Design of Web-based Report Card Processing Information System at MTS Negeri 4 Kebumen

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ABSTRACT

Keywords: Web-Based Report Card; PHP; MySQL.

Based on observations, the processing of report card scores in MTs N 4 Kebumen is still manual, so a lot of time and energy is needed to carry out the task. In addition, the distribution of report cards is also still conventional because parents must come to school to take them; for this reason, a report card application is needed that can improve services to students quickly in terms of distributing report card scores while making it easier for teachers to fill in report cards. The purpose of this study is to design a web-based value-processing application. In designing this application, the author uses the stages of SDLC development with the Waterfall process model. The design of this web-based report card processing information system can improve the quality of report card processing in MTs N 4 Kebumen. The programming language that the author uses is PHP, and uses a MySQL database. The authors used black box testing to test the system's feasibility. The final result of this research is creating a web-based MTs N 4 Kebumen report card application.

Introduction

MTs N 4 Kebumen has limited use of computers in the learning process and administrative activities. One of them is the student report card processing system. Report card scores are still considered one of the benchmarks for student success in school (Wahyuli & Irfan, 2021). Report cards are a collection of final grades from all subjects students take in a particular semester of the school year (Prabowo & Agustina, 2017). However, the report card processing at MTs N 4 Kebumen still uses conventional methods. Subject teachers assign student grades to homeroom teachers to generate report card scores using separate Excel data. So, there are often errors and delays in processing report cards. Students can only see grades at the end of the semester (Triatama et al., 2023).

MTs N 4 Kebumen, since 2022, has also begun to implement the latest curriculum being developed by the government, namely the independent curriculum. This curriculum significantly changes aspects of graduate competence (Jevri et al., 2023). The competence of graduates is determined by four aspects: aspects of social attitude competence, aspects

of spiritual attitude competence, aspects of knowledge competence, and aspects of skill competence. This adds new problems amid processing report card scores that are still conventional (Susanti et al., 2017).

From the existing problems, a solution is needed to facilitate the making of student report cards by designing a web-based report card processing information system in MTs N 4 Kebumen. Using a website-based report card processing application, users are expected to be easier to process student report card data and have a good level of effectiveness (Gusriana et al., 2022). The school has supported the design of this website-based information system. According to the school, this information system is handy because it makes it easier for teachers to process report card scores at the end of the semester. The school is improving its services with the increasing technology development today (Setyono, 2019).

Based on the description above, the author must design a web-based report card processing information system (Maudina et al., 2023). I will also solve the above problems by proposing a report card application with the theme "Design of a Web-Based Report Card Value Processing Information System in MTs N 4 Kebumen".

Research Methods

This research was conducted at MTs N 4 Kebumen, Purwosari Village RT 05 RW 06, Rowokele District, Kebumen Regency, Central Java Province. The research will be conducted from December 2023 to February 2024 (Wahidmurni, 2017). Processing student grades on MTs N 4 Kebumen is still manual. Namely, each subject teacher makes a report on student final grade data and submits it to the homeroom teacher. The homeroom teacher records student grade data in a report card book and gives it to students as report cards.
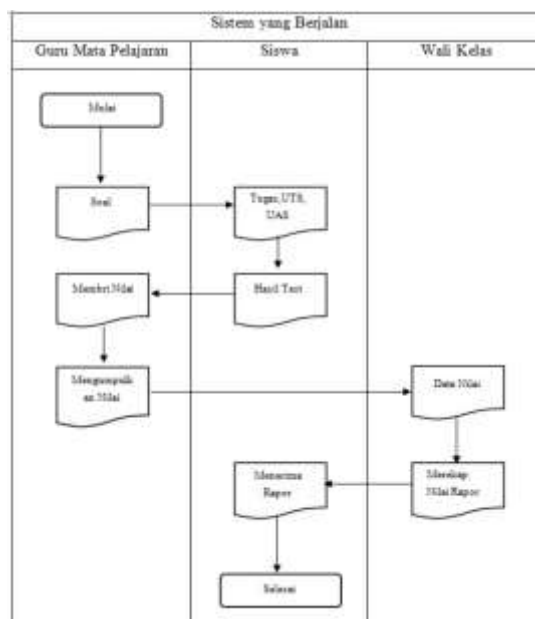

Figure 1 Running System

After analyzing the running system, the author designed a new one that can solve existing problems in MTs N 4 Kebumen. The following systems are proposed:
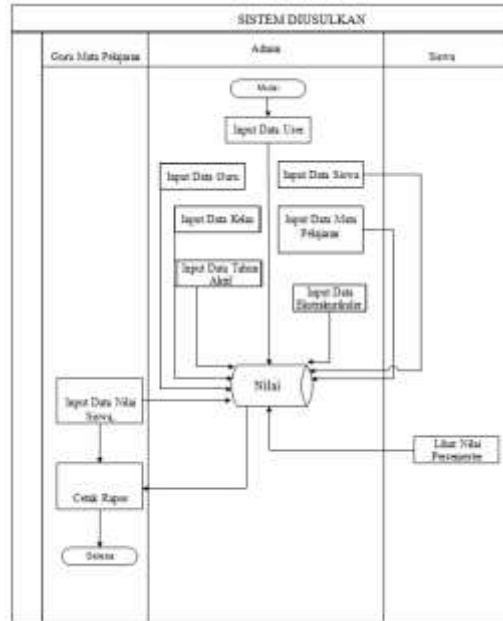

Figure 2 Proposed System

Data Collection Techniques

This study used several methods to collect data. The following methods carry out data collection:

1. Interview

An interview is a data collection technique conducted face-to-face and through direct question-and-answer between researchers and resource persons or resources. Interviews were conducted to collect the necessary data by meeting with the resource persons. Interview activities are carried out directly with teachers or homeroom teachers and the curriculum section at MTs N 4 Kebumen to obtain data on problems to be developed.

2. Observation

Observation is carried out to directly observe the system running or use it for report card processing. This method helps the needs analysis process gather information about what will facilitate users' work in accordance with the purpose of this study. This information is then used to determine software specifications.

3. Literature Study

The author conducts literature studies by reading and studying books, theses, and articles that support the topic to be discussed in the preparation of this thesis. In addition, the author also collects data from internet sites related to the author's thesis.

System Development Methods

The waterfall model, also known as the classic life cycle, implies a systematic and sequential approach to software development. It begins with the specification of user requirements and continues through the stages of planning, modeling, construction, and

delivery of the system/software to customers/users (deployment), ending with ongoing support for the resulting software (Pressman, 2012). Here are the stages of the waterfall model used.
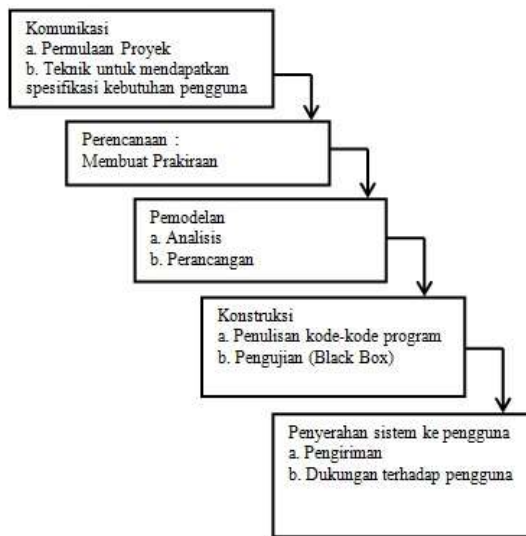
Figure 6
Metode Waterfall

Results and Discussion

Database Implementation

The database on this system uses MySQL. The total database tables are 19, and the database name is db nilai. Information System Processing of Student Value Data Curriculum 2013, where every data that becomes a record of each management process will be accommodated into the database created (Kurniawan, 2020).

Figure 7. Database Implementation

Table Relationships

Here is what a table relationship happens when 19 existing tables are linked:

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Figure 8. Table Relationships

Website Implementation

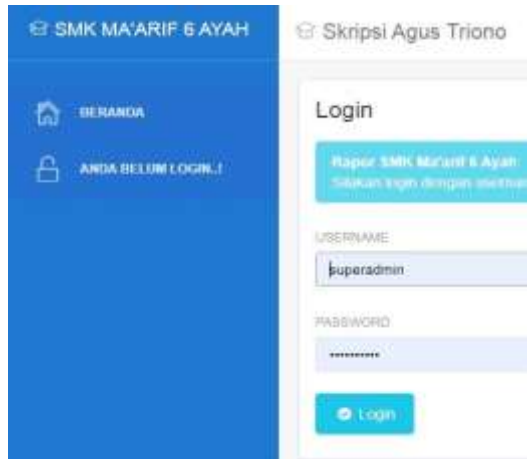1. User Interface Display

Figure 9. User Interface Display

2. Homeroom Login Page Display

Figure 10. Homeroom Login Page Display

3. Teacher Login Page Display

Figure 11. Teacher Login Page Display

4. Student Login Page Display

Figure 12. Student Login Page Display

Testing

Testing determines whether the system built is by the expected target. In this research testing, black-box testing was used. This method looks for errors in incorrect or missing functions, errors in interfaces, and errors in data structures or database access, reducing problems with input values. The design of the test list is as follows:

No	Fungsi yang diuji	Skenario	Hasil yang diharapkan	Ket.
1	Fungsi *login*	Guru memasukkan *username* dan *password*	Guru masuk ke halaman sistem, sistem menampilkan *dashboard* guru	Berhasil
2	Fungsi menu mapel diampuh	Masuke halaman guru kemudian pilih menu maple diampuh untuk menilahat mapel yang di ampuh	Tampil *form* menu yang diampuh dan melakukan	Berhasil
3	Fungsi tampil mapel diampuh guru	Guru masuk ke mapel yang di ampuh dan memilih nilai pengetahuan	Tampil *input* nilai yang akan diisikan	Berhasil
4	Fungsi tampil mapel diampuh guru	Guru masuk ke mapel yang di ampuh dan memilih tambah KD kompetensi dasar jika belum ada	Tampil set KD yaitu kode, dan nama	Berhasil
5	Fungsi tampil mapel diampuh guru	Guru masuk ke mapel yang di ampuh dan memilih nilai keterampilan	Tampil *input* nilai yang akan diisikan	Berhasil

Figure 13. Testing Results by Teachers

Based on user trials, calculation results have been obtained on testing aspects of functional suitability, that the report card processing information system produces a successful percentage value of 100% and an error rate of 0%. With this level of success, it can be concluded that the web-based report card processing information system is "Perfect" and feasible to use because it meets the standards of functional suitability. The lifetime of the system above is five years due to the growing needs of users; the system that has been built is no longer relevant, and users want a more modern system.

Conclusion

Based on the research results on the Design of a Web-Based Report Card Value Processing Information System in MTs N 4 Kebumen, it can be concluded that the built system uses the Waterfall system development method. Research carried out in building a Web-Based Report Card Processing Information System Design will manage data on PTS, PAS, extracurricular values, social attitude values, and spiritual attitude values to provide output information in the form of student report card scores. The design of the Web-Based Report Card Value Processing Information System at MTs N 4 Kebumen has been tested, focusing on functional suitability aspects with the calculation results included in the outstanding category; the products developed facilitate user work so that users work more effectively and efficiently.

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