

## **ABSTRACT**

# **IMPLEMENTATION OF PROCESS MINING TO AUDIT HELPDESK APPLICATION I-GRACIAS USING GENETIC ALGORITHM**

**By**

**ASTRID SHOFI DZIHNI RIESTA**

**1202154353**

*The purpose of making an Academic Information System is to support the process of academic activities effectively and efficiently. Telkom University is an institution that already has an Academic Information System called I-Gracias or Integrated Academic Information System. I-Gracias uses a single sign-on system which means one user for all applications. The Helpdesk application is one of the applications on I-Gracias that supports complaints service needs. The Helpdesk application has 4 categories of complaints, namely Serial Number License, Website / Subdomain, Academic I-Gracias, and Non-Academic I-Gracias. With the various complaints categories, the Helpdesk application actually promises time with the same service standards, its 3 days for maximum by filling in the same format in each category. Its not enough to describe how long a service will be done to the user. Therefore, to find out the student activities in the Helpdesk application, a modeling process is carried out to find activities that have the longest time and know the suitability of the procedures established with the activities carried out by students. There are many methods to do this research, which is by conducting direct surveys and process mining. The suitability will be measured through an audit process that compares procedures with activities carried out by students based on the event log, with the availability of event logs, the method used is process mining. In the process mining method, it is necessary to find the best fitness value process to produce accurate modeling, the selected Genetic Algorithm is able to make a good modeling. After obtaining modeling, an audit is carried out by analyzing the*

*bottleneck in the activity process. Based on the conformance checking results, the best fitness value is 0.9994142, the precision value is 0.7653061, and the structure value is 1. Modeling in performance analysis shows a bottleneck in the activity of Input Tiket and activity Lihat Progress Tiket. The bottleneck shows a problem in the Helpdesk application in guaranteeing complaints.*

*Keywords: Helpdesk, Process Mining, Audit, Genetic Algorithm.*