

# Design and Construction of a Website-Based Information System on the Potential of Cermo Village using the Rad Method

Arthur Ashley Christy Ong

Universitas Boyolali  
[bloke8no1@gmail.com](mailto:bloke8no1@gmail.com)

---

## Abstract

Information Systems are a collection of interconnected components that work together to collect, process, store, and distribute data. In this context, Cermo Village has a tourist spot called Wisata Taruloyo. In addition, Cermo Village also produces several bamboo woven products in various forms. In this case, there is a problem in the promotion sector, especially in the tourism sector of Cermo Village. The lack of public knowledge about Wisata Taruloyo in Cermo Village results in fewer visitors than expected, and the results are less than optimal. To address this problem, an information system for Cermo Village's potential was created and implemented in the form of a website, which can be accessed online using a browser. The development method used is Rapid Application Development (RAD). With the Cermo Village potential information system, it is hoped that the village's potential can be maximized.

**Keywords:** Information system, Village potential, Website, RAD, Cermo Village

---

## 1. Introduction

Boyolali Regency is a regency known as the "Milk City" and is home to a variety of tourist destinations. Its natural beauty is the main attraction. Besides its natural charm, Boyolali Regency is also rich in modern water tourism, even becoming a center for water recreation. With relaxing spots and growing recreational facilities, Boyolali Regency offers a complete holiday experience for visitors. Taruloyo Tourism is a unique water recreation destination located in Cermo Village, Boyolali Regency. More than just an ordinary swimming pool, Taruloyo offers swimming and relaxing experiences with a touch of nature and culture. The swimming pool is designed to blend harmoniously with its surroundings. In addition to having tourist attractions, Cermo Village also has crafts made from bamboo weaving, commonly used for household items. These items are made using bamboo weaving, resulting in natural products. The implementation of the current try out is carried out by educational organizers by providing additional class hours after school to deliver extra material that will be tested. In addition, there is also a simulation of the Computer-Based National Examination (UNBK) which is conducted two to three times leading up to the national exam. The try out simulation is held in each school according to a predetermined schedule.

In view of this trend, we intend to build a system that can assist schools in conducting CBT exams that can be used for daily tests. This way, students will become accustomed to the CBT examination process when they face the National Final Examination (UAN) and the Semester Final Examination (UAS) in the future. Additionally, implementing CBT exams will make it easier for teachers in the process of grading exam results. In the initial stage of the research, the design of the intended system focuses on designing the exam application interface, which is expected to assist and not complicate students in taking computer-based tests.

Although Cermo Village has interesting potential, like Taruloyo Tourism which offers a swimming pool with a natural and cultural vibe, and its natural woven crafts, this potential hasn't been fully utilized. The problem right now is the lack of structured and centralized promotion and publicity about the existence and uniqueness of these potentials. As a result, these tourist spots and crafts are not well known by people outside the village or the Boyolali Regency area, which directly affects the low number of tourists visiting. Based on this situation, the purpose of creating the Cermo Village Potential information system is as a strategic solution with the main function of digitally and integratively promoting all village tourism potentials. It is expected that this can increase tourist visits and boost the local economy for the people of Cermo Village.

## 2. Theoretical Foundations

### 2.1 Information System

Information systems are used to display information data through various techniques for grouping and processing media data in the form of text, photos, videos, sound, and a combination of various media that become information [1].

## **2.2 Laragon**

Laragon works by creating servers to run websites by ensuring that APIs and databases function as desired.[2]

## **2.3 Website**

A website contains a display of a collection of data information and is a combination of all of it which is displayed via the internet network and stored on a hosting server so that it can be accessed by digital users as long as there is a connection to the internet network.[3]

## **2.4 RAD**

RAD method website focuses on speed in creating website-based information systems using fast steps.[4]

## **2.5 PHP**

PHP is a computer programming language that is useful for creating and developing websites automatically by displaying results on the site via a browser.[5]

## **2.6 Blackbox**

The Black Box method is used to test each function in the system to see whether it is functioning as it should, without needing to understand the internal code structure of the system.[6]

# **3. Research Method**

A research method is a model used in conducting research. In this study, the researcher used a qualitative method with interviews to obtain and collect information and data.

