

Deep Learning - Hello Python

M.Sc. Oliver Guhr

University of Applied Sciences Dresden

Faculty of Computer Science and Mathematics

Department of Artificial Intelligence



oliver.guhr@htw-dresden.de

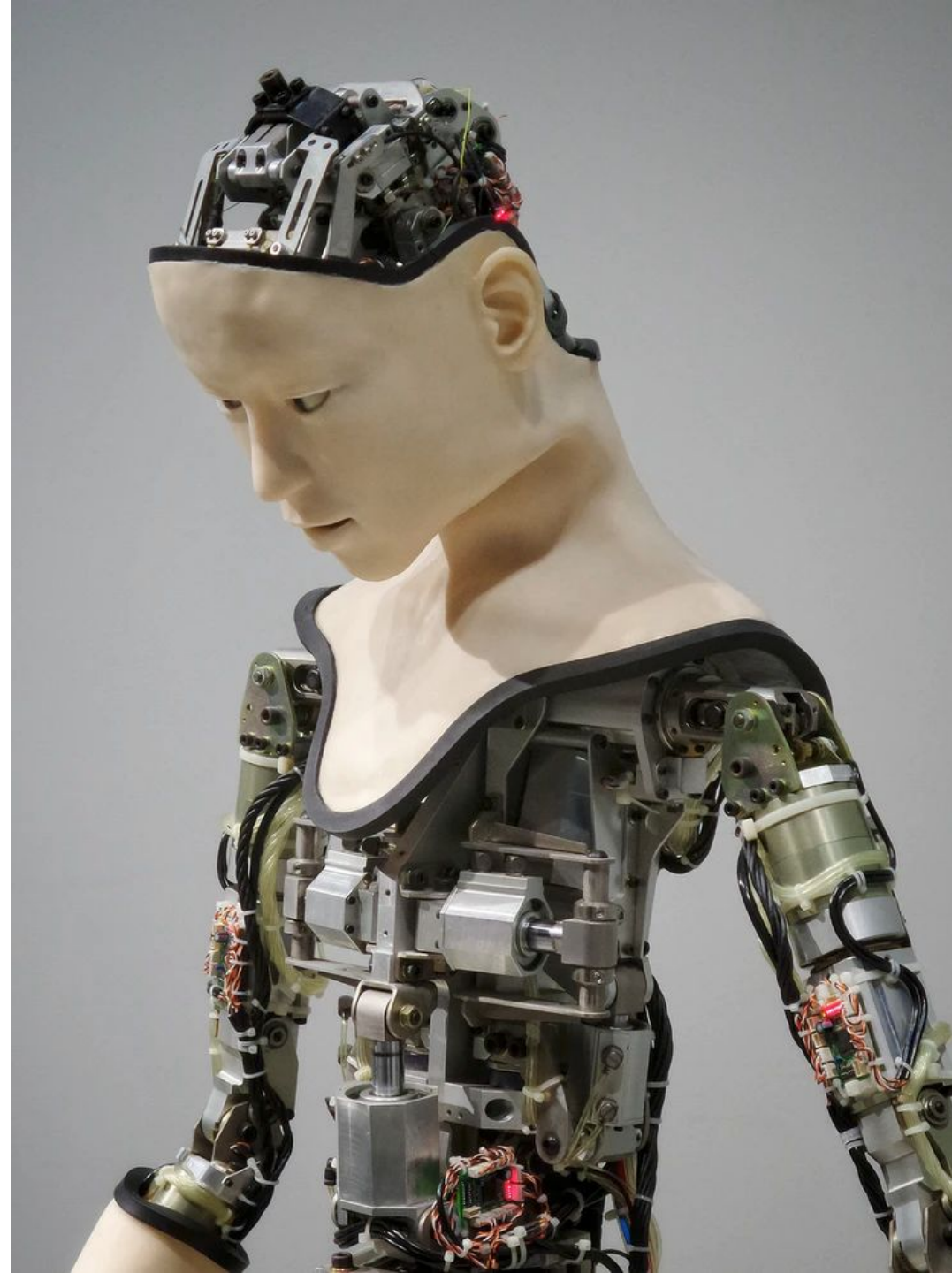
Our Robots

Tesaro, August
and Anna



Goal for today

- Warm Up
- Setup a deep learning environment
- Learn a bit about package management in Python
- Write a few lines python code





Warm Up

Do you have any Python
knowledge?

How many lines of
Python code did you write?

I have a PC with an current Nvidia
CPU.

**When one
teaches,
two learn.**

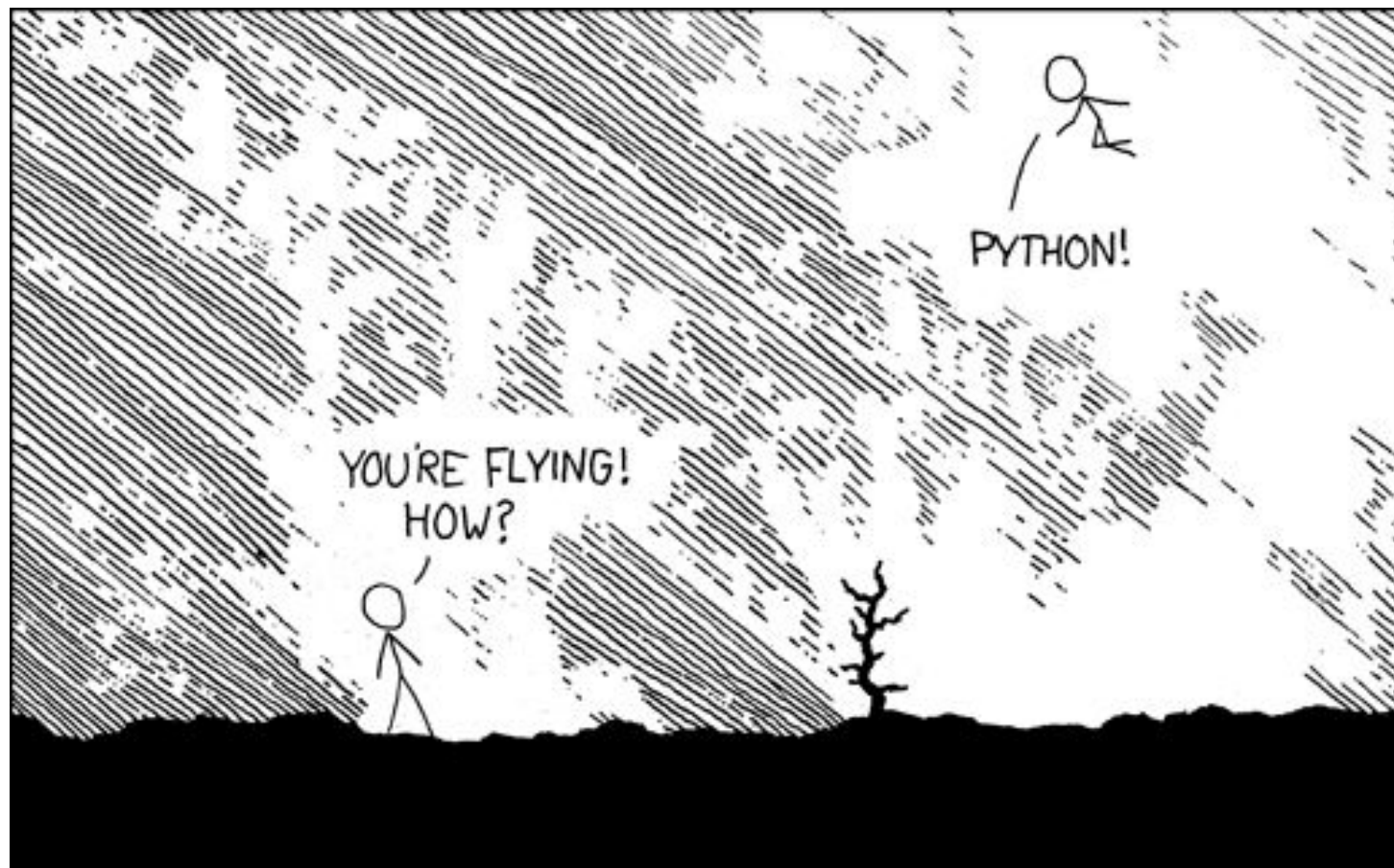
Robert A. Heinlein



About Python

- 1990 created by Guido van Rossum
- Functional / Imperative / Object-oriented
- Dynamic / Duck typing
- Interpreted Language
- Default language for many ML / DL Frameworks
 - TensorFlow
 - PyTorch
 - Keras





Why Python?

