Setup Python with Linux kernel in Windows 10

WSL (Windows Subsystem for Linux) + Python with Jupyter Notebook (Anaconda installation)

Disclaimer: The instructions were done and tested using Ubuntu installation.

1. Install WSL

https://docs.microsoft.com/en-us/windows/wsl/install-win10

1.1. Enable WLS feature in Win 10

1. Run Win Powershell as admin
2. Execute:
   `Enable-WindowsOptionalFeature -Online -FeatureName Microsoft-Windows-Subsystem-Linux`

1.2. Download/install Linux

3. From Microsoft store
   Install Linux version that you prefer (Ubuntu, Kali Linux, etc.)
4. In Microsoft Store
   Start the installed Linux

Linux Bash Window opens, with text: *Installing, this may take a few minutes…*

5. Wait
6. Give new username and password (these are separate from Win username and pw)
7. Wait and finalize the installation

1.3. Update the installation and upgrade packages

8. Update and upgrade the Linux installation
   `$ sudo apt update`
   `$ sudo apt upgrade`

1.4. Define data access between Win 10 and Linux

Access your Win 10 files from Linux with symbolic link

Note! do NOT try to do the opposite direction

Example contains Seafile folder in Win (could be dropbox or anything):
Win folder C:\Users\<Windows user>\Seafile (exists)
This would be in Linux /home/<Linux User>/Seafile (does not exist)

9. In Linux bash:
   $ ln -s "/mnt/c/Users/<Windows User>/Seafile" /home/<Linux User>/Seafile

(in case of problems, remove the softlink: unlink /home/<Linux User>/Seafile)

WSL references, tips and trics:
https://docs.microsoft.com/en-us/windows/wsl/interop
https://docs.microsoft.com/en-us/windows/wsl/faq

2. Setup graphical interface

2.1. Install X interface in Windows

10. Install VcXsr: https://sourceforge.net/projects/vcxsrv/

2.2. Install xfce4 in Linux

11. In linux bash:
    $ sudo apt-get install xfce4

2.3. Test X interface

12. Install Firefox (to open the jupyter notebook GUI):
    $ sudo apt-get install firefox

Log out from bash if you have not done that after xfce4 installation, then log in again

13. Start Xlaunch in Win 10 (installed with VcXsrv, start VcXsrv before it if needed)
14. In Linux bash (if this does not work, update the right hand side to match VcXsrv specification):
    $ export DISPLAY=localhost:0.0
15. Start firefox:
    $ firefox

Firefox should open in a new window. Ignore warning, if everything works ok otherwise.

If Firefox does not open properly, troubleshoot and correct before proceeding to next step, as Firefox is needed in the Anaconda output.

Video instructions: https://www.youtube.com/watch?v=VSqAyOY5huQ

Note!

The graphical interface needs to be either defined in each bash session (#1) or included in configuration (#2).

#1 When opening a new bash, define the output (before launching any graphical output):

```
$ export DISPLAY=localhost:0.0
```

#2 Edit configuration

```
$ nano ~/.bashrc
```

add with proper commenting

```
export DISPLAY=localhost:0.0
```

Tips for nano shortcuts: https://wiki.gentoo.org/wiki/Nano/Basics_Guide

3. Install Anaconda

Check the latest anaconda: https://www.anaconda.com/download/#linux

1. Download it (change the example file name according to the version you want to install)

```
$ wget https://repo.anaconda.com/archive/Anaconda3-5.2.0-Linux-x86_64.sh
```

2. Install it:

```
$ bash Anaconda3-5.2.0-Linux-x86_64.sh
```

(tested with: path: yes, MS VScode: yes)

Anaconda references, tips and tricks:
https://opensource.com/article/18/4/getting-started-anaconda-python
https://www.anaconda.com/download/
https://conda.io/docs/user-guide/install/linux.html

4. Use Python

Open Linux bash.
Use jupyter notebook:

```
$ jupyter notebook
```

Use anaconda navigator (includes jupyter notebook and a lot more):

```
$ anaconda-navigator
```