ABSTRACT

Abstract—A waste bank is a facility that functions to manage waste by applying the principles of 3R (Reduce, Reuse, Recycle) to support sustainable environmental programs and provide economic benefits to the community. Bank Sampah Capetang, located in Kelurahan Sekejati, Kecamatan Buah Batu, Kota Bandung, faces several operational management issues, particularly in transaction recording and waste transportation scheduling, which are often missed. These issues impact daily operational uncertainty and the potential loss of important data. This study aims to provide a solution by developing a web-based information system that integrates waste transportation scheduling and transaction recording, as well as providing a unified platform for Bank Pusat and Bank Unit managers to operate the waste bank. The system was developed using the Extreme Programming (XP) method, known for its iterative approach in software development. The technologies implemented in this system include the use of Unified Modeling Language (UML) for system modeling, the Laravel framework for application development, MySQL for database management, as well as Black Box Testing and User Acceptance Testing (UAT) for application testing. The testing results show that 100% tests were successful ("Passed") with two minor improvements that have been addressed. Thus, the developed information system meets the needs of Bank Sampah Capetang, with all key features such as scheduling and transaction recording functioning well. This study is expected to increase data transparation and assist users to manage transaction and scheduling data properly.

Keywords—waste bank, information system, scheduling, transaction, Extreme Programming, User Acceptance Testing.