Virtual environments

Why use them, how to start with virtualenv and how to go further with pyenv.

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. PyLadies Montréal .

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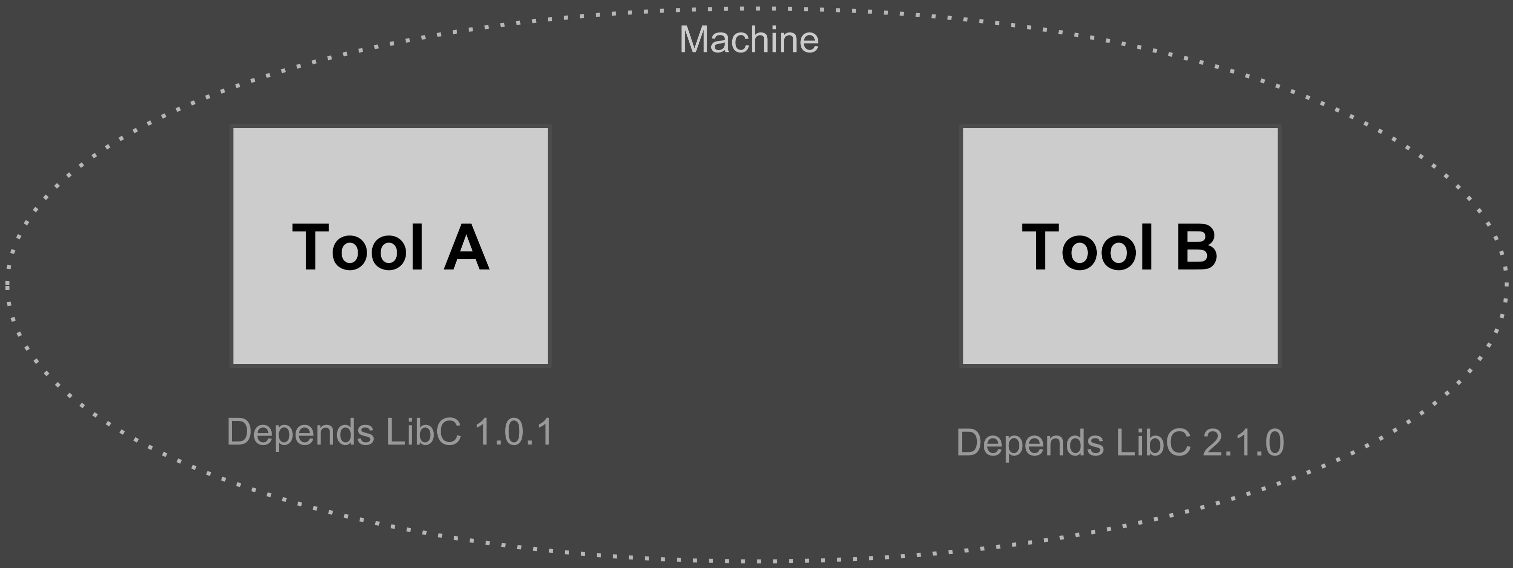
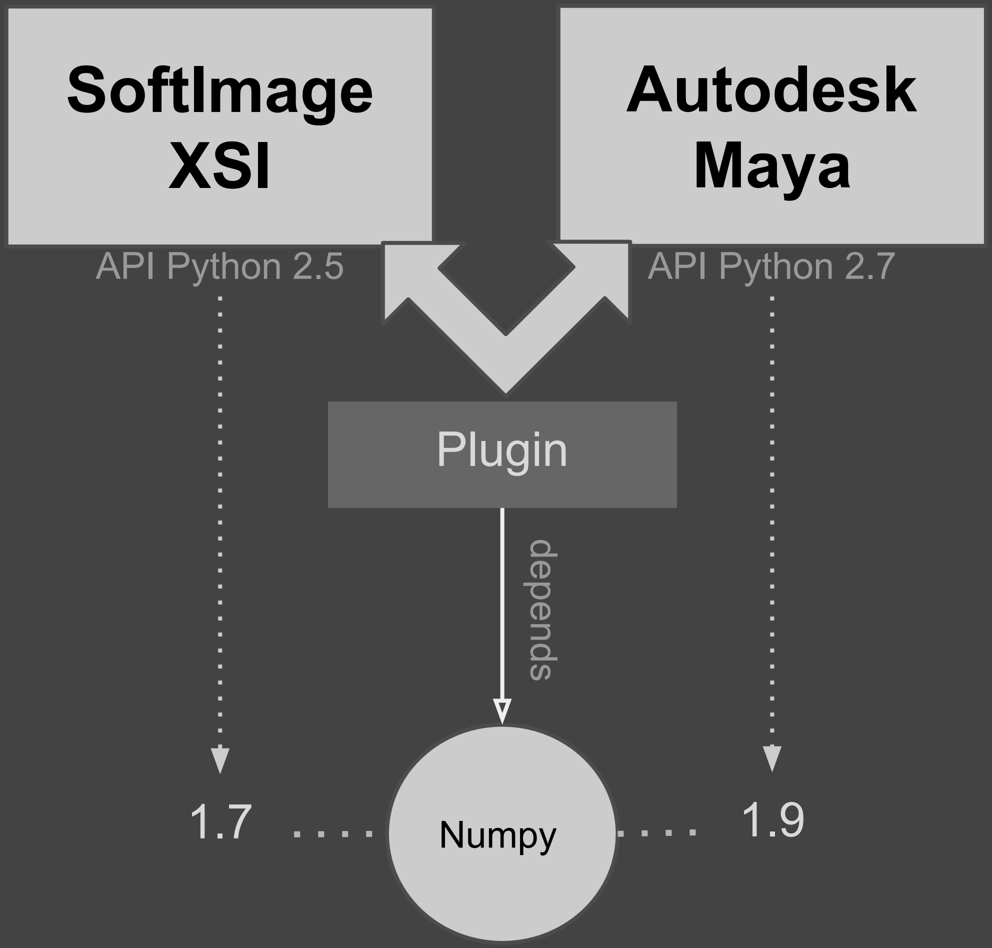
Example



- 2 tools using different versions of the same library (or even two differents python versions)
- Between the 2 versions of the library, API changes might have occurred, and new features been introduced
- Tool A is stable, port the code to use newer version of the lib may not be the more efficient

Concrete example



Quick definition

A **python virtual environment** is a full and isolated python installation that comes with module installation tools (easy_install, pip) and activation / deactivation scripts.

Why use virtual environments ?

- Isolate dependencies required by different projects
- Easily retrieve those dependencies
- Keep your main installation clean
- Create sandbox
- Switch easily from one environment to another

Virtualenv

Virtualenv is a tool to help you create isolated Python environments.

Installation :

```
pip install virtualenv
```

Create a new environment :

```
virtualenv my_env
```

Activate this new environment :

```
. my_env/bin/activate
```

Deactivate it :

```
deactivate
```

Specify a python exe on creation :

```
virtualenv -p /usr/bin/python26 my_env_2.6
```

More infos on virtualenv.pypa.io.

Pyenv

Pyenv is a tool to help you handle different versions of pythons :

- download and install
- switch the python version of your system, of a current shell or of a workspace

How does it work :

- based on Shell scripts,
- intercepts Python commands using shim executables injected into your PATH to pass your commands along to the correct Python installation.

Installation :

- Use homebrew on macOS,
- pyenv-installer,
- or clone the repository and set-up your env.

Pyenv is supported on MacOSX and Linux BUT not on Windows.

Pyenv : install a python

List available for download python versions :

```
pyenv install --list
```

Before installing a new version, you can set some configure options.
For example :

```
export CONFIGURE_OPTS="--enable-static --enable-unicode=ucs4 --with-pic"
```

Download and install a python version :

```
pyenv install <version>
```

```
pyenv rehash
```

Uninstall a python version :

```
pyenv uninstall <version>
```

Pyenv : check out versions

List installed python versions :

```
pyenv versions
```

Display current python version :

```
pyenv version
```

Locate current python :

```
pyenv which python
```

Pyenv : switch version

Change global python version :
```
pyenv global <version>
```

Set the python version of a workspace :
```
pyenv local <version>
```

Set the python version of the current shell :
```
pyenv shell <version>
```

`More infos on github.com/yyuu/pyenv.`

Pyenv-virtualenv

Pyenv-virtualenv is a pyenv plugin that allows you to create virtualenv via pyenv.

Installation:

```
git clone https://github.com/yyuu/pyenv-virtualenv.git ~/.
pyenv/plugins/pyenv-virtualenv
```

Create a virtualenv from the current version:

```
pyenv virtualenv my_env
```

Or from a specific version:

```
pyenv virtualenv <version> my_env
```

List virtual envs:

```
pyenv virtualenvs
```

Pyenv-virtualenv

Activate a virtualenv :

```
pyenv activate my_env
```

Deactivate a virtualenv :

```
pyenv deactivate
```

Uninstall a virtualenv :

```
pyenv uninstall my_env
```

More infos on github.com/yyuu/pyenv-virtualenv.

Questions ?

Presentation media on :
https://github.com/**mfe**/Prez/tree/master/virtualenv