Fall 2019
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QC101μ Introduction to Quantum Computing with IBM Q Experience

Mission 3: Greenberger-Horne-Zeilinger state

This assessment evaluates the following competencies:

- *QC102 – Understand the superposition and entanglement operations*
- *QC201 – Understand the notions quantum logic gate and perform simple operations on quantum circuits (X, H, CNOT)*
- *QC401 – Program a quantum circuit with IBM Q Experience and simulate it*

In this mission, you have to create a quantum circuit on the IBM Q Experience platform that computes the Greenberger-Horne-Zeilinger state, simulate it and analyse the obtained results. You have to present your manipulations to the teacher and explain how you built your quantum circuit. The GHZ state is:

$$|GHZ\rangle = \frac{|000\rangle + |111\rangle}{\sqrt{2}}$$