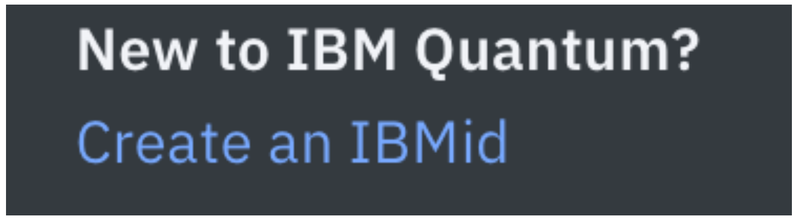
Preparation for hands-on exercise

Go to https://quantum.ibm.com/

If you don’t have IBM account, please follow the instructions to create an IBMid



Once you have the account, sign in to IBM Quantum

Koji Terashi

IBM Quantum Platform

API Token

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Recent jobs

View all

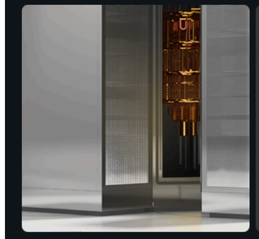
0
Pending

6705
Completed jobs

Job ID	Status	Created	Completed	Compute resource
cqdxtnjgepgg008fc860	Cancelled	About 12 hours ago	About 12 hours ago	ibm_cusco
cqdxk8xfejeg0085x230	Completed	About 13 hours ago	About 13 hours ago	ibm_cusco
cqdxeasgtagg008qrgs0	Completed	About 13 hours ago	About 13 hours ago	ibm_cusco
cqd7rpaxdecg008w5s1g	Cancelled	1 day ago	1 day ago	ibm_cusco
cqd4hfnxftxg00897bx0	Cancelled	1 day ago	1 day ago	ibm_cusco

Instance systems

12



Simulators

5

Documentation

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Hello World

Create a simple quantum program and run it on a quantum system

Qiskit Runtime

Introduction to primitives

Learning

Open app

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Graphically build circuits

IBM Quantum Lab
Develop quantum experiments

What's new

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  Update to Qiskit Runtime Primitives
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  Updates to Learning -- earn badges and explore the new Learning catalog!
  3 months ago • Read more
- Product update
  Introducing ibm_osaka, a new 127-qubit system
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  New URL strategy on IBM Quantum
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Recent jobs View all

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6705 Completed jobs

Job ID	Status	Created	Complet
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cqdxk8xfejeg0085x230	Completed	About 13 hours ago	About 13
cqdxeasgtagg008qrgs0	Completed	About 13 hours ago	About 13
cqd7rpaxdecg008w5s1g	Cancelled	1 day ago	1 day ago
cqd4hfnxftxg00897bx0	Cancelled	1 day ago	1 day ago

What's new →

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API Token

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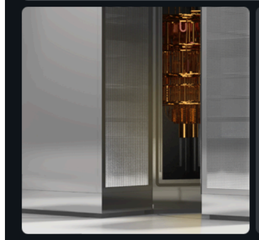
3 months ago • Read more

In case you need your API token, you can copy it here

No need to do that if you use only IBM Quantum Lab (next page)

Instance systems →

12



Simulators →

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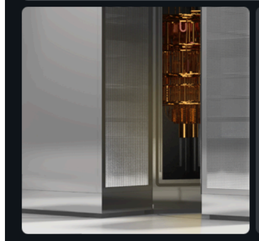
cqdxeasgtagg008qrgs0	Completed	About 13 hours ago	About 13 hours ago	ibm_cusco
cqd7rpaxdecg008w5s1g	Cancelled	1 day ago	1 day ago	ibm_cusco
cqd4hfnxftxg00897bx0	Cancelled	1 day ago	1 day ago	ibm_cusco

Instance systems →

12



Simulators →

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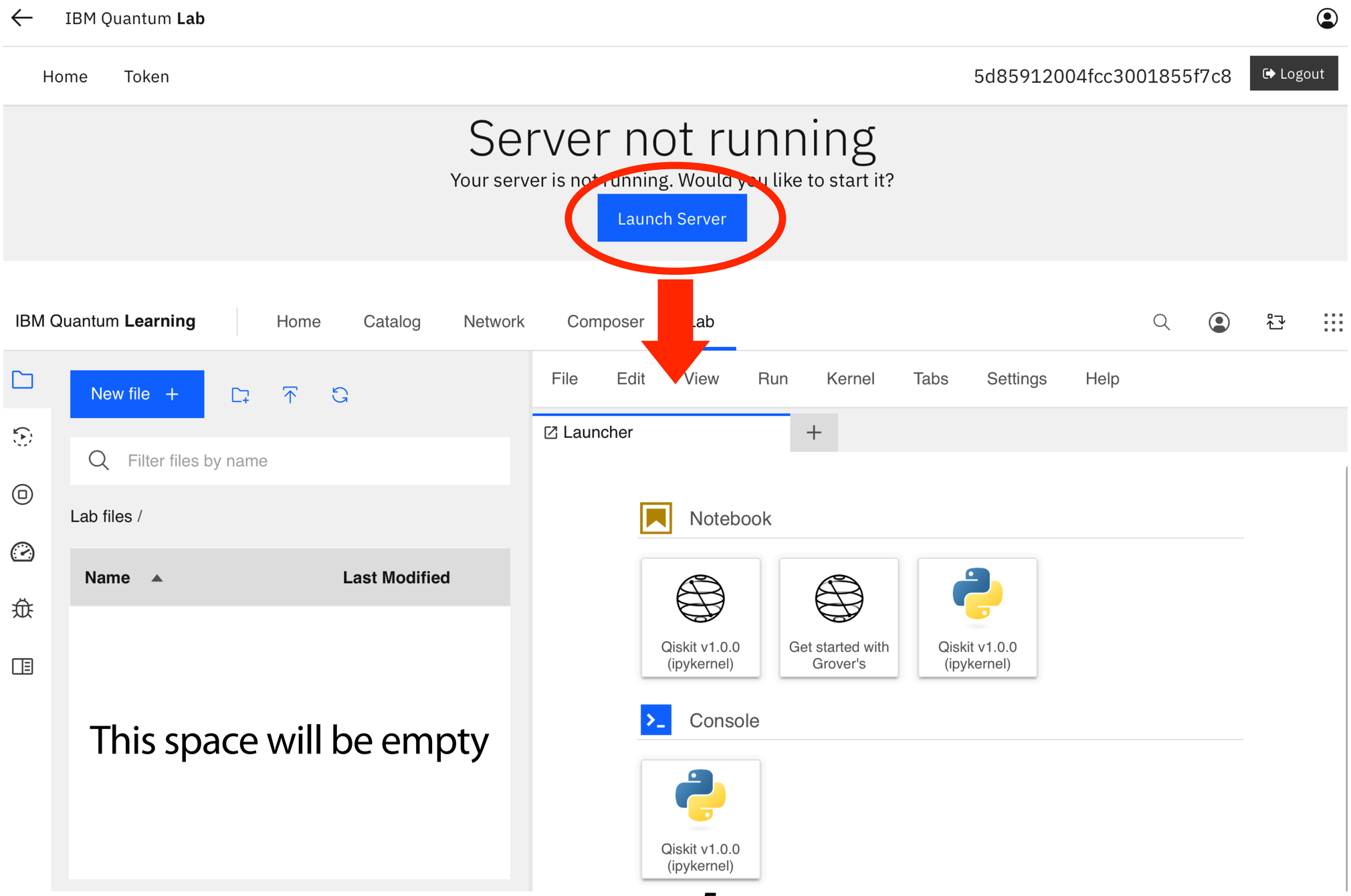
  New URL strategy on IBM Quantum
  3 months ago • Read more

We use IBM Quantum Lab for hands-on


IBM Quantum Lab
Home
Token
5d85912004fcc3001855f7c8
Logout
Server not running
Your server is not running. Would you like to start it?
Launch Server
IBM Quantum Learning
Home
Catalog
Network
Composer
Lab
New file
Filter files by name
Lab files /
Name
Last Modified
This space will be empty
File
Edit
View
Run
Kernel
Tabs
Settings
Help
Launcher
Notebook
Qiskit v1.0.0 (ipykernel)
Get started with Grover's
Qiskit v1.0.0 (ipykernel)
Console
Qiskit v1.0.0 (ipykernel)

At the beginning of the lecture, please click the link below, that will upload the hands-on materials to IBM Quantum Lab

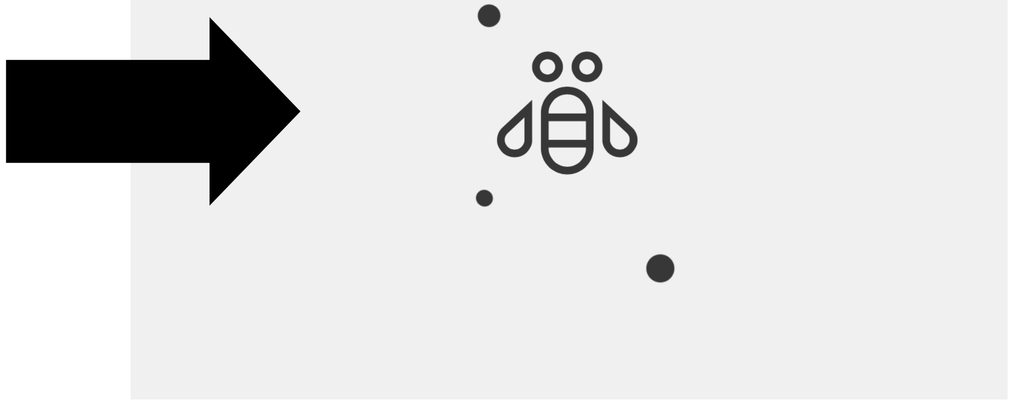
https://cern.ch/aertr

After clicking on the link, you will see…

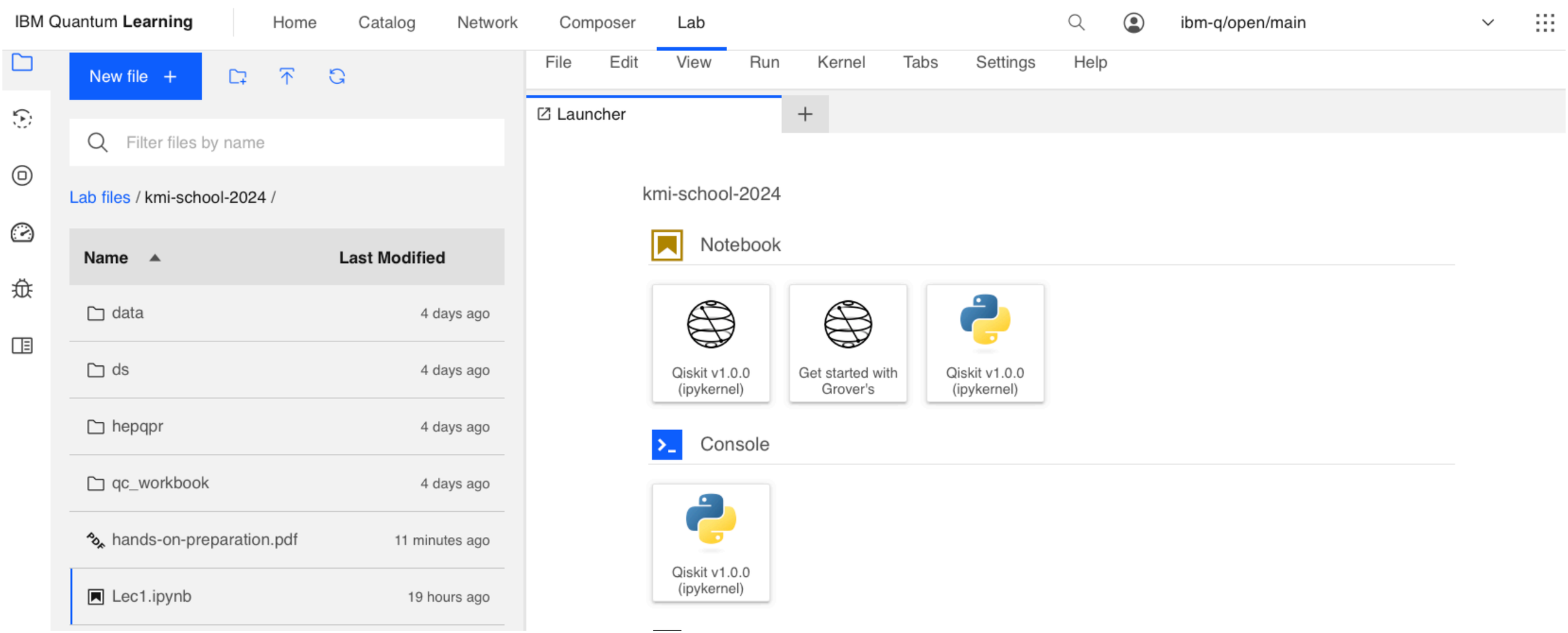
jupyter

Synchronizing git repository before sending you to **lab/tree/kmi-school-2024/...**

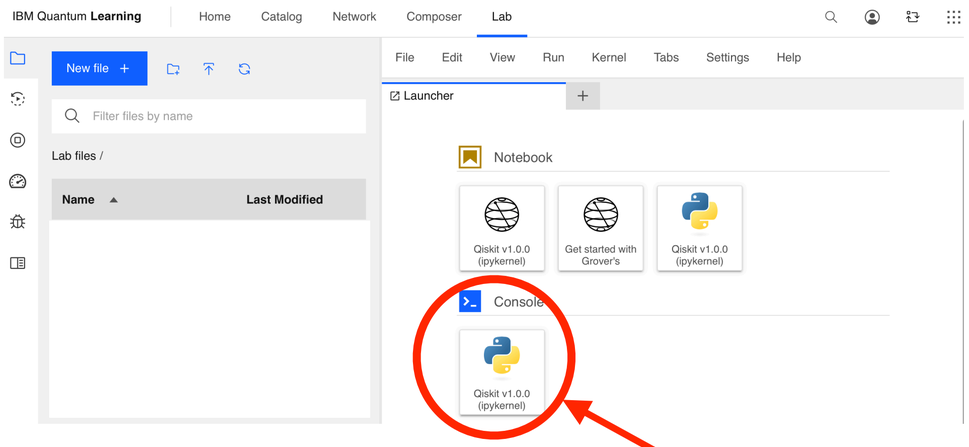
Click to see more detail



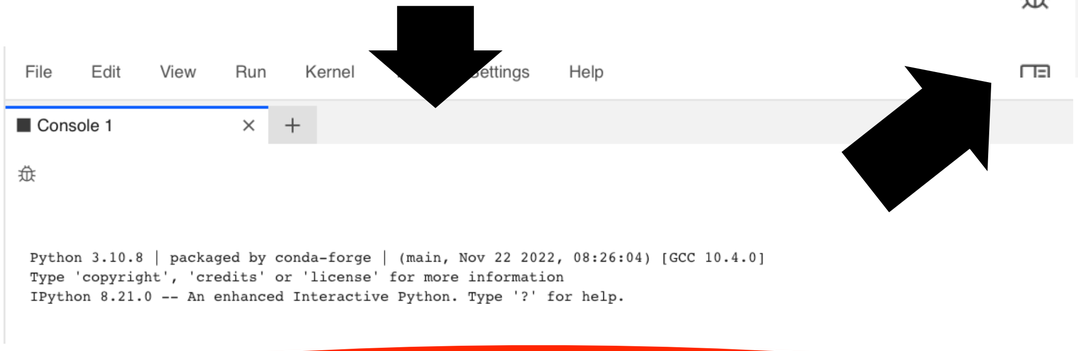
The page like this should appear



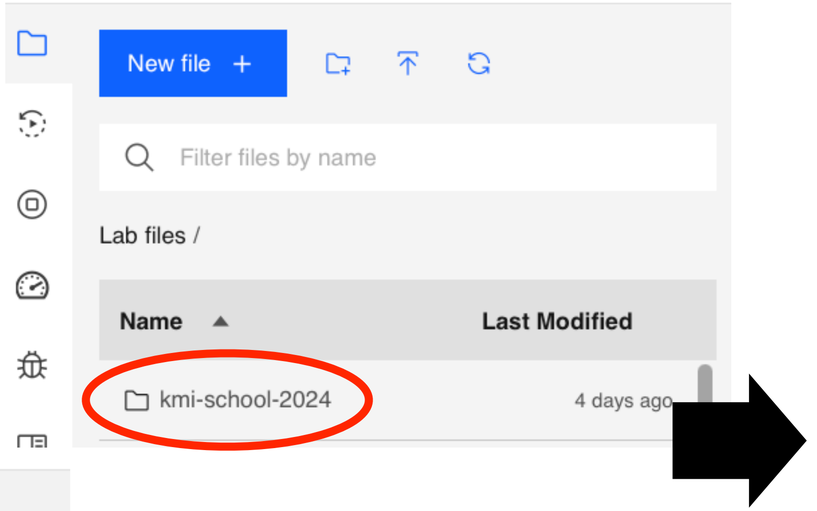
If this does not work for you, you can try the following



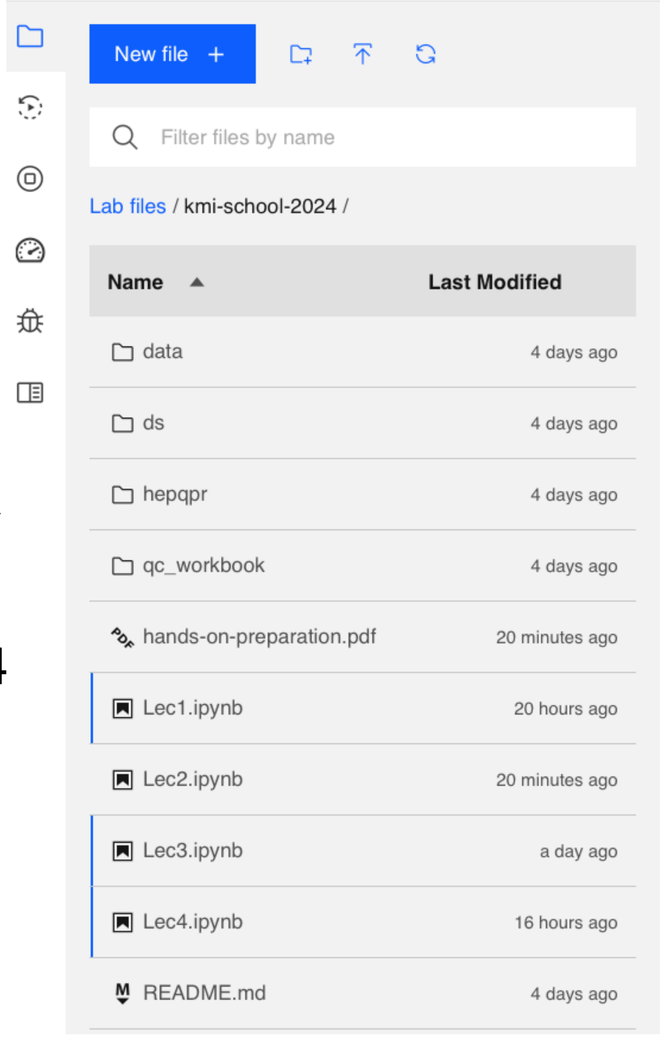
Open a terminal window from here



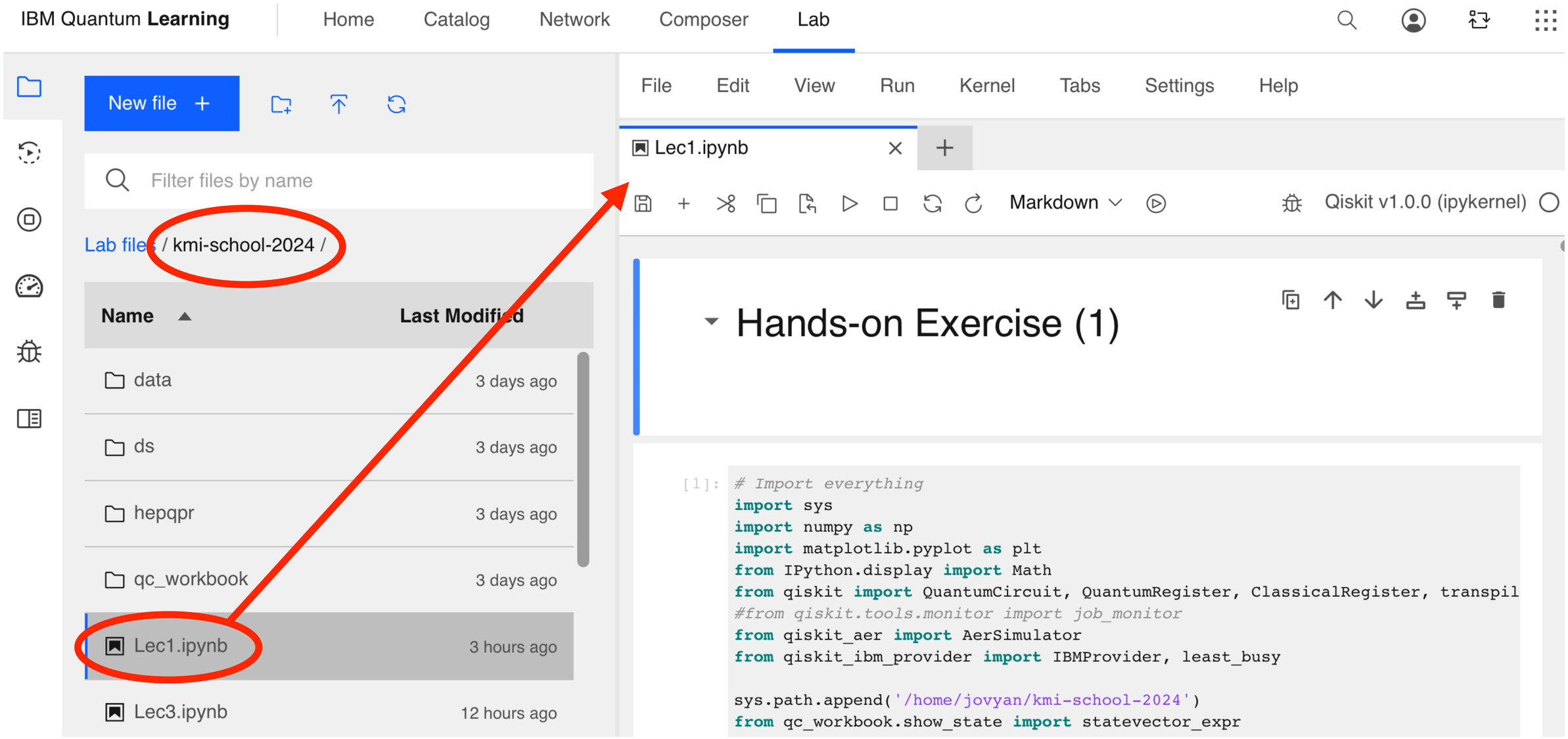

```
[ ]: git clone https://github.com/kterashi/kmi-school-2024.git
```



Double click on kmi-school-2024

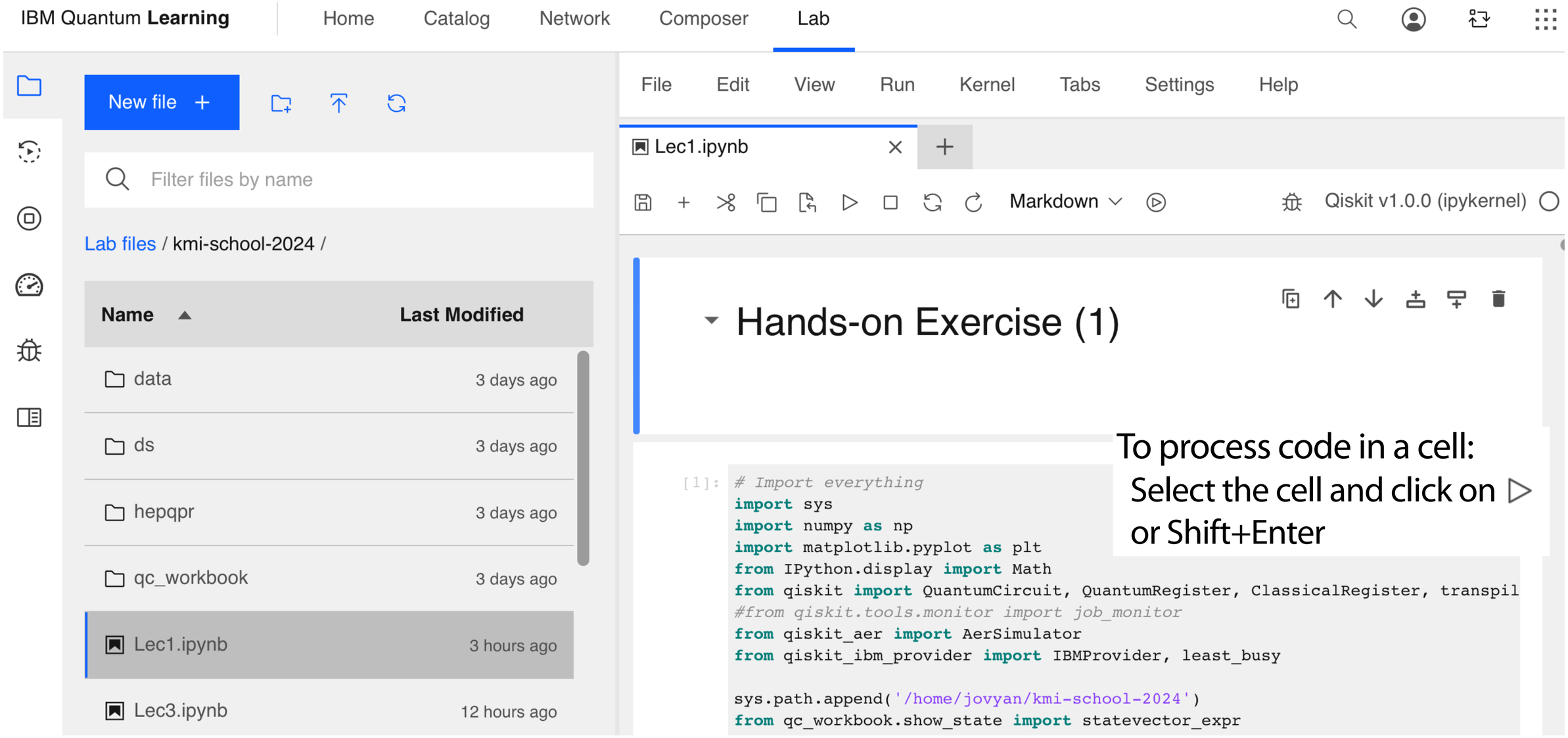


git clone the material at the bottom of the terminal



Jupyter notebook for hands-on:
Lec1-5.ipynb for 5 lectures

Double-click to open in the right window



If you restart the kernel, all processed information is lost, so you have to start from the beginning

Quantum Computing Workbook

We have been preparing an English version of Quantum Computing Workbook developed by ICEPP

Go to https://utokyo-icepp.github.io/qc-workbook/en

Several topics still missing in English version
Working in progress…

Japanese version:
https://utokyo-icepp.github.io/qc-workbook