

Sidohibah: Web-Based Application for Grant Applications for Private Elementary School Facilities and Infrastructure in Sidoarjo Regency

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Abstract. The process of applying for facilities and infrastructure grants at private elementary schools in Sidoarjo Regency is still mostly handled manually, which sometimes results in delays, recording errors, and difficulties in collecting data for each application. Therefore, researchers developed a web-based information system called Sidohibah. The system was developed in stages, adapting to user needs. The implementation results show that this system is capable of improving administrative efficiency while strengthening transparency in grant management.

Keywords: Infrastructure Grants, Private Elementary Schools, Sidoarjo Regency, Web-Based, Agile Method

1 Introduction

School facilities and infrastructure are important supporting elements in the implementation of education at the elementary school level. For private schools, limited facilities are often an obstacle in providing optimal educational services. Therefore, government support through the infrastructure grant program is one of the efforts to help meet school facility needs. Adequate educational facilities are one of the indicators of school quality because they directly affect the effectiveness of teaching and learning activities and student learning outcomes [1]. Therefore, an effective and efficient management system is needed. The use of information technology (IT) in the administration of facilities and infrastructure has been proven to increase productivity through the speed and accuracy of information, transforming what was previously manual work into a reliable data management system.

The use of information technology plays an important role in accelerating the administrative process in public services. In the management of education grants, the application of a web-based system makes it easier for users to apply for and monitor grants. With this system, all stages, from application and verification to monitoring of fund recipients, can be more transparent and easily accessed by relevant parties.

In Sidoarjo Regency, the process of applying for grants for private elementary school facilities and infrastructure is still largely done manually. This condition makes it difficult for schools and government agencies to monitor the progress of grant applications. The process takes a long time, especially at the document verification stage, and makes it difficult for schools and government agencies to monitor the progress of grant applications. The use of a web-based system for data collection is expected to significantly improve school performance [2] and simplify the data collection process to make it more effective and efficient [3] [4] [5].

Specifically, the infrastructure monitoring system, especially related to the process of applying for grants for private elementary schools in Sidoarjo Regency, is still carried out manually. This condition often results in obstacles such as incomplete verification data, which requires a long processing time. In fact, grant applications are very important for improving the overall quality of education. Integration with relevant and effective information technology [6][7] helps to monitor grant funds in a more transparent and accountable manner [8]. The better the implementation of the *E-government* Information System, the greater the transparency and the lower the chance of budget misuse [9].

Based on the urgency of accelerating the process, increasing accountability, and the need for appropriate technology, this study focuses on designing a system that facilitates data transactions and accelerates the process of monitoring grant applications using *website* technology. Based on these issues, this study aims to design and develop a web-based application that can support the process of applying for and managing grants for private elementary school facilities and infrastructure in Sidoarjo Regency more effectively, namely the "Sidohibah

Application for Applying for Grants for Private Elementary School Facilities and Infrastructure in Sidoarjo Regency Based on the Web".

2 Method

This study adopts a Research and Development (R&D) approach in collaboration with the Agile software development methodology. The Research and Development (R&D) approach is used in this study to produce a product in the form of the Sidohibah application and to test its feasibility in supporting the grant application process [10]. The Agile method was applied to the development of the Sidohibah application because it allows for adjustments to features and system flows based on input from users and government agencies during the development process [11]. Agile software development methods, as shown in Figure 1 below, are also often used because of their flexibility and adaptability to changing project requirements [12]. The following is an illustration of the stages of the agile method:

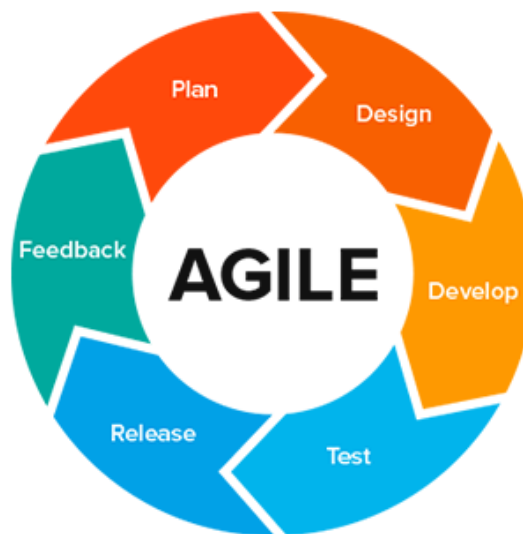


Figure 1. Agile Method

2.1 Research Stages

2.1.1 Planning

This stage begins with collecting system requirement data through a series of discussions. Through this process, clear development objectives that are easily understood by all parties involved can be established, and the main problems that are the focus of resolution through application development can be identified. The researcher then analyzes system requirements by combining direct observation in the field and interviews with grant applicants. User requirements analysis is conducted to assess the extent to which the grant application information system to be developed meets user needs and requirements in its implementation to facilitate the verification process.

2.1.2 Design

Based on the results of the requirements analysis, this study proceeded to the system design stage. This stage involved creating process flowcharts to map out the workflow, as well as developing a robust and organized database structure. The system interface was designed using tools such as Figma and Draw.io. The resulting design focused on an intuitive user experience, a structured permit application flow, and efficient data integration. The main objective of this stage was to ensure that the system could meet the needs of users, both from the community and the relevant authorities.

2.2 System Design

2.2.1 Use Case Diagram

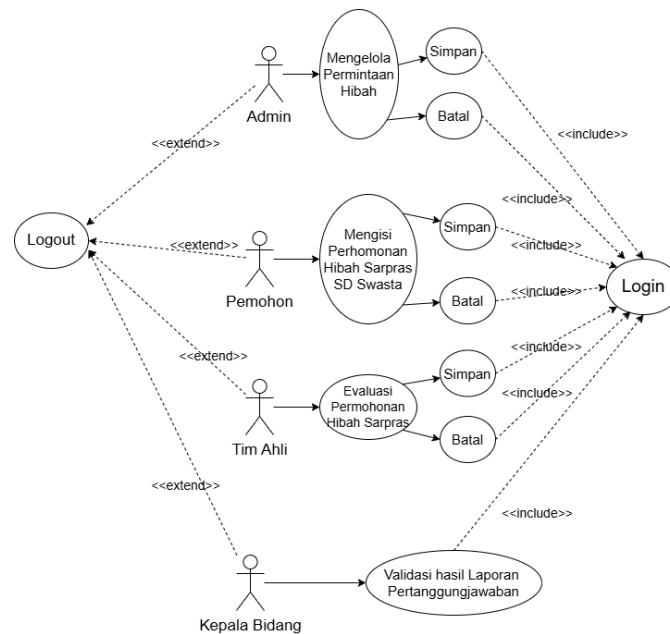


Figure 2. Use Case Diagram

Figure 2 is a *Use Case Diagram*, which is a tool to visualize system functionality and user needs. This *Use Case Diagram* is an important element. For the educational infrastructure grant application information system, a use case diagram was prepared to describe the system workflow in more detail. Further details of the diagram are presented in the following description:

2.2.2 Flowchart

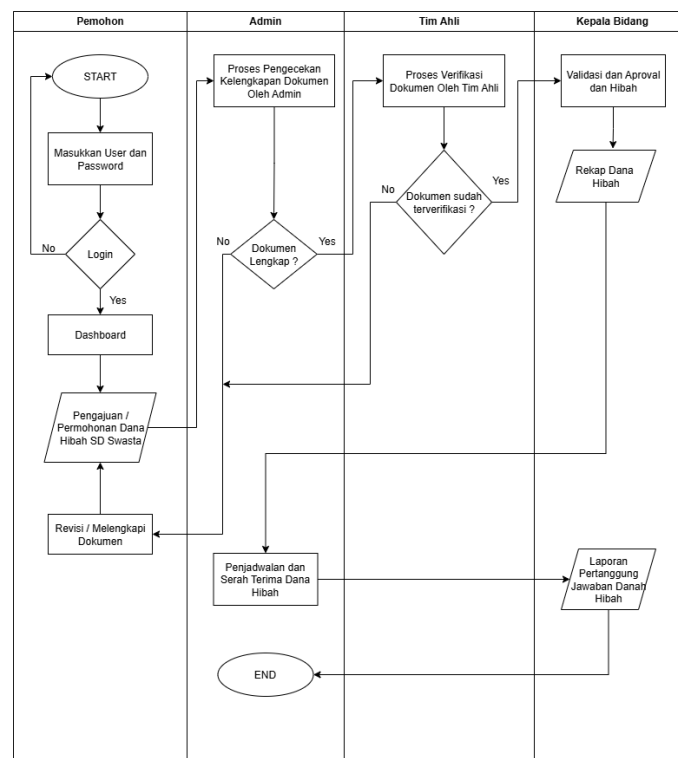


Figure 3. Sidohibah Flowchart

Figure 3 shows *the Flowchart*. The flowchart in the Sidohibah application is used to illustrate the grant application process flow, starting from the registration stage to the final approval process by the authorities[13]. This chart serves to map the steps in a procedure systematically. However, it should be noted that the complexity of the flowchart can increase if the algorithm described is too long or inefficient.

2.3 Database Design

The Sidoarjo Regency Private Elementary School Grant Information System uses MySQL as its database to store and manage data. Each stage of database creation is designed to ensure that the resulting data structure is capable of supporting all the functional requirements of the system that have been analyzed in depth by [14]. The design of this system will be explained in three main models, namely: *Entity Relationship Diagram* (ERD), *Conceptual Data Model* (CDM), and *Physical Data Model* (PDM).

2.3.1 ERD

Researchers use *Entity Relationship Diagrams* (ERDs) as a tool for modeling data. ERDs are used in the Sidohibah system to model the relationships between data involved in the grant application process, such as user data, applications, verification, and validation [15]. At this stage, ERD became the basis for compiling *the Conceptual Data Model* (CDM) to visualize the conceptual data structure in the private SD grant system in Sidoarjo Regency.

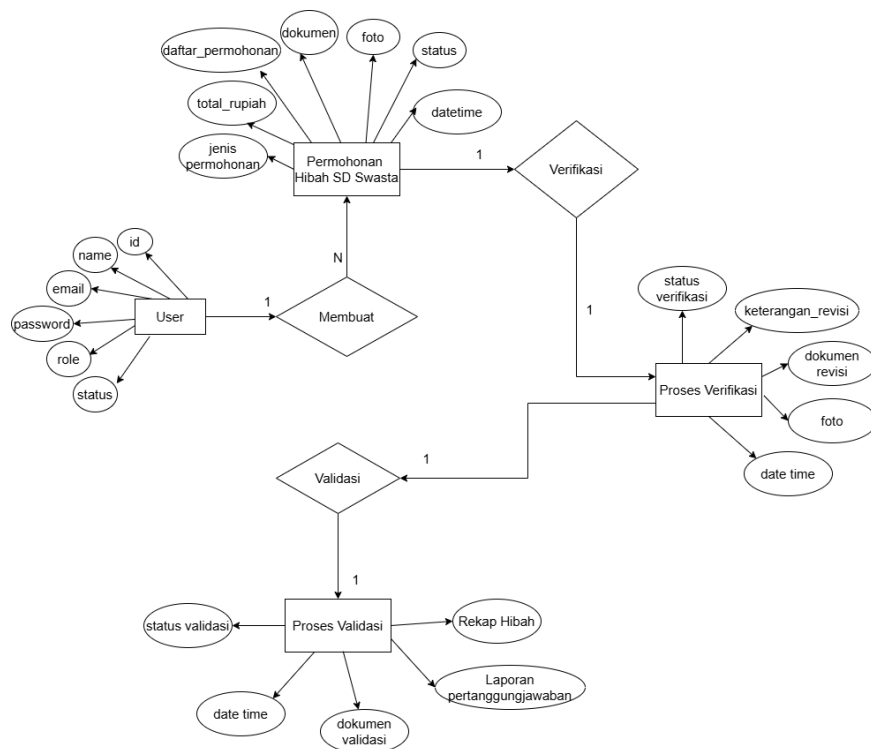


Figure 4. ERD

Figure 4 illustrates the data structure and relationships between entities in the grant application management system for private schools. Essentially, this system centers on three key interrelated processes, starting from initiation by the user to the final decision regarding the grant application. Each process and user entity has specific attributes that capture important information for the functionality of the system.

