

ABSTRACT

The development of technology and information nowadays has a very significant impact in various aspects. One of them is the data processing system with the emergence of Radio Frequency Identification technology (RFID). Currently, the use of RFID has been widely implemented in everyday life. The application of RFID technology can be found on the college student ID card (KTM), highway cards, parking cards, as well as the office employee's attendance cards.

Besides that *RFID Tag* can be used to the identification, it also can store a limited amount of data. However, due to memory limitations we can't just store the data into each tag. The use of compression is one of the ways to maximize the utilization of the memory capacity of RFID Tag which is limited. Therefore, in this final task will be implemented *Huffman Compression Algorithm* for transaction system of the library based on RFID. Applications created using VB.Net on a PC with RFID modules. The application also integrates database built using MS. Access 2007 with the Huffman algorithm which has the role to compress data which will be stored into the Tag. Module RFID that will be used is ACR120U. Type of card that will be used is MF1 IC S50.

The results of this final task is a software that serves as an interface between the user with module RFID in the process of writing / reading data to / from *tag card*. From the test results, it show that the Huffman algorithm are very effective for text compression and produces a compression ratio up to 67.77%, the process of adding Huffman code table to data compression make the compression ratio decrease, and the last that this system can improve the efficiency in data storage up to 120%.

Keywords: RFID, Compression, Huffman algorithm, Visual basic.net.