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Create a Reproducible Research Environment

Share your Environment

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Overview

Why do we need virtual environment?

What is a virtual environment?

Different virtual environments

How does it work?

What do I use

Why do we need virtual environments?

Specific version of dependencies

- Python module problem (all in one folder)
- Version conflicts

Easier to create a multi user project

Reproducible results

Speed up development process

Why do we need virtual environments? II

Example 1:

Project A:

numpy: 1.13.1

Project B:

numpy: 1.15.2

=> We need a version which works in both cases!

What is a virtual environment?

Creates an project space

Stores modules/dependencies

Can be exported and shared

Unlimited amount of virtual envs.

What is a virtual environment? II

Example 1 with a virtual environment:

Project A:

numpy: 1.13.1

Project B:

numpy: 1.15.2

=> Both projects use their own version!

Different virtual environments

WorkingEnv (VirtualEnv)

Pyenv

pipenv

Anaconda <- we will use this one

How does it work? I

Without virtual environment:

```
$ which python
/usr/bin/python
```

After activation:

```
$ which python
…/miniconda3/envs/ICDAR_Tutorial/bin/python
```

How does it work? II

Add environment path to PATH variable in first place

Before activation:

```
echo $PATH
/usr/local/bin:/usr/bin:/bin:/usr/sbin:/sbin:
```

After activation:

```
echo $PATH
/Users/voegtlil/miniconda3/envs/ICDAR_Tutorial/
bin:/usr/local/bin:/usr/bin:/bin:/usr/sbin:/sbin:
```

How does it work? III

Creating a new “folder”

Python executable

Activate -> change PATH variable

Installing packages

What do I use?

Virtual environment:

Miniconda

Package manager:

Conda

Pip