



EFFICIENCY OF THE COURSE PRACTICUM ASSISTANT SELECTION PROCESS USING BAYESIAN ALGORITHMS

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Abstract

The selection of the Practicum Assistant Course is the main problem in the process of selecting the role of the practicum assistant in big data. In the process of big data, the process of selecting assistant laboratorium subjects pay attention to the processes that occur before in the prospective assistant lab practicum (previous distribution). In this study we use the Bayesian classification method for the selection of practicum assistant courses. The Bayesian algorithm is applied in the process of selecting a practicum asiststen which is received with prior knowledge and posterior . In this consideration, the initial (prior) data is used as a consideration to determine whether a student in a certain semester can become a practicum assistant in the appropriate course of interest. The benefits obtained are efficiency in choosing a practicum assistant with consideration of previous events, $P(\theta | x)$. Based on the results obtained, the results of this study show the efficiency of the selection based on the previous few who became the background of the candidates for the practicum assistant course.

Keywords: Bayesian, Efficiency, Prior, Posterior, Bigdata, Course Practicum

INTRODUCTION

The registration of an assistant lecturer in an institution requires a good administrative procedure. So far, it is generally still done manually, starting from information seeking at the study program secretariat, in this case specifically the Diploma 3 program in Informatics Engineering, the registration process, until the announcement of the results of assistant selection is done manually. The absence of a supporting information system caused several problems, including the process of selecting a teaching assistant to be longer. In terms of students themselves, also not a few who have difficulty in finding information related to courses and lecturers who need assistants, as well as the conditions that must be met to become assistant lecturers (Yoga, & Endah, 2016), (Kusrini. 2007).

Therefore, to assist the Lecturers in selecting candidates for assistants, the author took the initiative to build an assistant of lecturer management information system of D3 Informatics Engineering UNS using the Yii 2 framework, so that management of teaching assistants became more effective and efficient (Harum. 2014), (Kusrini, 2007).

There are several studies related to the selection of assistants, and in this research is to create and design an assistant lecturer management information system with Bayesian algorithm so that it can facilitate the registration process and management of lecturer assistant data in an effective and efficient way (Putratama & Supono, 2018), (Mar'atush, 2015).

1. Experimental

Business processes can be seen in Figure 1 and Figure 1.

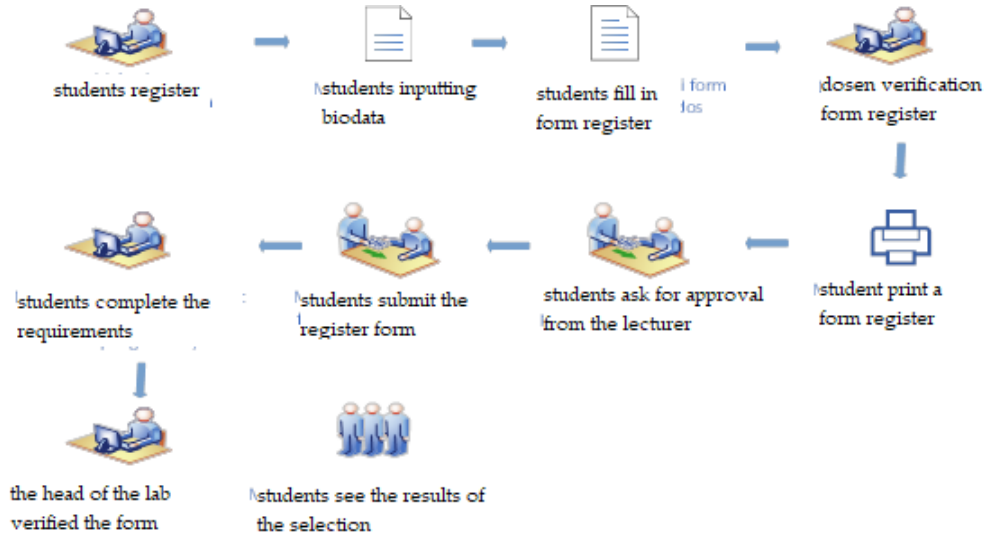


Figure 1 Business Proses of System

2. Result and Discussion

The Use Case Diagram of the Lecturer Assistant Management Information System is as follows:

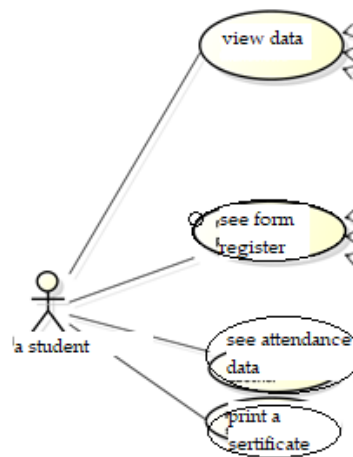


Figure 2 Use Case Diagram

Class diagram of assistant registration process based on planning is as follows:

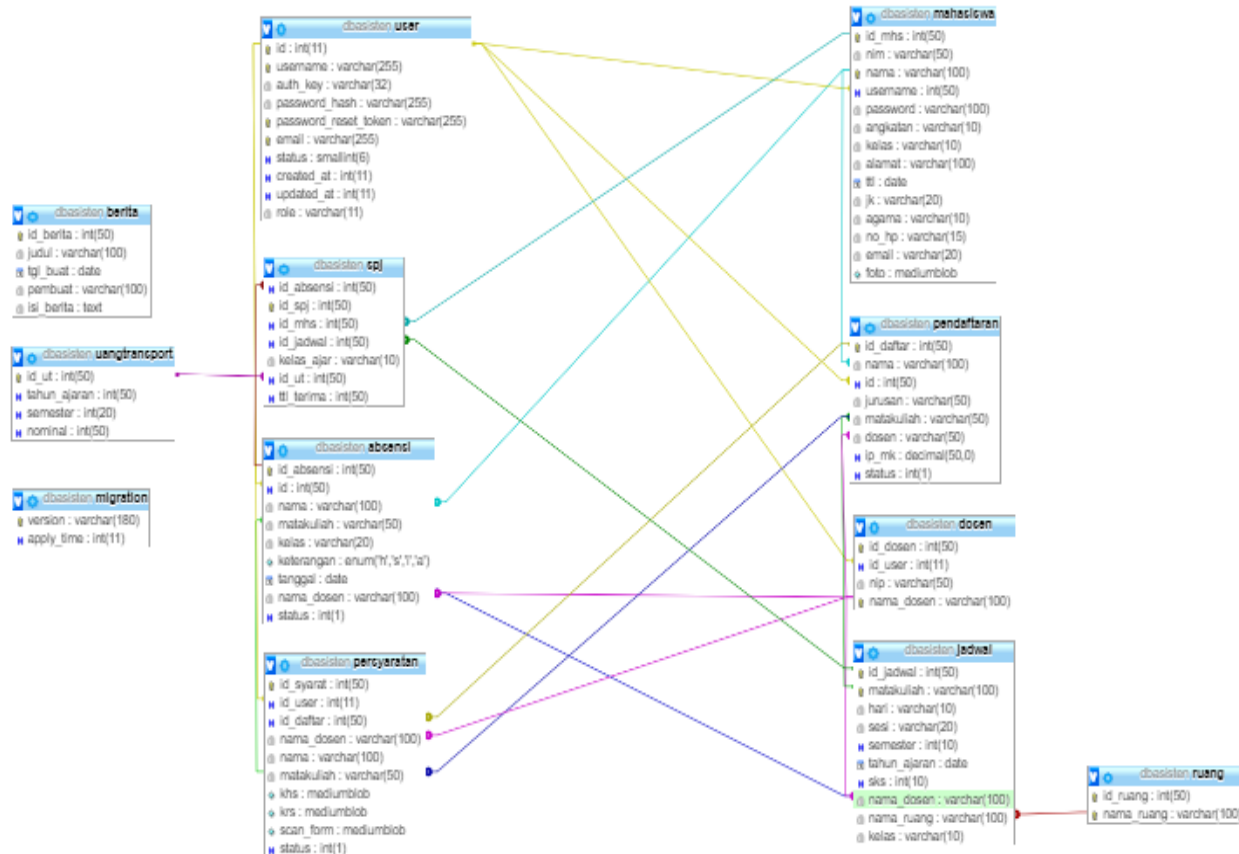


Figure 4 class diagram

Based on the design of the information system, the main page on the system is the login page with sso, then implementation of registration as below (Fuad Muhammad. 2016).

