Implementation of Fast Track Program Final Report Management

I Made Ari Dwi Suta Atmaja[1],
I Nyoman Gede Arya Astawa[2], Ni Wayan Wisswani[3],
and Made Pradnyana Ambara[4]

[1,2,3,4] Information Technology Department, Politeknik Negeri Bali, Bali, Indonesia
arisuta@pnb.ac.id

Abstract. At the level of technical education such as the Computer Network Administration Fast Track Program, the end report of the industry internship is one of the important aspects in evaluating the progress and skills of students. The research aims to implement an optimized management system to facilitate the preparation of the end reports of the industrial internships in the context of the Computer network administration fast-track Program. The end report is a special requirement in completing education for students of the fast track diploma program 2. The research involves steps of careful needs analysis, understanding the requirements, and the process of preparing the end of the report for the industry. The system design consists of developing database structures that match the required data types, as well as an intuitive user interface for easy use by academic staff, students, industry tutors, and campus tutors. The system implementation involves thorough testing, user training, and necessary technical support. The result of this research was the implementation of an effective management system to prepare the final report of industry internships in the Computer Network Administration Fast Track Program. The system is expected to improve efficiency in the process ranging from title registration, mentoring forms, seminar registrations, and final report seminars to validation sheets in digital reports and provide effective management for academic staff, students, and industry partners related to progress in industry internships.

Keywords: Management Systems, Industry Internship Final Report, Fast Track Program, Computer Network Administration, Needs Analysis, System Design, Implementation

1 Introduction

Higher education as one of the Indonesian labor producers is expected to occupy a high level of qualification in the workplace. Despite this, in addition to the possible limited availability of employment opportunities, the relevance and quality of the educational process is an important factor that should get attention from the organizers of higher education. As a result, the number of unemployed college graduates will increase over

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time (Prescott et al., 2020). The improvement in the quality of the Indonesian Labour Force resulted from an increasingly standardized quality of education, which increasingly benefits the Labour force to enter the labor market not only in the national labor market but also in the international labor market with better recognition (Kemdikbudristek, 2021).

The strategy developed about the national education area in terms of improving the quality of graduates is Industrial Internships where industrial internships are part of the learning process planned and intended in the curriculum in the professional vocation. The industry internship program is expected to provide usefulness that can be felt by students, study programs, or IDUKA (Dirjen Vokasi, 2020). Students gain direct experience of the world of work thus improving their skills, way of thinking, and ability to cope with the problems they face. (Afful et al., 2018). In the curriculum of the two-track Diploma Curriculum, the internship program is divided into two semesters, namely Semester 2 and Semester 3. The preparation of curricula is a collaboration between SMK, Colleges, and Industry Partners. The Curricula of the Two-Track Diplomas require that the Industrial Internship Programme carried out remains marked in the courses that must be completed by the students (Atmaja et al., 2024). In the curriculum, the Diploma 2 requires students to complete the final report at the end of semester 3. The Final Course Report is in the industry internship period of the third semester. During the process of preparation of the final report, students are scheduled to carry out the guidance process to the industry and also the internals of the campus. For the industry is appointed by the respective industry, while the internal university is determined by its study program. (Prodi D2 AJK, 2022). The obstacles encountered in this process are in the process of preparing the final report of the student's condition in conducting an industry internship, so it requires flexible conditions to be given guidance by both industry and campus internal tutors. (Sudana et al., 2019). Under normal conditions, it is easier for students to schedule the mentoring process because students are not burdened by other tasks, unlike the conditions of students in D2 Computer Network Administration, where in the process of preparing the final report students are undergoing industry internship. Also in the industrial internship students not only perform tasks charged by the industry in the same location, including may also be given tasks that enable out of the city of domicile (Nunley, 2016). This condition means that the final reporting process, which includes the submission of topics, will be more difficult to schedule, given the mobility of students who are conducting industry internships.

From the problems encountered by the industry internship process that requires students to compile the final report, then this research will build a system to help the process of management of final reports that are dedicated to the Fast Track Program. Subject proposal registration until the determination of the guide will be managed by this system and eventually, the entire management process can be assisted with the presence of this application. Applications can be accessed by using PC devices as well as smaller devices such as Smartphones or Tablets, making it easier for students to carry on mobile.

