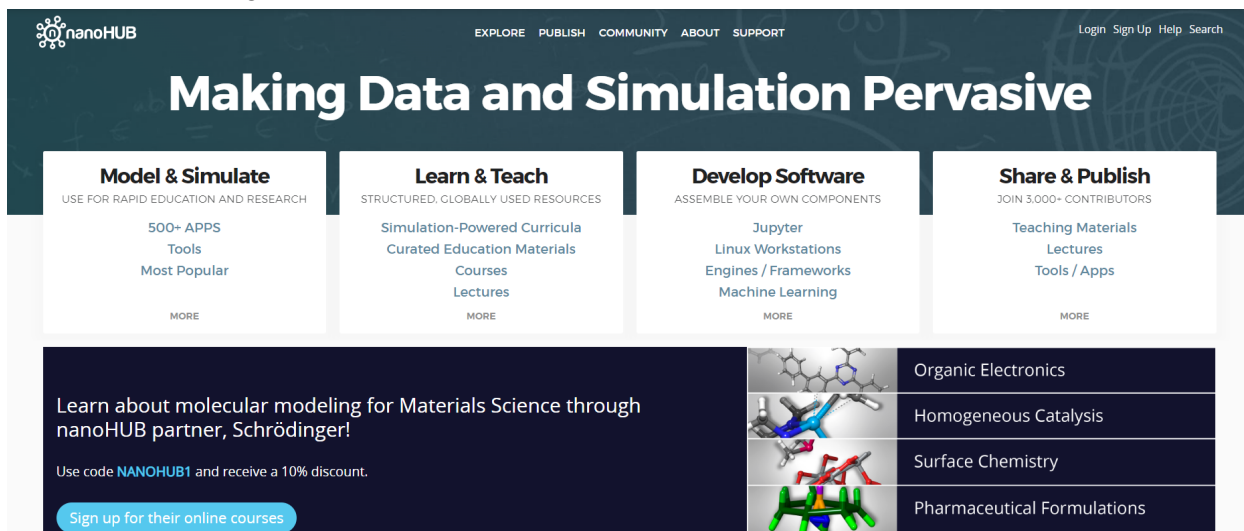


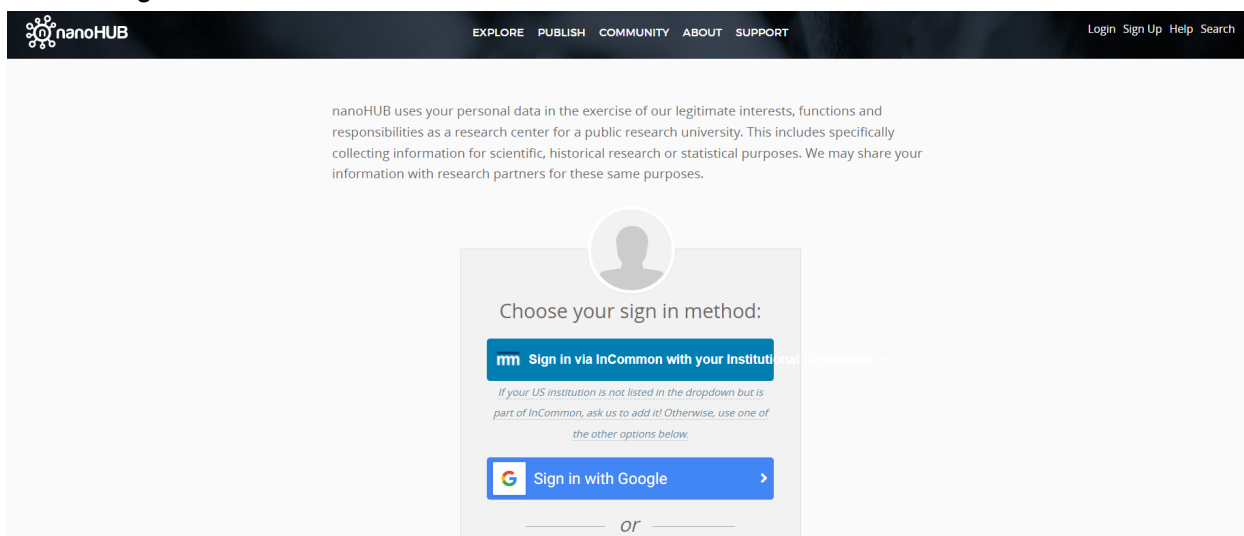
To Create an account on nanoHUB:

1. Go to nanoHUB.org



The screenshot shows the nanoHUB homepage with a dark blue header. The main navigation bar includes links for EXPLORE, PUBLISH, COMMUNITY, ABOUT, and SUPPORT. On the right, there are links for Login, Sign Up, Help, and Search. The main heading is "Making Data and Simulation Pervasive". Below this, there are four white boxes with dark blue text: "Model & Simulate" (USE FOR RAPID EDUCATION AND RESEARCH), "Learn & Teach" (STRUCTURED, GLOBALLY USED RESOURCES), "Develop Software" (ASSEMBLE YOUR OWN COMPONENTS), and "Share & Publish" (JOIN 3,000+ CONTRIBUTORS). Each box lists specific resources and a "MORE" link. At the bottom, there is a promotional banner for Schrödinger, stating "Learn about molecular modeling for Materials Science through nanoHUB partner, Schrödinger!" and offering a 10% discount with code NANOHUB1. To the right of the banner are four images of molecular models with labels: Organic Electronics, Homogeneous Catalysis, Surface Chemistry, and Pharmaceutical Formulations.

2. Click on sign on



The screenshot shows the nanoHUB sign-in page. The header is identical to the homepage. The main content area has a light gray background. At the top, there is a paragraph of text: "nanoHUB uses your personal data in the exercise of our legitimate interests, functions and responsibilities as a research center for a public research university. This includes specifically collecting information for scientific, historical research or statistical purposes. We may share your information with research partners for these same purposes." Below this text is a sign-in form. It starts with a placeholder for a profile picture. The heading is "Choose your sign in method:". There are two main buttons: "Sign in via InCommon with your Institution" and "Sign in with Google". Below the first button, there is a note: "If your US Institution is not listed in the dropdown but is part of InCommon, ask us to add it! Otherwise, use one of the other options below." Below the second button, there is a right-pointing arrow. At the bottom of the form, there is a link that says "or" with a right-pointing arrow.

3. Scroll down where it says create an account, and click on it

CONNECT WITH

Sign in via InCommon with your Institutional Credentials

If your US institution is not listed in the dropdown but is part of InCommon, ask us to add it! Otherwise, use one of the other options below.

Sign in with Google

--- OR ---

CREATE A NANOHUB ACCOUNT

Username **REQUIRED**

You can choose to log in via one of these services, and we'll help you fill in the info below!

Already have an account? [Log in here.](#)

Usernames cannot be changed. If this poses a serious problem or raises concerns please contact our [support](#).

Password may be changed any time after

4. Click on the first box that says “Sign in via InCommon with your Institutional Credentials”

CONNECT WITH

Sign in via InCommon with your Institutional Credentials

Search

AGH University of Science and Technology

Albert Einstein College of Medicine

American University of Sharjah

Ames Laboratory

Amherst College

AMOLF

Appalachian State University

If your US institution is not listed in the dropdown but is part of InCommon, ask us to add it! Otherwise, use one of the other options below.

Sign in with Google

--- OR ---

CREATE A NANOHUB ACCOUNT

Username **REQUIRED**

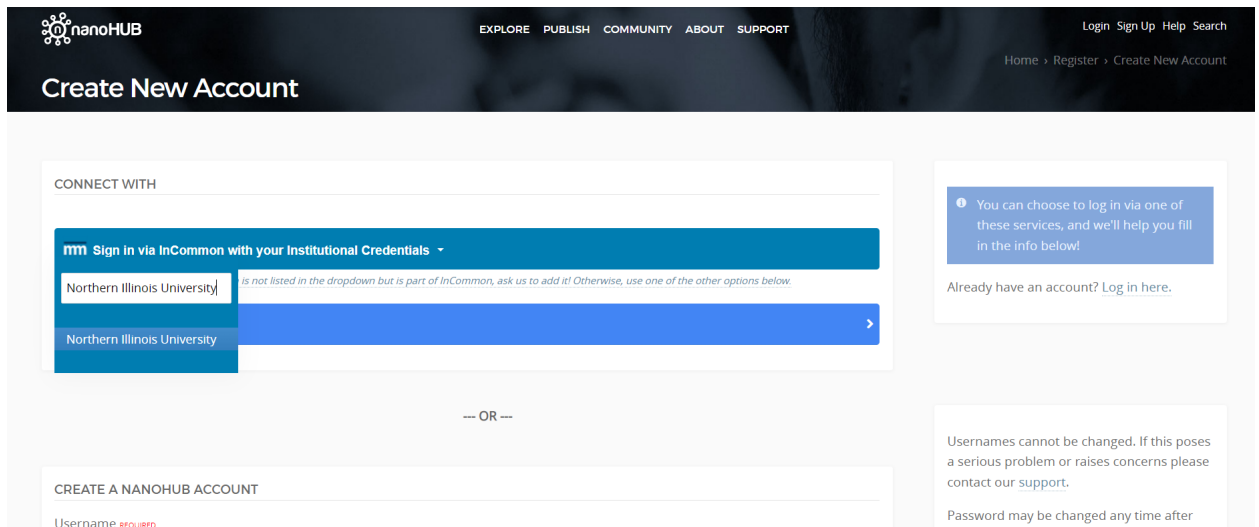
You can choose to log in via one of these services, and we'll help you fill in the info below!

Already have an account? [Log in here.](#)

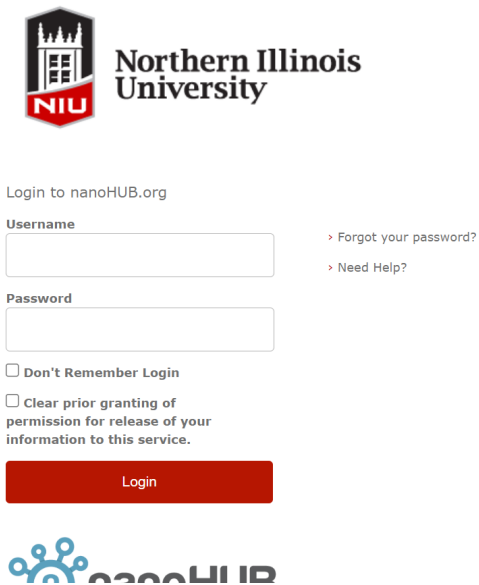
Usernames cannot be changed. If this poses a serious problem or raises concerns please contact our [support](#).

Password may be changed any time after


5. Type “Northern Illinois University” into the search bar



6. Click on the option that appears



7. Type your Zid into the username and your MyNIU password into the password
8. Select any of the options from the information release consent duration, and then click Accept

EXPLORE PUBLISH COMMUNITY ABOUT SUPPORTLogged in Help SearchHome

Account Setup

Have you ever logged into nanoHUB.org before?

No

Yes

9. Select yes or no

nanoHUB

EXPLORE PUBLISH COMMUNITY ABOUT SUPPORT

Logged in Help Search

nanoHUB.org requires additional registration information before your account can be used.
All fields marked required must be filled in.

Please correct the indicated invalid fields in the form below.

-- OR --

CREATE A NANOHUB ACCOUNT

Username REQUIRED

new_username

Combination of lowercase letters and numbers. No spaces or punctuation.

Invalid login name. Please type at least 2 characters and use only lowercase alphanumeric characters.

User login name is available

CONTACT INFORMATION

Names cannot be changed. If this poses a serious problem or raises concerns please contact our support.

We respect your privacy, and will never

nanoHUB

EXPLORE PUBLISH COMMUNITY ABOUT SUPPORT

Logged in Help Search

Field required: How did you first hear about nanoHUB?

What is the primary purpose of your visit to nanoHUB? REQUIRED

Explore content

Field required: What is the primary purpose of your visit to nanoHUB?

Personalized Communication by Interest

Yes, I would like to receive personalized communications

Updates and News

Yes, I would like to receive notices about nanoHUB webinars and events and the nanoHUB newsletter

TERMS & CONDITIONS

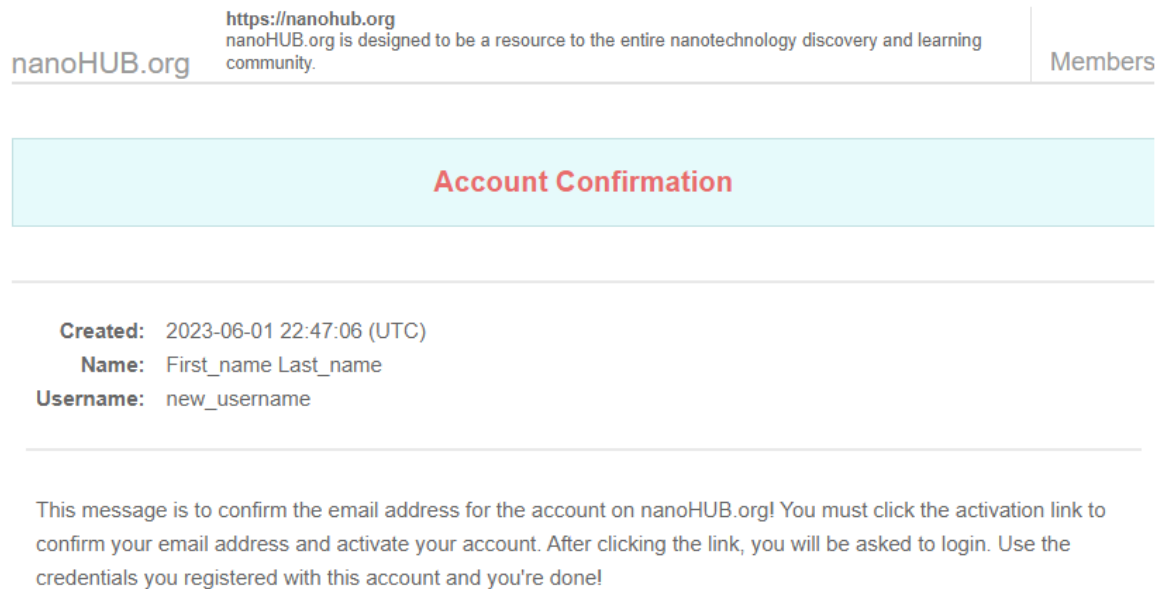
☒ Yes, I have read and agree to the Terms of Use. REQUIRED

Registration requires acceptance of the usage agreement

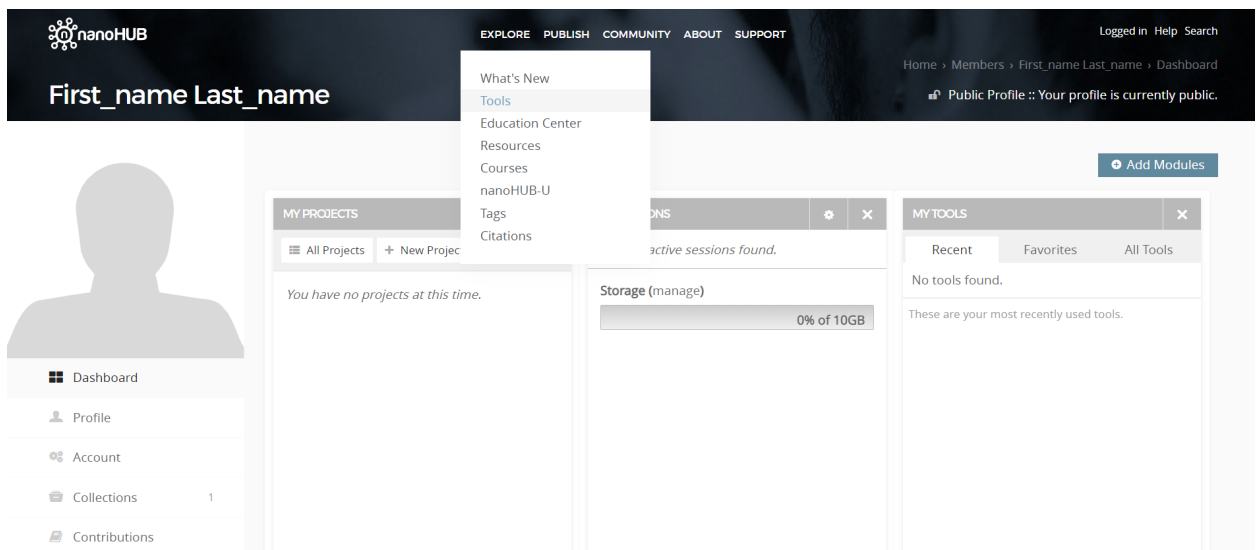
Update Account


10. Fill out the required information, start by changing your username then once all the required information is filled out click on update account

11. You will receive an Account Confirmation email to your student account, click on the link in the email to confirm your account



12. Now you have an account in nanoHub where you can access Jupyter Notebook, to find it hover mouse over Explore to open the drop down menu, then click on tools.





Dashboard

Profile

Account

Collections 1

Contributions

Courses

MY PROJECTS

All Projects + New Project

You have no projects at this time.

MY SESSIONS

No active sessions found.

Storage (manage)

0% of 10GB


MY TOOLS

Recent Favorites All Tools

No tools found.

These are your most recently used tools.

Add Modules

EXPLORE PUBLISH COMMUNITY ABOUT SUPPORT

Logged in Help Search

Home > Members > First_name Last_name > Dashboard

Public Profile :: Your profile is currently public.

First_name Last_name

What's New

Tools

Education Center


Resources

Courses

nanoHUB-U

Tags

Citations



Dashboard

Profile

Account

Collections 1

Contributions

MY PROJECTS

All Projects + New Project

You have no projects at this time.

MY SESSIONS

No active sessions found.

Storage (manage)

0% of 10GB

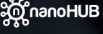
MY TOOLS

Recent Favorites All Tools

No tools found.

These are your most recently used tools.

Add Modules

EXPLORE PUBLISH COMMUNITY ABOUT SUPPORT

Logged in Help Search

Home > Resources > Tools

Start a new Tool

Resources: Tools

Browse Browse by Tags Browse Visually

search tools

1-D Chain Dispersions

1-D Chain of atoms, bases and layers to produce phonon dispersion

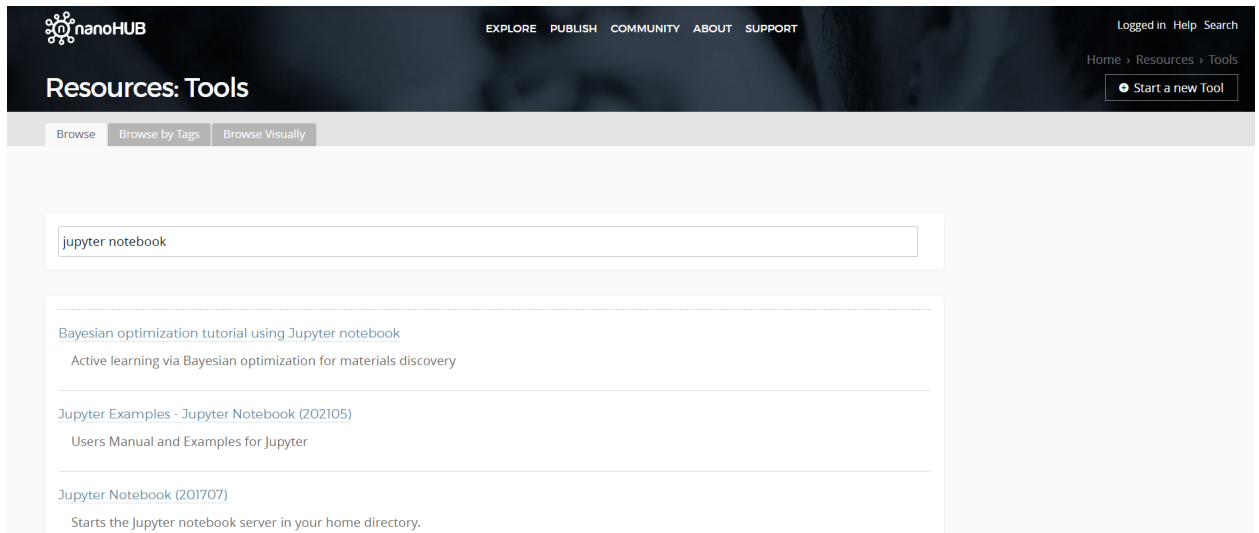
1-D Phonon BTE Solver

Simulate heat transport by solving one dimensional Boltzmann transport equation.

1D Drift Diffusion Model for Crystalline Solar Cells

Simulate a 1D solar cell of crystalline material with drift diffusion equations

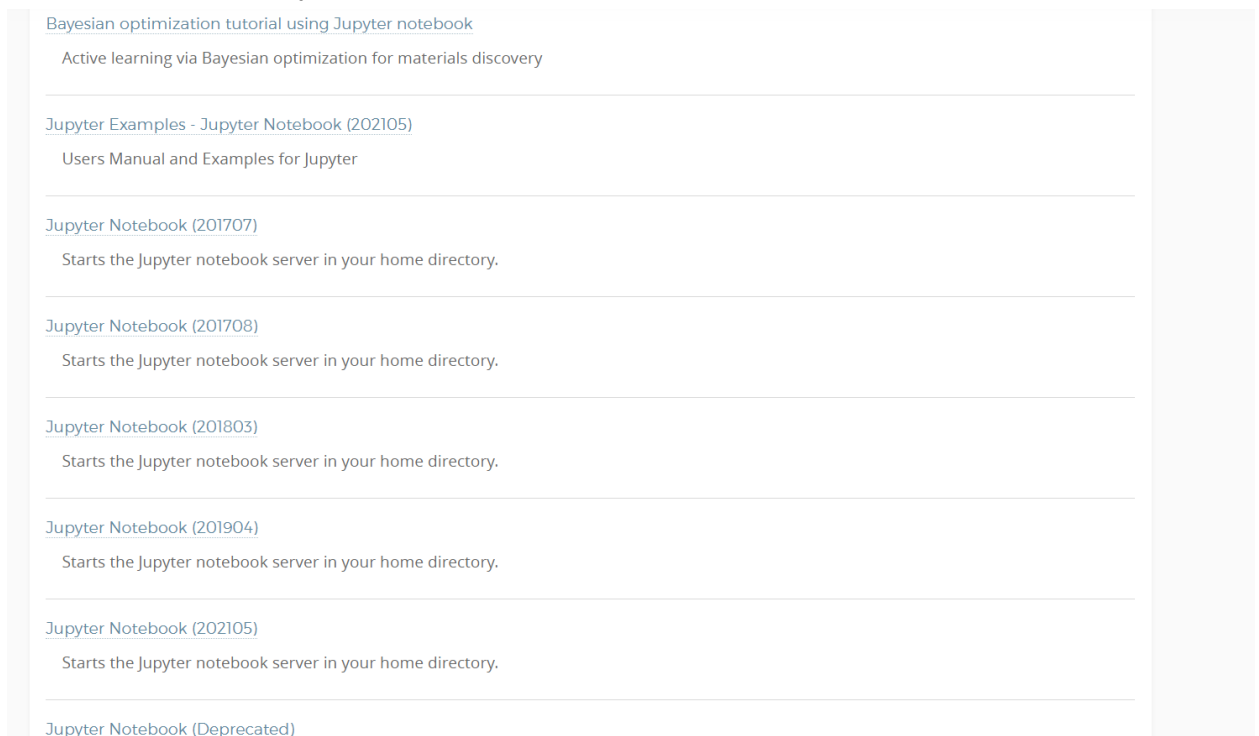
13. Search jupyter notebook on search bar



The screenshot shows the nanoHUB website's 'Resources: Tools' section. At the top, there's a navigation bar with links: EXPLORE, PUBLISH, COMMUNITY, ABOUT, SUPPORT. On the right, it says 'Logged in Help Search' and 'Home > Resources > Tools'. Below the navigation bar, there's a search bar containing the text 'jupyter notebook'. Below the search bar, there are several search results listed:

- [Bayesian optimization tutorial using Jupyter notebook](#)
Active learning via Bayesian optimization for materials discovery
- [Jupyter Examples - Jupyter Notebook \(202105\)](#)
Users Manual and Examples for Jupyter
- [Jupyter Notebook \(201707\)](#)
Starts the Jupyter notebook server in your home directory.


14. Scroll down to find Jupyter Notebook (202105), the newest version.



This screenshot shows the same search results as the previous one, but with more results visible due to scrolling. The results are:

- [Bayesian optimization tutorial using Jupyter notebook](#)
Active learning via Bayesian optimization for materials discovery
- [Jupyter Examples - Jupyter Notebook \(202105\)](#)
Users Manual and Examples for Jupyter
- [Jupyter Notebook \(201707\)](#)
Starts the Jupyter notebook server in your home directory.
- [Jupyter Notebook \(201708\)](#)
Starts the Jupyter notebook server in your home directory.
- [Jupyter Notebook \(201803\)](#)
Starts the Jupyter notebook server in your home directory.
- [Jupyter Notebook \(201904\)](#)
Starts the Jupyter notebook server in your home directory.
- [Jupyter Notebook \(202105\)](#)
Starts the Jupyter notebook server in your home directory.
- [Jupyter Notebook \(Deprecated\)](#)

15. Click on Jupyter Notebook (202105)



EXPLORE

PUBLISH

COMMUNITY

ABOUT

SUPPORT

Logged in

Help

Search

Home

Tools

Jupyter Notebook (202105)

About

Collect

Jupyter Notebook (202105)

Starts the Jupyter notebook server in your home directory.

Launch Tool

Version **2.0** - published on 24 Jan 2023

doi:10.21981/5SP6-9N34 [cite this](#)

This tool is closed source.

View All Supporting Documents

701 users, detailed usage

0 Citation(s)

0 questions (Ask a question)

0 review(s) (Review this)

0 wish(es) (New Wish)

→ Share:

f

t

g+

...

About

Usage

Citations

Questions

Reviews

Wishlist

Versions

Supporting Docs


Category

Tools

Published on

24 Jan 2023

16. Click on Launch Tool, and it will redirect you to the following page




[Submit a ticket](#)
[Terminate Session](#)

[Files](#)
[Running](#)

Select items to perform actions on them.

☐ 0

☐ /

Name ▾

Last Modified

File size

Filter

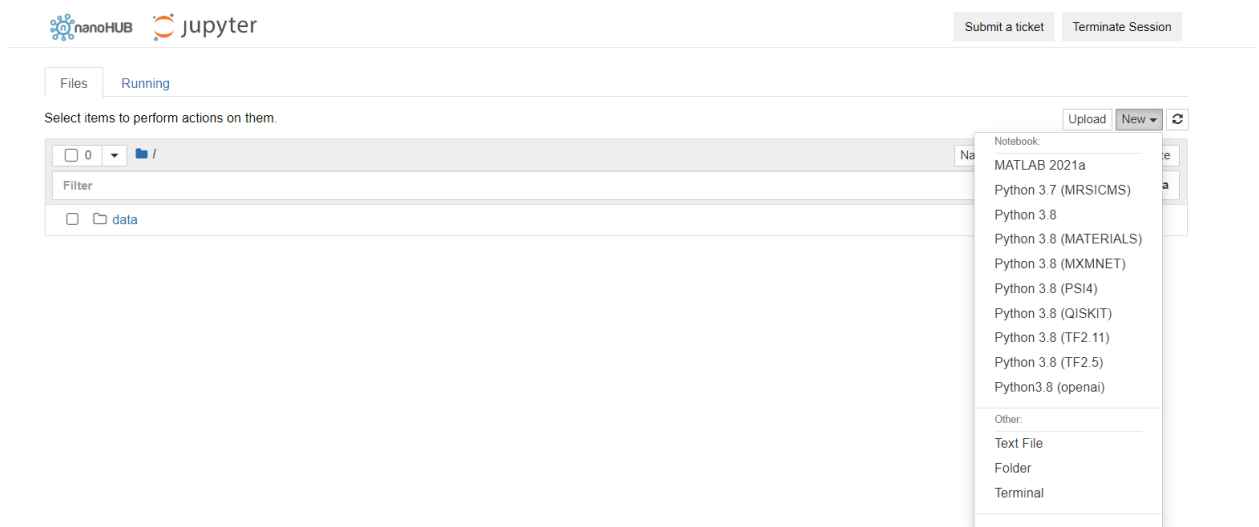
☐ .
 ☐ Aa

☐

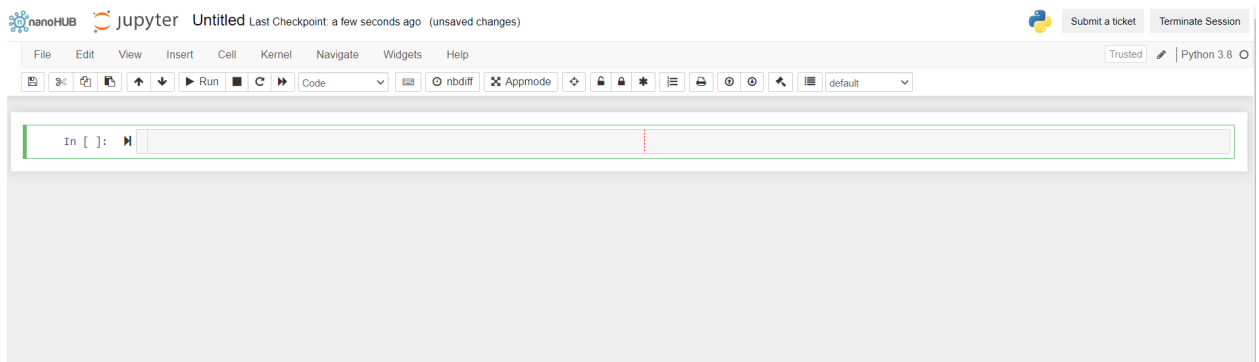
☐ data

seconds ago

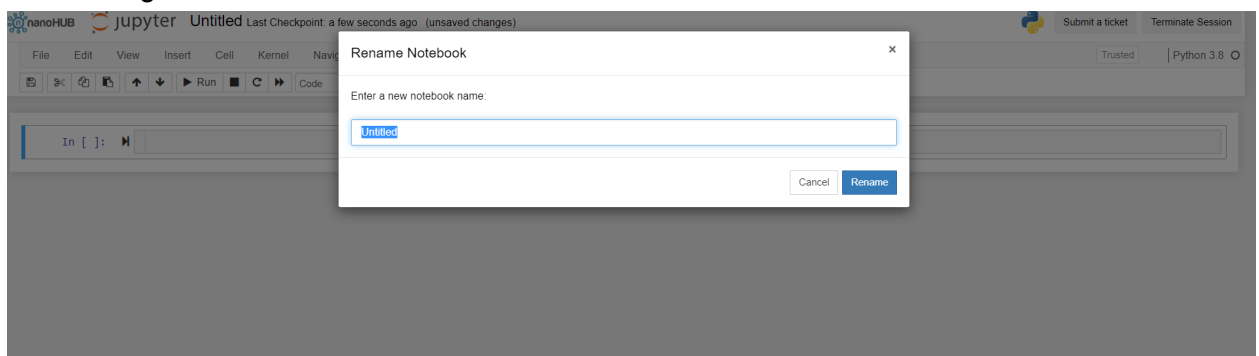
17. To create a new file click on New



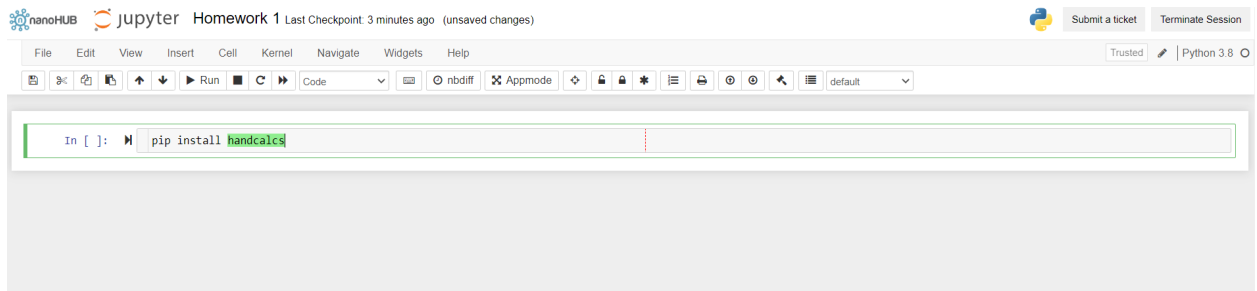
18. Then click on Python 3.8



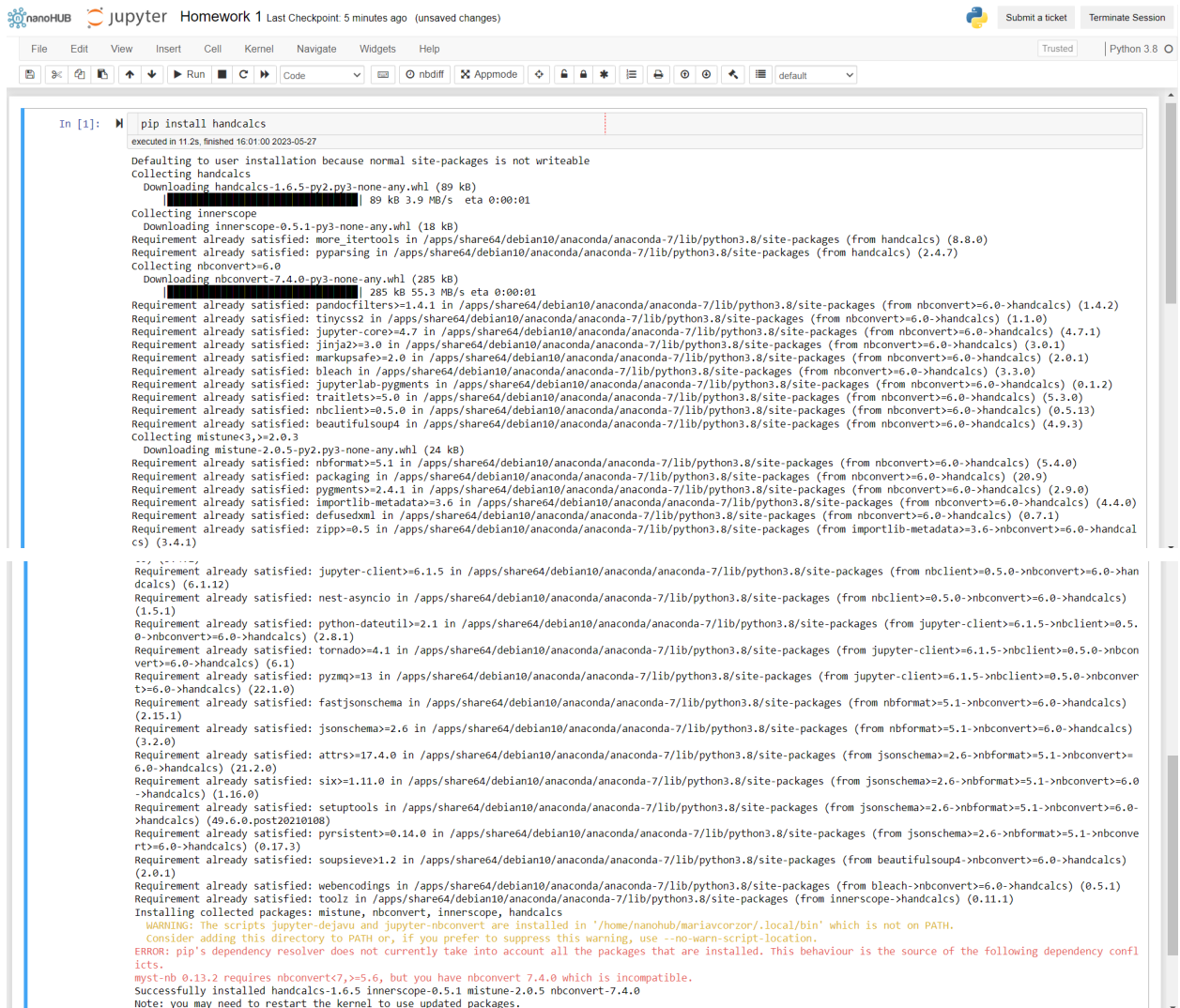
19. You can rename this notebook by clicking on Untitled, then typing on the new pop-up bar and clicking rename.



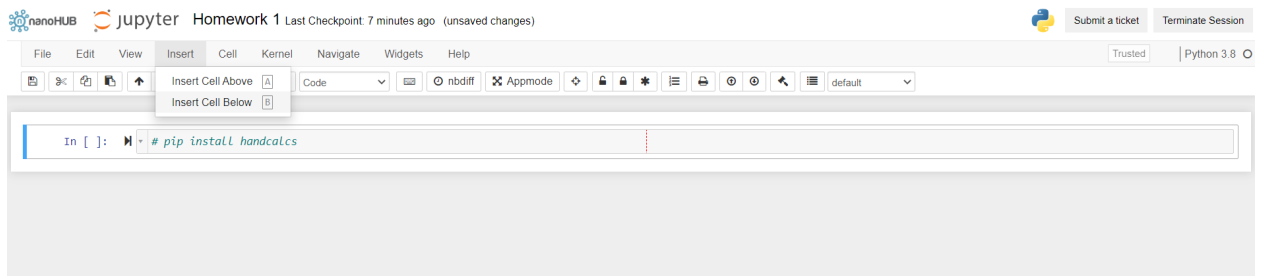
20. To use Handcalcs, you must download the library onto the Jupyter system, to do this type : “pip install handcalcs” and either click run on the menu above or the arrow next to the bar



21. This will run the command and download the library, which will look like the following:



22. This only needs to be done once, and afterwards refresh the page
23. To add another cell, click on insert and then cell below or on the downward arrow next to the printer in the menu

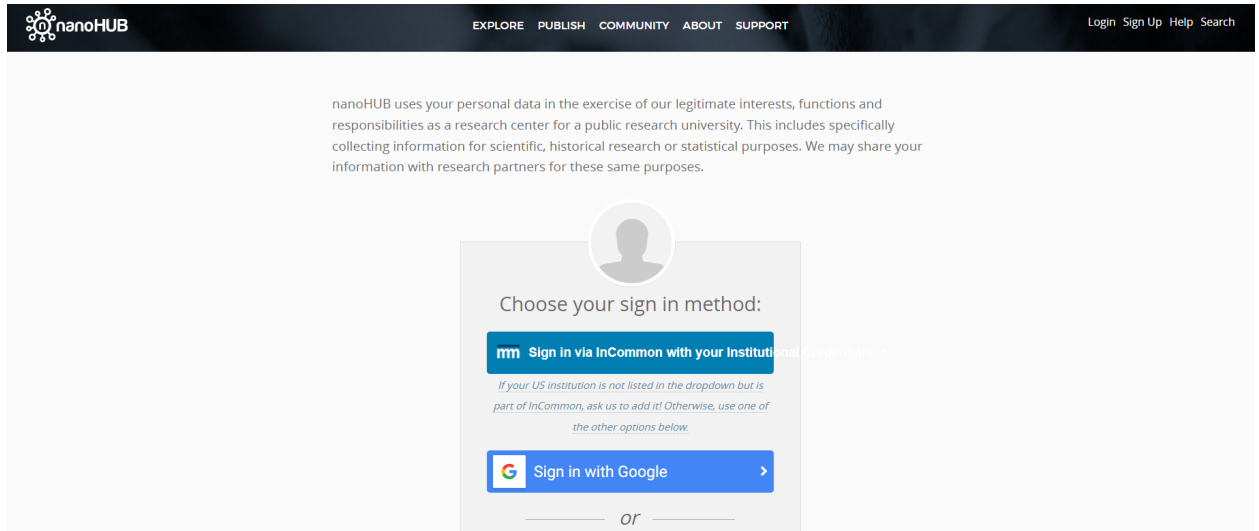


24. Now you can use the tools available in the Handcalcs library

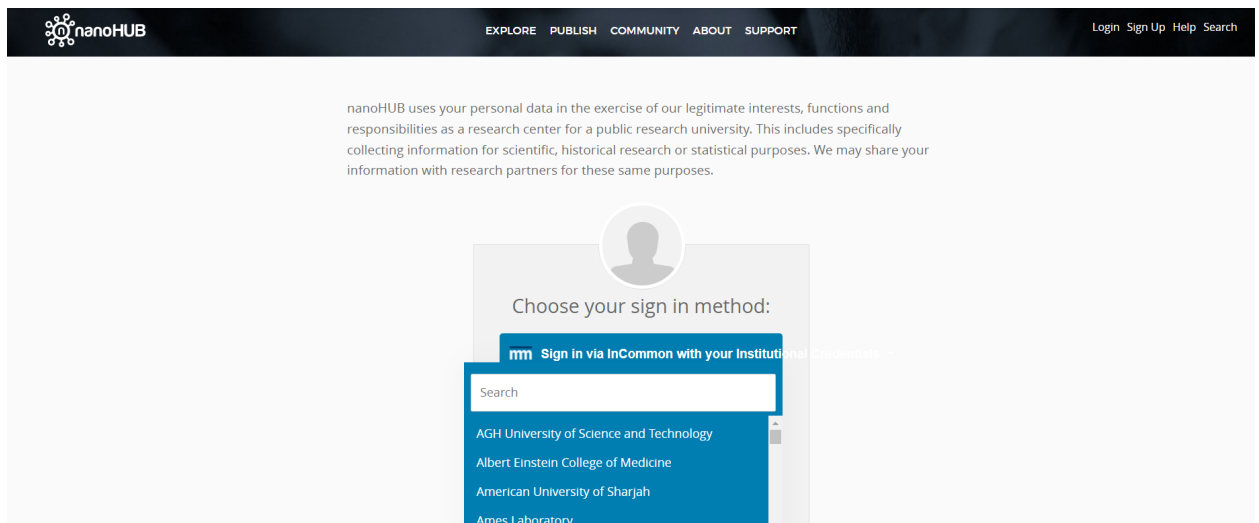
```
In [2]: %render
x = 5
y = 6
# run the code below in a new Jupyter cell
z = x + y
executed in 31ms, finished 16:08:22 2023-05-27
x = 5
y = 6
z = x + y = 5 + 6 = 11
```

To log into an already created account:

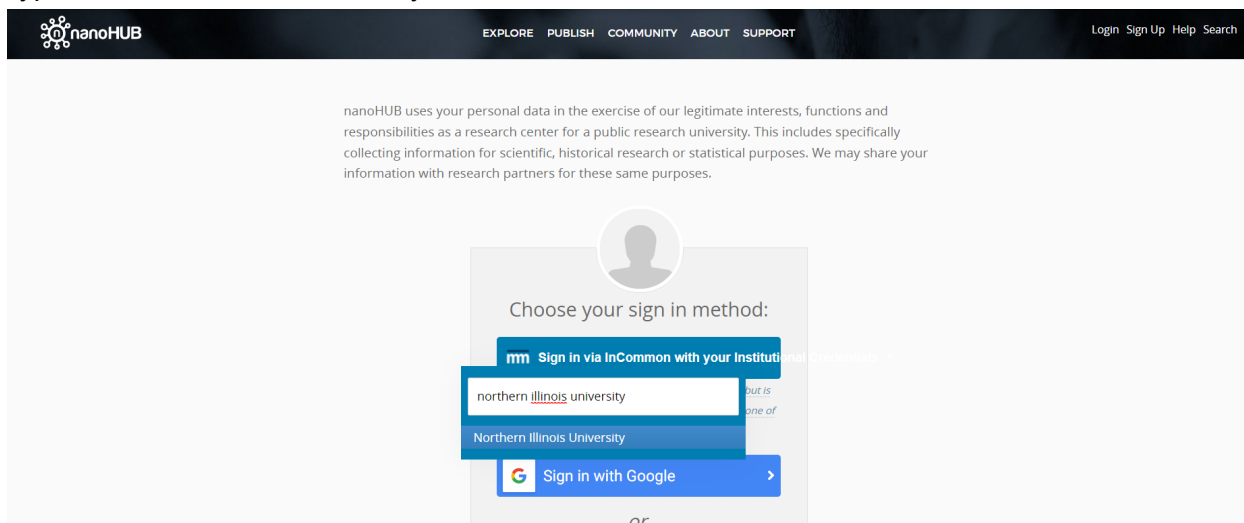
1. Click log in on the nanoHUB.org website



2. Then click on the first box under Choose your sign in method, “Sign in via InCommon with your Institutional Credentials”

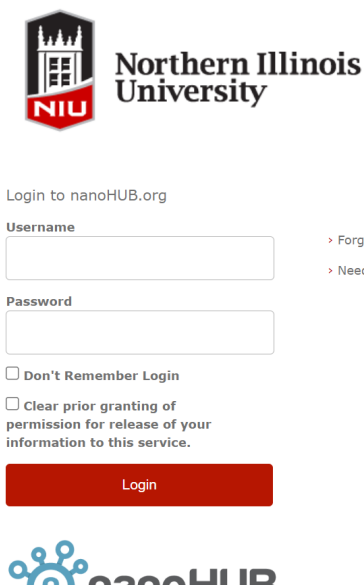


3. Type “Northern Illinois University” into the search bar



The screenshot shows the nanoHUB website's login interface. At the top, there is a navigation bar with the nanoHUB logo and links for EXPLORE, PUBLISH, COMMUNITY, ABOUT, and SUPPORT. On the right, there are links for Login, Sign Up, Help, and Search. Below the navigation bar, a privacy notice states: "nanoHUB uses your personal data in the exercise of our legitimate interests, functions and responsibilities as a research center for a public research university. This includes specifically collecting information for scientific, historical research or statistical purposes. We may share your information with research partners for these same purposes." The main content area features a "Choose your sign in method:" section. It includes a "Sign in via InCommon with your Institutional Credentials" button, which is highlighted. Below this button, a search bar contains the text "northern illinois university". A dropdown menu is open, showing "Northern Illinois University" as the selected option. To the right of the search bar, there is a "Sign in with Google" button. The page also includes a "Forgot your password?" link and a "Need Help?" link.

4. Click on the option that appears



The screenshot shows the Northern Illinois University (NIU) login page. At the top, there is the NIU logo and the text "Northern Illinois University". Below this, there is a "Login to nanoHUB.org" section. It includes a "Username" field, a "Password" field, and a "Login" button. There are also checkboxes for "Don't Remember Login" and "Clear prior granting of permission for release of your information to this service." To the right of the login fields, there are links for "Forgot your password?" and "Need Help?". The page also includes a "nanoHUB" logo at the bottom.

5. Type your Zid into the username and your MyNIU password into the password
6. Click login

The information above would be shared with the service if you proceed. Do you agree to release this information to the service every time you access it?

Select an information release consent duration:

- ☐ Ask me again at next login
 - I agree to send my information this time.
- ☒ Ask me again if information to be provided to this service changes
 - I agree that the same information will be sent automatically to this service in the future.
- ☐ Do not ask me again
 - I agree that **all** of my information will be released to **any** service.

This setting can be revoked at any time with the checkbox on the login page.

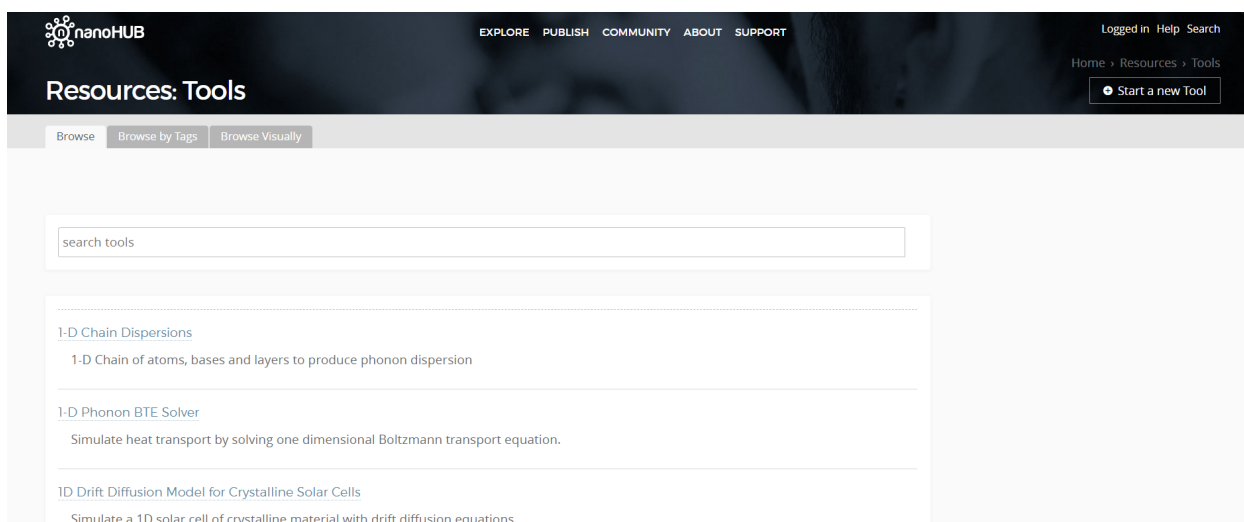
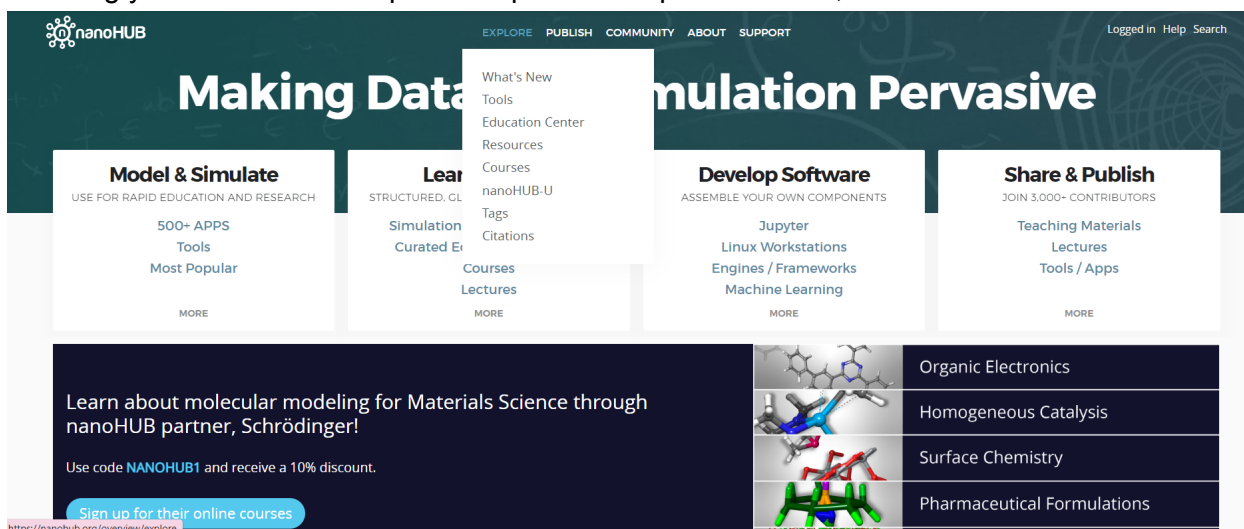
Reject

Accept

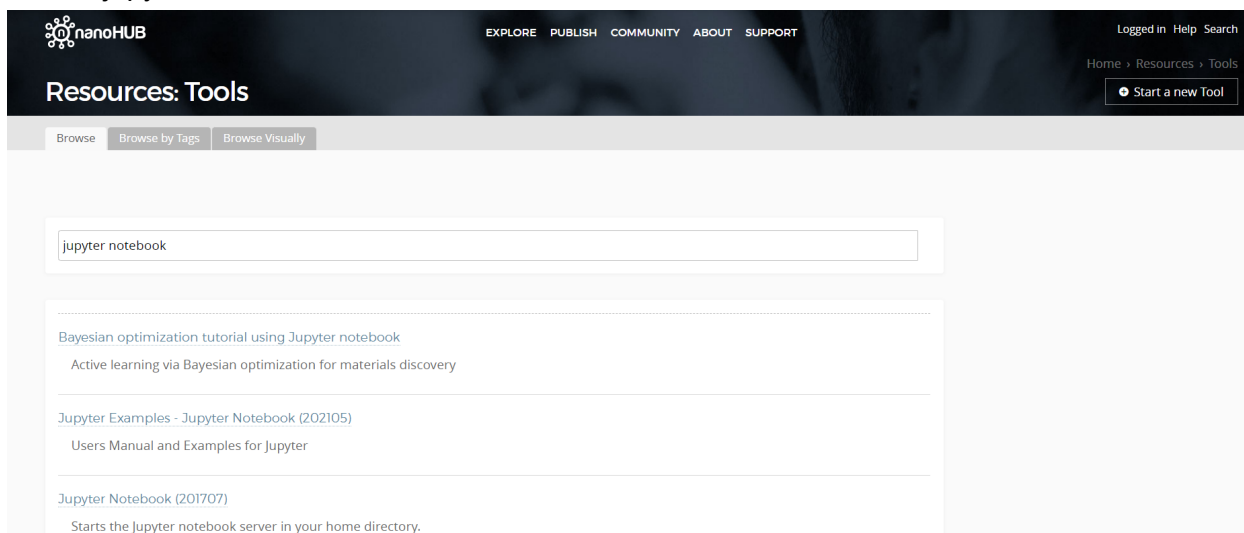
7. Select any of the options from the information release consent duration, and then click Accept

If you have not used nanoHUB before look for Jupyter Notebook by:

1. Hovering your mouse over Explore to open the drop down menu, then click on tools.




2. Search jupyter notebook on search bar



3. Scroll down to find Jupyter Notebook (202105), the newest version.

Bayesian optimization tutorial using Jupyter notebook	Active learning via Bayesian optimization for materials discovery
Jupyter Examples - Jupyter Notebook (202105)	Users Manual and Examples for Jupyter
Jupyter Notebook (201707)	Starts the Jupyter notebook server in your home directory.
Jupyter Notebook (201708)	Starts the Jupyter notebook server in your home directory.
Jupyter Notebook (201803)	Starts the Jupyter notebook server in your home directory.
Jupyter Notebook (201904)	Starts the Jupyter notebook server in your home directory.
Jupyter Notebook (202105)	Starts the Jupyter notebook server in your home directory.
Jupyter Notebook (Deprecated)	

4. Click on Jupyter Notebook (202105)


[EXPLORE](#)
[PUBLISH](#)
[COMMUNITY](#)
[ABOUT](#)
[SUPPORT](#)

[Logged in](#)
[Help](#)
[Search](#)


[Home](#)
[Tools](#)
[Jupyter Notebook \(202105\)](#)
[About](#)

[Collect](#)

Jupyter Notebook (202105)

Starts the Jupyter notebook server in your home directory.

Launch Tool

Version **2.0** - published on 24 Jan 2023
doi:10.21981/SSP6-9N34 [cite this](#)
 This tool is closed source.

[View All Supporting Documents](#)






[About](#)
[Usage](#)
[Citations](#)
[Questions](#)
[Reviews](#)
[Wishlist](#)
[Versions](#)
[Supporting Docs](#)

Category

Tools

Published on

24 Jan 2023

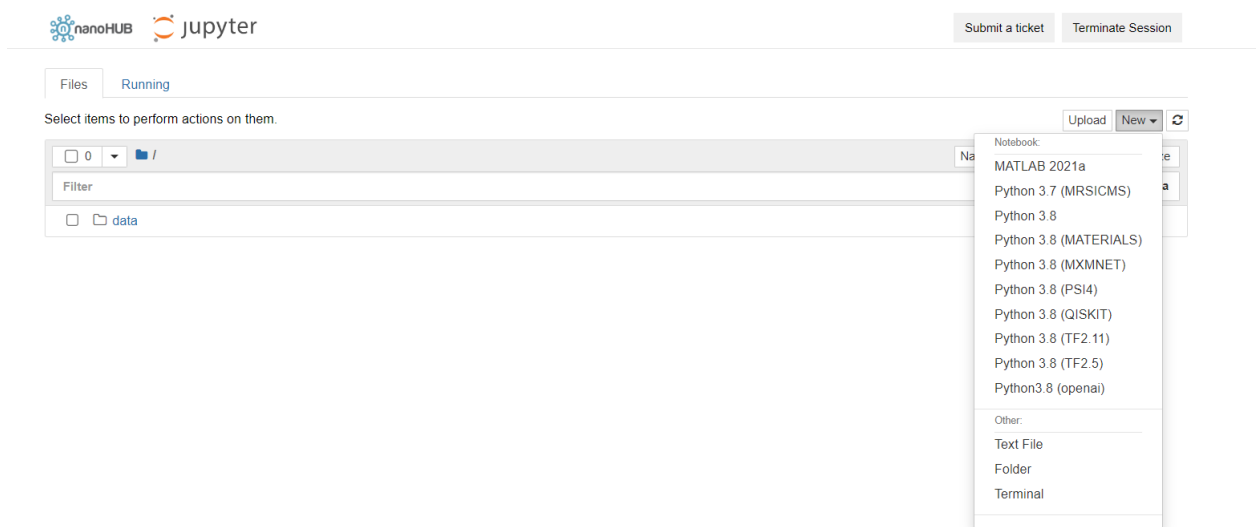
 701 users, detailed usage
 0 Citation(s)
 0 questions (Ask a question)
 0 review(s) ([Review this](#))
 0 wish(es) ([New Wish](#))

[→ Share:](#)
[f](#)
[t](#)
[v](#)
[p](#)

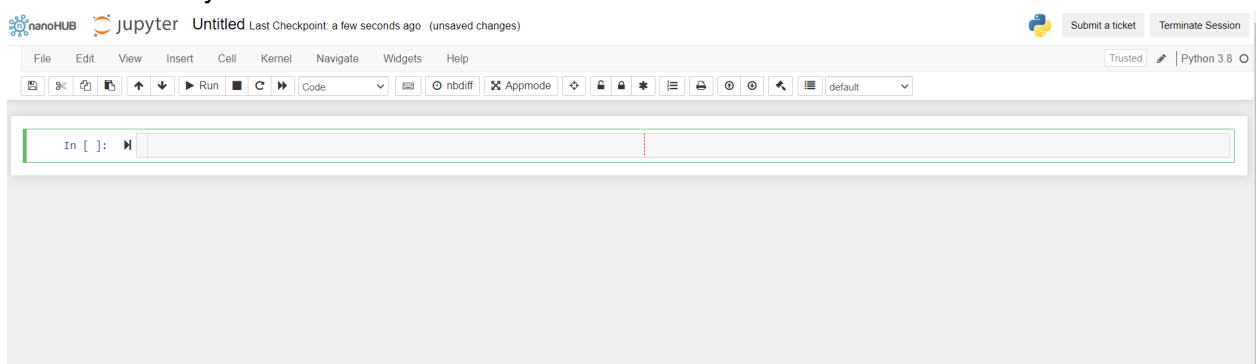
5. Click on Launch Tool, and it will redirect you to the following page



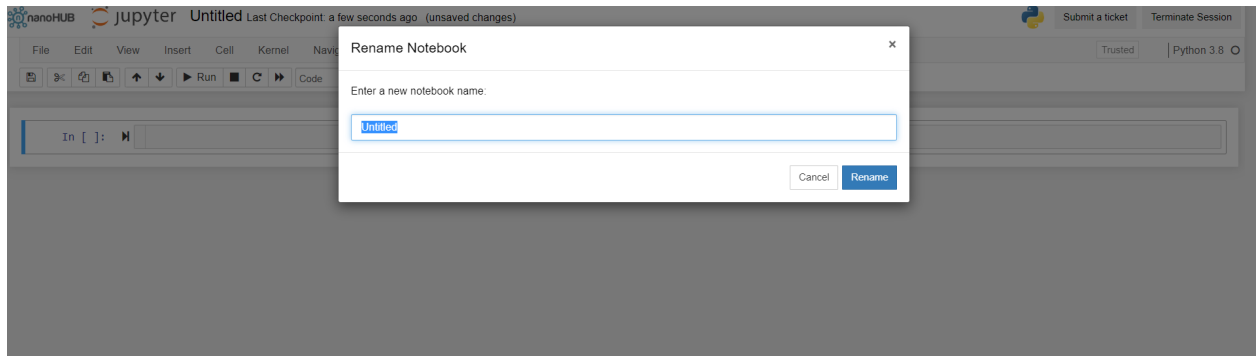
6. To create a new file click on New



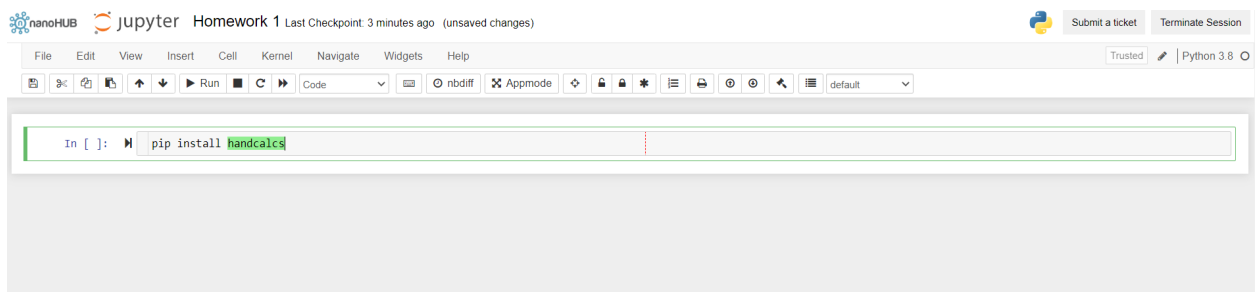
7. Then click on Python 3.8



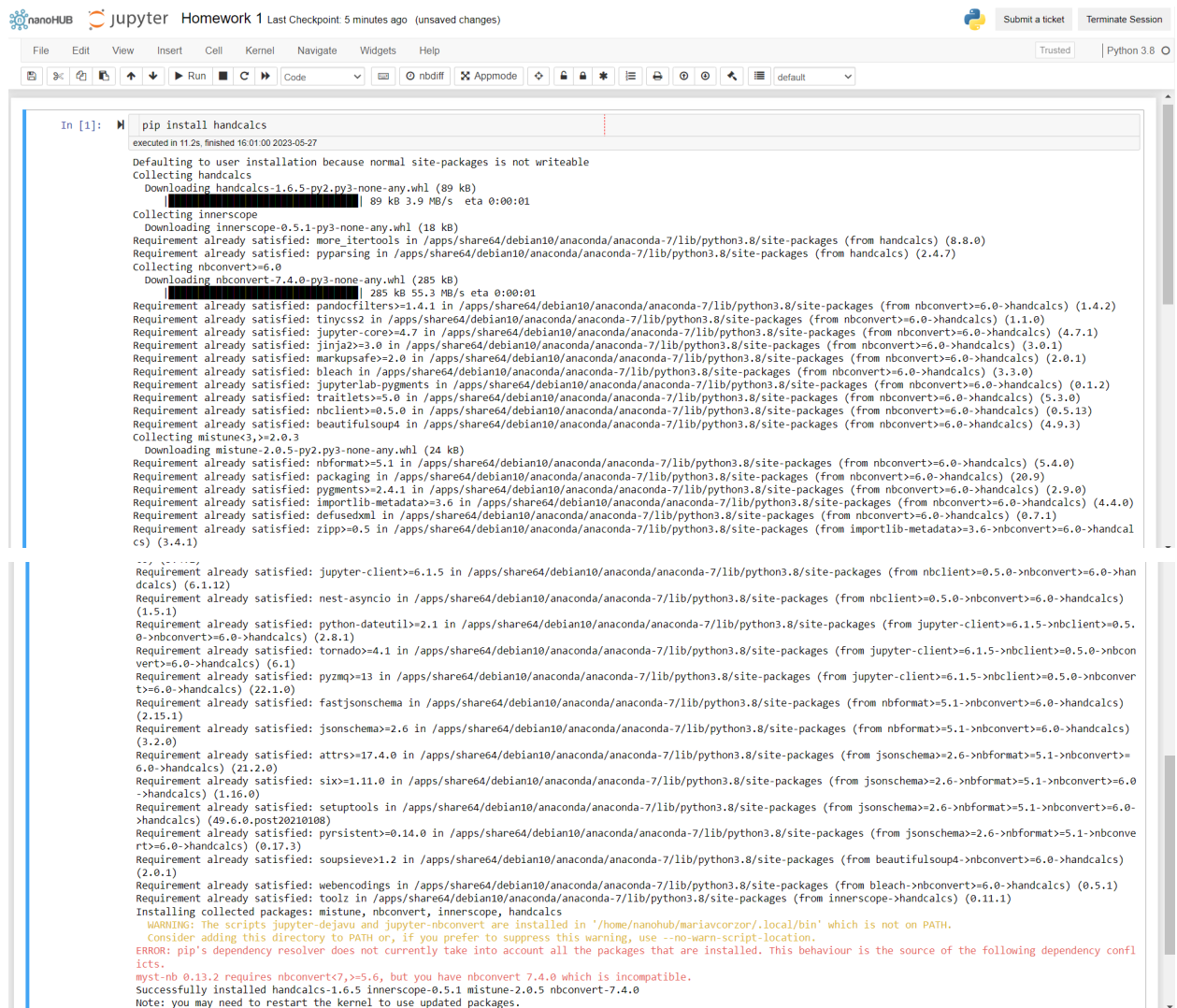
8. You can rename this notebook by clicking on Untitled, then typing on the new pop-up bar and clicking rename.



9. To use Handcalcs, you must download the library onto the Jupyter system, to do this type : “pip install handcalcs” and either click run on the menu above or the arrow next to the bar



10. This will run the command and download the library, which will look like the following:

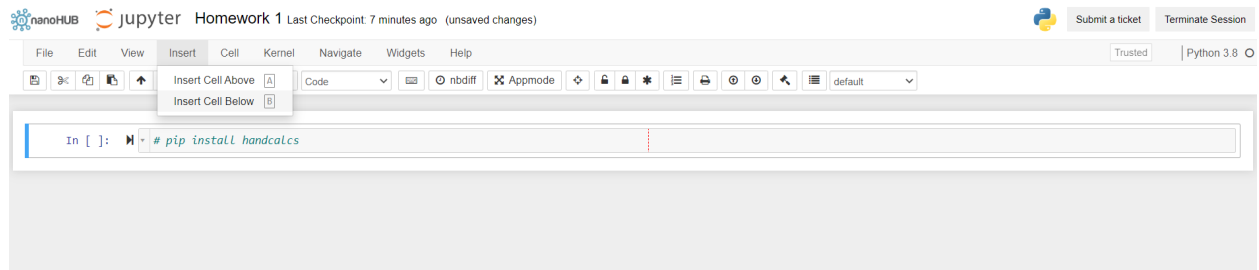


```
In [1]: pip install handcalcs
executed in 11.2s, finished 16:01:00 2023-05-27

Defaulting to user installation because normal site-packages is not writeable
collecting handcalcs
  Downloading handcalcs-1.6.5-py2.py3-none-any.whl (89 kB)
    |██████████| 89 kB 3.9 MB/s eta 0:00:01
collecting innerscope
  Downloading innerscope-0.5.1-py3-none-any.whl (18 kB)
Requirement already satisfied: more_itertools in /apps/share64/debian10/anaconda/anaconda-7/lib/python3.8/site-packages (from handcalcs) (8.8.0)
Requirement already satisfied: pyparsing in /apps/share64/debian10/anaconda/anaconda-7/lib/python3.8/site-packages (from handcalcs) (2.4.7)
collecting nbconvert<6.0
  Downloading nbconvert-7.4.0-py3-none-any.whl (285 kB)
    |██████████| 285 kB 55.3 MB/s eta 0:00:01
Requirement already satisfied: pandocfilters>=1.4.1 in /apps/share64/debian10/anaconda/anaconda-7/lib/python3.8/site-packages (from nbconvert>=6.0->handcalcs) (1.4.2)
Requirement already satisfied: tinycss2 in /apps/share64/debian10/anaconda/anaconda-7/lib/python3.8/site-packages (from nbconvert>=6.0->handcalcs) (1.1.0)
Requirement already satisfied: jupyter-core>=4.7 in /apps/share64/debian10/anaconda/anaconda-7/lib/python3.8/site-packages (from nbconvert>=6.0->handcalcs) (4.7.1)
Requirement already satisfied: Jinja2>=3.0 in /apps/share64/debian10/anaconda/anaconda-7/lib/python3.8/site-packages (from nbconvert>=6.0->handcalcs) (3.0.1)
Requirement already satisfied: MarkupSafe>=2.0 in /apps/share64/debian10/anaconda/anaconda-7/lib/python3.8/site-packages (from nbconvert>=6.0->handcalcs) (2.0.1)
Requirement already satisfied: bleach in /apps/share64/debian10/anaconda/anaconda-7/lib/python3.8/site-packages (from nbconvert>=6.0->handcalcs) (3.3.0)
Requirement already satisfied: jupyterlab-pygments in /apps/share64/debian10/anaconda/anaconda-7/lib/python3.8/site-packages (from nbconvert>=6.0->handcalcs) (0.1.2)
Requirement already satisfied: traitlets>=5.0 in /apps/share64/debian10/anaconda/anaconda-7/lib/python3.8/site-packages (from nbconvert>=6.0->handcalcs) (5.3.0)
Requirement already satisfied: nbclient>=0.5.0 in /apps/share64/debian10/anaconda/anaconda-7/lib/python3.8/site-packages (from nbconvert>=6.0->handcalcs) (0.5.13)
Requirement already satisfied: BeautifulSoup4 in /apps/share64/debian10/anaconda/anaconda-7/lib/python3.8/site-packages (from nbconvert>=6.0->handcalcs) (4.9.3)
collecting mistune<3,>=2.0.3
  Downloading mistune-2.0.5-py2.py3-none-any.whl (24 kB)
Requirement already satisfied: nbformat>=5.1 in /apps/share64/debian10/anaconda/anaconda-7/lib/python3.8/site-packages (from nbconvert>=6.0->handcalcs) (5.4.0)
Requirement already satisfied: packaging in /apps/share64/debian10/anaconda/anaconda-7/lib/python3.8/site-packages (from nbconvert>=6.0->handcalcs) (20.9)
Requirement already satisfied: pygments>=2.4.1 in /apps/share64/debian10/anaconda/anaconda-7/lib/python3.8/site-packages (from nbconvert>=6.0->handcalcs) (2.9.0)
Requirement already satisfied: importlib-metadata>=3.6 in /apps/share64/debian10/anaconda/anaconda-7/lib/python3.8/site-packages (from nbconvert>=6.0->handcalcs) (4.4.0)
Requirement already satisfied: defusedxml in /apps/share64/debian10/anaconda/anaconda-7/lib/python3.8/site-packages (from nbconvert>=6.0->handcalcs) (0.7.1)
Requirement already satisfied: zipp>=0.5 in /apps/share64/debian10/anaconda/anaconda-7/lib/python3.8/site-packages (from importlib-metadata>=3.6->nbconvert>=6.0->handcalcs) (3.4.1)
Requirement already satisfied: jupyter-client>=6.1.5 in /apps/share64/debian10/anaconda/anaconda-7/lib/python3.8/site-packages (from nbclient>=0.5.0->nbconvert>=6.0->handcalcs) (6.1.12)
Requirement already satisfied: nest-asyncio in /apps/share64/debian10/anaconda/anaconda-7/lib/python3.8/site-packages (from nbclient>=0.5.0->nbconvert>=6.0->handcalcs) (1.5.1)
Requirement already satisfied: python-dateutil>=2.1 in /apps/share64/debian10/anaconda/anaconda-7/lib/python3.8/site-packages (from jupyter-client>=6.1.5->nbclient>=0.5.0->nbconvert>=6.0->handcalcs) (2.8.1)
Requirement already satisfied: tornado>=4.1 in /apps/share64/debian10/anaconda/anaconda-7/lib/python3.8/site-packages (from jupyter-client>=6.1.5->nbclient>=0.5.0->nbconvert>=6.0->handcalcs) (6.1)
Requirement already satisfied: pyzmq>=13 in /apps/share64/debian10/anaconda/anaconda-7/lib/python3.8/site-packages (from jupyter-client>=6.1.5->nbclient>=0.5.0->nbconvert>=6.0->handcalcs) (22.1.0)
Requirement already satisfied: fastjsonschema in /apps/share64/debian10/anaconda/anaconda-7/lib/python3.8/site-packages (from nbformat>=5.1->nbconvert>=6.0->handcalcs) (2.15.1)
Requirement already satisfied: jsonschema>=2.6 in /apps/share64/debian10/anaconda/anaconda-7/lib/python3.8/site-packages (from nbformat>=5.1->nbconvert>=6.0->handcalcs) (3.2.0)
Requirement already satisfied: attrs>=17.4.0 in /apps/share64/debian10/anaconda/anaconda-7/lib/python3.8/site-packages (from jsonschema>=2.6->nbformat>=5.1->nbconvert>=6.0->handcalcs) (21.2.0)
Requirement already satisfied: six>=1.11.0 in /apps/share64/debian10/anaconda/anaconda-7/lib/python3.8/site-packages (from jsonschema>=2.6->nbformat>=5.1->nbconvert>=6.0->handcalcs) (1.16.0)
Requirement already satisfied: setuptools in /apps/share64/debian10/anaconda/anaconda-7/lib/python3.8/site-packages (from jsonschema>=2.6->nbformat>=5.1->nbconvert>=6.0->handcalcs) (49.6.0.post20210808)
Requirement already satisfied: pyparsing in /apps/share64/debian10/anaconda/anaconda-7/lib/python3.8/site-packages (from jsonschema>=2.6->nbformat>=5.1->nbconvert>=6.0->handcalcs) (2.4.7)
Requirement already satisfied: soupsieve>=1.2 in /apps/share64/debian10/anaconda/anaconda-7/lib/python3.8/site-packages (from BeautifulSoup4->nbconvert>=6.0->handcalcs) (2.0.1)
Requirement already satisfied: webencodings in /apps/share64/debian10/anaconda/anaconda-7/lib/python3.8/site-packages (from bleach->nbconvert>=6.0->handcalcs) (0.5.1)
Requirement already satisfied: toolz in /apps/share64/debian10/anaconda/anaconda-7/lib/python3.8/site-packages (from innerscope->handcalcs) (0.11.1)
Installing collected packages: mistune, nbconvert, innerscope, handcalcs
WARNING: The scripts jupyter-dejavu and jupyter-nbconvert are installed in '/home/nanohub/mariavcorzon/.local/bin' which is not on PATH.
Consider adding this directory to PATH or, if you prefer to suppress this warning, use --no-warn-script-location.
ERROR: pip's dependency resolver does not currently take into account all the packages that are installed. This behaviour is the source of the following dependency conflicts
myst-nb 0.13.2 requires nbconvert<7,>=5.6, but you have nbconvert 7.4.0 which is incompatible.
Successfully installed handcalcs-1.6.5 innerscope-0.5.1 mistune-2.0.5 nbconvert-7.4.0
Note: you may need to restart the kernel to use updated packages.
```

11. This only needs to be done once, and afterwards refresh the page

12. To add another cell, click on insert and then cell below or on the downward arrow next to the printer in the menu



```
In [ ]: # pip install handcalcs
```

13. Now you can use the tools available in the Handcalcs library

```
In [2]: %render
x = 5
y = 6

# run the code below in a new Jupyter cell

z = x + y

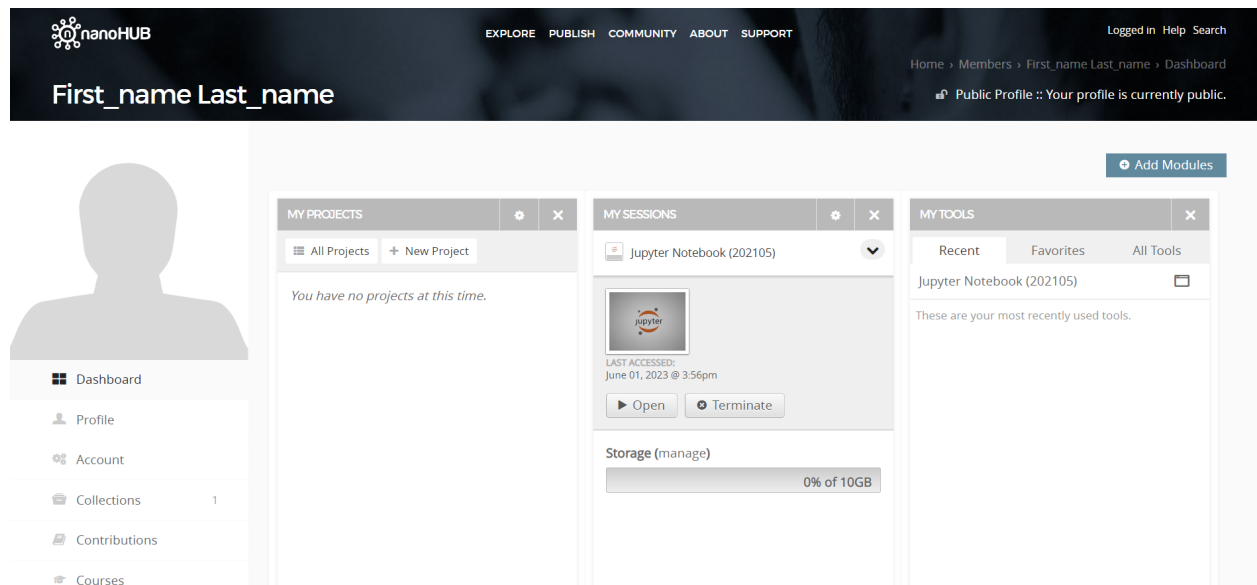
executed in 31ms, finished 16:06:22 2023-05-27

x = 5

y = 6

z = x + y = 5 + 6    = 11
```

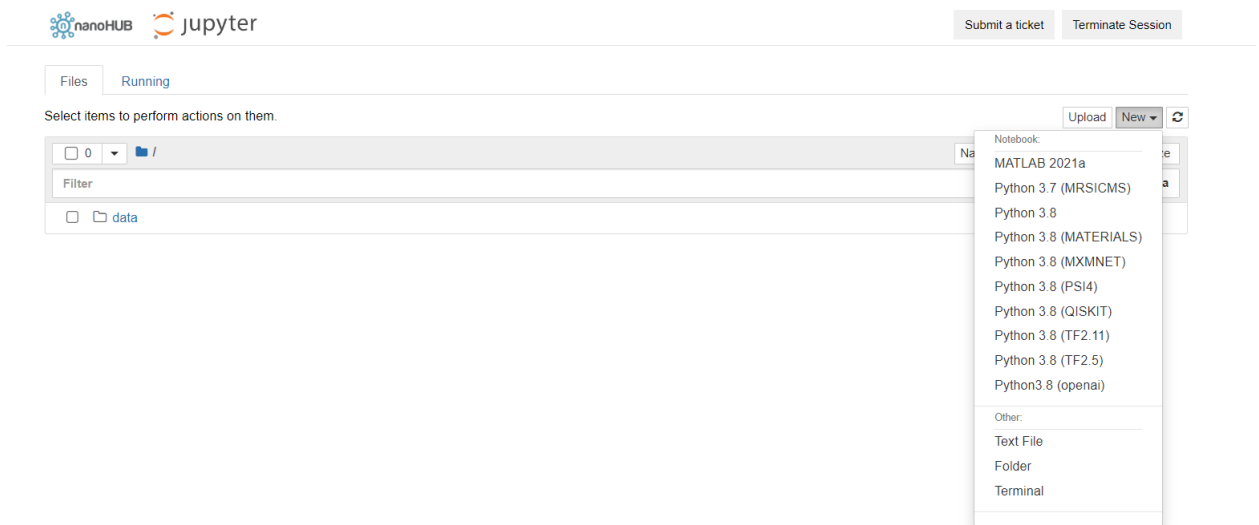
If you have already used nanoHUB for Jupyter you can easily access it on your dashboard under “My Session”



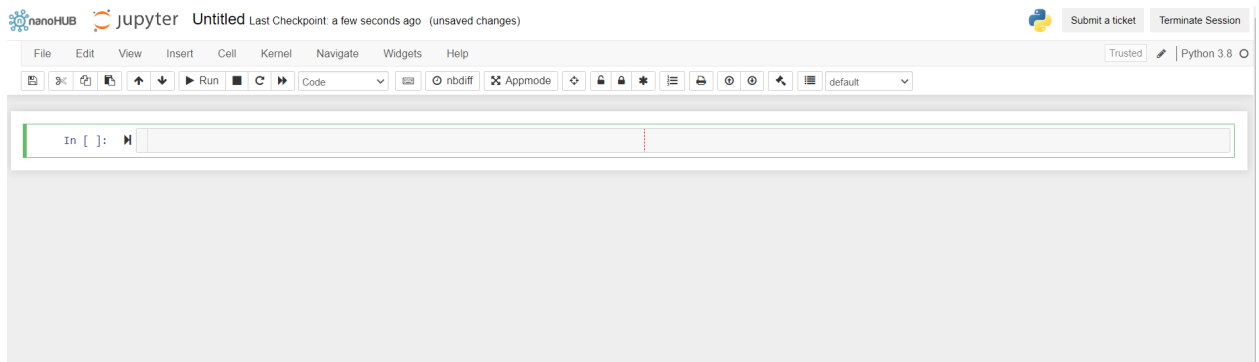
You can open it by clicking on “Open” under Jupyter Notebook.

If you have not downloaded the Handcalcs library before this must be done:

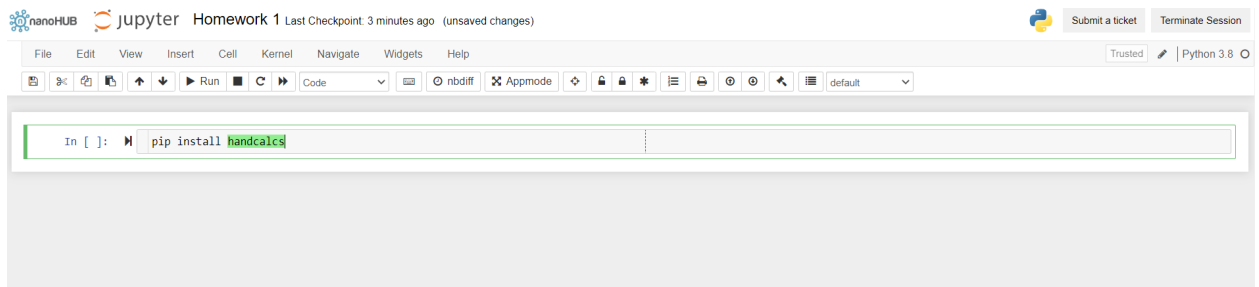
1. Create a new file click on New



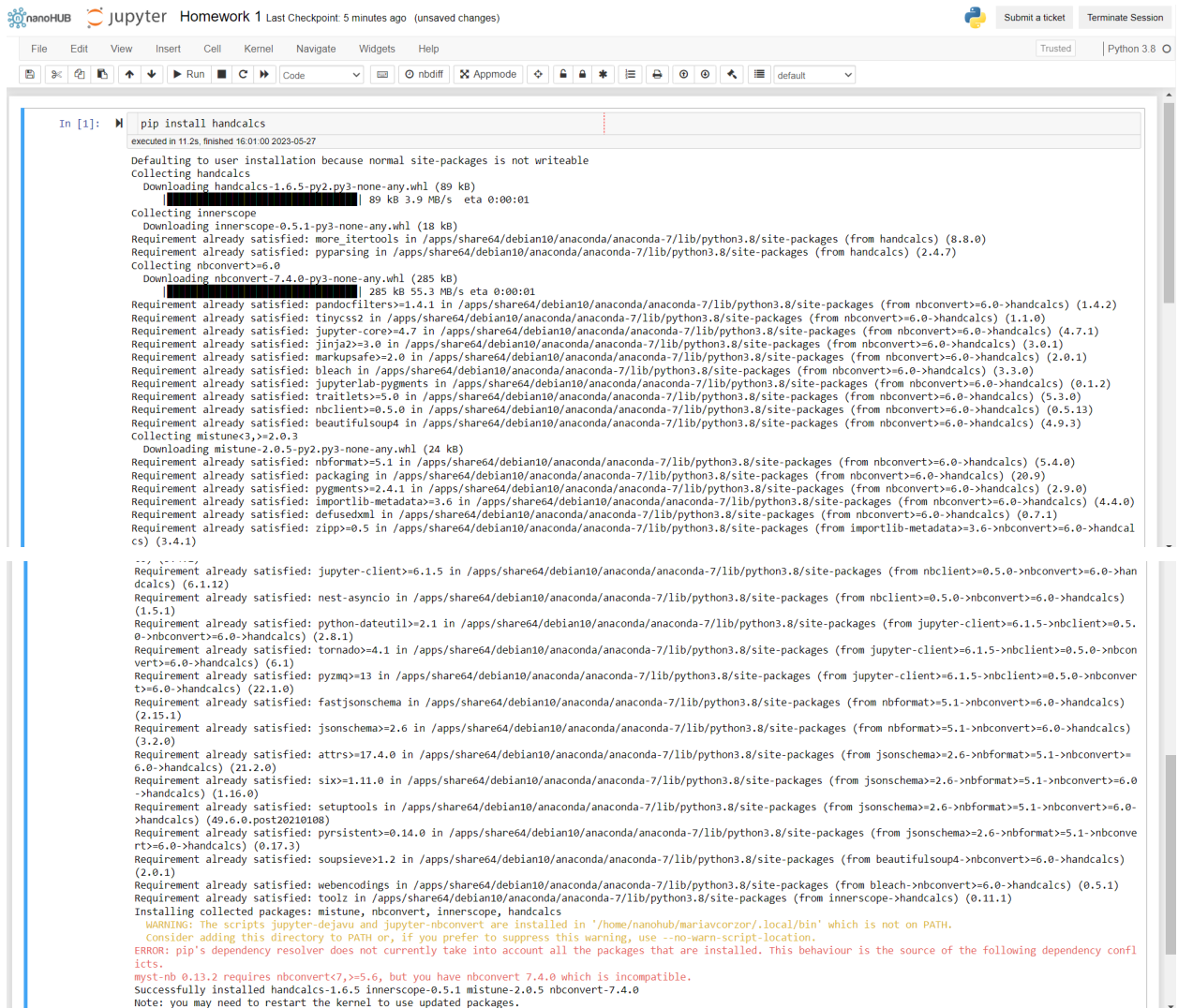
2. Then click on Python 3.8



3. To use Handcalcs, you must download the library onto the Jupyter system, to do this type : “pip install handcalcs” and either click run on the menu above or the arrow next to the bar



4. This will run the command and download the library, which will look like the following:

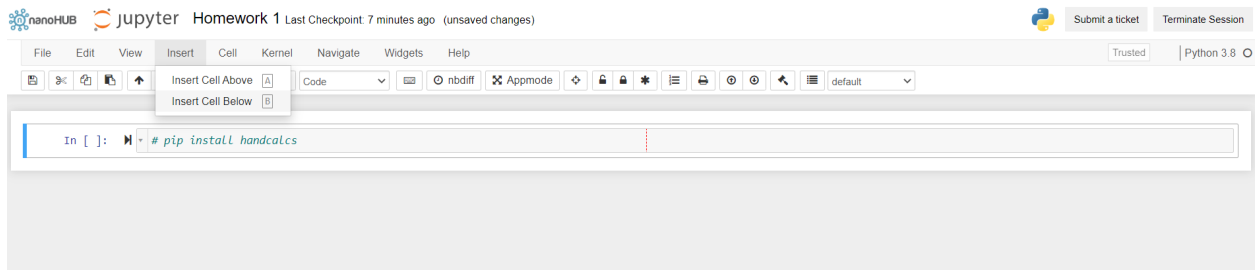


```
In [1]: pip install handcalcs

executed in 11.2s, finished 16:01:00 2023-05-27

Defaulting to user installation because normal site-packages is not writeable
collecting handcalcs
  Downloading handcalcs-1.6.5-py2.py3-none-any.whl (89 kB)
    |██████████| 89 kB 3.9 MB/s eta 0:00:01
collecting innerscope
  Downloading innerscope-0.5.1-py3-none-any.whl (18 kB)
Requirement already satisfied: more_itertools in /apps/share64/debian10/anaconda/anaconda-7/lib/python3.8/site-packages (from handcalcs) (8.8.0)
Requirement already satisfied: pyparsing in /apps/share64/debian10/anaconda/anaconda-7/lib/python3.8/site-packages (from handcalcs) (2.4.7)
collecting nbconvert<6.0
  Downloading nbconvert-7.4.0-py3-none-any.whl (285 kB)
    |██████████| 285 kB 55.3 MB/s eta 0:00:01
Requirement already satisfied: pandocfilters>=1.4.1 in /apps/share64/debian10/anaconda/anaconda-7/lib/python3.8/site-packages (from nbconvert>=6.0->handcalcs) (1.4.2)
Requirement already satisfied: tinycss2 in /apps/share64/debian10/anaconda/anaconda-7/lib/python3.8/site-packages (from nbconvert>=6.0->handcalcs) (1.1.0)
Requirement already satisfied: jupyter-core>=4.7 in /apps/share64/debian10/anaconda/anaconda-7/lib/python3.8/site-packages (from nbconvert>=6.0->handcalcs) (4.7.1)
Requirement already satisfied: jinja2>=3.0 in /apps/share64/debian10/anaconda/anaconda-7/lib/python3.8/site-packages (from nbconvert>=6.0->handcalcs) (3.0.1)
Requirement already satisfied: markupsafe>=2.0 in /apps/share64/debian10/anaconda/anaconda-7/lib/python3.8/site-packages (from nbconvert>=6.0->handcalcs) (2.0.1)
Requirement already satisfied: bleach in /apps/share64/debian10/anaconda/anaconda-7/lib/python3.8/site-packages (from nbconvert>=6.0->handcalcs) (3.3.0)
Requirement already satisfied: pygments in /apps/share64/debian10/anaconda/anaconda-7/lib/python3.8/site-packages (from nbconvert>=6.0->handcalcs) (0.1.2)
Requirement already satisfied: traitlets>=5.0 in /apps/share64/debian10/anaconda/anaconda-7/lib/python3.8/site-packages (from nbconvert>=6.0->handcalcs) (5.3.0)
Requirement already satisfied: nbclient>=0.5.0 in /apps/share64/debian10/anaconda/anaconda-7/lib/python3.8/site-packages (from nbconvert>=6.0->handcalcs) (0.5.13)
Requirement already satisfied: beautifulsoup4 in /apps/share64/debian10/anaconda/anaconda-7/lib/python3.8/site-packages (from nbconvert>=6.0->handcalcs) (4.9.3)
collecting mistune<3,>=2.0.3
  Downloading mistune-2.0.5-py2.py3-none-any.whl (24 kB)
Requirement already satisfied: nbformat>=5.1 in /apps/share64/debian10/anaconda/anaconda-7/lib/python3.8/site-packages (from nbconvert>=6.0->handcalcs) (5.4.0)
Requirement already satisfied: packaging in /apps/share64/debian10/anaconda/anaconda-7/lib/python3.8/site-packages (from nbconvert>=6.0->handcalcs) (20.9)
Requirement already satisfied: pygments>=2.4.1 in /apps/share64/debian10/anaconda/anaconda-7/lib/python3.8/site-packages (from nbconvert>=6.0->handcalcs) (2.9.0)
Requirement already satisfied: importlib-metadata>=3.6 in /apps/share64/debian10/anaconda/anaconda-7/lib/python3.8/site-packages (from nbconvert>=6.0->handcalcs) (4.4.0)
Requirement already satisfied: defusedxml in /apps/share64/debian10/anaconda/anaconda-7/lib/python3.8/site-packages (from nbconvert>=6.0->handcalcs) (0.7.1)
Requirement already satisfied: zipp>=0.5 in /apps/share64/debian10/anaconda/anaconda-7/lib/python3.8/site-packages (from importlib-metadata>=3.6->nbconvert>=6.0->handcalcs) (3.4.1)
Requirement already satisfied: jupyter-client>=6.1.5 in /apps/share64/debian10/anaconda/anaconda-7/lib/python3.8/site-packages (from nbclient>=0.5.0->nbconvert>=6.0->handcalcs) (6.1.12)
Requirement already satisfied: nest-asyncio in /apps/share64/debian10/anaconda/anaconda-7/lib/python3.8/site-packages (from nbclient>=0.5.0->nbconvert>=6.0->handcalcs) (1.5.1)
Requirement already satisfied: python-dateutil>=2.1 in /apps/share64/debian10/anaconda/anaconda-7/lib/python3.8/site-packages (from jupyter-client>=6.1.5->nbclient>=0.5.0->nbconvert>=6.0->handcalcs) (2.8.1)
Requirement already satisfied: tornado>=4.1 in /apps/share64/debian10/anaconda/anaconda-7/lib/python3.8/site-packages (from jupyter-client>=6.1.5->nbclient>=0.5.0->nbconvert>=6.0->handcalcs) (6.1)
Requirement already satisfied: pyzmq>=13 in /apps/share64/debian10/anaconda/anaconda-7/lib/python3.8/site-packages (from jupyter-client>=6.1.5->nbclient>=0.5.0->nbconvert>=6.0->handcalcs) (22.1.0)
Requirement already satisfied: fastjsonschema in /apps/share64/debian10/anaconda/anaconda-7/lib/python3.8/site-packages (from nbformat>=5.1->nbconvert>=6.0->handcalcs) (2.15.1)
Requirement already satisfied: jsonschema>=2.6 in /apps/share64/debian10/anaconda/anaconda-7/lib/python3.8/site-packages (from nbformat>=5.1->nbconvert>=6.0->handcalcs) (3.2.0)
Requirement already satisfied: attrs>=17.4.0 in /apps/share64/debian10/anaconda/anaconda-7/lib/python3.8/site-packages (from jsonschema>=2.6->nbformat>=5.1->nbconvert>=6.0->handcalcs) (21.2.0)
Requirement already satisfied: six>=1.11.0 in /apps/share64/debian10/anaconda/anaconda-7/lib/python3.8/site-packages (from jsonschema>=2.6->nbformat>=5.1->nbconvert>=6.0->handcalcs) (1.16.0)
Requirement already satisfied: setuptools in /apps/share64/debian10/anaconda/anaconda-7/lib/python3.8/site-packages (from jsonschema>=2.6->nbformat>=5.1->nbconvert>=6.0->handcalcs) (49.6.0.post20210808)
Requirement already satisfied: pysistent>=0.14.0 in /apps/share64/debian10/anaconda/anaconda-7/lib/python3.8/site-packages (from jsonschema>=2.6->nbformat>=5.1->nbconvert>=6.0->handcalcs) (0.17.3)
Requirement already satisfied: soupsieve>1.2 in /apps/share64/debian10/anaconda/anaconda-7/lib/python3.8/site-packages (from beautifulsoup4->nbconvert>=6.0->handcalcs) (2.0.1)
Requirement already satisfied: webencodings in /apps/share64/debian10/anaconda/anaconda-7/lib/python3.8/site-packages (from bleach->nbconvert>=6.0->handcalcs) (0.5.1)
Requirement already satisfied: toolz in /apps/share64/debian10/anaconda/anaconda-7/lib/python3.8/site-packages (from innerscope->handcalcs) (0.11.1)
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myst-nb 0.13.2 requires nbconvert<7,>=5.6, but you have nbconvert 7.4.0 which is incompatible.
Successfully installed handcalcs-1.6.5 innerscope-0.5.1 mistune-2.0.5 nbconvert-7.4.0
Note: you may need to restart the kernel to use updated packages.
```

5. This only needs to be done once, and afterwards refresh the page
6. To add another cell, click on insert and then cell below or on the downward arrow next to the printer in the menu



```
In [ ]: # pip install handcalcs
```

7. Now you can use the tools available in the Handcalcs library

```
In [2]: %%render
x = 5
y = 6

# run the code below in a new Jupyter cell

z = x + y

executed in 31ms, finished 16:06:22 2023-05-27
x = 5

y = 6

z = x + y = 5 + 6    = 11
```