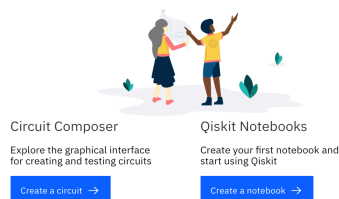# IBM | Prep-work for IBM Quantum Workshop

Foreword : we are happy to meet you at the IBM Quantum Computing Workshop, majority of the content will be focusing on Hands-on practive of the IBM platform (programming with QISKit, and execute on real quantum computers). For your best benefit during the workshop we suggest some prep-work. **Most important one is to install qiskit library for python** (use Python 3), link to the installation procedure is described below. Other subjects will be detailed during the workshop, it might be usefull that you review those subjects to get familiar (or remind yourself). Thank you.

SETUP

IBM Quantum Experience : https://www.ibm.com/quantum-computing/

Login to IBM Quantum Experience : **setup a free account**
Locate your API key (top right corner, My Account) it will be needed during the workshop

Sign in to get started

IBMid

Circuit Composer
Explore the graphical interface for creating and testing circuits

Create a circuit →

Qiskit Notebooks
Create your first notebook and start using Qiskit

Create a notebook →

Qiskit in local environment

1. Install Qiskit

2. Follow the instructions to access the IBM Quantum services from Qiskit , this is your API Token:

94add97f029749a3f8bde07df2cb9... 👁

Copy token

Regenerate

Q Running Your First Quantum Application

Learn to use the features of the IBM Quantum Experience by building your first "Hello Quantum World" application.

Learn Quantum Computing with IBM Quantum

Learn the basics of quantum computing and how to implement quantum algorithms in the IBM Quantum Experience.

While you are here, use the menu on left to go to Documentation and read through the assets :

Hello Quantum World

Using Circuit Composer →

Using Qiskit →

IBM Quantum Experience User G

Install qiskit on your laptop https://qiskit.org/documentation/install.html

Go to qiskit.org : top-right corner hit 'API Documentation' select 'Installing Qiskit' on the left menu, follow instructions.
Use Python 3
Open a Jupyter Notebook from the Anaconda environmet where qiskit in installed : `**import** qiskit` should have no errors
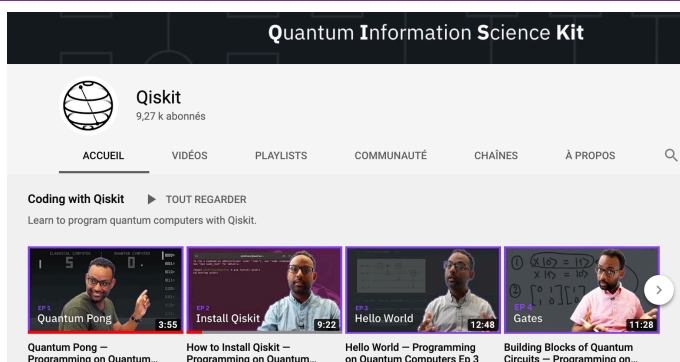
PREP MATERIAL

Python

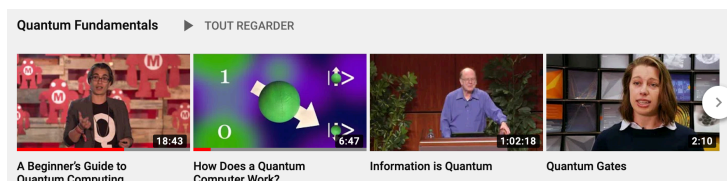Need a Python refresh or a crash course ?   Among many resources you may use Derek Banas Youtube channel :
https://youtu.be/N4mEzFDjqtA
https://www.youtube.com/playlist?list=PLGLfVvz_LVvTn3cK5e6LjhgGiSeVlIRwt

Youtube Qiskit channel https://www.youtube.com/Qiskit

Quantum Information Science Kit

Qiskit
9,27 k abonnés

ACCUEIL   VIDÉOS   PLAYLISTS   COMMUNAUTÉ   CHAÎNES   À PROPOS

Coding with Qiskit ▶ TOUT REGARDER
Learn to program quantum computers with Qiskit.

| EP.1 Quantum Pong 3:55 | EP.2 Install Qiskit 9:22 | EP.3 Hello World 12:48 | EP.4 Gates 11:28 |

Quantum Pong — Programming on Quantum...

How to Install Qiskit — Programming on Quantum...

Hello World — Programming on Quantum Computers Ep 3

Building Blocks of Quantum Circuits — Programming on...

Review « Quantum Fundamentals » and « Coding with Qiskit » playlists

Quantum Fundamentals ▶ TOUT REGARDER

| 18:43 | 6:47 | 1:02:18 | 2:10 |

A Beginner's Guide to Quantum Computing

How Does a Quantum Computer Work?

Information is Quantum
IBM Research

Quantum Gates
IBM Research

Quantum Computing Library (basic to advanced = left to right)

Leonard Susskind & Art Friedman
Quantum Mechanics The Theoretical Minimum

Mastering Quantum Computing with IBM QX
Dr. Christine Corbett Moran

EXPERT INSIGHT
Dancing with Qubits
How quantum computing works and how it can change the world
Robert S. Sutor

Quantum Computing Explained
David McMahon
WILEY

N. David Mermin
Quantum Computer Science
An Introduction

Quantum Computation and Quantum Information
MICHAEL A. NIELSEN and ISAAC L. CHUANG