Quantum Computing and Cryptography - 18: Multi-Qubit Gates and Operations

Length	Micromodule
Collection	NSA NCCP
Updated	March 14, 2019
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Academic Levels	Undergraduate, Graduate
Topics	Cryptography, Quantum Computing
Link	https://clark.center/details/aparakh/465927dc-c014-406f-ad4e-04c6424aa75f

Description

This lesson introduces methods to construct multi-qubit gates from single qubit gates. Students will also be able to determine the operations of the new multiqubit gates and compute the outputs of circuits consisting of multiple qubits.

The files are named nanomodules but it will take between 1 to 4 hours to complete all the exercises.

Email Dr. Abhishek Parakh at aparakh@unomaha.edu for solutions to the problems.

Note: To get started with Jupyter notebooks please follow the userguide available at: https://sites.google.com/unomaha.edu/userguideqcl/

Outcomes

- Construct multi-qubit gates from single qubit gates.
- Summarize the operations of new multi-qubit gates.
- Calculate outputs of circuits consisting of multiple qubits.

Links

External links that are associated with this learning object

- User guide