Building a web-based Comprehensive School Portal System Using the CodeIgniter Framework

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ABSTRACT
With the various advantages and conveniences that the internet can provide, various fields of human activity have begun to use internet technology to help facilitate the activities they undertake. Likewise with the education sector in managing its administration. The web is one of the internet technologies that is widely used to facilitate monitoring of school activities because it can be accessed easily anywhere and at any time, from school facilities to school activities. Through the use of a web data system, problems involving redundancy of student information, insynchronization between existing information and slow production of information can be overcome. By designing an information system or web-based portal, you can increase performance effectiveness.

Keywords*: Information Portal System; School Information System; Website.*

INTRODUCTION

The development of data technology has changed the world to make things easier, and thanks to the support of PC technology, it has been proven that long and continuous working mechanisms have become efficient and effective. PCs play an important role in supporting the smooth running of work activities in learning information management methods using information base systems (database systems) which have so far supported the performance of many schools, and with very rapid technological advances, we need good quality human energy sources.

The web has become a medium for storing information via the internet because it is considered a fairly efficient medium in this regard. A website can be designed as neatly and simply as possible so that it makes it easier for users to store information and display information.

With the existence of this school portal application, it is hoped that it can take over the existing semi-PC processing of academic information and can help minimize errors and make it easier to process academic information at schools. Based on this background, the author concludes with the title " Building a web-based Comprehensive School Portal System Using the CodeIgniter Framework" which is expected to be able to provide better industrial information and be able to provide information and make work easier.

METHOD

The system development method used is Research and Development (R&D). The research method uses quantitative techniques, so the data processed remains objective. And the Development Methodology uses the Waterfall model.

Waterfall methodology is one system development method that can be used. This model is often referred to as the Classic Living Model or the Waterfall Model. Although this model first appeared in 1970 and is generally considered an older model, it is also the most widely used model in software development. This is called cascading because the transfer phases must wait until the previous phase completes and are executed sequentially from start to finish.
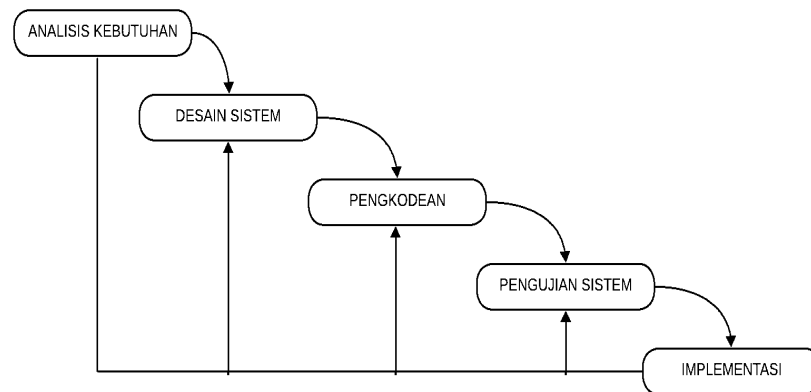
Figure 1. Waterfall Method The

- **Experimental Stages**
  - Needs Analysis
    This step will produce documents or user requirements data related to the user's desires when creating the system.
  - System Design
    This step aims to provide users with a general overview of the system to be built.
  - Coding
    This step is the step of writing program code which is the translation of the design into the PHP programming language and MySQL database.
  - System Testing
    This step is taken to find out how well this information system meets user needs. This test uses Black Box Testing.
  - Implementation
    At this stage the user evaluates whether the complete information system meets their needs or not.

RESEARCH INSTRUMENTS

This instrument is designed to support the collection of information needed to answer research questions or test hypotheses. Different types of research and scientific disciplines can use different instruments according to research needs and objectives. In this research, researchers used webqual 4.0 as a method that can be used to measure and analyze the quality of a website based on user perceptions or opinions.

FRIMEWORK PLAN

- **Utilize Case Graphs**
  Utilize Case Graph is an outline of the interaction between one or more on-screen characters and the framework to be built. There are 3 performing artists to be specific; admin, teachers, understudies and based on the comes about of the investigation of anticipated client needs from the School Entry Data Framework.
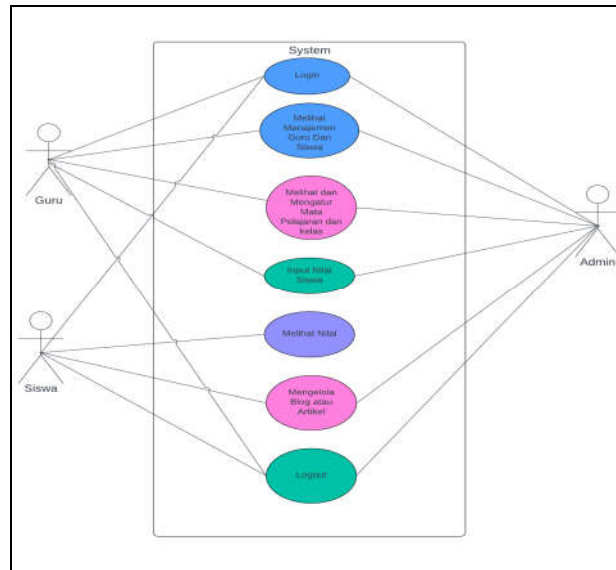
Figure 2. Use the Case Diagram System

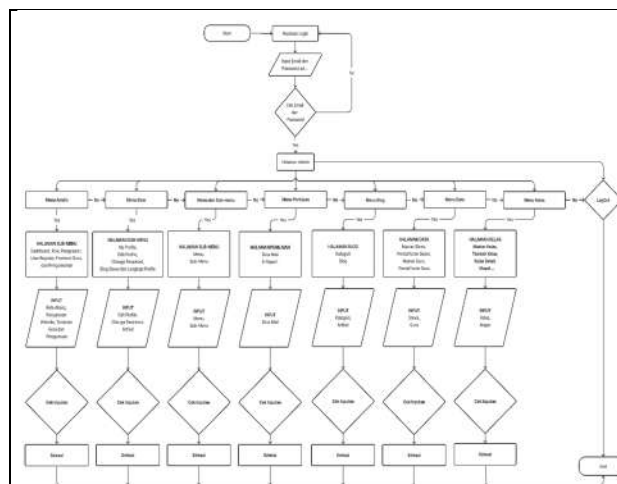- **Flowchart System**
  - Admin Flowchart

Figure 3. Admin Flowchart

The process starts with a login page where the user is asked to enter their email address and password. If the input does not match an administrator account, the system will deny access and return you to the login page. However, if the input matches an administrator account, the user will be directed to the administrator page. Here you can select various menus and submenus such as Settings, Review, Blog, Data, Courses, etc. Each menu item takes users to the corresponding page where they can enter the required information. When a user completes a process, the system checks the user's entries before declaring the process complete. Therefore, this flowchart clearly and efficiently guides users through the various features of the school management app.
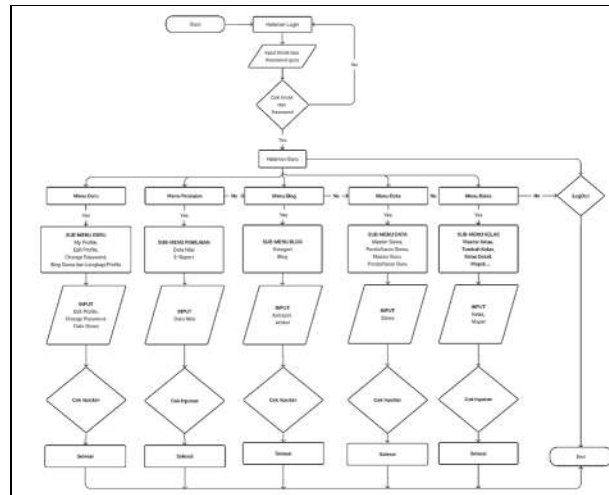
- Master Flowchart

Figure 4. Master Flowchart

The process starts with a login page where teachers are asked to enter their email address and password. If the information entered does not match the teacher's account, the system will deny access and return you to the login page. However, if the information entered is correct, the user will be directed to the teacher's page. Here you can select the teacher menu, which includes options such as assessments, blog, data, classes and more. Each menu option takes the user to the appropriate submenu to access features such as personal profile, settings, blog activity, etc. Apart from that, teachers can also manage student data, grades, blog categories, as well as class and subject information. When an operation is complete, the system validates its entries before declaring the operation complete.
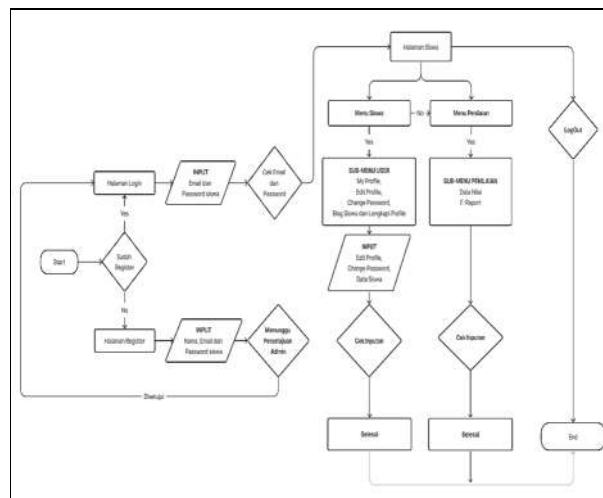
• Student Flowchart

