ABSTRACT

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Automated Teller Machine (ATM) is a computerized telecommunications device that provides the clients a bank with access to financial transactions in a public space. Because of the convenience offered by ATM, many banks offer ATM facilities. In 2011, the number of ATM in Indonesia reached 40,000 units. Problem often encountered with ATM is the problem related to the running out of money at the ATM. Bank or vendor need to create an ATM cartridge replacement schedule to prevent that situation. This thesis tries to solve that problem by applying fuzzy logic to create an ATM cartridge replacement scheduling system.

This thesis focuses on applying fuzzy logic to create an ATM cartridge replacement scheduling system. Fuzzy logic is applied in this thesis using Fuzzy Inference System Tsukamoto method with minimum implication function. Major factors in determining cartridge replacement schedule are location of that ATM, number of that ATM users, and trend of withdrawal at ATM. Because of the three major factors in determining cartridge replacement schedule, then the fuzzy logic system in this thesis has three input variables that are population, ATM user, and trend variable. Output variable of this fuzzy logic is the number of transactions in one day at each ATM. In this thesis there are 27 rules composed as a base for computation using fuzzy logic.

Testing for this system consists of rule testing and real testing. After testing is performed, result of rule testing was 100% true and result of real testing was 85.79% true. It can be concluded that fuzzy logic with Fuzzy Inference System Tsukamoto method and minimum implication function can be used for the ATM cartridge replacement scheduling system.

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