1) Unzip the folder and place this WSIproject folder in C drive (eg: C:\WSIproject\openslide-win64-20171122\bin)
2) Install anaconda (note: For now openslide binaries are only functioning within anaconda environment for windows)
3) Make sure you have visual studio c++ >14 version installed.
4) Open anaconda prompt as a administrator from start menu
5) Packages to install:
    a. pip install opencv-python
    b. pip install pillow
6) redirect anaconda prompt to this path (C:\WSIproject\openslide-win64-20171122\bin)
7) run python wsipreprocessing.py
8) it opens a wsipreprocessing window as Figure 1.

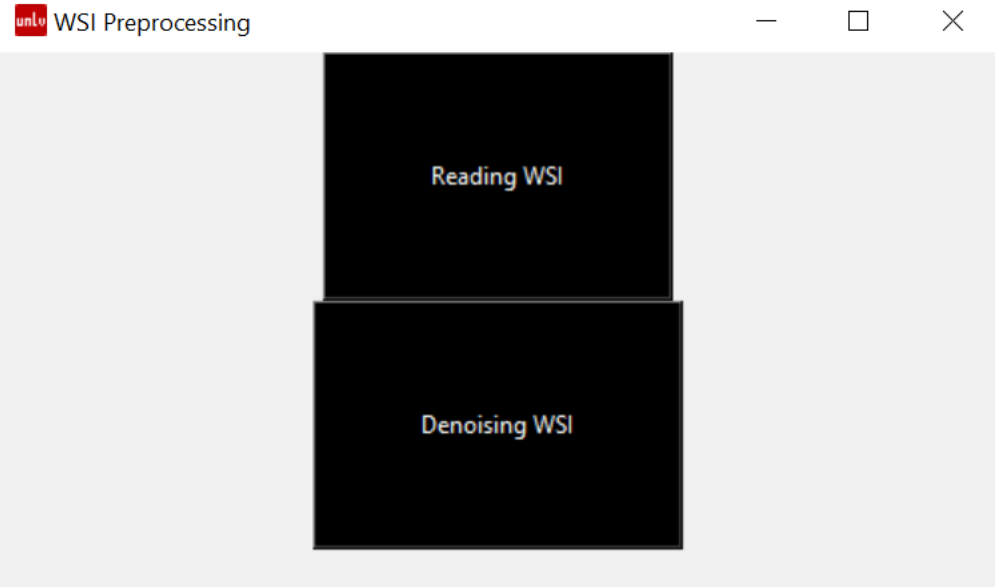



*Figure 1*

9) in figure 1 if we click “reading WSI” it opens a reading wsi window as figure 2

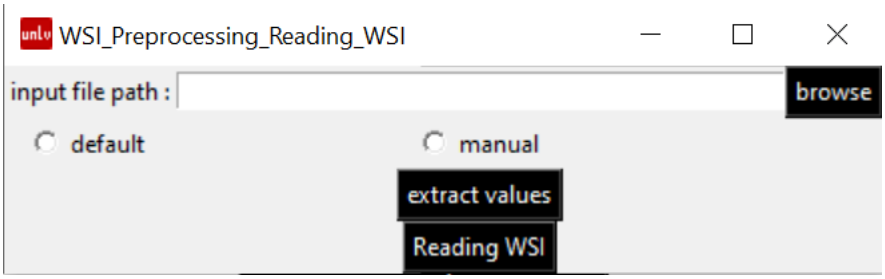



*Figure 2*

10) in figure 2 browse the filepath for WSi.
11) Select options such as “default” for displaying reading WSI functionality parameters in the figure 2 window. Figure 3 will be displayed.

