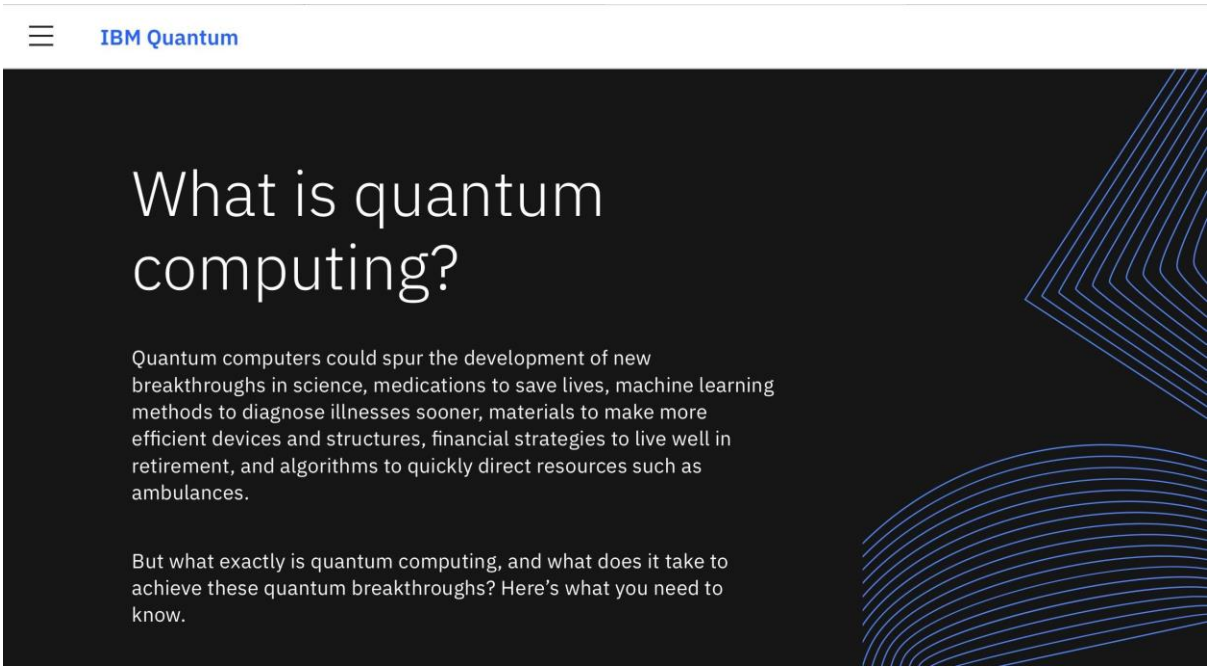
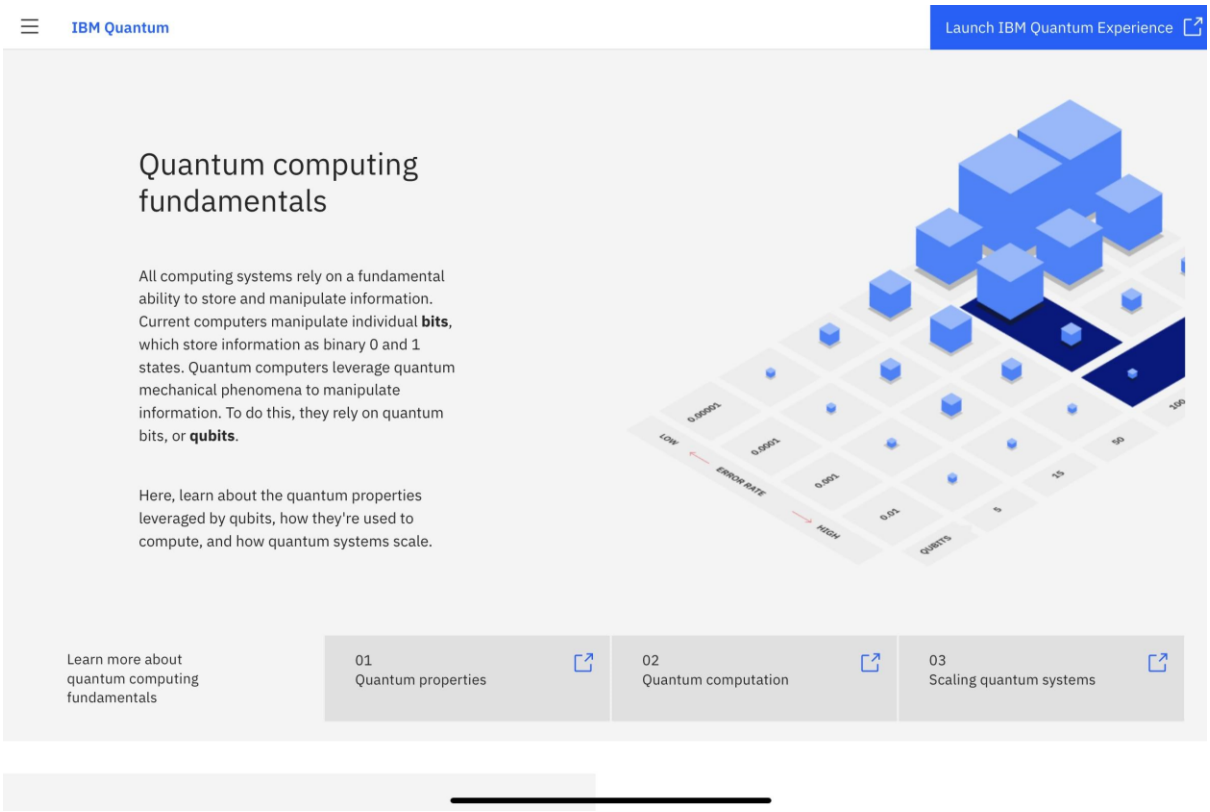
Nontawat Janpongsri 301311427

