Adamson University | College of Engineering | Computer Engineering Department

Laboratory Guide

Linear Algebra

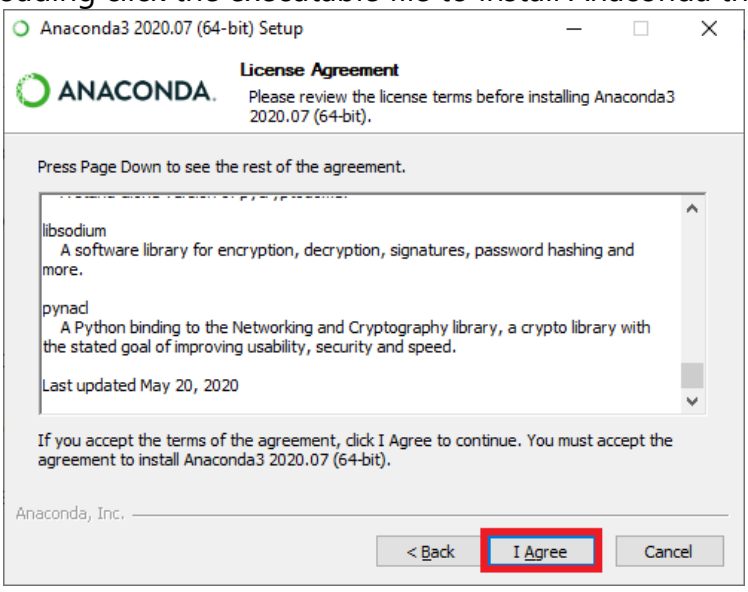
Setting up Python for Scientific programming

Installing Anaconda

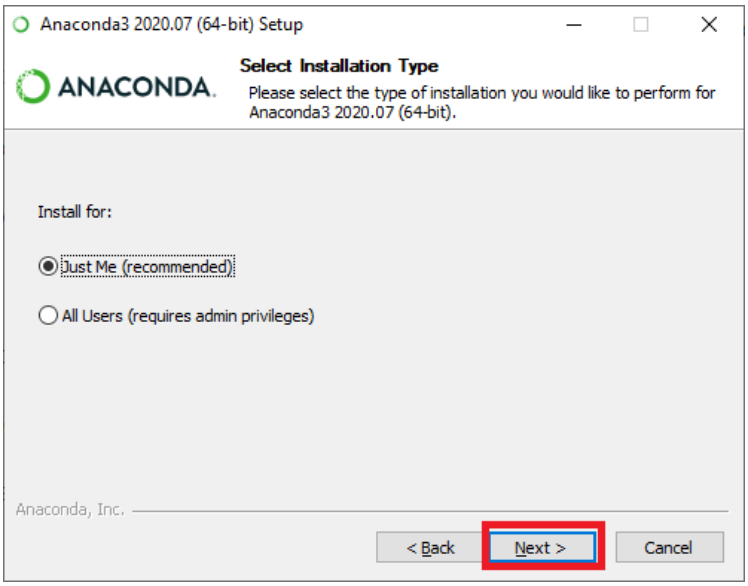
We will be using Python for doing scientific and numerical programming for our course in Linear Algebra. Before you'd go ahead and download Python directly from their site, let me just stop you there since we will use a data science package to make future coding easier using Anaconda.

Anaconda is a data science package based on Python, that has built-in data science libraries for scientific and numerical computation. To download and install Anaconda, click here: https://www.anaconda.com/products/individual

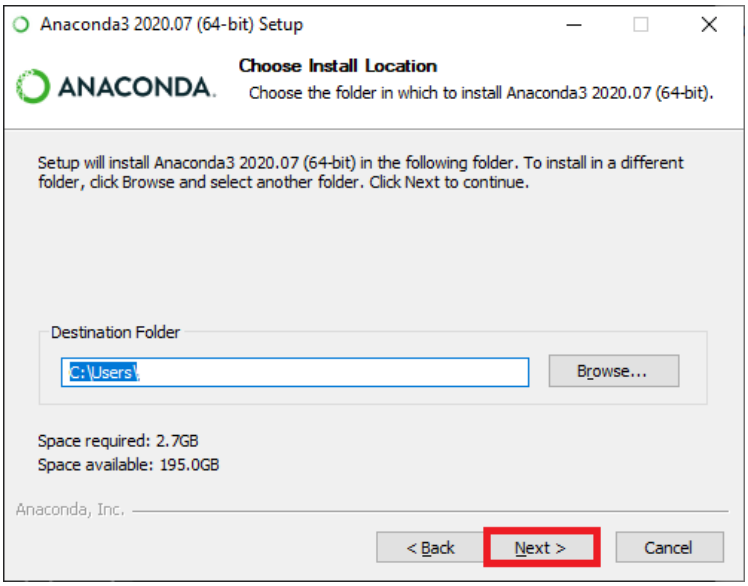
After downloading click the executable file to install Anaconda then proceed.