Figure 5. Student Flowchart

The process begins with students logging in or registering. The system will validate the information entered before giving the user access to submenus containing features such as personal profiles, settings, and student blogs. If students have registered, they will be immediately directed to the registration page where they can fill in their profile and personal information. However, if students have not registered, they will be directed to the registration page where students will enter their full name, email address and password. After filling in the registration form, your request will await approval from the administrator. If approved by the administrator and personal information is entered to provide grades for administrators and teachers, students can access the student page, where they can access various menus such as grading and exit.

• **System Development**

The design for building this school portal system is as follows:

- Login
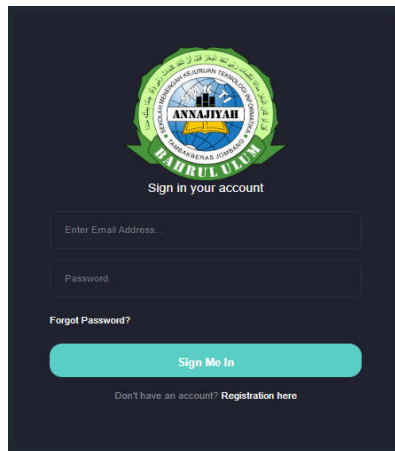 On the login page, users are required to enter their email and password to access it.

Figure 6. login Page

- Register
  On the registration page, users are required to fill in the name, email and password fields until they wait for admin approval so they can log in and access it.
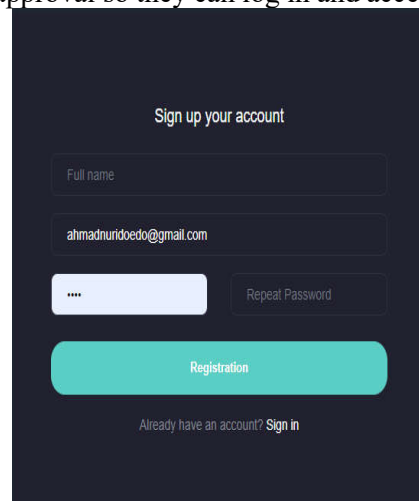

Figure 6. Registration page

- Admin Dashboard Page
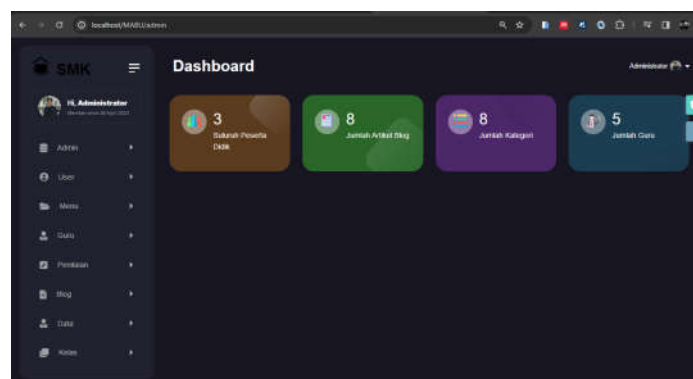 The admin dashboard will provide the total number of students, teachers, articles and article categories.

Figure 7. Dashboard page

- Profile Page

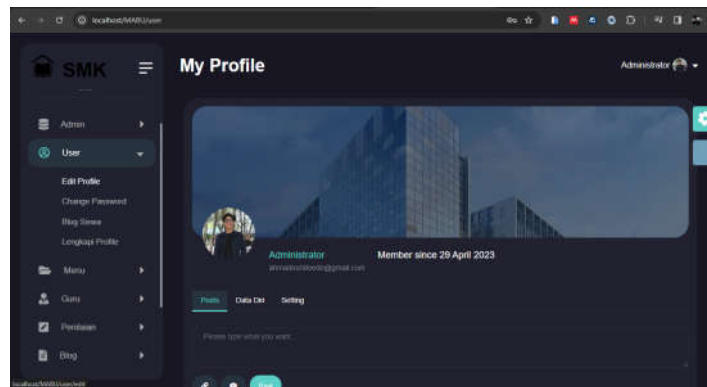on the profile Page will display all the information.

Figure 8. Profile page

- Menu and Sub-Menu Pages
  On the menu and sub-menu page the admin can add menus and sub-menus to the application.
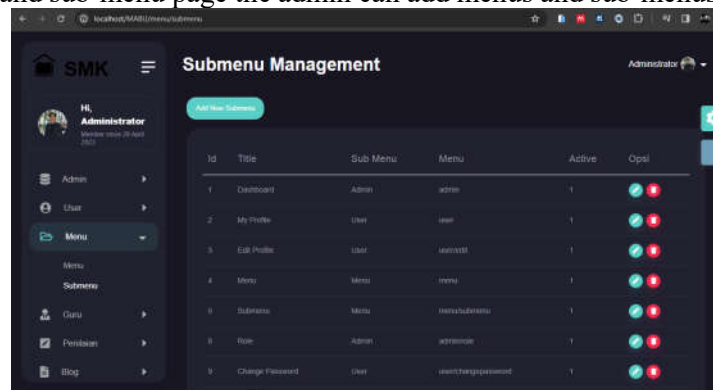

Figure 9. Menu and Sub-Menu page

- Assessment Menu Page
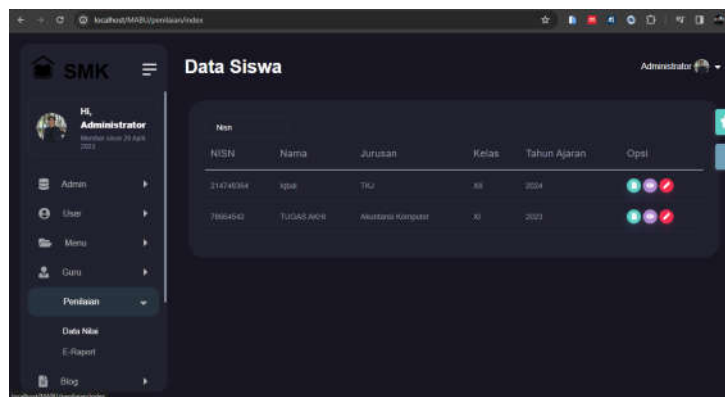 On the assessment page, admins and teachers can input the grades that will be filled in for students.

Figure 10. Assessment page

- Article Page
  On the article page, admins, teachers and users can upload their respective articles.
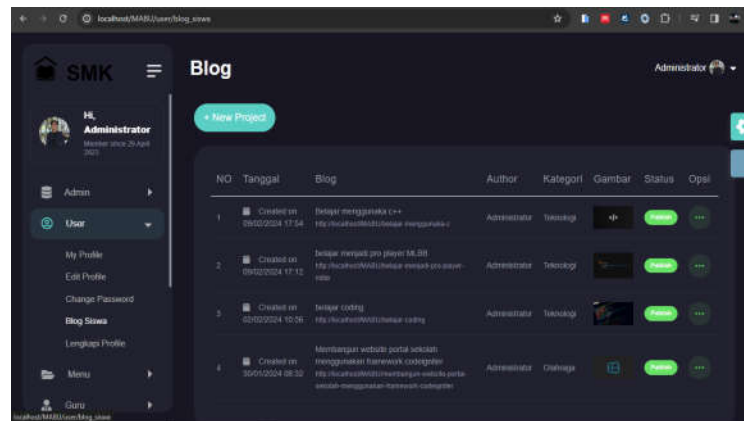
Figure 11. Article page

- Data Menu Page
  In the data menu, admin can add teachers and students.
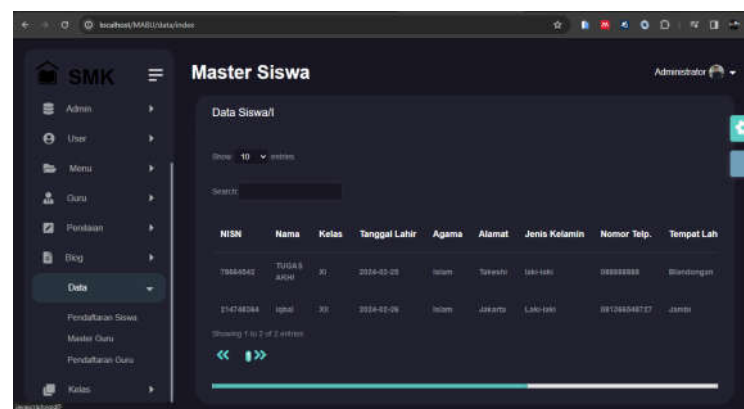
Figure 12. Article page

- Class Page
  On the class page, admins and teachers can add classes, majors and subjects.

