

UTILIZATION OF INFORMATION SYSTEMS IN WEB MOBILE-BASED SCHOOL FINANCIAL ADMINISTRATION MANAGEMENT CASE STUDY OF MA'ARIF 1 VOCATIONAL SCHOOL, KALIREJO

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Abstract

Teaching and learning activities in schools require costs, therefore funding needs to be managed properly so that available funds can be maximally utilized so that educational goals can be achieved. SMK Ma'arif 1 Kalirejo is a vocational school that has 802 students. The administrative management system at the school is still done manually so it has many risks. This research utilizes a web-based information system as a solution to the problems that occur. This research aims to create a web-based administrative information system at SMK Ma'arif 1 Kalirejo. This system is expected to provide accurate information about student data related to school financial income and expenses, making it easier for parents/guardians to obtain liability information and record payments quickly, easily, accurately, and systematically. The results of this study are the Mobile Web-Based Financial Administration Management System application developed with the Waterfall method using the PHP and MySQL programming languages, and designed with 8 menu views, namely 1. Administrator login page display, 2. Administrator home page display, 3. School profile page, 4. Student transactions, 5. Expense page, 6. Receipt page, 7. Payment name page, and 8. Payment type page. The existence of this information system is very helpful for officers in managing school financial administration to be more efficient.

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INTRODUCTION

School financial administration is documentation or collection of regularly collected data about the school's financial processing process. The data collected includes planning activities, use, reporting, recording, and accountability for managed funds.

An article entitled Financial Administration in Education by Nilda (2019) states that the study of education administration and management is a very determining potential and an inseparable part of education implementation activities[1]. Teaching and learning activities in schools require costs, therefore funding needs to be managed as well as possible so that available

funds can be utilized optimally so that educational goals can be achieved.

Financial management is the act of managing or administering finances which includes planning, implementation and recording, accountability, and financial reporting. Thus, school financial management is a series of activities managing school finances starting from planning, bookkeeping, learning, supervision, accountability, and reporting of school finances.

I. Goals of School Financial Management

1. Increase the effectiveness and efficiency of using school finances.

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2. Increase accountability and transparency of school finances.
3. Minimize misuse of school budgets.

II. Principles of school finance

1. Transparent principle
Contains the meaning that there must be clear transparency in managing school finances.
2. Principle of efficiency
The use of resources must match what is spent and what is produced.
3. Principle of Accountability
Every school's financial resource must be accounted for administratively and normatively (DEPDIKNAS, 2000)[2].

Dyah Ayu et al (2021), stated that the financial component is a production component that determines the process of carrying out teaching and learning activities in schools with other components, therefore all activities carried out by schools require good costs. The more efficient an education system, the smaller the amount of funds required to achieve educational goals. For this reason, if the school financial system is managed well it will increase the efficiency of the education administration[3].

There are many types of funding or financing in the education environment, namely investment, operational, and personal costs. Education units or schools need to know the sources of funds that will be used in preparing the school budget activity plan (RKAS). The types of school funding sources include funds from the government (BOS), funds from students' parents (KOMITE), funds from the community, and funds from alumni.

The School Committee is an independent institution consisting of parents/guardians of students, the school community, and community leaders who care about education. School Committees are regulated by Minister of Education and Culture Regulation Number 75 of 2016 concerning School Committees. The task of the School Committee is to provide considerations in determining and implementing educational policies, raising funds and other educational resources from the community, both individuals/organizations/business world /industrial world and other stakeholders

through creative and innovative efforts, supervising educational services in schools following provisions. statutory regulations, and following up on complaints, suggestions, criticism, and aspirations from students, parents/guardians, and the community as well as the results of the School Committee's observations of school work performance[4].

