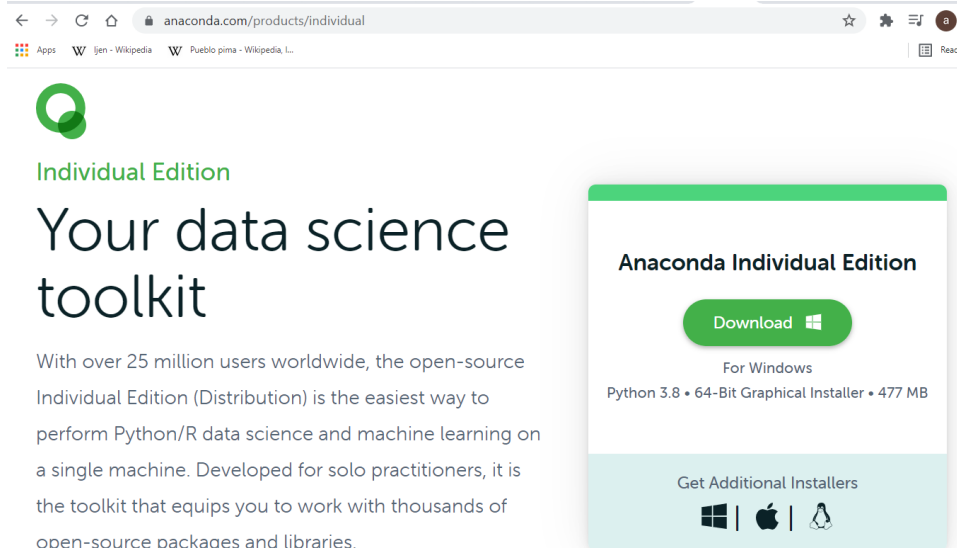


Setup instructions

(1) Download and install Anaconda (python distribution):

<https://www.anaconda.com/products/individual>

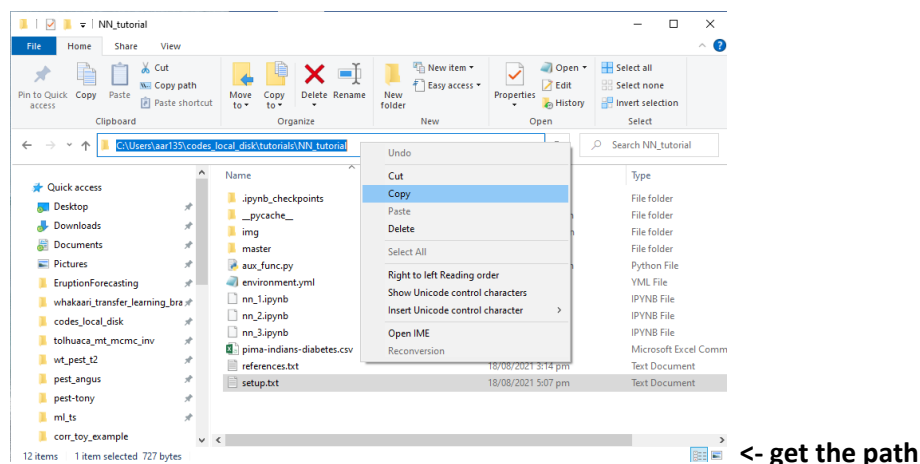


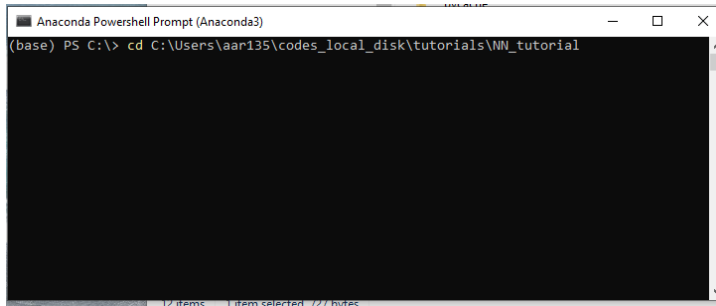
(2) Save the provide NN_tutorial folder in the Desktop.

(3) Open the 'anaconda prompt' and go to the NN_tutorial directory by typing the following command:

```
cd (path)\NN_tutorial
```

*cd: change directory





```

Anaconda Powershell Prompt (Anaconda3)
(base) PS C:\> cd C:\Users\aar135\codes_local_disk\tutorials\NN_tutorial

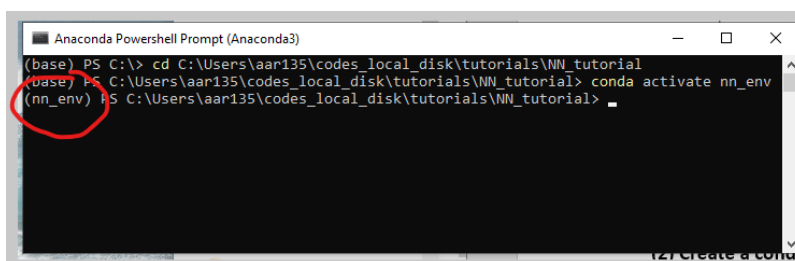
```

<- go to the path in prompt

(2) Create a conda environment and activate it (by typing the following commands in the prompt):

conda env create -f environment.yml

conda activate nn_env



```

Anaconda Powershell Prompt (Anaconda3)
(base) PS C:\> cd C:\Users\aar135\codes_local_disk\tutorials\NN_tutorial
(base) PS C:\Users\aar135\codes_local_disk\tutorials\NN_tutorial> conda activate nn_env
(nn_env) PS C:\Users\aar135\codes_local_disk\tutorials\NN_tutorial>

```

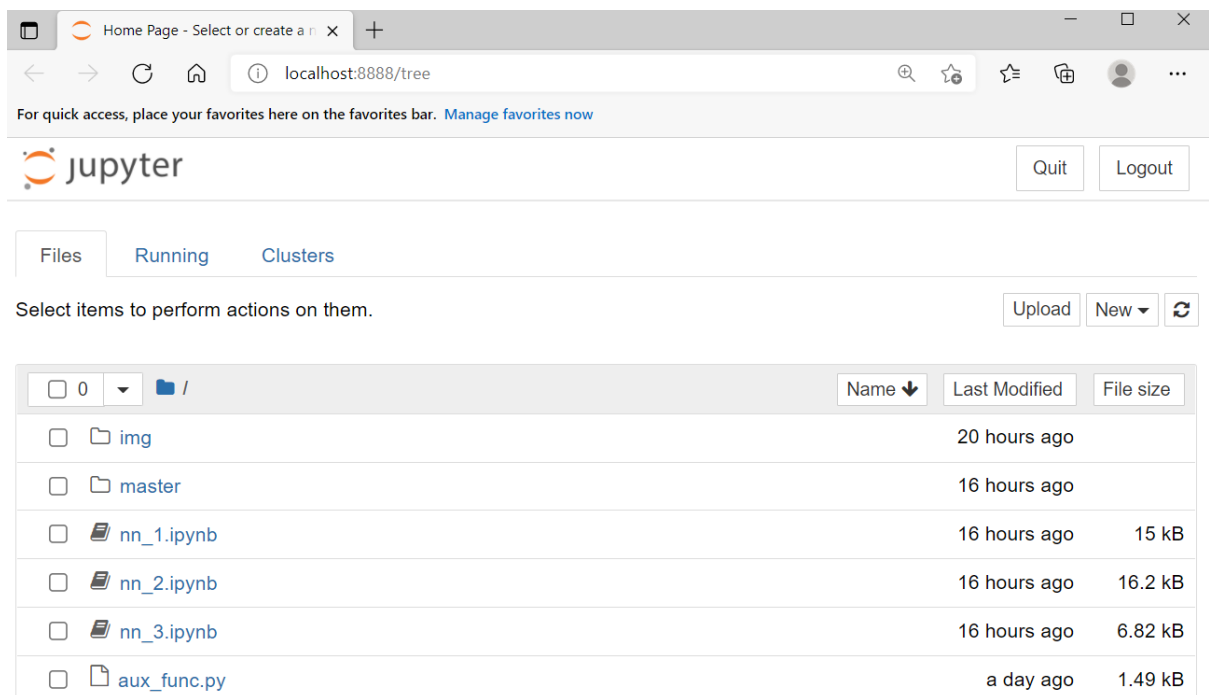
<- nn_env activated

(3) install and open jupyter notebook interface (by typing the following commands in the prompt):

conda install jupyter

jupyter notebook

*This should pop up in one of your browsers:



Home Page - Select or create a new notebook

localhost:8888/tree

For quick access, place your favorites here on the favorites bar. [Manage favorites now](#)

Jupyter Quit Logout

Files Running Clusters

Select items to perform actions on them. Upload New Refresh

	Name	Last Modified	File size
<input type="checkbox"/>	/		
<input type="checkbox"/>	img	20 hours ago	
<input type="checkbox"/>	master	16 hours ago	
<input type="checkbox"/>	nn_1.ipynb	16 hours ago	15 kB
<input type="checkbox"/>	nn_2.ipynb	16 hours ago	16.2 kB
<input type="checkbox"/>	nn_3.ipynb	16 hours ago	6.82 kB
<input type="checkbox"/>	aux_func.py	a day ago	1.49 kB

- (4) In the browser window you should see the NN_tutorial directory: **open nn_1.ipynb**. This is the first tutorial. Follow the instructions there. After completion keep going with tutorial **nn_2.ipynb** and **nn_3.ipynb**.

Home Page - Select or create a notebook | nn_1 - Jupyter Notebook

localhost:8888/notebooks/nn_1.ipynb

For quick access, place your favorites here on the favorites bar. [Manage favorites now](#)

jupyter nn_1 (autosaved) Logout

File Edit View Insert Cell Kernel Widgets Help Trusted Python 3

Run

Coding a deep neural network using Keras

Keras is a friendly (and powerful) python library design for developing and evaluating deep learning models (<https://keras.io/>).

In this tutorial, we will construct a deep neural network using Keras, train it with a dataset for a simple classification task, and evaluate its performance.

Let's start importing the libraries to be used in this tutorial. Run the next section by clicking on it and press Ctrl+Enter.

```
In [ ]: # import libraries
import numpy as np
from keras.models import Sequential
from keras.layers import Dense
```