Figure 13. Class page

RESULT AND DISCUSSION

Building a web-based Comprehensive School Portal System Using the CodeIgniter Framework, can be described as an effort that provides information on student data collection, teaching staff, and schedules for students.

Result

System testing carried out includes testing user quality, information quality, and interaction quality on the system.

- Validity Test Results

  The purpose of validity testing is to measure whether an indicator is valid. A questionnaire is considered valid if the calculated r-value of a questi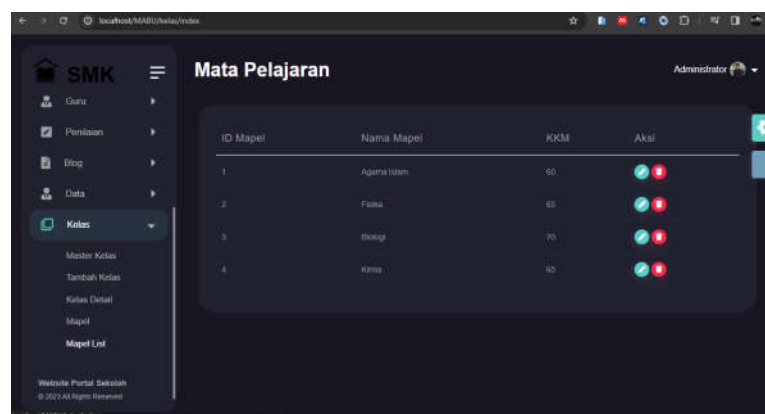on in the questionnaire is greater than or equal to the r-value in the table at a significance level of 5%. On the other hand, if the calculated r-value is significantly smaller than the table r-value at the 5% significance level, the value is invalid. Below are the results of a computational validity test with 10 respondents and her 15 questions.

Table 1 Usability

No.	Pertanyaan	r Hitung	r Tabel (N=10, df=8)	Valid/ Tidak Valid
1	Bisakah pengguna mempelajari cara menggunakan situs web dengan mudah?	0.65	0.632	Valid
2	Apakah interaksi pengguna dengan situs web jelas dan mudah dipahami?	0.70	0.632	Valid
3	Apakah pengguna merasa situs web mudah digunakan?	0.68	0.632	Valid
4	Apakah situs web ini menarik secara visual?	0.65	0.632	Valid
5	Apakah pengguna dapat menemukan informasi yang mereka cari dengan mudah?	0.75	0.632	Valid

Table 2 Information Quality

No.	Pertanyaan	r Hitung	r Tabel (N=10, df=8)	Valid/ Tidak Valid
1	Apakah website menyediakan informasi yang benar?	0.80	0.632	Valid
2	Apakah website menyediakan informasi yang dapat dipercaya?	0.82	0.632	Valid
3	Apakah website menyediakan informasi yang relevan?	0.79	0.632	Valid
4	Apakah website menyediakan informasi yang lengkap dan rinci?	0.65	0.632	Valid
5	Apakah website menyajikan informasi dalam format yang sesuai?	0.77	0.632	Valid

Table 3 Service Interaction / Interaction Quality

No.	Pertanyaan	r Hitung	r Tabel (N=10, df=8)	Valid/ Tidak Valid
1	Apakah website mempunyai reputasi yang baik?	0.74	0.632	Valid
2	Apakah website memberi rasa aman pada pengguna saat mengunduh?	0.76	0.632	Valid
3	Apakah situs web melindungi informasi pribadi pengguna?	0.78	0.632	Valid
4	Apakah situs web memberikan informasi yang relevan dengan kebutuhan pengguna?	0.81	0.632	Valid
5	Apakah Anda senang berinteraksi dengan website ini?	0.70	0.632	Valid

Discussion

This research uses a questionnaire to test the quality of the implementation of the web-based school portal information system at the Annajiyah Bahrul Ulum Tambakberas Jombang IT Vocational School. The results of the questionnaire showed that the majority answered positively to various aspects considered in the application form. There is a consistent trend in respondents' satisfaction with the ease of use, quality of information, and interaction services provided by the application.

CONCLUSIONS

Based on the comes about of the survey investigation and unwavering quality tests carried out, it can be concluded that the execution of the web-based school entrance data framework at Annajiyah

Bahrul Ulum Tambakberas Jombang IT Professional School is quality and reasonable for utilize. However, visual design improvements may be needed to improve the overall user experience. Further research on samples with larger respondents and more detailed data collection methods will hopefully provide a more comprehensive understanding of user perceptions of this application.

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