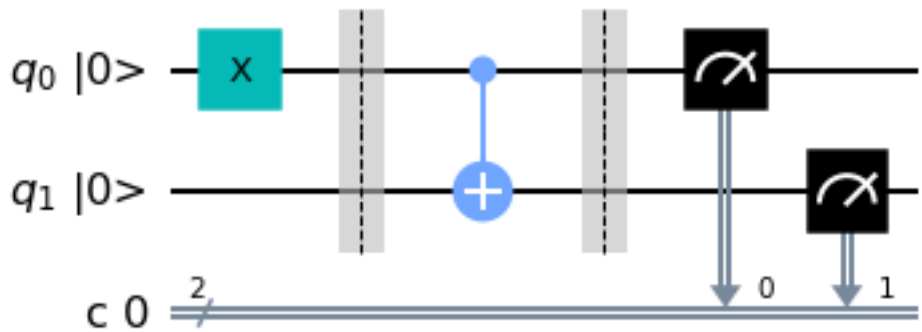
qtest_1031

October 31, 2022

[11]:
```
from qiskit import QuantumCircuit, assemble, Aer
from qiskit.visualization import plot_histogram, plot_bloch_vector,␣
 ↪plot_bloch_multivector
```

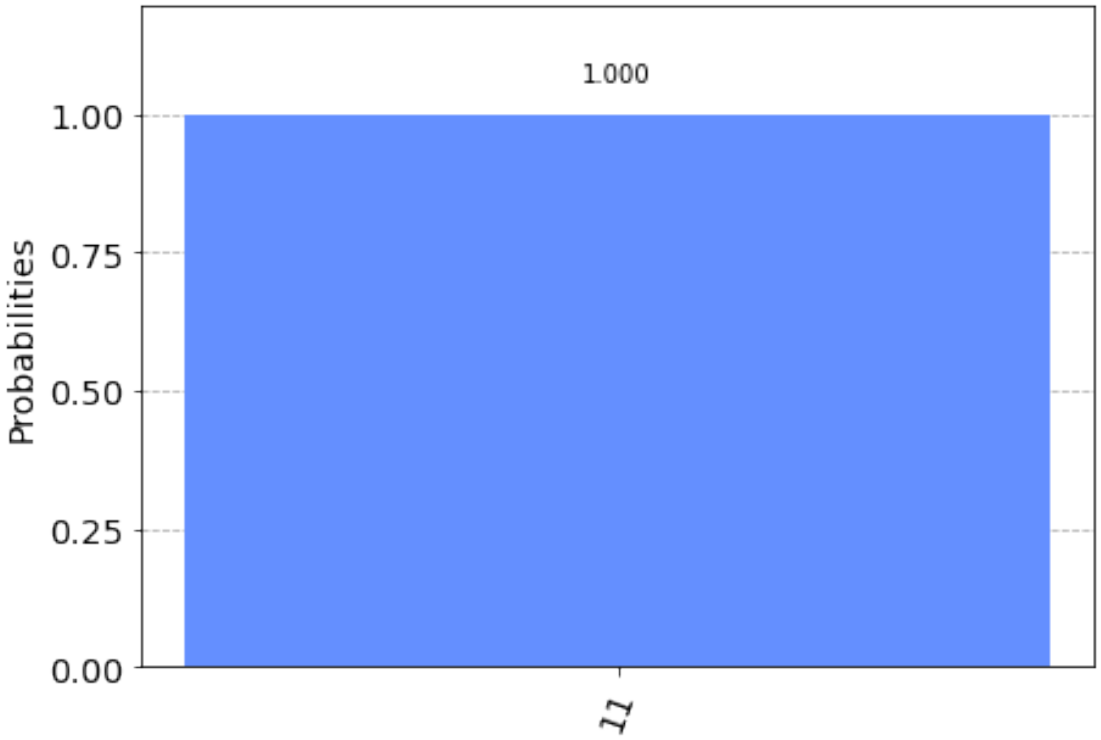
[7]:
```
qc0 = QuantumCircuit(2,2)
qc0.x(0)
qc0.barrier()
qc0.cx(0,1)
qc0.barrier()

qc0.measure(0,0)
qc0.measure(1,1)

qc0.draw('mpl',initial_state=True)
```

[7]:



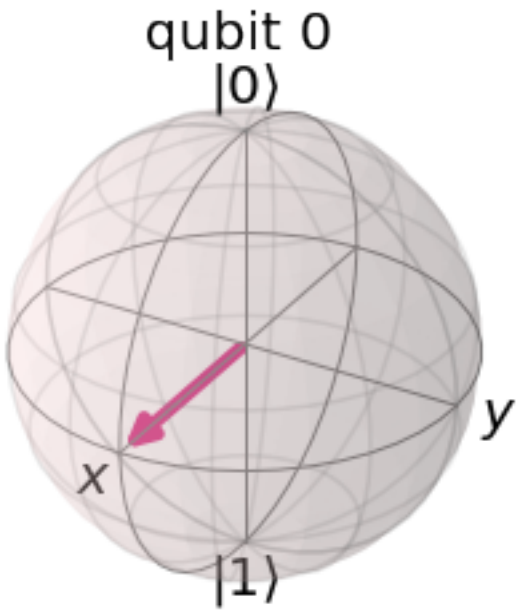
[9]:
```
sim = Aer.get_backend('aer_simulator')
result = sim.run(qc0).result()
counts = result.get_counts()
plot_histogram(counts)
```

[9]:



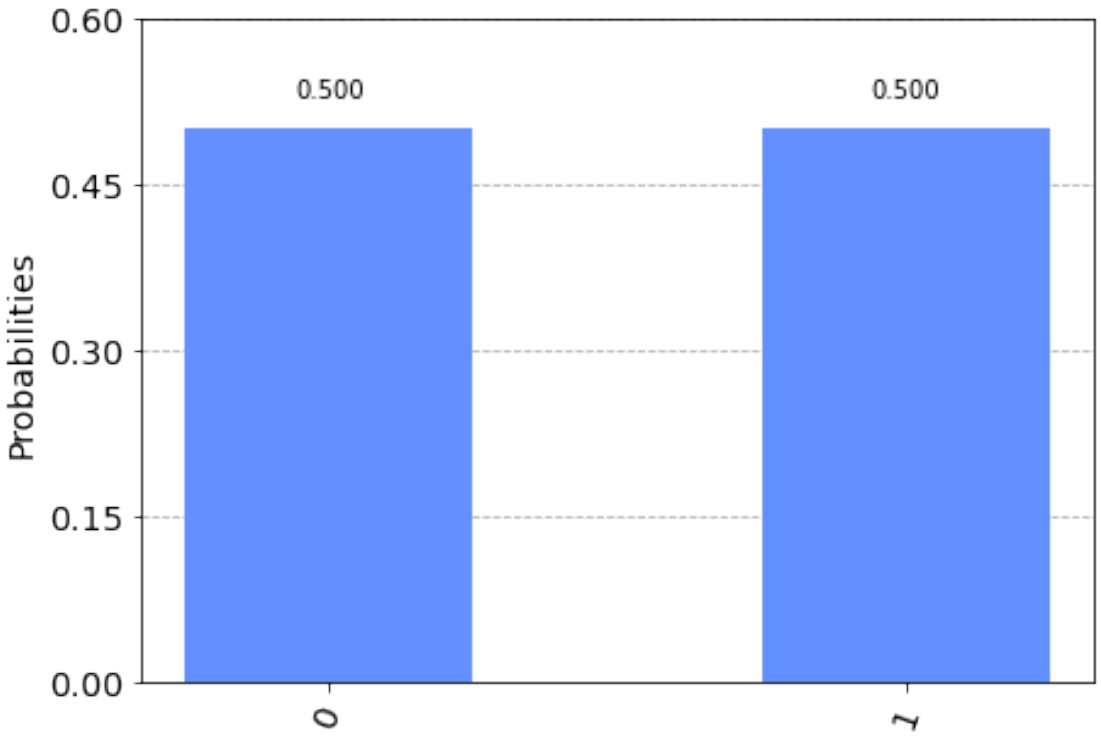
[18]:
```
from math import sqrt,pi

qc1 = QuantumCircuit(1)
initial_state = [1/sqrt(2),1/sqrt(2)]
qc1.initialize(initial_state,0)

qc1.draw('mpl')

plot_bloch_multivector(initial_state)
```

[18]:



[19]:
```
sim = Aer.get_backend('aer_simulator')

qc1.save_statevector()
qobj1 = assemble(qc1)

result = sim.run(qobj1).result()
counts = result.get_counts()
plot_histogram(counts)
```

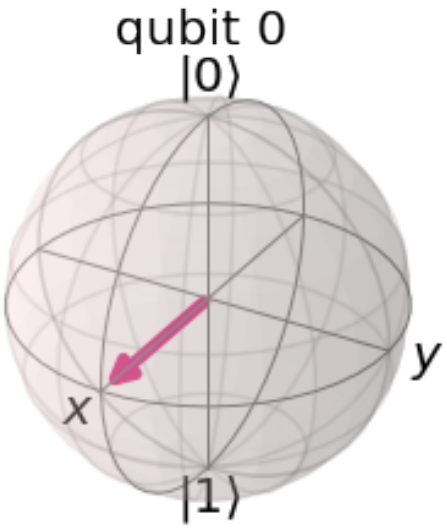
[19]:

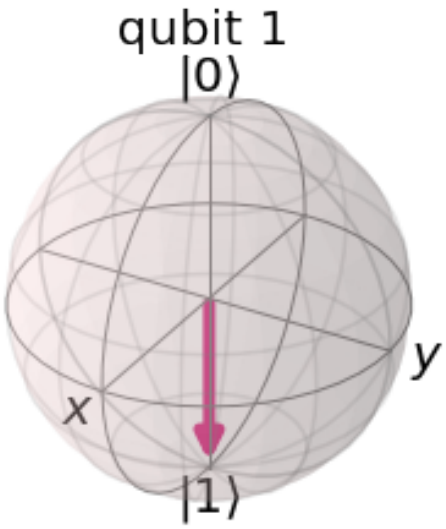


[23]:
```
qc2 = QuantumCircuit(2)
qc2.h(0)
qc2.x(1)


sim = Aer.get_backend('aer_simulator')
qc2.save_statevector()
qobj2 = assemble(qc2)

result = sim.run(qobj2).result()
state = result.get_statevector()
print(state)

plot_bloch_multivector(state)
```

```
Statevector([0.        +0.j, 0.        +0.j, 0.70710678+0.j,
             0.70710678+0.j],
            dims=(2, 2))
```

[23]:


qubit 0
|0⟩
y
x
|1⟩


qubit 1
|0⟩
y
x
|1⟩