School committee finances are obtained based on the results of committee member meetings and determine the amount that must be paid by students in 1 year. In the committee member meeting, it is also explained that student payment receipts can be paid in monthly installments or paid at once by students and their parents (Kaleb, 2019). In general, school committee funds consist of fixed monthly funds as contribution money which must be paid by parents every month as long as their child is a student at the school, incidental funds which are charged to new students which are usually only once for three years, as well as voluntary funds which are usually offered to parents of certain students who are generous and willing to donate voluntarily without any strings attached[5].

The Indonesian government has issued regulations governing fees in schools through Minister of Education and Culture Regulation no. 44 of 2012 concerning Levies and Contributions for Education Fees in Basic Education Units. The regulations differentiate between levies, donations, education funding, and education costs[6].

The definition of levies in this regulation is the receipt of educational costs in the form of money and/or goods/services at the basic education unit originating directly from students or parents/guardians which are mandatory, binding, and the amount and period of collection are determined by the basic education unit. Meanwhile, the definition of donations is the receipt of educational costs in the form of money and/or goods/services provided by students, parents/guardians, individuals, or other institutions to basic education units which are voluntary, not coercive, not binding, and not determined by the education unit. based on both the amount and the period of granting. So, the difference is clear between Levies which are mandatory and binding, while Contributions are voluntary and not binding.

Levies are allowed as long as they comply with the provisions in Article 8 and levies are prohibited if they do not comply with Article 11 in Minister of Education and Culture Regulation No. 44/2012. The limits on fundraising that may be carried out by the School Committee are regulated in Minister of Education and Culture Regulation No. 75 of 2016 concerning School Committees. In Article 10 paragraph (2) raising funds and educational resources takes the form of assistance and/or donations, not levies. So, the assistance or donations raised by the School Committee are to support improving the quality of educational services in schools using the principle of cooperation following the function of the School Committee in providing support for personnel, facilities, and infrastructure as well as educational supervision. Educational assistance as referred to in Minister of Education and Culture Regulation no. 75/2016 is a gift in the form of money/goods/services by educational unit stakeholders other than students or their parents/guardians, provided that the parties agree.

Vocational School Ma'arif 1 Kalirejo which is a Vocational High School located at Jalan Jendral Sudirman No. 569 Kalirejo, Central Lampung Regency. In the 2022/2023 academic year, this school has 42 teachers and 802 students covering classes 10, 11, and 12 from 6 departments, namely Software Engineering (RPL), Multi Media (MM), Institutional Financial Accounting (AKL), Automation Office Management (OTKP), Automotive Light Vehicle Engineering (TKRO), and Motorcycle Business Engineering (TBSM).

The administrative management system at the school is still done manually, so it has many risks, such as damaged or lost proof of payment, repetitive bookkeeping or writing of data, accumulation of files or documents that require a lot of time to analyze, wasting time resulting in delays in making reports, calculation errors, and so on. Therefore, the solution to the current problem is to utilize an information system that can help facilitate the work of financial employees so that financial administration management in schools can be carried out more efficiently.

The mobile web is a program that is currently developing and can be said to be popular in the field of education because it makes it easier for institutions to provide

information. The mobile web is a system that can describe information from a school.

Organizations and educational institutions need information technology for school data processing activities that can present information quickly and accurately. Vigi Ayu Pradipta et al (2021) in an article entitled "Waterfall Method in School Administration Payment Information Systems", stated that computerized systems can produce faster and more precise information to help minimize errors. The system can speed up data management because the data is stored in a structured manner in a database that has an indexing system so that it is easy to search if needed, and the existence of a computerized data processing system will be more effective and efficient in terms of time and avoid data entry errors, especially financial payment data[7].

Wanda Kurniawan and Siti Nurmiati (2020) in their research entitled "Web-Based Administration and Payment Information System at SMK N 1 Ciomas Bogor", stated that the role of information systems in school payment administration is very helpful for students or parents because parents can access the payment process yourself online and it will be easier for the school to find payment history data and so making reports will be faster[8].

This research aims to create a web-based administrative information system at Smk Ma'arif 1 Kalirejo that can assist officers in managing school financial administration so that it becomes more efficient and makes it easier for parents/guardians to obtain information on obligations and payment records quickly and easily, accurately.

This research aims to create a web-based administrative information system at Smk Ma'arif 1 Kalirejo. This system is expected to improve the efficiency of financial staff performance because it can speed up the process of collecting school financial data, save operational costs, provide accurate information about student data related to school financial income and expenses, make it easier for parents/guardians to obtain liability information and record payments quickly, easily, accurately and systematically.

METHOD

In systems engineering and software engineering SDLC is the basic method of

various types of methodologies. SDLC (Software Development Life Cycle, or Systems Life Cycle) is the process of creating and modifying a system for developing software on a computer or information system. The SDLC concept forms a framework from planning to the development process. This SDLC method has developed into several models including the waterfall model, prototype model, interactive, spiral rapid application development (RAD), and so on (Titania, 2021)[9].

The method used in this research is the SDLC method with the Waterfall system development model. The use of the SDLC method in this research is to organize the process of developing research from the initial stage to completion. The SDLC method is chosen in this research because this method has steps that require system developers to focus on one step or one stage first, after completion, then move to the next step or stage so that it allows programmers to minimize errors and provide better system results because the system is analyzed and designed as a whole before being implemented. The advantage of using this method is that it can help minimize risks to the project such as in the scope of costs, management of resources, and better cooperation of all parties involved in software development.

The waterfall model is often called the classic life cycle. It is called a waterfall because the process flows in one direction "down" like a waterfall. This waterfall method must be carried out sequentially according to the existing stages. The following are the development stages in the waterfall method.:

1. Requirement gathering and analysis

Requirement gathering and analysis is collecting complete requirements for analysis and defining what needs must be achieved by the program. Information can be obtained through interviews, discussions, or surveys.

2. Design

The design stage is designing the software design as an estimate before creating the code. System designs can be created using Flowcharts, Mind Maps, or Entity Relationship Diagrams (ERD).

3. Implementation

Implementation is the stage where all designs that have previously been created are converted into program codes. The resulting code is still in the form of modules that must be combined at the next stage.

4. Integration & testing

At this stage, the modules that have been created are combined and tested to find out whether the software created is in accordance with its design and function or not.

5. Verification/deployment

At this stage, the user or client directly tests the system, whether the system is in accordance with the approved requirements or not.

6. Operation & maintenance

This stage is the final stage of the waterfall model. The system has been completed and carried out maintenance. Maintenance consists of correcting errors that were not found in the previous step.

The stages of planning, modeling, construction, deployment, and maintenance can be illustrated with the following diagram:

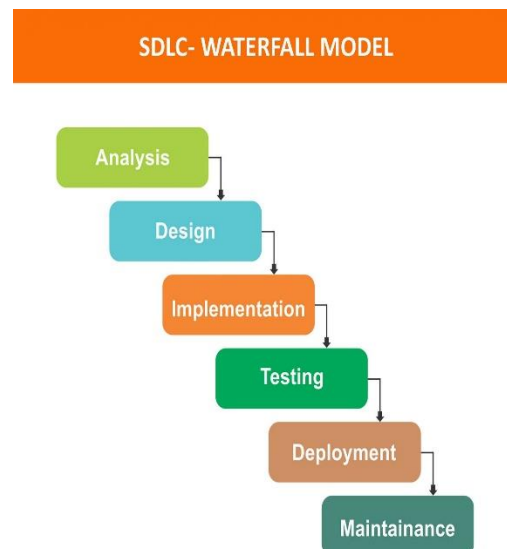


Figure 1. SDLC-Waterfall Model
RESULTS AND DISCUSSION

A mobile web is a website that can be accessed and viewed using a device such as a smartphone. The mobile web is flexible because

it can be accessed anywhere and at any time, making it easier for users to find the information they need just using a mobile device (Fachrie et al. 2020)[10].

