

DEVELOPMENT OF THE E-PERPUS APP FOR SDN SEBANI 1 PANDAAN

M. Mahyan Masbuby^{1*}, Aci Prismanda², Zahra Nabiilah³
Talitha Nabilah Ramadhani⁴, Alikah Rahma Revayza⁵

^{1,2,3,4,5}Rekam Medis dan Informasi Kesehatan, Poltekkes Kemenkes Malang
Malang, Indonesia

Author's email:

¹mahyanmasbuby2003@gmail.com; ²aciprismanda11@email; ³zahra.nabiilah23@gmail.com
⁴talithanabilahramadhani@gmail.com; ⁵alikaahrevayza@gmail.com

Corresponding author:

*mahyanmasbuby2003@gmail.com

Abstract. *This study was conducted to develop a library management application at SDN Sebani 1 Pandaan. The study employed a Research and Development (R&D) approach using the Evolutionary Prototyping model. The Evolutionary Prototyping method consists of analysis, prototype development, prototype refinement based on user feedback, and website launch. The results of the study illustrate the application system design process. Based on a needs analysis, the manual library system has many weaknesses, such as the risk of recording errors and disorganized data. Therefore, the E-Perpus application was developed as a solution to manage data in a more organized, efficient, and centralized manner. This application has several key features, namely book data management (input and categorization), book title search, loan and return management, loan data monitoring, and a book catalog accessible to students. Librarians have full access to manage data, while students can search for and view book information. Test results indicate that the application functions well and is capable of streamlining librarians' work while helping students find book information more quickly and easily. This study demonstrates that a simple, offline library digitization system can serve as an effective solution for schools with limited facilities.*

Keywords: *Application; Library; Management*

1. INTRODUCTION

The role of a library as a provider of book collections, magazines, journals, and reference materials requires proper and structured management. In several educational institutions, library management remains a challenge that needs to be addressed. This includes managing books and administration conventionally or relying on manual records. According to Murniyanto (2022:77), an organized library management system is an essential goal that can provide added value to a library. His research emphasizes the function of library management as a regulator, sorter, activator, and supervisor of the book administration cycle, which certainly supports the improvement of literacy in schools (Murniyanto, 2022). In the educational sphere, the library is one of the vital facilities supporting the educational process in schools, particularly in increasing students' literacy, knowledge, and skills. This is in line with the opinion of Loar and Setiawati (2023), who state that the purpose of a school library is always correlated with the learning process and literacy, where the library must support the teaching and learning process, provide reading material collections, and so forth.

According to Asmawati et al. (2023), the main problem faced by school libraries, from the elementary level to higher education, consistently relates to reading interest. In several educational institutions, especially elementary schools, there are often no specific Librarians or librarians officially appointed by the school to manage the library optimally. Book borrowing services remain limited, often only occurring when there are teacher assignments related to library use. The borrowing process is generally handled by the school administration, involving simple recording and returns based on mutual agreement.

A similar situation occurs at SDN Sebani 1 Pandaan. Based on the results of observations, researchers identified problems with a library management system that uses conventional

methods, which is considered less effective and no longer relevant. Consequently, the implementation of a systematic and structured library management system needs attention so that the library can function as an optimal information source and increase students' reading interest.

One solution that can be developed is the implementation of digital based library management. In today's digital era, such efforts have become crucial due to their superior effectiveness and efficiency. Furthermore, digital libraries provide ease of access for students to obtain learning resources anytime and anywhere, thereby encouraging sustainable literacy and reading interest improvements (Ziya' Ulhaq & Setiawan, 2024). The implementation of digital systems also supports data transparency and accuracy through organized databases, which minimizes recording errors and collection loss (Ramadhan et al., 2025).

The development of website based digital libraries was previously conducted by Iknajah et al., who specifically mentioned efforts to overcome library system constraints such as time-consuming book searches, difficulties in inventory, and inefficient reporting at the SDN Bandungrejo 4 Malang library (Iknajah et al., 2017). In that study, the development process was carried out using the Waterfall model. Research with similar problems was also conducted by Habibillah et al. concerning the development of a website based digital library to address library administrative problems at SDN 8 Rantau Bayur (Habibillah et al., 2022). That digital library was designed using Unified Modeling Language (UML) and the Waterfall method for software development.

Although previous research indicates that the development of website based digital libraries can improve management and library services, implementation is often limited to specific contexts and the needs of individual schools. Furthermore, technological developments demand more modern and adaptive management system transformations (Sinaga & Peniarsih, 2024). Accordingly, the development of digital library management is also necessary at SDN Sebani 1 Pandaan; therefore, this study was conducted to develop the E-Perpus application at SDN Sebani 1 Pandaan.

2. LITERATURE REVIEW

2.1 Management Information Systems and Library Management

Management Information Systems (MIS) is a systemic integration between hardware, software, and organized procedures designed to process data into information that supports strategic decision making (Saputra et al., 2024). In the context of school libraries, the implementation of MIS aims to automate manual processes such as collection recording, member management, and circulation transactions to increase administrative efficiency (Setyawan et al., 2025). Through this digitization, the library is expected to provide faster and more accurate literacy services for both students and educators, while minimizing the risk of data loss that frequently occurs in conventional systems.

Library operations at SDN Sebani 1 Pandaan are guided by Law No. 43 of 2007 and the National Library Standards for SD/MI (Perka Perpustakaan No. 10 of 2017). These standards emphasize that school libraries must be managed professionally as educational information centers, rather than merely book storage facilities. To achieve these standards, the implementation of a Management Information System (MIS) serves as a primary solution for automating collection data, circulation transactions, and member management. With this digitization, school literacy services become more efficient, transparent, and aligned with quality targets established by the government.

2.2 Software Development

The development of this application employs the Prototyping method, an adaptive approach that prioritizes iterative processes and active user involvement (Christoval et al., 2025). Unlike

conventional linear models, this method allows for the creation of an initial system design that can be immediately tested and evaluated by SDN Seban 1 Pandaan. Through repeated feedback cycles from needs analysis and prototype construction to revisions based on user responses the development process becomes more flexible. This ensures that the resulting application is not only technically stable but also highly relevant to real world operational needs in the field.

The system design is reinforced by the use of modeling tools such as Unified Modeling Language (UML) or Data Flow Diagrams (DFD) to visualize the system architecture comprehensively. Beyond visualization, the role of a Relational Database Management System (RDBMS) is fundamental as a structured and coherent data storage medium (Muis & Fendy, 2024). With a solid database architecture, the integrity and security of library information can be guaranteed. The use of these technical instruments confirms that the application is built on a strong data foundation, facilitating system maintenance and ensuring long term information consistency (Puteriawati et al., 2025).

3. RESEARCH METHODS

This study utilizes a Research and Development (R&D) approach by adopting the Evolutionary Prototyping model. The research was conducted at UPT Sekolah Dasar Negeri Seban 1 Pandaan, Pasuruan Regency. Data collection techniques included observation and interviews. Data analysis was performed through several stages, namely data reduction, data presentation, conclusion drawing, algorithm logic validation, and analysis of system testing results.

The evolutionary prototyping model was chosen as an alternative to the traditional System Development Life Cycle (SDLC) approach to address challenges in website based system development, which is characterized by dynamic user needs (Masbuby et al., 2025). This approach emphasizes continuous user involvement throughout the system development process (Hasibuan & Samsudin, 2025). Consequently, the system is able to flexibly adapt to changing requirements and minimize the potential for miscommunication during system implementation (Praktikto & Setiaji, 2024). The Evolutionary Prototyping method consists of analysis, prototype development, prototype adjustment with users, and website launch. Further details are illustrated in Figure 1.

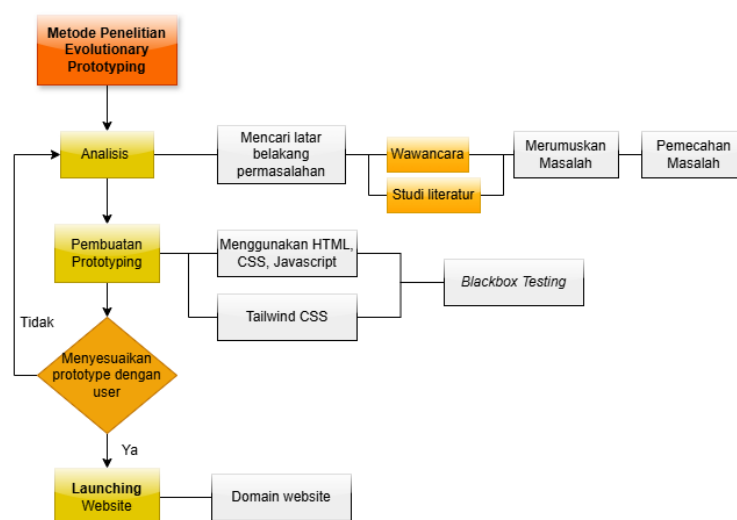


Figure 1. Research Methods

a. Needs Analysis

The analysis phase in this study was conducted through interview activities aimed at identifying the background of the problems and alternative solutions. The interviews were carried out once with two informants, namely the Principal of SDN Seban 1 Pandaan and the

**The Sixth International Conference on Innovation in Social Science
and Engineering Education (ICoISSEE-6)**

Bandung, Indonesia, July 25, 2026

Librarian, using a previously prepared interview guide. The interview results were then summarized and analyzed to identify system requirements, which subsequently served as the basis for prototype development in accordance with the identified problems.

Table 1. Interview Questions

No	Interview Questions
1	What are the obstacles encountered while managing the library?
2	Is the recording of book borrowing still done manually?
3	If a digital library application is available, is it expected to reduce the librarian's workload?
4	What features are desired in the digital library application?
5	What are the desired non-functional requirements for the application?

a. Prototype Development

After the analysis phase was completed, the next step involved prototype creation and technical system realization. This software design utilized UML standards, specifically using flowcharts and context diagrams to map the system workflow. Interface implementation was carried out using standard web programming languages, where Tailwind CSS was employed to accelerate the visual customization process. As a form of verification for the development results, testing was conducted using *blackbox testing* techniques to ensure the system functions according to expectations.

b. Prototype Refinement based on User Requirements

The next phase involved prototype validation through user reviews. This process aimed to obtain comprehensive feedback regarding the functionality and appearance of the website. Based on the results of these reviews, the prototype was then revised and refined to better align with the final user requirements.

c. Website Launch

This stage represents the final phase in the prototype development process. By hosting the database on a *localhost* environment, the website can now be operated optimally by librarians and students, providing stable and focused access within the school area.

4. RESULTS AND DISCUSSION

4.1 Needs Analysis

The development of this application began with direct observations and interviews at SDN Sebani 1 Pandaan. Based on the observations, the current library space was perceived as disorganized, resulting in a cramped and uncomfortable environment for visiting students. In addition to assessing physical conditions, interviews were conducted with the School Principal and library staff to understand the daily challenges in data management. The combined information from these observations and the school's input served as the foundation for the system design. The problems identified through the interviews are presented in the following table.

Table 2. Interview Results

No	Core Problem
1	Constraints encountered include manual recording, inconsistent book numbering, difficulty returning books to correct shelves, and a lack of monitoring for student borrowing.
2	Yes, it remains manual.
3	Yes, especially in book management tasks such as numbering, new book registration, and loan monitoring.

4	Login system, specialized librarian page, new book input, search functionality, borrowing feature, automatic numbering, and a digital library catalog.
5	User-friendly application, high quality UI/UX, restricted access within the school area, and high speed performance (no lagging).

4.2 Prototype Development

4.2.1 Flowchart Diagram

According to Rosyida et al. (2023), a flowchart is a diagram that describes the sequence of steps and the relationships between processes in detail using standard symbols. In addition to mapping the internal workflow of the system, this diagram serves to illustrate how the system interacts with external parties or entities. The workflow design for this application is presented more clearly in Figure 2.

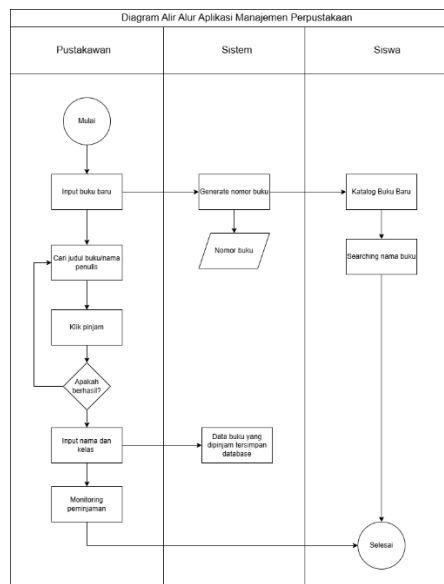


Figure 2. Flowchart Diagram

The application workflow involves three main entities: the Librarian, the System, and the Student. The process begins with the Librarian inputting new book data, after which the System automatically executes a function to generate a unique book number as the collection identity. This data is subsequently stored in a digital catalog, allowing Students to conduct independent book searches through the available features. Furthermore, in the borrowing procedure, the Librarian searches for a book title and selects the borrow feature, which is then validated by the System. If the validation is successful, the Librarian enters the borrower's identity, including name and class, and the System stores all transaction information in the database. This sequence of processes concludes with a monitoring phase by the Librarian to ensure that borrowing data is accurately recorded until the status is declared complete.

4.2.2 Use Case Diagram

According to Lubis & Siregar (2024), a use case diagram aims to explain the modeling and map the system's functionality in interacting with the user. This diagram clarifies the access rights of each actor toward the available features. The Use Case Diagram for the system is presented in Figure 3.

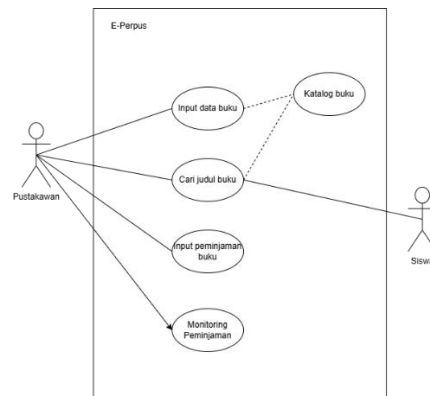


Figure 3. Use Case Diagram

Based on Figure 3, the system involves two main actors with different access rights: the Librarian and the Student. The Librarian acts as the primary system manager with the authority to execute four managerial functions, including inputting book data, searching for book titles, inputting book borrowing transactions, and monitoring borrowing records. All of these librarian activities aim to ensure smooth library administration, ranging from collection recording to digital borrowing oversight.

Meanwhile, the student actor has more limited access, specifically only for the function of searching for book titles. This feature is closely related to the book catalog, which serves as the data representation of the inputs previously performed by the librarian. Through this division of roles, the system is able to maintain administrative data security as records can only be modified by the staff, while still providing convenience for students to independently review the availability of the collection.

4.2.3 Context Diagram

The context diagram is an essential part of the Data Flow Diagram (DFD) that represents the entire system through a single circle symbol (Siswanto & Lailiyah, 2023). Unlike more indepth technical diagrams, a context diagram does not detail the data processes but serves as a communication tool to provide a high level overview of the system to stakeholders (Herdiansah et al., 2023). The design of the context diagram for the E-Perpus application is illustrated in Figure 4.

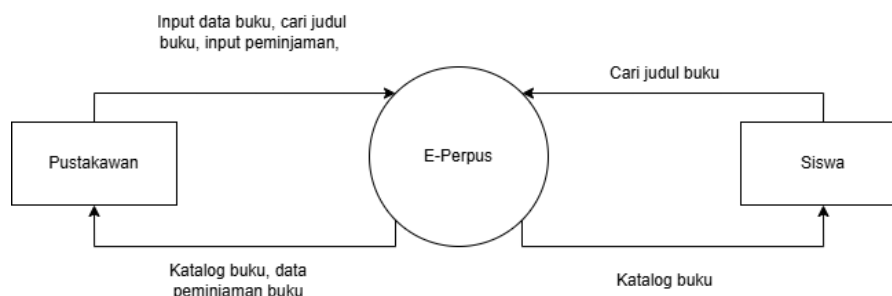


Figure 4. Context Diagram

Figure 4 presents the context diagram, which illustrates the system boundaries and the flow of information between the application and its external environment. In this diagram, the system is positioned as a data processing center interacting with two external entities: the Librarian and the Student. The Librarian acts as the primary data provider, sending inputs such as new book

data, title search criteria, and loan transaction data into the system. In response, the system provides outputs in the form of access to the book catalog and borrowing data summaries to facilitate administrative tasks. Meanwhile, the student actor interacts with the system by submitting book title search data, which the system then responds to by displaying the requested book catalog information. Overall, this diagram demonstrates that E-Perpus serves as an integration hub that bridges the librarian's operational needs and the students' information access needs centrally.

4.2.4 Data Structure Design

Application development using the evolutionary prototyping method focuses on the speed of feature validation development, utilizing a Relational Database Management System (RDBMS) with MySQL to ensure data integrity and security. The data structure is designed using relational tables that are interconnected through Foreign Keys (Dhiannisa et al., 2024). The design of the table structures and data attributes used in this application can be seen in Figure 5.

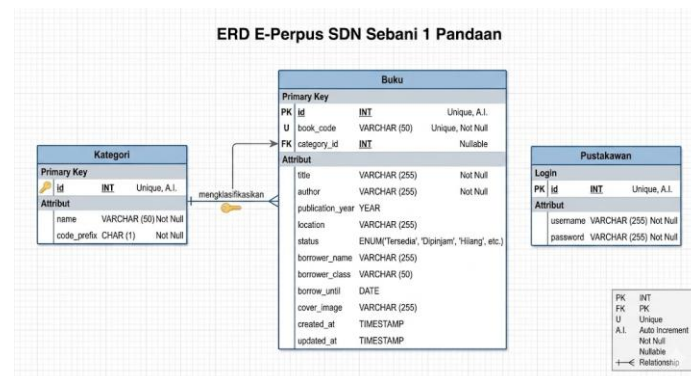


Figure 5. Entity Relationship Diagram (ERD)

In Figure 5, the data structure is visually designed through an Entity Relationship Diagram (ERD) to map the relationships between entities within the system. The main entities in this system consist of Categories, Books, and Librarians. The Categories table serves as a parent table that stores book category data along with their code prefixes, which has a one-to-many relationship with the Books table. This ensures that every book can be consistently classified into a specific category. Meanwhile, the Librarian entity stands as a management actor with access to all book managerial functionalities within the system.

The results of this logical design are then physically implemented into the MySQL relational database using standardized table structures. The "books" table is configured with detailed attributes including "id" as the Primary Key, "book_code" which is unique, and "category_id" as a Foreign Key that connects it to the categories table. In addition to basic attributes such as title, author, and year, this table is also equipped with a status column and temporary borrowing data such as *borrower_name* and *borrow_until* to support real-time circulation monitoring functions. The use of specific data types, such as integers for the year and timestamps for the creation time, ensures data integrity and storage efficiency within the SDN Sebani 1 Pandaan environment. The MySQL database implementation can be seen in Figure 6.

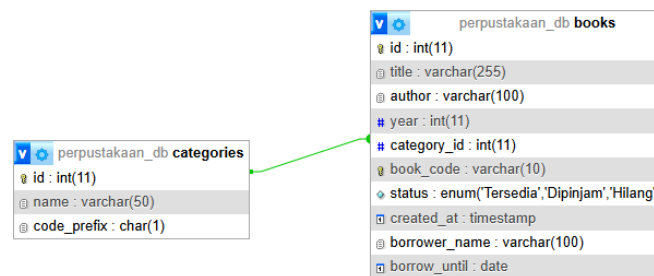


Figure 6. Database

4.2.5 Prototype Interface

The librarian interface is designed with a more functional and systematic approach to support library management activities. In the dashboard section, the system displays data summaries such as total collections, borrowed books, available books, and the number of categories. Additionally, there is a book data input form that facilitates librarians in adding new collections, along with search and transaction features that enable rapid borrowing and return processes. A borrowing monitoring panel is also provided to track the status of books currently borrowed by students.

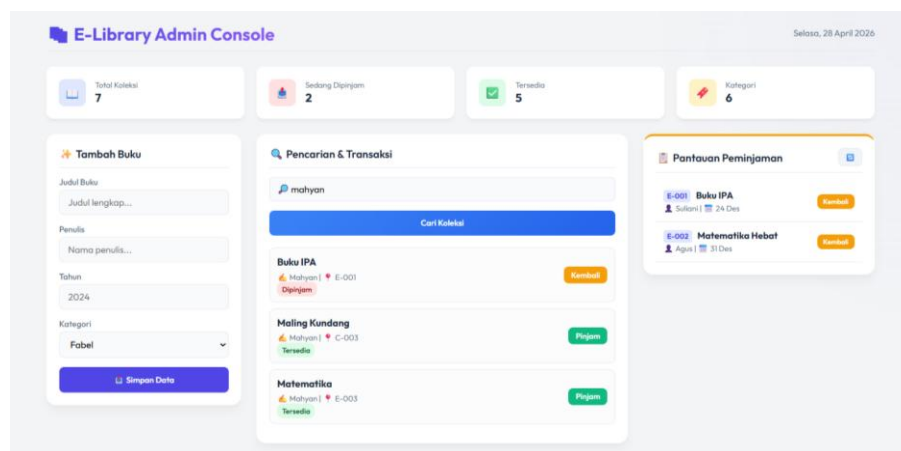


Figure 7. Librarian Interface

Meanwhile, the student interface on the E-Perpus prototype is designed with an attractive and simple visual concept to support user comfort, particularly for elementary school students. The header section utilizes striking color gradients with the main title “Perpustakaan Digital SD Negeri Sebani 1” and is equipped with a search bar and category filters to help students find books easily. The main section displays the latest book catalog in card format, containing essential information such as title, author, publication year, book code, and availability status. The concise presentation of information and neat visuals make this interface easy to understand and access. The student prototype interface is shown in the following image.

**The Sixth International Conference on Innovation in Social Science
and Engineering Education (ICoISSEE-6)**
Bandung, Indonesia, July 25, 2026

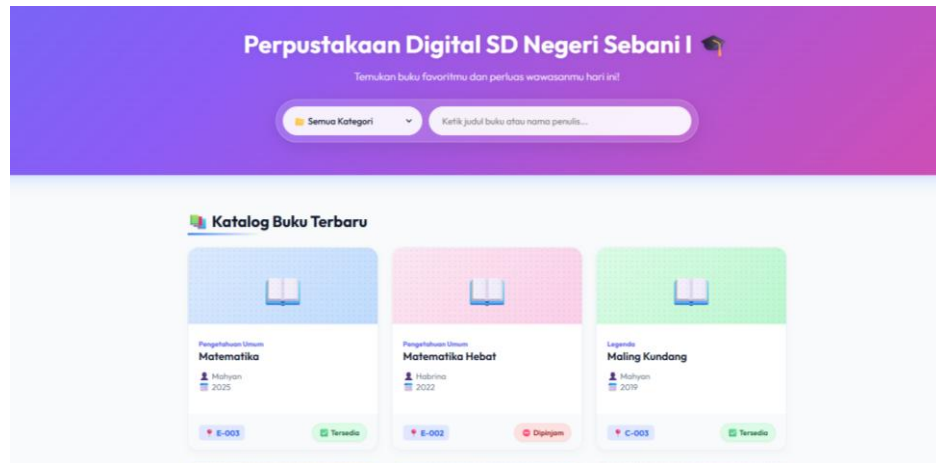


Figure 8. Student Interface

The choice of simple visual design, the use of attractive colors, and the presentation of the catalog in card format make it easier for users to search for and recognize book information. This aligns with research stating that a clean, neat, and easy-to-navigate interface can provide an intuitive user experience and increase comfort in system usage (Saputra et al., 2024). Furthermore, the provision of search features and category filters supports user efficiency in finding information, which is one of the primary indicators of successful interface design.

4.2.6 Prototype Testing

After passing through various previous stages, the final step in prototype development is the application testing phase using the blackbox testing method. The blackbox testing method is a software testing approach used to assess whether system features function correctly and are accepted by users (Restu, 2024). Furthermore, this method can evaluate whether bugs or errors occur within the system, thereby assisting the application's refinement before moving to the next stage. The results of this testing can be seen in Table 3.

Table 3. Blackbox Testing Results

No	Feature Tested	Scenario	Expected Result	Test Result
1	Enter new book	The Librarian inputs the book title, author's name, year of publication, and selects the book category.	The Librarian successfully entered the book title, author's name, year of publication, and selected the book category.	Success
2	Book title search	The Librarian searches for the title of the book or the name of the author of the book.	The Librarian managed to find the title of the book or the name of the author of the book.	Success
3	Book lending	The Librarian looks for the title of the book to be borrowed, clicks the borrow button, writes the borrower's name and return date.	The Librarian successfully searches for the title of the book to be borrowed, clicks the borrow button, writes the name of the borrower and the return date.	Success

**The Sixth International Conference on Innovation in Social Science
and Engineering Education (ICoISSEE-6)**
Bandung, Indonesia, July 25, 2026

4	Book returns	The Librarian looks for the title of the book to be borrowed, clicks the back button.	The Librarian has successfully found the title of the book to be borrowed, click the return button.	Success
5	Monitoring book loans	Displays borrowed book data with details of book name, borrower, and return date.	Successfully displays borrowed book data with details of book name, borrower, and return date	Success
6	Book Catalog	Displaying book data into interface catalog with details of book name, author name, year of publication, availability, bookshelf number	Successfully Displaying book data into interface catalog with details of book name, author name, year of publication, availability, bookshelf number	Success
7	Searching for Books in the Library Catalog	Students search for book titles in the search and category columns.	Students successfully search for book titles in the search and category columns.	Success

4.3 Prototype Refinement based on User Feedback

At this stage, two adjustments were conducted based on user feedback. The first revision focused on adding features to the librarian interface. The desired feature was the optimization of the total collection icon to enable a pop up display of all book collections that had been entered. Furthermore, the user requested edit and delete features for the collection to minimize input errors.

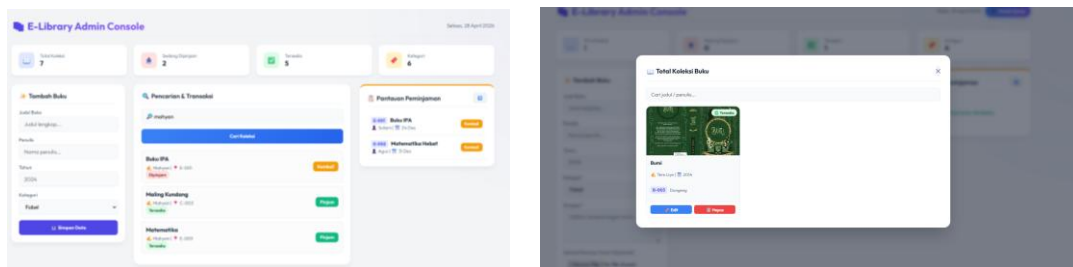


Figure 9. Left (before) and right (after)

The second revision focused on optimizing the user interface on the student side to increase engagement and reading interest. A fundamental change was made to the visual components of the catalog, where the book representation, which initially used generic icons, was replaced with actual book cover visualizations. This transformation aims to provide more effective visual stimulation for elementary school students when exploring the library collection. Beyond the visual aspect, the system is also equipped with a synopsis feature for each book title. The addition of this descriptive data allows students to conduct independent initial reviews to understand the relevance of the book's content before deciding to borrow it.

**The Sixth International Conference on Innovation in Social Science
and Engineering Education (ICoISSEE-6)**
Bandung, Indonesia, July 25, 2026

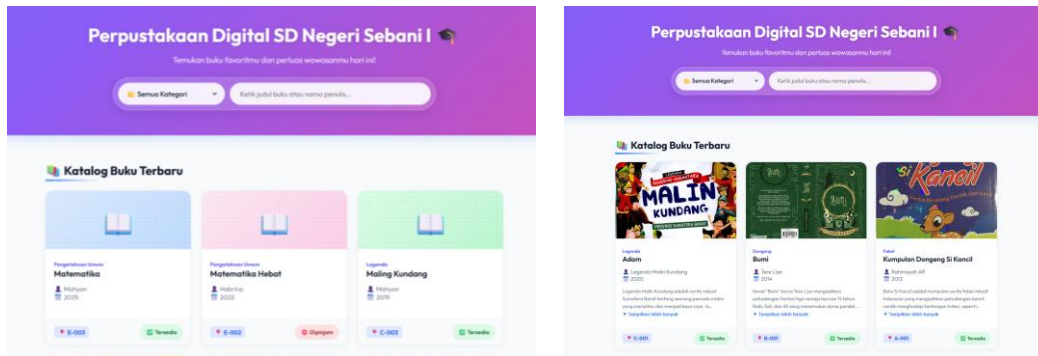


Figure 10. Left (before) and right (after)

4.4 Application Launch

The application launch phase began with its direct installation on the computers at the SDN Seban 1 Pandaan library using *localhost*. This system was specifically designed to operate without an internet connection (*offline*), ensuring that the application remains stable and fast when used to serve students (Febriyanti et al., 2024). All information regarding book collections and borrowing records is securely stored in a designated central data repository. Consequently, library staff no longer need to record transactions in physical ledgers, as all data is interconnected within the school's computer system.

In its operation, the application is divided into two primary sections. The first is a dedicated page for library staff, which functions to register new books and monitor student borrowing statuses to ensure no records are missed. The second is a search interface for students, where they can browse book covers and read story summaries before borrowing. The transition from conventional manual methods to this digital system streamlines the staff's workload and enables students to more easily retrieve the book information they require.

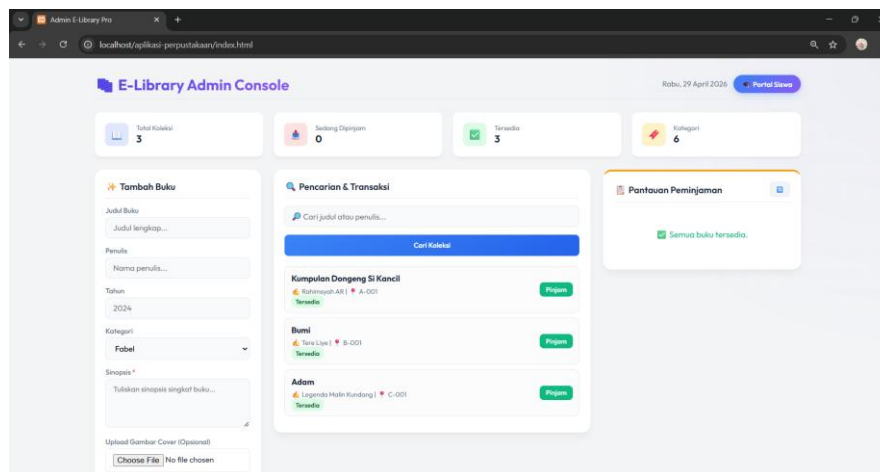


Figure 11. Librarian Interface

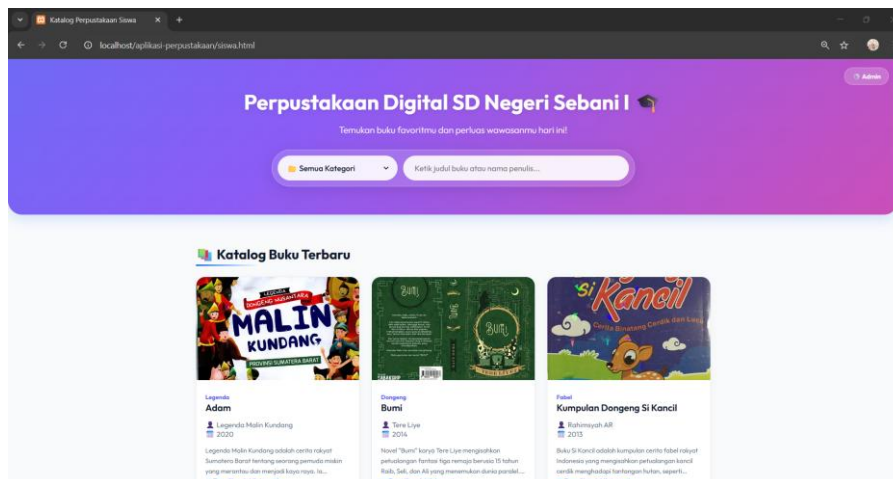


Figure 12. Student Interface

CONCLUSION

Based on the research conducted, the author has successfully designed and developed the E-Perpus application at SDN Seban 1 Pandaan. The Evolutionary Prototyping method employed consists of analysis, prototype development, prototype adjustment with users, and website launch. The research results indicate an urgency for application development based on the needs analysis performed. In the needs analysis phase, it was found that the manual library management system is highly prone to human error. The primary issues lie in disorganized book recording and borrowing transactions, along with inconsistent book numbering due to the requirement for staff to manually verify the last assigned number whenever a new collection is added. Thus, the development of this application serves as a definitive solution to address these problems.

In the second stage, prototype development, the application established a workflow involving three main entities: the Librarian, the System, and the Student. Furthermore, the Use Case Diagram involves two main actors with distinct access rights: the librarian, who executes four managerial functions including inputting book data, searching for book titles, inputting book borrowing, and monitoring borrowing and the student, who is limited to the book search function. The context diagram stage illustrates the E-Perpus system functioning as a link between the librarian and students to manage and access book information centrally. Next, the data structure design stage produced an integrated and consistent database that supports efficient book management and monitoring. The subsequent stage determined a simple, attractive, and user-friendly prototype interface to facilitate user interaction, followed by testing. System revisions further improved features and visuals, aligning them more closely with user needs and increasing overall user comfort.

REFERENCES

- Asmawati, Idrus, M., & Pawerangi, M. H. (2023). Manajemen Perpustakaan Dalam Meningkatkan Minat Baca Siswa Di Sd Inpres 4/82 Abbumpungeng Kabupaten Bone. *BISENTER: Jurnal Bisnis Dan Entrepreneur*, 1(2). <https://ojs.amiklps.ac.id>
- Christoval, P., Harahap, S. Z., Nasution, M., & Masrizal, M. (2025). Implementasi Sistem Informasi Perpustakaan Untuk GBI Antiokhia Berbasis Web Menggunakan Framework Adonis JS Pada Node JS Menggunakan Metode Prototype. *Jurnal Pendidikan Indonesia*, 6(8). <https://doi.org/10.59141/japendi.v6i8.8530>
- Dhiannisa, F., Firliana, R., & Wardani, A. S. (2024). Analisis Kualitas Website E-Perpus Menggunakan Metode WebQual 4.0 dan Importance Performance Analysis (IPA). *METHOMIKA Jurnal Manajemen Informatika Dan Komputerisasi Akuntansi*, 8(2), 129–137. <https://doi.org/10.46880/jmika.Vol8No2.pp129-137>

**The Sixth International Conference on Innovation in Social Science
and Engineering Education (ICoISSEE-6)**

Bandung, Indonesia, July 25, 2026

- Febriyanti, F., Kanada, R., Suryana, I., Apriliani, S., Rahmadania, I., Saputri, T. A., & Wahyuningsih, N. (2024). Perpustakaan sebagai Pusat Sumber Belajar di Era Digital. *Jurnal Basicedu*, 8(3), 2331–2339. <https://doi.org/10.31004/basicedu.v8i3.7784>
- Habibillah, A., Terttiaavini, & Heryati, A. (2022). Pengembangan Perpustakaan Digital Untuk Meningkatkan Minat Membaca Siswa Sd Negeri 8 Rantau Bayur Palembang. *Klik - Jurnal Ilmu Komputer*, 3(1), 42–49. <https://jurnal.uss.ac.id/index.php/klik/article/view/340>
- Hasibuan, M. A., & Samsudin. (2025). Analisis Dan Rancang Bangun Sistem Informasi Akademik Menggunakan Metode System Development Life Cycle (Sdlc). *Jurnal Informatika Teknologi Dan Sains (Jinteks)*, 7(1), 377–385. <https://doi.org/10.51401/jinteks.v7i1.5589>
- Herdiansah, A., Sugiyani, Y., Fitriawati, N., & Cholid, H. N. (2023). Sistem Informasi Akademik Penilaian Hasil Kegiatan Belajar Mengajar Sekolah Menengah Pertama. *JIKA (Jurnal Informatika)*, 7(3). <https://doi.org/10.31000/jika.v7i3.8838>
- Ikrajah, A. M., Brata, A. H., & Ananta, M. T. (2017). Pengembangan Aplikasi Perpustakaan Berbasis Website pada SDN Bandungrejosari 4 Malang. *Jurnal Pengembangan Teknologi Informasi Dan Ilmu Komputer*, 1(1). <http://j-ptiik.ub.ac.id>
- Loar, Y. N., & Setiawati, E. (2023). MANAJEMEN PENGELOLAAN PERPUSTAKAAN SEKOLAH. *Jurnal Manajemen & Bisnis, Kajian Ilmu Akuntansi Dan Manajemen Bisnis*, 13(1). <https://ejournal.sainttheresa.ac.id/index.php/jmb/article/view/101>
- Lubis, F. H., & Siregar, H. (2024). Design of a Web-Based E-Perpus Information System for The Faculty of Tarbiyah and Teacher Education UIN Sumatera Utara. *Jurnal Metrokom : Media Teknik Elektro Dan Komputer*, 1(2), 75–89. <https://doi.org/10.65371/metrokom.v1i2.83>
- Masbuby, M. M., Candra, M. S. K., Azzahra, F. N., & Putri, G. G. W. (2025). Design And Development Of A Smart Ring To Address Anxiety (Initial Case Study And Mechanism Review). *The Fifth International Conference on Innovations Social Sciences Education and Engineering*. <https://conference.loupiasconference.org/index.php/ICoISSEE-5/article/view/753>
- Muis, A., & Fendy. (2024). Penerapan Teknologi Informasi Pada Perpustakaan. *Journal Papyrus: Sosial, Humaniora, Perpustakaan Dan Informasi*, 3(2), 1–13. <https://doi.org/10.59638/jp.v3i2.49>
- Murniyanto. (2022). Manajemen Perpustakaan Sekolah Dasar Negeri 2 Rejang Lebong. *Tik Ilmeu : Jurnal Ilmu Perpustakaan Dan Informasi*, 6(1). <https://doi.org/10.29240/tik.v6i1.4227>
- Praktikto, & Setiaji. (2024). Penerapan Metode Evolutionary Prototyping Dalam Pembuatan Desain Ui/Ux Website Snapwork. *Jurnal INSTEK (Informatika Sains Dan Teknologi)*, 9(1), 97–104. <https://doi.org/10.24252/instek.v9i1.46412>
- Puteriawati, D., Adiati, N., Nugraha, D., & Permana, A. (2025). Implementasi Sistem Perpustakaan SMA Negeri 1 Ciwaru Menggunakan Model Analytical Customer Relationship Management (e-CRM). *Buffer Informatika*, 11(1), 57–63. <https://doi.org/10.25134/buffer.v11i1.331>
- Ramadhan, N., Putra, D. W. T., Swara, G. Y., Marni, & Anisya. (2025). Pembangunan Sistem Informasi Perpustakaan Digital Berbasis Web. *Jurnal Minfo Polgan*, 14(2). <https://doi.org/10.33395/jmp.v14i2.15232>
- Restu, M. S., V. A., & A. R. A. (2024). Black Box Testing pada Website Sistem Perpustakaan Menggunakan Metode Equivalence Partitioning dan Analisis Boundary Value. *STRING (Satuan Tulisan Riset Dan Inovasi Teknologi)*, 8(3), 355. <https://doi.org/10.30998/string.v8i3.19529>
- Rosyida, Sakti, D. A. K., & Prabowo, R. Y. (2023). Perancangan Aplikasi Workload Measurement Analysis (Wma) Berbasis Android Untuk Perhitungan Beban Kerja Perekam Medis Di Rsi Aminah Blitar. *Teknimedia: Teknologi Informasi Dan Multimedia*, 4(2), 151–159. <https://doi.org/10.46764/teknimedia.v4i2.116>
- Saputra, D., Almira, & Meiline. (2024). User Interface (UI) dan User Experience (UX) Design serta Contohnya Melalui SLiMS (Senayan Library Management System). *THE LIGHT: Journal of Librarianship and Information Science*, 4(1).
- Setyawan, G. P., Fendy, F., & Mantasa, K. (2025). Perpustakaan Di Era Digital: Menjaga Eksistensi Di Tengah Dominasi Kecerdasan Buatan (Artificial Intelligence). *Journal Papyrus: Sosial, Humaniora, Perpustakaan Dan Informasi*, 4(1), 49–58. <https://doi.org/10.59638/jp.v4i1.82>
- Sinaga, D., & Peniarsih. (2024). Menghadapi Perubahan Dunia Melalui Transformasi Digital Menuju Kesuksesan Pada Era Digitalisasi. *JSI (Jurnal Sistem Informasi) Universitas Suryadarma*, 11(2). <https://journal.universitassuryadarma.ac.id/index.php/jsi/article/view/1240>

**The Sixth International Conference on Innovation in Social Science
and Engineering Education (ICoISSEE-6)**

Bandung, Indonesia, July 25, 2026

- Siswanto, & Lailiyah. (2023). Perancangan Sistem Manajemen Informasi Akademik Berbasis Web SD N 3 Jambearum Kendal. *Jurnal Teknik Mesin, Elektro Dan Ilmu Komputer*, 3(3), 108–117. <https://doi.org/10.55606/teknik.v3i3.2551>
- Ziya' Ulhaq, A., & Setiawan, A. C. (2024). Implementasi Program Perpustakaan Digital Berbasis Aplikasi (Henbuk) Dalam Meningkatkan Budaya Literasi Di Smp Negeri 1 Denpasar. *Jurnal Inspirasi Manajemen Pendidikan*, 12(2). <https://fip.unesa.ac.id/implementasi-program-perpustakaan-digital-berbasis-aplikasi-henbuk-untuk-meningkatkan-budaya-literasi-di-smpn-1-denpasar/>