

# Effective Programming Practices for Economists

## Basic Python

### Running Python code via pytask

Janoš Gabler and Hans-Martin von Gaudecker

# Preparation

- We assume you have installed anaconda and created the course environment
- Open a shell in the root directory of your project
  - On Windows, use the anaconda prompt or the powershell
  - If conda is not recognized in the powershell, check out this [stackoverflow post](#)
- Activate the environment using `conda activate epp`
- Confirm the activation worked using `conda info`

# 0: Activate and Info

```
hmg@hmg-home:/mnt/econ/epp/example
(base) → example conda activate epp
(epp) → example conda info

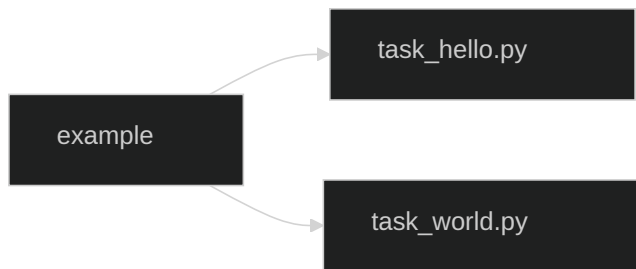
active environment : epp
  active env location : /home/hmg/mambaforge/envs/epp
    shell level      : 2
    user config file  : /home/hmg/.condarc
  populated config files : /home/hmg/.condarc
    conda version     : 23.1.0
  conda-build version  : not installed
    python version    : 3.10.10.final.0
  virtual packages     : __archspec=1=x86_64
                        __cuda=11.4=0
                        __glibc=2.35=0
                        __linux=6.2.0=0
                        __unix=0=0
  base environment    : /home/hmg/mambaforge (writable)
  conda av data dir   : /home/hmg/mambaforge/etc/conda
  conda av metadata url : None
  channel URLs        : https://conda.anaconda.org/conda-forge/linux-64
                        https://conda.anaconda.org/conda-forge/noarch
                        https://conda.anaconda.org/pytask/linux-64
                        https://conda.anaconda.org/pytask/noarch
                        https://repo.anaconda.com/pkg/main/linux-64
```

# How does pytask execute code?

- Executing .py files: Run the entire file
- Executing notebooks: Run individual cells
- Pytask: Run individual functions in multiple .py files

Very useful for automating research pipelines

# Example Project Structure



- Our shell is in the `example` directory
- We want to run all functions that start with `task_` in both `.py` files
- Command is `pytask`

# 1: Execute

```
hmg@hmg-home:/mnt/econ/epp/example
```

(epp) → example pytask

Start pytask session

Platform: linux -- Python 3.11.0, pytask 0.4.0rc2, pluggy 1.3.0  
Root: /mnt/econ/epp/example  
Collected 2 tasks.

Task	Outcome
task_hello.py::task_write_hello	.
task_world.py::task_write_world	.

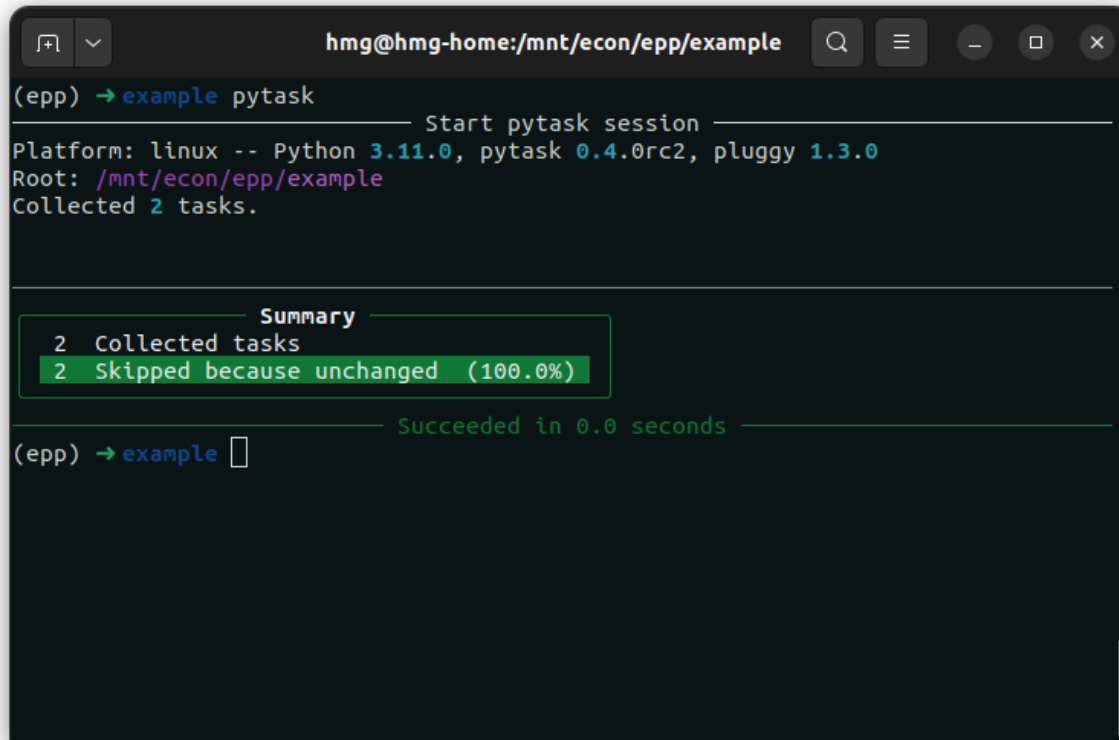
Summary

2	Collected tasks
2	Succeeded (100.0%)

Succeeded in 0.07 seconds

```
(epp) → example
```

# 1: Execute again



```
hmg@hmg-home:/mnt/econ/epp/example
(epp) → example pytask
----- Start pytask session -----
Platform: linux -- Python 3.11.0, pytask 0.4.0rc2, pluggy 1.3.0
Root: /mnt/econ/epp/example
Collected 2 tasks.

----- Summary -----
2 Collected tasks
2 Skipped because unchanged (100.0%)
----- Succeeded in 0.0 seconds -----
(epp) → example
```