

Proceedings of the 3rd Annual World Conference
of the Society for Industrial and Systems Engineering,
San Antonio, Texas, USA
October 20-22, 2014

Frequent Pattern Mining in a Pharmacy Database through the Use of Hadoop

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Abstract: This research applies Frequent Pattern Mining (FPM) on prescriptions database of a central fill pharmacy in the State of Florida to extract useful knowledge that improves different strategies in pharmacy automation. The study involves the use of a Frequent Pattern Growth (FP-growth) approach to examine possible associations within the prescribed drug regime for different patients in order to find ways to improve the Robotic Prescription Dispensing System (RPDS) planogram process. The RPDS planogram mainly involves the distribution of dispensers among different robotic units and the dispenser assignment inside one robotic unit. The FP-growth application on a prescriptions database is novel, thus, FP-growth is tested on both sequential and parallel modes on a distributed platform Hadoop and MapReduce paradigm. The discovered rules reveal strong associations among the purchased drugs that are beneficial in improving the allocation and distribution of dispensers among the robotic units in an automated pharmacy.

Keywords: Frequent Pattern Mining, FP-growth, Robotic Prescription Dispensing System Planogram