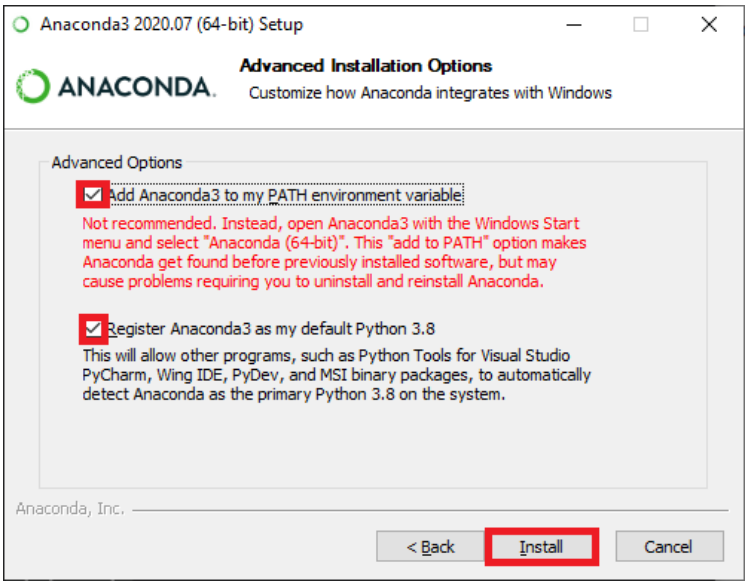
If you have the freedom and time to read the End-user license agreement, please do. Click “I Agree” to proceed.



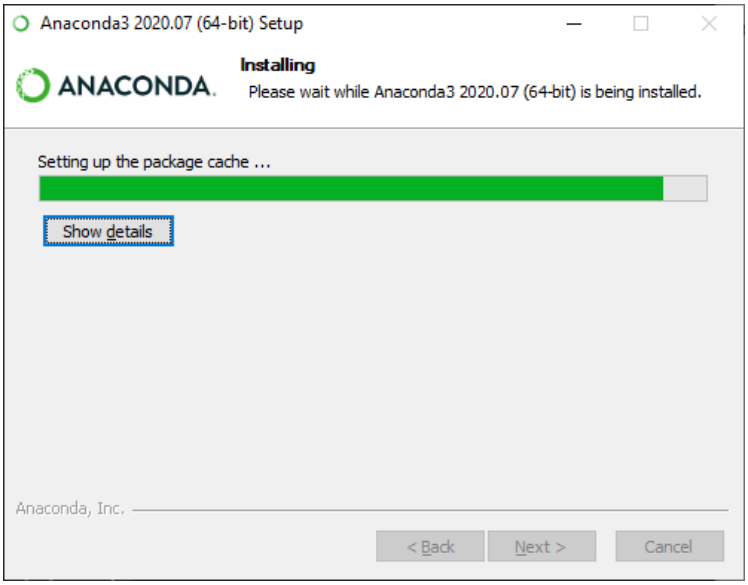
You can install it just for you or for all users, then proceed.



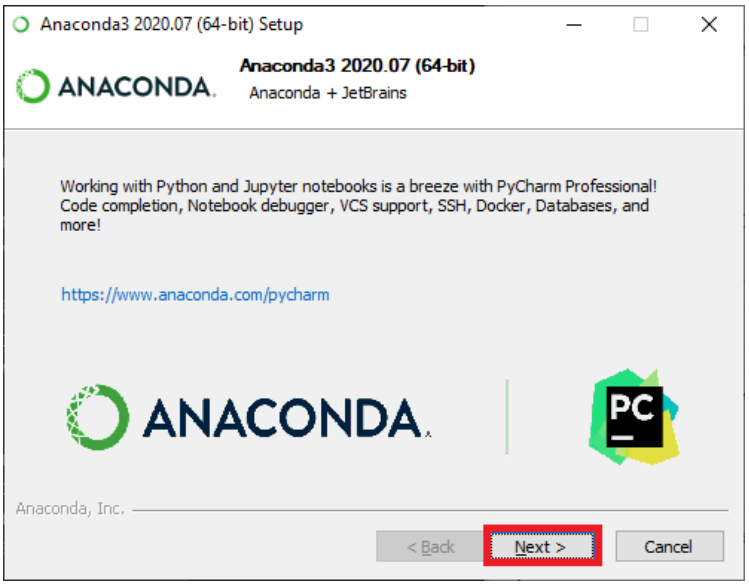
Choose the installation drive and folder to install Anaconda. If you have installed Anaconda before, you can just update it or uninstall it completely first.



Make sure to check both tick boxes. If you are doubtful about the first, don't worry you can trust me on this. We will be using the command line a lot to just check the first one for now. You can now then install Anaconda.

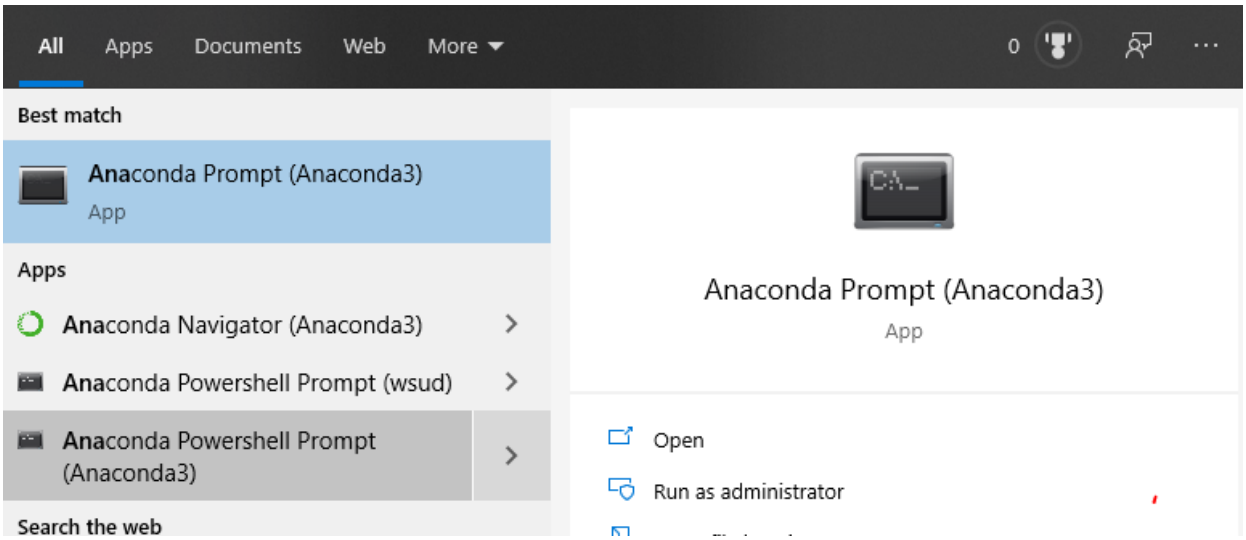


Just wait until the installation is complete. This will take a while depending on your computer specs.



Once everything's fine. Just click "Next" and finalize everything.

Testing Anaconda



Try to search Anaconda in your start menu and select the Anaconda Prompt

A command-line interface should appear. Make sure that there is a `(base)` indicator on the left side of the command line.

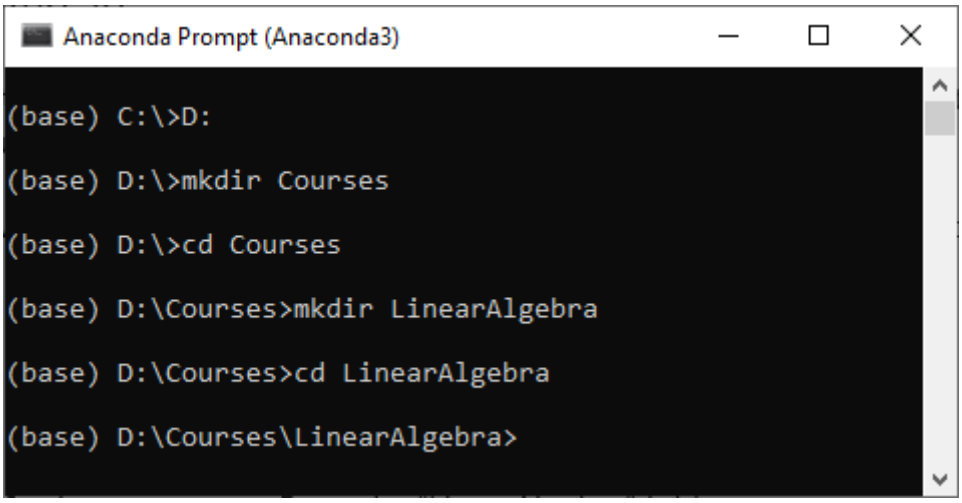
To check Python is working, type `python --version` to make sure python is installed.

Trying JupyterLab

First, we need to organize our projects. Find a convenient place for all of your activities on your computer and create a folder named “LinearAlgebra”.

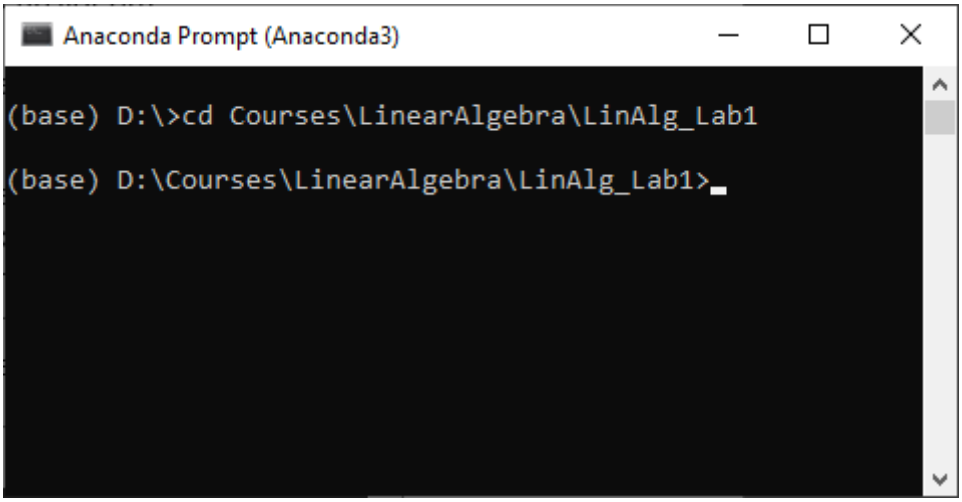
For those who want to practice their command-line skills you can try to type the following:

`> D:`	*Go to your drive of choice*
`> mkdir Courses`	*This means make a directory named: “Courses”*
`> cd Courses`	*Go to the “Courses” directory*
`> mkdir LinearAlgebra`	*Make a directory named “LinearAlgebra”*
`> cd LinearAlgebra`	*Go to the “LinearAlgebra” folder*

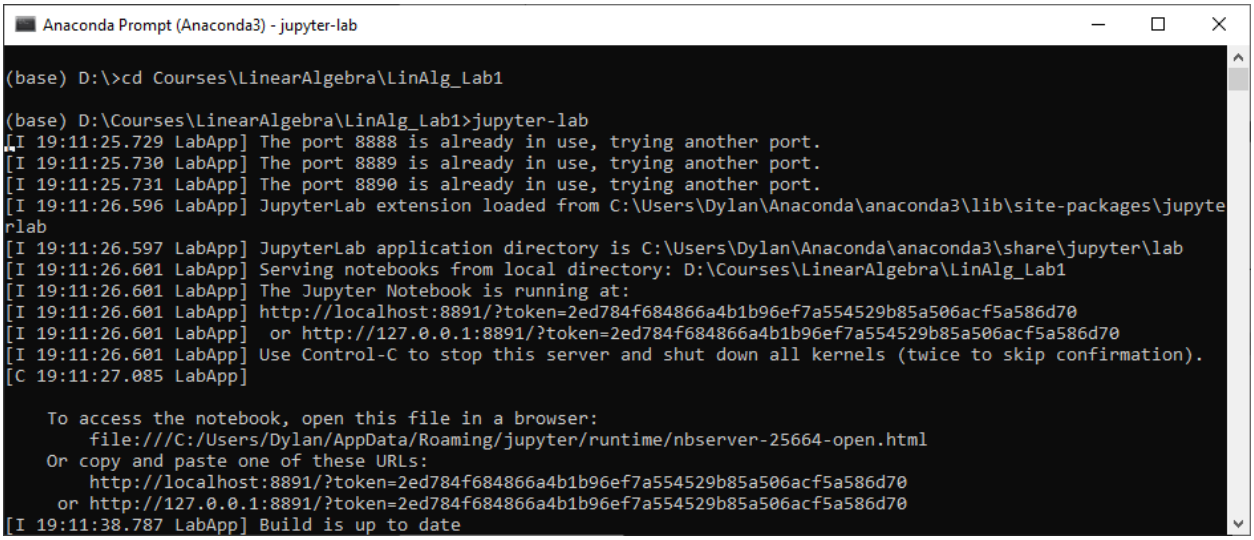


Now our project folder is ready we can now use this for our activities. In your LinearAlgebra folder create a new directory for your Laboratory Activity.

