ABSTRAK

Penalaran berbasis aturan (*rule base reasoning*) merupakan cara bernalar berdasarkan situasi-situasi tertentu menggunakan *short-term memory* dan *long-term memory* sebagai dasar untuk melakukan sebuah tindakan. Sedangkan penalaran berbasis kasus (*case base reasoning*) penalaran didasarkan kasus-kasus terdahulu. Dengan memanfaatkan komputer, proses penalaran ini mengalami perubahan subjek pelaku dari manusia menjadi perangkat komputer. Penalaran yang dilakukan oleh manusia digantikan dengan penalaran berbasis mesin inferensi yang didasarkan atas aturan-aturan dan fakta-fakta kasus. Dalam aktivitas penilaian atau *assesment*, kedua model penalaran ini dapat digunakan untuk menentukan format soal assessment, cara pelaksanaan assessment, analisa kemiripan kalkulasi nilai dan analisa kemiripan saran-saran assessment. Untuk menyusun aturan-aturan (*rules*) dapat digunakan algoritma ID3 yang akan menghasilkan pohon keputusan dan tabel aturan penentuan format soal dan cara assessment. Sedangkan untuk analisa kemiripan kalkulasi nilai dan saran dalam assessment dengan menentukan bobot kedekatan atribut dan bobot kemiripan kasus assessment menggunakan fungsi kemiripan kasus baru dengan kasus lama menggunakan algoritma *nearest neaighbor*. Kombinasi bentuk penalaran berbasis aturan dan kasus tersebut di integrasikan kedalam kerangka kerja sistem *e-assessment* berbasis web.

Kata kunci : E-Assessment, Penalaran berbasis aturan (rule base reasoning), Penalaran berbasis kasus (case base reasoning), ID3, Kemiripan, *nearest neaighbor*.

ABSTRACT

Rule-based reasoning (penalaran berbasis aturan) is a way of reasoning based on specific situations using the short-term memory and long-term memory as a basis to perform an action. While the case-based reasoning (penalaran berbasis kasus) is based reasoning previous cases. By utilizing a computer, this reasoning process of changing the subject of human actors into the computer. Conducted by human reasoning is replaced by machine-based reasoning inference based on the rules and the facts of the case. In the assessment activity, both models this reasoning can be used to determine the format about assessment, how the implementation of assessment, similarity analysis of calculation and similarity analysis of assessment suggestions. To formulate rules (aturan-aturan) can be used ID3 algorithm that will generate decision trees and tables of rules determining the format of questions and how assessment. As for similarity calculation of value analysis and advice in the assessment to determine the weight and the weight of the proximity attribute similarity assessment of cases using a similarity function of new cases with old cases using nearest neighbor algorithm. The combination of rule-based reasoning and case-based reasoning be integrated into the framework of e-assessment system based on web.

Keywords: E-Assessment, Rule-based reasoning (penalaran berbasis aturan), Case-based reasoning (penalaran berbasis kasus), ID3, Similarities, nearest neaighbor.