

ABSTRACT

General elections are a fundamental element of democracy that guarantees fairness and transparency in government. However, conventional elections in Indonesia still face problems such as inefficiency and the potential for ballot manipulation. This study proposes a solution in the form of developing a blockchain-based mobile application for the Electronic Voting (e-voting) system, focusing on accessibility, transparency, and security. The Design Thinking approach is applied through five stages: Empathize, Define, Ideate, Prototype, and Testing. The application is designed to enable voters to cast their votes digitally through blockchain integration and a user-friendly interface. Blockchain plays a crucial role in ensuring the security, transparency, and integrity of election data. This research also involves usability testing using the Usability Testing method and the System Usability Scale (SUS) to assess user satisfaction, as well as Black Box Functionality Testing to evaluate the application's functionality. The research results indicate that this application is effective in reducing the risk of manual errors, improving the efficiency of the election process, and expanding voter reach. The average SUS score of 95.75 (grade A) indicates a very high level of satisfaction. All participants successfully completed all tasks with full success, although there were some misclicks on each task. Task completion times varied, with the longest time spent on the registration and login process at around 54.5 seconds, and the fastest on viewing voting results at around 6.3 seconds. Additionally, 9 application features passed black box testing without any issues. This application is expected to strengthen public trust in the democratic process in Indonesia.

Keywords: *Blackbox Testing, Blockchain, Design Thinking, Electronic Voting, Mobile Application, System Usability Scale (SUS), Usability Testing*