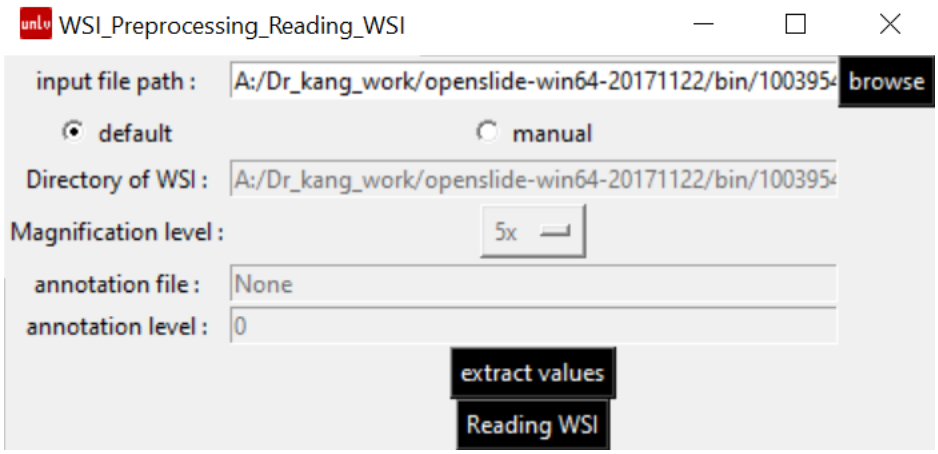



*Figure 3*

12) Select options such as “manual” for displaying reading WSI functionality parameters in the figure 2 window. Figure 4 will be displayed.

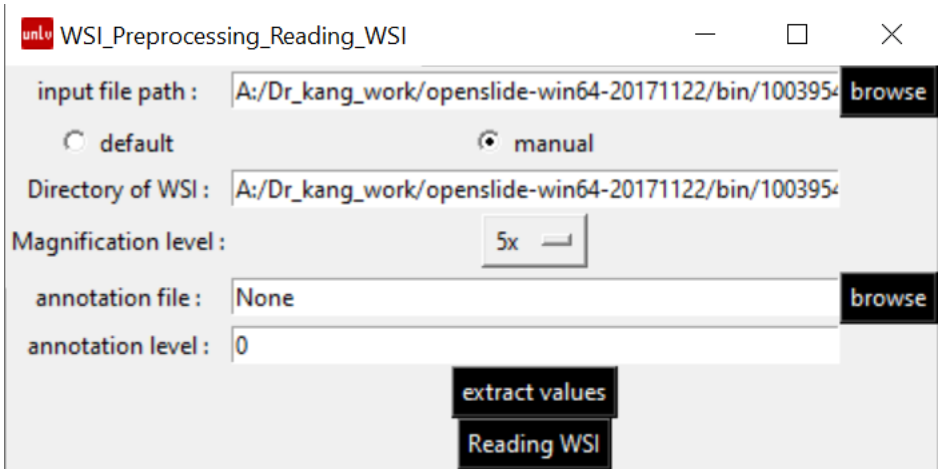



*Figure 4*

13) Click on “reading WSI” to implement reading WSI functionality from the package. After click that it executes function and displays options for download or select fragments for denoising. Figure 5 will be displayed.

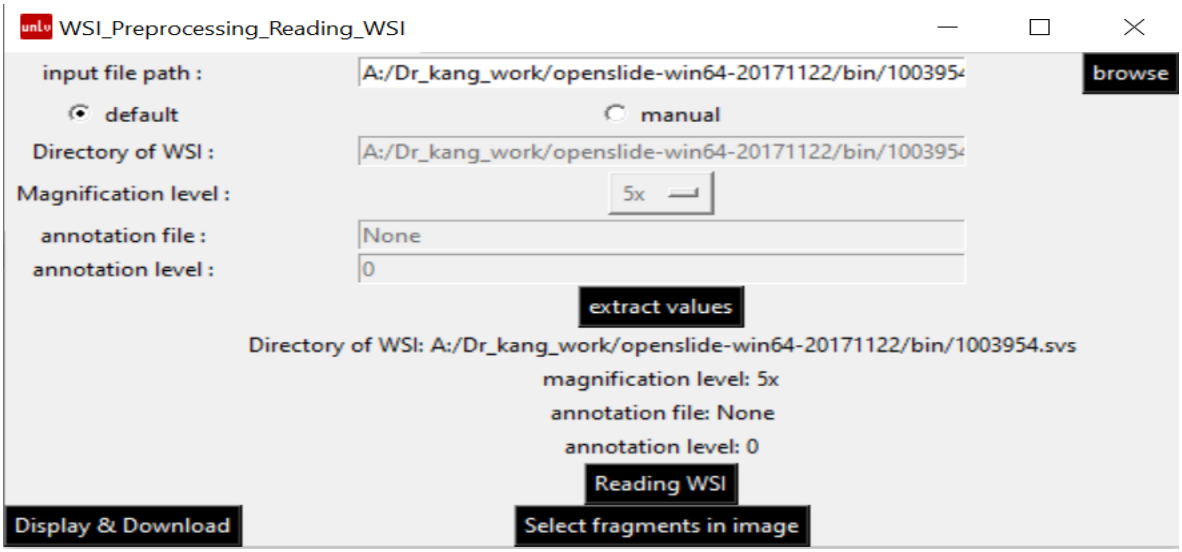



*Figure 5*

14) Display and download will download the entire WSI, whereas selecting fragments will open a new window for performing denoising via fragments of WSI as in figure 6.


*Figure 6*

15) Click on any part of the WSI which we are interested to denoise, upon clicking it gives a message box with an position of WSI (it is just to give an intimation of your selection) as shown in figure 7.

