



PYTHON 101



Who is this voice from the internet?



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Moved from Franconia to Jena 7 Semesters ago
Programming since school
Self taught programmer



Who are you?

Which OS are you using?

Have you programmed before?

Did you manage to install
everything?



What is the plan?

DAY 1

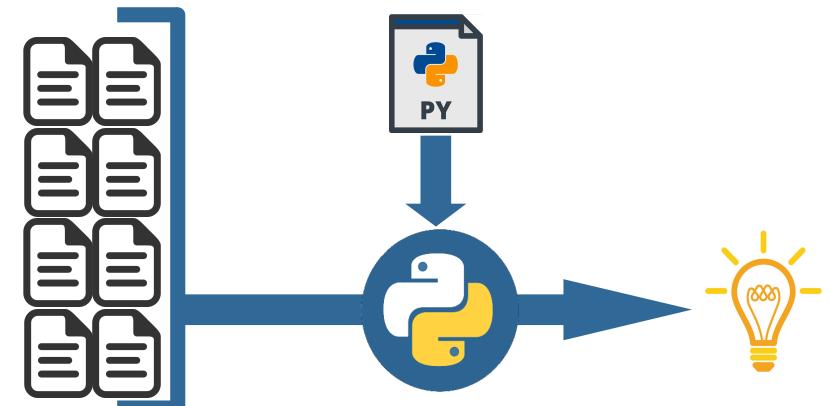
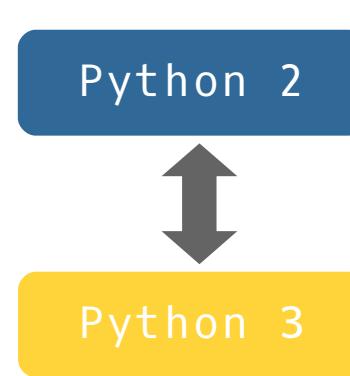
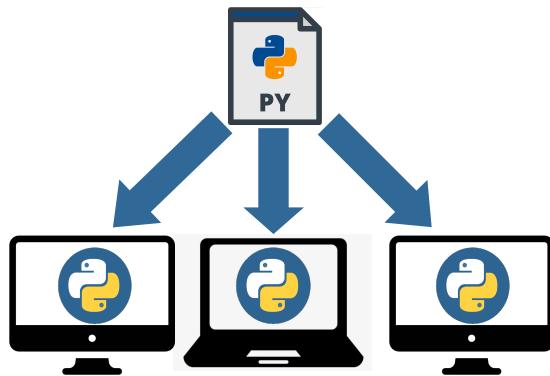
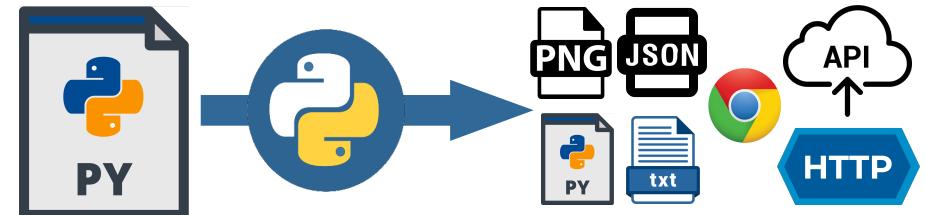
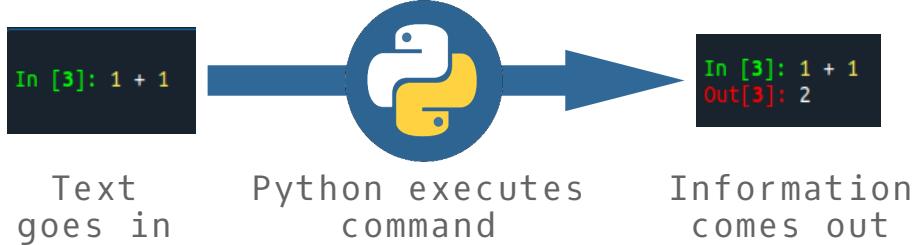
- (1) Introduction
- (2) Basics with Exercises
- (3) Advanced Programming with Exercises

DAY 2

- (1) Recap
- (2) Three Complex Exercises
- (3) Some Topics We Skipped

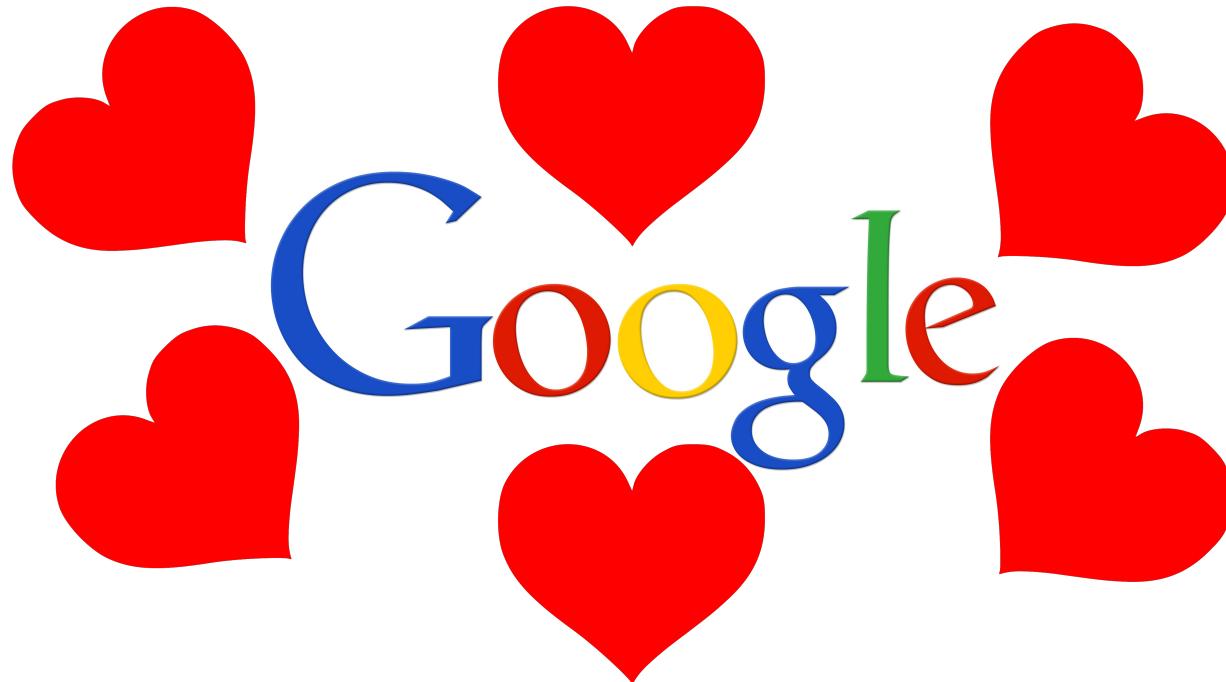


What is Python?



How to code?

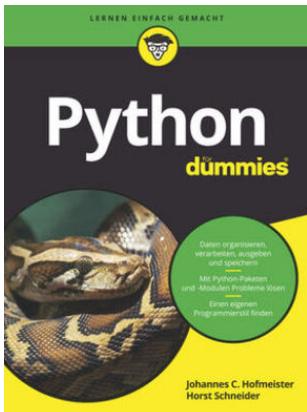
the short version



How to code?

the short version

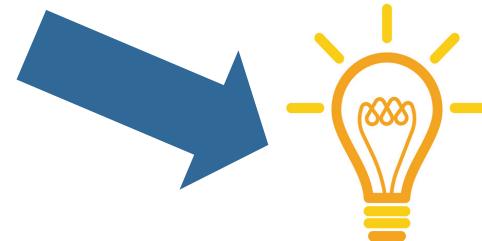
```
In [4]: with open("SomeRandomFile.txt") as file:  
...:     variable = file.read()  
...:  
Traceback (most recent call last):  
  
  File "<ipython-input-4-6fed91ef0b24>", line 1, in <module>  
    with open("SomeRandomFile.txt") as file:  
  
FileNotFoundError: [Errno 2] No such file or directory: 'SomeRandomFile.txt'
```



A screenshot of a Google search results page for the query "FileNotFoundError: [Errno 2] No such file or directory: 'SomeRandomFile.txt'". The first result is a link to a Stack Overflow post titled "FileNotFoundError: [Errno 2] No such file or directory - Stack ...". The page shows several other search results and navigation links.



```
In [10]: help()  
In [12]: dir()
```



How to code?

the short version

1) Think before programming.

What do I want my program to do?

2) Search for solutions on the internet.

Has anyone solved my problem or part of it already?

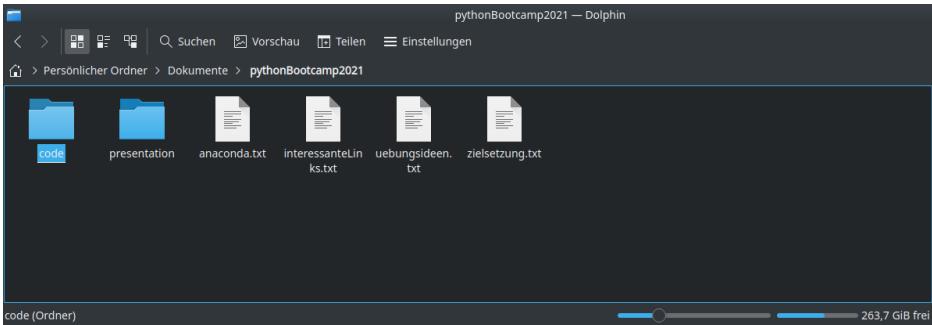
3) Document/Comment your code.

Will I understand my code one month from now?



Hello, World! / Setup

(1) Organise your code in folders.



The screenshot shows a file manager window titled "code -- Dolphin". The top menu bar includes "Suchen" (Search), "Vorschau" (Preview), "Teilen" (Share), and "Einstellungen" (Settings). The navigation bar shows the path: "Persönlicher Ordner > Dokumente > pythonBootcamp2021 > code". Below the navigation bar, there are seven items listed:

- complexExercis e_01_fluorescence
- complexExercis e_02_DPP
- complexExercis e_03_NMR
- conda-env
- easyExercise_01_helloWorld
- LICENSE
- README.md

The "easyExercise_01_helloWorld" item is highlighted with a blue selection bar at the bottom of the list.

Create a folder for all the exercises we will do.

Create a folder for our first exercise.

(2) Create a new python environment with Anaconda.

Anaconda? Environments?

Go to your console.
Win : Search and open Anaconda Prompt.
Linux : Open the terminal program.
macOS : ⌘+[Space] and type “terminal”.



Hello, World! / Anaconda

```
Datei Bearbeiten Ansicht Lesezeichen Einstellungen Hilfe  
(anaconda3) jonas@jonas-nb:~/Dokumente/pythonBootcamp2021/code/  
(anaconda3) jonas@jonas-nb:~/Dokumente/pythonBootcamp2021/code$ █
```

Go to the our folder with "cd".

```
Datei Bearbeiten Ansicht Lesezeichen Einstellungen Hilfe  
code : conda — Konsole  
(anaconda3) jonas@jonas-nb:~/Dokumente/pythonBootcamp2021/code/  
(anaconda3) jonas@jonas-nb:~/Dokumente/pythonBootcamp2021/code$ conda create -p conda-env anaconda  
Collecting package metadata (current_repodata.json): done  
Solving environment: failed with repodata from current_repodata.json, will retry with next repodata source.  
Collecting package metadata (repodata.json): done  
Solving environment: - █  
  
zlib          pkgs/main/noarch/zlib=1.2.11-h7b6447c_3  
zope          pkgs/main/linux-64::zope-1.0-py38_1  
zope.event    pkgs/main/linux-64::zope.event-4.5.0-py38_0  
zope.interface pkgs/main/linux-64::zope.interface-5.1.2-py38h7b6447c_0  
zstd          pkgs/main/linux-64::zstd-1.4.5-h9ceee32_0  
  
Proceed ([y]/n)? █
```

Create a new environment with
"conda create -p ... anaconda".
Optional command:

conda config --set env_prompt
'({name}) '

Alternative command:
"conda create -n ..."



Hello, World! / Anaconda

```
Proceed ([y]/n)?  
  
Preparing transaction: done  
Verifying transaction: done  
Executing transaction: done  
#  
# To activate this environment, use  
#  
#     $ conda activate /home/jonas/Dokumente/pythonBootcamp2021/code/conda-env  
#  
# To deactivate an active environment, use  
#  
#     $ conda deactivate  
  
(anaconda3) jonas@jonas-nb:~/Dokumente/pythonBootcamp2021/code$ █
```

Change the environment with “conda activate ...” or “conda deactivate”.

Leave all environments by deactivating the base environment.

Install new packages with “conda install”



Hello, World! / Console



```
code : python -- Konsole
Datei Bearbeiten Ansicht Lesezeichen Einstellungen Hilfe
(anaconda3) jonas@jonas-nb:~/Dokumente/pythonBootcamp2021/code$ conda activate ./conda-env/
(conda-env) jonas@jonas-nb:~/Dokumente/pythonBootcamp2021/code$ python
Python 2.7.17 (default, Sep 30 2020, 13:38:04)
[GCC 7.5.0] on linux2
Type "help", "copyright", "credits" or "license" for more information.
>>> 
```

Let's have a look at some python commands:
print, help, comments

Hello, World! / Editor

