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Application of Prototype Method on Student Monitoring System Based on WEB

April Lia Hananto [1]
Information Systems Study Program
School of Engineering and Computer Science
Universitas Buana Perjuangan Karawang
aprilia.hananto@ubpkarawang.ac.id

Bayu Priyatna [2]
Information Systems Study Program
School of Engineering and Computer Science
Universitas Buana Perjuangan Karawang
bayu.priyatna@ubpkarawang.ac.id

Asep Haris [3]
Information Systems Study Program
School of Engineering and Computer Science
Universitas Buana Perjuangan Karawang
asepharis88@gmail.com

***Abstract*—Public vocational school in Subang which continues to improve its academic activities, specifically in terms of improving student discipline related to student participation in school and improving student achievement. The collection of information about student participation and the value of new students delivered at the end of the semester compilation of report cards makes students who experience difficulties in the development of grades, meetings and student learning activities at school, for that we need a system that can help students to help guardians of students and the school in activities that involve students in school. In this research, we use a prototype method for system development. The advantage of the system built is that it can send attendance messages or student grades to enter no answers or get poor test scores for student guardians, student guardians can provide feedback on incoming information and make permits through the existing information system pages, the school also can use attendance data and grades to support activities at school.**

Keywords— A student monitoring system, Attendance, Prototype.

I. INTRODUCTION

Monitoring academy activities is a major activity in the world of education. Cipunagara Vocational High School 1 as one of the educational institutions, of course, must carry out these activities as mandatory activities in the implementation of student learning activities, but these activities cannot be carried out optimally. One of the problems that often occur in high school level education environments is monitoring student attendance, the process of delivering information from school to student guardians in addition to internal problems such as the flow of data that is processed quite a lot every day, there are also problems caused by external factors such as manipulation data or cheating done by students in terms of attendance, this must be addressed immediately because it is very disruptive to the learning process at school.

Also, guardians of students still experience difficulties in monitoring the progress of their children's learning achievements or activities at school. Notification of achievements (grades) and abscesses is done when the school report card is dropped, which is once every end of the semester. Student guardians can only get the final results of their children's learning activities without being able to monitor their children's achievements and attendance during the teaching and learning process in progress. Notification for students with problems is done by sending a letter and sometimes the letter is not delivered.

Also, the assessment of the teacher is also still not computerized, so the guardians of students or students still have difficulty knowing the value during the teaching and learning process. Based on the above background, we need an information system that can facilitate teachers in absenteeism, provide assessments to students and facilitate student guardians in monitoring their children's academic activities.

II. THEORETICAL BASIS

A. Prototyping Method

The Prototyping Method is an iterative process in the development of systems where requirements are changed into working systems that are continuously improved through collaboration between users and analysts". They can build prototyping methods through several development tools to simplify the process and the following cycle prototype methods [7].

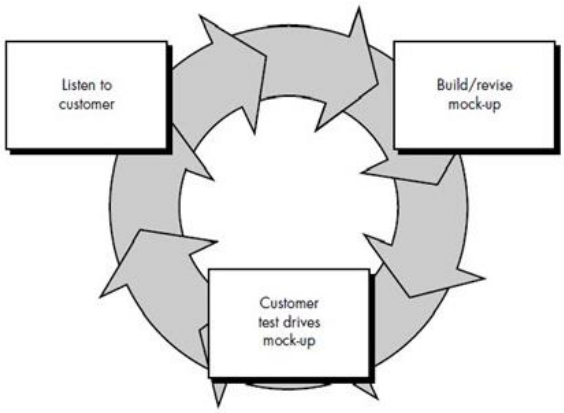

Fig. 1. The Prototype Method cycle [7].

The making of a prototype for system developers aims to collect information from users so that users can interact with the prototype models that are developed because prototypes describe the initial version of the system for the continuation of the actual larger system [1].

B. Application

I can interpret applications as a software program that runs on a particular system useful to assist various activities carried out by humans [2]. To understand the application is a program ready to use that is made to carry out a function for

users of application services and a target to be addressed can use the use of other applicationsa target to be addressed can use the use of other applications. According to the executive computer dictionary, the application has a meaning that is problem solving that uses one of the application's data processing techniques which refers to a desired or expected computation or the expected data processing [3]

C. System

The system is a network of procedures that are interconnected procedures, gathered together to carry out an activity or to complete a particular goal [4]. A sistem is a group of elements that are integrated with the common porpose of achieving an objective [5]. The system is a network of interrelated procedures, gathered together to carry out an activity or for a particular purpose [6].

III. RESEARCH METHODS

In this study, applying the prototype development method to design and implement system designs. To obtain maximum results, this study therefore emphasizes the needs analysis.

IV. RESULT AND DISCUSSION

A. Overview of the proposed system

The physical architecture of the system comprises three main parts, client, application server, and database server. I can see the working principle of the system as a whole in the following figure:

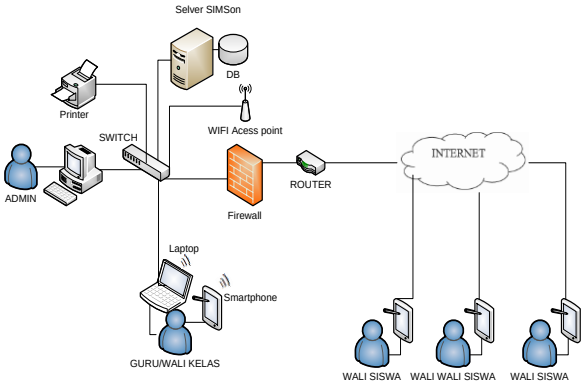

Fig. 2. Architecture of Student Monitoring Information Systems

B. Use Case Diagram

In the n use case of the design of student monitoring information systems, where there are 4 actors admin and homeroom teacher, subject teacher and student guardian. where 1. admin who has full rights in the activities of input, edit and delete, 2. homeroom teacher may see attendance data / grades, print attendance data / values and view and input messages or information for teachers or students, 3. subject teachers may input and view attendance data or grades, view incoming permits, view and input information either to the student, or two students, and 4. Guardians Students may view data on grades, attendance, information, input permits, and input responses incoming information.

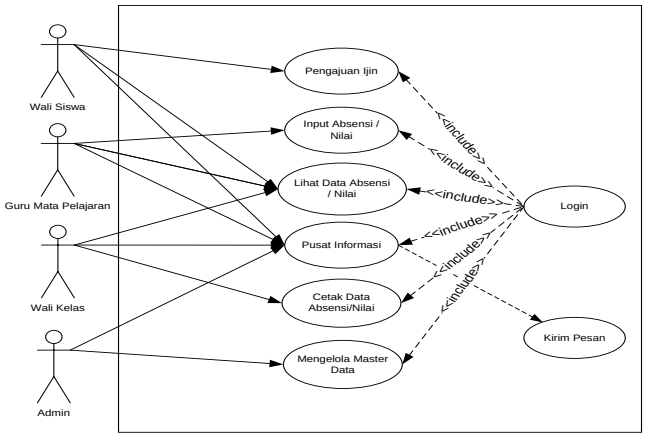

Fig. 3. Use Case Diagram Student Monitoring Information System

C. Class Diagram

After the use case diagram, the writer makes a class diagram aimed at a container that describes the structure of objects in the system formed from the relationships between classes.

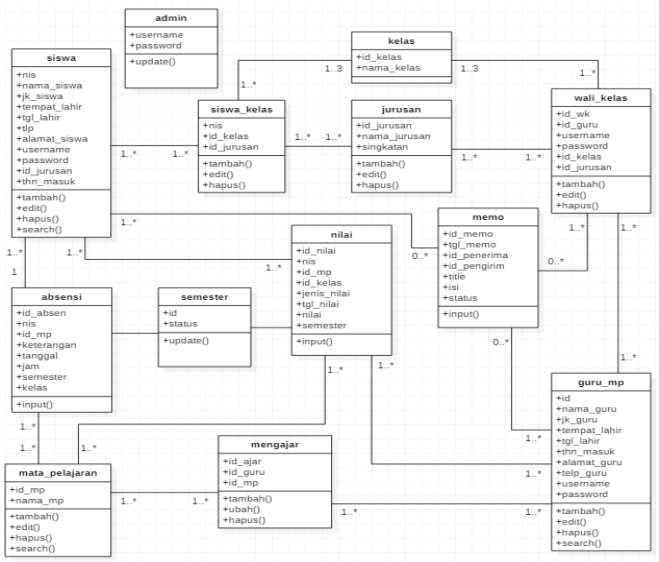

Fig. 4. Class diagram of Student Monitoring Information System

D. Implementation of the user interface

Implementation of the user interface is done with every display program that is built. The following is the implementation of the user interface application SIMSON (Online Student Monitoring Information System) created.

E. Main page of the program

This page is the first page that appears when opening the Simson application (Online Student Monitoring Information system), this page contains the Logo, the name of the school agency and a portal to log in as the guardian of students and the school (subject teacher, homeroom teacher and admin);

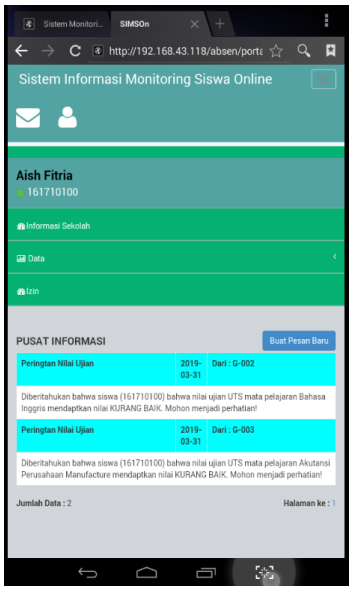

Fig. 5. Main page of the program

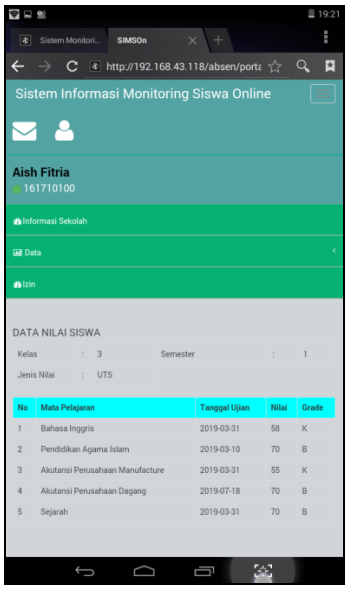

Fig. 7. Value Monitoring

F. Attendance Data Input Page

This student attendance page is the page that appears after the teacher fills in the attendance form, and clicks the show button, in this form the teacher can do student attendance, the data will be displayed in the default settings present, so the teacher can change the attendance status of students who are not present course, the following appearance of the user interface page design attendance (Student Attendance);

Fig. 6. Attendance Data Input Page

G. Value Monitoring

This value monitoring page is a page the Student Guardians can use that to see the values gottheir children can obtain that per subject based on the selected semester and class Display the implementation of the value monitoring page:

H. Print page Value data

This value data print page is a page that the teacher can use if he wants to print the value data that has been displayed. Display the implementation of the value data report:

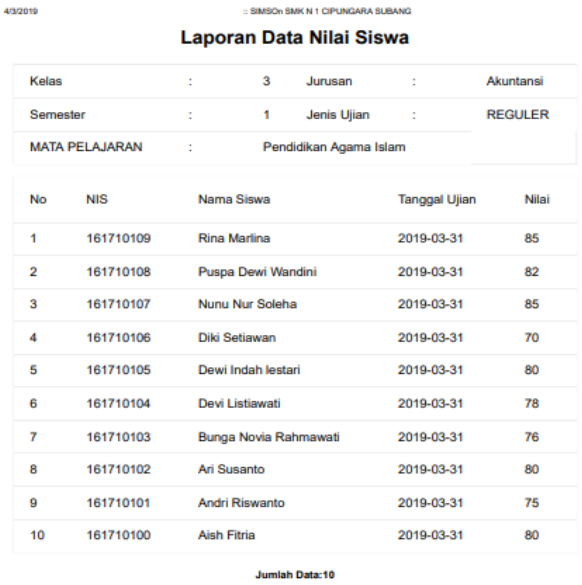

Fig. 8. Print page Value data

I. Attendance Data Print Page

Display the attendance report data:

4/3/2019 :: SIMSOn SMK N 1 CIPUNGARA SUBANG

Laporan Data Absensi Siswa

Kelas	:	3	Jurusan	:	Akuntansi
Semester	:	1			

Nis	Nama Siswa	Total	Hadir	Ijin	Sakit	Alpa
161710100	Aish Fitria	20	19	0	0	1
161710101	Andri Riswanto	20	20	0	0	0
161710102	Ari Susanto	20	19	0	0	1
161710103	Bunga Novia Rahmawati	20	18	1	1	0
161710104	Devi Listiawati	20	19	1	0	0
161710105	Dewi Indah lestari	20	19	1	0	0
161710106	Diki Setiawan	20	19	0	1	0
161710107	Nunu Nur Soleha	20	19	0	0	1
161710108	Puspa Dewi Wandini	20	20	0	0	0
161710109	Rina Marlina	20	19	0	1	0

Fig. 9. Attendance Data Print Page

CONCLUSION

Based on the results of the analysis conducted by the results of the design, realization, and testing of the system, several conclusions can be drawn, including:

The results of the system analysis that runs include attendance data, student grades, and notification of problematic student information to student guardians, processed to get a new system design that can overcome the problems expressed in the background.The results of the new system design are discussed in the form of a web-based and mobile student monitoring system that can manage student attendance data, grades and infringement information so that it can be accessed by student guardians computerized or mobile.

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