Package Managers

Pat Pannuto / **Marcus Darden**

Package Managers

- What are they?
- What do they do?
- Let's name a few...

Creating an installable python package

One-time Actions

1. Upgrade the python toolchain

```
$ sudo apt-get update
$ sudo apt-get install python3 python3-pip python3-venv python3-wheel python3-setuptools
```

Creating an installable python package

Per-project Actions

1. Create a python virtual environment for your project

```
$ mkdir <projectdir>  # If creating from scratch
$ cd <projectdir>
$ python3 -m venv env
```

Creating an installable python package

Per-project Actions

1. Add a `setup.py` to your project

```python
from setuptools import setup

setup(
    name='c4cs_wn18_<uniqname>',
    version='0.1.0',
    packages=['<packagename>'],
    entry_points={
        'console_scripts': [
            '<packagename> = <path>.<module>:<function>'
        ]
    },
)
```

Creating an installable python package

Per-project Actions

1. Create a python package

```
$ mkdir <packagename>
$ touch <packagename>/__init__.py
```

1. Edit or move your source code into the `<packagename>` folder
   - Remember to add a shebang at the top of executable files
   - `#!/usr/bin/env python3`
2. Install it locally

```
$ pip3 install .  # Add -e or --editable to enable local editing
```

Adding a package to PyPI (The Python Package Index)

One-time Actions

1. Register an account at https://test.pypi.org
2. Create a ~/.pypirc file

```
[distutils]
index-servers =
    pypi
    testpypi

[pypi]
username: mmdarden

[testpypi]
repository: https://test.pypi.org/legacy/
username: mmdarden
password: <your-very-very-insecure-password-here>
```

```
- I haven't figured out how to work the password more securely
- An issue was raised and closed, but doesn't seem to have fixed this
```

Adding a package to PyPI (The Python Package Index)

Per-project Actions

1. Add some more info to `setup.py`
   - Project stuff:
     - `license='MIT'`
     - `description='<some-text-here>'`
     - `url='<gitlab-repo-address>'`
   - User stuff:
     - `author='<your-name>'`
     - `author_email='<duh>'`
2. Upload your package `python setup.py sdist upload -r testpypi`
3. `pip3 install -i https://test.pypi.org/pypi c4cs-w18-python`
4. Start python, `import c4cs`

More at [https://python-packaging.readthedocs.io/en/latest/minimal.html][]

Creating a Simple Python Package for PyPI

It's your turn (attendance)!!

- Make a PyPI package (on TestPyPI) of your RPN Calculator
- Name the package `w18_rpn_<uniqname>`