Quantum Batteries

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This project explored whether quantum batteries, which utilize the quantum mechanical principles of superposition and entanglement, have the potential to serve as an important energy storage device in the future. The initial idea was to build a classical circuit to model how a quantum battery works. While the circuit shared energy between two separate capacitors, difficulties were encountered when attempting to share energy via inductors. This obstacle led to the use of "Quiskit", a coding program that allows one to simulate and build quantum circuits using "Qubits", which are energy storage components that store energy by changing their quantum states rather than through electrochemical means. The digital model used "cells" of code to simulate different aspects of quantum batteries. Both the physical and digital models accurately depicted different aspects of a quantum battery.

Awards Won: