**Instructions**

The Python programming language is used to solve the laboratory exercise. The tasks are given in the form of a Jupyter notebook that needs to be filled out. To solve it, the free Google Colab service can be used, or a Python/Jupyter working environment can be set up locally. The Google Colab variant is recommended for easier setup of the working environment, while local Python/Jupyter is left for those who want to know more.

**Google Colab**

Link to Google Colab: <https://colab.research.google.com/>

Google Colab is a Jupyter notebook that runs on Google's servers. Log in with your Google *account* and transfer the laboratory notebook to Colab. Your notebook is saved in Google Drive. The limiting factor is that your instance cannot be run for more than 12 hours at a time, and that occasionally free GPU instances are not available, yet the results can be saved and are not deleted. Therefore, watch out for the deadline! "Couldn't get GPU" is not a valid reason for not having the exercise done.

To make sure you are using a GPU instance, click on "Runtime" → "Change runtime type" in the toolbar and select "GPU" from the drop-down menu.

In Colab, it is not necessary to adjust the *environment*.

**Local Python and Jupyter**

To set up a local working environment, the Anaconda distribution is recommended, which includes most of the necessary python packages for creating the exercise.

Instructions for setting up the Linux environment can be found here: <https://docs.anaconda.com/anaconda/install/linux/>

Instructions for setting up the Windows environment can be found here: <https://docs.anaconda.com/anaconda/install/windows/>

Instructions for installing the desktop environment for MacOS can be found here: <https://docs.anaconda.com/anaconda/install/mac-os/>

It is recommended to use a special conda *environment* to solve the exercise. Instructions on how to handle conda *environments* can be found here: <https://docs.conda.io/projects/conda/en/latest/user-guide/tasks/manage-environments.html>

Jupyter Notebook or Jupter Lab can be used to fill in the notebook. Jupyter Notebook comes installed with Anaconda, while Jupyter Lab can be installed later by following the instructions:

<https://jupyter.org/install>.

Instructions for using Jupyter can be found here: <https://www.dataquest.io/blog/jupyter-notebook-tutorial/>

In order for your conda environment to be easily accessible in Jupyter Notebook/Lab, it is necessary to install the package nb\_conda\_kernels (conda install -c conda-forge nb\_conda\_kernels) in the *environment* where Jupyter Notebook/Lab is installed, and in the environment you want to access, it is necessary to install the package ipykernel (conda install ipykernel).