

Rough Draft of Project 2

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As the summary of the principle reference *You are what you document*, it summarized the documents into three different types. Written documentation, Code documentation, Community documentation. Each type of documentation solves a different problem, I will be following the structure of this document to explaining quantum computing, especially virtual quantum computing machine.

Written documentation

- Use some of the introduction documentation, such as tutorial document to introduce quantum computing and quantum algorithm
https://en.wikipedia.org/wiki/Quantum_computing
<https://docs.microsoft.com/en-us/quantum/overview/what-is-quantum-computing?view=qsharp-preview>
<https://quantum.country/qcvc>
- Then use the introduction tutorials to introduce some of the virtual quantum computing machine
<https://quantum-computing.ibm.com/docs/> (IBM's Q Experience)
<https://docs.microsoft.com/en-us/quantum/welcome?view=qsharp-preview> (Microsoft QDK)
<http://swarm.cs.pub.ro/~agheorghiu/licenta/Quantum%20Computing%20Virtual%20Machine.pdf>
- As well as the basic operation of the virtual quantum computing machine, like how to install, how to create quantum circuit....
<https://quantum-computing.ibm.com/docs/qis-tut/> (Qiskit tutorials)

Code documentation

- Using some of the code examples to illustrate how the virtual quantum computing machine works
<https://quantum-computing.ibm.com/docs/qis-tut/#qiskit-terra>
<https://quantum-computing.ibm.com/docs/qis-tut/#qiskit-aer>
<https://quantum-computing.ibm.com/docs/qis-tut/#qiskit-ignis>
- Some other example using Q#
- <https://docs.microsoft.com/en-us/samples/browse/?languages=qsharp&view=qsharp-preview>
<https://docs.microsoft.com/en-ca/samples/microsoft/quantum/measuring-qubits/>
- Some APIs
<https://docs.microsoft.com/en-us/qsharp/api/qsharp/microsoft.quantum.amplitudeamplification?view=qsharp-preview>(Microsoft)
<https://quantum-computing.ibm.com/docs/qiskit/apidoc/qiskit-terra/qiskit> (Qiskit)

Community documentation

- Some community documents that includes blogs and board discussions of quantum computing machine
<https://stackoverflow.com/questions/3163234/does-anyone-know-what-quantum-computing-is/3175933#3175933> (quantum computing)
<https://www.nature.com/articles/npjqi201523> (introduction quantum computing)