Web-Based Student Activity Credit Unit Information System at State Polytechnic of Banyuwangi

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***Abstract*— The student Activity Credit Unit is a credit value obtained by students after participating in curricular and extracurricular student activities. The credit score is a specific value unit in the form of numbers given to each student who carries out actions. Credit score provisions have been set. Each activity must be accompanied by proof of participation/certificate/other evidence that will be used as the basis for assessing creditworthiness. If the calculation of the loan amount is done manually, errors can occur because the work done by humans is relatively error prone. Therefore, we need an application that provides a solution to minimize the occurrence of computational errors. This research was conducted to create a credit unit information system for student activities using the PHP programming language with the Laravel framework and MySQL as the database. This system makes it easier for students to input data on student activities. The result of this research is a web-based credit information system for student activities that can be implemented at the State Polytechnic of Banyuwangi as a tool for calculating credits for all student activities.**

***Keywords*— Credits, curriculum, laravel, PHP, student**

I. INTRODUCTION

Student activities develop people's thinking skills, talents, interests, skills, and personalities as an integral part of the learning process [1]. Student activities refer to competitive activities both at the local and national levels. Student activities are designed to meet students' interests and talents, increase grades and improve student welfare. Award certificates are proof of participation in activities such as training, workshops, seminars, and competitions [2]. This certificate itself is usually in the form of sheets that are given to people who participate in the activities carried out.

In Poliwangi, in collecting data on student activities, they still use ineffective methods, such as the admin spreading the Google Drive link form to several WhatsApp groups, and then students filling in their student activity data [3]. Of course, this method does not increase students' interest in filling out student activity data and at the same time, does not encourage students to be more active in participating in student activities [4].

Based on these problems, we built an information system to provide a more effective impact which we named "Information System for Student Activity Credit Units at Poliwangi Web-Based." This information system is used to input data on student activities that have evidence of activities, such as certificates. In the process, proof of activity is verified by the Student Association, then validated by the Student Executive Board (BEM) and the Association's Supervisory Lecturer. From the validated data, point calculations will be carried out according to predetermined standards. Afterward, if the points obtained by students meet the minimum requirements, then the student is free from being dependent on the credit unit for student activities.

II. METHOD

In software development there are several approaches or methods used, in this research using the Rapid Application Development (RAD) method. The RAD method emphasizes short, short, and fast development cycles [5]. This method is very effective in its use so that it produces software systems with urgent needs and can shorten the time when building applications. This method also has the ability to reuse existing components so that developers don't have to start all over again so that the time used will be shorter [6].

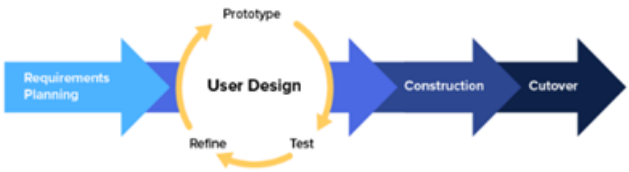

Figure 1. Rapid Application Development (RAD)

Fig. 1. shows the framework for the RAD method including:

A. Planning

In this planning stage, the author conducted direct interviews with the parties concerned to obtain information that could support creating an information system for student activity credit units [7].

B. Needs Analysis

At this stage, it is a requirement gathering that is carried out intensively to specify software requirements so that it can be understood as what is needed by the user.

C. System Design

At this system design stage, thoughts are poured, namely, making a system model based on information obtained from related parties. In addition to creating a system model, there is also a database model to describe the relationship between data. Unified Modelling Language (UML) is used as a modelling system that consists of several diagrams, including use case diagrams [8].

D. System Testing

This stage is the stage of testing the application that has been implemented. The test is carried out to find out the weaknesses and deficiencies of the system that has been made, then a review and improvement of the application are carried out to make it better and more perfect. Testing is also carried out to find out how well the application has been built. Application testing is carried out using the black box testing method, which is a test to see the application only from the outside without knowing what is happening in the application, and the testers are people who are not involved in making the program.

E. System Implementation

At the stage of implementing this system, it is a process for implementing a Web-based information system for student activity credit units at the State Polytechnic of Banyuwangi (POLIWANGI). Provide socialization to students about how the process of the student credit unit system is, starting from inputting data on student activities to passing through the verification and validation stages from the Student Association (HM), Bem, and Association Advisory Lecturers then to the final result if the points obtained are above the set limit then BEM can print a list of SKKK dependent free students and students can print a validated data recapitulation [3].

F. Overview

In solving the problem, a global overview of the system is needed in making or developing the system. There are two main points of discussion in the general description, namely, an overview of the current system at the State Polytechnic of Banyuwangi and an overview of the proposed new system so that the process of the system being built is more efficient.

Figure 2. Overview of the previous system

Fig. 2. shows the system currently running at the State Polytechnic of Banyuwangi. The current system admin provides a Google Drive form link, and then the admin distributes it to several social media chat groups such as WhatsApp. Then students are asked to fill in achievement data when they become Poliwangi students via the link. After that, the admin downloads the data from Google Drive to then use it as material for recording the data recapitulation of outstanding students.

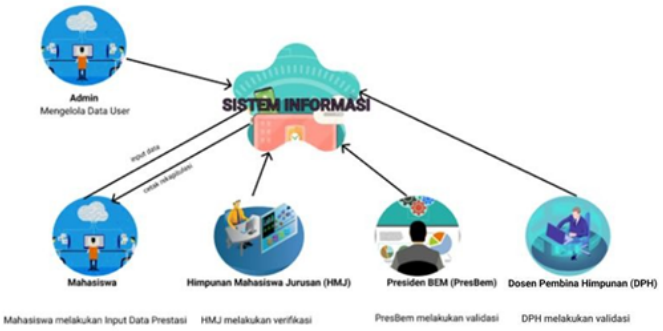

Figure 3: Created System

Fig. 3. shows the system to be proposed in the Information System for Student Activity Credit Units at the Web-Based Banyuwangi State Polytechnic. Its use is Students, Student Associations (HM), Student Executive Boards (BEM), and Lecturer Association Advisors (DPH). Students input submission data in accordance with the provisions on the form provided. Then the submission data is verified by the Student Association (HM). After that, validation was carried out by the Student Executive Board and the Association of Lecturer Advisors (DPH). After completing the BEM, further can print a list of students who are free of credit unit responsibility for student activities at Poliwangi.

III. RESULTS AND DISCUSSION

A. Landing Page

It is the front page of the student activity credit unit information system as shown in Fig. 4. On the front page, actors can see important notifications about student activity credit units. There are buttons for logging in for actors who have accounts. There is also an about button that contains an explanation of what a student activity credit unit is, its purpose, and its benefits.

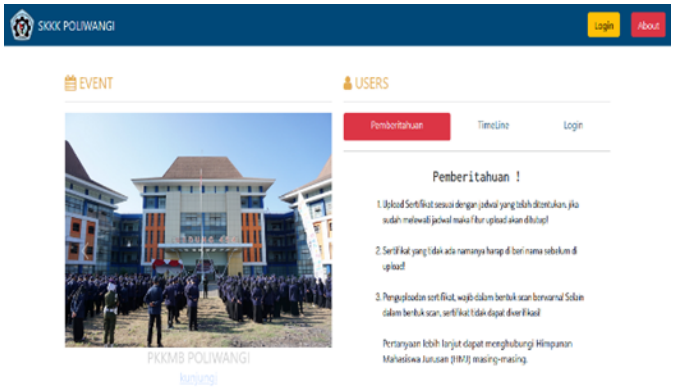

Figure 4: Created System

B. *Login Page*

Fig. 5. shows the login page is the page that will be used by the user to enter the information system. Users who can log in are those that the admin has created a user account. The user validation process is carried out by checking the username and password entered by the user into the database in the user table.

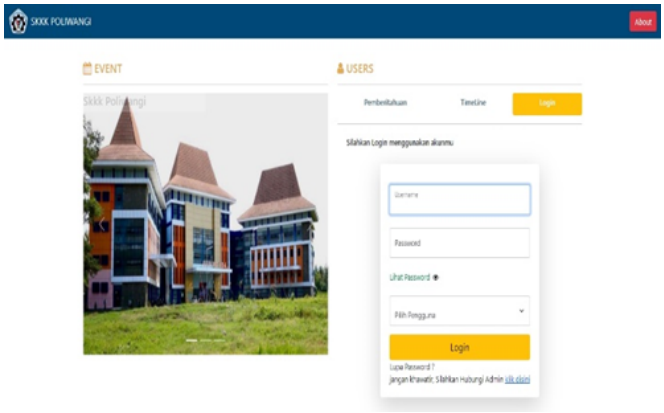

Figure 5: Login Page

C. *Home Page*

On the Fig. 6. can show student home page, several cards are displayed containing a percentage of the submitted submission data. Then there are the total points that have been obtained, along with information about the minimum points that must be obtained to complete the student activity unit free of charge. Then there is a bar chart that contains the students with the highest points for each study program, and the filter feature is used to see the highest points for each study program in a particular class.

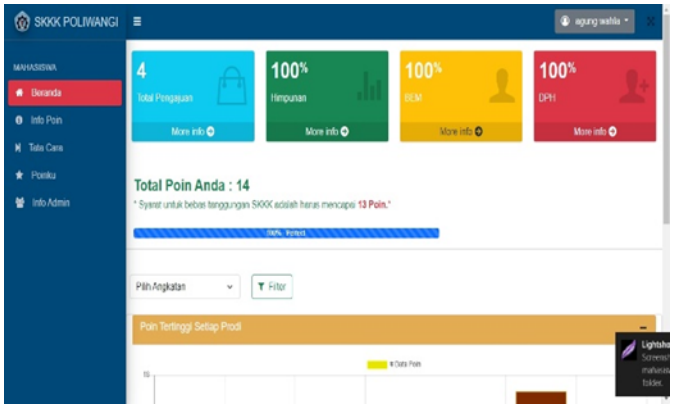

Figure 6: Home Page

D. *Point info page*

On the point info page, several categories of activities are displayed, which are counted as points in the student activity credit unit information system at Poliwangi. In each category, there are many sub-categories. For example, in the Association category, there will be several sub-categories, such as points earned as chairman of the association, deputy, secretary, treasurer, etc. Information is also provided regarding the flow of student activity credit unit activities at Poliwangi. The flow of activities begins with carrying out activities, scanning proof of certificates, activities, membership cards, and then uploading files according to the provisions.

E. *Mypoint Page*

This page displays submission data that has been inputted by students in table form, and there is also a feature to add point values by adding new achievements that are in accordance with the assessment standards, of course also evidenced by a copy of proof of achievement.

F. *Verification Page*

A list of students is displayed according to the majors from which the student association originates. Then several cards containing the name of the department are also displayed, which function to display student data that is currently running the SKKK process in accordance with the chosen major. Then a verification process is carried out to sort out outstanding students or not by looking at the uploaded evidence.

G. *DPH Validation Page*

On the Fig. 7. can show the DPH validation page is the final process of the validation series for submitting student files. Where the association supervisor conducts validation on files previously verified by the student association and the Student Executive Board (BEM). With the end of this process, the status of the file submission is updated to complete from the previous status in process.

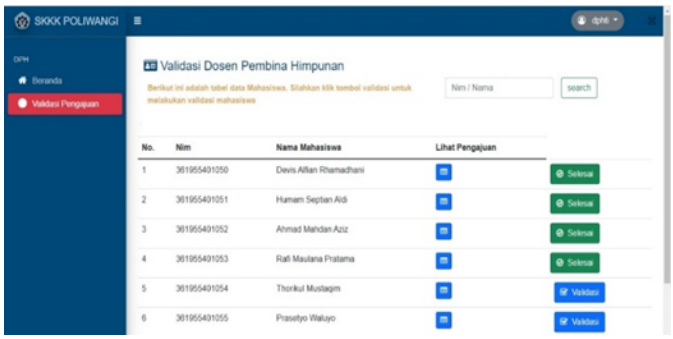

Figure 7: Validation Page

IV. CONCLUSION

The Web-Based Student Activity Credit Unit Information System at Poliwangi was built using the Laravel 8 framework based on the PHP programming language in collaboration with a MySQL or MariaDB-based database. This software is used by Admins, Student Associations, Student Executive Boards, and Association Supervisors with the provisions of their respective access rights. When implemented, this software is proven to make it easier for students to input submission data, verify data by student associations, and save time for the validation process carried out by the Student Executive Board (BEM) and the Association's Supervisory Lecturers. This system functions to collect all forms of student achievement, which can later be used as supporting data for student achievement so that it can be appreciated by the campus and can also be used as material for consideration later after graduation. This certainly can make students more active in

participating in student activities because there is a minimum of points that must be obtained for each student. However, it is also necessary to pay attention to the development stage, especially compliance with the rules that apply to educational institutions that use it. It is also necessary to test application performance and server toughness as a home where applications are placed to serve multiple user access.

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