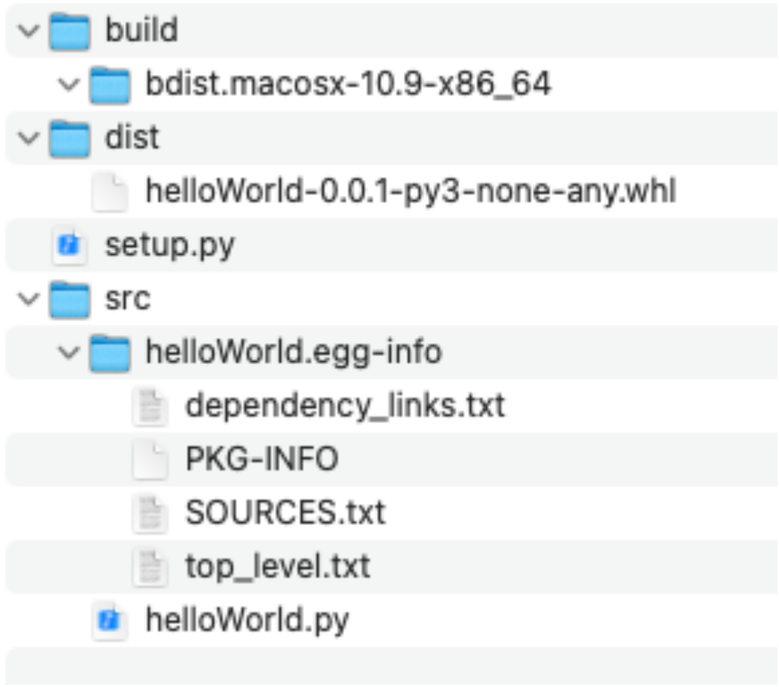
- General code that others can use
- Extract and make independent
- Put it in a src directory
- Make a setup.py file

```
def say_hello(name=None):
    if name is None:
        return "Hello, world!"
    else:
        return f"Hello, {name}!"
```

```python
from setuptools import setup

setup(
    name="helloWorld", #what you write after $ pip install
    version="0.0.1", # 0.0.x generaly means it is nstable
    description="Say hello!", # usually one liner
    py_modulies=["helloWorld"], # list of actual python modules (code)
    package_dir={"": "src"},
)
```

- $ python setup.py bdist_wheel
- Git ignore src/helloWorld.egg-info



Test package

Run every time setup.py changes

- $ pip install -e .
- -e : Link (not copy) to the library
- . : find package here

```
>>> from helloWorld import say_hello
>>> say_hello()
'Hello, world!'
>>> say_hello('Ali')
'Hello, Ali!'
>>>
```

Before uploading?

gitignore & classifiers

- gitignore.io
- License

- Add classifiers
  https://pypi.org/classifiers/

```
    classifiers=[
        "Programming Language :: Python :: 3",
        "Programming Language :: Python :: 3.6",
        "Programming Language :: Python :: 3.7",
        "License :: OSI Approved :: GNU General Public License v3 (GPLv3)",
        "Operating System :: OS Independent",
    ],
)
```

Before uploading?

Documentation

```
from setuptools import setup

with open("README.rst", "r") as fh:
    long_description = fh.read()

setup(
    name="helloWorld", #what you write after $ pip install
    version="0.0.1", # 0.0.x generaly means it is nstable
    description="Say hello!", # usually one liner

    long_description=long_description,
    long_description_content_type="text/x-rst",
```

README.rst or
README.md

Before uploading?

Dependencies

- Make sure restrictions are as relaxed as they can be

- $ pip install -e .

```
from setuptools import setup

with open("README.rst", "r") as fh:
    long_description = fh.read()

setup(
    name="helloWorld", #what you write after $ pip install
    version="0.0.1", # 0.0.x generaly means it is nstable
    description="Say hello!", # usually one liner
    long_description=long_description,
    long_description_content_type="text/x-rst",
    py_modulies=["helloWorld"], # list of actual python modu
    package_dir={"": "src"},
    classifiers=[
        "Programming Language :: Python :: 3",
        "Programming Language :: Python :: 3.6",
        "Programming Language :: Python :: 3.7",
        "License :: OSI Approved :: GNU General Public Licen
        "Operating System :: OS Independent",
    ],
    install_requires = [
        "package ~=1.7",
    ],
)
```

```
    py_modulies=["helloWorld"],
    package_dir={"": "src"},
    classifiers=[
        "Programming Language :: Python ...
        "Programming Language :: Python ::...
        "Programming Language :: Python :: ...
        "License :: OSI Approved :: GNU General...
        "Operating System :: OS Independent",
    ],
    install_requires = [
        "numpy ~=1.7",
    ],

    extras_require = {
        "dev":[
            "pytest>=3.7",
        ],
    },
)
```

Tests

pyTest

- **Development** dependencies
- Update README

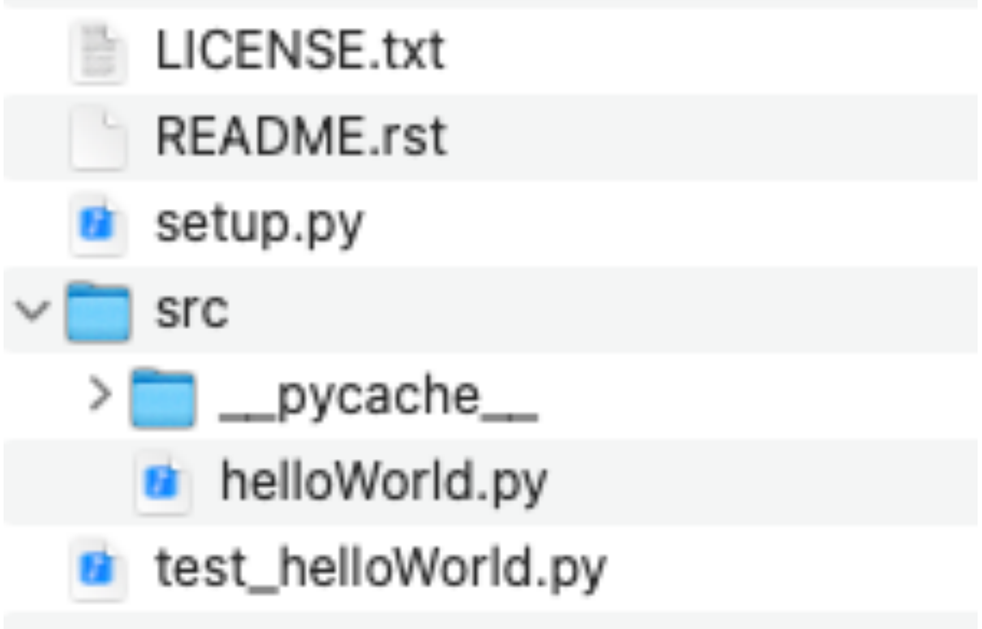
Almost done!

```
version="0.0.1", # 0.0.x generaly means it i
description="Say hello!", # usually one line
long_description=long_description,
long_description_content_type="text/x-rst",
py_modulies=["helloWorld"], # list of actual
package_dir={"": "src"},

url="https://github.com/...",
auther="name surname",
auther_email="user@example.com",

classifiers=[
    "Programming Language :: Python :: 3",
    "Programming Language :: Python :: 3.6",
    "Programming Language :: Python :: 3.7",
    "License :: OSI Approved :: GNU General
    "Operating System :: OS Independent",
],
install_requires = [
    "numpy ~=1.7",
],
```

Check distribution



- $ python setup.py sdist

- $ tar tzf dist/helloWorld-0.0.1.tar.gz
  - Check everything
  - Use “check-manifest” If you want to include other stuff in package:

Publish!

As soon as you have covered the basics

- $ python setup.py bdist_wheel sdist
- $ ls dist
  - helloWorld-0.0.1-py3-none-any.whl
  - helloWorld-0.0.1.tar.gz
- Push to PyPI with **twine**:
  - $ pip install twine
  - twine upload dist/*
    - Asks

Go to PyPI website to check your package

Is there a shortcut?

- $ pip install cookicutter
- $ cookicutter gh:ionelmc:cookicutter-pylibrary