Quantum Computing Notes & Simulations by Soham Agrawal

Welcome to my learning repository on **Quantum Computing**, built around handwritten notes, key concepts, and simple quantum circuit simulations.

This journey began during Techfest at IIT Bombay, where a live lecture on **Quantum Teleportation** sparked my curiosity. Since then, I've been exploring the principles of quantum mechanics and their applications in computation.

📓 Notes Snapshot

1. Entanglement & Basic Quantum Gates

- Matrix forms of X, Y, Z, H (Hadamard), and I (Identity) gates
- Explanation of **Quantum Entanglement**
- Hand-calculated derivation of Bell states
- Visual layout of a **Quantum Circuit**

2. Quantum Computing Foundations

- Bloch Sphere visualizations
- State vector transformations
- Superposition & eigenstates
- Notes on teleportation logic and classical logic gates

📌Why This Repository?

- To document my self-learning path
- To share concepts visually and clearly
- To gradually pair theory with actual simulation code

🔗Related Post

https\://www.linkedin.com/posts/sohamagrawal0_techfest2024-quantumcomputing-studentlife-activity-7276244521976233984-alaZ?utm_source=share&utm_medium=member_desktop&rcm=ACoAAEBFjF0B9mShM-r5L4YDlY7kHizPmrPwYBQ

> *“Nature isn't classical, dammit, and if you want to make a simulation of nature, you'd better make it quantum mechanical.” – Richard Feynman*