FEDS - Modelling and Analysing of Forestal and Environmental Data

First steps with Python

Steffen M. Noe, Spring semester 2023

What is Python?

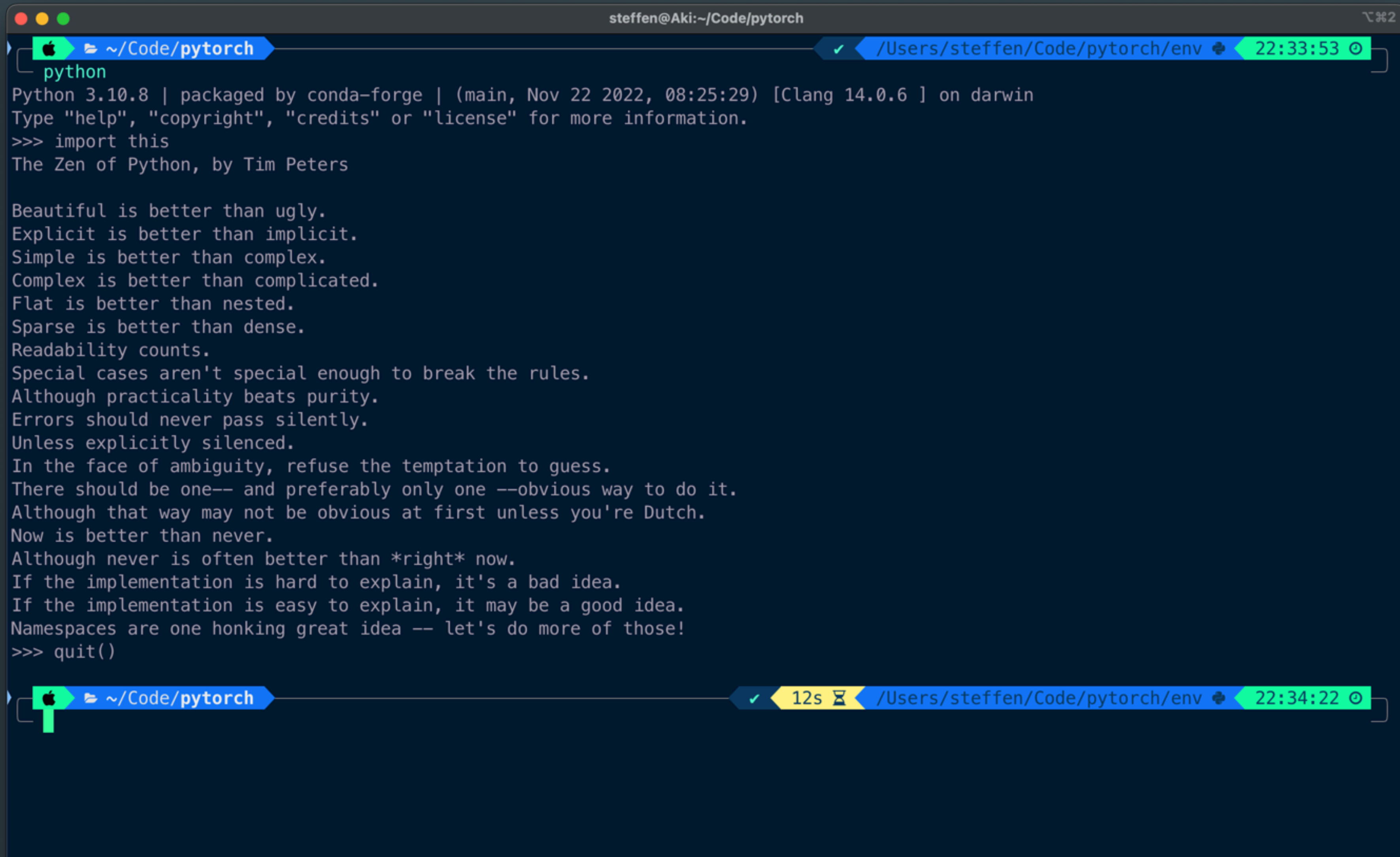- Python was developed since the 1980's as a sucessor of the language called "ABC" by Guido van Rossum

- Its a "scripting language", that means it is interpreted" (in contrast to compiled)

- Its emphasised on readability

- It uses "significant indentation" to separate blocks

- It is dynamically typed

Python's aim: It should be learnable by non-programmers

The Zen of Python

build into the language by Tim Peters (creator of the Timsort algorithm)


```
python
Python 3.10.8 | packaged by conda-forge | (main, Nov 22 2022, 08:25:29) [Clang 14.0.6 ] on darwin
Type "help", "copyright", "credits" or "license" for more information.
>>> import this
The Zen of Python, by Tim Peters

Beautiful is better than ugly.
Explicit is better than implicit.
Simple is better than complex.
Complex is better than complicated.
Flat is better than nested.
Sparse is better than dense.
Readability counts.
Special cases aren't special enough to break the rules.
Although practicality beats purity.
Errors should never pass silently.
Unless explicitly silenced.
In the face of ambiguity, refuse the temptation to guess.
There should be one-- and preferably only one --obvious way to do it.
Although that way may not be obvious at first unless you're Dutch.
Now is better than never.
Although never is often better than *right* now.
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.
Namespaces are one honking great idea -- let's do more of those!
>>> quit()
```

How Python is organised

- Python has a "core" interpreter - https://www.python.org/

- The extensibility is realised via "modules" - https://pypi.org/

- Python has a plethora of 3rd party modules (aka libraries) that can be used

- many modules have been developed by large companies like Google, Meta, Microsoft, Apple, and numerous other contributors

Where to find help?

- RTFM - the "ground truth" we should always refer to - https://docs.python.org/3/

- Go to the course Github Discussions - https://github.com/stenoe/FEDS/discussions

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