ELE510 - Setting up the LAB environment

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Infection control in classrooms

- If you have respiratory symptoms - go home - contact your GP
- Keep social distance -- At least one meter
- Disinfect hands on the way in and out of the room
- Locked seats must not be used
- Registered students have priority
- Clean the table surface in front of you with disinfectant wipes (available in the room)
- Food and drink are not allowed in classrooms
- Follow the messages in your inbox at xxxx@student.no

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Overview

- 7 (or 8) assignments (mandatory, not graded)
  - 6 out of 7 (or 8) assignments must be approved to be able to take the final project.
  - The assignments consist of some theoretical questions and some programming (Python, openCV) exercises.

- Assignments will be given as Jupyter notebooks on CANVAS.
- You **must** deliver a single PDF file of the Jupyter notebook on CANVAS
  - A copy of the notebook can be asked to be uploaded together with the PDF file.

Anaconda + Jupyter (& Python)

- Anaconda
  - https://www.anaconda.com/products/individual
- Jupyter notebook
  - https://jupyter.org/
- Python 3.7
  - https://www.python.org/

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Jupyter notebook

- A notebook is composed of cells:
  - **Code cells**: used to write python code on them
  - **Markdown cells**: lightweight syntax (mixed between LaTeX and HTML) used for adding text, images, LaTeX equations, tables, … → documentation

- **Important:** the assignment must be delivered on CANVAS in a single pdf file.
  - Must export the assignment notebook in a pdf format (File → Download as → PDF)
  - For theoretical questions, the standard way to answer them is through a markdown cell (for equations, use LaTeX commands)
  - However, it is possible to answer them in a separate way and insert a scan (or image) inside the notebook (more information during the assignments)

Download Anaconda

- **Anaconda is already installed in all the pc in D-123 room, thus if you are using one of this pc you DON'T need to install Anaconda.**

- If you don't have Anaconda installed in your personal laptop, you can install it via this link: https://www.anaconda.com/products/individual#Downloads

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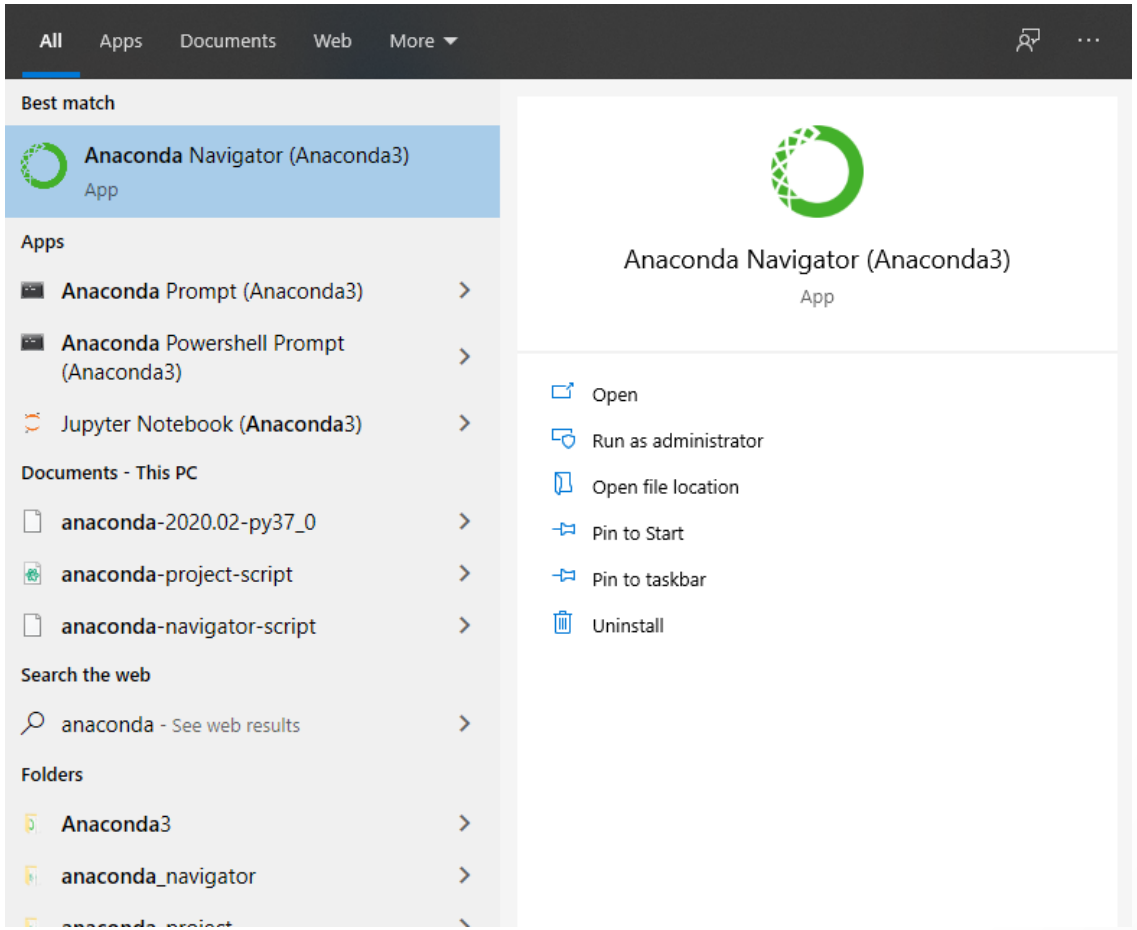
How to start a Jupyter notebook through Anaconda (1/4)



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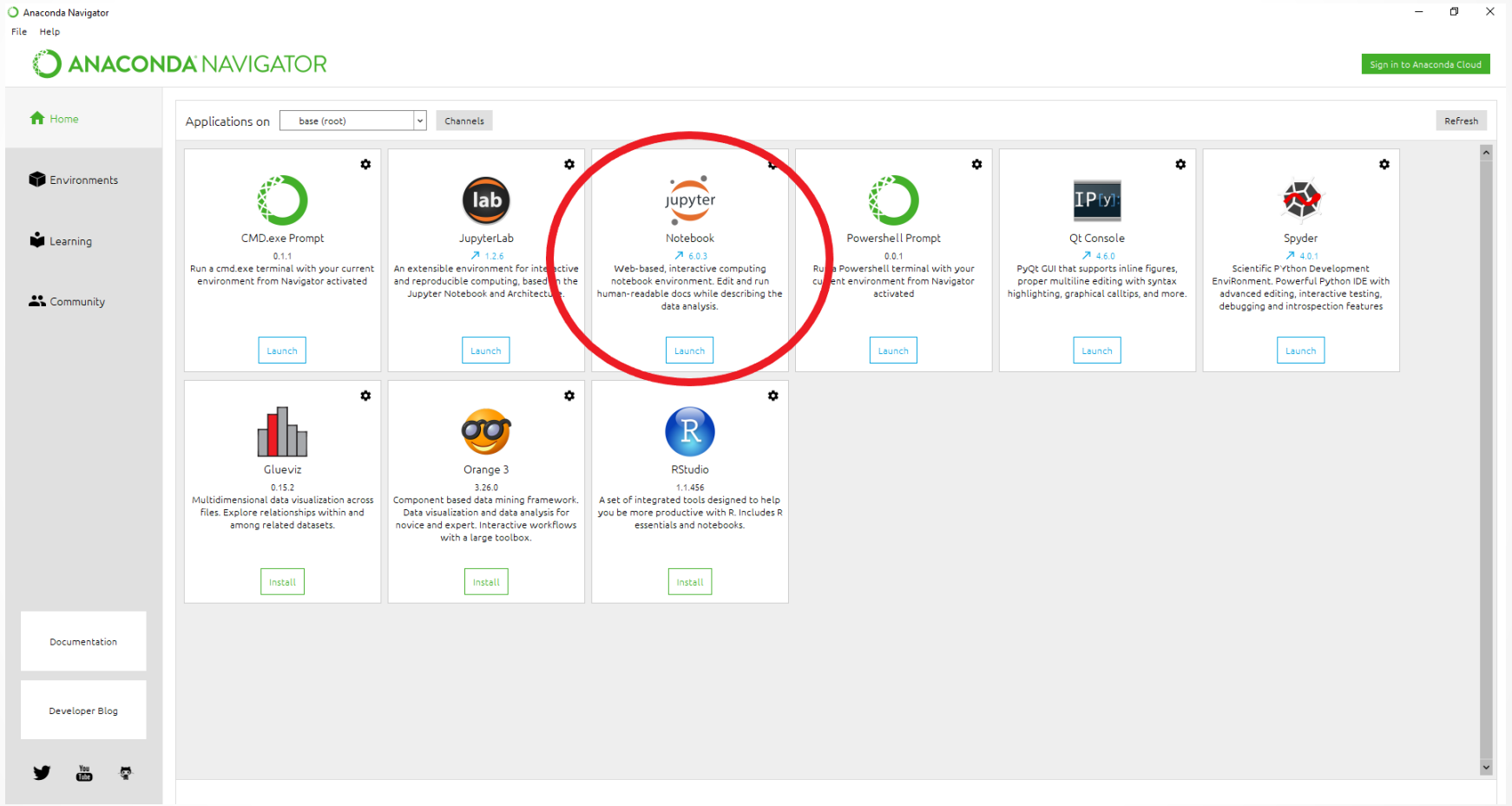
How to start a Jupyter notebook through Anaconda (2/4)



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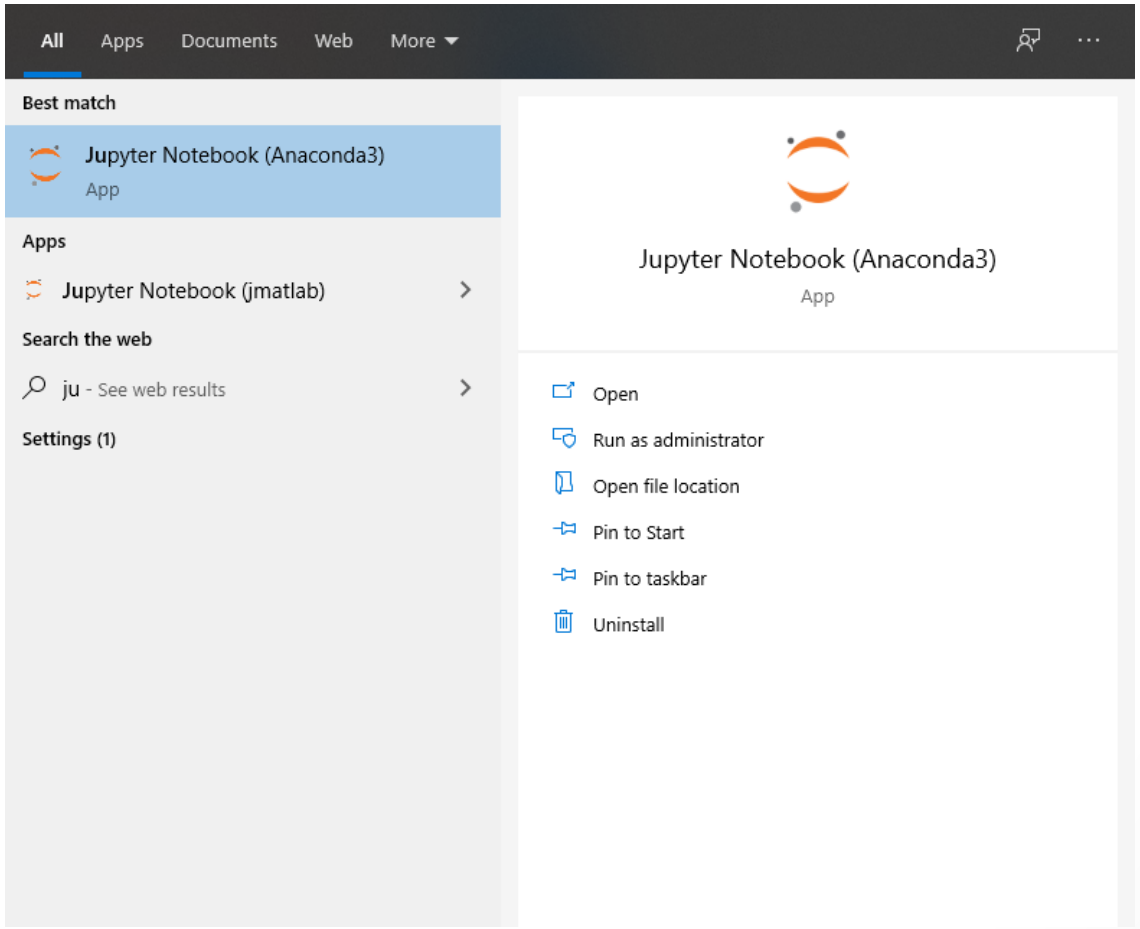
How to start a Jupyter notebook through Anaconda (3/4)



