Report of Four Algorithms in Qiskit

1. Design
   * Present the design of how you implemented the black-box function Uf. Access how easy to read it is.
   * Present the design of how you parameterized the solution in the number of qubits, that is, how you made the number of qubits easy to change.

Deutsch-Jozsa:

Bernstein-Vazirani:

Simon’s:

Grover’s:

1. Evaluation
   * Discuss the number of lines and percentage of code that your four programs share. Assess how well you succeeded in reusing code from one program to the next.
   * Discuss your effort to test the four programs and present results from the testing. Report on the execution times for different choices of Uf and discuss what you find.
   * Discuss the impact of noise.
   * What is your experience with scalability as the number of qubits grows? Present one or more diagrams that map the number of qubits to execution time. Present a table with the highest number of qubits that you were able to simulate for each program and for each kind of simulation on each simulator.

Deutsch-Jozsa:

Bernstein-Vazirani:

Simon’s:

Grover’s:

1. Instructions: Describes how to input the function f, how to run the program, and how to understand the output.

Deutsch-Jozsa:

Bernstein-Vazirani:

Simon’s:

Grover’s: