




## Online Assistance Data Collection Information System in Janggalan Village (Si Pandul Janggalan)

Najmuddin Firdaus<sup>1\*</sup>, Pratomo Setiaji<sup>2</sup>, Wiwit Agus Triyanto<sup>3</sup>

<sup>1,2,3</sup>Information Systems Study Program, Faculty of Engineering, Universitas Muria Kudus, Kudus 59327, Indonesia

Corresponding Author Email: [njfirda@gmail.com](mailto:njfirda@gmail.com)

Copyright: ©2025 The author(s). This article is published and is licensed under Information Systems Department Faculty of Engineering Universitas Muria Kudus (<https://jurnal.umk.ac.id/index.php/insytech>).

<https://doi.org/10.24176/insytech.v1i2.14679>

### ABSTRACT

**Received:** January 22, 2025

**Revised:** January 25, 2025

**Accepted:** January 27, 2025

**Available online:** February 01, 2025

#### **Keywords:**

*Si Pandul Janggalan, Data Collection on Aid Recipients*

*Janggalan sub-district, which is located in Kudus district, has implemented digitalization in recording population data. However, the data collection system for aid recipients still uses manual methods, which carries the risk of losing documents, input errors, and delays in accessing information. The Head of Welfare Section has an important role in managing various forms of assistance, such as PKH, BPNT, BST, KIP and KIS, but the conventional recording system that is still used today not only slows down the administration process, but also makes integration with other systems difficult. In practice, the distribution of social assistance at the village level involves many stages, starting from verifying recipient data by the village government, to coordinating with related institutions such as banks and post offices, in order to distribute aid on target. Furthermore, notifications are made through field officers so that the public knows the schedule and mechanism for distributing aid. This system aims to ensure that assistance is received by families who comply with the criteria for each type of assistance that has been determined..*

## 1. INTRODUCTION

Janggalan Village, located in Kudus Regency, has adopted digitalization in various administrative sectors, particularly in citizen data recording, which is now integrated into the national system. However, the process of recording and distributing social assistance remains manual, leading to inefficiencies such as delays in data entry, verification errors, and a high risk of data loss due to the lack of a structured backup system.

Social assistance programs at the village level include the Family Hope Program (PKH), Non-Cash Food Assistance (BPNT), Cash Social Assistance (BST), the Smart Indonesia Card (KIP), and the National Health Insurance (KIS). These programs are designed to support low-income families by providing basic necessities, education support, and healthcare services. However, manual data management creates challenges in ensuring aid reaches the intended beneficiaries accurately and promptly. Common issues include duplicate entries, delays in aid distribution, and inefficiencies in tracking recipient eligibility.

Research by Rahmadani (2019) highlights that implementing an information system in aid distribution significantly enhances administrative efficiency and reduces data entry errors. Meanwhile, Karmila (2018) emphasizes that digital-based systems expedite access to information and improve transparency in aid distribution, addressing one of the major shortcomings of conventional methods. Pratama & Effiyaldi (2018) further indicate that reliance on traditional

manual systems in several rural areas often leads to data mismanagement, making retrieval difficult during monitoring and evaluation.

Recent studies have reinforced the need for digital transformation in social assistance management. Anggriani et al. (2022) found that web-based information systems integrated with SMS notifications improve data accuracy and expedite information dissemination to beneficiaries. Similarly, Khairudin & Mujiastuti (2023) developed an integrated web-based aid management system, featuring automated validation to enhance recipient verification. Wardani (2019) proposed a web-based system for managing social assistance data more effectively, reducing the likelihood of data manipulation and expediting verification and distribution processes.

In response to these challenges, this study proposes the development of the Online Assistance Data Recording Information System in Janggalan Village (SI PANDUL JANGGALAN). This system is designed to replace the existing manual process with a digital platform that is more efficient, accurate, and accessible in real-time. By implementing this system, aid distribution is expected to become more transparent and systematic, ensuring that assistance is directed to the rightful recipients without delays. Additionally, the system will incorporate tracking features, allowing village officials to monitor aid distribution progress and validate recipient data effectively, reducing administrative bottlenecks and enhancing accountability in social assistance programs.

## 2. RESEARCH METHODOLOGY

The research was carried out to analyze and identify ongoing problems at the research location using observation and interview methods with village staff and local residents.

### 2.1 Data Collection Methods

In order to obtain accurate, relevant and reliable data, the author carried out data collection in a structured and systematic manner. The following are several data collection methods used by the author:

#### 1) Interview

Collecting data using a face-to-face method and conducting direct questions and answers with divisions that are related to the welfare of residents and the distribution of aid to residents.

#### 2) Observation Method

The data collection method is through observation and recording of symptoms or events investigated at the research object directly for the purpose of collecting data from the Janggalan sub-district by the Head of Welfare Section.

#### 3) Literature Studies

An activity to collect information that is relevant to the topic or problem that is the object of research. This information can be obtained from books, scientific papers, theses, dissertations, encyclopedias, the internet, and other sources.

### 2.2 System Development Methods

To facilitate the development of the Online Assistance Data Collection Information System In Janggalan Village (Si Pandul Janggalan), the author utilizes the System Development Life Cycle (SDLC) as the development method. SDLC is a cycle used in the creation or development of information systems aimed at solving problems effectively. According to Prof. Dr. Sri Mulyani, AK., CA (2017), SDLC is a logical process used by a system analyst to develop an information system, involving requirements, validation, training, and system supervision.

SDLC serves as a framework containing the steps required for software development. This system includes a comprehensive plan for developing, maintaining, and replacing specific software.

Additionally, from various perspectives, SDLC has multiple supporting functions. It acts as a communication tool between development teams and stakeholders, clearly defines roles and responsibilities among developers, designers, business analysts, and project managers.

Functionally, SDLC provides a clear depiction of the inputs and outputs from one stage to the next. The following are the stages included in the SDLC.

### 2.3 System Analysis

The actors in the Online Assistance Data Collection Information System In Janggalan Village include the following:

#### 1. Welfare Officer

Welfare officers are the actors who will manage the entire system, from managing citizen data, managing data on aid recipients to managing final reports.

#### 2. Field Officer

Field officers are actors who act as liaison between residents and officers at the village hall.

#### 3. Head Of Village

The village head's role is to evaluate reports from residents receiving aid which have been grouped by welfare officers.

#### 4. Village Residents

Village residents are actors whose role is to receive assistance that has been provided through field officers.

These actors carry out some of the business processes showed in table 1.

**Table 1.** Business process used in the system

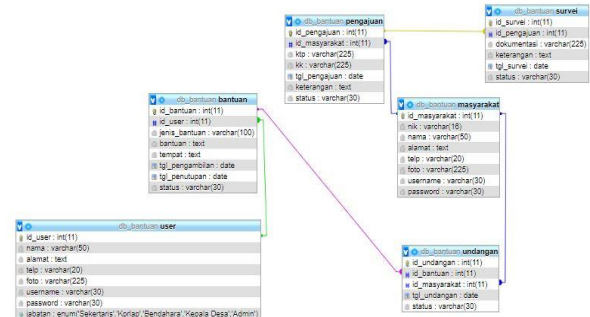
No	Business Process	Actor	System Use Case
1.	Admin Logs In To The System	Admin	Logs In
2.	Admin Manages Other Users, Can Add Or Delete Other Users Who Have Lower Levels	Admin	Manage Users
3.	Admin Carries Out Management, Such As Adding, Checking, Changing, Deleting Assistance Data	Admin	Manage Aid
4.	Admin Verifies The Files That Have Been Filled In By Residents	Admin	Verification Of Aid Recipients
5.	The Village Secretary Collects Data On Residents Who Have The Potential To Receive Assistance, Both Social Assistance And Routine Assistance	Secretary	Data Collection On Potential Aid Recipients
6.	After The Data Is Verified By The Admin, Data On Residents Who Are Entitled To Receive Assistance Will Be Recorded By The Village Secretary	Secretary	Record Recipients Of Aid
7.	The Village Secretary Makes Assistance Cards Which Will Be Distributed To Residents Who Are Entitled To Receive Assistance.	Secretary	Print Help Cards
8.	The Data Submitted By Residents Is Verified First By The Secretary, Including Data Suitability And Data Completeness	Secretary	Verify Citizen's Application
9.	Residents Create Accounts To Apply For	Village Residents	Register Account

- |     |  |                   |                                   |
|-----|--|-------------------|-----------------------------------|
| 10. | Residents Who Already Have Account Access Can Then Apply For Assistance  | Village Residents | Application For Assistance        |
| 11. | The Treasurer, Using The Aid Recipient's Card Data, Makes Regular Reports.   | Treasurer         | Make A Report                     |
| 12. | After All The Data Is Fulfilled, The Coordinating Committee Conducts A Survey Directly At The Residence Of The Prospective Aid Recipient | Field Coordinator | Survey Of Locations Receiving Aid |

**Figure 2.** Class Diagram of Online Assistance Data Collection Information System In Janggalan Village

### 3.3 Database relationship

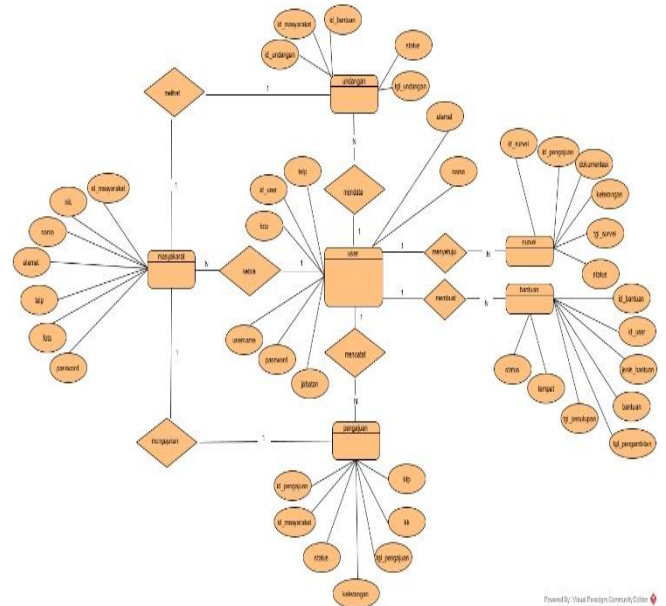
From the data that has been obtained through the entity diagram, then determine what tables are needed in the "Si Pandul Janggalan" system, the following is the database design it showed in Figure 3.



**Figure 3.** Database relationship of Online Assistance Data Collection Information System In Janggalan Village

### 3.4 Entity relationship diagram

Entity Relational Diagram (ERD) is a model for explaining relationships between data in a database based on basic data objects that have relationships between relationships. The following is a picture of the ERD as showed in Figure 4.



**Figure 4.** ER Diagram of Online Assistance Data Collection Information System In Janggalan Village

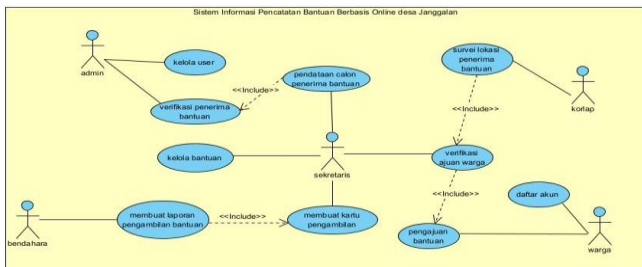
### 3.5 System Result

The Si Pandul Janggalan system is a web-based Online Aid Data Recording Information System for Janggalan Village. It is developed using PHP as the programming language and utilizes the CodeIgniter 4 framework as the structural foundation for the application.

## 3. RESULT AND DISCUSSION

### 3.1 System Design

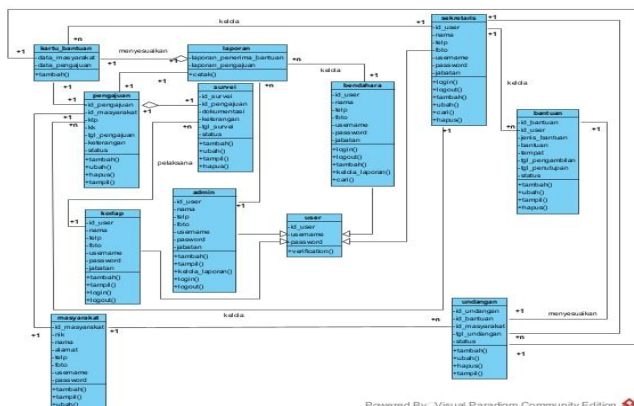
The image below presents a use case system diagram that illustrates the business process workflow. This diagram identifies the actors involved in the system and outlines the system's functionalities, as depicted in Figure 1.



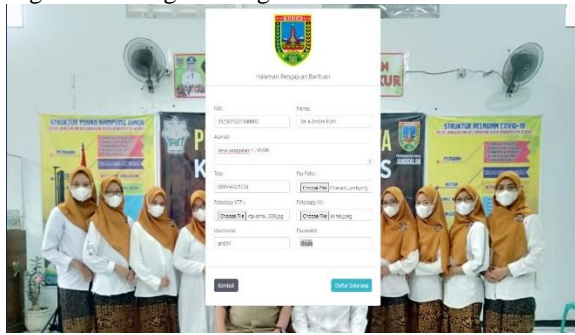
**Figure 1.** Usecase of Online Assistance Data Collection Information System In Janggalan Village

### 3.2 Class Diagram

Additionally, several class analyses will be integrated into the class diagram to identify the relationships and coupling between each component, as shown in Figure 2.



- 1) Registration Page  
Registration Page On Figure 5.



**Figure 5.** Registration Page View

- 2) Login Pages For Citizen  
Login Page On Figure 6.



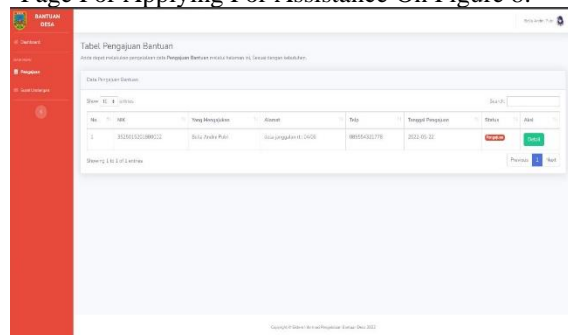
**Figure 6.** Login Page View

- 3) Citizen Dashboard Views  
Citizen Dashboard Page On Figure 7.



**Figure 7.** Citizen Dashboard Page View

- 4) Page For Applying For Assistance By Residents  
Page For Applying For Assistance On Figure 8.



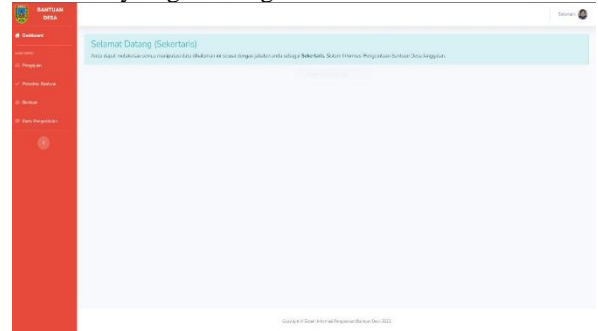
**Figure 8.** Page For Applying For Assistance Page View

- 5) Employee Login Page  
Employee Page On Figure 9.



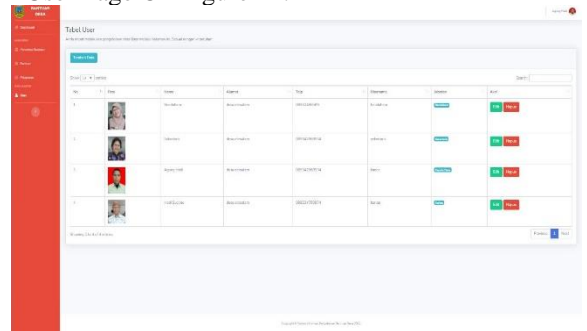
**Figure 9.** Employee Page View

- 6) Secretary Dashboard  
Secretary Page On Figure 10.



**Figure 10.** Secretary Page View

- 7) User Pages  
User Page On Figure 11.



**Figure 11.** User Page View

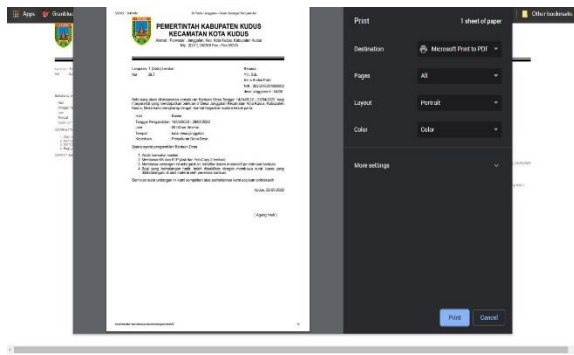
- 8) Ticket Pages For Citizen Invitation  
Tickets Page On Figure 12.



**Figure 12.** Tickets Page View

- 9) Display Of Citizen Invitations  
Display of Citizen Invitation Page On Figure 13.

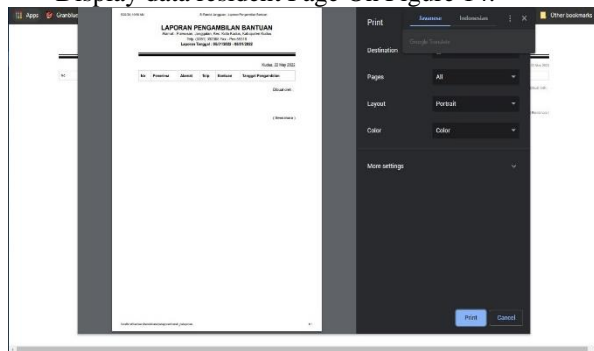




**Figure 13.** Display of Citizen invitation Page View

- 10) Display Output Data On Residents Who Received Assistance

Display data resident Page On Figure 14.



**Figure 14.** Display data resident Page View

## 4. CONCLUSION

### 4.1. Conclusion

Based on the research and development of the Online Assistance Data Recording Information System in Janggalan Village (SI PANDUL JANGGALAN), it can be concluded that this system provides an effective solution to address various issues associated with manual data recording methods and things that have increased after optimization through the system:

- 1) Time Efficiency

The automation of data entry and verification accelerates processing, eliminating the need for redundant paperwork or physical document searches.

- 2) Improved Data Accuracy

The system minimizes errors commonly found in manual processes, such as duplicate records or incorrect beneficiary information.

- 3) Easier Access and Monitoring

Authorized users can retrieve and monitor beneficiary records anytime, enabling greater transparency and streamlined oversight of aid distribution.

- 4) Increased Transparency

Reduces the potential for fraud or misallocation of aid, as every transaction and recipient record is systematically documented and traceable.

- 5) Simplified Reporting and Evaluation

The system provides automated reporting features, facilitating data-driven decision-making and more efficient evaluation of aid effectiveness.

## 4.2. Advice

Although Si Pandul Janggalan has significantly enhanced the efficiency and accuracy of social aid distribution, several limitations remain that need to be addressed for further improvement. Below are some key weaknesses of the system and recommendations for optimizing its functionality:

- 1) Risk of data breaches it should have Strengthen data encryption protocols, implement multi-factor authentication (MFA) for login access, and conduct regular security audits to ensure system integrity.
- 2) Limited user digital literacy makes the web-based program are hard to understand, Organize training sessions and workshops to educate users on how to navigate the system effectively. Additionally, integrate an intuitive user interface (UI) with simple navigation and multilingual support.
- 3) Develop an automated reporting dashboard and feedback submission feature where beneficiaries and administrators can report system issues, suggest improvements, and monitor key performance indicators (KPIs).

## BIBLIOGRAPHY

- [1] Nopriandi, H. (2018). PERANCANGAN SISTEM INFORMASI REGISTRASI MAHASISWA. *JURNAL TEKNOLOGI DAN OPEN SOURCE*, 1(1), 73-79. <https://doi.org/10.36378/jtos.v1i1.1>
- [2] jimi, A. (2019). Rancang Bangun Sistem Informasi Desa Berbasis Website (Studi Kasus Desa Netpala). *Jurnal Pendidikan Teknologi Informasi (JUKANTI)*, 2(1), 1–7. <https://doi.org/10.37792/jukanti.v2i1.17>
- [3] Pratama, A., & Effiyaldi, E. (2018). Analisis dan Perancangan Sistem Informasi Pendataan Rakyat Miskin untuk Program Beras Miskin (RASKIN) Studi Kasus : Kantor Kecamatan Betara Kabupaten Tanjung Jabung Barat. *Jurnal Manajemen Sistem Informasi*, 3(1), 870-883. Retrieved from <http://ejournal.stikom-db.ac.id/index.php/manajemensisteminformasi/article/view/425>
- [4] Rahmadani, M., & Effiyaldi, E. (2019). ANALISIS DAN PERANCANGAN SISTEM INFORMASI PENDATAAN KELUARGA PENERIMA MANFAAT (KPM) BANTUAN PANGAN NON TUNAI (BPNT) PADA DINAS SOSIAL KOTA JAMBI. *Jurnal Manajemen Sistem Informasi*, 4(4), 444-454. doi:10.33998/jurnalmanajemensisteminformasi.2019.4.4.736.
- [5] Karmila. (2019). *Rancang Bangun Sistem Pengelolaan Data Bantuan Masyarakat Miskin Berbasis Web pada Desa Taraweang Kabupaten Pangkep* (Master's thesis, Universitas Islam Negeri Alauddin Makassar, 2018) (pp. Ii-74). Makasar: Irmawati Irmawati. Retrieved February 20, 2021, from <http://repository.uin-alauddin.ac.id/id/eprint/14148>.
- [6] Karmila. (2018). *RANCANG BANGUN SISTEM INFORMASI PENGELOLAAN DATA BANTUAN MISKIN BERBASIS WEB PADA DESA TARAWEANG KABUPATEN PANGKEP*.