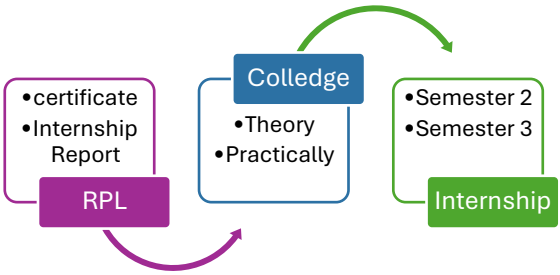

Figure 1. Fast track lesson course

2. Methodology

Industrial internships carried out by the quick-track program refer to established procedures. The curriculum that is based on the guidelines still requires the presence of the academic course final report. The academic course final report is to be at the end of semester 3. Where final report preparation is carried out before completing an ongoing industry internship (Shoenfelt et al., 2013). The final reporting process follows the following procedure: a) The student chooses the topic to be submitted in the final report; b) The student submits the subject to the industry tutor who has been shown. The selection of topics is subject to initial approval by the industry instructor; c) Students submit approved topics by the industrial instructor to the internal instructor of the campus as an accompanying tutor; d) After the approval of both instructors, then students report the topic of the final report to the head of the study program to be subsequently recorded manually; e) The president of the prodi announces a list of the topics of the student final report that has been agreed to be known together.

In the process of determining the topic of the final report, the industry tutor continues to communicate intensively with the university tutor so that the appropriate topic-determination process can run smoothly and does not hinder the student in the completion process.

2.1 Determination of the Final Report Guide

There are two final report guides, one from college and one from industry. The instructor of the college is a permanent lecturer in the area of the Department of Information Technology Polytechnic State of Bali whose appointment is based on the Decree (SK) instructor final report issued by the college. The supervisor of the college is determined by the head of the study program. The tutor of the college determines to adjust to the subject submitted by the student by considering the competence of the internal lecturer of prodi (Atmaja, 2022) The field tutor is the staff of the company where the student is internship who is designated by the company to guide the student during the conduct of industry internships activities including guiding the preparation of final reports. The assessment of the final report is carried out by both sides, where later at the end of the semester a final report seminar is held and who becomes the panel of assessors is from the designated industry supervisor and the internal supervisor of the college (Yudhi, 2020).

2.2 Development Method Final Report Management System

Based on an overview of the problems encountered in the process of drafting the final report, a new system design is made as in Figure 2 below.

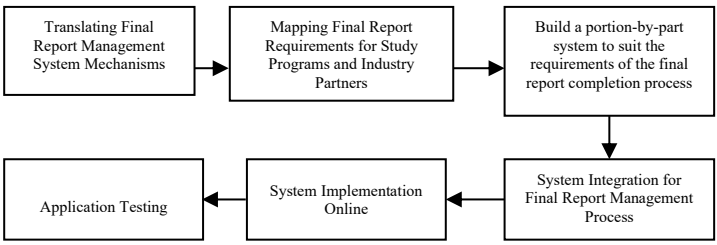

Figure 2. Research planning and implementation

Translation of Final Report Management System Mechanisms: This phase carries out the process of translating the mechanisms of the quick-track end report management system into a procedure that will be the basis of the implementation phase of the completion of the final report.

Mapping the needs of the Final Report for the Study Program and Industry Partners: At this stage, a mapping is carried out of the requirements of the final report management process for each student, the tutor from the industry partners, and also the internal tutor of Higher Education.

Build a system of parts according to the needs of the final report completion process: in this phase, the construction of a division system for the final report is carried out. The final report preparation has several stages that must be passed from the determination of the topic by the student to the outcome, i.e. the seminar of the final report.

System Integration Per Module Becomes Integrated For Final Report Management Process: After the construction of the partition system, then each module is integrated so that the system can be used comprehensively from the final report preparation process until the final student report can be completed in the form of course evaluation.

System Implementation Online: After each part of the system is integrated, the application is implemented online so that it can be accessed from anywhere and anytime. A system that is accessible online will facilitate students, industry partners, and internal programs where activities range from submission of topics, and guidance process to final assessment in the form of a final report seminar. After the implementation of the system online then the test will be carried out covering the process of submission of the topic of the final report by the student, then the input of

the log of the activity of the online tutoring, until the final evaluation in the form of a seminar involving both the internal tutor of the Higher Education and the tutor from the industry.

2.3 Final Report Management System Flow Details

Following the development plan above, the implementation of the system to be built is explained in the Figure 3 below:

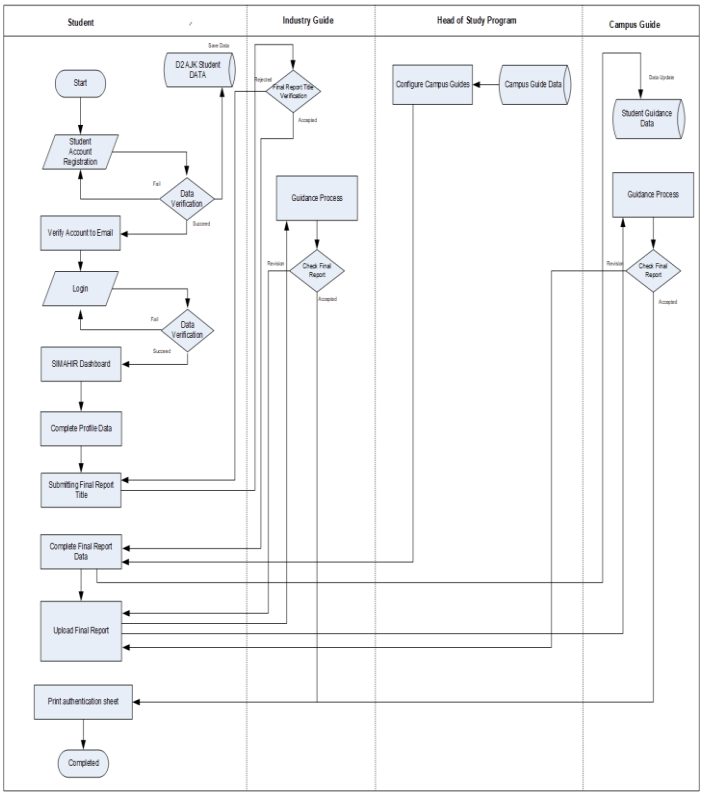

Figure 3. Final report management system flow

In the management of the final report involved are the Students themselves, the internal tutor of Higher Education, the Fast Track Program of the head of the study program, and the Industry Partner tutor. The final report system registration process starts with the student logging into the system to do account registration, the verification process will be sent to the email of each student. After the student successfully logs in, the next student is asked to complete the profile data. Then submit the title of the final report to the tutor of the respective industry partners. After the title is submitted will be verified by the industry tutor, if the topic is accepted then will proceed to the process of completing the data of the end report and if the subject is not suitable then it will be rejected the student will submit a new topic that matches what was done during the industry internship and following the expectations of the industrial tutor. After the

confirmation of the topic is done by the industry tutor, the next the head of the study program will make arrangements for the student tutor from the internal Higher Education. After the determination of the university tutor is done then the process of determining the schedule of tutoring can be arranged more flexibly for both tutors final report.

The next process is that the student can conduct the tutoring process online through the application. The determination of the mentoring schedule can be done by both tutors by permitting them to set the date and the date to adjust to the situation and conditions at the time. In the course of tutoring students can upload the progress of the final report. Then on the account of the tutor will get a notification to carry out the mentoring process in which there are improvement processes, writing instructions as well as giving the discussion of topics that will be discussed according to the existing format of the writing of final reports.

When the check process has passed and the student has obtained the approval of both tutors, then the student can print the authentication sheet to be requested for signature directly to both tutors. As long as the process of creation of signature by the tutor is carried out in person because the industry tutor and the internal tutor of the Higher Education have not yet digitally signed. Until later on the time when both tutors have a digital signature, then the signature creation process can be done directly through the application. The authentication sheet that has been signed and handled wetly by the two tutors is to the head of the study program to be submitted to the determination of the schedule of the examination seminar of the final report. In the system, the head of the study program can perform monitoring of the guidance process to be able to know the progress of the elaboration of the final report and subsequently can be to chief of the major.

2.3 Testing Method Final Report Management System

Black Box is a software testing method that is used to examine the external work of the system such as the input/output of the system, the expected results, and the user interface whether the system has been made according to the design (Yudhi et al., 2020). Black box testing results on this system are shown in Table 1.

Table 1. Black Box test form

No	Function	Testing	No	Function	Testing
1	Login process	Entering the user's email and password then checking user data based	6	Creation of signature	Input digital signature into validity sheet
2	Final report registration process	Save data final project to the database	7	Approve Head Study Program	Accepted input to the next process
3	Tutor process	Accepted or needs revision input from the user	8	Arrange Examination Schedule	Present the exam schedule

4	Upload the final report file	Save data final report file to the database	9	Assessment Final Report	Input value and save to the database
5	Tutors Approval	Accepted value input and lunch next process	10	Archive Final Report File	Save the File in to databased and clean the cache

3 Result and Discussion

3.1 Design and Implementation of Final Report Management System

The results obtained from this study are industrial apprenticeship applications. This application was built using the programming language used in building this information system PHP using the CodeIgniter Framework where the database used is SQL Server. The results of this application have been implemented and can be used online through the page: https://simagispnb.id.

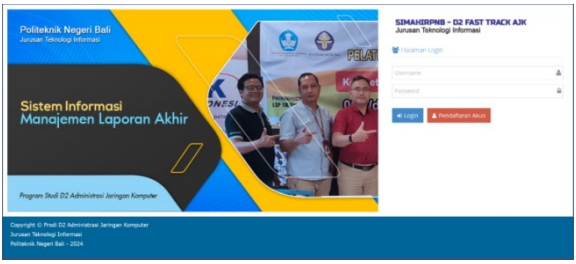

Figure 4. Dashboard

Admin login by entering username and password. After the login process and account verification, a page will appear as below.