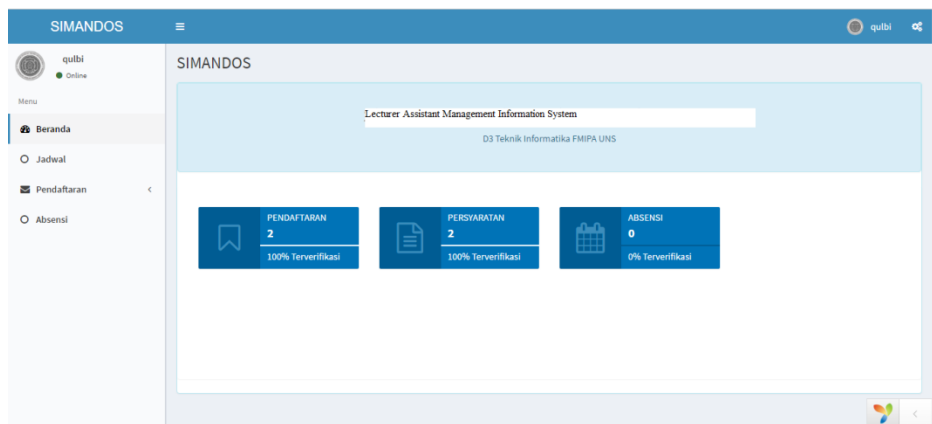


Figure 5 Implementation of registration page

Calculation of Assistant Selection With Bayes

The Bayes method has attributes that are interconnected with each other. The approach used by the Bayes theorem is to calculate the probability of an event in certain conditions (Sukahar, 2014), (Hartatik, 2017), which is based on priors and posteriores.

In the above formula it can be explained that the Bayes theorem requires a clue as a class determinant process that corresponds to the sample. So that the suitability of the Bayes theorem (Zara. 2017), (Zainudin, 2017) is needed as follows:

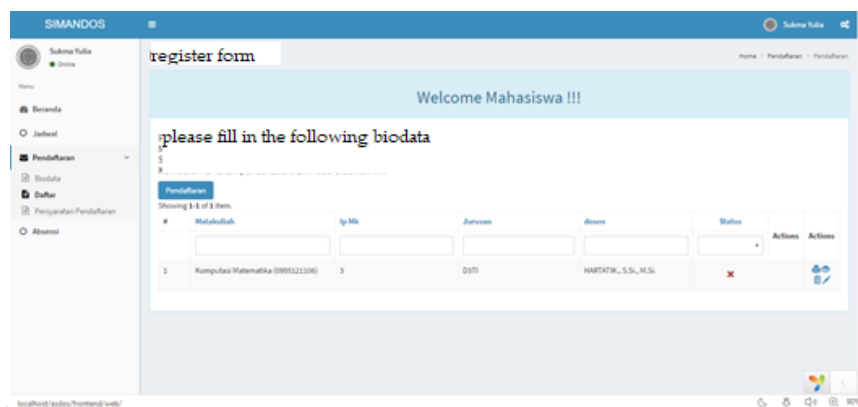
$$P(A | S1 \dots Sn) = \frac{P(A) P(S1 \dots Sn | A) P(S1 \dots Sn)}{P(S1 \dots Sn)} \quad (2)$$

Information:

A : Class assistant

S1 ... Sn: conditions that must be fulfilled

The following are the results of the implementation of an assistant registration information system.



System about course practicum assistance that is made is tested by conducting interviews with respondents. The respondent tried the expert system that was made and then asked questions. From survey result that 67% percent stated that this information system was very helpful, this can be seen in figure 6.

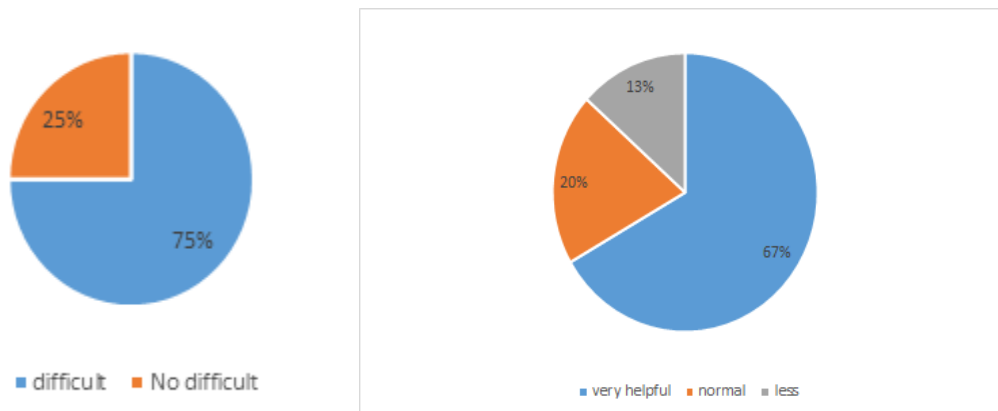


Figure 6 survey results

CONCLUSION

The conclusion can be obtained from the Final Project entitled Management Information System of course practicum assistance using bayes, a system created to support the registration process of teaching assistants to be more effective and efficient. This system still has weaknesses, namely the absence of tests in the selection of lecturer assistant selection.

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