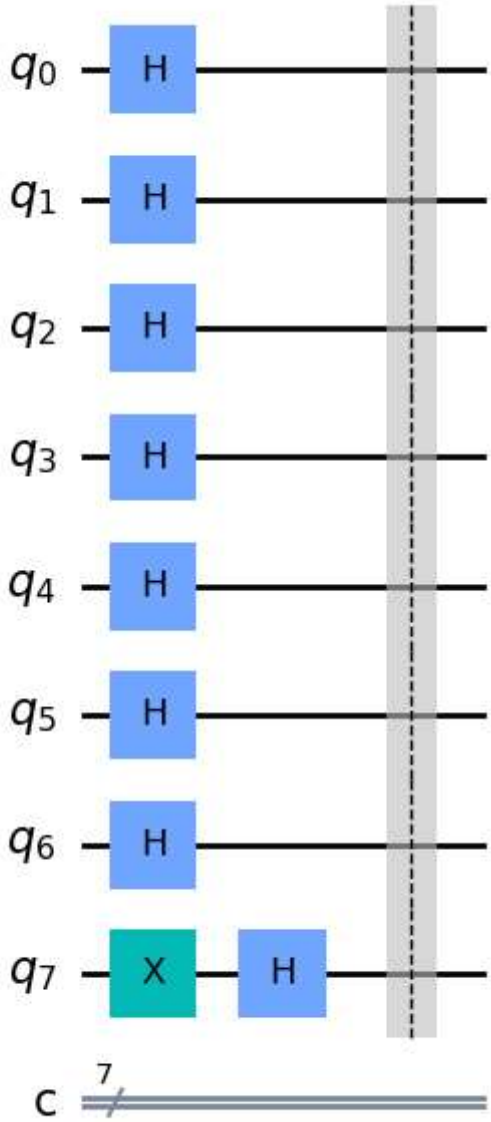
In [1]:
```
from qiskit import *
from qiskit.tools.visualization import plot_histogram
%matplotlib inline
from qiskit.visualization import plot_histogram
```

In [2]:
```
secretNumber = '1000101'
```

In [3]:
```
circuit = QuantumCircuit (8,7)
```

In [4]:
```
circuit.h([0,1,2,3,4,5,6])
circuit.x(7)
circuit.h(7)
circuit.barrier()
circuit.draw(output='mpl')
```

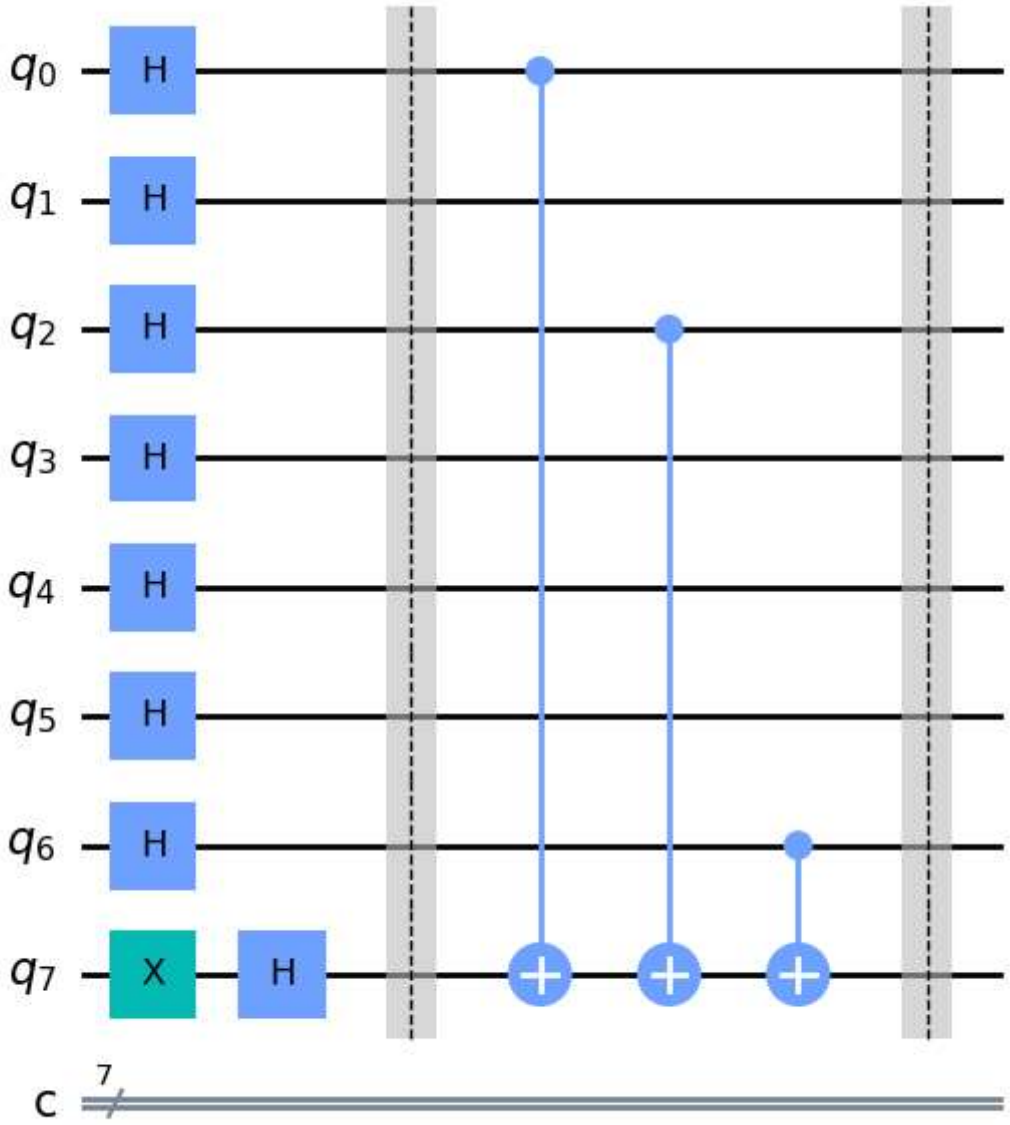
Out[4]:



Q7 is the 8th qubit ancilla qubit. Where there is '1' in the secret number we add a 'control-not' gate along with adding 'control-not' gate to ancilla qubit. For now we are doing this manually to identify the secret number. Will automate in the next program.

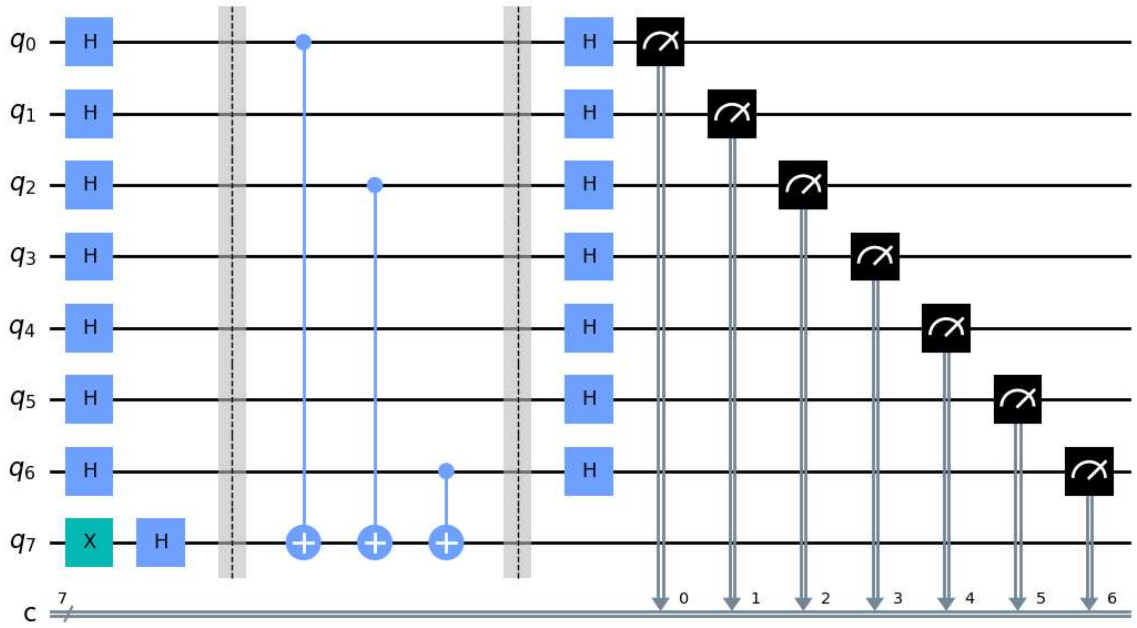
In [5]:
```
circuit.cx(0,7)
circuit.cx(2,7)
circuit.cx(6,7)
circuit.barrier()
circuit.draw(output='mpl')
```