Written documentation





Code documentation

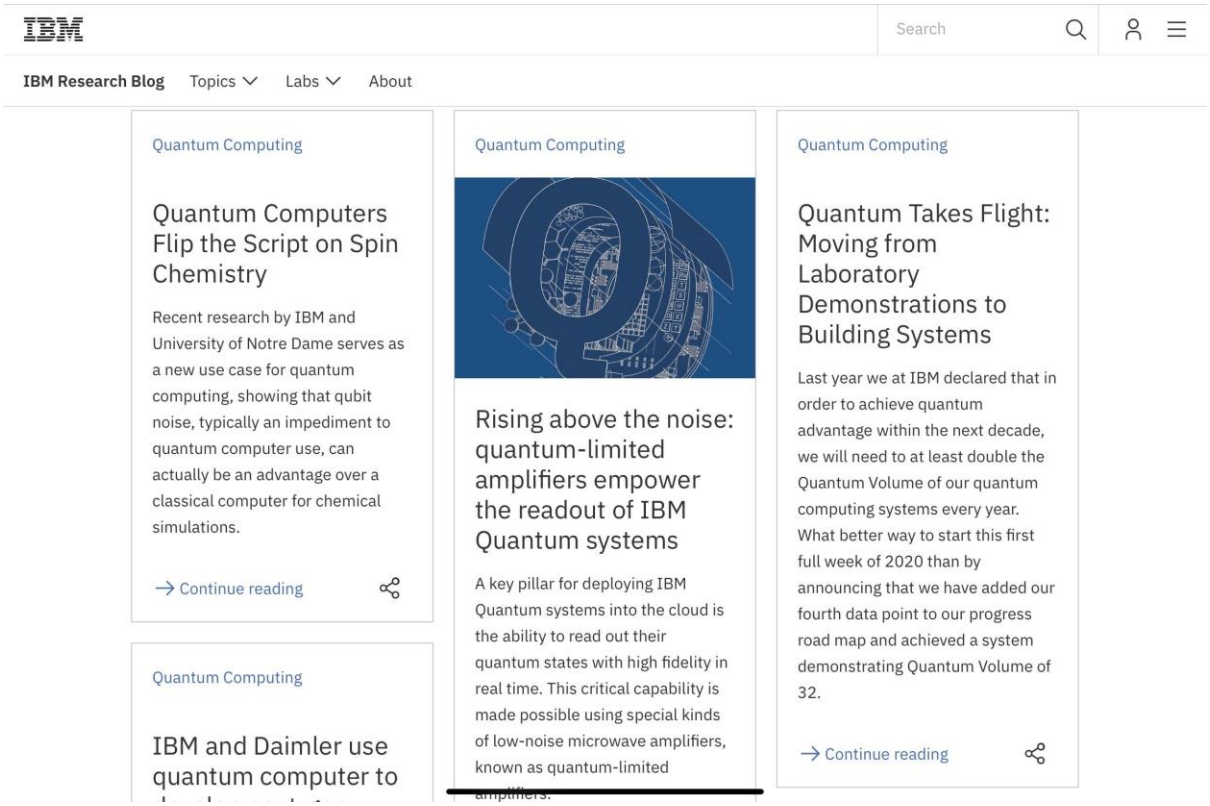
```
import numpy as np
from qiskit import(
  QuantumCircuit,
  execute,
  Aer)
from qiskit.visualization import plot_histogram

# Use Aer's qasm_simulator
simulator = Aer.get_backend('qasm_simulator')

# Create a Quantum Circuit acting on the q register
circuit = QuantumCircuit(2, 2)

# Add a H gate on qubit 0
circuit.h(0)

# Add a CX (CNOT) gate on control qubit 0 and target qubit 1
circuit.cx(0, 1)

# Map the quantum measurement to the classical bits
circuit.measure([0,1], [0,1])

# Execute the circuit on the qasm simulator
job = execute(circuit, simulator, shots=1000)

# Grab results from the job
result = job.result()

# Returns counts
counts = result.get_counts(circuit)
print("\nTotal count for 00 and 11 are:",counts)

# Draw the circuit
circuit.draw()
```


```
import numpy as np
from qiskit import(
  QuantumCircuit,
  execute,
  Aer)
from qiskit.visualization import plot_histogram
```


In more detail, the imports are

- `QuantumCircuit`: can be thought as the instructions of the quantum system. It holds all your quantum operations.
- `execute`: runs your circuit / experiment.
- `Aer`: handles simulator backends.
- `plot_histogram`: creates histograms.

Community documentation



National Accelerator Laboratory, has joined the IBM Q Network. As a member organization, Q-FARM will collaborate with IBM to accelerate joint research in quantum computing and develop curricula to help prepare students for careers that will be influenced by this next era of computing across science and business.

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