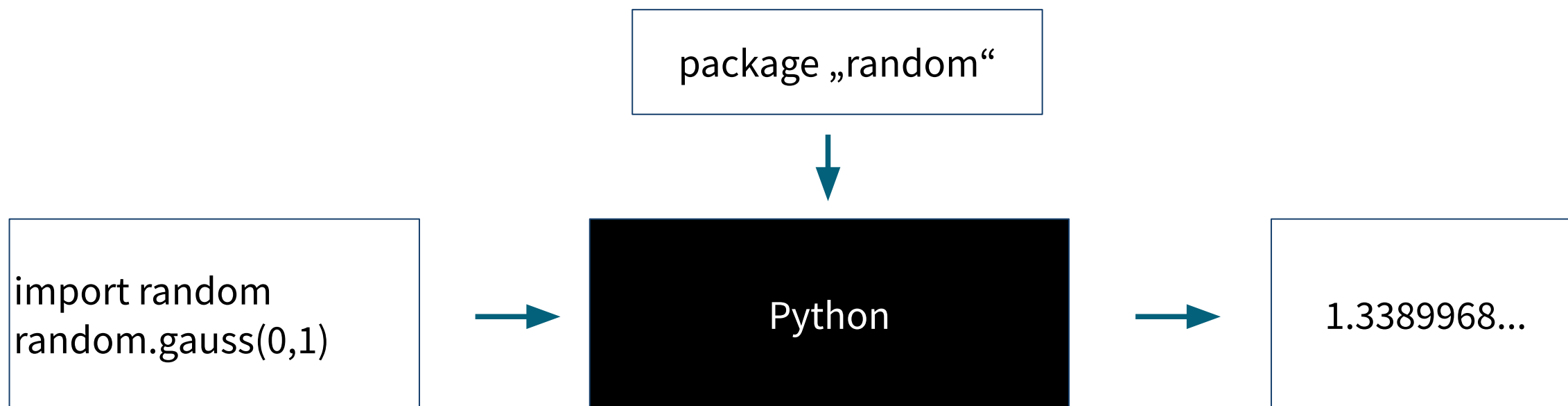
- C is fast at run time but slow to write
- Python is slower at runtime but fast to write
- Idea:
 - Write computational heavy code in C/C++
 - Prototype in Python

The Zen of Python

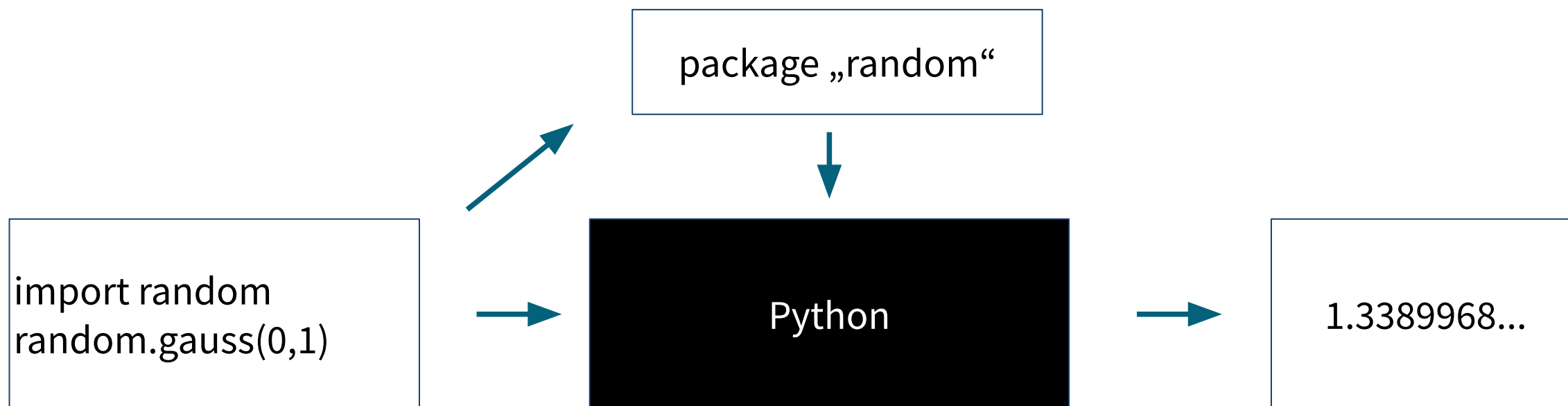
- If the implementation is hard to explain, it's a bad idea.
- If the implementation is easy to explain, it may be a good idea.
- To read more type “import this”

Python and packages

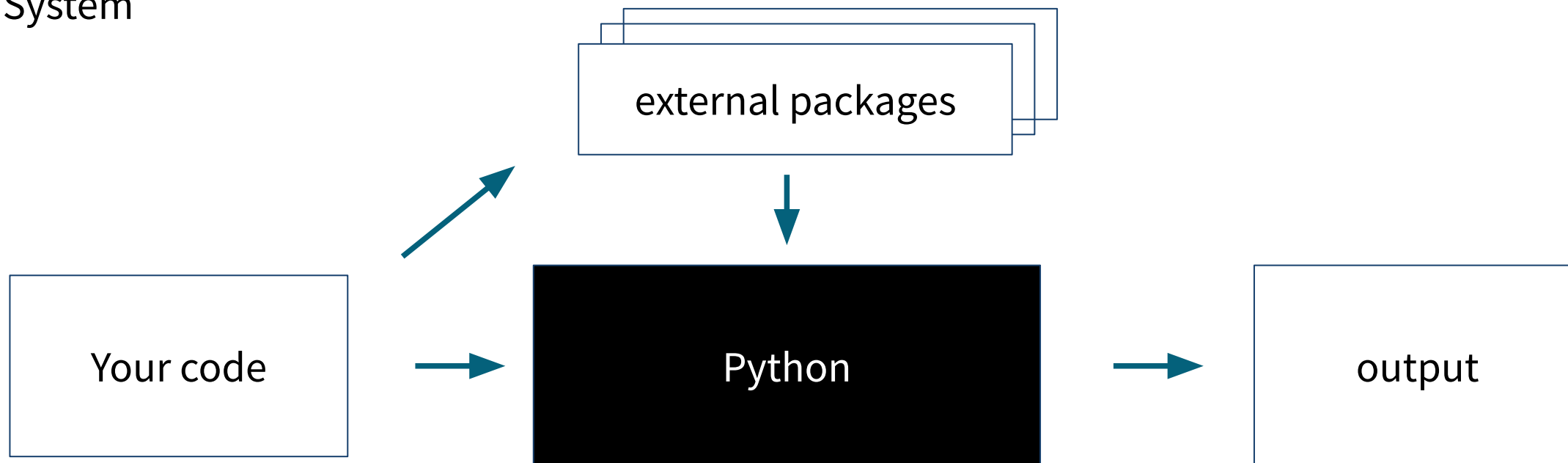




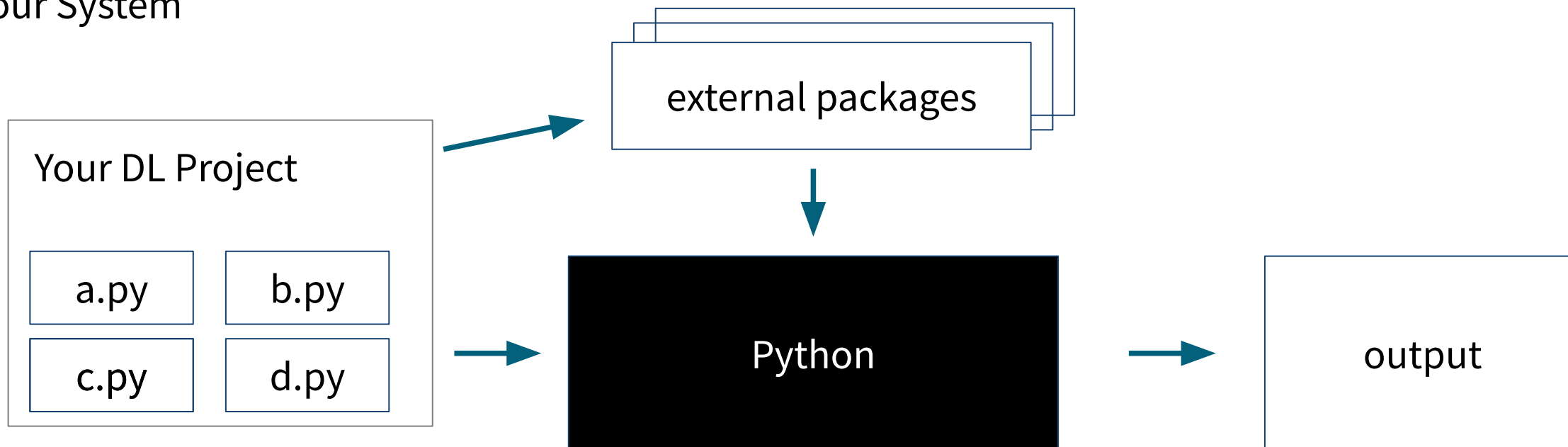
Your System



Your System

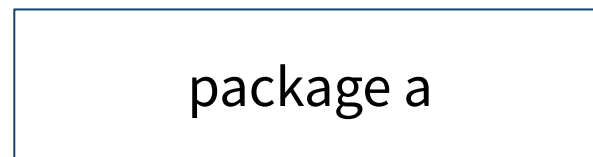
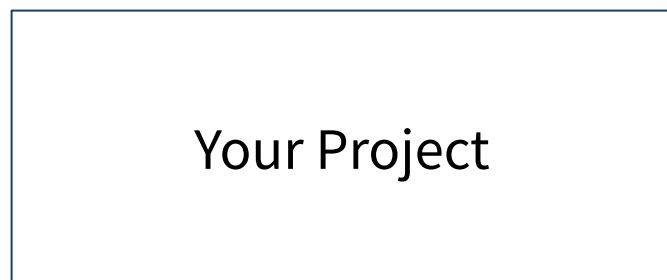


Your System

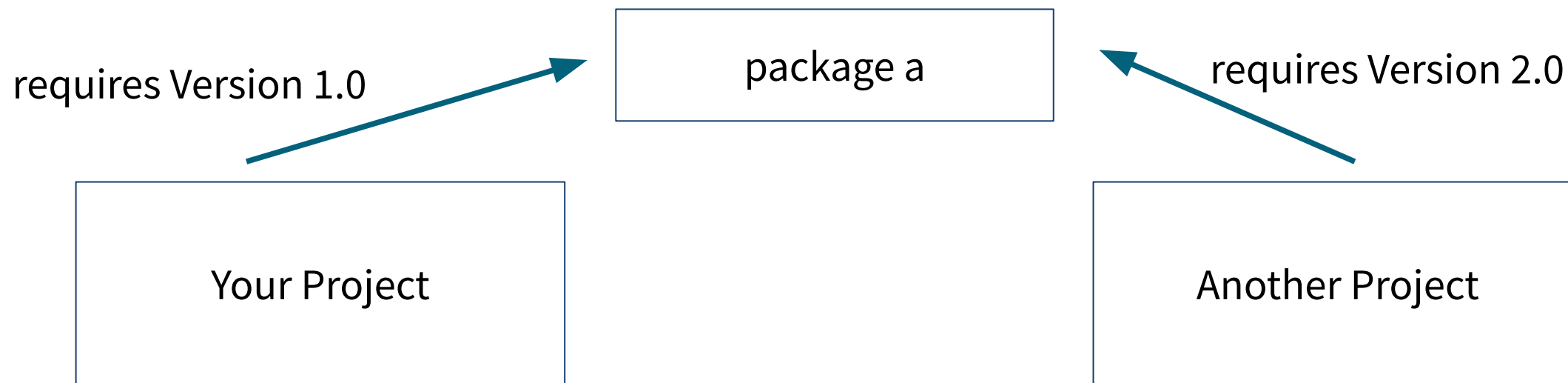


Your System

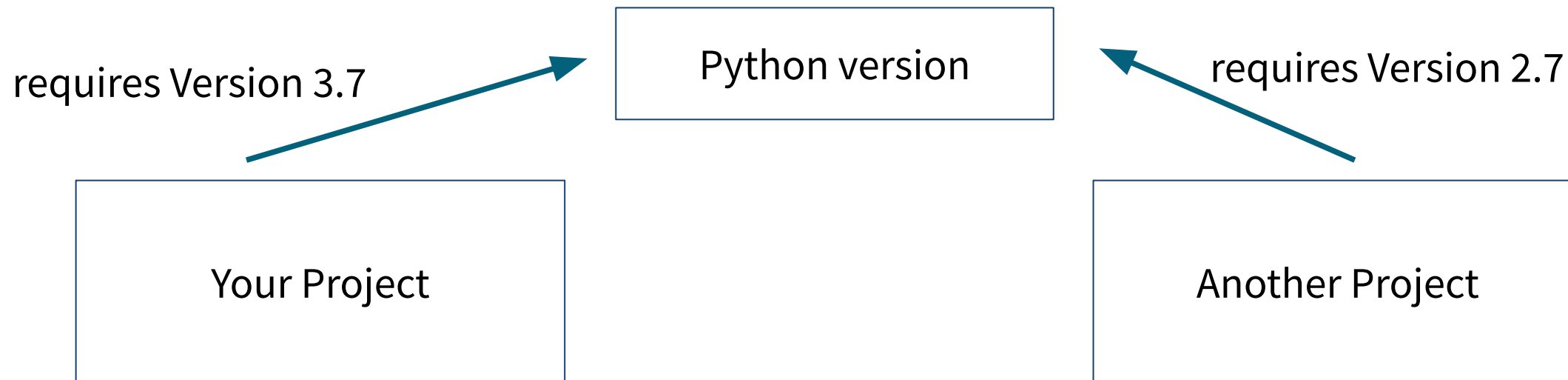
requires Version 1.0



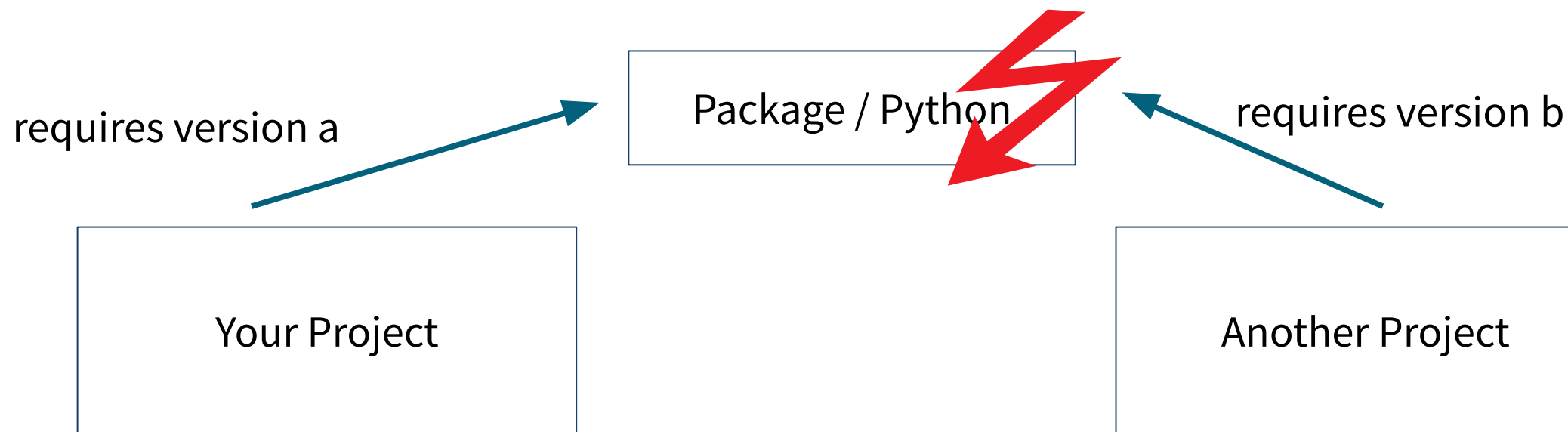
Your System



Your System

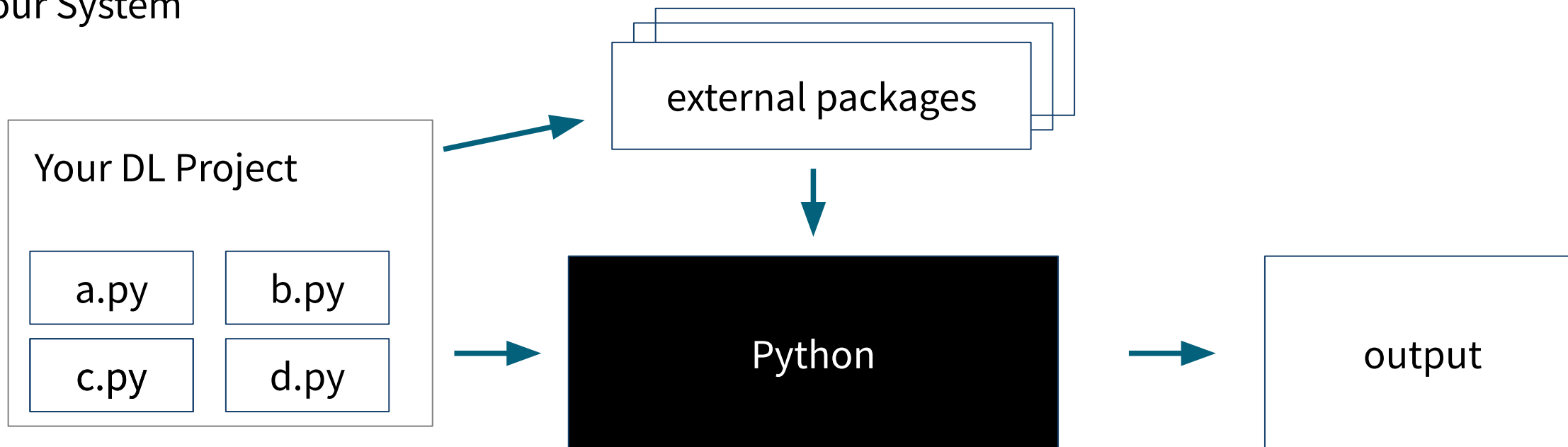


Your System

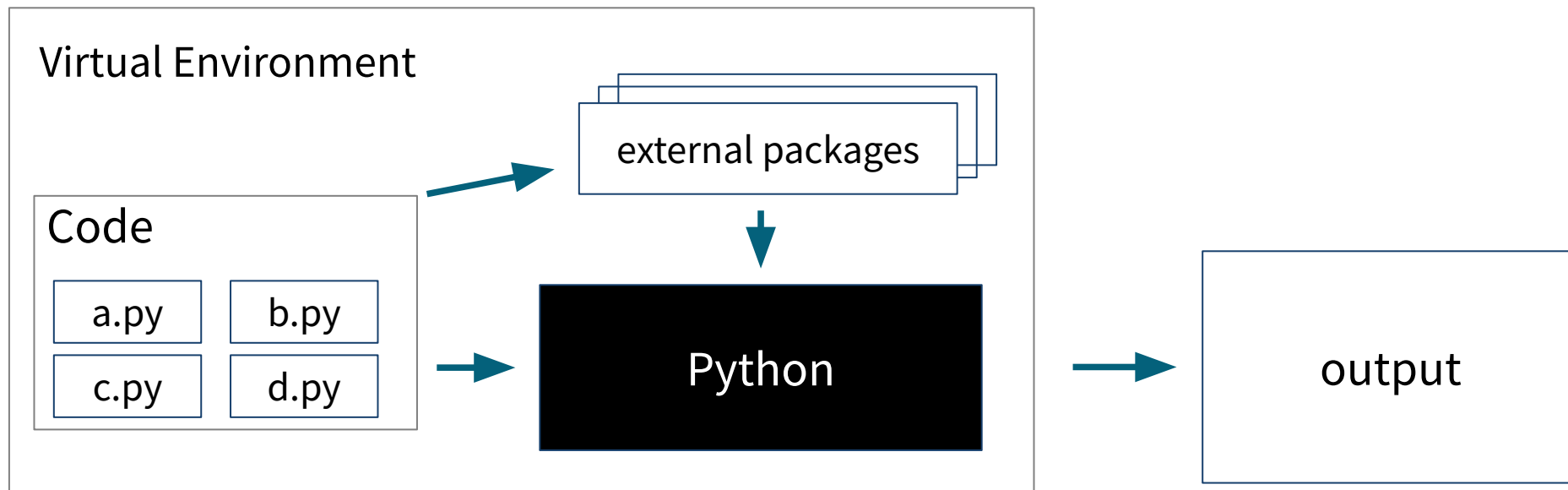


Virtual Environments

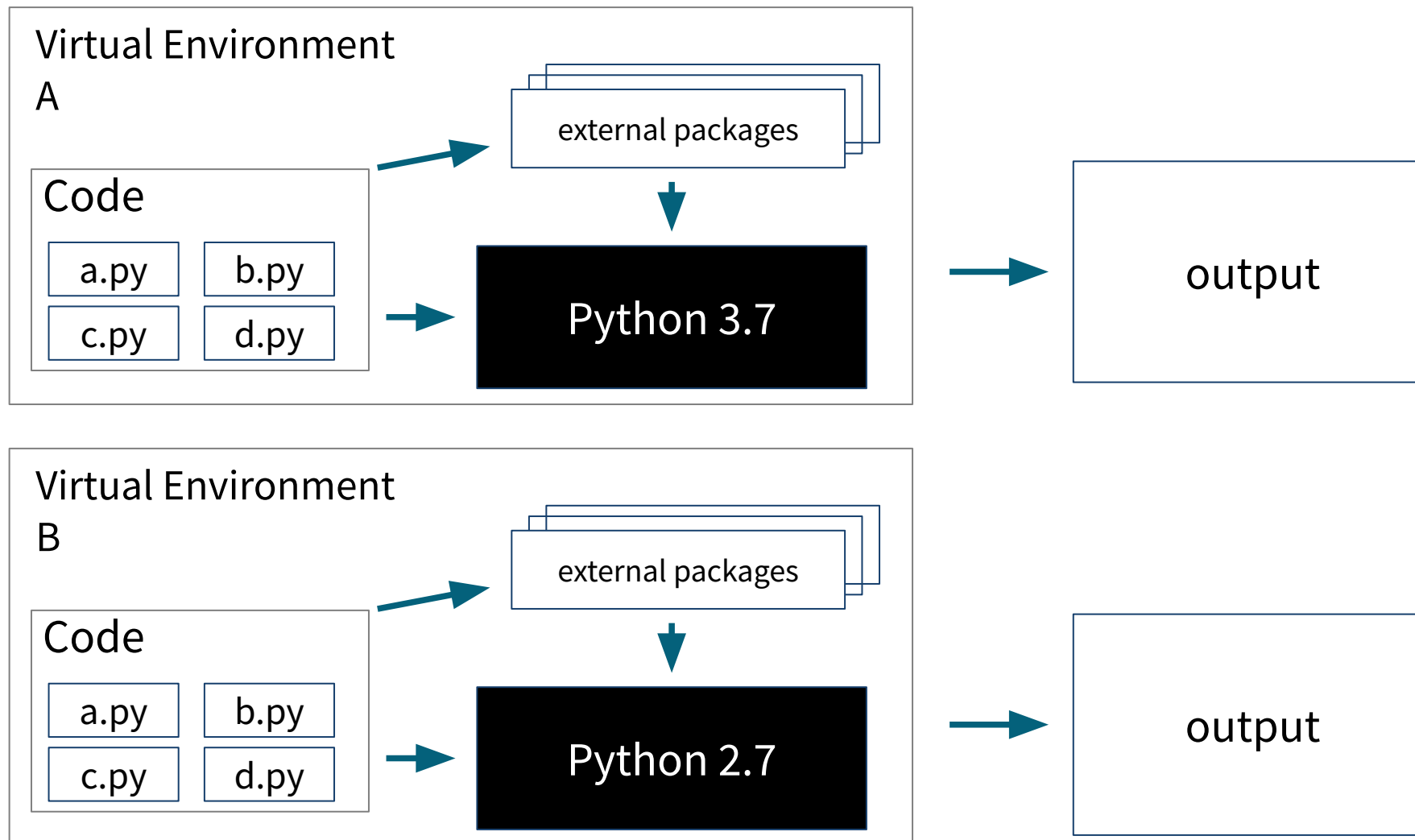
Your System



Your System



Your System





- Is Python and R distribution
- contains a
 - A Python interpreter
 - Package management tool (conda)
 - data science packages (TensorFlow etc)
- Available for Windows, MacOS, Linux
- Simplifies the Python setup process on Windows

Questions?

Let's code!



Getting started on your computer



Setup Python on your PC

1. Install Python 3 and create a new folder for this project.
 - a. Linux: `sudo apt install python3`
 - b. Windows: download from python.org

How to create a new virtual environment:

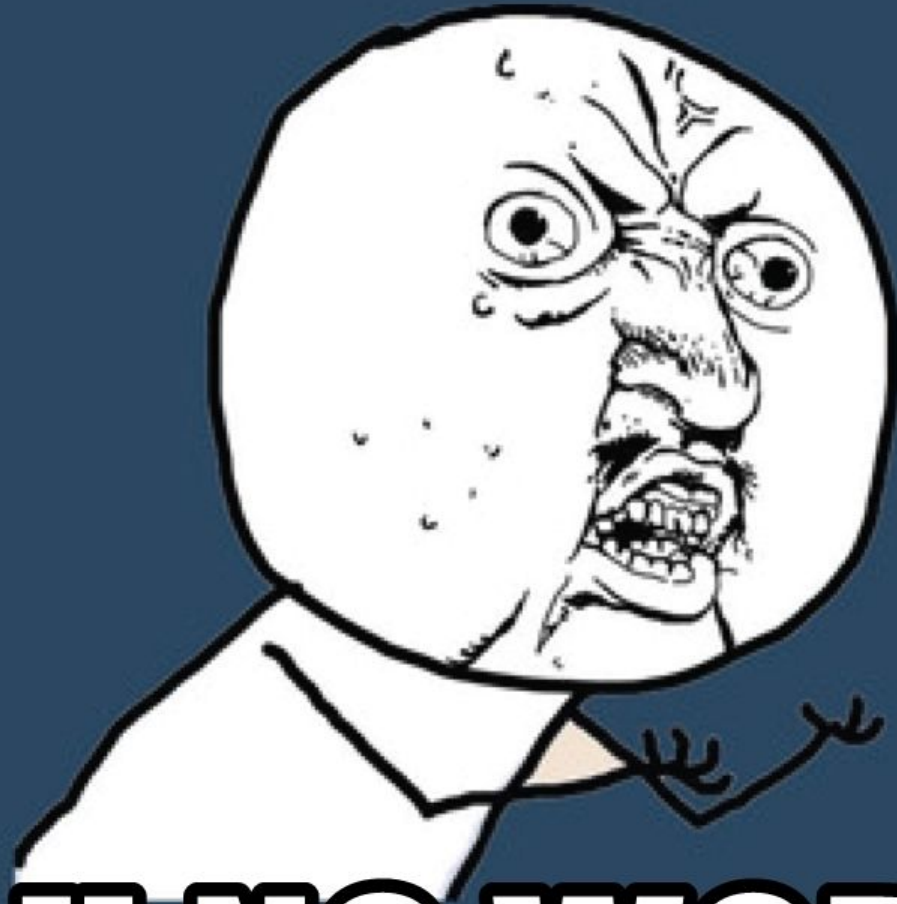
1. `python -m venv ./venv`
2. `source ./venv/bin/activate`
3. `pip install jupyter pandas`
4. `python -m jupyter notebook`

Colab



- Go to <https://colab.research.google.com>

PYTHON CODE



Y U NO WORK

File Edit Selection View Go Debug Terminal Help Welcome - Visual Studio Code

EXPLORER

OPEN EDITORS

Welcome

NO FOLDER OPENED

You have not yet opened a folder.

Open Folder

Start

New file

Open folder

Add workspace

Recent

data e:\dl-

anaconda-t

bert-torch

benchmark-fs c:\Users\oli\source

fsharp c:\Users\oli\source

More... (Ctrl+R)

Terminal

>termin

View: Toggle Integrated Terminal Ctrl + ö recently used

Open New Terminal Ctrl + Shift + C

Debug: Terminate Thread other commands

Python: Python-Datei im Terminal ausführen

Python: Selektion/Reihe in Python-Terminal ausführen Shift + Enter

Python: Terminal erstellen

Tasks: Terminate Task

Terminal: Allow Workspace Shell Configuration

Terminal: Clear

Terminal: Clear Selection Escape

Terminal: Copy Selection Ctrl + C

Learn

Find and run all commands

Rapidly access and search commands from the Command Palette (Ctrl+Shift+...)

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

1: cmd

Microsoft Windows [Version 10.0.17134.590]

(c) 2018 Microsoft Corporation. Alle Rechte vorbehalten.

C:\Users\oli>

OUTLINE

0 0 0

Zur Suche Text hier eingeben

13:46 08.04.2019

