



Online Final Assignment Guidance Application (BIMO) as Monitoring Departments in Politeknik Negeri Medan

Miftahul Jannah^{1*}, Preddy Marpaung², Adli Abdillah Nababan³, Nidya Banuari⁴, Suci Amalia⁵, Jeri Sekiawan⁶

^{1,2,5} Sistem Informasi, Universitas Mahkota Tricom Unggul

³ Teknik Informatika, Universitas Prima Indonesia

⁴ Sistem Informasi, Universitas Mahkota Tricom Unggul

⁶ Teknologi Informasi, Universitas Mahkota Tricom Unggul

miftahuljannah0077@gmail.com^{1*}

Abstract

The final project guidance process is a crucial phase in students' academic journey. However, at Politeknik Negeri Medan, this process is still conducted manually, leading to limitations in monitoring, time efficiency, and flexibility. This study aims to develop an online final project guidance application named BIMO as a digital solution to facilitate guidance and monitoring processes at the department level. The application is designed with three main user levels: administrators, lecturers, and students. The key features developed include account registration, guidance activity management, document uploads, and a monitoring system to support transparency and accountability. The development methodology adopts the System Development Life Cycle (SDLC) prototype model to ensure the application meets user needs. Application testing was carried out using the black-box testing method to evaluate functionality, and user satisfaction surveys were conducted to assess the application's effectiveness. The results indicate that BIMO improves the efficiency of the guidance process, simplifies access to information, and facilitates lecturers and departments in monitoring the progress of students' final projects. Thus, this application is expected to serve as a relevant digital solution to support the academic system transformation at Politeknik Negeri Medan.

Keywords: Final project guidance, online application, monitoring, Politeknik Negeri Medan, digitalization

1. Introduction

The final assignment is an integral part of the higher education process, both for Bachelor (S1) and Diploma (D3) programs, in universities, both private and state. As a graduation requirement, the thesis or final assignment demonstrates the student's ability to complete independent research in the field they are studying. This research process involves identifying problems in the field being studied, as well as in-depth discussions in accordance with the understanding of the knowledge that has been obtained. In the process of compiling a thesis, guidance is very important. This guidance is carried out by several parties, including the academic field, head of study program, and supervisor. Communication between students and supervisors in the guidance session has a crucial role in determining the smoothness and quality of the thesis or final assignment produced. However, in practice, obstacles often occur in the guidance process. One common problem is the lack of systematic and structured notes regarding the development of the thesis from each guidance session. Some supervisors may not provide notes or feedback directly, which can result in unclear stages of which students have reached, as well as the direction to be taken in further research. In addition, the process of recording guidance which is still carried out manually by the supervisor can cause difficulties in monitoring and evaluating the progress of each student's guidance efficiently. This limitation results in a lack of transparency and difficulties in coordination between the supervisor and students. In order to support the progress of the thesis and final project guidance process, a number of studies have been conducted to develop applications and support systems based on information technology. One of them is the research conducted by [1], which resulted in an online guidance support system application to facilitate the online thesis guidance process. The application of mobile technology in this application is expected to make it easier for students and supervisors to communicate, especially during the COVID-19 pandemic [2]. In addition, also developed a mobile-based online thesis guidance application to facilitate communication between students and supervisors and provide a guidance form that can be accessed flexibly [3]. In line with that [2] designed an online final project guidance information system using the Codeigniter framework with the aim of increasing the efficiency and effectiveness of the guidance process. Other studies, such as those conducted by [4] [5] have also developed online guidance applications with various features that facilitate communication and monitoring of the thesis guidance process [6]. In addition, research by [7] [8] presents a web application for thesis guidance and scheduling with the aim of increasing the effectiveness of the guidance process. Meanwhile highlighted the lack of utilization of information technology in the thesis guidance process at STMIK Jayakarta ([9][10] developed the MyAbita application as a monitoring system for the final assignment guidance process [11] Through this research, it is expected to provide an effective solution in improving the quality and efficiency of the thesis and final assignment guidance process for students and supervisors. The literature review presented shows that the utilization of information technology in the thesis and final

assignment guidance process is important. Various studies highlight challenges such as communication difficulties, schedules that do not always match, and ineffective document management. In this context, the Online Final Assignment Guidance Monitoring Application is the right solution [12][13] MOBI allows students and supervisors to communicate and provide guidance efficiently through an online platform, and provides notification and document management features that help users stay organized and informed. Thus, this Community Service aims to develop an online Thesis and Final Assignment guidance application to improve the efficiency and effectiveness of the guidance process. MOBI is designed to increase transparency.

2. Research methods

In this study, all initial research procedures must first be carried out such as a literature study conducted by collecting, reading and understanding references related to the problem. In this study, all initial research procedures must first be carried out such as a literature study conducted by collecting, reading and understanding references related to the problem of online final task guidance. The research framework is as follows: In this study, all initial research procedures must first be carried out such as a literature study conducted by collecting, reading and understanding references related to the problem. In this study, all initial research procedures must first be carried out such as a literature study conducted by collecting, reading and understanding references related to the problem of online final task guidance. The research framework is as follows: In this study, all initial research procedures must first be carried out such as a literature study conducted by collecting, reading and understanding references related to the problem. In this study, all initial research procedures must first be carried out such as a literature study conducted by collecting, reading and understanding references related to the problem of online final task guidance. The research framework is as follows:

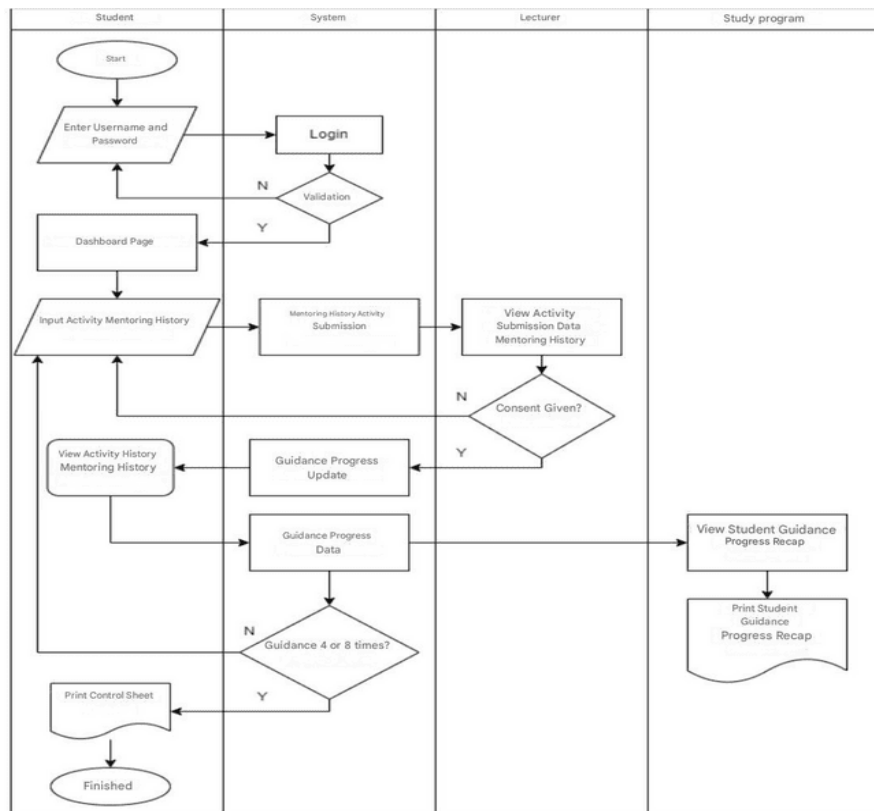


Fig. 1: Flowchart System

The flowchart above explains the series of flows of the online final assignment guidance application. where students will enter their username and password in the application. students can carry out guidance activities, such as sending guidance documents through the application to the supervisor according to the provisions of the study program. the lecturer will receive the documents sent by the student, the lecturer will make revisions online and send them back to the student concerned. The study program is the administrator who will monitor the process of supervising students' final assignments. if there are problems and obstacles found during guidance, the study program will easily find solutions to these obstacles.

3. Results and Discussion

3.1. Front-End BIMO

On Bimo Application Front-End To get information, the front-end is made with a user-friendly user interface so that the academic section, study programs and students, or website users can get good information. The front-end page refers to the creation and development of the

website and the application section that focuses on the development of the website's user interface, which is useful for communication between users or visitors and the website itself.

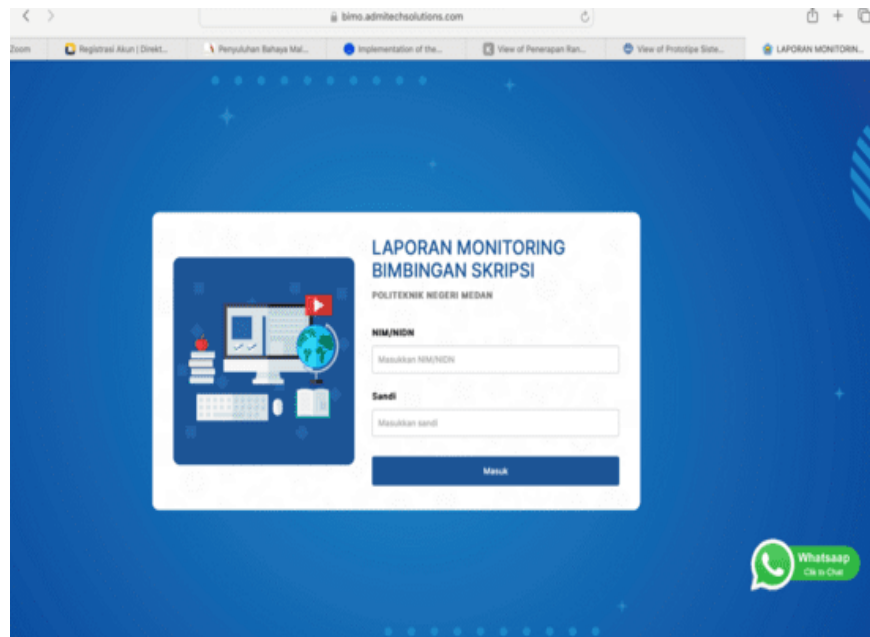


Fig. 2: Login Page

Figure 2 shows the login display on the Final Assignment Online Guidance (BIMO) application. The login level consists of 3, namely Student, Lecturer and Administrator (Study Program). On the Bimo homepage, there is a WhatsApp connection feature, this feature functions as a helpdesk if the application user experiences problems accessing the application.

3.2. Back- End BIMO

On The Guidance master menu functions to store data on the supervisor and student according to the Decree issued by the study program. In the BIMO Backend there are 3 page levels.

1. back-end administrator

in the administrator section there are several menu information such as, dashboard menu, study program master menu, section master menu, guidance master menu, user master menu, daily guidance report menu, profile settings menu and application settings menu. mhe study program menu functions to store study program data. The section menu functions to store data on the systematic section of writing final assignments, such as title, chapter 1, chapter 2 and so on. the Guidance master menu functions to store data on supervisors and students according to the Decree issued by the study program. he user menu contains the username data of the application user. the report menu contains a summary of the guidance report data for all students. The Home menu is used by administrator access rights to directly view the progress of each student's guidance with each supervisor, there is information on the student's ID number, student name, supervisor's name, study program, number of supervisions, and supervision progress. Administrators can also print the overall and individual student guidance progress based on study program or based on supervisor.

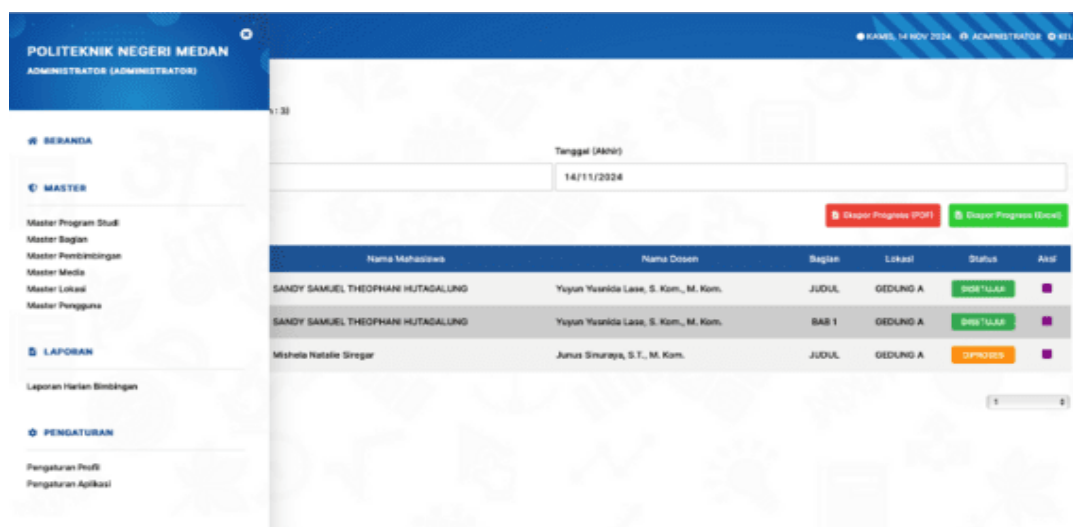


Fig. 4: Master Study Program

Figure 4 shows the master view of the study program which consists of study program data such as the name of the study program and the Head of the Study Program.

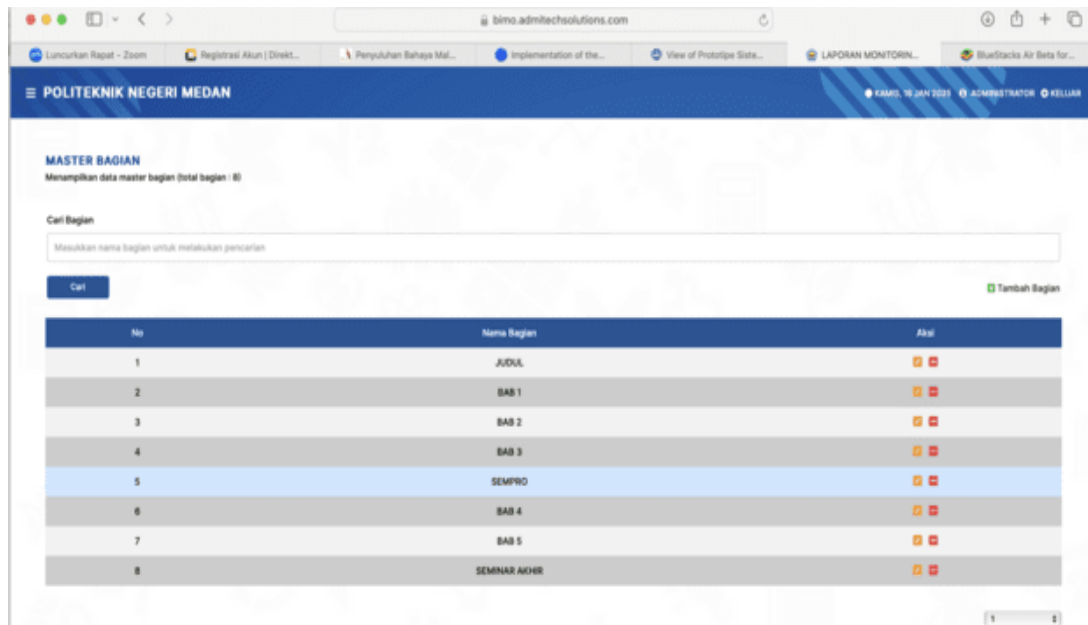


Fig. 5: Master Section

Figure 5 shows the master section display which consists of systematic data for writing the final assignment which consists of the title, Chapter 1, Chapter 2, Chapter 3, Chapter 4 and Chapter 5.

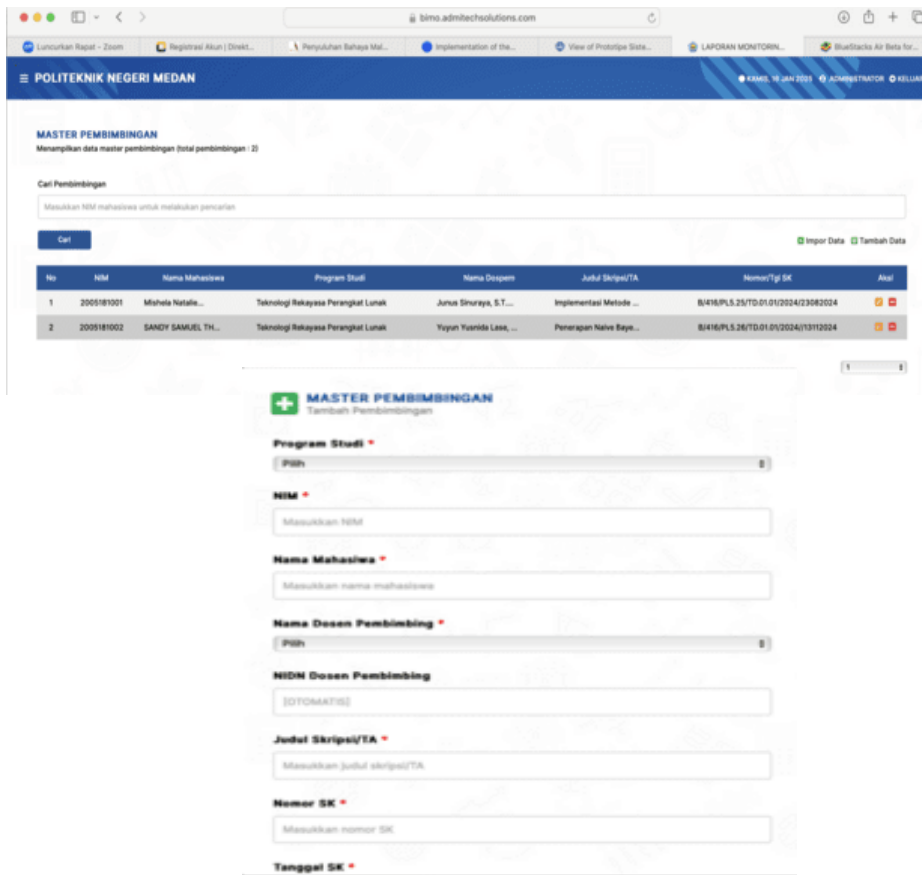


Fig. 6: Master Guidance

Figure 6 shows the master guidance display which consists of student data, supervisor and the title of the final assignment submitted.

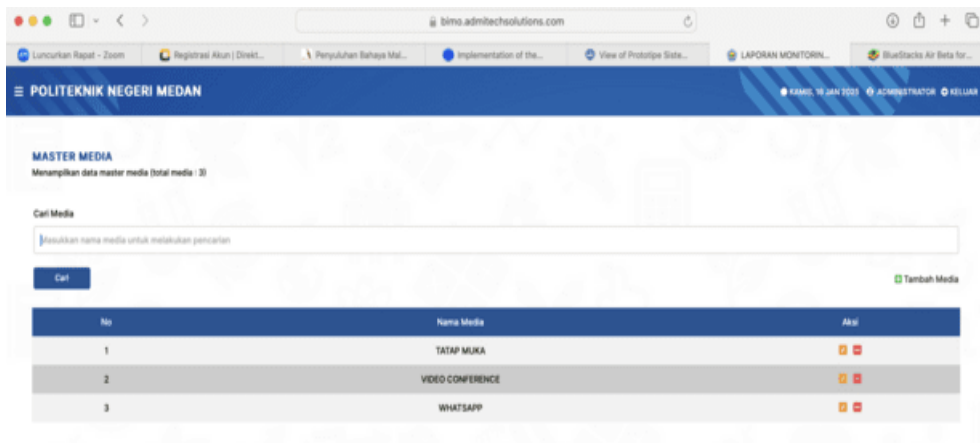


Fig. 7: Master Media

Figure 7 shows the master media display which consists of data on the mentoring process carried out either online or face to face.

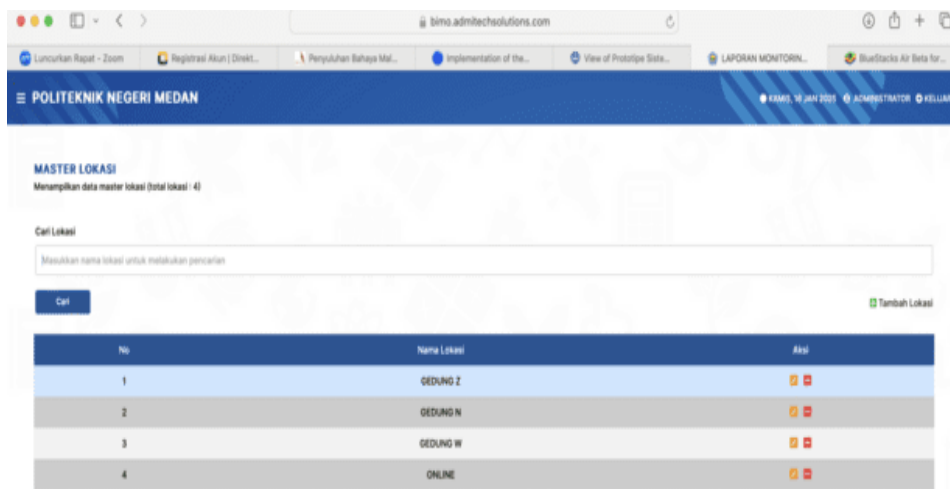


Fig. 8: Master Location

Figure 8 shows the master view of the location used, which consists of data on the guidance process carried out face to face, so the location will display the location in the polytechnic building environment.

