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***Abstract—***Quantum teleportation is a counterintuitive and interesting   
quantum mechanical effect in which the quantum state of   
a particle can be transmitted to a second particle else  
where without transporting the original particle in space.   
Quantum teleportation relies upon quantum entanglement,   
in which particles become correlated in such a way that   
the state of one particle immediately determines the state   
of the other regardless of the distance between them.   
Quantum teleportation has deep implications in quantum   
computing, quantum cryptography, and quantum commu  
nication systems of the future. Because of the sensitive   
and subtle nature of quantum systems, experimental con  
firmation of quantum teleportation is difficult to perform   
with usual apparatus and environments, and therefore it is   
not an easy job for most programmers and students to ma  
nipulate   
these   
concepts.   
This is a mobile app created on the Flutter platform for   
simulating quantum teleportation via Bluetooth. The app   
makes fundamental quantum mechanical concepts simple   
and straightforward to simulate, such as Bell states, en  
tanglement, and quantum measurement, to illustrate how a   
quantum state may be teleported from one mobile phone   
to another. Although actual quantum processes cannot be   
simulated on non-quantum devices, the simulation applies   
classical algorithms derived from quantum logic to en  
code, encrypt, send, and decrypt messages. The objective   
is to create an educational platform that simplifies making   
quantum principles behind quantum teleportation more   
accessible to people through simple-to-use mobile inter  
faces and live peer-to-peer communication. At the center   
of the simulation is the creation and utilization of Bell   
states, two maximally entangled qubits. The application   
simulates the states in order to encode messages and emu  
late the entangled pair between two devices. The simula  
tion begins with the sender using a classical message on a   
qubit-like object and using operations akin to quantum   
gates, including Hadamard and CNOT gates, in trying to   
entangle and control the state. A simulated Bell measure  
ment is taken, and the outcome is transmitted via Blue  
tooth to the receiving device. The receiver uses this clas  
sical information to recover the original message using   
simulated   
quantum gates and decoding logic.   
This simulation has a dual role: it is a learning tool used   
for the study of quantum teleportation and it also demon  
strates the use of classical systems to simulate quantum   
processes in order to experiment and learn. Mobile-first   
design makes it interactive and accessible, where students,   
educators, and learners are able to learn complex quantum   
concepts without needing to access quantum labs or com  
puters.   
Theoretical foundation of the quantum teleportation pro  
cess, mobile application design, encryption and decryp  
tion process to simulate quantum processes, and how   
Bluetooth communication is utilized to facilitate peer-to  
peer data transfer are discussed in this paper. The pro  
posed solution demonstrates how the concepts of quantum   
mechanics are realized in practical applications through   
the utilization of classical technology to bring theory and   
practice together