

How much is the cost of implementing arithmetic on a quantum computer ?

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The transition from classical computing to quantum computing is marked by capabilities and challenges associated with qubits. Unlike classical computing, which utilizes bits to represent 0 and 1, qubits have the unique ability to operate in superposition, simultaneously encompassing both states 0 and 1. This characteristic allows quantum computers to perform certain calculations faster than classical ones, executing complex operations in a single step. Comparative analysis addresses the feasibility and costs of integrating quantum computing into everyday applications, as well as the possibility of personal quantum computing devices. The results indicate significant advancements in the speed of routine calculations, but the technology is still not economically viable or competitive in the current market. The future of quantum computing may lie in cloud-based resources, suggesting a significant shift in this direction.

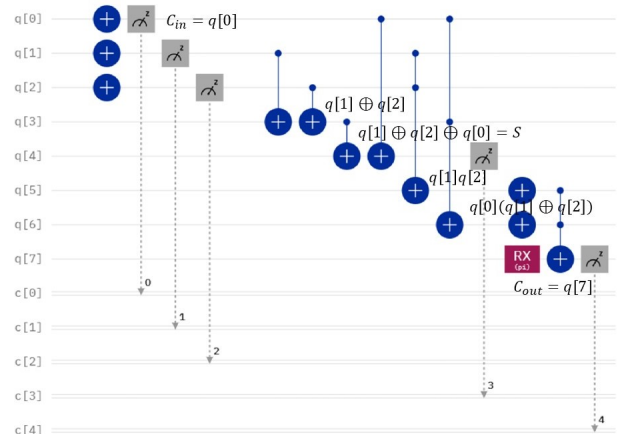


Figure 1: Quantum adder on the IBM platform

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