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Application of the Rapid Application Development Method to Analyze the MBKM Information System at Prima Indonesia University

Teddy Chandra Wijaya[*1], Vanness[2], Jefry[3], Andre Tania[4], Marlince NK Nababan[5]*

[1,2,3,4,5]*Universitas Prima Idonesia*

teddywjy05@gmail.com

ABSTRACT

The Campus Merdeka (MBKM) program is an innovation initiated by the Ministry of Education and Culture, and one of the universities that has implemented it is Universitas Prima Indonesia (UNPRI). In the implementation of MBKM, students at UNPRI have encountered difficulties in participating in MBKM activities due to misinformation and a lack of information. To improve the MBKM process, researchers will reanalyze the MBKM management information system using the Rapid Application Development (RAD) model. The application of the RAD model in the MBKM program at Universitas Prima Indonesia is expected to transform manual processes such as activity entry, activity selection, and lecturer assessment monitoring into a web-based MBKM management system. This research has resulted in a web-based MBKM system, an information system that includes features for activity entry and a lecturer monitoring system, which can be implemented by users.

Keywords: Sistem Informasi, MBKM, RAD, UML

INTRODUCTION

Every student who participates in the Merdeka Belajar Kampus Merdeka (MBKM) Program will be prepared to pursue their career goals in the future. By learning directly from real-world experiences, MBKM activities allow students to develop their competencies independently while collaborating with the campus academic system (Sephira and Krisnanik 2021). The goal of the self-reliance-based MBKM college learning program is to foster a creative learning society without limiting the actions of its participants. Advances in information technology are pushing universities to make calculated decisions to maintain their overall leadership position. Information technology is beginning to function in several academic procedures and activities in higher education (Hasanah and Untari 2020).

This program allows students to choose the courses they want to take at their own pace. It is taught in-depth and is ready to be a problem solver in small and large scopes. From the progress and development carried out to provide the best input for the progress of the country, for

example having quality human resources, from research on the implementation of the MBKM Program according to the student's point of view of 60.2% (B. S. D. Oetomo 2002).

The registration cycle of the MBKM program on the Software Engineering Staff utilizes Google Structure as a medium for filling in the structure. Thus, data innovation is expected to make the framework an MBKM program exercise application. This enrollment application is made using Laravel Structure which aims to give students a site to enroll in the MBKM program, choose a supervisor, get choice data, and work with enrollment information administrators (Masitoh et al. 2021).

Students have difficulty participating in MBKM activities due to misinformation and lack of information. The purpose of this deepening is to plan a data framework that can equip students with an understanding of the MBKM program. The examination strategy used is an online programming improvement technique with the Framework Improvement Life Cycle (SDLC) model. Procedures for disseminating information about MBKM activities, providing testimonials from students who have participated in MBKM, and requiring registration for MBKM activities have been developed (Sinuraya and Sihombing 2021). The University of Prima Indonesia is one of the largest confidential universities in North Sumatra and is currently implementing a free land autonomy review program consisting of eight exercises, specifically student trade, entry-level positions, autonomous review, performance venues, pioneering exercises, building a city or original work address, reasonable work, showing assistance in education, compassionate efforts, and exploration. So far, the MBKM exercise at UNPRI has not been planned much, student reports are not summarized, the number of dynamic students in the exercise is unclear, there is no activeness of the resource persons who participate in MBKM and there is no correspondence starting with one staff and then to the next staff, so there are still many students who do not know. MBKM. Therefore, “MBKM monitoring information system based on RAD (Rapid Application Development) model at Universitas Prima Indonesia” is an interesting topic for researchers who study MBKM activities(Nurman Hidayat and Kusuma Hati 2021).

The formulation of the problem is that there is no coordination in implementing MBKM activities at Prima Indonesia Higher Education, many students do not understand MBKM due to a lack of information or misinformation, RAD-based programming improvement model for testing frameworks that can be built quickly and truly according to user needs.

The problems that will be solved by analysts develop an observation framework for the implementation of MBKM exercises using the RAD (Quick Application Improvement) model,

users of this data framework are only limited to students and speakers at Prima Indonesia Higher Education who are related to MBKM training, this data framework is specifically designed for MBKM training registration, selecting superiors, providing determination data, collaborating with registration information administrators, as well as checking and assessing student actions and progress in MBKM training.

Rad System Development Model

Rapid Application Development (RAD) is a product enhancement model that uses a steady method. RAD is a daily life cycle methodology that aims to deliver faster improvements and produce better quality compared to conventional cycles. According to Pressman in his book, "Programming: A Professional Methodology," RAD is an incremental programming process model emphasizing short improvement cycles. The RAD model is a "high-speed" variation of the waterfall model, where rapid improvements are achieved using a component-based development approach. The RAD procedure allows the development team to create a fully functional system in a very short time if all the project scope requirements and constraints are known.

Figure 1. RAD model illustration

In RAD, there are three phases:

1. Requirement Planning: In this phase, the framework requirements are distinguished by recognizing data needs and issues necessary to determine objectives, framework constraints, requirements, and elective critical thinking. Examination is used to decide on the framework implementation and what exercises are within the framework.

2. Plan Studio: In this phase, you must choose the best solution from the available alternatives. Then, a business cycle plan and programming configuration are made by reviewing the information obtained and displayed within the data engineering framework. The tools used in the demonstration system typically employ Unified Modeling Language (UML).
3. Execution: After the framework configuration is completed, the framework is executed (coding) into a structure that can be perceived by the machine, known as a project or program unit. The system creation process can proceed and is known as the system implementation phase.

METHODS

The scoping exercise that will be conducted focuses on planning, creating, using, and re-creating MBKM data frames. Before directing exploration, various writing concentrations related to this subject are concentrated first to obtain better results (Aswati et al. 2015).

Abstract Exam The main stage of this exam is collecting information and data by reading and understanding several diaries and books related to this exploration to obtain supporting references.

a) Investigation

Information He said, that in the field of inspection, we focus on searching for data that is considered important in determining the required data. Data and information can be collected in various ways.

b) Observation

All the senses—sight, hearing, smell, taste, and smell—are included in perception. The results can be recorded using a recording device.

c) Interview

Collect data through direct/oral correspondence and provide data face-to-face or by telephone. Member responses are recorded and summarized by actual scientists. Interviews were conducted directly with field supervisors and students at Prima Indonesia Higher Education.

Exams and Work The next stage is to complete the exams and planning. Variables used in designing databases and websites can only be obtained through system analysis procedures. Then, the MBKM site framework configuration process is completed according to your needs.

At the planning stage, the site created consists of a front-end as the main page which can be accessed by all clients, and a back-end specifically for administrators.

Framework Improvement Model Rapid application improvement (RAD) is a technique that emphasizes building applications quickly, through recognition and criticism (kissflow 2022). RAD was proposed by IBM in the 1980s and 1990s when interest in applications was widespread. The software development process known as rapid application development (RAD) emphasizes short development cycles. Incremental methods include a software development process model known as rapid application development (RAD) or rapid prototyping. Fast, concise, and short development cycles are emphasized by RAD (Davis and Yen 2019). This model is very limited by limited time. A working model of the system is built at the beginning of the development stage to establish user requirements and is then discarded. Rapid application development uses iterative methods to develop systems. Working models are rarely used as a rationale for planning and implementing a conclusive framework.

Assessment Framework At the framework assessment stage, framework precision checking interactions will be completed to measure the feasibility level of the MBKM framework (Humaira Aliya 2021).

DISCUSSION

RAD System Design/Development Model (UML)

Now start designing the MBKM information system to find out the features and functions of each user. See the image below for more information regarding the features or functions that each user can perform.

