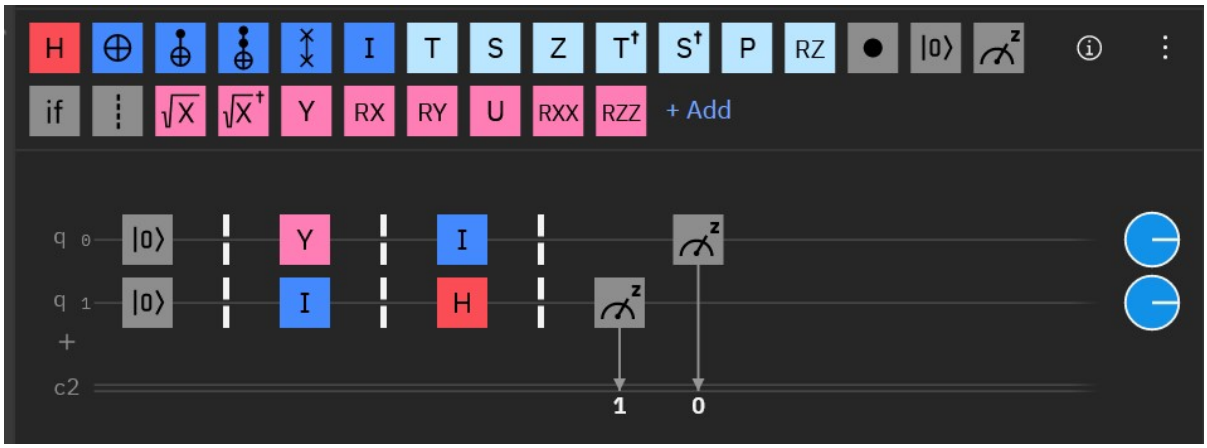
Initializing qubits with $|00\rangle$

Adding Y gates changes the current state to $|01\rangle$ **with a phase angle of** π**/2**

Dirac Notation: $(Y|0\rangle)|0\rangle$

Adding H gate changes the current state to 1/$\sqrt{2}$**(**$|01\rangle$ **+** $|11\rangle$**) with phase angle** π**/2**

Dirac Notation: $|0\rangle(H|1\rangle)$



Initialize qubits with $|01\rangle$

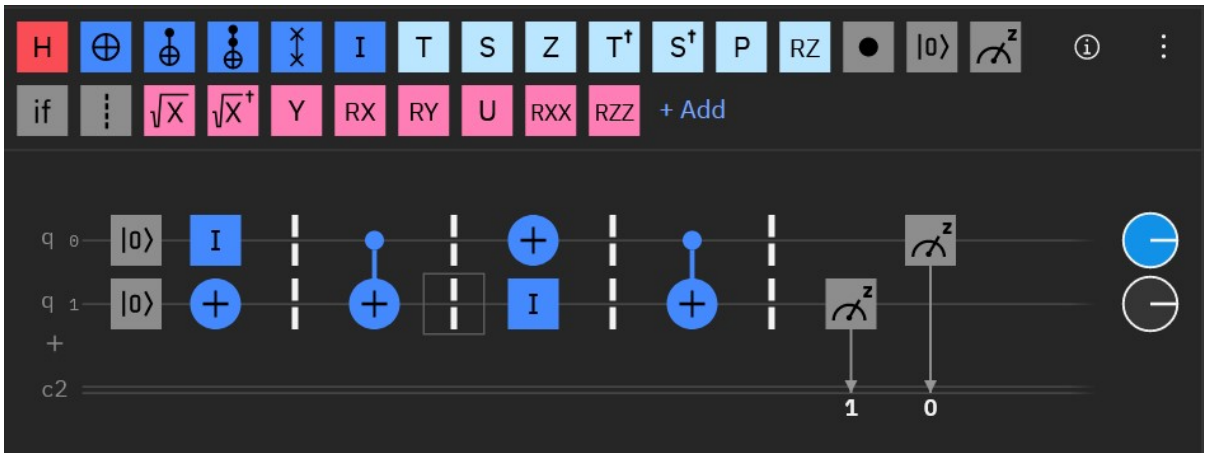
Adding CNOT gate has no change in the curcuit

Apply X gate changes the current state to $|11\rangle$

Dirac notation: $(X|0\rangle)|1\rangle$

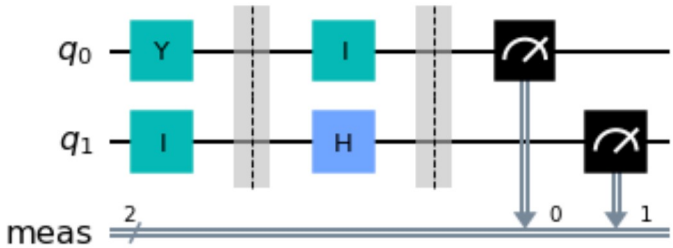
Applying another CNOT gate changes the current state to $|01\rangle$

Dirac notation: $CX|11\rangle$



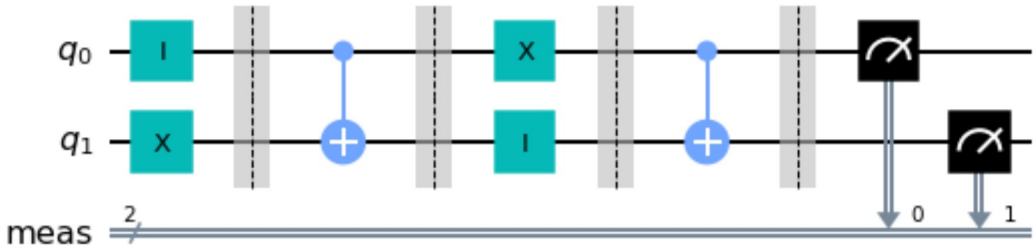
In [1]:
```
from qiskit import QuantumCircuit

circ = QuantumCircuit(2)
circ.y(0)
circ.i(1)
circ.barrier()
circ.i(0)
circ.h(1)
circ.measure_all()
circ.draw('mpl')
```

Out[1]:



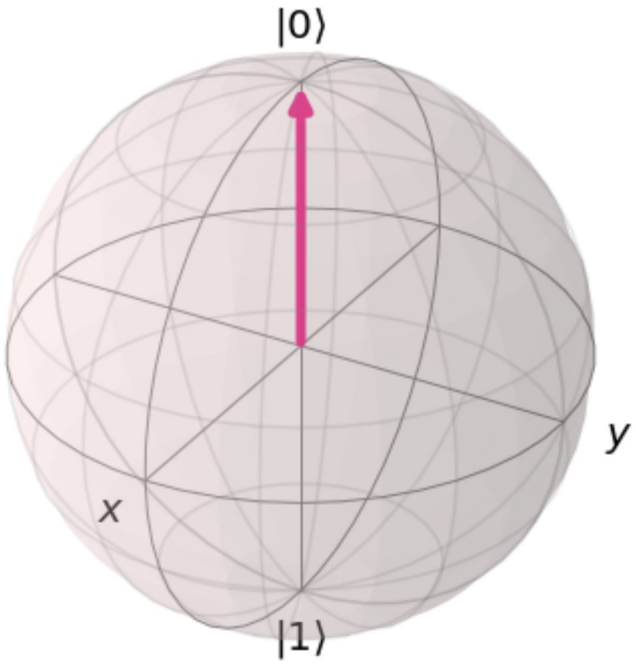
In [2]:
```
circ1 = QuantumCircuit(2)
circ1.i(0)
circ1.x(1)
circ1.barrier()
circ1.cx(0,1)
circ1.barrier()
circ1.x(0)
circ1.i(1)
circ1.barrier()
circ1.cx(0,1)
circ1.measure_all()

circ1.draw('mpl')
```

Out[2]:



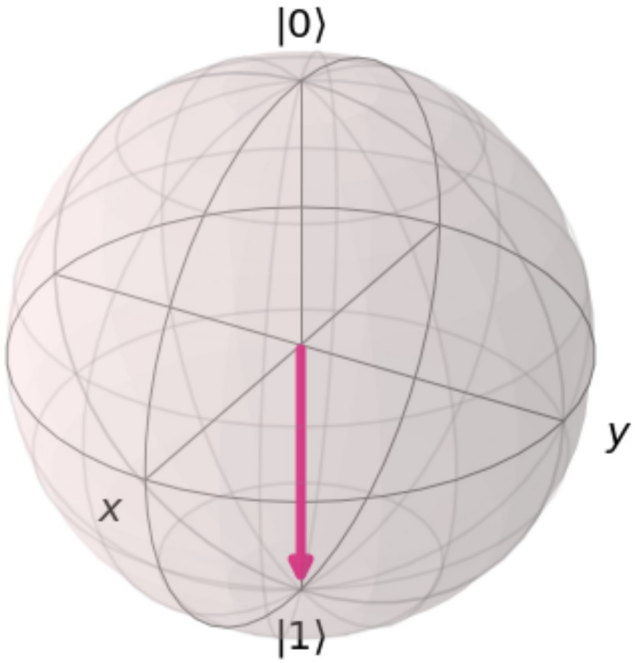
In [10]:
```
from qiskit.visualization import plot_bloch_vector
%matplotlib inline

plot_bloch_vector([0,0,1])
```

Out[10]:



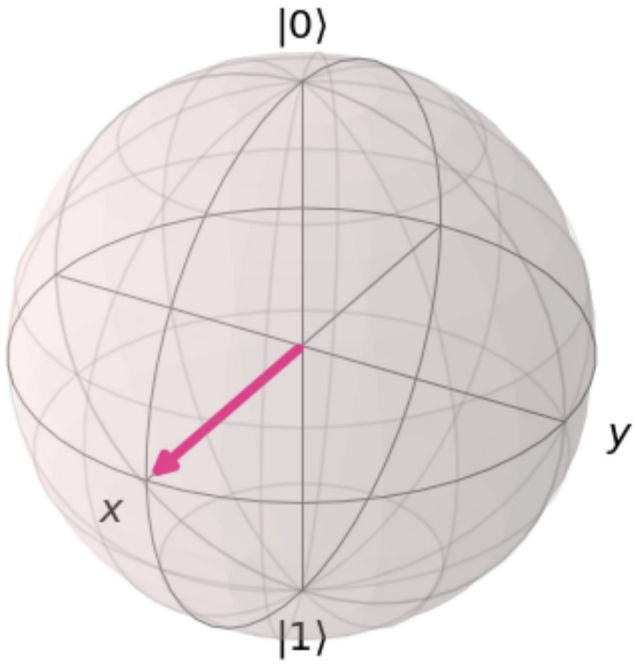
In [11]:
```
plot_bloch_vector([0,0,-1])
```

Out[11]:



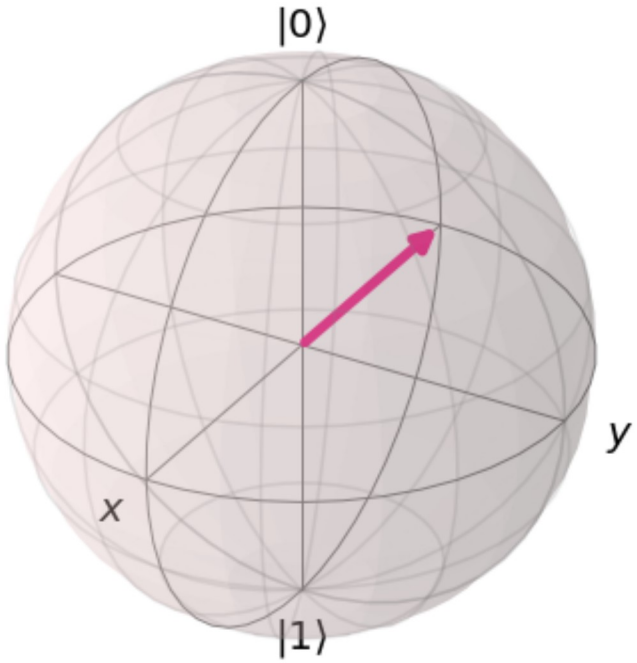
In [17]:
```
plot_bloch_vector([1,0,0])
```

Out[17]:



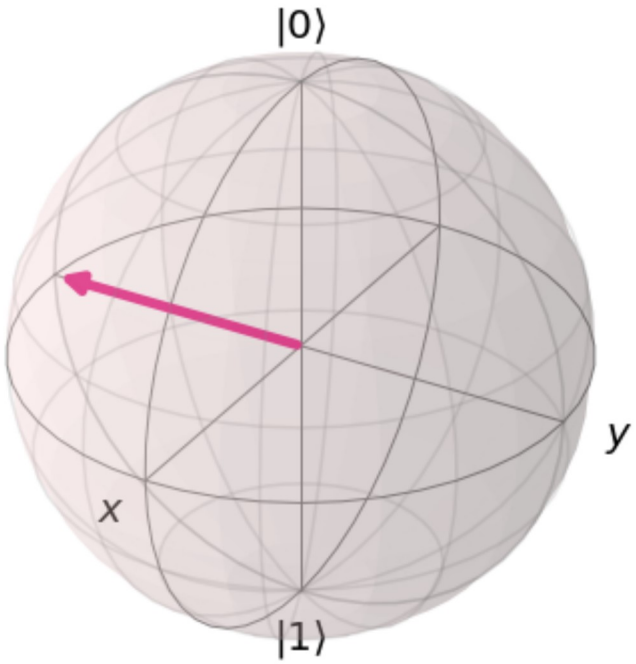
In [18]:
```
plot_bloch_vector([-1,0,0])
```

Out[18]:



In [19]:
```
plot_bloch_vector([0,-1,0])
```

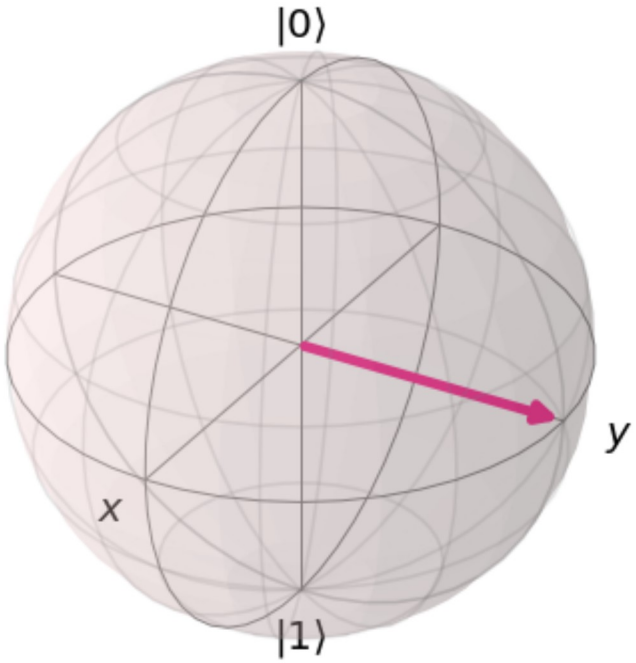
Out[19]:



In [20]:

```
plot_bloch_vector([0,1,0])
```

Out[20]:



In [ ]: