

## Digital Information System Transformation Population Data Management Solution for Galanggang Village, West Bandung Regency

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### Abstract

*The community service team of lecturers and students from STMIK Mardira Indonesia has implemented a project to manage demographic data services in Galanggang Village, Batujajar, West Bandung. This project involved the team's efforts to advance information technology via a website that includes essential components such as the homepage, admin and community login pages, village population statistics, records of deceased individuals, data on individuals relocating, and a compilation of relocation requests. The project aims to improve efficiency and openness in managing demographic data for village administrators and the local community. The methodology encompassed the advancement of information technology and the training of village leaders and the community to optimize the application's use. The project successfully implemented the Galanggang Village website application (SIDELA) for managing demographic data. This application enables village administrators and citizens to handle demographic data, including relocation and mortality information, efficiently. This community service initiative has profoundly influenced village administrators and inhabitants of Galanggang by enhancing the implementation of information technology for improved demographic data management. These measures are anticipated to be perpetually enhanced to yield sustainable advantages for village administrators and citizens of Galanggang, West Bandung Regency.*

**Keywords:** *Population Data Management Website Application, Benefits of Implementing Information Technology.*

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## **Introduction**

Galanggang Village, located in West Bandung Regency, faces complex challenges in managing population data. The lack of resources and technological expertise often impedes the efficient management of demographic data, both for village administrators and citizens (Ali, 2024). However, the implementation of modern technology, specifically the creation of a village information system (VIS) via a website, offers a viable solution to these challenges (Davi et al., 2024). By adopting the village information system (VIS) technology, village officials and citizens can significantly improve data management efficiency in their operations and foster community engagement. This integrated web platform will not only enable village leaders and inhabitants to enhance their information dissemination, improve services, and strengthen relationships, but also encourage active participation. The establishment of a website-based village information system not only boosts efficiency but also signifies a contemporary digital transformation, empowering village officials and residents to adapt to technological advancements. The system's adaptability ensures that it is compatible with the needs and resources of the village (Saputra, 2023).

Implementing the village information system (VIS) is anticipated to enhance the efficiency and organization of population data management by incorporating population changes, death records, and residential relocations, which will be readily accessible to village officials and residents. This is expected to enhance community engagement and participation in village data management, expand the comprehension of village officials and citizens on ongoing activities, and encourage them to contribute more actively.

The village information system (VIS) facilitates convenient access to information, allowing inhabitants to submit diverse requests based on their needs within the system's accessible capabilities. Consequently, the village information system (VIS) functions as both an internal efficiency instrument and a robust communication conduit between village

administrators and citizens, facilitating the establishment of a collective to sustain and enhance this VIS.

Research on the application of information technology in village information systems (VIS) consistently shows that technology can significantly enhance transparency and efficiency in various village operations. This promising potential, as demonstrated by numerous studies (Hartatik et al., 2024), (Candra Pratama et al., 2024), (Faisal & Rusda, 2022), (Agustin et al., 2021), (Sembiring et al., 2020), is a beacon of hope for the future of rural or remote urban locales. However, a notable disparity in the deployment of this VIS technology exists among different communities, influenced by factors such as insufficient technical resources and a lack of comprehension of technology's benefits in promoting the sustainability of rural living.

The community service program aims to overcome this gap by offering a modern technology-based village information system that local officials and inhabitants can readily accept. By addressing this technological disparity, it is anticipated that the officials and citizens of Galanggang Village would exemplify the effective use of technology to improve efficiency and transparency for other villages.

The primary objective of this community service program is to establish a contemporary village information system (VIS) that aligns with current technology breakthroughs, functioning as a communication medium between officials and the citizens of Galanggang Village. The aim is for Galanggang Village and its local community to excel in all their endeavors.

## **Method**

The community service team, including lecturers and students from STMIK Mardira Indonesia, has launched an initiative to support the local administrators and inhabitants of Galanggang in the Batujajar District, West Bandung Regency. The team's primary focus is tackling the issues encountered by village officials and citizens about service supply and demographic data management, which continue to be conducted traditionally. The optimization and effectiveness of service and population

management procedures are hindered by constrained resources and insufficient technical expertise, complicating the attainment and preservation of service electability and the integrity of population management outcomes.

Comprehending the requirements of the village leaders and inhabitants is an essential initial step. The community service team comprising lecturers and students from STMIK Mardira Indonesia has conducted thorough and continuous discussions with village officials and residents, examining current service delivery processes and population data management, while also considering the aspirations and objectives of the community. A comprehensive strategy, meticulously detailing the requisite stages, assigning the necessary resources, and creating an efficient project implementation timeline, was established. The initiation of the Galanggang Village Information System (SIDELA) has begun. The team meticulously designed and developed the system in accordance with the expectations and requirements of the village administration and people. The Galanggang Village Information System (SIDELA) is now operational following the phases of design, development, testing, and installation. Nevertheless, the team's efforts remain unfinished as they must deliver training to the village leaders and citizens on the appropriate utilization of the information system.

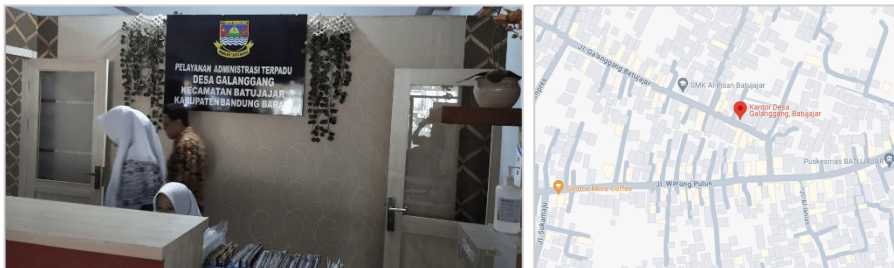
The community service team of lecturers and students from STMIK Mardira Indonesia persists in their endeavors by conducting training for village officials and citizens, equipping them with the requisite expertise to utilize the Galanggang Village Information System (SIDELA) proficiently. The training emphasizes system utilization, upkeep, and management of population data systems. Following the implementation of the Galanggang Village Information System (SIDELA), the team is required to assess and monitor its efficacy. Guaranteeing the system operates effectively, satisfies the requirements of village leaders and citizens, and delivers the anticipated advantages. The participation of the local people is highlighted, with the expectation that they will actively utilize the Galanggang Village Information System. The community service team comprising lecturers and

students from STMIK Mardira Indonesia remains committed to this project, aspiring for it to yield sustainable and advantageous solutions for the officials and residents of Galanggang Village, through robust collaboration and unwavering commitment, with the objective of effecting a substantial positive impact on the entire village community.

## **Results and Discussion**

On July 10, 2024, the faculty and students of STMIK Mardira Indonesia conducted a community service initiative as an aspect of the University's Tri Dharma. This effort sought to enhance the broader community by establishing a Village Information System (VIS) to improve service delivery and manage demographic statistics in Galanggang Village, Batujajar District, West Bandung Regency, West Java 40561.

The team has developed a groundbreaking product named the 'Galanggang Village Information System (SIDELA) West Bandung Regency' as part of this community service project. The project's main focus is the administration of Galanggang Village, located at Jl. Galanggang Batujajar No. 5, Galanggang, Batujajar District, West Bandung Regency, West Java 40561. Galanggang Batujajar No. 5, Galanggang, Batujajar District, West Bandung Regency, West Java 40561. The initiative is designed to empower village administrators and citizens, who play a crucial role in overseeing the Galanggang Village Information System.



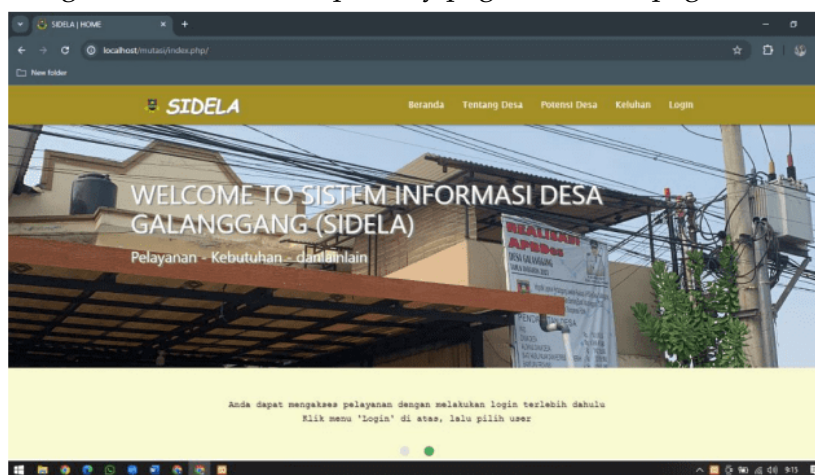
**Figure 1. Location of Community Service Activities**

The community service seeks to improve efficiency and transparency in service administration and demographic statistics. Through product development, the team aims to significantly enhance data service management in Galanggang Village while also aiding village

administrators and inhabitants in leveraging technology for mutual advantage.

