

## Implementing a 5 qubit Quantum Fourier Transform

### Code :

```
from qiskit import QuantumRegister, ClassicalRegister
from qiskit import QuantumCircuit, execute, IBMQ
from qiskit.tools.monitor import job_monitor
from qiskit.circuit.library import QFT
import numpy as np

pi = np.pi

IBMQ.enable_account('ENTER API KEY HERE')
provider = IBMQ.get_provider(hub='ibm-q')

backend = provider.get_backend('ibmq_qasm_simulator')

q = QuantumRegister(5, 'q')
c = ClassicalRegister(5, 'c')

circuit = QuantumCircuit(q, c)

circuit.x(q[4])
circuit.x(q[2])
circuit.x(q[0])
circuit += QFT(num_qubits=5, approximation_degree=0, do_swaps=True, inverse=False,
insert_barriers=False, name='qft')
circuit.measure(q, c)
circuit.draw(output='mpl', filename='qft1.png')
print(circuit)

job = execute(circuit, backend, shots=1000)

job_monitor(job)

counts = job.result().get_counts()

print("\n QFT Output")
print("-----")
print(counts)
input()
```