2.3.2 CDM

As an extension of the ERD, *the Conceptual Data Model* (CDM) in the Sidohibah system serves as an initial overview of the table structure and data attributes that will be used in the database before physical implementation. The CDM is crucial because it bridges the conceptual design with the physical database design by logically adding

table names, attributes, and data types. The CDM design for the Sidoarjo Regency Private Elementary School Grant System is as follows:

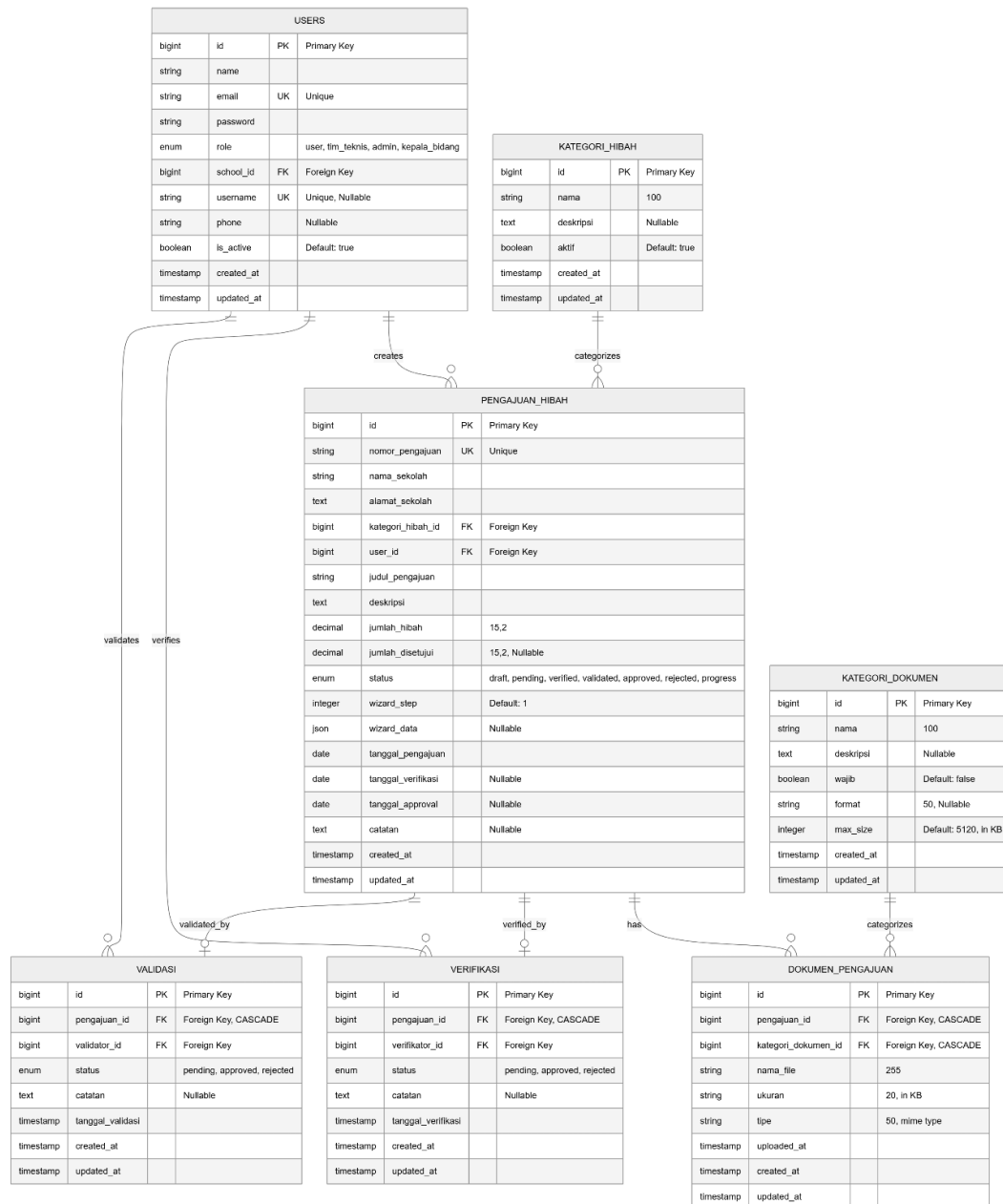


Figure 5. CDM

Figure 5 shows the relational database structure designed to manage the flow of applications or requests in the grant system. This design describes four main entities represented in the form of tables, complete with attributes and logical relationships between entities. The design focuses on managing user application data, application details, and the verification and validation stages that each application must go through.

2.3.3 PDM

The *Physical Data Model* (PDM) serves to detail the data structure that is ready to be implemented in the database system. This model specifically displays tables, columns, data types, character lengths, and physical relationships between tables. It is used to describe the database structure of the Sidohibah system in detail, including data types, field lengths, and relationships between tables that are ready to be implemented in MySQL (Irwanda et al., 2022). The PDM design for the private elementary school grant information system in Sidoarjo Regency is as follows:

Table 1. PDM

Table	Column	Data Type	Length	Default	Constraint
users	id	BIGINT	-	AUTO	PK
users	name	VARCHAR	255	-	-
users	email	VARCHAR	255	-	UNIQUE
users	password	VARCHAR	255	-	-
users	role	ENUM	-	'user'	INDEX
users	username	VARCHAR	50	-	UNIQUE
users	is_active	BOOLEAN	-	TRUE	-
grant_application	id	BIGINT	-	AUTO	PK
grant_application	application_number	VARCHAR	50	-	UNIQUE
grant_application	school_name	VARCHAR	200	-	-
grant_application	school_address	TEXT	-	-	-
grant_application	grant_category_id	BIGINT	-	-	FK INDEX
grant_application	user_id	BIGINT	-	-	FK INDEX
grant_application	grant_application_title	VARCHAR	200	-	-
grant_application	description	TEXT	-	-	-
grant_application	grant_amount	DECIMAL	15 2	-	-
grant_applications	approved_amount	DECIMAL	15 2	-	-
grant_application	status	ENUM	-	'draft'	INDEX
grant_application	wizard_step	INTEGER	-	1	-
grant_application	application_date	DATE	-	-	INDEX
grant_application	verification_date	DATE	-	-	-
grant_application	approval_date	DATE	-	-	-
item_submission	id	BIGINT	-	AUTO	PK
submission_item	submission_id	BIGINT	-	-	FK INDEX
submission_item	item_number	INTEGER UNSIGNED	-	-	INDEX
item_submission	item_name	VARCHAR	255	-	-
item_submission	qty	INTEGER	-	1	-
item_submission	submitted_price	DECIMAL	15 2	-	-
item_submitted	approved_price	DECIMAL	15 2	-	-
item_submitted	total_submitted	DECIMAL	15	-	-
item_submitted	total_approved	DECIMAL	15 2	-	-
grant_category	id	BIGINT	-	AUTO	PK
grant_category	name	VARCHAR	100	-	-
grant_category	description	TEXT	-	-	-
grant_category	active	BOOLEAN	-	TRUE	INDEX
document_category	id	BIGINT	-	AUTO	PK
document_category	name	VARCHAR	100	-	-
document_category	required	BOOLEAN	-	FALSE	INDEX
document_category	format	VARCHAR	50	-	-
document_category	max_size	INTEGER	-	5120	-
verification	id	BIGINT	-	AUTO	PK
verification	submission_id	BIGINT	-	-	FK INDEX
verification	verifier_id	BIGINT	-	-	FK INDEX
verification	status	ENUM	-	'pending'	INDEX
verification	note	TEXT	-	-	-
verification	verification_date	TIMESTAMP	-	-	-
validation	id	BIGINT	-	AUTO	PK
validation	submission_id	BIGINT	-	-	FK INDEX
validation	validator_id	BIGINT	-	-	FK INDEX
validation	status	ENUM	-	'pending'	INDEX
validation	note	TEXT	-	-	-
validation	validation_date	TIMESTAMP	-	-	-

Each table has columns with more detailed data types such as varchar, integer, and date, and the relationship between tables is also shown through the appropriate foreign keys. Thus, the data design for the Private Elementary School Grant System has followed a layered approach, starting from the conceptual model (ERD), elaborated into the logical data model (CDM), and concluded with the physical model (PDM) for a structured and consistent system implementation.

2.4 Interface Design

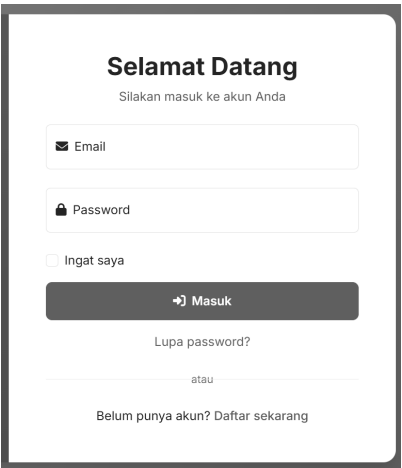


Figure 6. Login Page

Figure 6 shows the design for *the login user interface*, which typically includes an email and password field, a login button, a password reset button, and a registration link.



Figure 7. Registration Page

Figure 7 shows the structure and appearance of the registration page for new users. The inputs consist of school information, principal information, and login information.

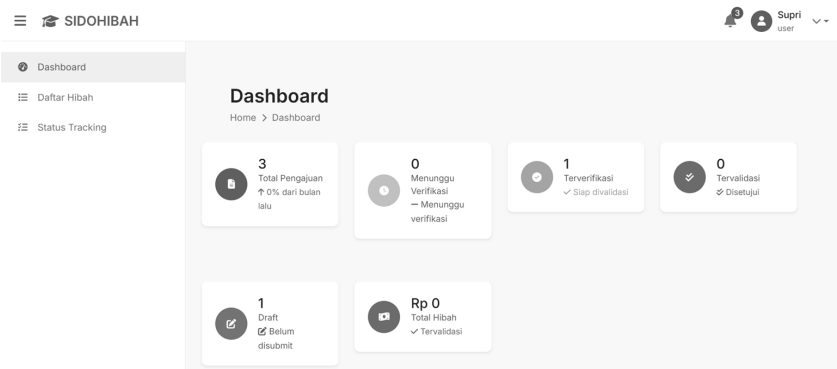


Figure 8. User Page

Figure 8 is a design of the main display consisting of a sidebar and main display. *The sidebar* is specifically limited to *user roles*, namely *the dashboard*, grant list, and grant status tracking. Meanwhile, on *the navigator bar* at the top right, there is a user menu for *logging out*.

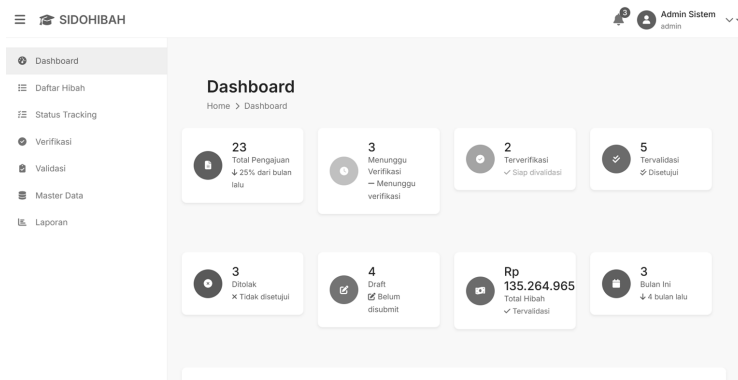


Figure 9. Admin Page

Figure 9 is the admin *user interface*, which is similar to the user interface in that it consists of a sidebar and main display. The difference is that the admin interface has more menus, such as verification, validation, master data, and reports.

2.5 Development

After the display design was finalized according to requirements, the application was developed using the website programming language PHP, supplemented with *the* Laravel *framework* [16] and MySQL database. Development was carried out in stages, starting from the initial menu: registration, master user menu, category menu, grant application process, verification and validation, and finally reports.

Development uses the Agile methodology, which involves creating the program while receiving input from users and grant administrators. The finished program's appearance and flow will be demonstrated, and any *feedback* will be used for further development. The program is created module by module or menu by menu, and development will continue to other menus once the previous module is deemed sufficient and acceptable to users.

2.6 Testing

The *black-box* testing method allows the functionality of the system to be assessed from the user's point of view, without the need to view the program code. The testing process is carried out to ensure that all features operate according to their functions [17] [18]. This stage includes testing various menus, including login, permit data input, document uploads, and process verification. This testing is carried out together with prospective users or government agencies so that direct feedback can be obtained. The instrument used is a system expert test instrument specifically designed for black-box testing on functional aspects.

Table 2. Testing Format

No	Role	Test Form	Expected Results	Test Results	
				Successful	Failed
1	Role Name 1	Menu 1	Expected results can be used on the website		
2	Role Name 2	Menu 2	Expected display that is appropriate.		

Table 2 above is a system testing plan consisting of user *roles*, test forms, expected results, and test results. In the results column, there are two options that can be checked, namely successful and failed. The test forms that match the expected results will be checked to see the results of the developed website. To obtain a score for the development success indicator, use the following formula:

$$\text{Score} = \frac{\text{Total Score}}{\text{Question Item}} \times 100\%$$

3 Results and Discussion

3.1 Results

The results of the Sidohibah *web-based* application development are in line with the requirements of the ongoing process of managing private elementary school grant applications in Sidoarjo Regency. The Agile method provides researchers with *insight* to receive the necessary *feedback* from users, administrators, and the technical team. Through *black-box* testing, Sidohibah achieved a score of 100%, making it a suitable information system for managing grant applications for private elementary schools in Sidoarjo Regency. The following are the results of the application development:

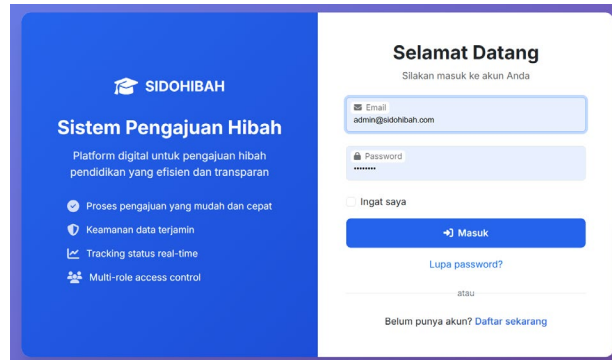


Figure 10. Login Screen

Figure 10 shows the login screen used by both users and administrators to log in. The left side features additional functionalities to enhance appeal. There are fields for email and password input, along with a button for new users to register.

Figure 11. Registration Screen

Figure 11 is the registration form for new users. There are three main sections: school information, principal information, and login information. School and principal information is required as justification and verification data later on.

Kelola User

Home > Kelola User

Daftar User

Tambah User

No	Nama	Email	Role	Dibuat	Aksi
1	S Supri	sdbudaya@gmail.com	User	21 Nov 2025	
2	T Tim Teknis	teknis@sidohibah.com	Tim Teknis	28 Oct 2025	
3	A Ahmad Hidayat	ahmad.hidayat@alazhar-sidoarjo.sch.id	User	28 Oct 2025	
4	S Siti Aminah	siti.aminah@muhammadiyah-sidoarjo.sch.id	User	28 Oct 2025	
5	A Admin Sistem	admin@sidohibah.com	Admin	28 Oct 2025	
6	K Kepala Bidang	kepala@sidohibah.com	Kepala Bidang	28 Oct 2025	

Figure 12. Manage User Display

Figure 12 is the user management screen, which can only be accessed by the Admin. The function of this menu is to manage users, such as blocking users or resetting passwords. The Admin can make changes to all users, including the Department Head and Technical Team.

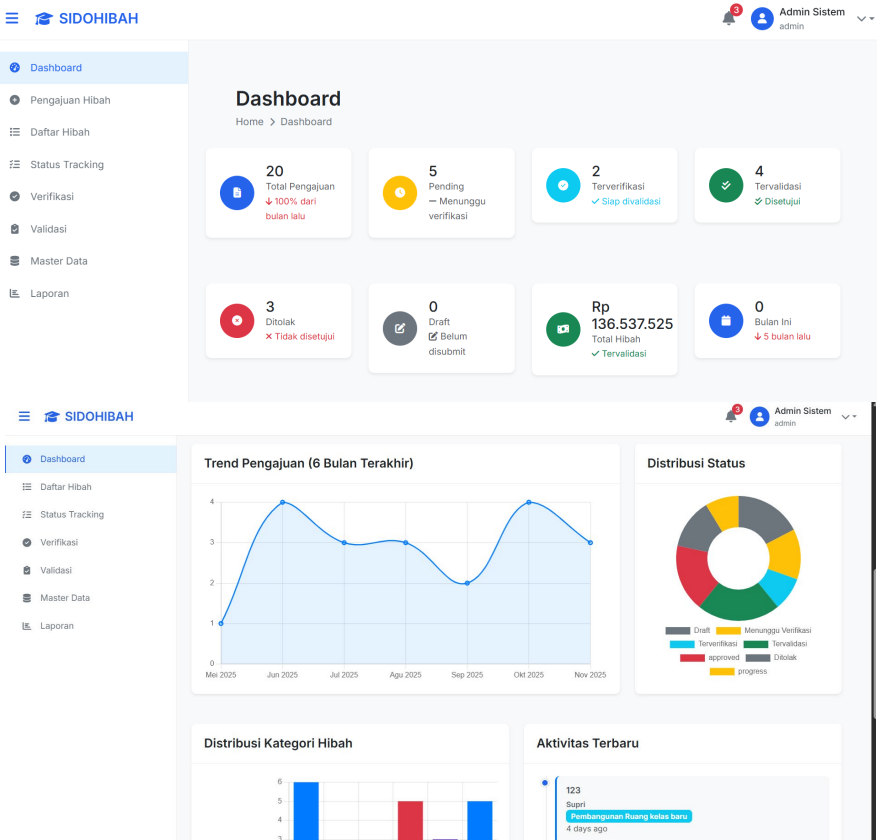


Figure 13. Admin Dashboard

Figure 13 is the Admin Dashboard, designed to help government agencies monitor grant applications through data summaries and graphical visualizations, enabling more efficient oversight. The goal is for Admin to monitor submitted grant applications and generate concise summaries.

Kelola Kategori Hibah					
Home > Kelola Kategori Hibah					
Daftar Kategori Hibah				+ Tambah Kategori	
No	Nama Kategori	Deskripsi	Status	Dibuat	Aksi
1	Pembangunan Ruang kelas baru	Hibah untuk pembangunan ruang kelas baru di sekola...	Aktif	28 Oct 2025	Edit Delete
2	Pembangunan ruang sumber belajar	Hibah untuk pembangunan ruang sumber belajar seper...	Aktif	28 Oct 2025	Edit Delete
3	Rehabilitasi ruang kelas	Hibah untuk rehabilitasi dan perbaikan ruang kelas...	Aktif	28 Oct 2025	Edit Delete
4	Rehabilitasi ruang sumber belajar	Hibah untuk rehabilitasi ruang sumber belajar sepe...	Aktif	28 Oct 2025	Edit Delete
5	Peralatan pendidikan	Hibah untuk pengadaan peralatan pendidikan dan sar...	Aktif	28 Oct 2025	Edit Delete
6	Sarana dan Prasarana lainnya	Hibah untuk sarana dan prasarana lainnya yang mend...	Aktif	28 Oct 2025	Edit Delete

Figure 14. Grant Category Master

Figure 14 is the grant category master, the purpose of which is to be able to add, edit, or delete grant categories that can later be selected by applicants. The grant category master was added due to the dynamic nature of the grant categories that can be selected.

Daftar Kategori Dokumen						
+ Tambah Kategori						
No	Nama Kategori	Deskripsi	Wajib	Format	Max Size	Dibuat
1	Proposal Hibah	Dokumen proposal lengkap pengajuan hibah (Maksimal...	Wajib	pdf,doc,docx	5 KB	28 Oct 2025
2	Surat Permohonan	Surat resmi permohonan hibah dari kepala sekolah (...)	Wajib	pdf,doc,docx	2 KB	28 Oct 2025
3	Rencana Anggaran Belanja (RAB)	Dokumen rincian anggaran penggunaan hibah (Maksima...	Wajib	pdf,doc,docx	5 KB	28 Oct 2025
4	Akta Pendirian / Surat Keterangan Terdaftar Kemenham	Akta pendirian sekolah atau surat keterangan terda...	Wajib	pdf,jpg,jpeg,png	5 KB	28 Oct 2025
5	Akta Notaris	Akta notaris pendirian yayasan atau badan hukum se...	Wajib	pdf,jpg,jpeg,png	5 KB	28 Oct 2025
6	Izin Operasional	Surat izin operasional sekolah dari dinas pendidik...	Wajib	pdf,jpg,jpeg,png	5 KB	28 Oct 2025
7	Sertifikat Akreditasi	Sertifikat akreditasi sekolah dari BAN-S/M (Maksim...	Wajib	pdf,jpg,jpeg,png	5 KB	28 Oct 2025

Figure 15. Document Category Master

Figure 15 shows the document categories for adding the categories required for grant applications. Documents are mandatory attachments for verification by several parties to ensure a smooth grant application process.

No. Pengajuan & Tanggal	Judul & Pengaju	Sekolah & Kategori	Jumlah Hibah	Status	Aksi
PH2025110023 22/11/2025	123 Supri	123 Pembangunan Ruang kelas baru	Rp 2.916.429	Disetujui	Detail
PH2025110022 21/11/2025	Judul Ini Adalah Pengajuan Supri	SD Budaya Pembangunan Ruang kelas baru	Rp 0	Ditolak	Detail

Figure 16. Grant List

Figure 16 shows the list of grants that have been created or are currently in process. Here, the admin can see the complete list of grants and view the details by clicking the details button. There is a filter above the menu that functions to filter data by status or specific number.

Wizard Pengajuan Hibah - Step 1

Step 1: Informasi Sekolah

Step 2: Item Pengajuan

Step 3: Upload Dokumen

Informasi Sekolah

Nama Sekolah:

Alamat Sekolah:

Kategori Hibah:

Figure 17. Grant Application

Figure 17 shows a grant application submitted by a user. The grant application process is divided into three main stages, namely filling in school information, collecting grant item data, and uploading supporting documents to make it easier for users to complete the data in stages. In the last step, users must complete the documents that must be uploaded, after which they can submit and send the documents, which will then *be reviewed* by the admin, technical team, and head of the division.

Detail Pengajuan

PH2025110023

Judul Pengajuan: 123

Nama Sekolah: 123

Alamat Sekolah: 123213

Kategori Hibah: Pembangunan Ruang kelas baru

Jumlah Hibah: Rp 2.916.429

Status: Disetujui

Deskripsi Pengajuan: 123213

Catatan:

Timeline

- Pengajuan Dibuat
Oleh: Supri
22 November 2025, 17:22
- Dikirim untuk Verifikasi
Oleh: Supri
23 November 2025, 00:00
- Terverifikasi
Oleh: Tim Teknis
24 November 2025, 04:54
Verifikasi disetujui dengan catatan

Figure 18. Application Details

Figure 18 above shows the application details. On the right column, there is a timeline of status changes made by each user *role*, such as application created, verification sent, validation sent, and approved. The application details also display *the list* of grant *items* and documents uploaded by the applicant.

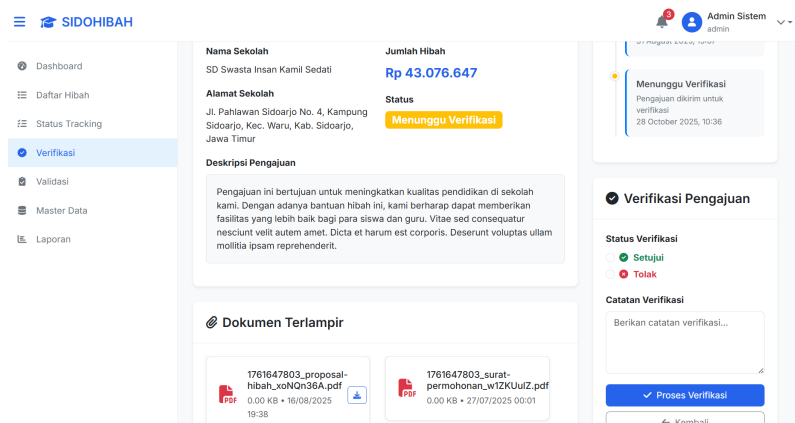


Figure 19. Application Verification

Figure 19 shows the application verification screen accessed by the technical team *role*. In this menu, the technical team can comment on the application with an approved or rejected status.

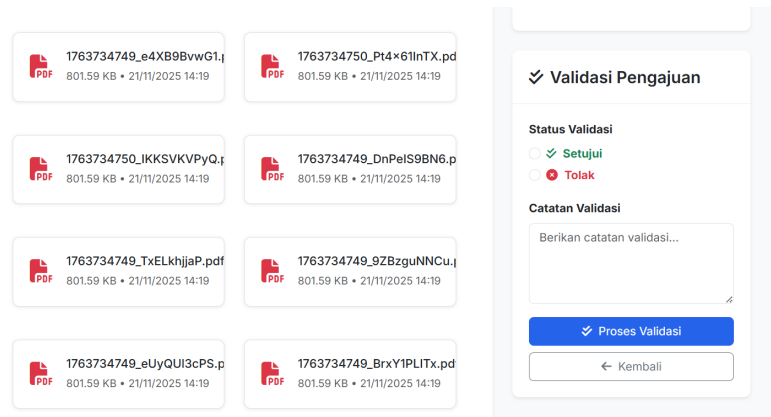


Figure 20. Application Validation

Figure 20 is the validation page for the Head of Division. The requirement for validating the application documents is that the grant application has been verified by the technical team. After validation is complete, the admin can complete the application flow by changing the status to approved.

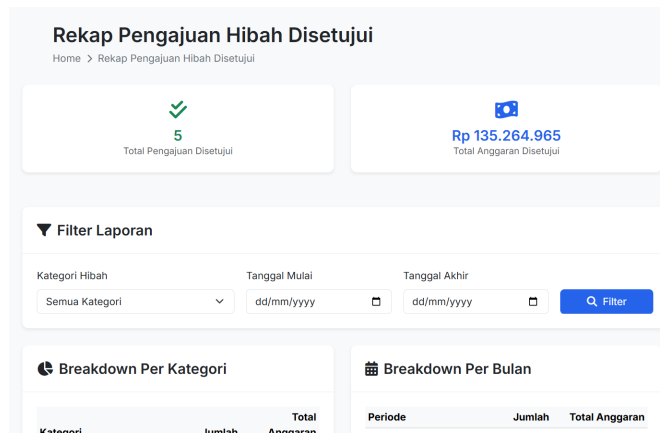


Figure 21. Grant Application Summary

Figure 21 is a summary of grant applications related to the budget. There is a filter to search for date periods and grant categories.

3.2 Discussion

The development of the Sidohibah application using the Agile method provided a lot of useful input for development and change. During the process, there were changes in form and design due to suggestions from related parties. *The user interface* was made as simple and concise as possible to reach users who had never used an information system before, and there was a *mobile* display mechanism that facilitated access via *smartphones*. The main menu was made as easy as possible by using a *wizard* form so that input could be divided into several parts. Each step could be drafted or saved, considering the large amount of input that had to be filled in and the large number of documents that had to be uploaded. Users could continue to input grant applications without having to start over from the beginning, and the application was divided into three main stages.

For the admin menu, the technical team and division heads also have *control* divisions, such as not all users being able to perform verification and validation. This is in accordance with existing activities in the field due to the different positions required to perform data verification and validation processes. Application monitoring is also divided into several statuses and there are comprehensive filters that make it easier for admins to filter or manage data further. Another advantage of the Sidohibah System is its reports. The processed recap results can be directly *downloaded* in Excel and PDF formats. Although the information system has been designed to display a recap, sometimes there are things that need to be edited manually for further reporting or data management, so Excel *export* is still needed by the administration with additional filters to group the data. The admin menu also has additional *support* menus such as *user management*, which is used to change the passwords of users who have forgotten them.

The use of information systems for managing educational infrastructure grants can replace manual management methods such as paper and Excel [19] [20], and has many advantages, such as: no use of paper, the ability to *monitor* incomplete and complete files, no more manual data summarization, easier and more transparent supervision for leaders and executors, can be done anywhere with a *mobile* display, and can organize data so that it is neater and can be reprocessed into government policy. This study shares similarities with previous research, where the use of systems can enhance the quality and efficiency of grant application processes and the management of existing infrastructure. The following are the results of the *black-box* testing in Table 3 below:

Table 3. *Black-box* Analysis

No	Role	Test Form	Expected Results	Test Results	
				Successful	Failed
1	Applicant	Registration Menu	Display <i>an alert</i> if there are required fields that have not been filled in	√	
2	Applicant	Registration Menu	Successfully uploaded document	√	
3	Applicant	Registration Menu	Successfully saved and obtained a new user	√	
4	All	Login Menu	Display email and password.	√	
5	All	Login Menu	Successfully logged in to the login form according to role.	√	
6	All	Login Menu	A warning appears stating that the username and password are incorrect.	√	
7	Admin	Dashboard Menu	Displaying card elements with data: Number of Applications, Pending, Approved, Number of Users, Rejected, Number of Grant Values	√	
8	Admin	Dashboard Menu	Display quick action buttons: new application, grant list, master data, report	√	
9	Admin	Dashboard Menu	Displaying the 5 most recent applications along with their submission status	√	
10	Admin	Grant List Menu	Displaying filter buttons consisting of: search keywords, status, category, date	√	
11	Admin	Grant List Menu	View details of grant applications submitted by applicants along with their status and uploaded documents.	√	

12	Admin	Grant List Menu	Displaying a list of grants that have been submitted by applicants and match the applied filters	√
13	Admin	Master Data Menu	Display the User Master Menu to manage new users, change passwords, and edit users	√
14	Admin	Master Data Menu	Displaying the Grant Category Master Menu, can add grant categories, edit and delete	√
15	Admin	Master Data Menu	Displaying the Master Document Category Menu, which allows you to add document types that applicants can upload when submitting an application.	√
16	Admin	Report Menu	View reports on grant applications in chart form.	√
17	Applicant	Grant List Menu	Displaying filter buttons consisting of: search keywords, status, category, date	√
18	Applicant	Grant List Menu	View details of grant applications submitted by applicants along with their status and uploaded documents	√
19	Applicant	Grant List Menu	Displaying a list of grants that have been submitted by the applicant and match the applied filters	√
20	Applicant	Grant Application Menu	Displaying the grant application form filling process	√
21	Applicant	Grant Application Menu	Uploading the required documents and photos	√
22	Applicant	Grant Application Menu	Feature to provide grant requirement information	√
23	Technical Team	Verification Menu	View and filter grant applications that are pending or completed	√
24	Technical Team	Verification Menu	View documents and photos, as well as download features	√
25	Technical Team	Verification Menu	Document verification feature and change of application status to verified	√
26	Head of Division	Validation Menu	View and filter grant applications that are pending or completed	√
27	Head of Division	Validation Menu	View documents and photos, as well as download features	√
28	Head of Division	Validation Menu	Document validation feature, accountability reports, and change of application status to validated	√

$$\text{Score} = \frac{\text{Total Score}}{\text{Question Item}} \times 100\%$$

$$\text{Score} = \frac{28}{28} \times 100\% = 100\%$$

4 Conclusion

This research can implement an information system not only in its creation but also in providing increased productivity and efficiency in the management of private elementary school grant applications in Sidoarjo Regency, with an analysis score of 100% for the use of the application menu. By using the Agile method, researchers can create applications that suit the needs and desires of users, with the hope of replacing existing

manual processes with a reliable and more professional information system for monitoring grant funds. The advantage of an information system such as Sidohibah is that it provides comprehensive information to organizations, and the system enables more integrated and easy-to-understand data management. With the support of systematic data management, predictive analysis allows the system to identify trends in aid distribution[21].

On the other hand, Sidohibah provides support for more integrated and structured data management, so that the information presented is more comprehensive and easier to understand by the relevant agencies and applicant schools. This neat data management also opens up opportunities for further development towards predictive analysis, for example in observing patterns and trends in aid distribution, so that the results of the analysis can be used as material for consideration in making more targeted decisions and strengthening the transparency and accountability of grant fund management in the next period.

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References

- [1] Eva Nurjannah and Muhammad Ibnu Faruk Fauzi, "Website-Based School Facilities and Infrastructure Information System at MTs Darul Ikhlas Sangatta Selatan," *Jurnal Sadewa: Publication of Education, Learning and Social Sciences*, vol. 1, no. 4, pp. 69–84, Oct. 2023, doi: 10.61132/sadewa.v1i4.217.
- [2] R. Annisa, P. A. Rahayuningsih, and A. Anna, "Designing a Web-Based School Facilities and Infrastructure Inventory Information System," *Infotek: Journal of Informatics and Technology*, vol. 6, no. 1, pp. 60–70, Jan. 2023, doi: 10.29408/jit.v6i1.7356.
- [3] Mohamad Thibyan, Yat Rospia Brata, and Tatang Parjaman, "Management of Educational Facilities and Infrastructure in Supporting the Quality of Education at SD IT Al-Amin Sindangkasih Ciamis," *Jurnal Sadewa : Publication of Education, Learning and Social Sciences*, vol. 1, no. 4, pp. 32–41, Oct. 2023, doi: 10.61132/sadewa.v1i4.211.
- [4] D. Rochmawati and W. Lutpiah, "DESIGNING A GRANT FUND VERIFICATION INFORMATION SYSTEM USING PHP MYSQL AT THE BASIC SOCIAL SERVICES BUREAU OF THE RELIGIOUS AFFAIRS DEPARTMENT OF THE WEST JAVA PROVINCIAL SECRETARIAT," *Journal of Informatics and Computers (INFOKOM)*, vol. 9, pp. 13–2, Jun. 2021.
- [5] V. Riyanto, Sumarna, and H. Nurdin, "Facility and infrastructure information system (sisapras) as monitoring of higher education service facilities," *Journal of Technology*, pp. 96–104, Jun. 2021.
- [6] S. Hendartie, B. Nugroho, and E. Erlina, "SCHOOL INFRASTRUCTURE MANAGEMENT INFORMATION SYSTEM (Case Study: Siak Regency Education and Culture Office)," Nov. 2020.
- [7] M. Zhu, A. Sari, and M. M. Lee, "A systematic review of research methods and topics of the empirical MOOC literature (2014–2016)," *Internet and Higher Education*, vol. 37, pp. 31–39, Apr. 2018, doi: 10.1016/j.iheduc.2018.01.002.
- [8] A. Ikhwan, M. Wianda Putri, and M. P. Tirta, "Designing a Web-Based Grant Fund Management Information System: A Case Study of the North Sumatra Provincial People's Welfare Bureau," *JSI (Journal of Information Systems) Suryadarma University*, pp. 137–149, Jan. 2025.
- [9] I. Sulastri, A. Wahid Mahsuni, S. Aminah Anwar, P. Accounting Studies, F. Economics and Business, and U. Islam Malang, "The Influence of E-Government on Transparency and Accountability of Public Finance in Local Government (A Study of WAWO NTB Bima Subdistrict)," *e_Journal of Accounting Research*, vol. 14, no. 01, pp. 1007–1018, 2025, [Online]. Available: <http://jim.unisma.ac.id/index.php/jra>,
- [10] Sugiyono, *Quantitative, Qualitative, and R&D Research Methods*. Bandung: Alfabeta, 2020.
- [11] M. I. Mandirri, S. Nur Budiman, and U. Mawaddah, "Application of the Agile Method in the Development of a Web-Based Teaching Journal Application at Madani University Indonesia," 2025.
- [12] Z. Hadi Irawan, S. Lestanti, and U. Mawaddah, "DESIGNING A WEB-BASED GYM ADMINISTRATION MANAGEMENT INFORMATION SYSTEM USING THE AGILE DEVELOPMENT METHOD," 2024.
- [13] K. Nurhaliza, "INTRODUCTION TO FLOWCHART AND PSEUDOCODE IN ALGORITHMS AND PROGRAMMING," Dec. 2021, doi: <https://doi.org/10.32388/tf77dy>.

- [14] T. A. Naser, R. F. Alfariz, H. S. Rahman, and Z. Niqotaini, "DESIGN AND MODELING OF DATABASE FOR BARBERSHOP SERVICE RESERVATION INFORMATION SYSTEM," *Kohesi: Journal of Science and Technology*, vol. 9, Jul. 2025.
- [15] H. Toba and M. Fransisca, "Design and Development of a Forward Chain-Based Expert System for Early Diagnosis of Emotional Development in Children," *Journal of Informatics*, 2023.
- [16] A. Nofiar *et al.*, "Website-Based Internal Grant Application Information System for Kampar Polytechnic Using the Laravel Vue.js," *IGNITE : Journal Islamic Global Network for Information Technology and Entrepreneurship*, vol. 2, no. 2, pp. 14–22, 2024, doi: 10.59841/ignite.v1i4.
- [17] I. Kurniawati and A. Eviyanti, "Design and Development of a Web-Based Animal Feed Sales Information System Using the Laravel Framework," *Indonesian Journal of Applied Technology*, vol. 1, no. 1, p. 21, Jul. 2024, doi: 10.47134/ijat.v1i1.3094.
- [18] W. Nur Fadhillah, "Development of a Web-based Library Information System for SMA Negeri 1 Mojolaban Sukoharjo," *Jurnal Teknik Elektro*, vol. 21, no. 02, 2021.
- [19] I. Ilman, R. Sholehurrohman, Muhaqiqin, and R. Taufik, "Website-based Grant Management Information System at the Lampung Provincial Government Welfare Bureau," *Jurnal Pepadun*, vol. 5, pp. 172–181, 2024.
- [20] M. R. Saputra *et al.*, "INFORMATION SYSTEM FOR OPERATIONAL GRANT FUND ASSISTANCE FOR PLACES OF WORSHIP IN BENGKALIS REGENCY," *Journal of Business Technology and Information*, vol. 3, pp. 31–2021, Jan. 2021, doi: 10.47233/jteksis.v3i1.171.
- [21] S. Samsudin and R. J. Sinaga, "Web-Based Community Welfare Monitoring Information System with Predictive Analytics for Social Assistance and Scholarship Management," *Journal of Science and Technology for the Community*, vol. 4, no. 2, pp. 131–142, Dec. 2024, doi: 10.55537/jibm.v4i2.1009.