

Deep Learning in NLP

Hints on using VSCode and IPython

Development environment

We will be using Python 3 (programming language), Visual Studio Code (IDE; VSCode for short), and IPython (Interactive Python) for development throughout the course. They should be all installed on the computers in the lab room by now (if this is not the case for some computers, let me know!). The goal of this document is to give you some basic information and links to the relevant resources concerning these three topics.

Python

You can find a Python 3 refresher [here](#).

If you feel like a simple refresher is not enough, the official Python tutorial (<https://docs.python.org/3/tutorial/>) should be a good place to start.

VSCode

VSCode is an editor integrating functionality such as syntax highlighting, autocompletion, hints, linting, etc. All this requires a Python VSCode extension, which should be already installed on your machines. If not, none of the features mentioned before will probably work.

Useful key bindings (those I use pretty often):

- **CTRL+‘**: Switch the terminal on or off. Allows to run an IPython session within VSCode.

WARNING: The binding may be different on computers with German language/keyboard settings: **CTRL+ö** (?)

- **CTRL+/:** Toggle comment for the selected block of code.
- **Tab** or **Shift+Tab**: Indent/unindent the selected block of code.
- **CTRL+Shift+I**: Perform automatic document formatting. This should help you to keep your code clear and readable.

- **CTRL+Shift+P**: Select linter (which analyses the code to identify errors and suspicious constructs). The `pylint` linter is probably the default on the lab computers, and it should be good enough in most situations. The `flake8` linter would be the best option, because it works well with PyTorch.

IPython

IPython facilitates interactive development of Python applications. It's similar to the standard Python interpreter but provides some additional functionality. Visit <https://ipython.readthedocs.io/en/stable/interactive/> for more information.

To start an IPython session in VSCode, switch the terminal on (see the section on VSCode) and type `ipython`. You can also run IPython outside VSCode if you prefer (in a terminal).

Useful commands:

- To quit, type `quit` (**CTRL+c** then **CTRL+d** should also work)
- Type `object?` or `object??` to see help information about the object (function, class, etc.)
- Type `run test.py` to execute the entire `test.py` file. As a result, you have access to all the objects (functions, attributes, classes) defined top-level in `test.py`. Useful to quickly test the code you modify often.

WARNING: this does not reload other modules that `test.py` may rely on, so if you modify them in VSCode, you will have to use a different method to reload them manually (the classic one: turn off + turn on the session...).

There are definitely other useful commands, but we won't necessarily need them during the course (otherwise, I will add info about them here later).