How to run simulations on the virtual desktop

1 Launching the Virtual Desktop:

Go to the **Jupyter notebooks** section of the Swedness 2024 course page on the e-learning platform. Click on the external tool **JupyterLab**.
(Swedness 2024 course: `https://e-learning.pan-training.eu/course/view.php?id=139`)

You will be redirected to the JupyterHub start up environment. Click **Start My Server**.

Once you have connected to the server, click on the desktop icon on the Launcher tab. You are now using the virtual desktop!

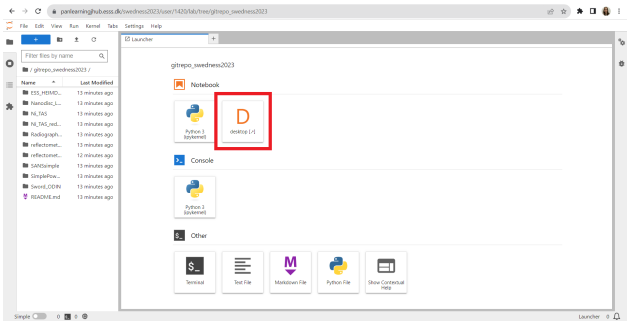
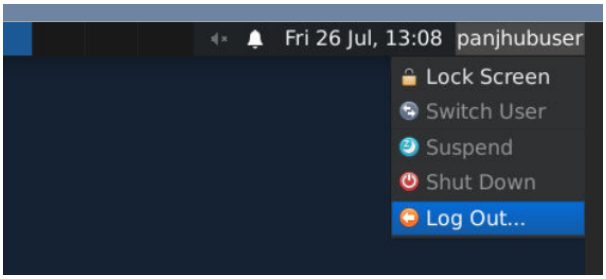


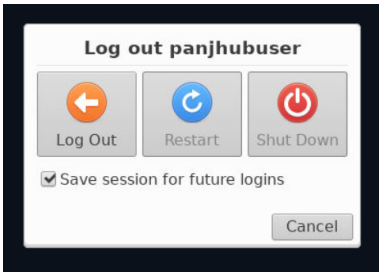
Figure 1: Launching Virtual Desktop

2 Saving your progress:

To log out of the Virtual Desktop click on **panjhubuser** on the upper right corner and select **Log out**. Tick the *Save session for future logins* box in order to save your progress. You will only need to do this once. You can now safely click **Log Out** when you are ready to end your session or click **Cancel** to move on.



Log out of the Virtual Desktop



Save session

Figure 2: Saving your progress

3 Launching Software:

You will be using the Command Line to launch the simulation/tutorial software: **McStas**, **FullProf**, **Mantid**. The commands for the corresponding software is written below and can also be found on the Virtual Desktop in the **gitrepo_swedness2024** folder in the **Software_Commands** file.

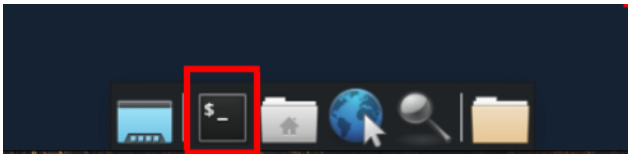


Figure 3: Command Line (Bottom centre of your terminal)

3.1 McStas:

Type *mcgui* in the command line and hit *Enter* to launch McStas:

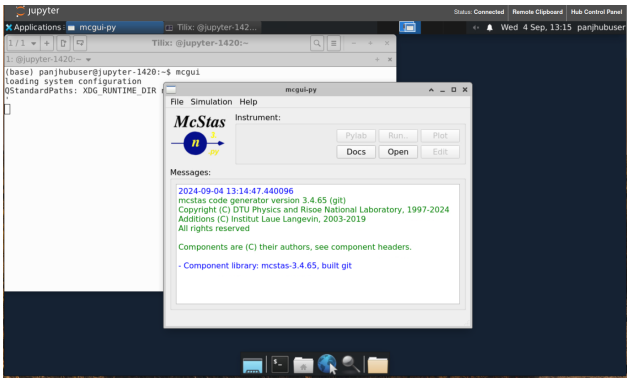


Figure 4: Launching McStas

3.2 FullProf:

Type */opt/FullProf/winplotr-2006* in the command line and hit *Enter* to launch FullProf:

3.3 Mantid:

Type *mantidworkbench* in the command line and hit *Enter* to launch Mantid:

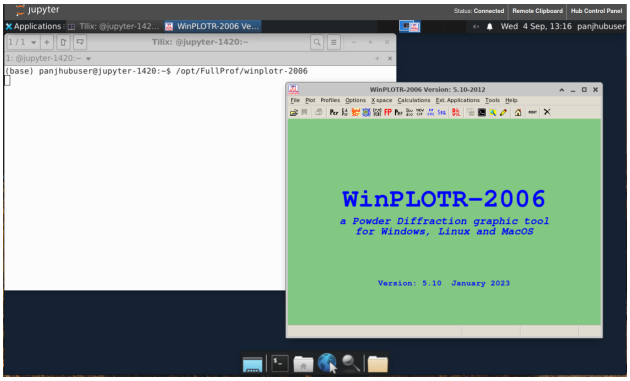


Figure 5: Launching FullProf

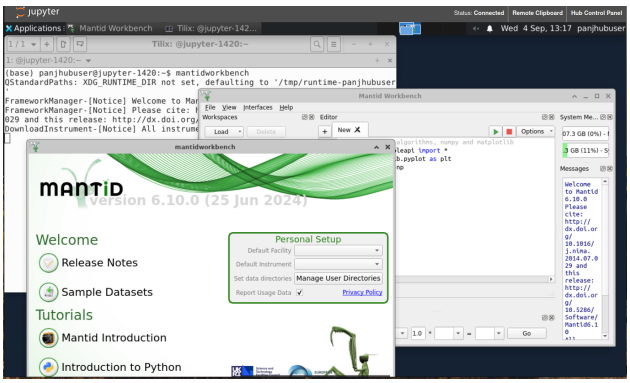


Figure 6: Launching Mantid

4 Running simulations on McStas:

You are now using the McStas Graphical User Interface, aka mcgui (left window on screenshot).

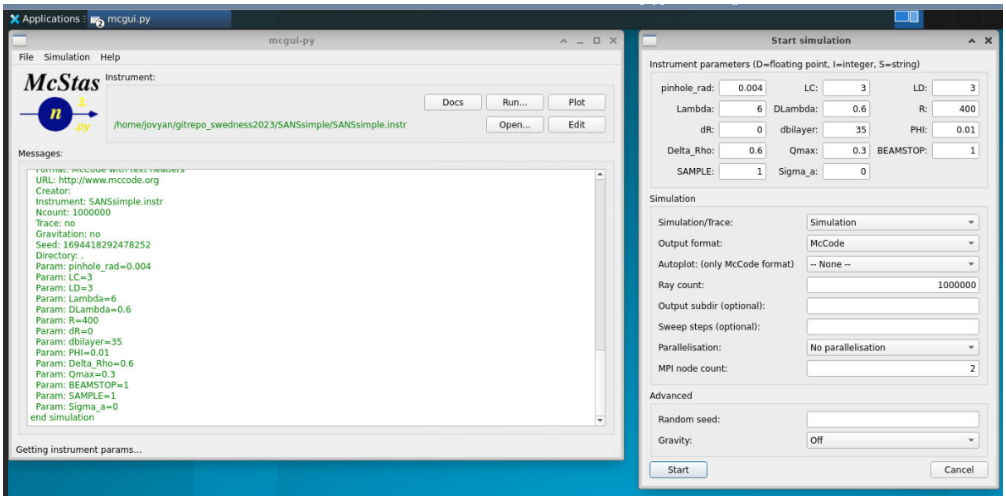


Figure 7: McStas User Interface (left) and simulation window (right)

To select a simulation:

- Click **Open**. In the pop up window go to the **gitrepo_swedness2024** folder.
- Open the folder named after the corresponding simulation quiz you are working on.
- Select the instrument file (*file_name.instr*).

To run the simulation:

- On the mcgui, click **Run**. A new window will appear (right window on screenshot). Here you can set the parameters and start the simulation.
- On the *Instrument parameters* section you can adjust the parameters of the simulated instrument according to the questions on the quiz.
- On the *Simulation* section you can set the *Ray count*. This controls how many neutron rays you will be using in your simulation. More neutron rays give better statistics, but take more time to run!
- Once you have filled out all the parameters and settings necessary, click **Start** to run the simulation.

Plotting your results:

- Once the simulation is completed, click **Plot** on the mcgui (left window on screenshot). A window with plots will pop up.
- Click on one plot to see it in full screen mode. Hit *b* key on your keyboard to go back.

- Hit l key on your keyboard to toggle log scale. Hit again to go back.
- Hit h key on your keyboard to get help with plot action shortcuts.