TRANSACTION INFORMATION EXTRACTION FROM AUTOMATIC TELLER MACHINE ELECTRONIC JOURNAL USING REGULAR EXPRESSION

Ojulari H. O., Arulogun O. T. & Oke A. O

Research Scholar, Department of Computer Science and Engineering, Ladoke Akintola University of Technology,
Oyo State, Nigeria

ABSTRACT

The vast majority of Automatic Teller Machines (ATMs) researches is mostly focused on security and ATM modeling, but no study has considered extracting financial information from the electronic journal (EJs). ATM Customer transactions are recorded in a semi-structured text file called EJ. This makes it difficult to run a direct search query on such format to resolve transaction disputes in banks. This research focuses on how to extract financial information from ATM EJs. An EJ Parser algorithm was developed to establish information extraction (IE) method. The IE applied a divide and conquer concept to decompose the EJ into sub-problems of unit transaction sessions, and named entity recognition (NER) was performed to identify all financial transaction tokens or entities, and the extraction task adopted a regular expression (Regex) as an entity classifier. The algorithm was tested with a collection of live EJ data from a Wincor ATM of a bank, and its performance was evaluated accordingly, using standard performance metrics such as precision, accuracy, f-secure, misclassification and recall. The algorithm indicated 99%, 99.7%, 99.7% of precision, recall and accuracy respectively. However, there were a few exceptions that happened as misclassification of which, were traced to 'comments' and 'avail balance' entities.

KEYWORDS: Automatic Teller Machine (ATM), ATM State chart, EJ Parser, ATM Electronic Journal, EJs, EJ, NDC, CEN XFS, NCR