SKRIPSI

PREDIKSI INDEKS PRESTASI KUMULATIF MAHASISWA PENDIDIKAN TEKNIK INFORMATIKA & KOMPUTER UNIVERSITAS NEGERI JAKARTA MENGGUNAKAN ALGORITMA C4.5 DAN NAÏVE BAYES

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ABSTRACT

Angel Karentia, Grade Point Average Prediction of Informatics & Computer Engineering Education Study Program at State University of Jakarta Using C4.5 and Naïve Bayes Algorithm. Supervisors: Dr. Widodo, S.Kom, M.Kom, Hamidilah Ajie, S.Si, M.T. Informatics & Computer Engineering Education Study Program. Faculty of Engineering, State University of Jakarta. 2021

In the learning process, college students will get a score called GPA. The GPA value is used as an indicator to measure student success during college years. Predicting the GPA value is needed to evaluate student performance so it can maintain the accreditation of the college. The prediction of learning outcomes score was limited only to the numerical attributes using the regression method, even though there were categorical attributes that affected the score of learning outcomes. To overcome the limitations of categorical attributes, prediction of GPA can be done using existing classification methods in data mining. In this research, GPA predictions were carried out using the C4.5 algorithm as a rule based algorithm and Naïve Bayes as a non-rule based algorithm to compare the performance of the algorithm. The data used in this research is data from students of Informatics Engineering & Computer Education Study Program at State University of Jakarta who graduated in 2016 to 2020. Data attributes used are the entrance point, tuition fee group, GPA on semesters 1-4, credits on 1-4, and GPA when graduate. The parameters used to evaluate the results of the model are the precision, recall, accuracy, and kappa coefficient values. There are no significant differences in the results of the two algorithms. The recall value and accuracy between the two algorithms produce the same value. Naïve Bayes managed to surpass C4.5 with the precision value of 0,039 and the kappa coefficient of 0,124. From this research, the best algorithm for GPA prediction is a non-rule based algorithm.

Keywords: GPA Prediction, C4.5 Algorithm, Naïve Bayes Algorithm