## **3.1 Research Method**

The method chosen in this research is qualitative using the Miles and Huberman model. The application of Miles and Huberman involves conducting interviews with the village head or related community figures. It also includes collecting data documents, summarizing the interview results into key points of main potentials such as village profile data, tourism potential data, and village products. These potentials are then grouped into categories of village profile, tourism potential, and products in a database, determining which potentials should be highlighted on the website page.

## **3.2 Data Search**

The research materials consist of raw data needed to be entered into the information system. The materials used in this study consisted of data provided by the Cermo Village Office or other parties involved in the research. These data include village profiles, including the village's vision and mission, and a village description. They also include photos of potential marketable village opportunities.

## **3.3 Research Work Procedures**

### **1. Requirements Planning**

This stage focuses on determining the system and gathering basic requirements through discussions between students and village officials regarding the system to be created. Data collection through interviews, such as those used to obtain village profiles, is collected. The resulting raw data is used to create the Cermo Village Potential Information System. The data obtained consists of the village profile and data on village potential.

### **2. RAD Design**

This stage is the system design phase. During this stage, students create an initial design for the Cermo Village Potential Information System website. The village office provides corrections and guidance for any errors in the system design, which are then corrected until it meets the Cermo Village Office's expectations. The resulting design is a draft of the website.

### **3. Implementation**

In this phase, students code the website to create the Cermo Village Potential Information System website. The system is then tested live to ensure it functions and is error-free. The system is functional and meets the village's expectations.

## **3.4 System Testing Methods**

Test results for the Cermo Village potential web system using blackbox testing methods. The results demonstrate that all the functional features developed are functional and meet established requirements. Testing was conducted by examining each key function, such as recording village profile data and Cermo Village potential data, as well as real-time monitoring.

# **4. Use Case Design**

In this model, each use case represents a main function provided by the website, such as managing commodity data, mapping potential

locations, and even presenting village profiles.

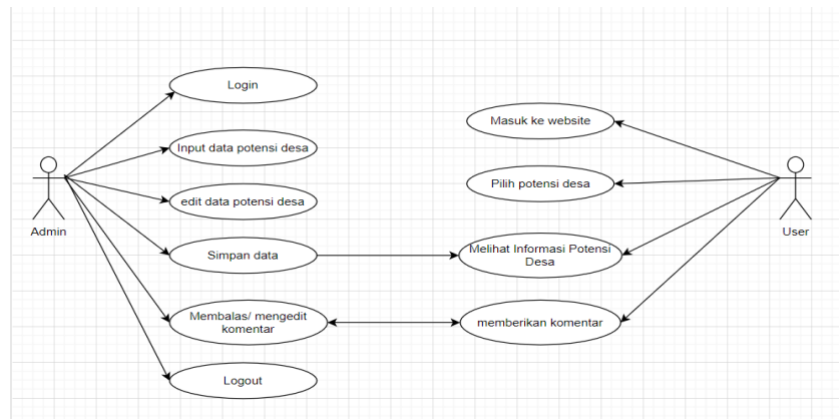


Fig. 1 Use Case System

Figure above is a use case diagram of the information system for Cermo Village's potential. You can see the admin logging in, then filling in or editing the village potential data.

## 5. Implementation

Explanation of the results that have been produced from the research conducted in Cermo Village. The research results include the website of the Cermo Village potential information system.

### 5.1 System home page

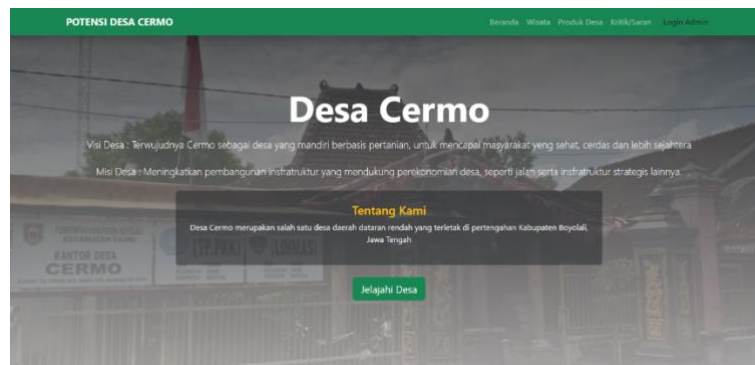


Fig. 2 System home page

Figure above the homepage is the main view that consists of several menu sections to access. On the Cermo Village potential information system page, there is a brief explanation about the village's vision and mission as well as a short description of the village. There are several menus such as the home menu, tourism menu, village products menu, feedback/suggestions menu, and a menu for admin login.

### 5.2 Admin login page

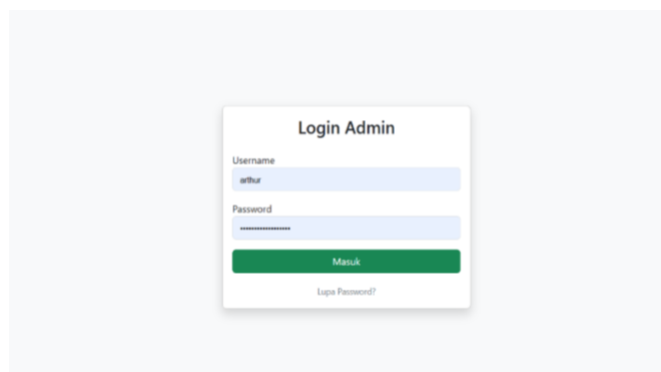


Fig. 3 Admin login page

Figure above the login page works as an admin sign-in check to access and manage the data inside. The login page contains a view for entering the username and password for admins who want to access the admin part of the website.

### 5.3 Admin webpage for inputting village potential

Fig. 4 Admin webpage for inputting village potential

Figure above the admin website page is a special site for admins to manage and access data displayed in the Cermo Village potential information system. The admin page includes menu options to input or edit data about the village profile, village potential which consists of tourism potential and MSME products, as well as an admin menu to reply to, delete, or edit messages written by users. Admins can also view and monitor data that has been entered into the system.

### 5.4 Admin page for editing tourism potential data

Fig. 5 Admin page for editing tourism potential data

Figure above The admin page for editing village tourism potential data contains a page to edit the existing village tourism potential data on the village potential website. The admin can make changes to the description, images, or location if there are errors after the data is entered. Changes will be updated automatically on the visitor website.

### 5.5 Admin page for editing MSME product data

Fig. 6 Admin page for editing MSME product data

Figure above the admin page for editing village product data contains a page to edit the village MSME product data that already exists on the village potential website. The admin can make changes to the product name, image, phone number, and price if there are mistakes after the data has been entered. Changes will be updated directly on the visitor website.

## 5.6 Admin page for editing the village profile

Fig. 7 Admin page for editing the village profile

Figure above the admin page for editing the village profile functions to edit data such as the village description and the website page background on the Cermo Village potential information system. The admin can make changes to the data or enter new data that can later be directly displayed on the visitor's website.

## 5.7 Admin page to edit feedback or suggestions

Fig. 8 Admin page to edit feedback or suggestions

Figure above the admin page for editing feedback or suggestions on the admin website is used to delete comments from visitors or reply to messages typed by visitors.

