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**A Study of Blockchain-Based Security Model for Secure
Communication in The Internet of Devices (IoD)**

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ABSTRACT

The Internet of Devices (IoD) is a rapidly growing technological ecosystem where multiple smart devices are connected through the internet to exchange data and perform automated tasks. These devices include sensors, smart appliances, mobile devices, and other embedded systems that communicate with each other continuously. However, as the number of connected devices increases, the risk of cyberattacks, data breaches, and unauthorized access also grows. Therefore, ensuring secure communication among devices has become a major challenge in IoD networks. A blockchain-based security model offers an effective solution to address these issues. Blockchain technology provides a decentralized, transparent, and tamper-resistant platform where all transactions are recorded in secure blocks and linked together in a chain. In this model, each device in the network can be authenticated through cryptographic techniques, ensuring that only authorized devices can participate in communication. The distributed ledger system of blockchain eliminates the need for a centralized authority and reduces the chances of single-point failure or manipulation. Moreover, blockchain ensures data integrity, privacy, and traceability in device communication. Smart contracts can also be used to automate security protocols and manage device interactions securely.