

# 1 Installation Instructions

This section will focus on installing Python 3.10. There are many ways to setup python. Here, we will use *Miniconda* since that is a painless way to do it.

## 1.1 Linux

### 1.1.1 Install Miniconda

- Download the Miniconda Linux installer: <https://docs.conda.io/en/latest/miniconda.html> Usually the 64-bit version is correct. Use `wget [link]` to download a file in the terminal.
- Open the terminal and `cd` into the folder containing *Miniconda3-latest-Linux-x86\_64.sh*.
- Run `bash Miniconda3-latest-Linux-x86_64.sh`. Install and remember to select the correct installation directory when working with computers in the PC pool as described above. When asked by the installer to initialize Miniconda3, answer yes. This way, your `~/.bashrc` file will be modified so you have conda available at startup.
- Close and reopen your terminal window to make sure the changes take effect.
- Test your installation by running `conda --version` to see the its version.

## 1.2 Windows 10

### 1.2.1 Install Miniconda

- Download miniconda: <https://docs.conda.io/en/latest/miniconda.html> and install it. Usually the 64-bit version is correct.
- Open the *Anaconda Prompt (miniconda3)* you just installed.
- Run the command `python -V`. It should output `Python (version number)` or similar.

## 1.3 macOS

### 1.3.1 Install Miniconda

There are two ways to install Miniconda in macOS.

- Download Miniconda3 MacOSX 64-bit pkg: <https://docs.conda.io/en/latest/miniconda.html>
- Open *Miniconda3-latest-MacOSX-x86\_64.pkg* in the Finder and follow the instructions on screen.
- When installation is complete, test it by opening a terminal and running `conda --version` to see its version.

OR

- Download Miniconda3 MacOSX 64-bit bash: <https://docs.conda.io/en/latest/miniconda.html>
- Open the terminal and `cd` into the folder containing *Miniconda3-latest-MacOSX-x86\_64.bash*.
- Run `bash Miniconda3-latest-MacOSX-x86_64.bash`. Accept the default settings.
- Close and reopen your terminal window to make sure the changes take effect.
- Test your installation by running `conda --version` to see the its version.

## 2 Set up your environment

Next we will set up conda with a new environment named `cenv` which uses Python 3.8. Run the following commands in your Miniconda prompt (Windows) or terminal (macOS, Linux):

```
conda --version
conda update conda -y
conda create --name cenv python=3.10 -y
conda activate cenv
conda env list
```

The last command should show you all installed environments (including `base` and the activated `cenv` environment). This way, you have a separate environment to install everything for this course and avoid possible interference with/from other python projects.

**Note:** Whenever you start the miniconda prompt/terminal for this course, run `conda activate cenv` to switch to the correct environment.

## 3 Install requirements and run your first code

We have prepared hello world code for you to test your installation.

- Clone the exercise repository using git (see website).
- Open the Miniconda prompt (Windows) or terminal (macOS, Linux) and `cd` into the repository.
- Run `pip install -U -r requirements.txt` to install the required package.
- `'cd'` into folder `'ex01'`
- Run `python hello.py` and check the output.

## 4 IDE (code editor)

In this lecture we will be using jupyter notebooks to run our code so we do not necessarily need an IDE. If you want to use one, both VSCode and PyCharm offer notebook support. Especially with very big notebooks, PyCharm tends to become slow (last tested end of 2023).