## 5.8 Tourism potential page

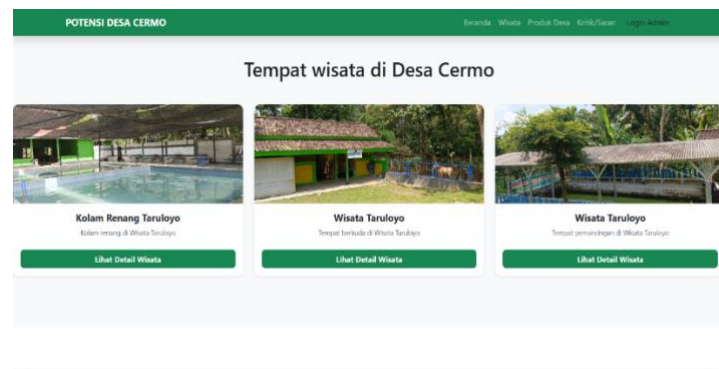


Fig. 9 Tourism potential page

Figure above tourist potential page is a page that displays tourist spots in Cermo Village. The main section of the tourist potential page features places that are considered tourism potential in Cermo Village, such as Taruloyo Tourism located in Taruloyo Hamlet, Cermo Village. Visitors can view them and, if they want to learn more about the tourist spots, they can click the 'view tourist details' button.

## 5.9 Tourism continuation page

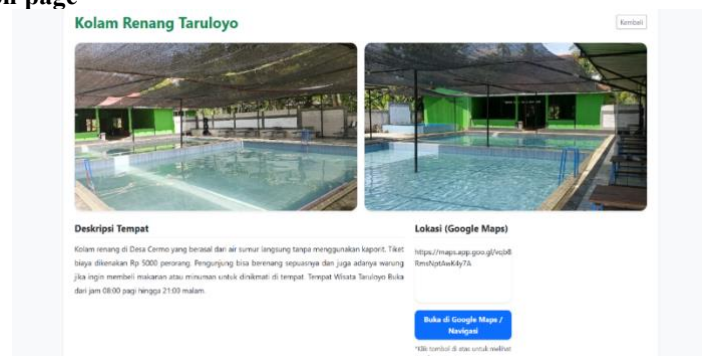


Fig. 10 Tourism continuation page

Figure above the extended tourism page contains a continuation of the tourist attractions listed in the tourism potential menu on the visitor's website. The extended page provides more detailed explanations about the tourist spots, complete with clearer images of the places and detailed descriptions. There is also a navigation button that, when clicked, connects to the Google Maps app to show the exact location of the tourist spot.

### 5.10 UMKM Product Potential Page

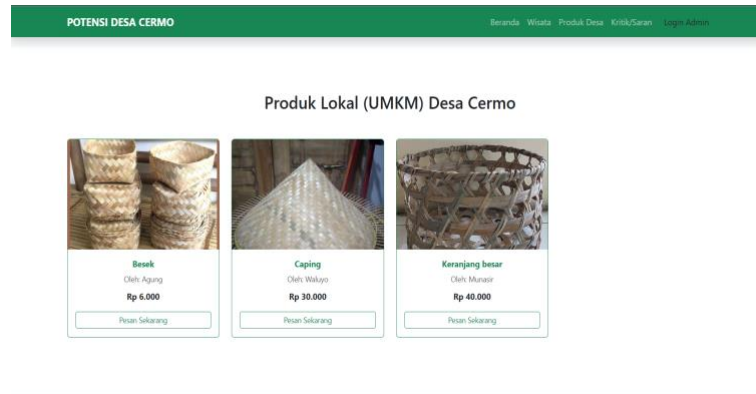


Fig. 11 UMKM Product Potential Page

Figure above the crafts product potential page is a page that showcases products made by the residents of Cermo Village. The product section contains the results of products made in Cermo Village. They are made from bamboo weaving, such as baskets, hats, and woven containers. These products are made from woven bamboo and then sold by the local residents.

### 5.11 Feedback or suggestion page

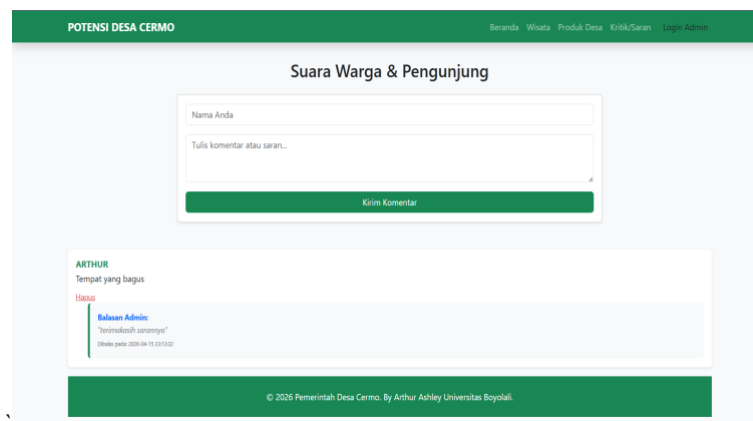


Fig. 12 Feedback or suggestion page

Figure above the feedback or suggestion page is a page that shows comments from visitors who access the Cermo Village Potential System website. Visitors can send comments or personal opinions directly, which will then be displayed on the feedback or suggestion page on the visitor's website.

## 6. System Testing

Based on the results of testing the Cermo Village potential information system using the blackbox method, it was found that this system matches the function specifications that were created. The test results show that most of the main features, such as recording village profile and potential data, as well as providing this information, can already be displayed and run as expected.

## 7. Conclusion

Based on all the stages of research, design, development, and testing carried out on the Cermo Village potential information system website using the Rapid Application Development (RAD) method, the conclusions are as follows:

1. The Cermo Village potential website is digitally effective in promoting the potential in Cermo Village.
2. The Cermo Village potential website also makes it easier to present information about the village's potential, especially Taruloyo Tourism and bamboo craft products, for wider access.

## References

- [1.] Afandi, I. R., Pratiwi, N., Rizki, A. A., Irva, M., & Fathan Aulia, M. (2022). PERANCANGAN SISTEM INFORMASI PELAYANAN PEMBUATAN SURAT ONLINE DI DESA CIANGSANA BEBASIS WEBSITE. In *Jurnal Mahasiswa Teknik Informatika* (Vol. 6, Number 2).
- [2.] Kausar Al Farihin Zidniy, & Suhirman. (2024). *Rancang Bangun Aplikasi Rute Pendakian Gunung Laragon*.
- [3.] Warasto, D. (2023). *Sistem Informasi Pelayanan Masyarakat Kelurahan Pasar Kliwon-Surakarta dengan PHP dan MySQL*. 22(1). <https://AdminLTE.io/>
- [4.] Nugroho, D. D., Haq, E. S., Umam, K., Bisnis, J., Informatika, D., Banyuwangi, N., Banyuwangi, K., & Timur Indonesia, J. (2024). Rancang Bangun Website Promosi Ekonomi Kreatif Menggunakan Metode RAD Design and Development of a Creative Economy Promotion Website Using the RAD Method. In *JIKOM: Jurnal Informatika dan Komputer* (Vol. 15, Number 2).
- [5.] Satria, A., Ramadhani, F., & Sari, I. P. (2023). Rancang Bangun Sistem Informasi Penerimaan Peserta Didik Baru (PPDB) Sekolah Menengah Kejuruan Telkom 2 Medan Menggunakan Codeigniter. *Wahana Jurnal Pengabdian Kepada Masyarakat*, 2(1), 23–31. <https://doi.org/10.56211/wahana.v2i1.285>
- [6.] Basvira, B. I., Prapanca, A., & Kunci-, K. (2025). Rancang Bangun Sistem Reservasi Hotel Online Untuk Mendukung Digitalisasi Layanan Hotel X. *Journal of Informatics and Computer Science*, 07.