Use Case

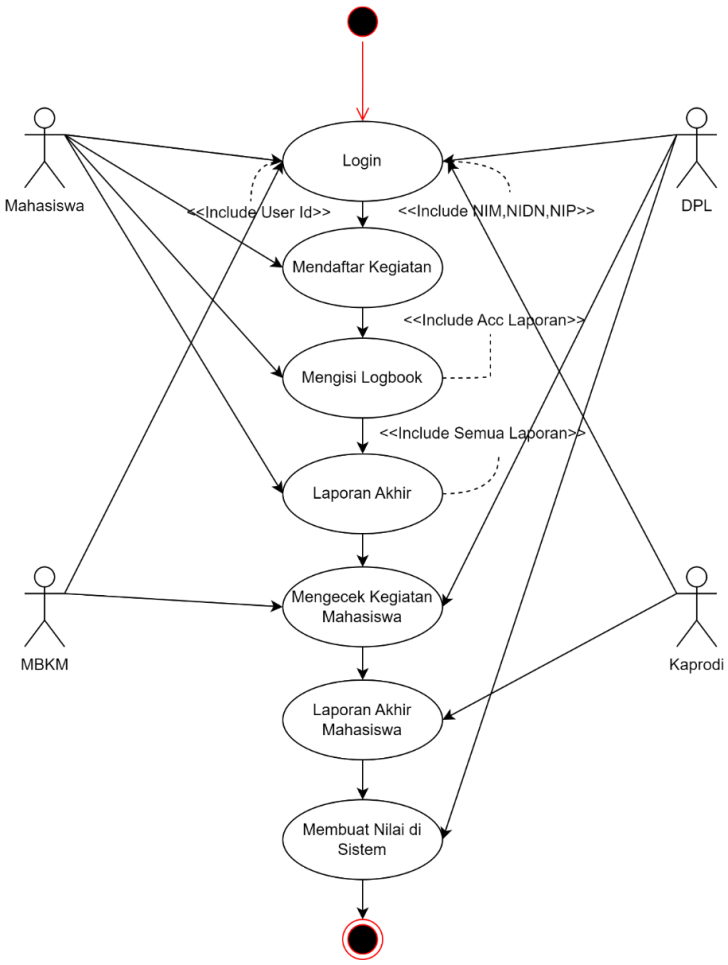

Figure 2. Use Case

The Merdeka Belajar Kampus Merdeka (MBKM) data use case begins with four clients who are expected to go through a login cycle by filling in the login structure to approve the client ID and secret word. Students use the NIM and secret key which are incorporated in the Prima Indonesia Higher Education Scientific Data Framework. After successful login, users will be taken to the home page for their role, where they can perform their function's specific tasks (Putri and Hartanto 2013). If there are errors in writing or uploading evidence of MBKM activities, lecturers can also manage data in this use case to improve activity reporting. Students and lecturers who communicate with each other to carry out activities are users of the learning information system known as Merdeka Belajar Kampus Merdeka (MBKM). Clients can log in with the records listed in the data collection framework (Jeperson Hutahean 2015).

Students are tasked with verifying the implementation of MBKM, while the presenters are responsible for checking evidence of training that students have transferred. Students can check

whether evidence of MBKM practice has been transferred to the data framework and approved by the program teacher's concentration data framework.

MBKM Information System Activity Diagram

Activity diagrams are a representation of the image of a system based on the workflow in its activities, choices, actions, repetitions, and results of user activity processes.

The Merdeka Belajar Kampus Merdeka (MBKM) data activity diagram above illustrates the cycle that must be carried out by the four clients, starting from the login interaction. Students use their NIM and password, both of which are integrated with the Prima Indonesia University Academic Information System, while users validate their user ID and password by filling in the login form. After effectively logging in, clients will be coordinated to a landing page as per their task to complete the exercise at their own pace. The presenter can also complete the management information if there are errors recorded in the form of a hard copy or proof of transfer of MBKM implementation.

This is done so that the action disclosure cycle becomes more effective. This framework is intended to help and make it easier for teachers in the Prima Indonesia Higher Education Data Framework Study Program to screen each student while taking part in MBKM training.

Class Diagram

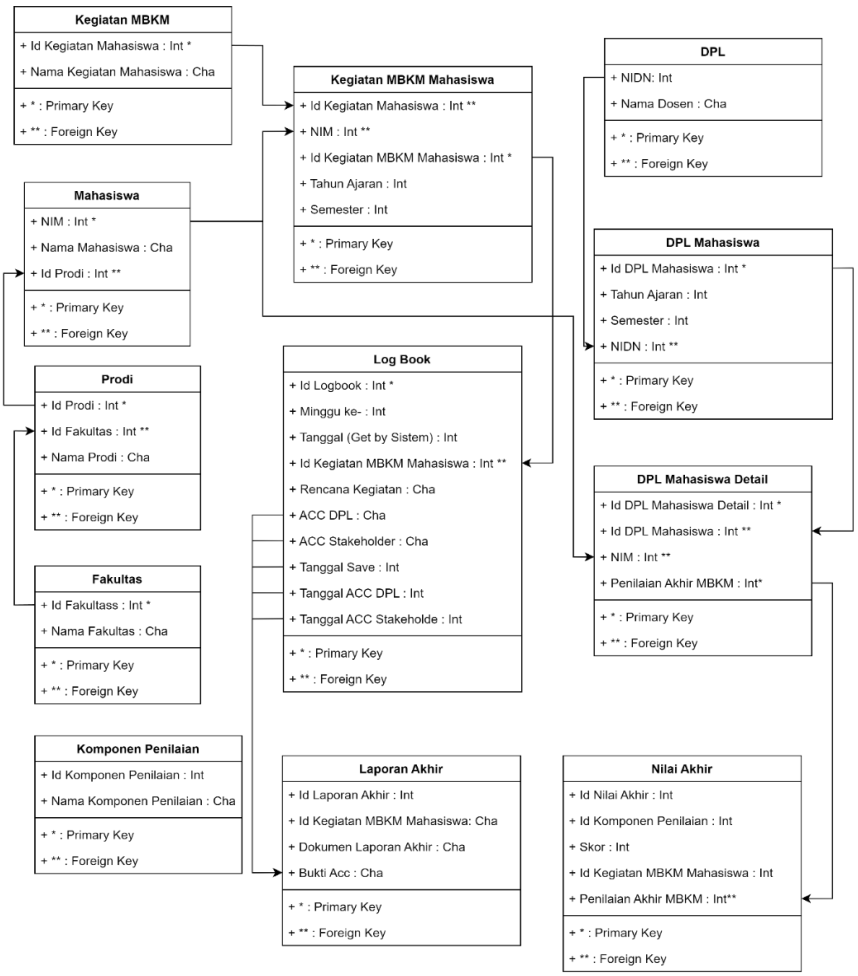

Figure 3. Class Diagram

Flow Diagram

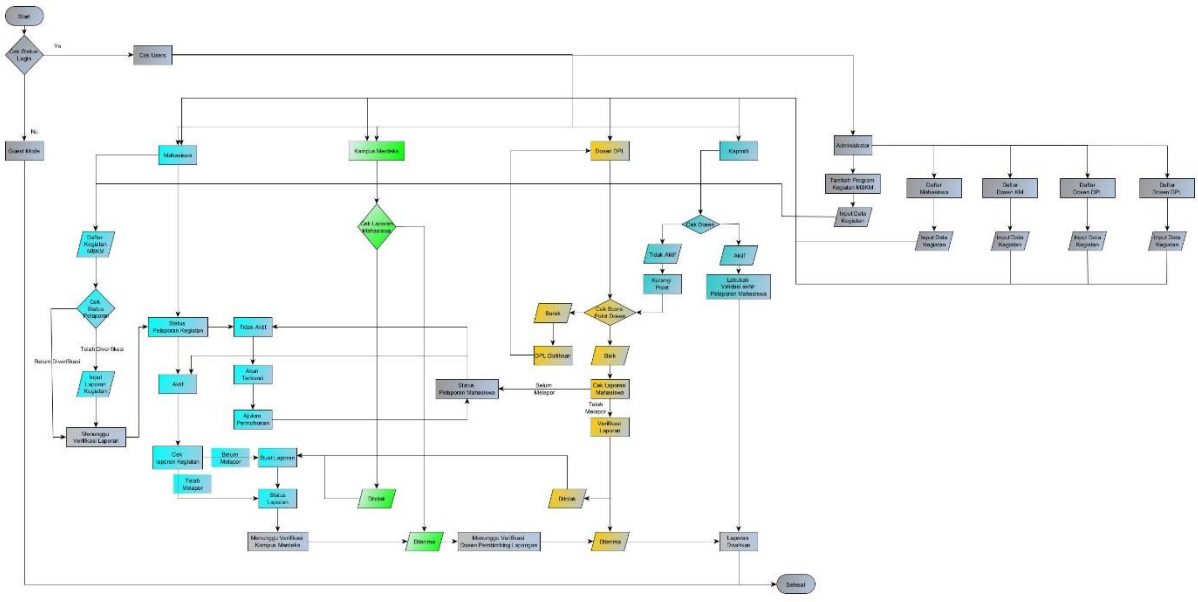

Figure 4. System Flowchart

Information system design development process

Information system design is an important stage in software development which includes various steps to design the structure, components, and functions of the system to be built. The following are general steps in designing an information system for the MBKM Monitoring Information System based on the RAD model at Prima Indonesia University:

A. On the front page a display will be created containing menus such as the homepage, activity list, help menu, login, and others. The program search menu and general requirements are intended so that users can see further information regarding the available MBKM programs along with their requirements.
B. In the login menu, this is specifically for students/users which is filled in with the NIM and password for the user/student.
C. The following is a display of the Independent Campus program form which contains the 4 programs most liked by students and is also equipped with a separate explanation of the MBKM program as well as the terms and conditions for joining the program.
D. My Activities Menu is a place where users/students submit proof of reporting every week. If it has been processed by MBKM (Stakeholder) and DPL, the status will change to Accepted, Processed, or Rejected.

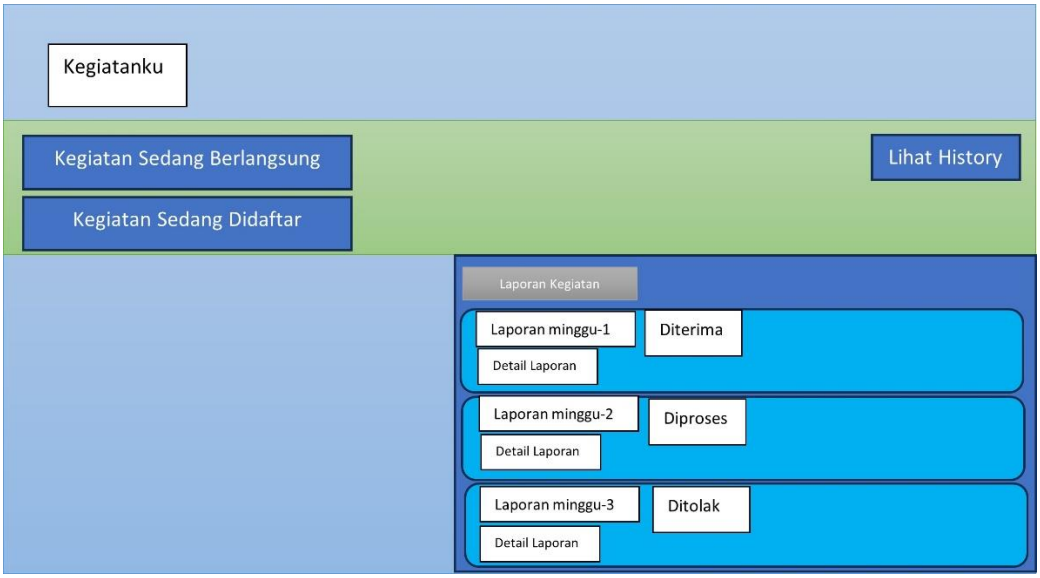

Figure 5. Designing Your Activity Information System

RESULTS

Product implementation/completion

On the front page, a display is created containing menus such as the homepage, activity list, help menu, log-in, and others. The program search menu and general requirements are so that users can see further information regarding the MBKM program, On the login homepage, it is displayed to log in according to their respective interests which are available in Figure 3.12 such as Students, KM Lecturers (Stakeholders), Lecturers (Campus DPL Lecturers), Head of Study Program.

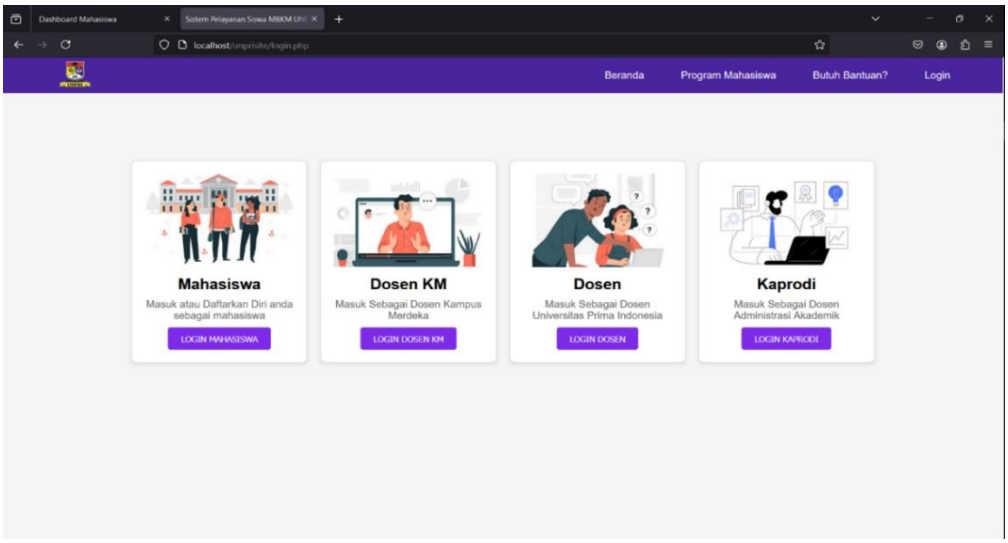

Figure 6. Login Home Information System

This Administrator page contains a variety of information from the number of students, MBKM (Stakeholders), and DPL Lecturers according to Figure 7. This makes it easy for us to monitor the overall number without having to calculate manually.

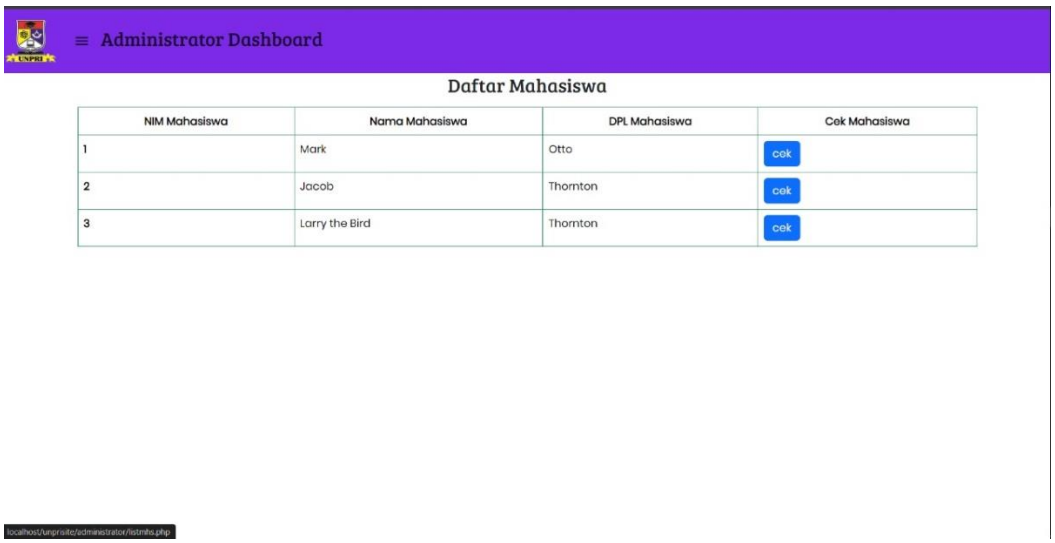

Figure 7. View Student List

When we select the View Student List menu, it will be directed to the details menu for each student and can see their status one by one so that it is also easier for us if there are students who registered more than one account.

CONCLUSION

Following the research results, the research team can provide conclusions:

- Implementation of the Rapid Application Development (RAD) model in the MBKM program at Prima Indonesia University can be analyzed according to user needs.
- This program offers students the opportunity to choose their course of study and develop problem-solving skills.
- Implementing the Rapid Application Development (RAD) model can enhance the MBKM management information system, addressing incomplete analysis and the need for further stakeholder involvement.

Suggestions from researchers:

- To add/design a data form for students who have participated in MBKM activities
- Add/design companies that want to join UNPRI

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