Python Programming Setup Guide

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Introduction

The tutorial materials typically consist of Jupyter notebooks. We will make these materials available via our GitHub repository.

You are encouraged to familiarize yourself with the concepts of GitHub and Jupyter notebooks. Introductory materials are available on the course Moodle page as well as on the web and on YouTube.

The easiest way to open Jupyter notebooks is to use cloud-based environments like Google Colab. Colab is the right choice if you are hesitant to install software on your private computer and/or feel less comfortable with installing and configuring programs and packages.

The second option is to use your own computer for the tutorial. All the software we need is free to use and you do not need an account with Google or any other cloud provider. However, you should be ready to do some configuration work.

Option 1: Use GitHub and Colab

Go to our GitHub repository

https://github.com/Humboldt-WI/bads

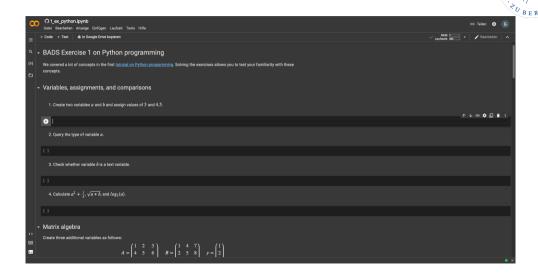### Open the first notebook in Colab

Click on "exercises".
Click on "1_ex_python.ipynb".
Click on the button in the top left "Open in Colab".

Save changes in your Google Drive

After making changes you can save a copy of the notebook in your personal Google Drive.

Option 1: Use GitHub and Colab

Option 2: Use your own machine

Install Python3 and git

https://www.python.org/downloads/ (It is recommended to install Python 3.9 or 3.8, not 3.10)
https://git-scm.com/

Open terminal

Search for "cmd.exe" on Windows.
On Mac, iterm2 is a good alternative to the default "terminal.app".

Clone repository

Download the GitHub Desktop App and clone the repository from our URL ...

... or type into the terminal:

```
git clone https://github.com/Humboldt-WI/bads
```

Option 2: Use your own machine

Install requirements

Type into the terminal:

```
cd bads
pip install --upgrade pip
pip install -r requirements.txt
```

Open Jupyter

Type into the terminal:

```
jupyter lab
```

A tab with Jupyter Lab should open in your default browser.
You can now browse the repository and select the first exercise notebook.
Any changes to the exercise notebooks should be saved outside of the cloned git repo to avoid merge conflicts when the online repository is updated.

Option 2: Use your own machine

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Useful resources and further reading

- Colab:
  https://www.kdnuggets.com/2020/06/google-colab-deep-learning.html
- Jupyter:
  https://towardsdatascience.com/getting-the-most-out-of-jupyter-lab-9b3198f88f2d
- More on Jupyter:
  https://pabloinsente.github.io/intro-jupyter-ide
- Virtual environments:
  https://www.dataquest.io/blog/a-complete-guide-to-python-virtual-environments/