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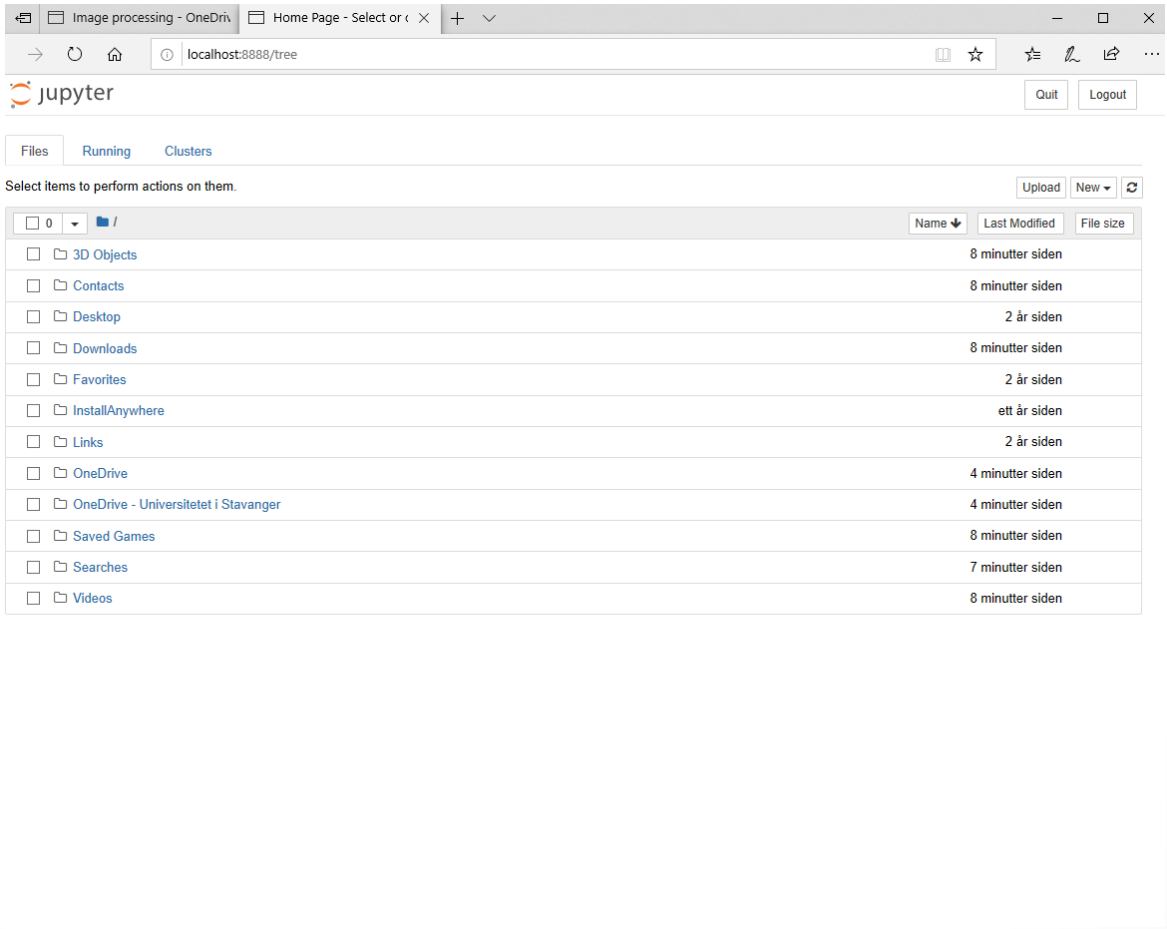
How to start a Jupyter notebook through Anaconda (4/4)



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Useful packages for the assignments

- Opencv (https://opencv.org/)
  - OpenCV (Open Source Computer Vision Library) is an open source computer vision and machine learning software library.
  - Documentation
- Numpy (https://numpy.org/)
  - The fundamental package for scientific computing with Python
  - Documentation
- Matplotlib (https://matplotlib.org/)
  - A comprehensive library for creating static, animated, and interactive visualizations in Python
  - Documentation

Test the environment

In order to test the Jupyter environment:

- Download and open the Jupyter notebook that you can find on CANVAS,
- Edit the parts with "…" to complete the tasks,
- Run it and export as a PDF file.