Out[5]:



In [6]:
```
circuit.h([0,1,2,3,4,5,6])
circuit.measure([0,1,2,3,4,5,6],[0,1,2,3,4,5,6])
circuit.draw(output='mpl')
```

Out[6]:

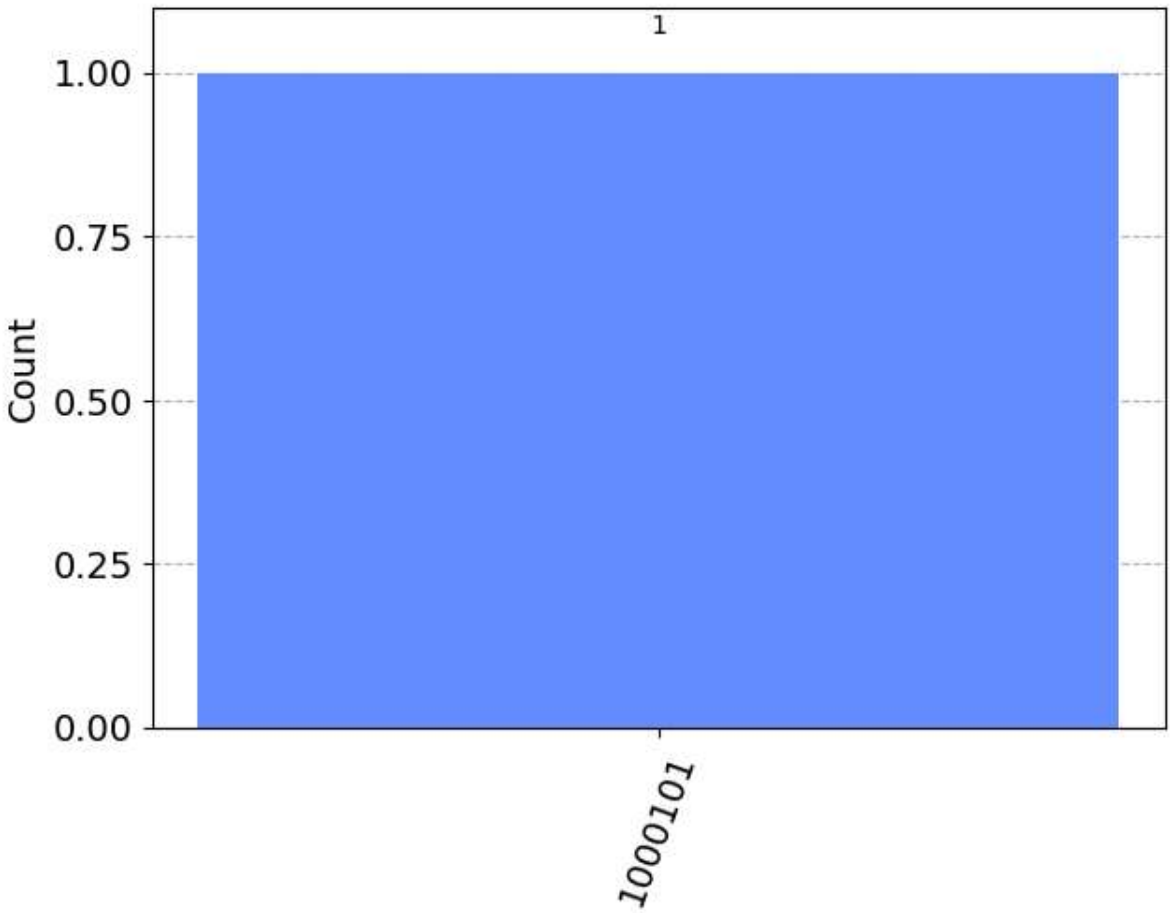


In [7]:
```
simulator = Aer.get_backend('qasm_simulator')
result = execute(circuit,backend=simulator, shots=1).result()
counts = result.get_counts()
print(counts)
```

```
{'1000101': 1}
```

In [8]:
```
plot_histogram([counts])
```

Out[8]:



In [ ]:

In [ ]: