

Development of The Real-Time Thesis Guidance Model Using GitHub And Telegram Bot in The French Department of FBS Unimed

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Abstract: This research aims to speed up the thesis supervision process of French Department students of FBS Unimed through the application of the Github Collaboration model and Telegram Bot in real time. The research method uses the ADDIE development research method, namely Analysis, Design, Development, Implementation and Evaluation. Using the ADDIE method, a real-time thesis guidance system flow model was obtained using Github and Telegram Bot and with the actors involved. From these results, the system was then implemented after 10 trials were carried out. This system was recorded an average time of 0.37 ms in terms of response between the student's work on the thesis file and the notification via the Telegram bot received by the supervisor.

Keywords: accelerated thesis guidance, collaboration model, GitHub, Telegram bot.

1 Introduction

The Covid-19 pandemic as a global outbreak officially hit Indonesia in March 2020 (Nia et al, 2020). This was marked by an official announcement by President Joko Widodo which was then followed by the implementation of social distancing rules for all community activities in the Republic of Indonesia. The Ministry of Education and Culture, as a state institution that focuses on handling education in Indonesia, then issued a ban on holding face-to-face (conventional) lectures and ordered online learning. In other words, universities are required to carry out online learning processes (Firman, F., & Rahayu, S. (2020). One of the learning processes that must continue during the COVID-19 pandemic is the thesis guidance process for active students in Higher education. Guidance itself means an activity given to individuals or groups to solve problems to achieve prosperity (Zulhalim, 2020). A thesis is a scientific work whose truth can be justified and is carried out by Strata-1 students to obtain a Bachelor's degree (Kasiwulan, 2019).

2 Thesis Guidance

Thesis guidance is an activity of writing scientific papers to be applicable regulations, where the writer receives guidance from interested lecturers (Rini, 2019). Supervisors play a very

important role in producing good scientific work (Karyanah, 2016). (Khairil, 2016) states that there are 2 main factors influenced students to be able to complete their thesis, internal factors related to motivation to be able to immediately complete lectures and factors, namely supervisors who indirectly hinder students from completing their thesis. The obstacles to the success of the thesis guidance process became increasingly large and found their peak when the COVID-19 pandemic arrived, due to social distancing between students and supervisors. Several problems were found in the guidance process during the pandemic (1) 42.9% of students did not understand the corrections given so there was a misunderstanding between the corrections given by the lecturer and the results of the corrections given by students, (2) 60% of students had difficulty communicating with the lecturer, so it was very difficult received confirmation regarding the improvements that had been made by students, (3) 62.8% of students said they had difficulty getting improvements from their supervisors so that the guidance process took a very long time, due to feedback from lecturers and students (Juita & Yusmaridi, 2020). On the other hand, the use of social media is also very rapid in society, according to data in 2020, 160 million Indonesians are actively using social media. One of the social media is Telegram. So then, based on existing problems and possible solutions, this research will attempt to solve problems in thesis guidance by developing a real-time thesis guidance model using GitHub as a cloud storage medium and Telegram Bot as a communication medium.

3 Method

This research is development research (research and development/R&D), a process used to develop and validate educational products, such as materials, learning media, or developing methods for thesis guidance meetings in education area. The research paradigm is depicted in the following scheme.

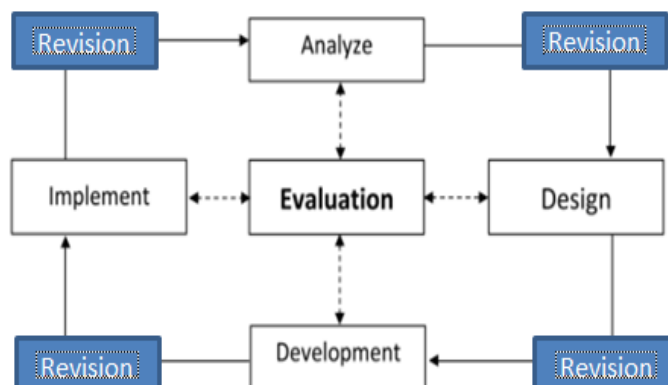


Figure 1 ADDIE Model (Hidayat & Nizar, 2021)

This development research uses the ADDIE (Analysis, Design, Development, Implementation, Evaluation) development model. The choice of this model was based on the consideration that was easy to understand. Apart from that, this model was developed systematically referring to

the theoretical basis for the design of the system model being developed. This model is structured programmatically with systematic activity sequences that solve problems in the thesis guidance process.

