Intro to Deep Learning
Exercise 1

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1. **Installing Python.** When working with Python, it is often useful to install external packages. Since the required packages and their dependencies may vary based on your current project, it is highly recommended to install packages into a *virtual environment*. Anaconda is an easy way to handle this.
   (a) Download the latest version of miniconda from https://docs.conda.io/projects/miniconda/en/latest/index.html and install it following the instructions.
   (b) Start *Anaconda Prompt* (on Windows. On Linux, you should be able to use the shell) and execute the following commands:

   ```
   conda create --name idl23
   conda activate idl23
   conda install python=3.11 numpy matplotlib jupyterlab ipykernel
   ```

   This will create a virtual environment named *idl23* and install some useful Python packages. Whenever you install new packages in the future, make sure to activate the environment first. For more details visit the documentation.

2. (Optional) **Installing an IDE.** Having an integrated development environment (IDE) that supports you makes writing good code easier. For example, with automatic Python formatting you will always have the same code style without having to think about it. Other examples are static code analysis, which helps you catch mistakes, and sorting imports for good organization. We recommend installing Visual Studio Code, which is free and has good support for Jupyter notebooks, which we will write most our code in.
   (a) Download and install VS Code
   (b) In VS Code, install a formatter extension like *black* or *autopep8*.
   (c) Install the Python extension
   (d) Install isort extension
   (e) Install the Jupyter extension
   (f) Go file, preferences, and search for "on save" and check "format on save" features.

   There are more ways to customize your experience, which you can try out as well.

3. **Using Python.** If you installed VS Code in the previous step, download the Jupyter notebook from Stud.IP and open it with VS Code.

   Otherwise, first start Anaconda Prompt, then type:

```
conda activate idl23
jupyter notebook
```

This should open a window in a web browser, which you can use to start a notebook. Work through the tasks.