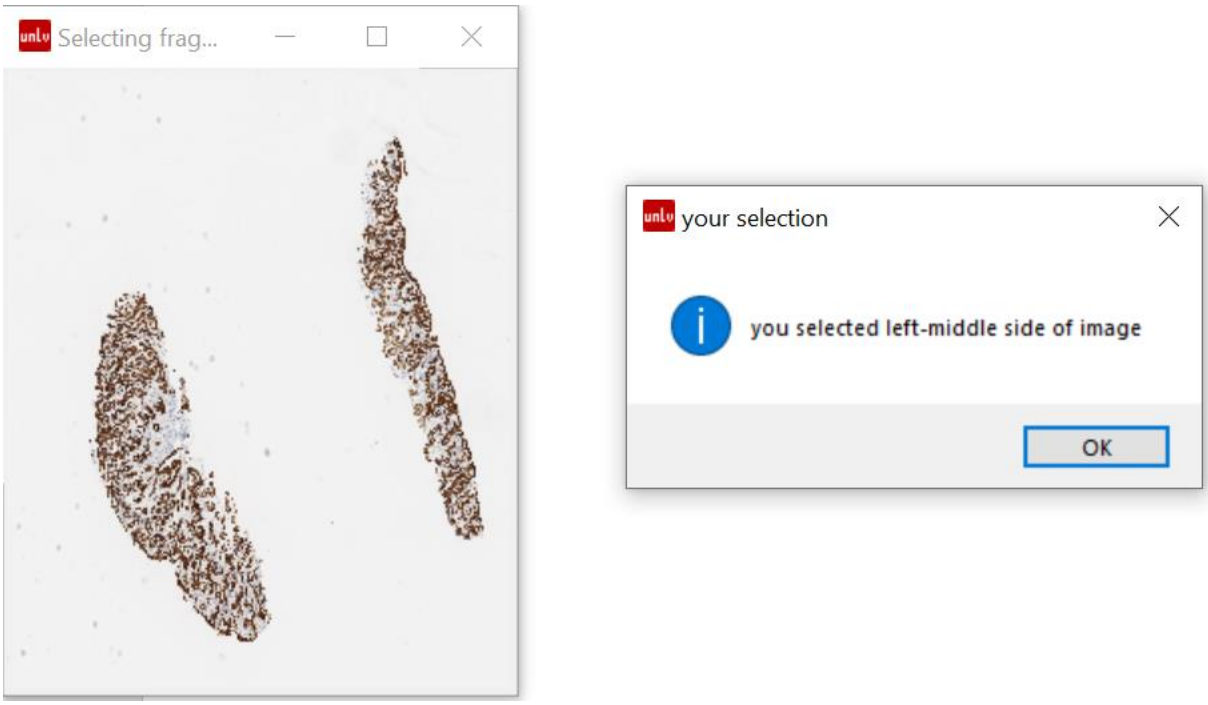



*Figure 7*

16) After Ok in the message box in figure 7. It opens a question box which asks the user whether to perform denoise for the selection or not as shown in figure 8.

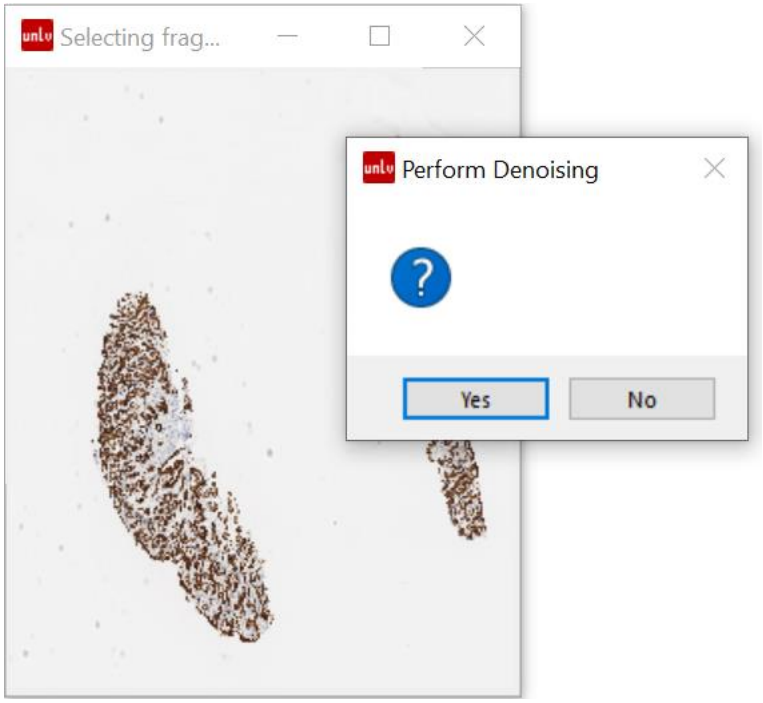



*Figure 8*

17) Upon clicking yes in figure 8 a new deoising WSI fragment window opens up as shown in figure 9 to give input for the hyperparameters of Guassian Blur (note: for now we are only dealing for Guassian blur in this phase but in future will include the rest of the filtering techniques.

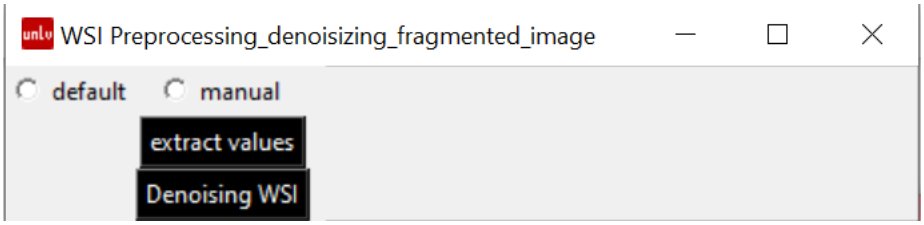



*Figure 9*

18) If you click on “default”, you only get default value for denoising whereas if you click on “manual” you can control the hyperparameters. Example is shown in figure 10.

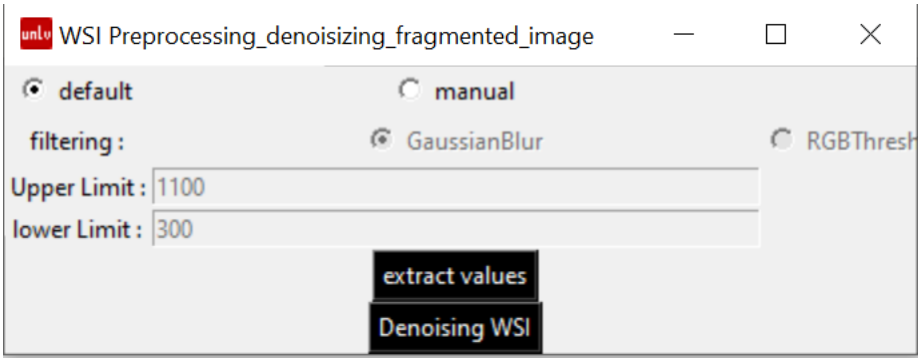



*Figure 10*

19) Click on “denoising WSI” to download or display the denoised selected fragment of WSI as shown in figure 11.

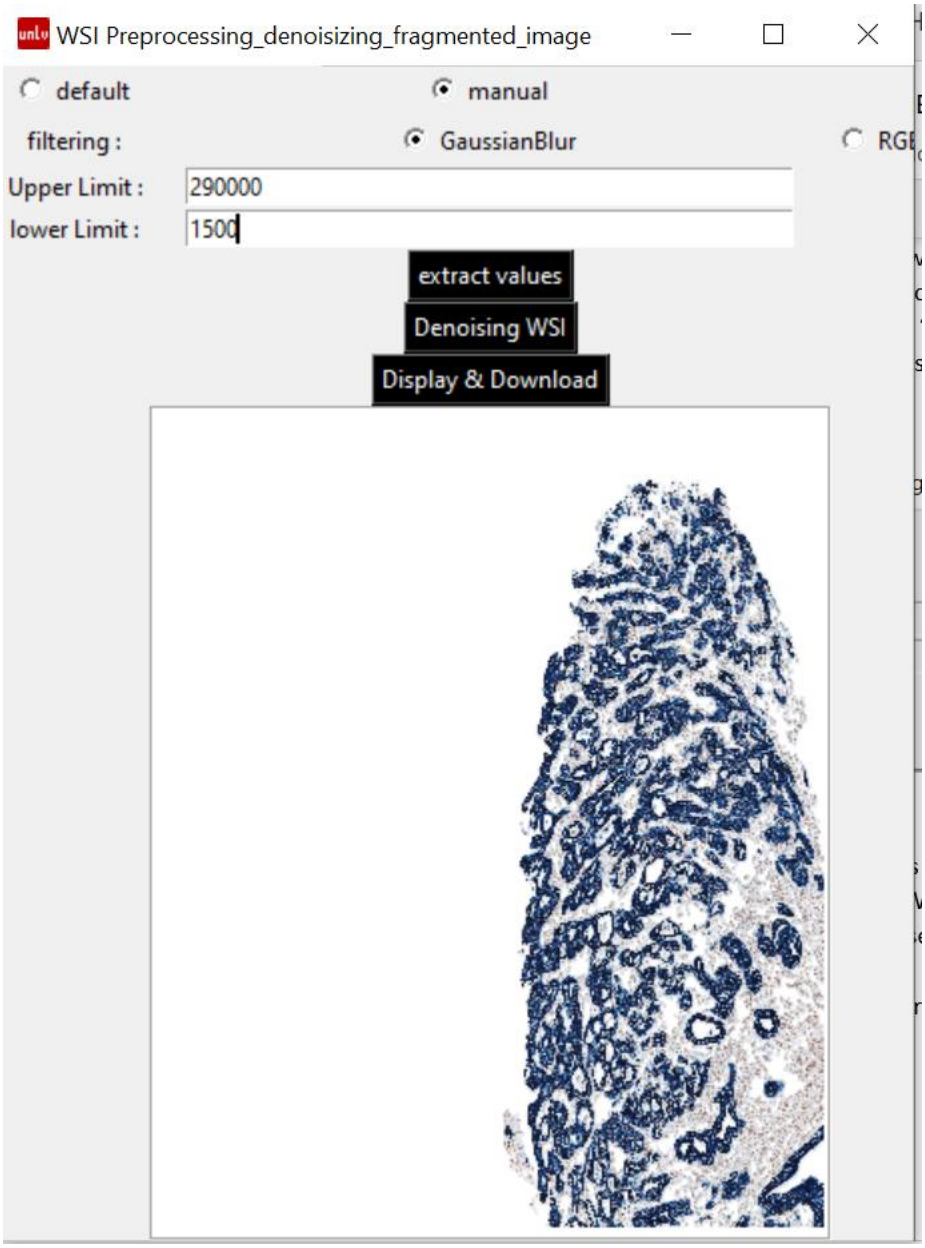
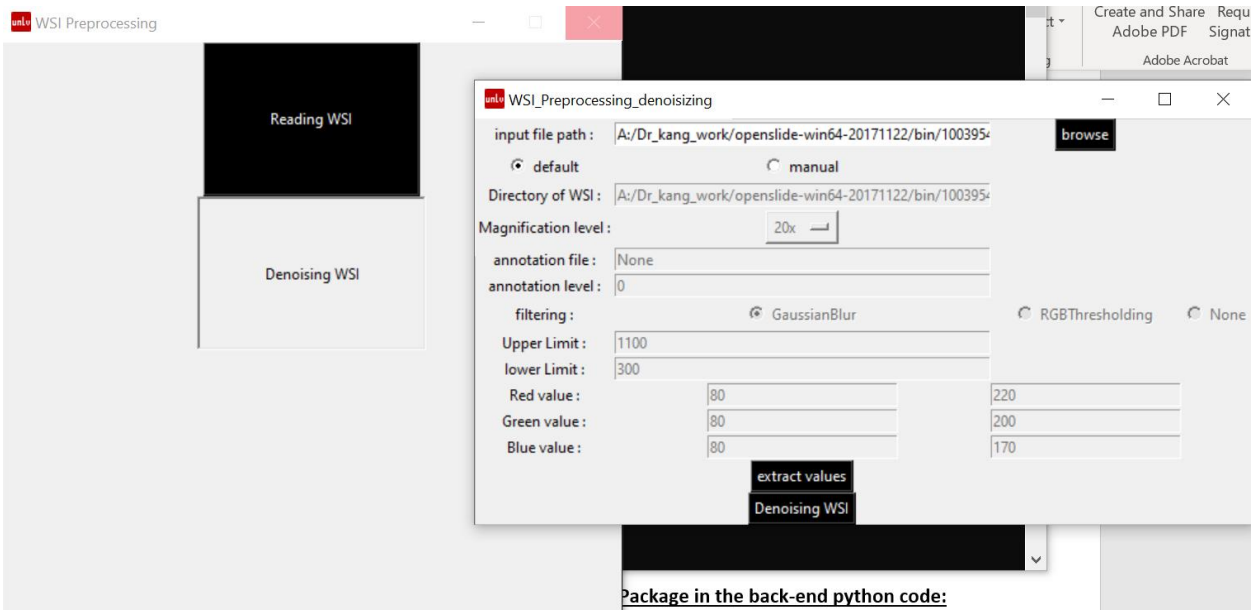



*Figure 11*

20) If you click denoising WSI in figure 1. It will open a new window which looks like figure 12. Then browse the filepath and select default or manual option for displaying and selecting hyperparameters. It will denoise the entire WSI. (note: denoising WSI is different in step 20 which performs for entire WSI, whereas denoising fragmented WSI in step 16 performs for fragmented WSI.




**Package in the back-end python code:**