

## **Lab Assignment #1**

Please implement and run on both a simulator and a real backend a 3-qubit Deutsch-Jozsa algorithm experimenting both constant and balanced oracles using Qiskit framework.

Then, create a report having the following:

- 1- Code used to simulate constant and balanced oracles.
- 2- Reason about the design of oracles.
- 3- Display the quantum circuit for each of the constant and the balanced oracles.
- 4- Plot the histogram of the measurement outputs of constant and balanced oracles