

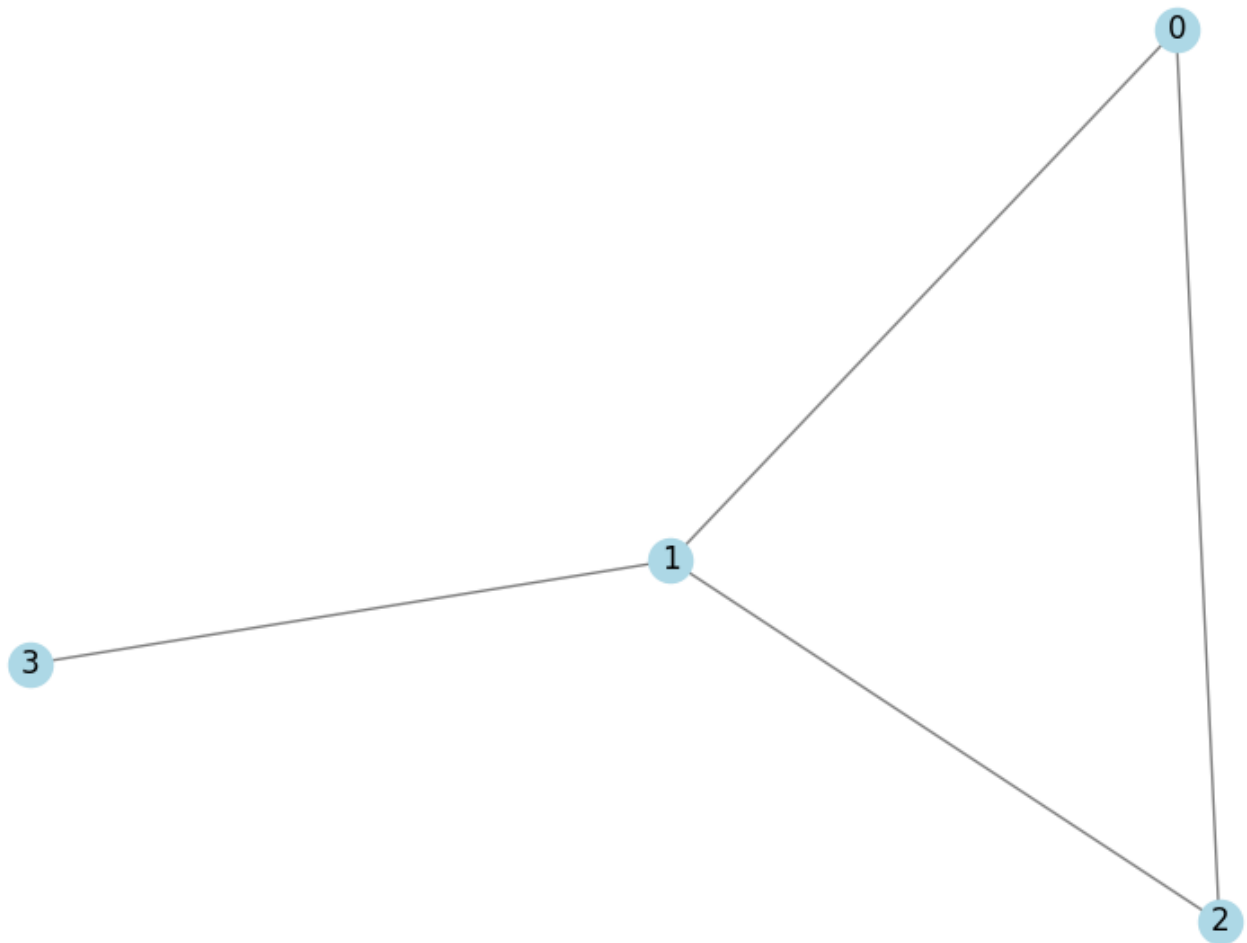
Maximal Independent Set Problem Report

GRAPH:

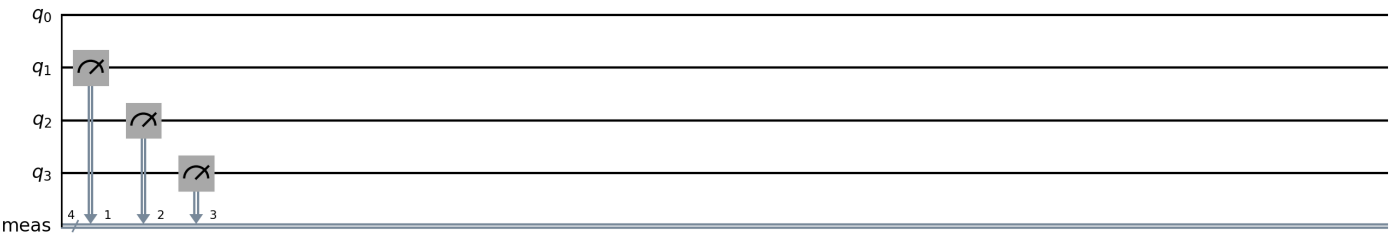
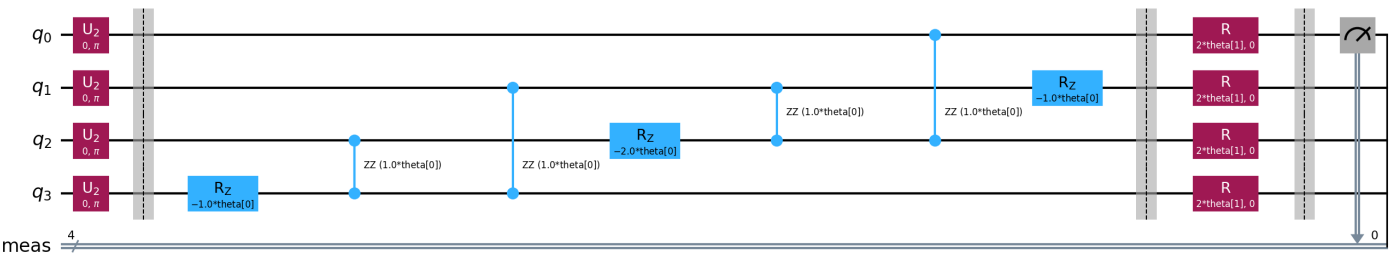
Number of Nodes: 4

Edges of Nodes: [(0,1), (0,2), (1,2), (1,3)]

Visualization of Graph:



QAOA Optimization, generated quantum circuit

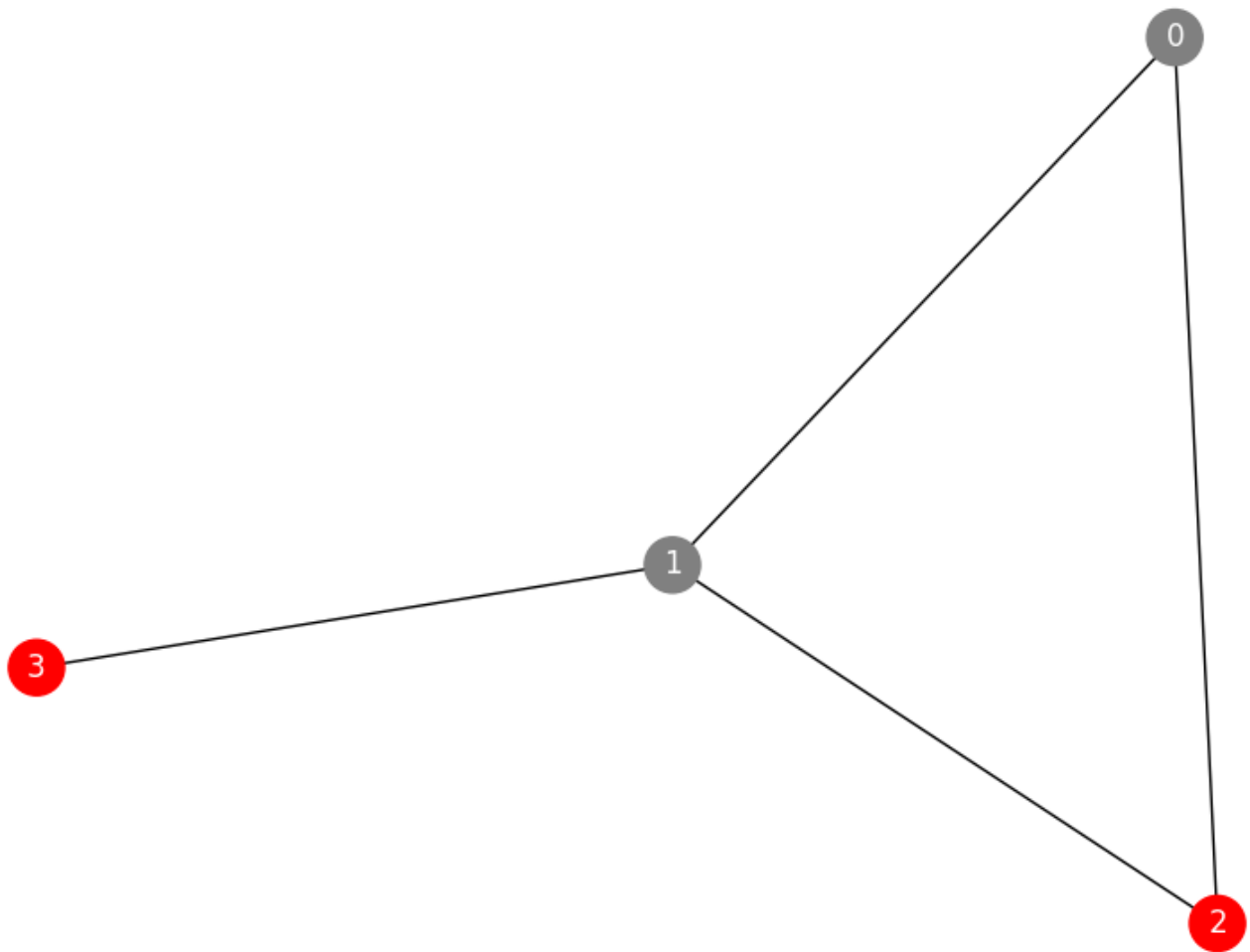


QAOA Optimization Results

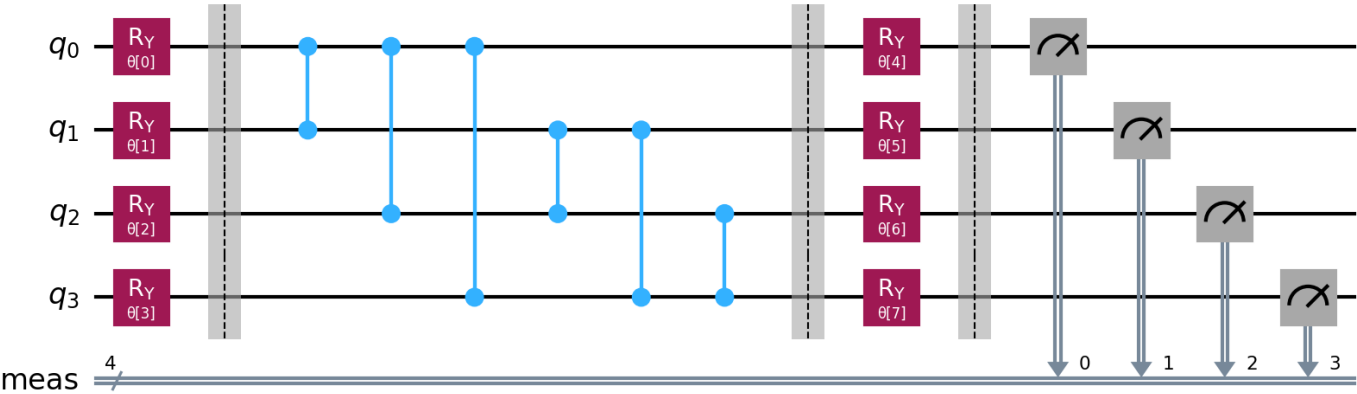
Most Probable Solution:

[0 0 1 1]

Visualization of QAOA Solution:



VQE Optimization, generated quantum circuit

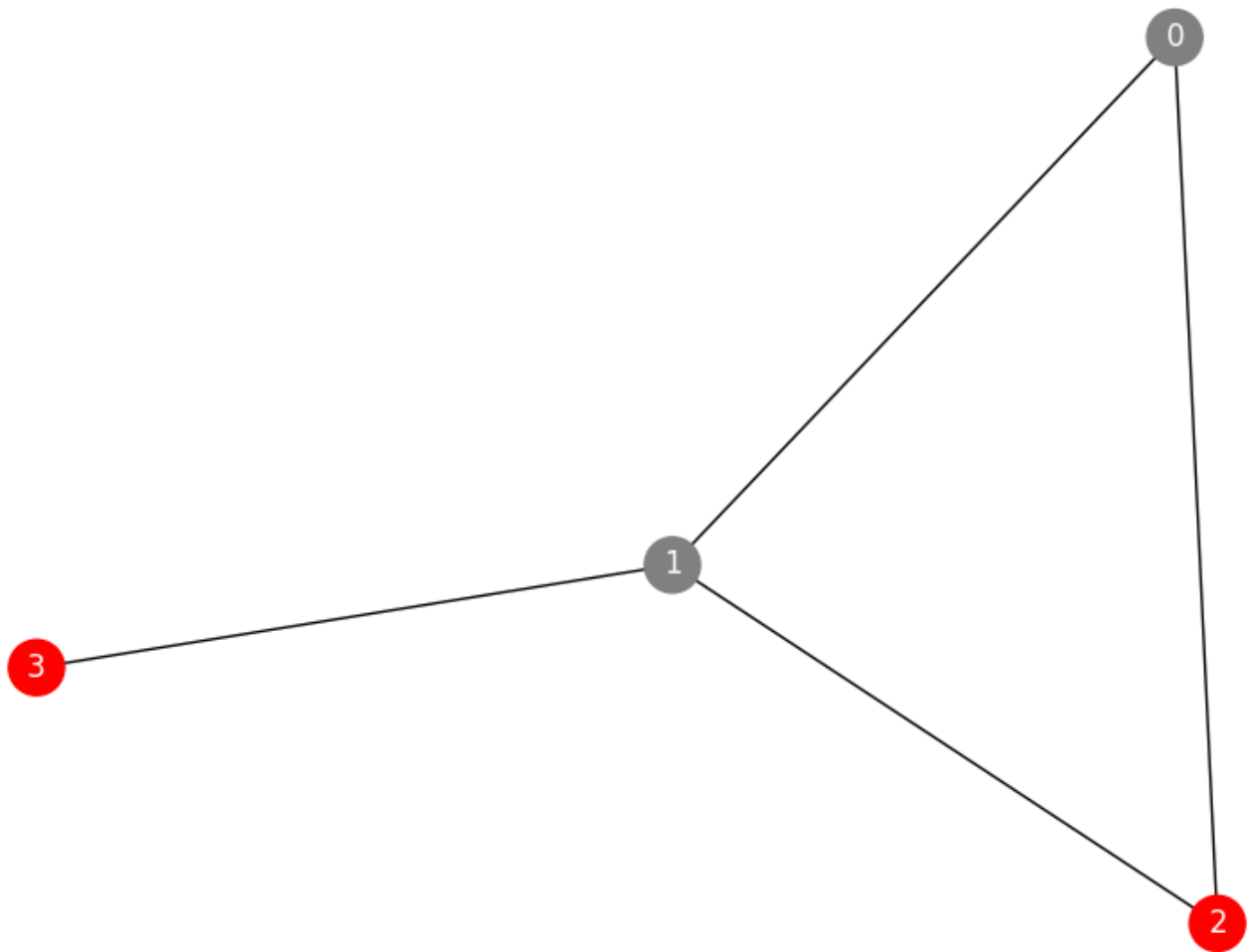


VQE Optimization Results

Most Probable Solution:

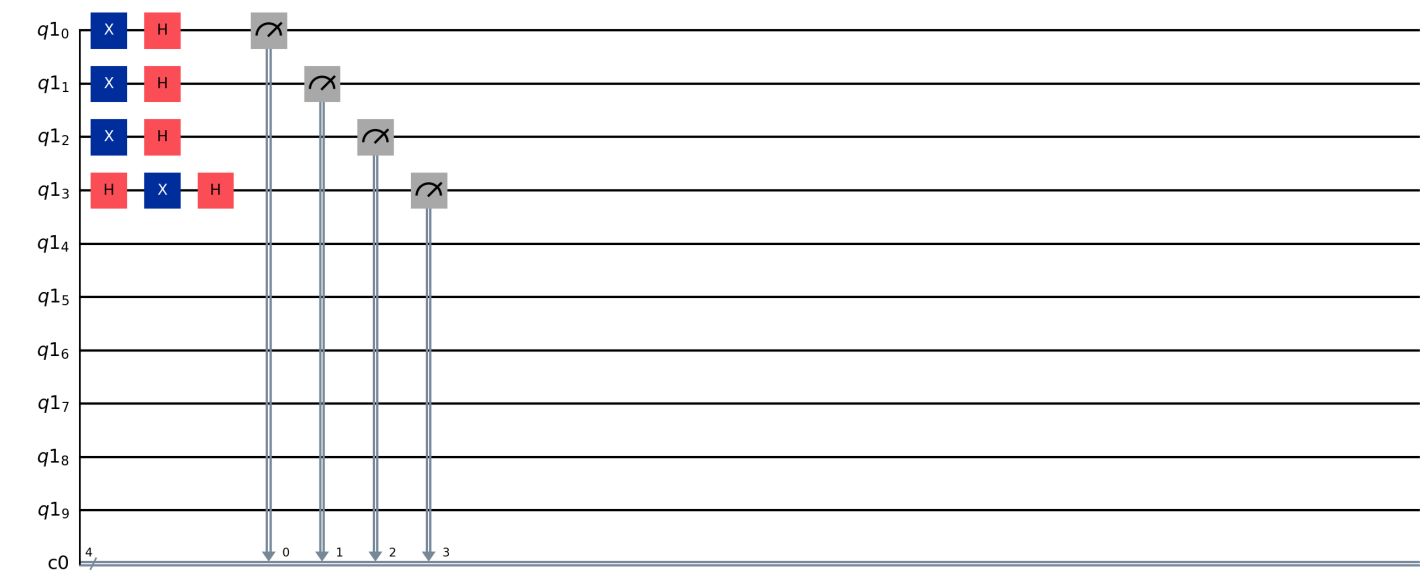
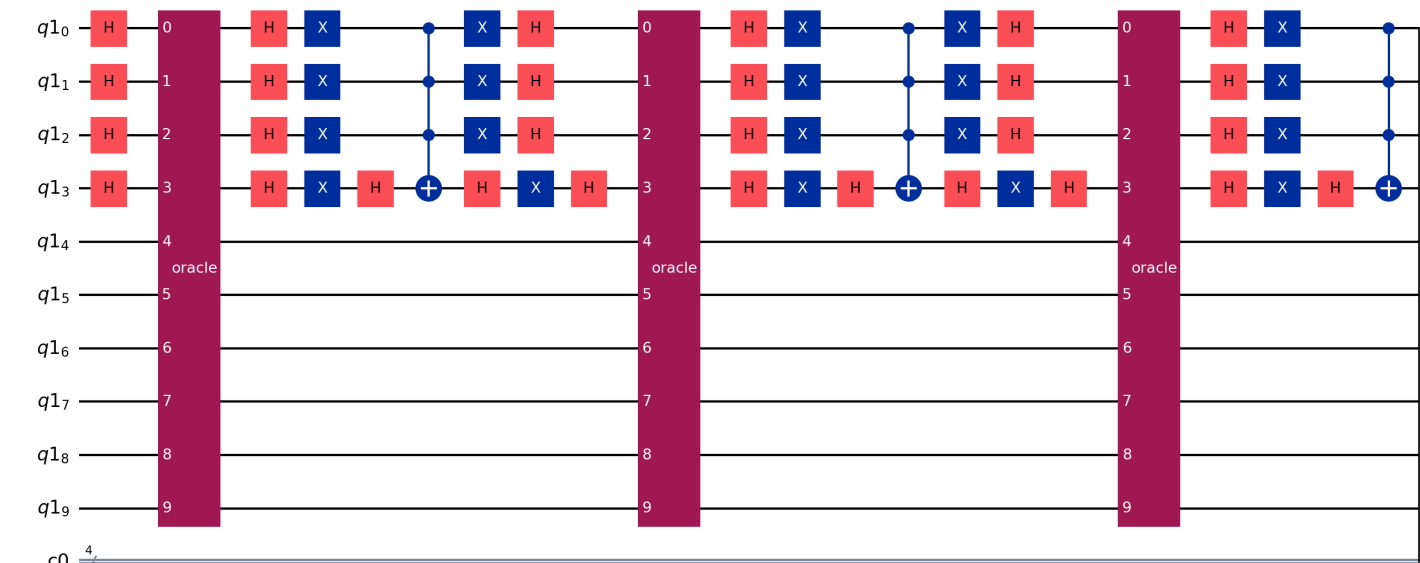
[0 0 1 1]

Visualization of VQE Solution:



Grover algorithm, generated quantum circuit

Global Phase: π

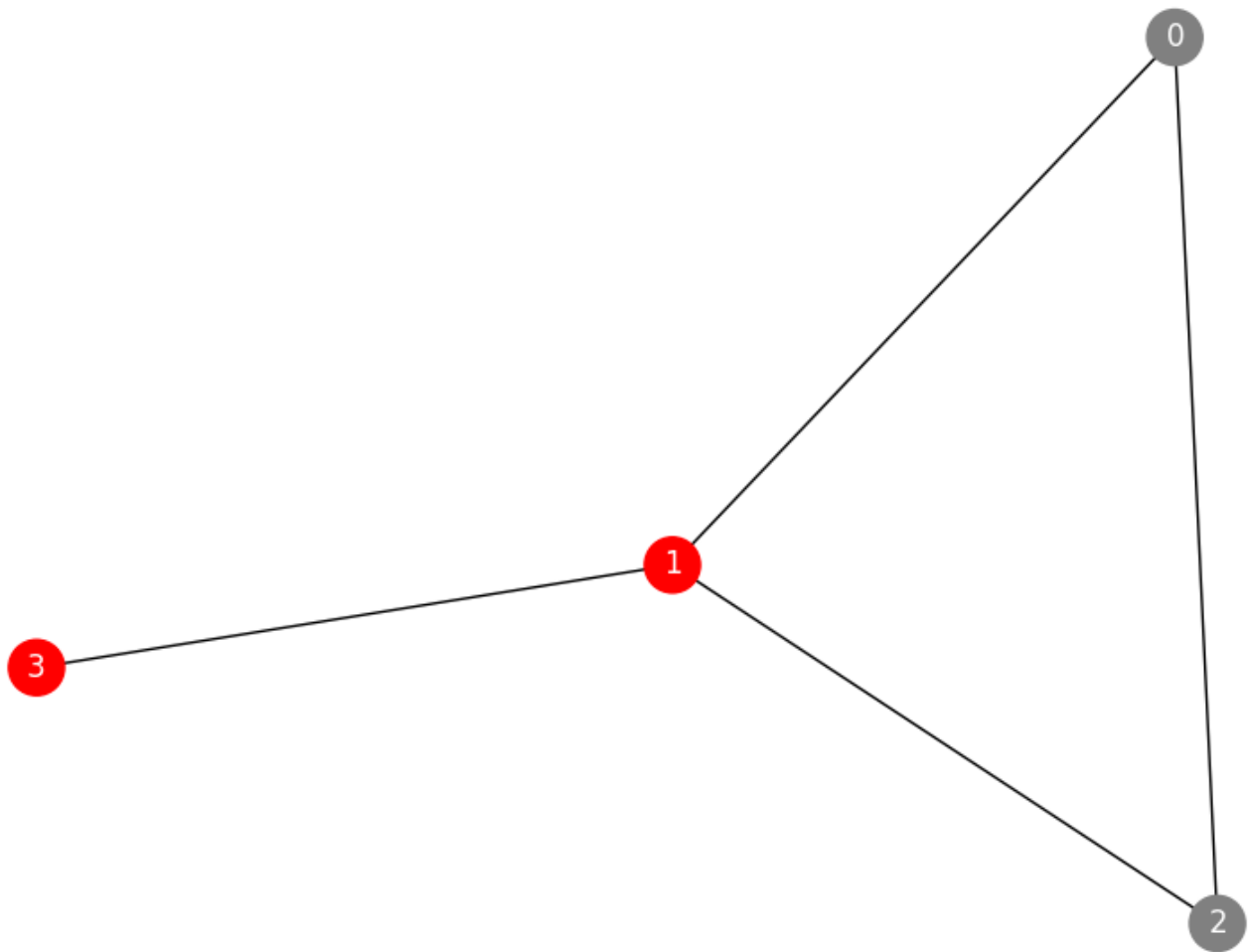


Grover Optimization Results

Most Probable Solution:

[0 1 0 1]

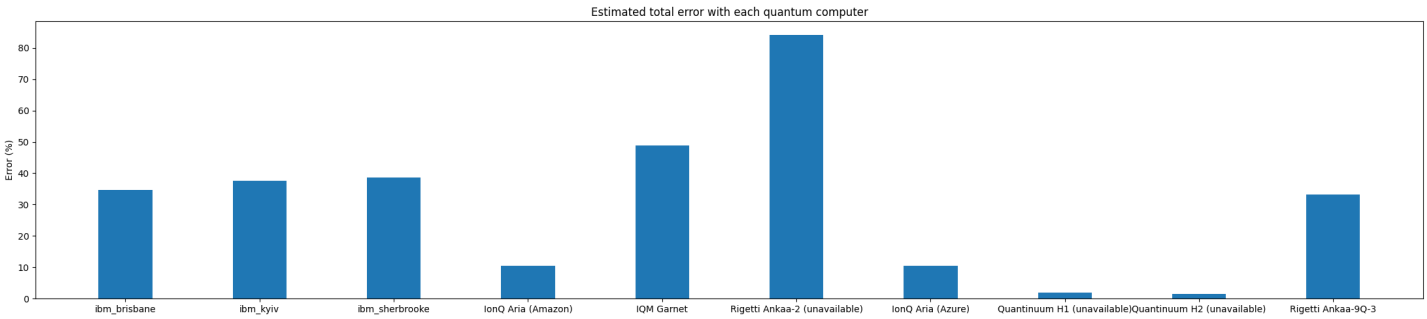
Visualization of Grover Solution:



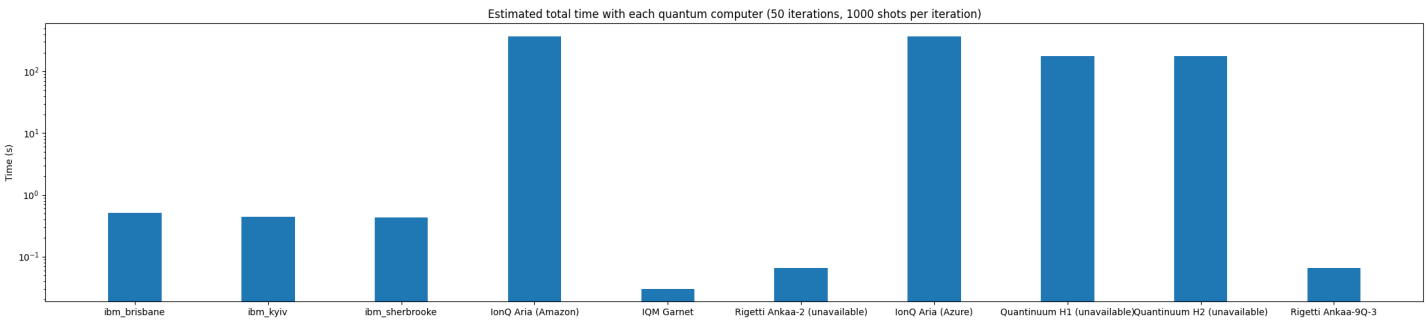
Devices recommendation based on VQE circuit

- Lowest error: IonQ Aria (Amazon) from Amazon Braket with a calculated error of 10.55%, time to execute: 372.75 seconds and a price of \$1515.0.
- Lowest time: IQM Garnet from Amazon Braket with a calculated error of 48.95%, time to execute: 0.03 seconds and a price of \$87.5.
- Lowest price: Rigetti Ankaa-9Q-3 from Azure Quantum with a calculated error of 33.24%, time to execute: 0.066 seconds and a price of \$0.09.

Estimated errors:



Estimated execution times:



Estimated prices:

