Analisis Performansi Decision Tree dalam Smart Shopping Cart Berbasis Passive RFID

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Abstract
When welcoming religious holidays or new year, queues are often found at clothing store. This happens because the service time between consumers takes a long time, the cashier must scan all items one by one, and make the transaction process at the cashier slow. To handle this problem, an internet of things based system is needed, namely smart shopping cart based on passive RFID. Each item will be equipped with an RFID tag, and the shopping cart will be equipped with an RFID reader, so the items that inserted into the shopping cart will be scanned and calculated in the system. Customers can see the total shopping temporarily on the display contained in the shopping cart, and only have to pay according to the amount calculated by the system. This will make the service time shorter and minimize the number of queues at the cashier. In addition, stores often carry out promotions like discounts with certain conditions. With smart shopping cart, discounts are automatically calculated on total if they meet the discounted requirements. To support the performance of smart shopping cart, a decision tree algorithm is needed to to classify consumer shopping lists and determine discounts. The author tests and analyzes the performance of the decision tree ID3 algorithm in the smart shopping cart. The test results show that decision tree algorithms can determine discounts with a 90% accuracy rate and 100% precision rate.

Keywords: Smart Shopping Cart, Internet of Things, Decision Tree ID3, RFID