ABSTRACT

The growth of digital economies worldwide is being led by sales growth in E-commerce. One method that is widely used in conducting electronic commerce transactions in E-commerce is electronic auction. However, the electronic auction system still has many weaknesses, one of which is in terms of security and trust between the parties conducting the auction. In addition, in the electronic auction system, transaction records and personal data of bidders participating in the electronic auction process are stored in a centralized database so that they are vulnerable to manipulation, data loss, privacy issues and data theft by irresponsible parties. The combination of blockchain technology with smart contracts can be developed to create a decentralized electronic auction system that can increase the security of a website. Smart contracts are contracts in the form of automated software. Smart contract integration on blockchain technology can meet various system needs to run various processing with blockchain protocols. This system requires an initial description that will be used before further development, the method that will be used in the development of this system is RAD (Rapid Application Development). This development resulted in a decentralized electronic auction application that is expected to provide increased security to avoid theft and data leakage as well as fraud committed during the auction process. This system runs on the client side where in the process it does not use a server on the backend side but is carried out by a smart contract that runs on the Ethereum blockchain.

Keywords: Smart Contract, Blockchain, Ethereum, Electronic Auction