dj-circuit

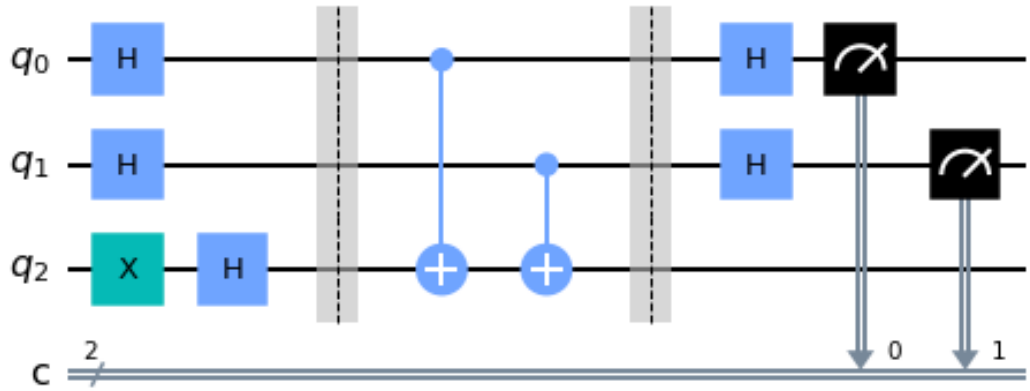
March 11, 2021

[4]:
```
%matplotlib inline
# Importing standard Qiskit libraries
from qiskit import QuantumCircuit, execute, Aer, IBMQ
from qiskit.compiler import transpile, assemble
from qiskit.tools.jupyter import *
from qiskit.visualization import *
from ibm_quantum_widgets import *

# Loading your IBM Q account(s)
provider = IBMQ.load_account()
```

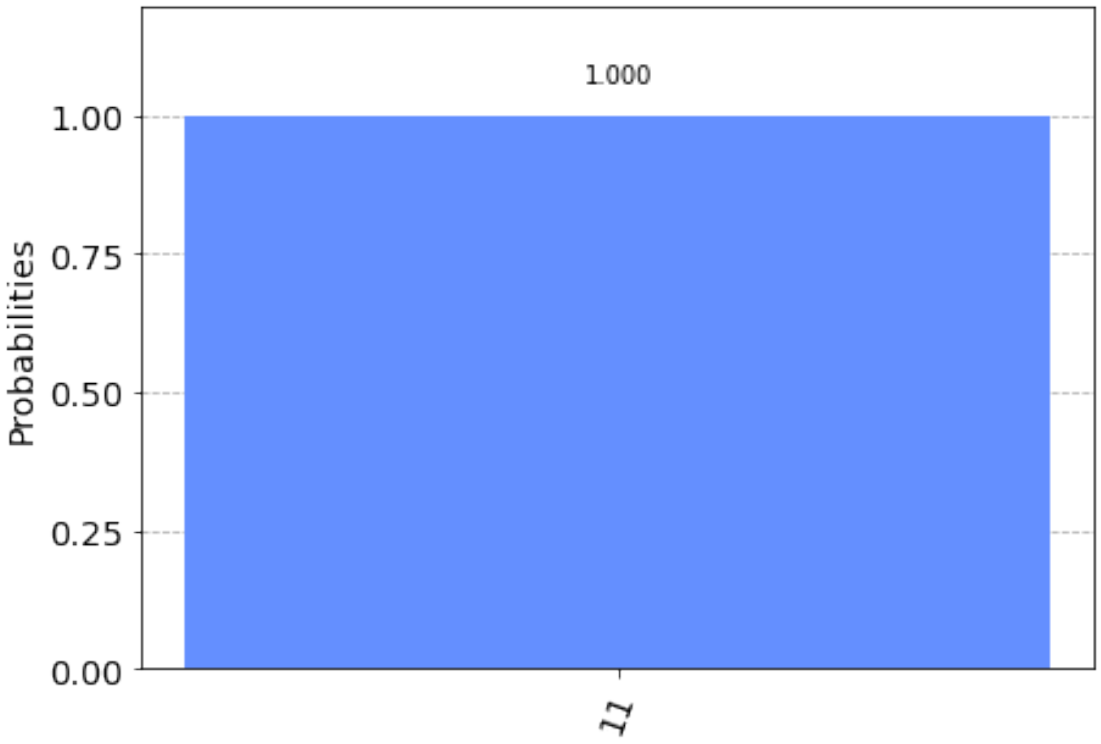
```
/opt/conda/lib/python3.8/site-packages/qiskit/providers/ibmq/ibmqfactory.py:192:
UserWarning: Timestamps in IBMQ backend properties, jobs, and job results are
all now in local time instead of UTC.
  warnings.warn('Timestamps in IBMQ backend properties, jobs, and job results '
ibmqfactory.load_account:WARNING:2021-03-04 05:22:27,067: Credentials are
already in use. The existing account in the session will be replaced.
```

[6]:
```
from qiskit import QuantumRegister, ClassicalRegister, QuantumCircuit
from numpy import pi

qreg_q = QuantumRegister(3, 'q')
creg_c = ClassicalRegister(2, 'c')
circuit = QuantumCircuit(qreg_q, creg_c)

circuit.h(qreg_q[0])
circuit.h(qreg_q[1])
circuit.x(qreg_q[2])
circuit.h(qreg_q[2])
circuit.barrier()
#balanced oracle
circuit.cx(qreg_q[0], qreg_q[2])
circuit.cx(qreg_q[1], qreg_q[2])
circuit.barrier()
circuit.h(qreg_q[0])

circuit.h(qreg_q[1])
circuit.measure(0,0)
```

```
circuit.measure(1,1)
display(circuit.draw())

editor = CircuitComposer(circuit=circuit)
backend=Aer.get_backend('qasm_simulator')
result=execute(circuit, backend=backend,shots=1024).result()
counts=result.get_counts()
plot_histogram(counts)
```



[6]:



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