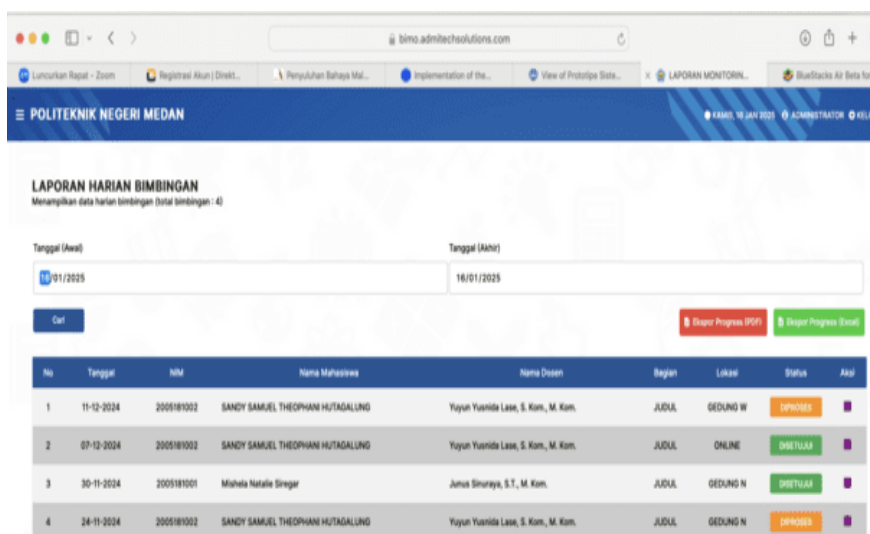


Fig. 9: Master Location

Figure 9 shows the results of the daily report regarding the daily progress of the thesis guidance process while the student is undertaking the guidance process.

2. student back-end

in the student Back end section there is a change password menu and a guidance activity menu such as upload

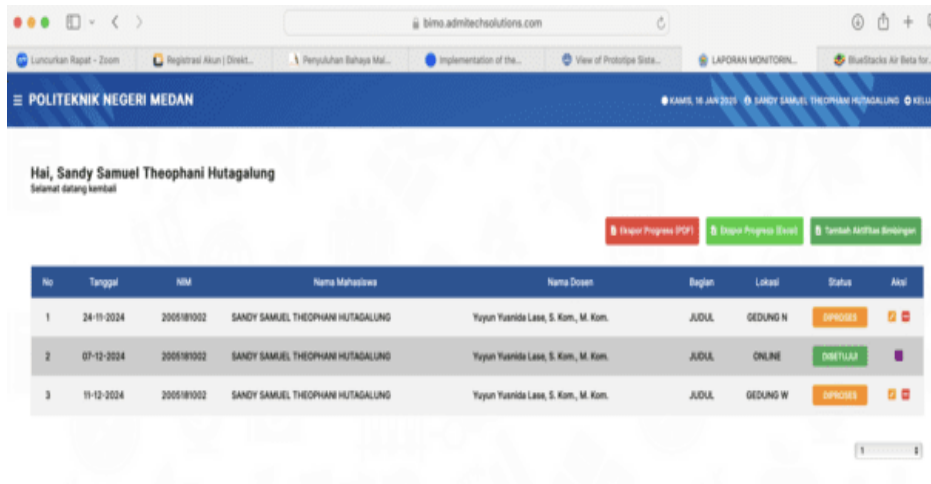


Fig. 10: Student Back-end

Figure 10 shows the homepage display for student access level. On the student homepage display, there is an add guidance activity menu, where when the add activity menu is selected, the following display will appear:

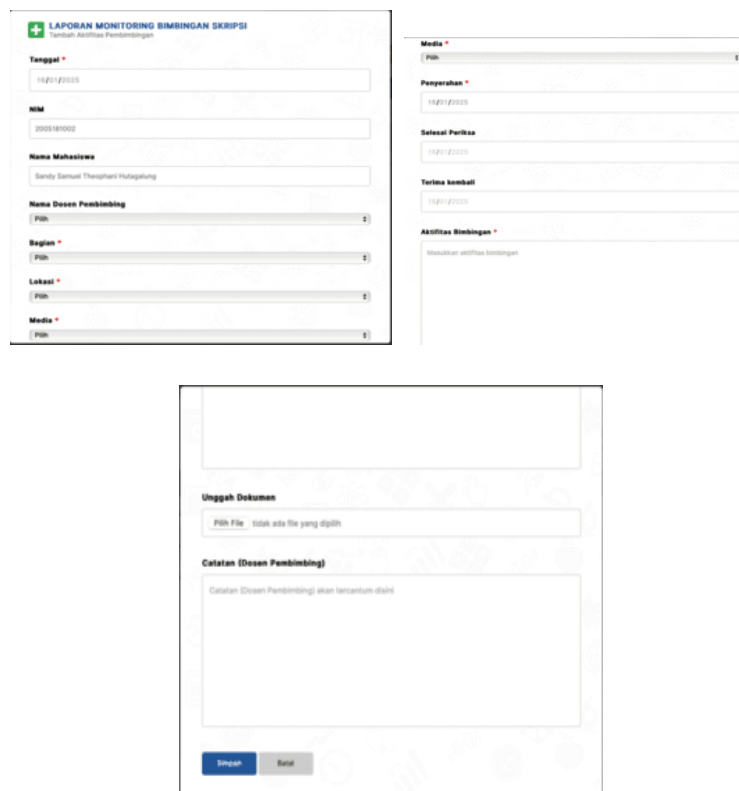


Fig. 11: Student activity process

Figure 11 shows the student activity process, where in this menu students will fill in all the guidance process activities and the process of uploading the guidance chapter file that they want to discuss with the supervisor.

3. Lecture back-end

in the Lecture Back end section there is a change password menu and a guidance activity menu such as upload :

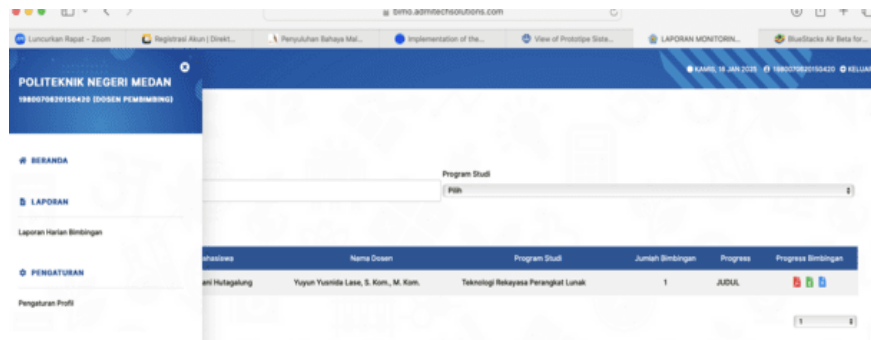


Fig. 12: Lecture Dashboard

Figure 12 shows the dashboard display of the lecturer login menu. On the dashboard menu there is a daily guidance report menu where the supervising lecturer can check the final assignment report that has been submitted by the student. The daily guidance report display is as follows:

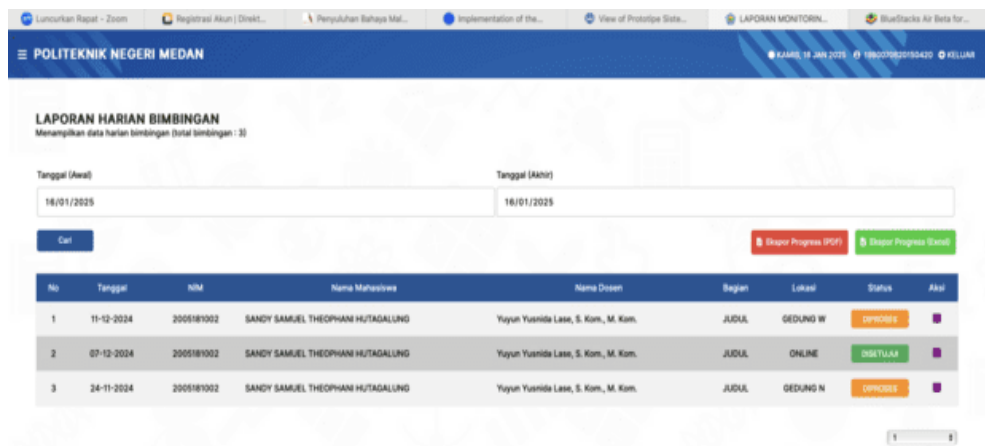


Fig. 13: Daily Lecture Guidance Report

4. Conclusion

The development of the Online Guidance (BIMO) application is the right solution. This application is designed to facilitate the recording and monitoring of thesis or final project guidance more effectively and efficiently. With MOBI, students can easily input guidance activities and view previous guidance history, while the supervisor can monitor student progress and provide more structured feedback. In addition, this application also provides convenience in terms of managing and storing guidance data, thus allowing for better transparency and coordination between the supervisor and students. With BIMO, it is hoped that the thesis or final project guidance process can run more smoothly and efficiently, thereby increasing the rate of on-time graduation or Graduate on Time (GOT) in higher education. Overall, the implementation of MOBI has the potential to provide a significant positive impact on the quality and efficiency of the thesis or final project guidance process, as well as improving the quality of graduates from the Medan State Polytechnic. To increase the effectiveness of the BIMO application implementation,

Acknowledgement

We would like to express our gratitude to all stakeholders involved, especially to "Politeknik Negeri Medan" which has provided easy sample data in developing the BIMO application

Reference

- [1] Syahroni, A.W., & Slamet, S. (2020). Design and Construction of Mobile-Based Online Service Applications. *Respati*, 15(3), 102. <https://doi.org/10.35842/jtir.v15i3.378>
- [2] Fakhri, M. I., & Delianti, V. I. (2021). Design and Implementation of Online Final Project Guidance Information System. *Voteteknika (Vocational Electronics and Informatics Engineering)*, 9(1), 103. <https://doi.org/10.24036/voteteknika.v9i1.111205>
- [3] Lesbassa, S., Setiawan, A., & Dewi, L. P. (2021). Design and Construction of Mobile-Based Online Thesis Guidance Application for Students (Case Study of Informatics Study Program, Petra Christian University). *Infra Journal*, 9(2), 302–307.
- [4] Zaenuddin, & Mahalisa, G. (2022). Design of Online Thesis Consultation Application Using Research and Development Method.
- [5] Herdiana, Y., & Nursalam, A. I. (2020). Case Study of Informatics Engineering Study Program, Fti Unibba. *Informatics-COMPUTING Journal*, 07, 29–34.
- [6] Rosman, J. A., Imron, I., & Prasetyo, M. H. (2021). Web-Based Online Final Project and Thesis Guidance Information System. *INSAN Journal: Journal of Information System Management Innovation*, 1(1), 61–69. <https://doi.org/10.31294/jinsan.v1i1.433>
- [7] Wiratama, A., Setiawan, E., & Ambarwati, A. (2022). Website-Based Guidance and Thesis Scheduling Design Application. *Journal of Information Technology Education (JUKANTI)*, 5(2), 165–174. <https://doi.org/10.37792/jukanti.v5i2.572>

-
- [8] Rafi, M., & Nilmada, M. (2022). Web-Based Application Creation for Informatics Students' Thesis Submission and Guidance at Gunadarma University. *Ug Journal*, 16, 8–18.
- [9] Zulhalim, Anton, Z. S., & Palakka, M. I. (2020). Design of Web-Based Thesis Guidance Monitoring Application at STMIK Jayakarta. *Journal of Information System, Applied, Management, Accounting and Research*, 4(1), 49–66.
- [10] Salamah, I., Lindawati, L., & Sitompul, H. Y. (2019). Final Project Guidance Application Using Android-Based Notifications. *Journal of Informatics Media Budidarma*, 3(3), 232. <https://doi.org/10.30865/mib.v3i3.1216Syahroni>
- [11] Wiratama, A., Setiawan, E., & Ambarwati, A. (2022). Website-Based Guidance and Thesis Scheduling Design Application. *Journal of Information Technology Education (JUKANTI)*, 5(2), 165–174. <https://doi.org/10.37792/jukanti.v5i2.572>
- [12] Zaenuddin, & Mahalisa, G. (2022). Design of Online Thesis Consultation Application Using Research and Development Method.
- [13] A.A Nababan, M.Jannah & A.H. Nababan. (2024). Socialization of the Online Guidance Monitoring Application (MOBI) for Theses and Final Projects. *Indonesian Journal of Community Service (JPkMN), Management, Accounting and Research*, 5(1), 941–942. <https://ejournal.sisfokomtek.org/index.php/jpkm/article/view/2882/1911>