

Abstract

Emergency medical situations are conditions in which a rapid response is required from the patient, family, or anyone nearby. In an emergency, everyone is deemed to have an obligation to make a quick decision, taking the patient to hospital for medical treatment. Transporting severely injured patients in an emergency case can be time-consuming and resource-consuming. This practical application of a built system can be used to determine a suitable hospital for a patient in a timely manner. Several objectives and criteria should be considered to increase the patient's life expectancy. In this study, we build an Expert System (ES) to obtain a suitable hospital using criteria such as patient conditions, travel time, availability of a doctor, speciality doctor, availability of an operating room, and any other rooms. An Expert System built upon a knowledge base model, this knowledge is stored into rules and processed by an inference engine using the Rete Algorithm, which is built from a Rete network implementing Drools business rule management system. The relationship between nodes in the Rete Algorithm is designed to eliminate redundancy of computer processes of an Expert System. Through the use of the Rete algorithm on a rule-based system, the result is that this expert system can process the knowledge base, which is a rule and fact into a desired emergency unit.

Keyword: *Rete algorithm, Drools, expert system, inference engine, knowledge based.*