Qiskit Installation Tutorial

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발표 순서

Qiskit

Using Qiskit through IQX

Using Qiskit in Local Machine

Developing the Qiskit project in collaboration

Known Issue

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Simple and Easiest way to use Qiskit:

Qiskit

Login to I.Q.X. (IBM Quantum Experience)

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Using Qiskit in Local Machine

Ref)

Qiskit Installation Guide : https://qiskit.org/documentation/install.html
Qiskit Installation Tutorial Video - Coding with Qiskit Season 2 installation part : https://www.youtube.com/watch?v=iMCphGJWVSE (~ 4:00:00)
Anaconda: https://www.anaconda.com

IMPORTANT:

Use “Anaconda”
Install with “register anaconda as default python”
Make and Activate “Environment”
Install Qiskit at “Jupyter Notebook”

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Requirements

Python ≥ 3.6.
3.7 or 3.8 recommended

Jupyter Notebook
Anaconda recommended

System architecture:

Windows: 64-bit x86 / 32-bit x86

MacOS: 64-bit x86

Linux: 64-bit x86 / 64-bit Power8/Power9

Operating System:

Windows 8 or newer

64-bit macOS 10.13+

Linux, including Ubuntu, RedHat, CentOS 6+, etc

Minimum 5 GB disk space to download and install

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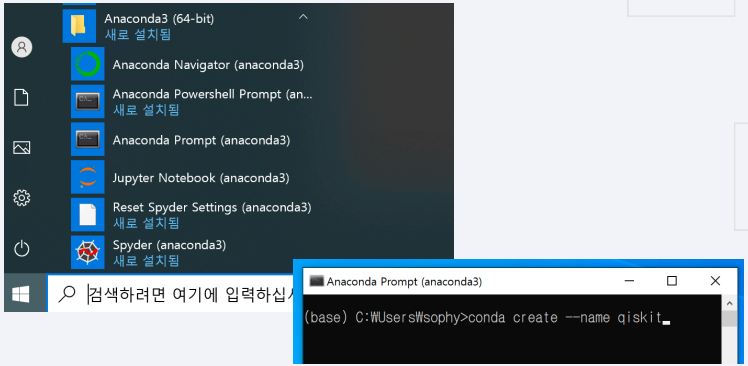
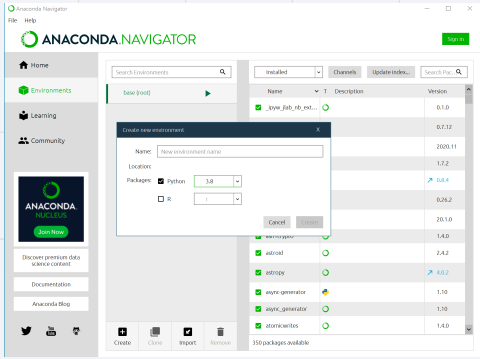
Windows

1. Download Anaconda Installer and install with “register anaconda as default python” options

2. Make and Activate Environment: Conda Prompt or Anaconda Navigator





3. Launch Jupyter notebook: click Jupyter notebook on start menu / Anaconda Navigator / Conda Prompt

4. Install Qiskit : type *!pip install qiskit[visualization]* at Jupyter notebook cell

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MAC

1. Download Anaconda Installer and install with “register anaconda as default python” options

2. Make and Activate Environment: Terminal / Anaconda Navigator

   create env: *conda create --name env_name*

   Activate env: *conda activate env_name*

```
sophy@sophys-MacBook-Pro ~ % conda create --name qiskit_env
Collecting package metadata (current_repodata.json): done
Solving environment: done

## Package Plan ##

  environment location: /Users/sophy/opt/anaconda3/envs/qiskit_env



Proceed ([y]/n)? y
```

```
sophy@sophys-MacBook-Pro ~ % conda activate qiskit_env
(qiskit_env) sophy@sophys-MacBook-Pro ~ % jupyter notebook
```

3. Launch Jupyter notebook: Terminal

   Type: *jupyter notebook*

4. Install Qiskit : type *!pip install ‘qiskit[visualization]’* at Jupyter notebook cell (‘’ for MAC and zsh)

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Linux

Qiskit

1. Check Prerequisites:

https://docs.anaconda.com/anaconda/install/linux/
https://docs.anaconda.com/anaconda/install/linux-power8/

2. Download proper installer and install Anaconda: Terminal
   type: *bash filename.sh*
   during installation:
   "Do you wish the installer to initialize Anaconda3 by running conda init?" → *"yes".*
   type: *source ~/.bashrc*

3. Make and Activate Environment: Terminal
   create env: *conda create --name env_name*
   Activate env: *conda activate env_name*

4. Launch Jupyter notebook: Terminal
   Type: *jupyter notebook*

5. Install Qiskit : type *!pip install qiskit[visualization]* at Jupyter notebook cell

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Install Anaconda – FAQ

1. If you want to deactivate base env
   conda config --set auto_activate_base false
2. If you want a env with specific python version, type
   conda create --name env_name python=3.7
3. How to install the previous qiskit version?
   Check release note: https://qiskit.org/documentation/release_notes.html
   you can install previous qiskit version by
   pip install qiskit[visualization]==0.20.0
4. Do not use Sudo!!
5. Take a look at, if you still have problems: https://docs.anaconda.com/

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Collaboration Env. with Qiskit - Github

Qiskit

(leader) Make repository: usually project leader.
- Write Readme.md
- Choose license type
- https://olis.or.kr/license/compareGuide.do

(leader) Assign collaborator

(members) branch repository (don't touch master directly)

(all) Working locally: use proper editor and git tools
- VSCode
- Github Desktop

(all)After writing code, write commit, then push, write pull requst

(leader) merge issue

(leader) leave project as issue in qiskit-hackathon-korea repo

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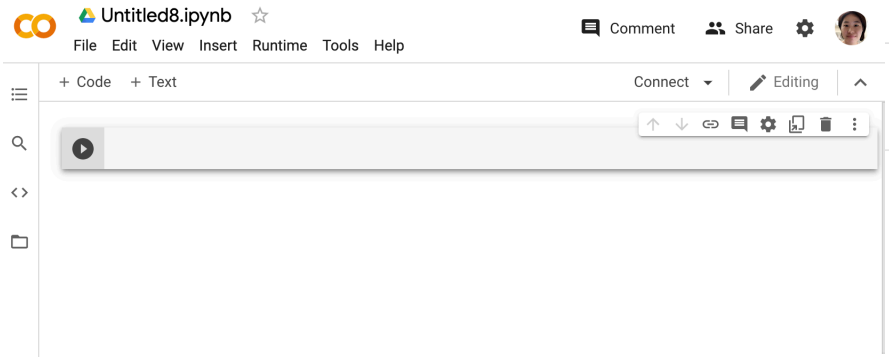
Collaboration Env. with Qiskit – Colab



Good:

100G drive with 12G max memory

Can use Google Drive

Can share with others and work together

Use .ipynb of Github

Can save at Github directly

Bad:

Sometimes, code sync not match

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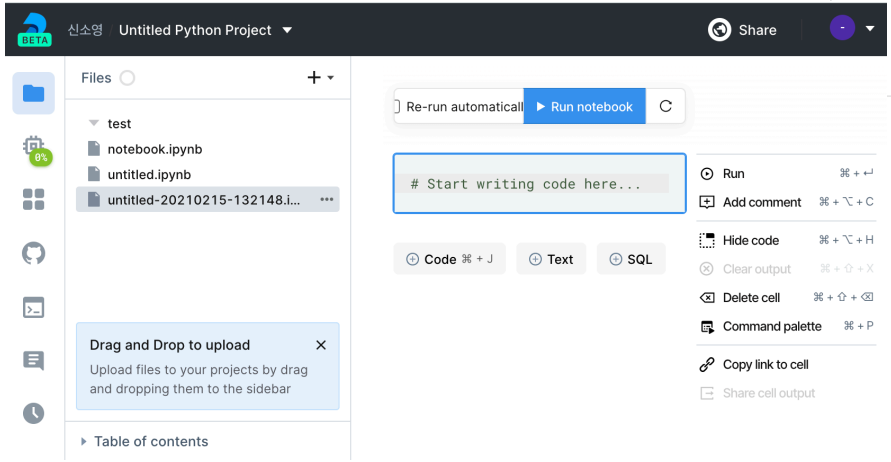
Collaboration Env. with Qiskit –Deepnote



Good:

Can share with others and work together

Code sync – pretty good

Use .ipynb of github

Can save at github directly

Bad:

Slow

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Known Issue

Qiskit

Update pip:

python -m pip install -U pip

Numpy error:

Use latest (0.23.5) Qiskit

pip install -U qiskit

Use numpy >= 1.20.0

pip install –U numpy

Or

pip install numpy==1.20.1

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