

The Development of E-Magang System for Independent Learning-Independent Campus Program in Universitas Dharmawangsa

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ABSTRACT

A country's development might be represented by its education system. The Indonesian government, through the Ministry of Education, Culture, Research and Technology make a breakthrough through Regulation of Minister of Education and Culture no. 3 of 2020 on the Independent Learning-Independent Campus (Merdeka Belajar Kampus Merdeka / MBKM) program. This policy provides private and state university students an opportunity to enrich and broaden their knowledge and competence in a real life settings. One of the implementations of this program is the industrial internship. In Dharmawangsa University, MBKM policy has been translated into an industrial internship program through collaboration with several companies and industrial sectors. In order to monitor its students' activities during the internship, Undhar assigns a permanent lecturer as a field guide lecturer (Dosen Pembimbing Lapangan/DPL). The monitoring system presented in this paper was developed using Agile Scrum, which began with problem identification stage to system testing stage. This method was selected due to easier adjustability, as it allows further development following the needs. This work produced a web-based system for monitoring and reporting students' internship activities, allowing students and DPL to communicate more easily related to the students' internship activities.

Keyword : Agile Scrum, Monitoring, Internship, Report, System

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Article history:

Received Sep 01, 2022
Revised Sep 10, 2022
Accepted Sep 20, 2022

1. INTRODUCTION

Internship program is one of the prerequisites before students are allowed to work on their thesis. It is mandatory in nature. The Independent Campus (Kampus Merdeka) program is one of the Indonesian government's policies stipulated in the Regulation of Minister of Education and Culture no. 3 of 2020 n Higher Education National Standard, which stipulates extra-campus internship program, among others. The program aims to prepare students in coping with socio-cultural changes, work environment, and rapid growing technology, ensuring that they can fit the development. The Independent Learning-Independent Campus (Merdeka Belajar Kampus Merdeka/MBKM) program is expected to serve as one of the answers to higher education institutions' challenges in delivering graduates fitting the development, science advancement, industrial and public demands(Vikasari, 2018).

Undhar is one of the universities implementing the industrial internship. It makes regulation on internship in the form of MBKM Guidebook, stipulating that intern students are required to make reports, and monitored by an appoint field guide lecturers (DPL) . However, the distance and time limit often serve as challenges in monitoring and reporting activities. The pandemic condition also serves as a challenge since it restricts direct interaction. Hence, it is necessary to address the issue on monitoring and report evaluation process to ensure optimal internship process.

In this regard, it is necessary to develop a system to facilitate students' online consultation with lecturers' appointed by the department head. Such a system is helpful for the department head to monitor the consultation process. The system is developed using agile scrum method. Agile Software development is a set of software development method based on same principles, it is a short-term system development that requires developers' quick adaptation to any change (Nurzaman, 2020). Agile scrum has some advantages, including: 1.) Users could review the developed software earlier 2.) The failure causes

fewer material and immaterial losses 3.) Increasing user satisfaction 4.) Reducing risks of non-technical failure during the software implementation (Anwar et al., 2020).

A previous study report that e-magang reporting system substitute the old system by utilizing GPS technology, providing more thorough monitoring the students' location and allowing supervisors to ask students if they are not in the internship location (Yulianto & Firdaus, 2019). The application could also be used to record students' presence, activities, and agenda during the internship period in a company or government institution. The application was developed using waterfall method, beginning with analysis stage and followed by designing, coding, testing, and maintenance stages (Azis et al., 2020).

2. Research Method

System

The term system refers to a group of interdependent objects that interact one another, forming a unity and is needed to support an organization's operation (Putri & others, 2017). It is commonly used for storage, collection, and information distribution purposes (Sadewa & Siahaan, 2016). In its operation, system requires interactions of its elements in order to deliver the targeted output (Anza et al., 2019).

Monitoring

Monitoring could be defined as a data collection process exercised regularly to objectively measure a program's progress (Gunawan et al., 2020). This activity allows the identification of shortage and error during the program's operation, making it possible for earlier improvement and achieving the program's target (Trisianto, 2018).

Internship

Internship is regulated in Law no. 13 of 2003 on Manpower, particularly in articles 21 to 30. It is also specifically stipulated in the Regulation of Minister of Manpower and Transmigration no. Per.22/Men/IX/2009 on the Administration of Domestic Internship. The ministerial regulation defines internship as a part of job training system administrated integratively by a training institution and experienced instructors/workers within a company's production/ service process in order to achieve a certain skill. (Nurrahman & others, 2021).

Report

Report refers to the presentation of news, description by subordinates to their superior according to the authority and responsibility, either orally or in written forms (Carera, 2020) (SORMIN et al., 2014). Facts presented in the report are required information that should be delivered objectively according to the reporter's own experience when exercising a task or activity (Wahana & Riswaya, 2014).

Agile Scrum

One's solution to a problem sometimes fails to work as expected, causing difficulty to find the ideal solution to solve a problem. Therefore, guideline methods are developed to help an organization or individuals solve their problems, one of them is *Agile Scrum method*. *Agile* is a flexible thinking framework in solving a problem, its problem-solving pattern could be adjusted to changes (Nugraha et al., 2021). Applying *Agile* framework, one should be prepared for any potential change, as a change may alter steps required to solve a problems and cause the designed plan to be irrelevant during the execution (Ependi, 2017). Meanwhile, *Scrum* refers to a method that implements *Agile* in the development of a project, event, or other programs (Suharno et al., 2020). *Agile* is a *framework* containing adaptive problem-solving principles, while *Scrum* is the implementation of the framework in the forms of operational steps. (Anoesyirwan et al., 2020). In other words *Agile* and *Scrum* is a principle-action loop, where the former contains rules aiming to solve problem adaptively, while the latter represents the implementation of the rules (Yumna Majdina et al., 2020).

3. RESULT AND DISCUSSION

3.1 Research Stages

Several stages were applied in this study, presented as follows:

1. Problem Identification
in this stage, we identified problems to solve, particularly the conformity of internship guideline and documents to the internship reporting system of students attending the MBKM internship program.
2. Literature Study
The second stage was literature review, which was done to see the problem development in from the existing literature's perspectives. The literature review was used as the theoretical

foundation, garnered from various scientifically accountable resources. In this stage, we collected various information relevant to the topic being studied.

3. Data Collection

The data source was MBKM guideline document published by Dharmawangsa University and other documents related to MBKM internship.

4. System Design and Development.

In this study, the system was designed using Unified Modeling Language (UML) and an open-source platform MySQL as the database.

5. Implementation

In this stage, the developed system was tested following Agile Scrum methods. The test was performed to ensure the system's conformity to the research goal and to identify any system error.

6. Result

In this stage, the system test result is presented. It also describes results of each test stage in order to achieve the research goal optimally.

3.2 User Analysis

Three actors play important roles in this system:

1. Admin, an individual managing the system
2. Field Guide Lecturer, an individual responsible for students' report, and
3. Students, individuals responsible for internship reports they make.

3.3 Design

3.3.1 Admin's Activity Diagram

Figure 3.1 displays the Admin's login process.

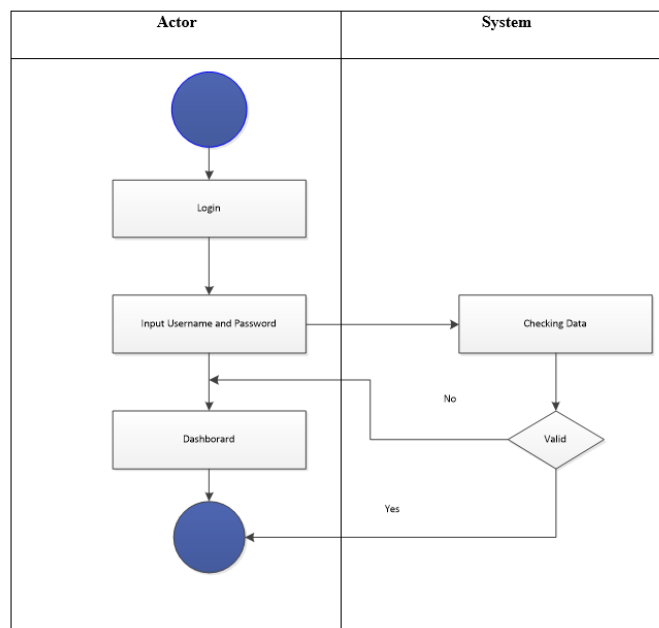


Figure 3.1 Admins Activity Diagram

3.3.2 Field lecturer's Activity Diagram

Figure 3.2 displays the process of adding field guide lecturer into the system

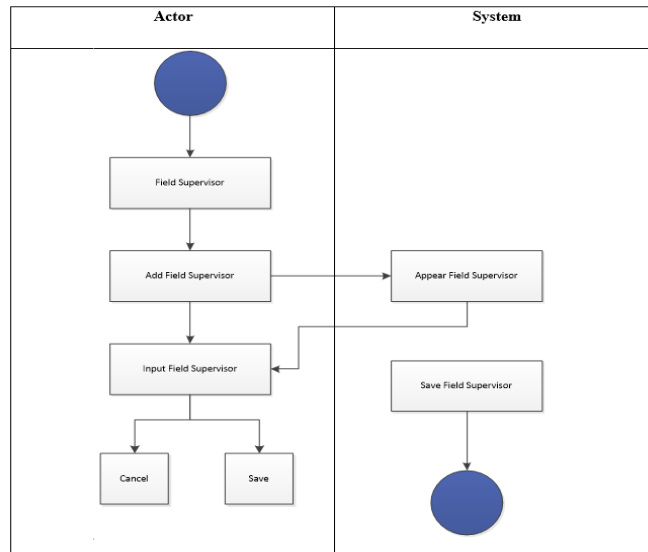


Figure 3.2 Field lecturer's Activity Diagram

3.3.3 Students' Activity Diagram

Figure 3.3 displays the students' guidance process.

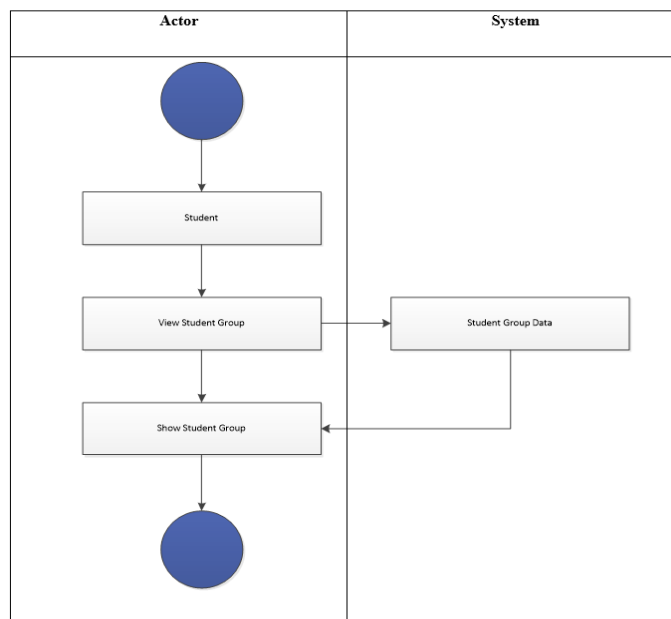


Figure 3.3 Students Group Activity Diagram

3.4 System Implementation

System implementation was carried out to test the designed program. It is important for future development.

1. Home Page

The website's home page is designed to provide a login menu to enter the dashboard.



Figure 3.4. Login Main Display

After inputting user name and password, the admin will be logged in to the main dashboard menu

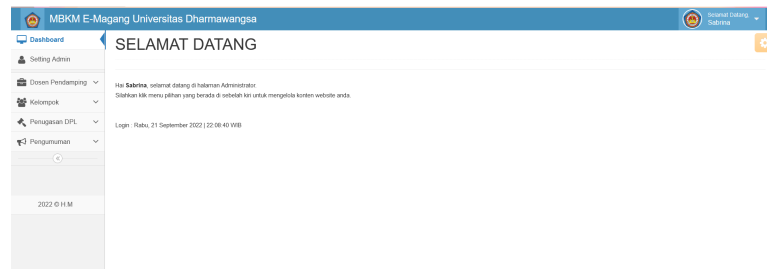


Figure 3.4 Admin Dashboard

2. Guide Lecturer's Page

After admin enrolls a guide lecturer, he/she could log in to the system through the provided link. The following figure presents the guide lecturer's page:

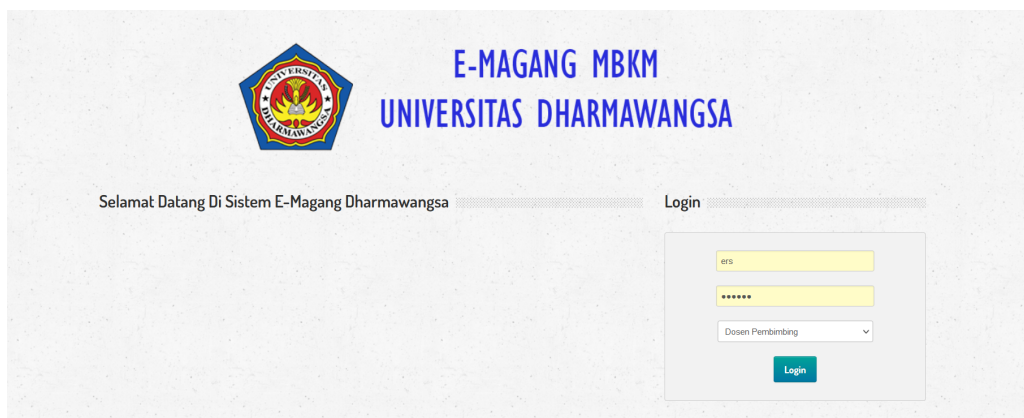


Figure 3.5 Guide Lecturer's Login Display

After logged in, guide lecturers will be able to see reports on students who want to consult.

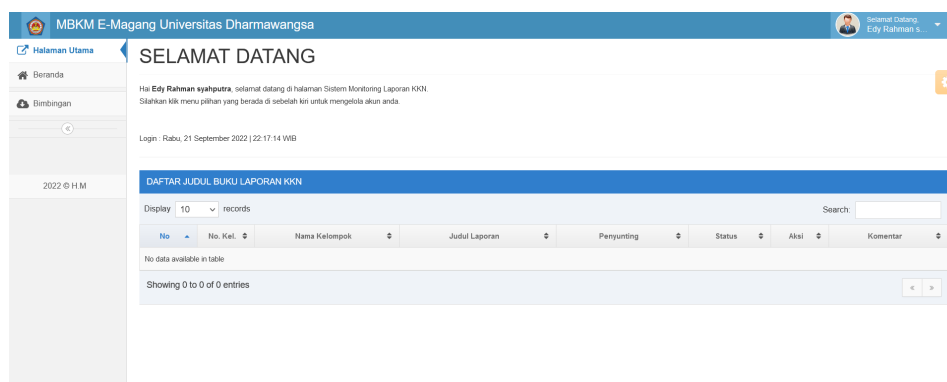


Figure 3.5 Guide Lecturer's Dashboard

3. Students Page

Students who have received user name and password from admin are allowed to log in to the application to conduct a consultation session. The following figure presents the students' page

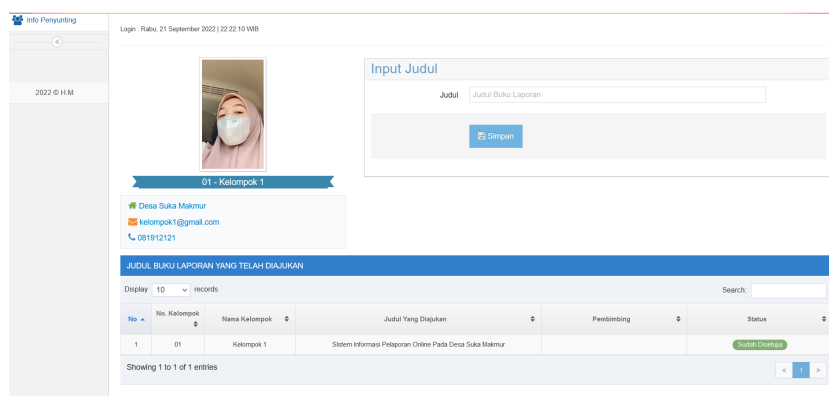


Figure 3.6 Student Group Dashboard

4. CONCLUSION

The report monitoring system developed in this study could substitute the old, manual system. This system allows students and lecturers to conduct consultation process anywhere, inside or outside the campus.

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