ABSTRACT

The process of lectures grade input that occurs in the Integrated Academic Information System (i-Gracias) is one of the important processes in supporting the use of integrated platforms in the field of education, namely by Telkom University. The input process is a final step that can be done in the Integrated Grade System (i-Gadis) feature. The procedure of the process begins by determining the value component, entering the value of each component, the system will automatically calculate the value, the system determines the index automatically, the system will display and calculate the index, and ends by printing the value input report. This platform can be accessed by all existing academic community, especially by the lecturers. But in carrying out the process there were several obstacles reported by lecturer users at the Faculty of Industrial Engineering. For that analysis needs to be done in order to find out the location of the actual problem starting from getting an overview of the pattern of the value input process to getting activities that inhibit the entire process. In addition, research by implementing process mining is also carried out in order to get a certain pattern of event logs starting from the discovery stage to conformance checking. Before entering the analysis stage with process mining, data from the system from 2018 to 2021 at the Faculty of Industrial Engineering is first prepared to have clean quality to produce event logs so that the results of analysis are also good and reliable. Among the preparation of log quality to be considered and become a priority is to define case id, activity, and timestamp, then filtering, finally adjustment of the log format in order to represent the actual process on the platform. Process modeling with inductive miner algorithm at the discovery stage allows to see an image of the flow of the value input process automatically based on logs on the i-Gracias system that are able to show concurrent activities. The algorithm was selected with several considerations ranging from its ability shown by accuracy in modeling the process in logs, and because there is still a rare use of algorithms in the field of education. Conformance checking with reference to four criteria with a comparison of several inductive miner variants shows that the inductive miner infrequent lifecycle (IMflc) variant as the best with an overall value of 0.835 although it has a slight weakness in the value of the criteria weren't

balanced, but the variant is already good (if referring to some results from other studies) to be used in finding bottlenecks which are likely to be the cause of problems in the process. The final result found out in the form of behavior from the value input process starting from the homepage, value input, assessment component, index standard, event news, print event news, then the main part is the result of obstacles that refer to the model with a length of waiting time exceeding the average of each running activity (sojourns time) on event news activities and user manuals can be used as a basis so that related parties, namely Telkom University in improving the existing process to be more effective and efficient. Furthermore, related parties can pay more attention especially to the news activity of events because it always detected as bottleneck in each year of the data time span. Suggestions are given, further study can compare several algorithms so that they can produce a more valid model, the analysis process can be expanded in scope (all University area) so that it can better see the overall use of the platform, and the analysis can produce results in the form of business processes or in other words reach the enhancement stage so that results can better show how to implement it more clearly.

*Keywords—**i-Gracias, Process Mining, Inductive Miner, Conformance Checking, Bottlenecks***