

# Effective Programming Practices for Economists

## Basic Python

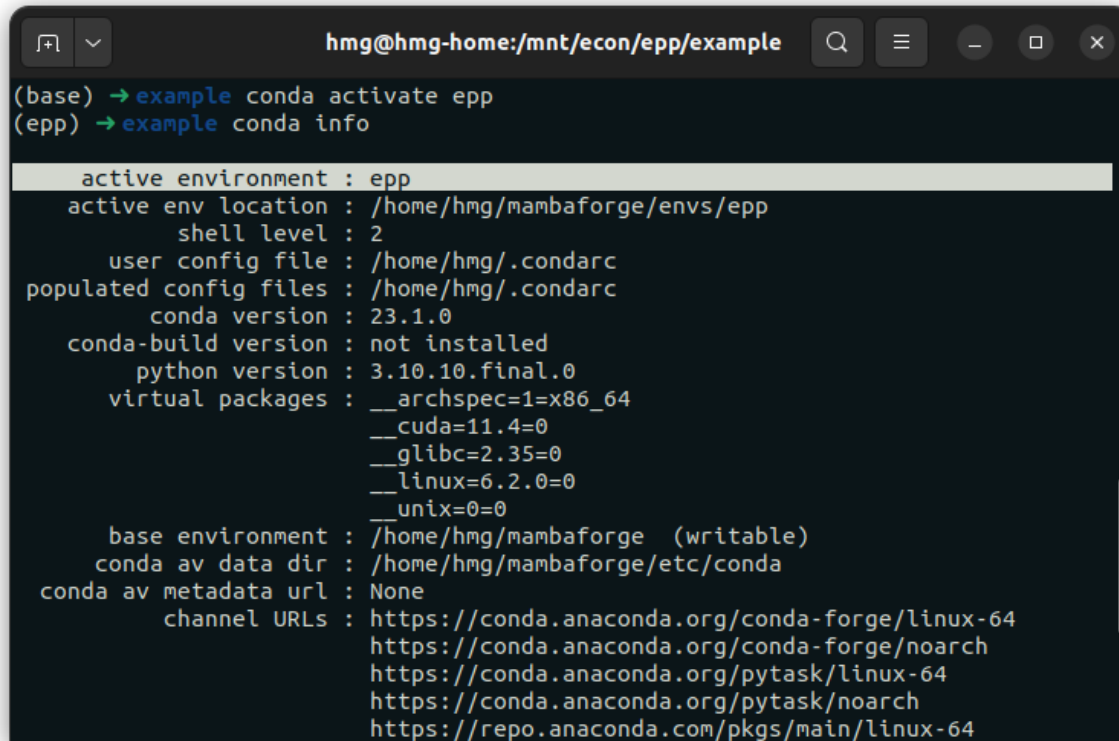
### Running Python code via pytask

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# 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

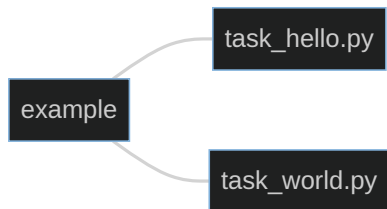
active environment : epp
active env location : /home/hmg/mambaforge/envs/epp
shell level : 2
user config file : /home/hmg/.condarc
populated config files : /home/hmg/.condarc
conda version : 23.1.0
conda-build version : not installed
python version : 3.10.10.final.0
virtual packages : __archspec=1=x86_64
                  __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

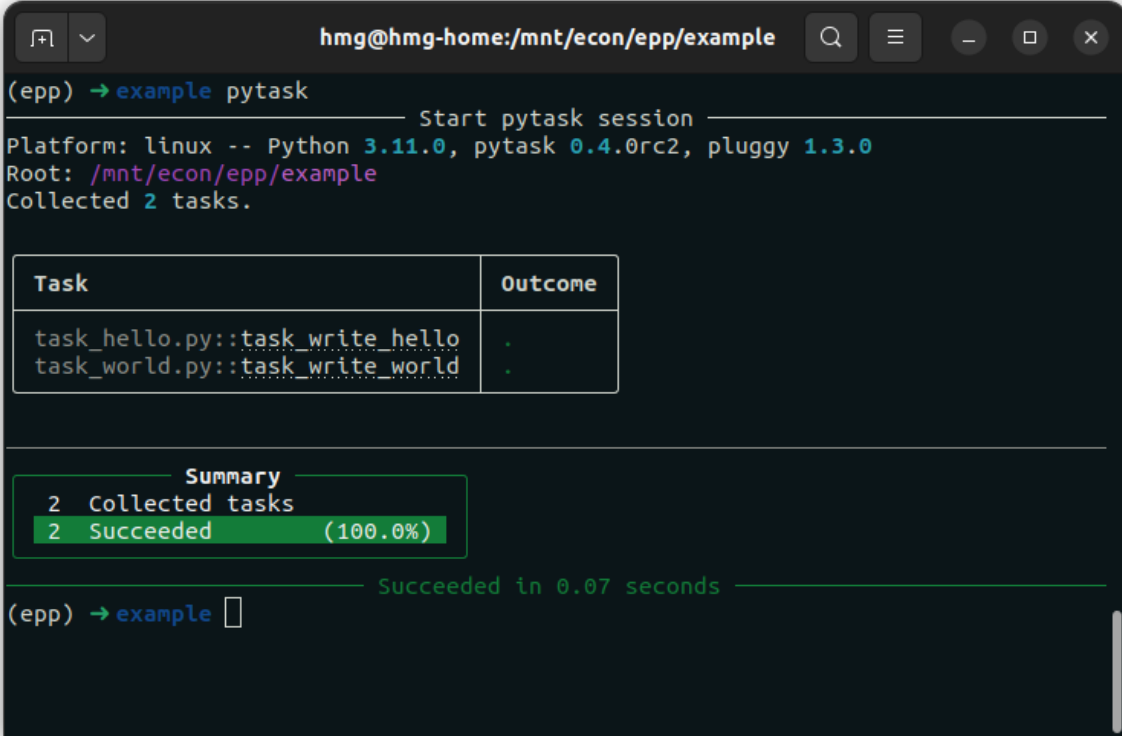
Very useful for automating research pipelines

# 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 | .       |

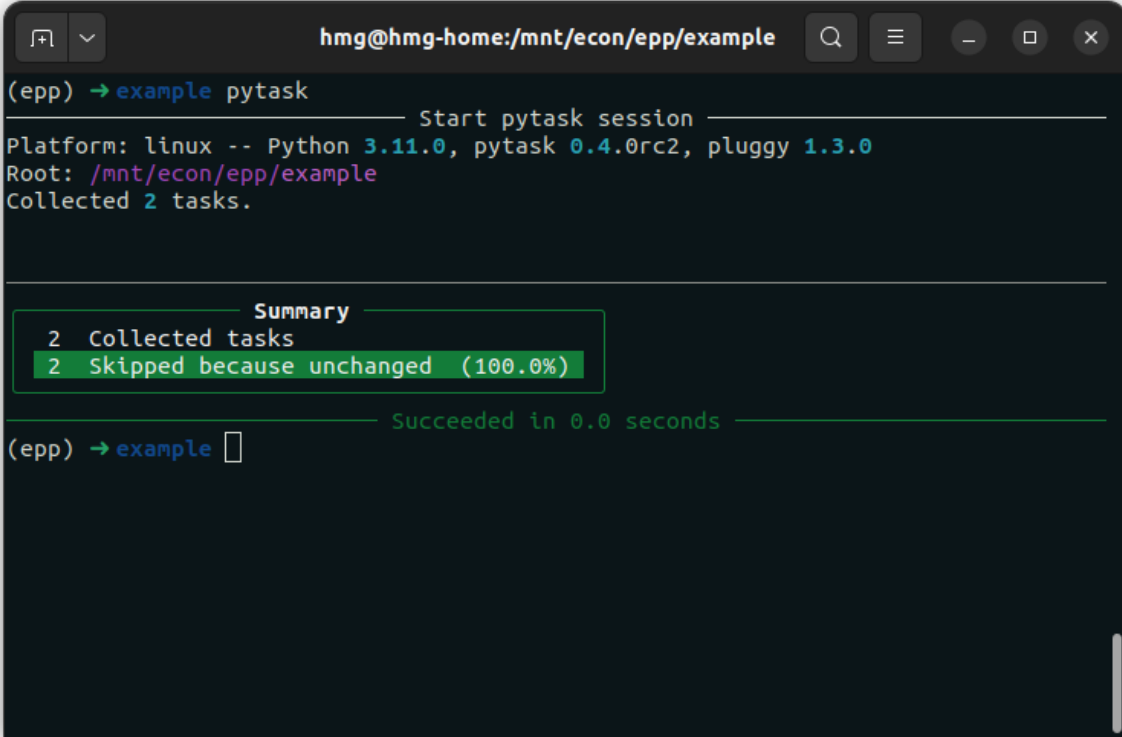


Summary
2 Collected tasks
2 Succeeded (100.0%)

Succeeded in 0.07 seconds
(epp) → example
```

The terminal window displays the execution of a pytask session. It shows the platform (linux), Python version (3.11.0), pytask version (0.4.0rc2), and pluggy version (1.3.0). The root directory is /mnt/econ/epp/example, and 2 tasks were collected. A table shows the tasks and their outcomes: task\_hello.py::task\_write\_hello and task\_world.py::task\_write\_world, both succeeded. A summary box indicates 2 collected tasks, 2 succeeded (100.0%). The session succeeded in 0.07 seconds.

# 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
```

The image shows a terminal window with a dark background. The title bar at the top reads 'hmg@hmg-home:/mnt/econ/epp/example'. The prompt is '(epp)'. The user enters '→ example pytask'. The output shows 'Start pytask session', platform and version information, the root directory, and that 2 tasks were collected. A green-bordered box highlights the 'Summary' section, which shows '2 Collected tasks' and '2 Skipped because unchanged (100.0%)'. Below this, it says 'Succeeded in 0.0 seconds'. The prompt returns to '(epp) → example' with a cursor.