

# Setup Guide for MBSI Bioinformatics Workshops 2021

For the MBSI Bioinformatics Workshops in 2021, we will be using the programming environment JupyterLab to complete worksheets. The following instructions will allow you to gain access and complete material using the Python programming language from your own local computer.

## Installing Anaconda

Anaconda is a data science toolkit that allows you to easily install and access thousands of open-source packages and libraries. Installing Anaconda will mean that you can use Python on your computer and provides a simple way of accessing JupyterLab locally.

Follow the steps below to install Anaconda for free:

1. Open this link in a new tab: <https://www.anaconda.com/products/individual>.
2. Click "Download".
3. You should see the following:



Click on the appropriate installer for your operating system (if you are a Windows user, you will most likely need the 64-bit installer. For Mac users, choose the graphical installer).

Allow some time for the file to download, it may take a while.

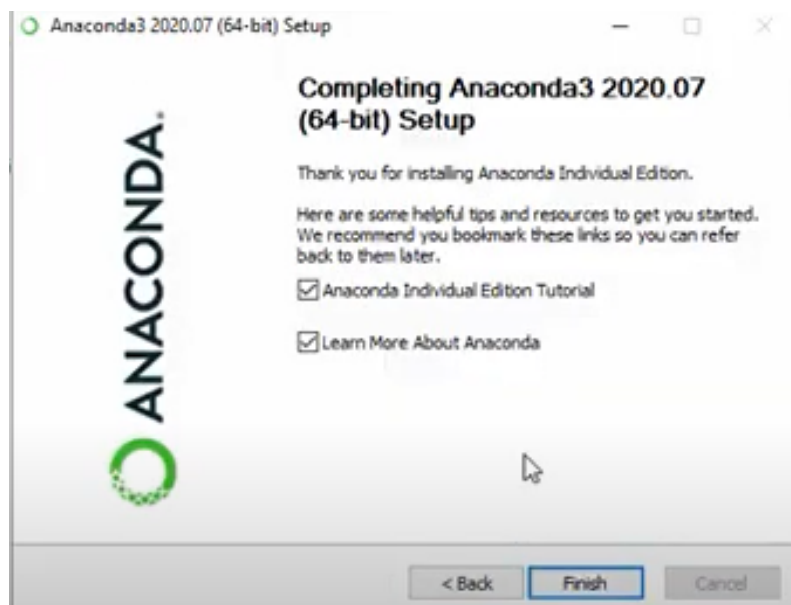
4. After the installer has downloaded, run the .exe file to begin the setup.
5. You should now see the following:



Run through the setup process, keeping all of the default settings (keep clicking next without changing anything until Anaconda is installed).

Note: It may take some time after you click "install".

6. After the installation is complete, click "Next" and you should get to this stage:



7. Uncheck both boxes and click "Finish".

You have now successfully installed Anaconda!

# Downloading Worksheets

The worksheets will be available for download on GitHub from the following link:  
<https://github.com/MBSI-Inc/Bioinformatics-Workshops>

New worksheets and answers for the previous week will be made available here before each workshop.

To download the worksheet for this week:

- Locate and click on "Workshop 1 Worksheet.ipynb"
- Right click on "Raw" (refer to image below)
- Click "Save link as..."
- **Save the file in a location that you will be able to find easily** (We recommend creating a new folder called MBSI Bioinformatics Workshops)

**Note:** The above instructions are for Google Chrome (or Microsoft Edge). If you are a Mac user and Safari is your default browser, you will need to click "Download Linked File As..."; however, this will save the file as a .ipynb.txt file by default and you will need to manually edit this to a .ipynb file. We recommend using a different browser such as Google Chrome to avoid this. Ask a tutor for help if you encounter any issues.

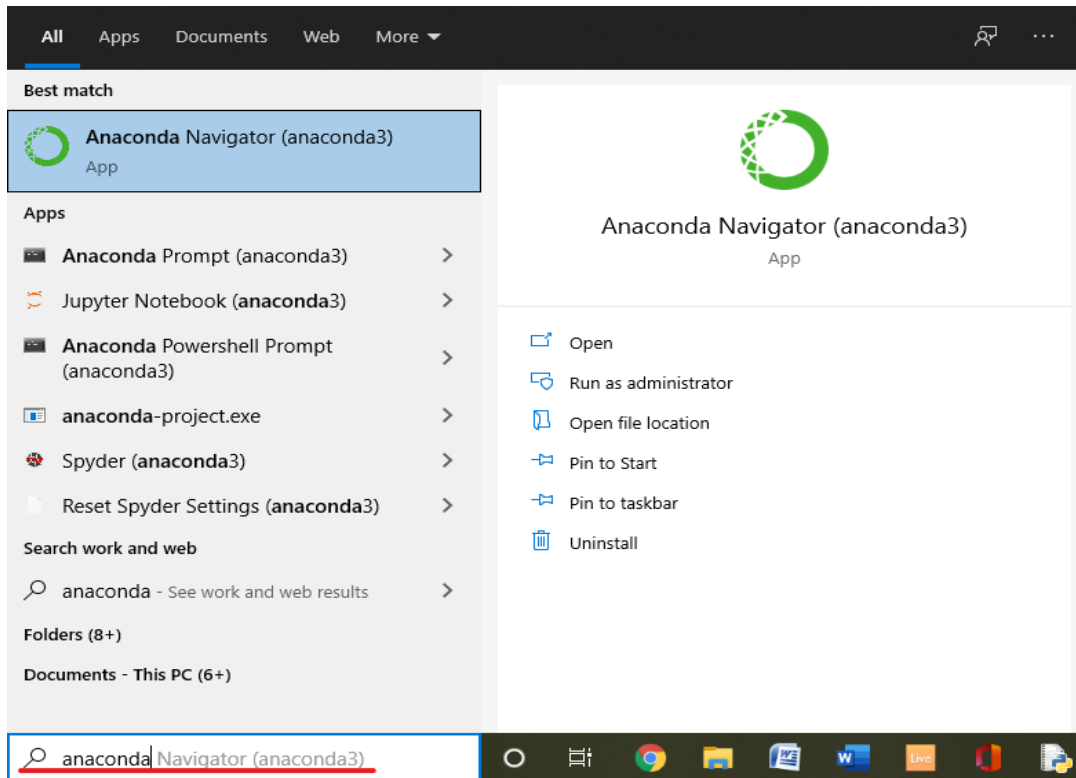
The screenshot shows the GitHub interface for the repository 'MBSI-Inc / Bioinformatics-Workshops'. The breadcrumb navigation indicates the path: 'Bioinformatics-Workshops / Worksheets / Workshop1 Worksheet.ipynb'. The file 'Workshop1 Worksheet.ipynb' is selected, showing its commit history and contributors. The file size is 298 KB. The 'Raw' button is highlighted with a red box. A right-click context menu is open over the 'Raw' button, with the 'Save link as...' option also highlighted with a red box. The menu options include 'Open link in new tab', 'Open link in new window', 'Open link in incognito window', 'Save link as...', 'Copy link address', 'AdBlock — best ad blocker', and 'Inspect'. The main content area shows the beginning of the Jupyter notebook, titled 'Bioinformatics Workshop 1', with a welcome message and instructions for the workshop.

