Effective Programming Practices for Economists

Basic Python

Running Python code via pytest

Janoś 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

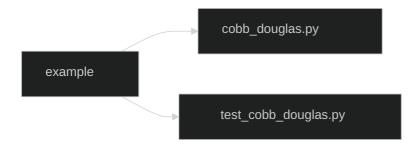
```
hmg@hmg-home:~/econ/example
(base) \rightarrow example conda activate epp
(epp) \rightarrow example conda info
     active environment : epp
    active env location : /home/hmg/miniforge/envs/epp
            shell level : 2
       user config file : /home/hmg/.condarc
populated config files : /home/hmg/miniforge/.condarc
                           /home/hmg/.condarc
          conda version : 23.3.1
   conda-build version : not installed
         python version: 3.10.12.final.0
       virtual packages : __archspec=1=x86_64
                          cuda=11.4=0
                             alibc=2.35=0
```

How does pytest execute code?

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

Very useful for automating test execution across an entire project

Example Project Structure



- Our shell is in the example directory
- We want to run all functions that start with test_ in test_cobb_douglas.py
- Could be spread across multiple test files, across different subdirectories
- Command is pytest

1: Execute

```
hmg@hmg-home:~/econ/example
(epp) → example pytest
 platform linux -- Python 3.11.0, pytest-7.4.2, pluggy-1.3.0
rootdir: /mnt/econ/example
plugins: anyio-4.0.0
collected 3 items
test_cobb_douglas.py ...
                                     [100%]
   (epp) → example
```