ABSTRACT

Prediction of Period Student Study in Pembangunan Jaya University Using K-Nearest Neighbors Algorithm

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The prediction of the study period for the students of Universitas Pembangunan Jaya (UPJ) has not been measured optimally. Biro Pendidikan Universitas Pembangunan Jaya (BP UPJ) as a unit for the development of education and learning requires an application to predict the student's study period. To overcome this problem, the student study period prediction website was created to make it easier to map students who have the potential to graduate on time and display trend data for students who have graduated from UPJ. The research method used is mixed methods with a combination of quantitative and qualitative. Quantitative contains data mining calculations using the K-Nearest Neighbors (K-NN) algorithm to generate predictions. The qualitative section contains the results of interviews with the Head of BP UPJ, data on UPJ graduate students from 2015-2020, and school accreditation data from the Ministry of Education and Culture website. This system is built by testing, namely black box testing and white box testing. The parameters used to predict the student's study period are the Grade Point Average (GPA), gender, and the student's school origin. The results of the research are in the form of a website that can be used to predict student study periods. In addition to predictions, the website will display a graph of the number of students who have graduated from UPJ from 2015-2020 based on several categories of data mining processing results. The highest accuracy value is 82.10% with gender attribute 2 variables, school origin 4 variables, and GPA 4 variables. Based on the research, varied data is needed with a large number of variables that are equivalent to one another, so as to get a high accuracy value. Based on the test results obtained that the parameters of gender, school origin, and GPA can be used to predict student study period.

Keywords: *Period of student study, Prediction, Data Mining, K-Nearest Neighbors.*

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