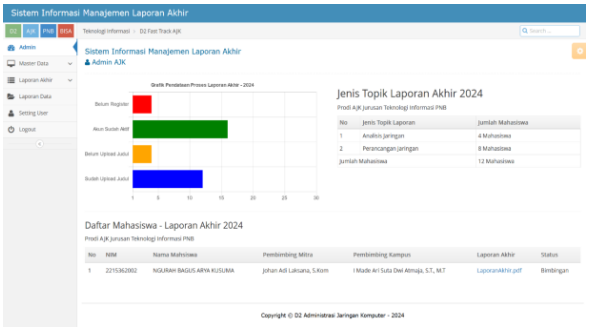

Figure 5. Login process

In this section, the administrator has access to all the facilities of the system, both in master data management for student data, industry partner data, topic proposal data of

the final report, industry guide data as well as internal campus guide data. Then for the student facilities is the process of submitting topics to the online tutoring process. Which is preceded by an account registration on the system. The registration process is done by filling in data on the registration pages such as NIM, Full Name, NoTelp, and Email. After registration, then go to the submission page of the final report title. Here students make data input of submitted topics which will be verified by the industry supervisor and then the internal supervisor will be determined by the head of the study program. It show in Figure 6 below.

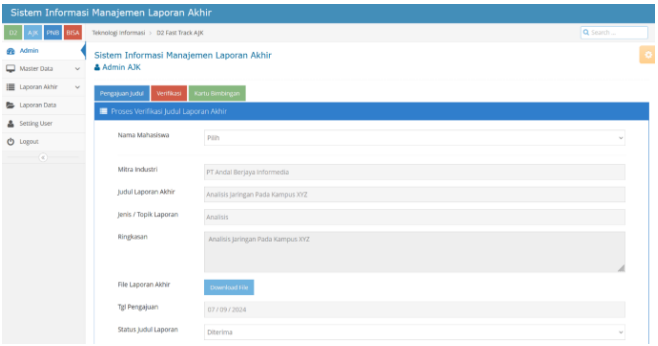

Figure 6. Verification of submission of title

After the head of the study program performs the verification by selecting the university tutor, the next student can open the menu tab to print the guidance card. This guidance card will then be used for the guidance process of the student's final report. This card will be signed by the tutor lecturer, both from industry partners and from the university. Then the student will carry out the mentoring process from the system by uploading the reporting process. Later this report will be verified by the partner and university tutors.

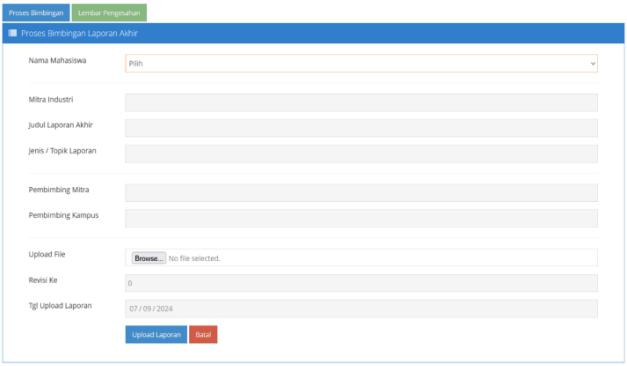

Figure 7. Student report mentoring process form

If the status of the student's final report has been approved, then the Validation Sheet menu tab can be opened by the student. The student then prints the validation sheet for use on the final report before conducting the test.

Figure 8. Print the authentication sheet

Next is the Data Report. This section contains a summary of the student's submission reports. The created system already filters data based on Year and Report Status. This is shown in Figure 9 below.

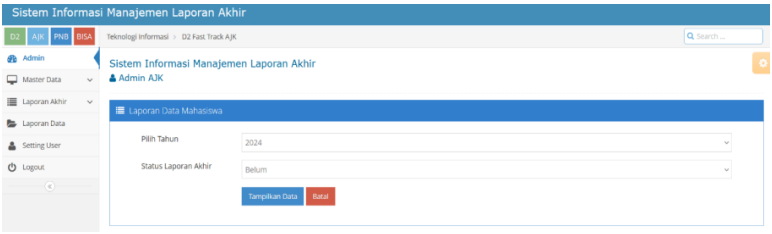

Figure 9. Data report filter

4 Conclusion

The Fast Track Final Report Management System is designed by the user and with several improvements to the system based on user request. The Fast Track Final report is implemented for Final Report in the D2 Fast Track Study Program. The software testing result to the Information System using Black Box Testing show that the function of the systems is working properly. The application can be used online thus facilitating the process of managing the final reports without having to date to the campus. The guidance process can be done online to facilitate the process and not through complicated administration.

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