In [10]:
```
# Importing standard Qiskit libraries
from qiskit import QuantumCircuit, transpile
from qiskit.tools.jupyter import *
# from qiskit.visualization import *
from ibm_quantum_widgets import *
from qiskit.visualization import plot_histogram
from qiskit_ibm_runtime import QiskitRuntimeService, Sampler, Estimator, Ses
# Import Aer
from qiskit import Aer

# Loading your IBM Quantum account(s)
service = QiskitRuntimeService(channel="ibm_quantum")

# Create a Quantum Circuit acting on a quantum register of three qubits
qc = QuantumCircuit(3)
```

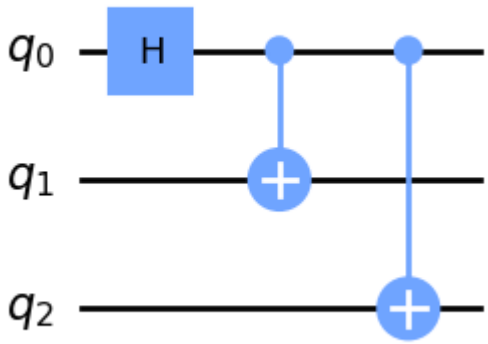
In [11]:
```
# After you creating the circuit with its registers, add gates ("operations"
# By default, each qubit in the register is initialized to |0>
# QIT, a Greenberger–Horne–Zeilinger state (GHZ state) is a certain type of
# to make a GHZ state, we need to do the following
# 1. A Hadmard Gate H on quibit q_0, such that q_0 = (|0> + |1>)/sqrt(2)
# 2. A controlled-Nit operation CNOT between q_0 and q_1
# 3. A controlled-Not operation CNOT between q_0 and q_2

# Add an H gate on qubit q_0, putting this qubit in superposition.
qc.h(0)
# Add a CX (CNOT) gate on control qubit q_0 and target qubit q_1, putting
# the qubits in a Bell state.
qc.cx(0, 1)
# Add a CX (CNOT) gate on control qubit q_0 and target qubit q_2, putting
# the qubits in a GHZ state.
qc.cx(0, 2)
```

Out[11]:
```
<qiskit.circuit.instructionset.InstructionSet at 0x7f816453ec20>
```

In [12]:
```
qc.draw('mpl')
```

Out[12]:



In [14]:
```
# Run the quantum circuit on a statevector simulator backend
backend = Aer.get_backend('statevector_simulator')
```

```
# Create a Quantum Program for execution
job = backend.run(qc)

result = job.result()
```

In [15]:
```
outputstate = result.statevector(qc, decimals=3)
print(outputstate)
```

```
Traceback (most recent call last):
  Cell In[15], line 1
    outputstate = result.statevector(qc, decimals=3)
  File /opt/conda/lib/python3.10/site-packages/qiskit/result/result.py:117
in __getattr__
    raise AttributeError(f"Attribute {name} is not defined") from ex
AttributeError: Attribute statevector is not defined

Use %tb to get the full traceback.
```

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In [16]:
```
from qiskit.visualization import plot_state_city
plot_state_city(outputstate)
```

```
Traceback (most recent call last):
  Cell In[16], line 2
    plot_state_city(outputstate)
NameError: name 'outputstate' is not defined

Use %tb to get the full traceback.
```

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In [ ]: