

# Library Information System on Public Elementary School 108 Home Base Based on Android

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## Abstract

Elementary school libraries play a vital role as essential learning resources, offering diverse instructional materials that can greatly boost the reading interest of both teachers and students within the school community. These libraries also present continuous opportunities for expanding and deepening knowledge. This study focuses on creating a web-based library information system tailored for State Elementary School 108 Home Base. The system was developed using the Rapid Application Development (RAD) method, which facilitates iterative feedback and enables swift adjustments during the development process. The research findings indicate that the implemented Library Information System has been positively received by its users. The system streamlines the book borrowing process for students and staff at State Elementary School 108 Home Base and makes it easier for library administrators to manage book loans, returns, and reporting tasks. This research makes a significant contribution to the field of educational technology by offering a practical and efficient web-based solution for school library management. The use of the RAD method in system development underscores the value of incorporating user feedback to create tools that address the unique needs of educational institutions. Additionally, this study sheds light on how technology can be utilized to improve library management in elementary schools, ultimately enhancing access to educational resources and fostering a more robust reading culture among students.

**Keywords:** Android; Rapid Application Development; School Library.

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## Introduction

The school library is an important part of an education. Each school strives to maintain a high standard for library education to ensure that the library remains an important resource (Martzoukou, 2021). Each school unit must have access to the library. The library develops and is useful as one of the centers of information, knowledge resources, research, recreation, and conservation of cultural characteristics of the country, as well as the provision of many other services (Dresel et al., 2020).

In this era of globalization, information and communication technology (ICT) is developing rapidly, and it is natural to use IT (information technology) in education (Zhang et al., 2022). Therefore, all schools want to improve the quality of education through competitions, and schools should focus on the field of information and communication technology, especially the application of this information system using information technology (Fu, 2013). One way to use information technology in a school library is to apply it to the management of books and other library materials.

The elementary school library is an important part of an education and a valuable source of study (Mulang, 2021). This supports the achievement of school education goals. The school library is a collection of materials used to support the achievement of educational goals. This includes books, magazines, newspapers, and other materials (Tabroni et al., 2022). Library materials are managed regularly and systematically to support the learning process (Himanen et al., 2019). School libraries, especially elementary school libraries, as learning resources that contain various library instructions, can increase the interest in reading by school residents, especially teaching staff and students, and provide continuous opportunities to expand and deepen their knowledge (Fadillah & Istikomah, 2021).

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3. Android Studio, Android can simply be interpreted as a software used on mobile devices that includes the operating system, middleware, and key applications released by Google. So Android covers the entirety of an application, from the operating system to the development of the application itself. Application development on this Android platform uses the basic Java programming language. But narrowly speaking, Android usually refers to the operating system only (Aman & Mustika, 2019).

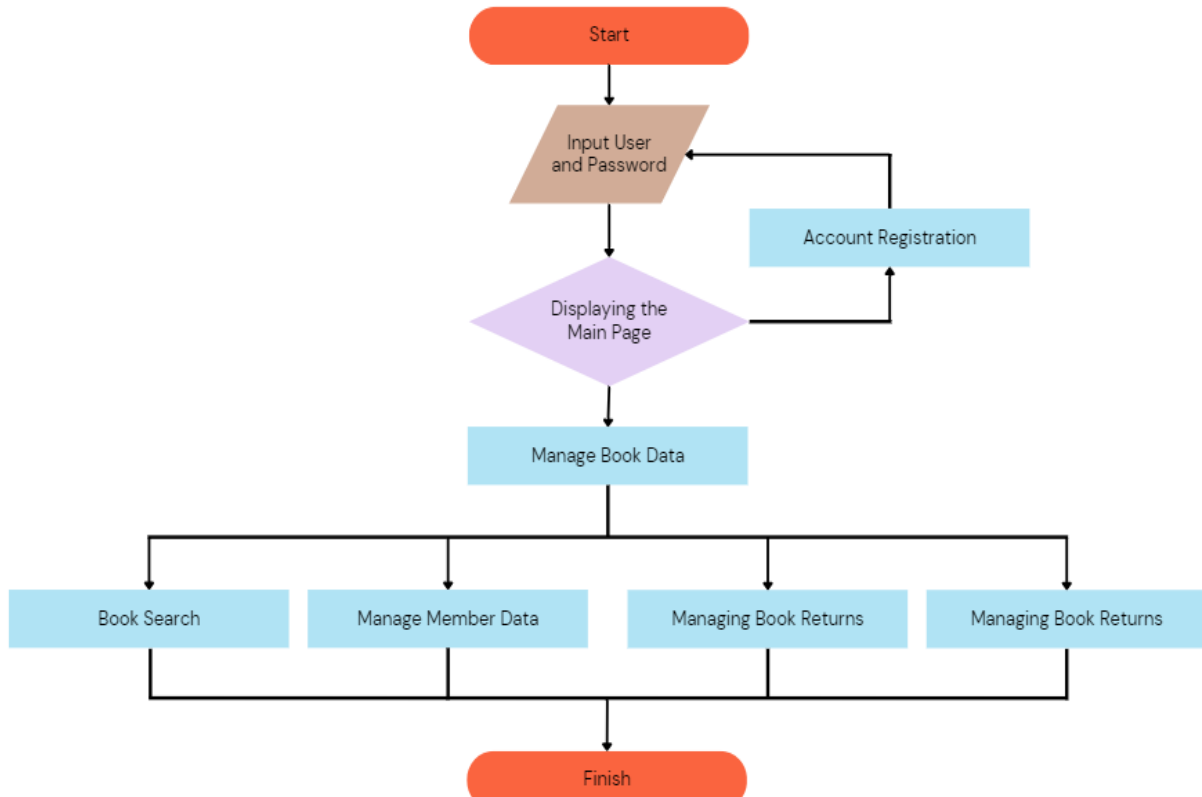


Figure 2. Flowchart System

Figure 2 describes the flow of the Library Information System On Public Elementary School 108 Home Base Based On Android system using the Flowchart System, the system flow starts from user validation using an account that has been registered, the registration feature is available to users who have not registered in the system. In the book management section, users can search books, manage member data, manage book borrowing and returns.

## Results and Discussion

### Result

After designing the system design, it then proceeds with the development stage which uses several important applications such as Android Studio and MySQL databases. The results of system development have been tested several times to users so as to produce a system that can actually run according to function and according to the display between users.

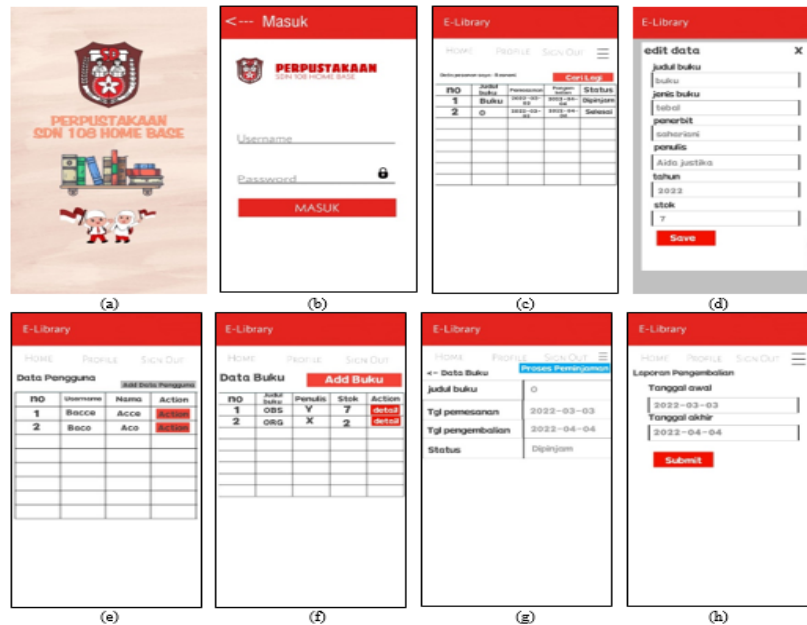


Figure 3. User Interface Design

Figure 3 shows the display between Admin users starting from (a) displaying the user's splash screen when starting to enter the system, (b) then the user logs in using a username and password, (c) after successfully logging in the user can search for books, (d) can manage book data, (e) manage member data, (f) add book data, (g) manage book lending data, (h) check the book return report.

### System Testing

At this stage, the Library Information System On Public Elementary School 108 Home Base Based On Android system will be tested based on the functionality of each component, the test is carried out to ensure that the system is free from bugs or system errors that can affect the performance of using the system. Table 1 describes testing based on the functionality of the system.

Table 1. Functional Testing

Page Functional Testing	Expected results	Test Results
Login Page	Users can log in using username and password	Succeed
Book Data Search Page	Users perform book searches	Succeed
Edit Book Data page	Users can edit book data	Succeed
Manage Member Data page	Users can manage member data	Succeed
Add Book Data page	Users can add book data	Succeed
Manage Borrowed Book Data page	Users can manage book-borrowing data	Succeed
Manage Book Return Data page	Users can manage book return data	Succeed

### Discussion

One of the functions of the library can encourage creativity, add insight, and can be used as a scientific tourist attraction (Batat, 2021). The ideal library is able to approach the community to awaken the reading potential that exists in the community (Pearce, 2020). This approach is adapted to the passions, hobbies, pleasures, and habits that exist in society. The library information system can make it easier for users to manage the library and even know the track record of library visitors' activities (Villamor & Shotick, 2022).

### Conclusions and Suggestions

#### Conclusions

After going through several stages starting from analysis, system design, the author can conclude that the library application that runs in State Elementary School 108 Home Base can make it easier for users to borrow books at State Elementary School 108 Home Base. As well as the application that runs at State Elementary School 108 Home Base can make it easier for admins/officers to manage book loan data, and book return data in the 108 Home Base State Elementary School library. And can help admins and library staff in the process of managing reporting.

### Suggestions

The research on Library Information System On Public Elementary School 108 Home Base Based On Android that we developed is still relatively simple, so we hope that this system can be developed again with the addition of other features that are not yet found in the system such as user access that can see books contained in the library, this research can also be developed with an approach to the appreciation of users who carry out activities in the library so that this can increase the number of library visitors.

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