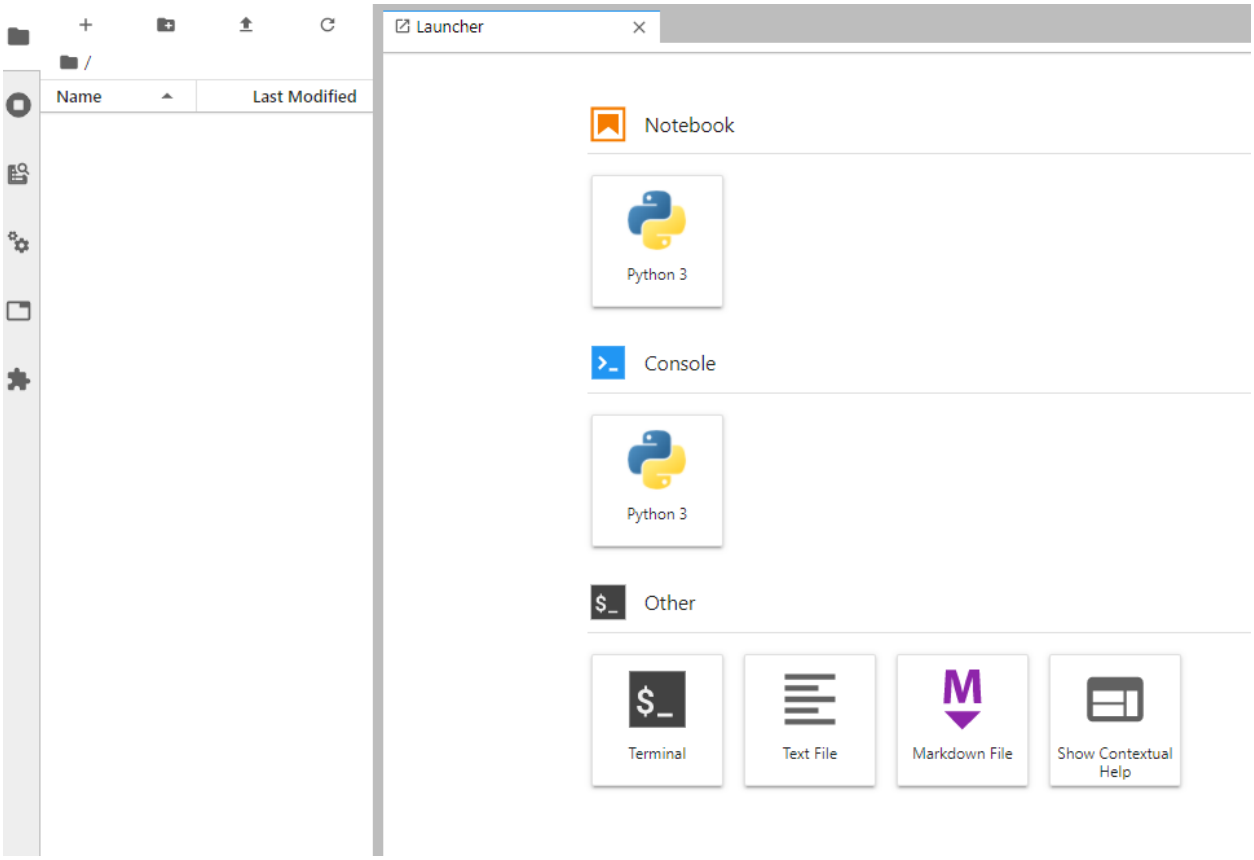
Open your Anaconda Prompt and access your First Laboratory Activity, mine is named as “LinAlg_Lab1”



Once you're in your Lab Activity folder type `jupyter-lab`



Once the command-line has been populated with these logs you should be directed to your Jupyter Lab page.



There! It's done you have successfully lauched Jupyter Lab, you are now ready to code!