Blockchain-based Lightweight Transaction Process Modeling and Development

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Abstract— **Recently, blockchain systems are being applied in various application fields by combining blockchain with existing legacy systems. In particular, the cryptocurrency payment transaction system to support digital financial transactions is emerging as an important issue. Nevertheless, the development and valuation of blockchain-based cryptocurrency transactions and application services are fluctuating. With the advent of the Untact era due to Covid-19 recently, the commercialization of cryptocurrency is becoming more focused. In addition, as technical constraints for the spread of commercialization, there are problems of reaching a fast consensus in a large-scale blockchain network, consuming excessive energy for calculation, and storing the entire blockchain for verification. We propose a lightweight blockchain transaction process modeling to overcome these problems and to enhance blockchain applicability in an application environment where computing resources are weak. In addition, we propose a lightweight transaction-based blockchain application model optimized for areas with weak computing and network resources such as vending machines and ATMs.**

Keyword— **Blockchain, Cryptocurrency, Lightweight Transaction, Distributed Process, Vending Machine**

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