The chairperson and team members have resolved to establish Intellectual Property Rights (IPR) for the intellectual property generated during the website-building project for Galanggang Village as part of their community service initiative. This decision was made to safeguard the intellectual property generated during the building of the Galanggang Village Information System.

The Galanggang Village Information System was developed in this project. Figure 2 illustrates the primary page of the webpage.

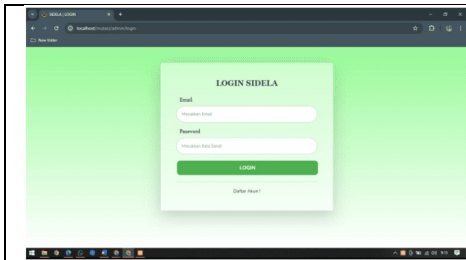


**Figure 2. The main page of the SIDELA homepage**

The subsequent pages in the Galanggang Village Information System (SIDELA) for administrative access comprise Figure 4, the administrator login interface; Figure 5, the administrator dashboard; Figure 6, demographic data of Galanggang Village; Figure 7, information on deceased mutations; Figure 8, data regarding relocating mutations; and Figure 9, a compilation of relocation mutation submissions.

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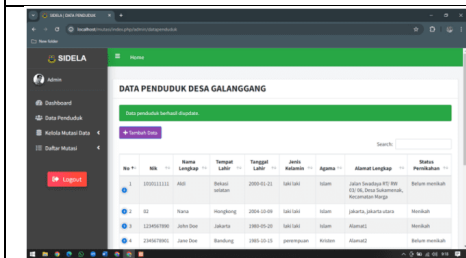
*Heri Wahyudi<sup>1</sup>, Rohmat Nur Ibrahim<sup>2</sup>, Feri Alpiyasin<sup>3</sup>, Komarudin<sup>4</sup>, Miranti Andhita Scantya<sup>5</sup>*



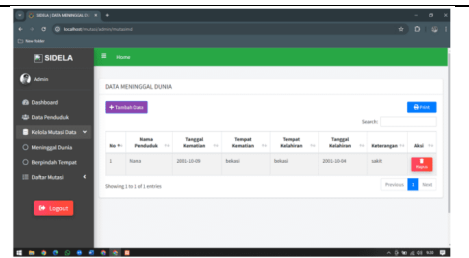
**Figure 4. Admin login page**



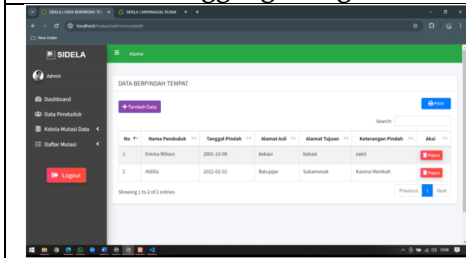
**Figure 5. Admin dashboard**



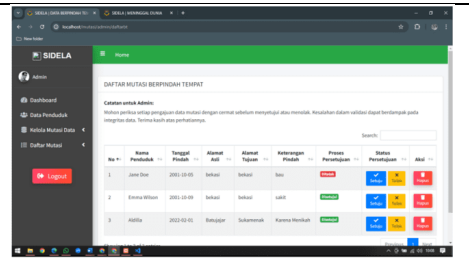
**Figure 6. Data on the population of Galanggang village**



**Figure 7. Death mutation data**



**Figure 8. Mutation data changes location**



**Figure 9. List of applications for transfer transfers**

The following pages available in the Galanggang Village Information System for public access comprise Figure 10, the public login page; Figure 11, the public dashboard; Figure 12, the form for submitting deceased mutation requests; Figure 13, data on relocation requests; and Figure 14, the form for relocation mutation submissions.

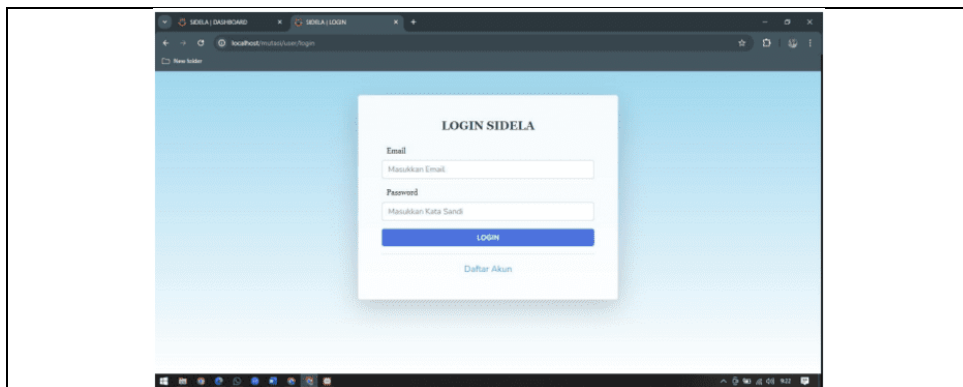


Figure 10. Community login page

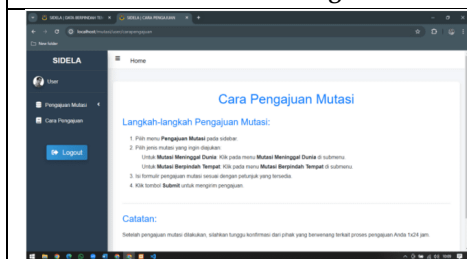


Figure 11. Community dashboard

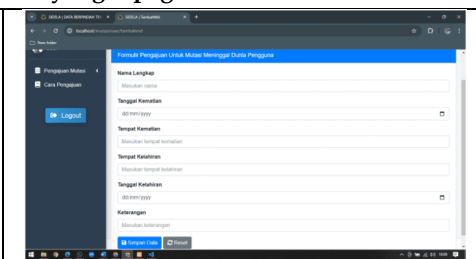


Figure 12. Formula for applying for death mutation

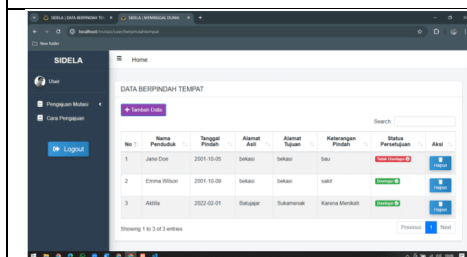


Figure 13. Transfer application data

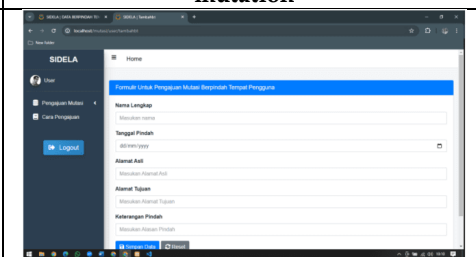


Figure 14. Formula for requesting a mutation to change location

The program aims to facilitate the management of service operations and population statistics for village administrators and inhabitants in Galanggang Village. This application includes features for managing population data, information on deceased mutations, and relocating mutations, aiming to enhance the efficiency and transparency of population data management, thereby offering significant advantages for village officials and the Galanggang Village community.



Intellectual Property Rights (IPR), originating from human creativity and innovation in developing beneficial products or processes, include copyrights, patents, trademarks, and other related rights pertinent to the establishment of the village information system for Galanggang Village (Suci et al., 2023; Kosasih & Saripudin, 2023). Safeguarding intellectual property rights is essential to protect the diligent efforts and innovations of the community service team from exploitation. By holding intellectual property rights, the community service team may guarantee that their contributions and intellectual efforts are acknowledged and safeguarded and allow them to govern the application and usage of their work in compliance with relevant rules.

Establishing IPR signifies the community service team's dedication to appreciating originality, innovation, and diligence. With intellectual property rights established, it is anticipated that this project's outcomes will yield enduring advantages for the village administration and the community of Galanggang Village while also motivating subsequent community service initiatives.

## **Conclusion**

A team of instructors and students from STMIK Mardira Indonesia executed a committed community service initiative to support Galanggang Village. From assessing requirements to designing and implementing the Village Information System (VIS), training village authorities as system administrators, and instructing the community on utilizing the VIS, every phase was executed with the highest degree of sincerity.

Upon the successful completion of the project, the chairperson and team members convened to contemplate their experience. The determination to safeguard creative Property Rights (IPR) for the generated creative work was a crucial milestone in the completion of this project. They acknowledged the significance of protecting and appreciating the originality and innovation inherent in the Galanggang Village Information System.

In a contemplative environment, the teacher and student team from STMIK Mardira Indonesia determined that this project had yielded advantageous answers for the village government authorities and the community of Galanggang Village. To ensure the project's longevity, it is essential to empower the Village Information System (VIS) management, broaden collaborations, and engage in ongoing evaluations to improve the services offered. Dedication is essential to further assist the Galanggang Village administration in optimizing the utilization of this Village Information System (VIS). The teacher and student team from STMIK Mardira Indonesia asserts that implementing these proposals will yield immediate advantages and establish a basis for extensive future development and empowerment. May each incremental action they undertake result in concrete beneficial transformations for the local government authorities and the Galanggang local people.

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