- Analysis stage, analysis is a process of defining what will be the main problem in the thesis guidance process, namely by identifying problems, assessment (needs analysis).
- Design stage, this stage includes preparing the system structure, making storyboards, interface design, systematic preparation, illustration, visualization, as well as tool design, and evaluation.
- Development stage, researchers carry out implementation collection, creation, testing and distribution, development
- The Implementation stage carried out was conducting field trials using the thesis guidance model in real time using Github and Telegram Bot

4 Results

After carrying out a series of processes using the ADDIE model which begins with the analysis, design, development and implementation stages where each stage is evaluated, we get a flow model of the thesis guidance system in real time using GitHub and Telegram Bot as follows,

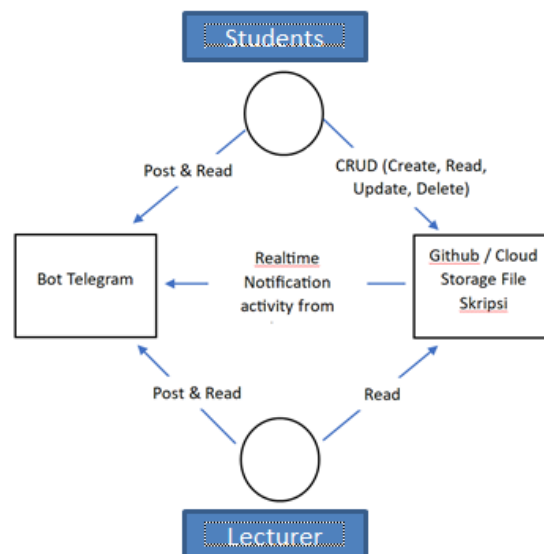


Figure 2. Flow model of the real-time thesis guidance system using GitHub and Telegram Bot.

Through this flow model we can see that students have the authority to edit manuscripts where every activity carried out will automatically be sent in real time to the telegram bot where the supervisor will also receive notifications in real time on the telegram about editing activities

on the thesis files in the cloud. Supervisor can then validate it by opening the thesis file on Github, but the supervisor is only given access to read the file. Lecturers can provide input and suggestions for improvement via the Telegram Bot which can be directly received by students. To determine the level of effectiveness of the real-time thesis guidance system using Github and the Telegram Bot, 10 attempts were made to update the thesis file on Github Storage and then the lag time between file updates and notifications on the Telegram Bot was recorded in Table 1.

Table 1. Response time test results between file updates and notifications on the Telegram bot

NO	Percobaan	Waktu dalam mili second
1	Ke – 1	0.3 ms
2	Ke – 2	0.2 ms
3	Ke – 3	0.5 ms
4	Ke – 4	0.3 ms
5	Ke – 5	0.4 ms
6	Ke – 6	0.7 ms
7	Ke – 7	0.4 ms
8	Ke – 8	0.3 ms
9	Ke – 9	0.2 ms
10	Ke – 10	0.4 ms
Rata - Rata		0.37 ms

From 10 trials, the average notification time for activity in the thesis file on the Telegram Bot was 0.37 ms, of course this is a very good result so it is hoped that it will be able to improve the guidance process to be faster and more focused.

5 Conclusion

From the research results, it can be concluded that the use of Telegram and Github bots can be combined into a real-time thesis guidance system, where supervisors can immediately find out the activities of students being supervised with an average time of 0.37 ms. The supervisor does not need to ask students whether they have corrected or worked on their thesis, they just need to monitor work activities via the Telegram bot.

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