```python
#!/usr/bin/env python
# coding: utf-8

# In[ ]:




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# In[35]:


from qiskit import QuantumCircuit
length = 5
circuit = QuantumCircuit(length + 1, length)
circuit.x(length)
circuit.h(range(length + 1))
```

```
circuit.barrier(range(length + 1))
circuit.cx(1, length)
circuit.cx(2, length)
circuit.cx(4, length)
circuit.barrier(range(length + 1))
circuit.h(range(length))
circuit.measure(range(length), range(length))
circuit.draw(output='mpl')
```

In[34]:

```
backend = AerSimulator()
qc_compiled = transpile(circuit, backend)
job_sim = backend.run(qc_compiled, shots = 1024)
results = job_sim.result()
counts = results.get_counts(qc_compiled)
plt.hist(counts)
```

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