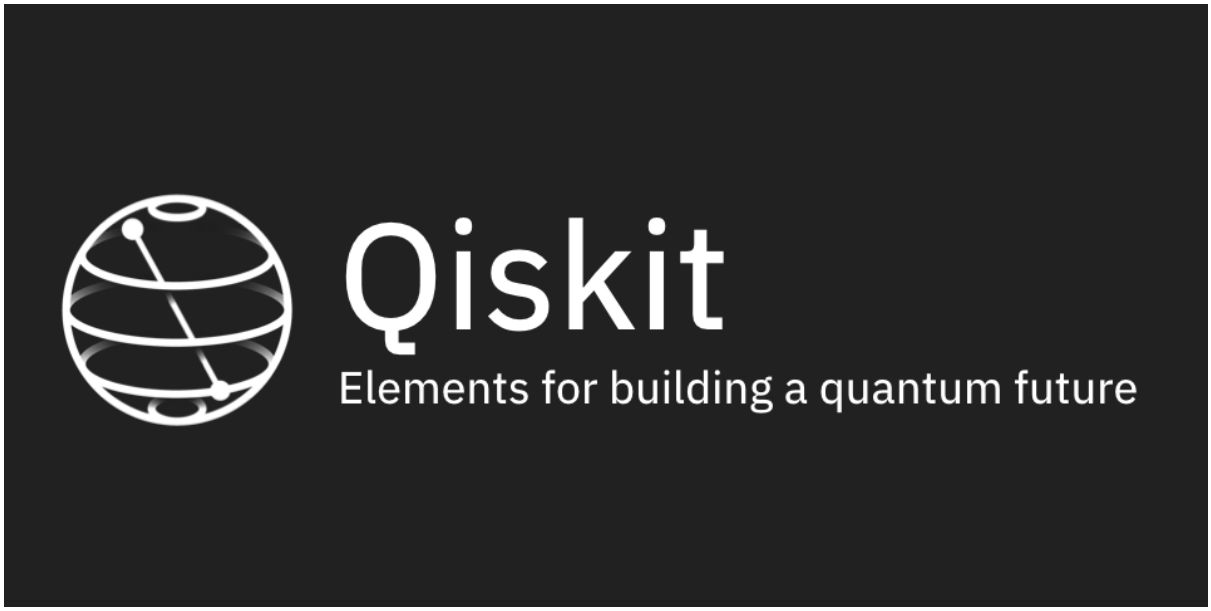
Introduction to IBM Qiskit



Qiskit is an open-source, Python-based, high-performance software stack for quantum computing, originally developed by IBM Research and first released in 2017. It provides tools for creating quantum programs and executing them on quantum computers or classical simulators.\

Qiskit is the world's most popular software stack for quantum computing. Build circuits, leverage Qiskit functions, transpile with AI tools, and execute workloads in an optimized runtime environment.

Install miniconda

Windows Command Prompt

curl https://repo.anaconda.com/miniconda/Miniconda3-latest-Windows-x86_64.exe -o .\miniconda.exe \

start /wait "" .\miniconda.exe /S \

del .\miniconda.exe

macOS

mkdir -p ~/miniconda3 \

curl https://repo.anaconda.com/miniconda/Miniconda3-latest-MacOSX-arm64.sh -o ~/miniconda3/miniconda.sh \

bash ~/miniconda3/miniconda.sh -b -u -p ~/miniconda3 \

rm ~/miniconda3/miniconda.sh

Linux

https://www.anaconda.com/docs/getting-started/miniconda/install#linux-2

In case of any future updates, you can check the following link for qiskit installation.\

https://quantum.cloud.ibm.com/docs/en/guides/install-qiskit

Install environment

Download qcl.yml \

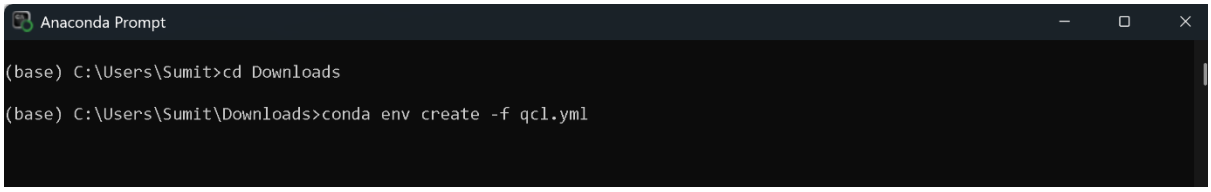
Open Anaconda prompt (windows) \

Open terminal (macOS and Linux)

Change the directory where the qcl.yml is downloaded

Enter the following command to create an Environment to install all the required libraries:

conda env create -f qcl.yml



Activate Environment and Run the Streamlit.py Application

Activate the qcl Environment by using the following command:

conda activate qcl

Change the directory where you have downloaded the Python File (streamlit_app.py)

For Example:

cd Downloads [if the python (.py) file in Downloads Folder]

To run the streamlit_app.py execute the following command:

streamlit run streamlit_app.py