# Accessing JupyterLab

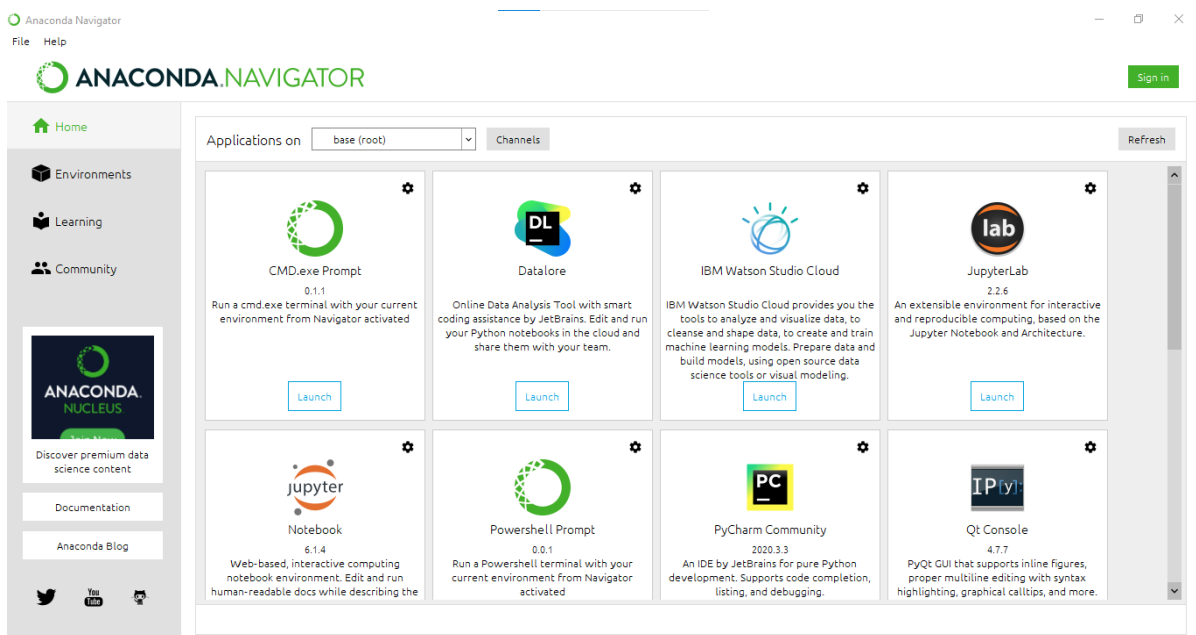
JupyterLab provides a programming environment that allows you to access, edit and download interactive Python files, which merge code with text. This is where you will learn how to use Python, via the worksheets we provide.

You can now launch JupyterLab using Anaconda by following these steps:

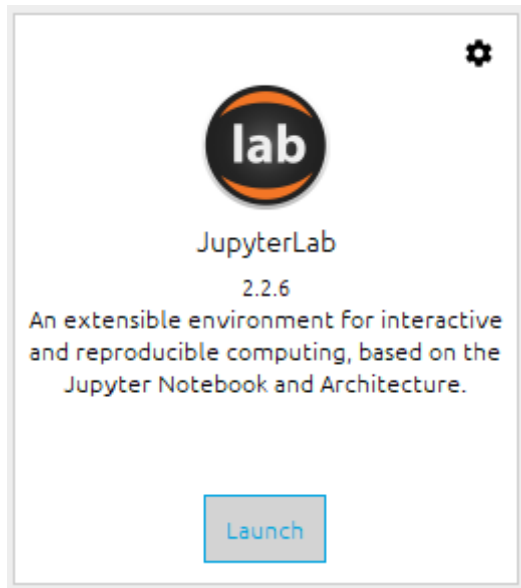
1. Type "anaconda navigator" in the search bar of your computer and click on the Anaconda Navigator app.



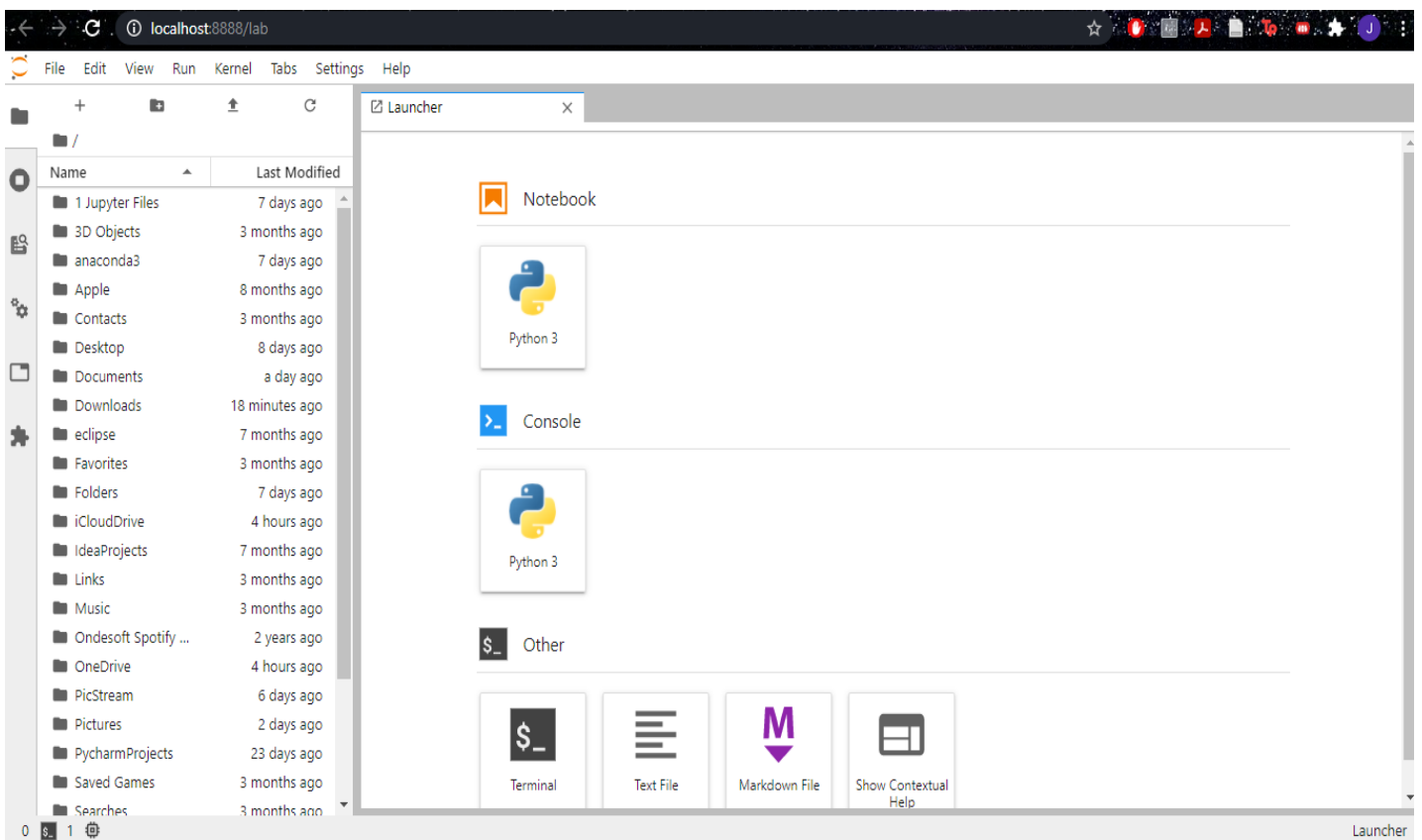
2. Wait for the Anaconda Navigator to open and you should see this screen with the applications that are now available for you to use:



- Click "launch" on the JupyterLab application. This will open a tab in your default browser that connects you to JupyterLab.



- You should now see a webpage similar to this:



- In the tab on the left hand side, navigate to the folder where you saved the worksheet file and double click on the file.

**Important Note: Do NOT delete or move the folders you see in this tab as it will apply the changes to your operating system and could cause issues.**

Alternatively, you can click the Upload Files button and find the worksheet that way.

However, I recommend going through the folders - it will be beneficial in future workshops to have the files in the same folder and you won't have to go through this process again.

You should now have the worksheet open in JupyterLab. You are now ready to start going through the worksheet! Your tutors are here to help you with this - please ask any questions if you get stuck.