

# Software Packaging

Ali Farnudi, Nov 2023

# Npm's "Left-pad problem"

11 lines of code  
downloaded 2.5 million times the month 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

- python version > 3.6.3
- `python3 -m pip install --upgrade pip`
- `python3 -m pip install --upgrade build`

# Publish code

## make python better

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

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

# pyproject.toml

```
[project]
name = "Resolve-Captcha" #what you write after pip install
version = "0.0.1" # 0.0.x generally means it is unstable
authors = [
    { name="Ali Farnudi", email="a.farnudi@gmail.com" },
]
# usually a one liner
description = "The solution to day 1 of the 2017 Advent of Code."
```

- \$ python -m build
- Add .gitignore

# pyproject.toml

```
[project]
name = "Resolve-Captcha" #what you write after pip install
version = "0.0.1" # 0.0.x generally means it is unstable
authors = [
    { name="Ali Farnudi", email="a.farnudi@gmail.com" },
]
# usually a one liner
description = "The solution to day 1 of the 2017 Advent of Code."
```

+

More to put in the **tmol** file

```
readme = "README.md"
requires-python = ">=3.8"
license = {file = "LICENSE"}
keywords = ["Advent of Code", "captcha", ]
```

# Test package

- \$ 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](https://gitignore.io)

License

```
classifiers = [  
    "Programming Language :: Python :: 3",  
    "License :: OSI Approved :: MIT License",  
    "Operating System :: OS Independent",  
]
```

# Before uploading?

## gitignore & classifiers

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

```
classifiers = [  
    "Programming Language :: Python :: 3",  
    "License :: OSI Approved :: MIT License",  
    "Operating System :: OS Independent",  
]
```

# Before uploading?

## Dependencies

- Make sure restrictions are as relaxed as they can be

- \$ pip install -e .

```
        "License :: OSI Approved :: GNU General Public License",
        "Operating System :: OS Independent",
    ],
    install_requires = [
        "package ~=1.7",
    ],
)
```

# Tests

## pyTest

```
install_requires = [  
    "numpy ~=1.7",  
],  
  
extras_require = {  
    "dev": [  
        "pytest>=3.7",  
    ],  
},  
)
```

- **Development** dependencies
- Update README

# Almost done!

```
[project.urls]
Homepage = "https://example.com"
Documentation = "https://readthedocs.org"
Repository = "https://github.com/me/spam.git"
Changelog = "https://github.com/me/spam/blob/master/CHANGELOG.md"

[project.scripts]
res-captcha = "resolve_captcha:main"
```



# Publish!

**As soon as you have covered the basics**

- Push to PyPI with **twine**:
  - `$ python3 -m pip install --upgrade twine`
  - `$ python3 -m twine upload --repository testpypi dist/*`

# Is there a shortcut?

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