A mobile web is a web or internet website page that can be used or accessed on a mobile device using PHP and Javascript language scripts. (Joni Karman dan Ahmad Zainul Arifin 2018).[11]

PHP is a server-side script programming language designed for web development that is processed on a server computer.

According to Widi Oetomo and Bambang Mahargiono (2020), PHP is a programming language that is widely used for handling, creating, and developing websites and is usually used in conjunction with HTML[12]. In addition, PHP is used to translate lines of program code into machine code that can be understood by a server-side computer that can be added to HTML (Supono dan Virdiandry Putratama, 2016)[13].

PHP has many features needed to build and develop more complete applications and can be used widely for web development using computers in conjunction with HTML or by various web systems.

Apart from using PHP and HTML programming languages, the design of this web-mobile-based administrative information system also uses MySQL (My Structured Query Language) as a database management system. The design of this system also uses Xampp, which is free software, that supports many operating systems, and is a compilation of several programs that function as a stand-alone server (localhost), is open source (free), and supports various systems operation, either Windows, Linux, or Mac OS.

Discussion

The application of the Waterfall model in the design and construction of a web-based administrative information system at Ma'arif 1 Vocational High School, Kalirejo, is described as follows:

1. Requirement gathering and analysis

Requirement gathering and analysis includes national and non-functional needs. In terms of functional requirements, the system created must be able to display data in the form of mobile web-based payment administration

information and can be controlled by management so that it can be accessed online, and the system created by researchers must follow what is expected by the Vocational School Ma'arif 1 Kalirejo educational institution, especially in managing the administration of required student payments and an attractive web display.

Non-functional requirements include new system requirements, requirements specifications involving hardware analysis, software analysis, and user analysis (Brain ware), used to create a mobile web-based website for the implementation of a financial administration information system at SMK Ma'arif 1 Kalirejo.

2. Design

The financial administration information system at SMK Ma'arif 1 Kalirejo is designed with several table menus, namely 1) the admin table which functions to store login data so that it can enter the web system., 2) the student table functions to store student registration data for making payments., 3) post table, this table is a table for making payment sub-sub/types of payment., 4) payment table functions as a storage of payment data in terms of monthly, yearly, etc., 5) department table functions to separate departmental student data at school., 6) the credit table is a table that contains data on students who have bills or who have not paid administrative payments., 7) the debit table is information on student payments based on time., 8) the class table contains class data information.

The relationship between these tables can be seen in the following ERD diagram:

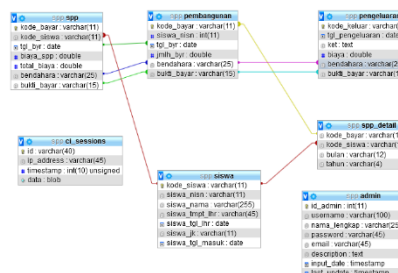


Figure 2. Entity Relationship Diagram

3. Implementation

The implementation stage is carried out by applying the design results in the previous section by creating source code so that it can be run by a computer. The following displays the results of the implementation of the financial administration information system at SMK Ma'arif 1 Kalirejo:

1. Display the Administrator Login Page

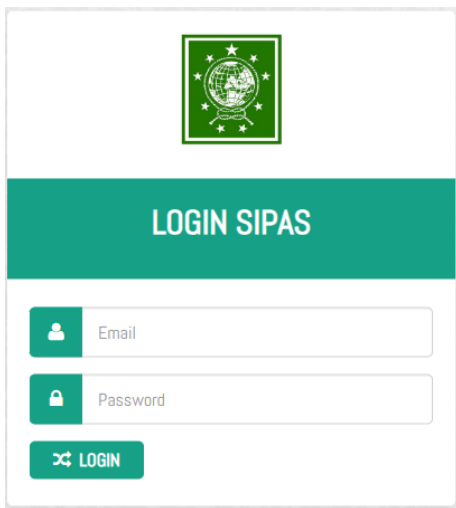


Figure 3. Administrator Login Page

2. Display the Administrator Home Page

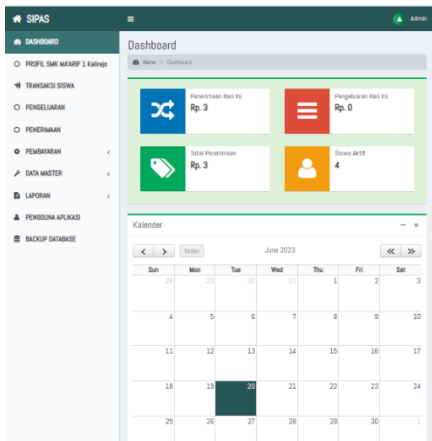


Figure 4. Administrator Home Page

3. The School Profile Page

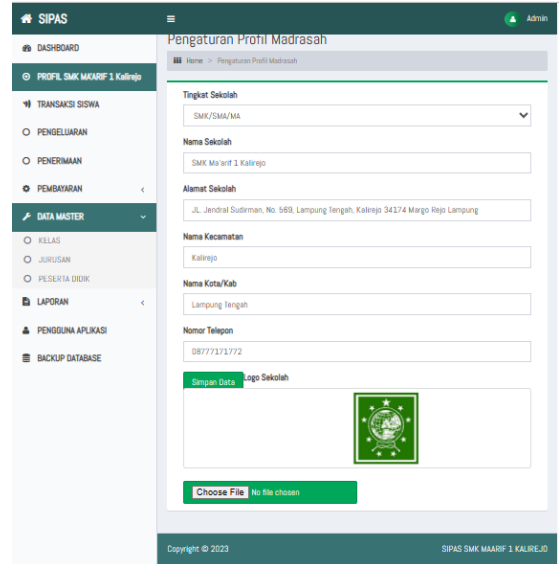


Figure 5. The School Profile Page

4. Display of Student Transactions

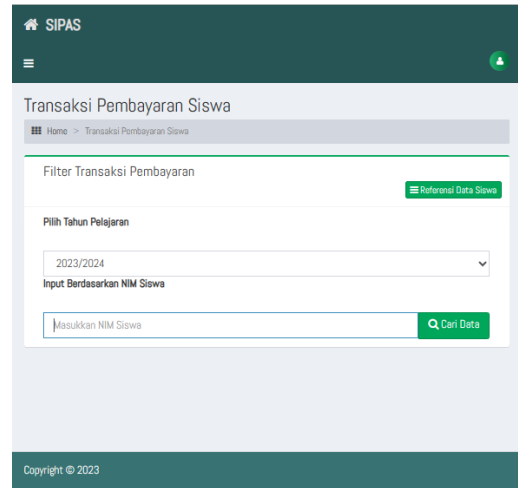


Figure 6. Student Transactions

5. Display the Expenditure Page

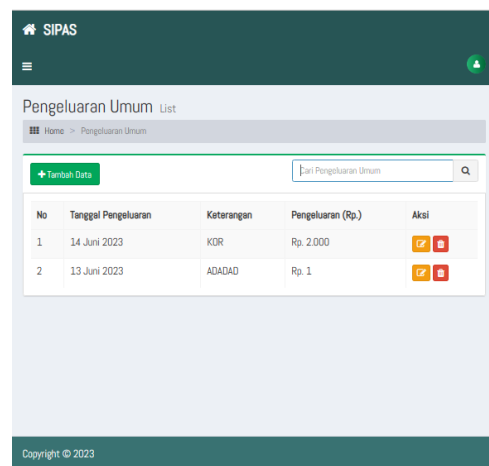


Figure 7. The Expenditure Page

6. Display the Acceptance Page

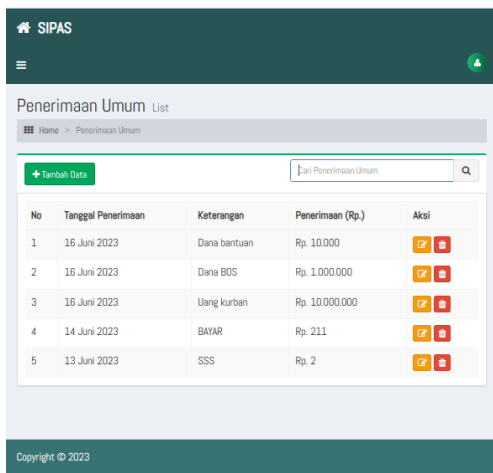


Figure 8. The Acceptance Page

7. Display the Payment Name Page

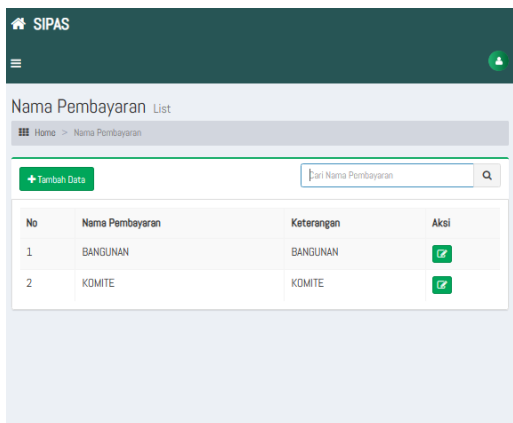


Figure 9. The Payment Name Page

8. Display the Payment Type Page

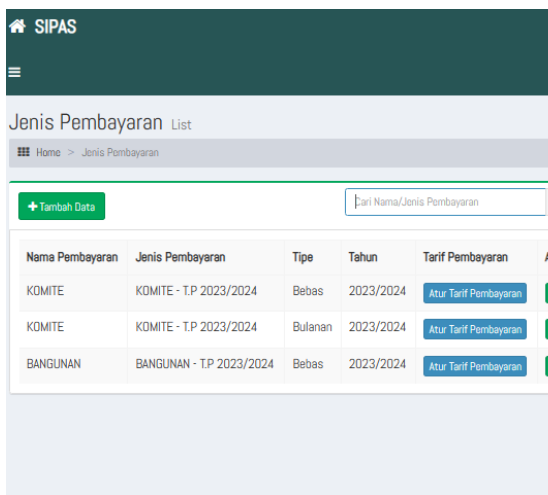


Figure 10. The Payment Type Page

CONCLUSION

Based on the results of analysis, design, and implementation, as well as testing of this system, the following conclusions can be drawn:

The Mobile Web-Based Vocational School Financial Administration Management System was built using the PHP and MySQL programming languages. Mobile Web-Based Financial Administration Management System Design has 8 menu displays, namely 1. Administrator login page display., 2. Administrator home page display., 3. School profile page., 4. Student transactions., 5. Expenditure page., 6. Receipt page., 7. Payment name page., and 8. Payment type page

This Mobile Web-Based Vocational High School financial administration management system can make it easier for treasurers and management to make detailed summary reports based on students and majors quickly and accurately and management can control the school's financial data in real-time.

SUGGESTION

The application of the Mobile Web-Based SMK Financial Administration Management System in this study, of course, has several other challenges to create perfection according to its needs. Improvements can be made in further system development research to be maximized. Here are some recommendations as suggestions for web maintenance and research development:

1. The need for experts such as staff or operators and technicians who can operate the web professionally, namely competent and responsible, and can overcome problems that may occur in using the system.
2. Conduct training for experts in the management of SMK financial administration systems
3. Gradually analyze performance to understand the effectiveness of the Mobile Web-based Vocational Financial Administration Management System.
4. Further development requires an Android-based version of the application so that it can be opened at any time in real-time.

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