

Installing Qiskit and IBMQ Setup

Installing Anaconda

- Link: <https://www.anaconda.com/>
- After the download and installation, check if you can open Anaconda Navigator

Creating Anaconda Environment

- To create a new anaconda environment, we use the following code. If on a Mac, open terminal. If on Windows, open command prompt.
- To create a new python environment, we use the following code. Let's name it "quantum". **conda create -n quantum python=3**
- Since we named our environment quantum, **conda activate quantum** will open the environment . If you gave another name, make sure to type that name to open the environment.

Installing Qiskit

- Qiskit is a python module, we can install it using pip. The code is as follows:
- For MacOS users: **python -m pip install 'qiskit[visualization]'**
- For Windows users: **pip install qiskit[visualization]**
- This code automatically installs Jupyter lab on your environment. So type **jupyter notebook** to open jupyter lab.
- Additionally install: **pip install rise**

Creating a new IBMQ Account

- Link : <https://quantum-computing.ibm.com/>
- From the link above create your new account and login from the same link after you create a new account.

API Token

- You will be able to see an API Token after you login.
- Now go to the jupyter lab, create a new '.ipynb' file. Now copy, paste and run the code in the next slide. Remember to replace the API token with your own token.

Code

```
# Importing the 'Qiskit' Module  
from qiskit import *
```

```
from qiskit import IBMQ  
# paste the api code in 'apostrophes'  
#you only need to save the account once, from the next time just load the account.  
IBMQ.save_account('PASTE_Your_API_Toeken_Here')  
IBMQ.load_account()
```

```
# Creating a Quantum circuit  
circuit = QuantumCircuit(2,2)
```

```
# To view the circuit, we use the 'draw()' funcction.  
circuit.draw()
```


Output

- Output should look like this:

q_0 —

q_1 —

c ²