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Website-Based Student Savings Application

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ABSTRACT
Student savings is one of the flagship programs at the Al-Husna Education Foundation which aims to train students in managing finances from an early age. Through this program, students are taught to set aside some of their pocket money to meet school needs such as uniforms, tuition fees, and other activities. This program also plays a role in shaping the character of discipline, frugality, and responsibility. However, the savings management system used before is still manual, namely by recording transactions in savings books and cash books. This method is prone to cause recording errors, data loss, and lack of information transparency for students' parents. In addition, manual recording becomes less efficient as the number of transactions increases. Based on these problems, a website-based student savings management system has been developed to replace manual processes with computerized systems. The system is built using the CodeIgniter 4 framework, the PHP programming language, and the MySQL database. The results of the study show that this system is able to make it easier to record transactions, present reports automatically, and provide fast, accurate, and transparent access to information for schools and parents of students.

***Keywords**: Student Savings, Information System, Website, CodeIgniter, PHP, MySQL, Al-Husna Education Foundation.*

INTRODUCTION
According to the Banking Law No. 10 of 1998, savings are a type of deposit whose withdrawal can only be made based on certain conditions that have been agreed, and cannot be withdrawn using checks, bilyet, giro, or other similar instruments. Savings is an activity where a person sets aside some of his money to be collected or stored in a place or banking institution whose withdrawal is made under certain conditions as a deposit that can be used for future plans (Febiyansyah dkk., t.t.).

Savings have many benefits, especially for school students. By saving, students learn to manage their finances, be trained in discipline, and be taught to save from an early age. If students want to buy something, they are taught to save first by setting aside part of the pocket money given to them by their parents (Gustina dkk., 2022).

The Al-Husna Education Foundation is an education under the auspices of the Jombang district education office, the Al-Husna Foundation is an early childhood school, in addition to education providers also hold other programs that are very beneficial both for the continuity of the school, student achievement and student finances at the school, one example is student savings .

Students at the Al-Husna Education Foundation are now required to save, with the aim that the funds raised can be used for urgent needs related to school fees. This savings will be used to pay for various school needs, such as student uniforms, study tours, and tuition fees every month as well as for other payments considering that private schools do require considerable costs because they are not fully subsidized by the government.

In the process of depositing savings, students are required to provide their passbooks and money to the admin. This is done so that the deposit data can be recorded in the student savings book and recorded in the savings manager's cash book as a deposit transaction.

The problem that is being faced is the recording of transactions that are still carried out manually. This

can result in errors in data logging, especially when there are many transactions that need to be recorded, as well as frequent loss of students' passbooks. In addition, the lack of data transparency for students' parents is also a problem. The current system is still manual, with recording and storing data in writing in books, as well as calculations that are also still done manually (Irfan, 2022). Therefore, the author plans to utilize information technology to accelerate access to information, ensure accuracy for data access, timeliness of information presentation, and produce accurate information and can provide better services.

METHOD

The type of research used in this study is development research that produces a web-based student savings management system in the field of technology. Research and development methods are used to create or manufacture a particular product as well as test the effectiveness of that product (Herpiah Herpiah dkk., 2024). Therefore, this study uses research and development methods to design and implement the information system in question.

The selection of the Rapid Application Development (RAD) method in this study is based on the consideration that this method can provide a structured, focused, and fast approach in designing and building a website-based student savings management system. RAD is a popular and effective method for developing applications in a short time, and is able to provide flexibility in handling changing user needs (Ahmad Fauzi dkk., 2023). The stages in the system development process with the RAD approach are as follows:

- System Design
  Use Draw.io to create diagrams that describe system flows, such as ERD diagrams for MySQL databases and application workflow diagrams. And Corel draw to design a mockup of the website.
- Code Development
  Start writing code for web apps using Visual Studio Code. Integrate PHP code with MySQL to manage databases, and use HTML, CSS, and JavaScript to build user interfaces.
- Local Testing
  Run Laragon to set up a local server and MySQL database. Use Google Chrome to access the developed web apps and perform tests to make sure all the features are working properly.
- Enhancement and Debugging
  Use the Developer Tools feature in Google Chrome to debug, check the interface display, and fix issues that arise during testing.

RESULTS AND DISCUSSION

This Website-Based Student Savings management system has a Login page, Dashboard page, Student data page, Add Student Data, Student Update, Saving Page, Cash Deposit, Withdrawal Page, Cash Withdrawal, Student Recap. To ensure that all features are functioning properly, the researchers conducted system testing using the Black Box method.

Result

- Login Page
  The admin login form interface is the initial component that is accessed before entering the website-based student savings management system. This form is designed with a simple, responsive, and user-friendly interface (Wardlatul dkk., 2021). The implementation of this interface aims to provide a good user experience as well as ensure system security by restricting access to only users who have authorization as admins. The appearance used carries a clean and professional concept, in line with the identity of the Al-Husna Education Foundation. The Login page looks as follows:

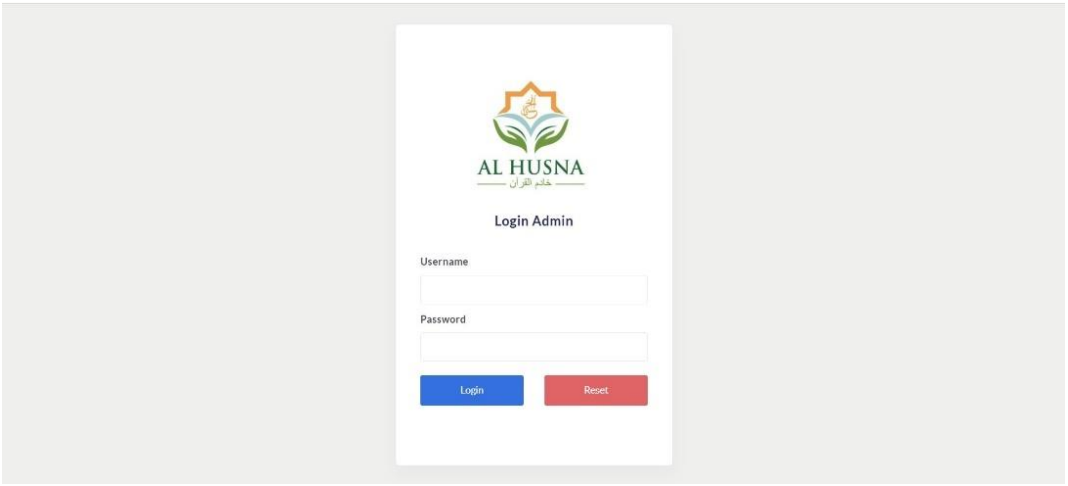

Figure 1. Login Page

- Dashboard Page
  The dashboard interface serves as the main page after the user successfully enters the system. This view is designed to provide a concise and informative (Ali Kasri dkk., 2024) overview of important information related to the management of student savings regarding the number of Customers, Total Students, Total Operators, Total Balance and deposit graphs and withdrawal charts. The interface design is simple, structured, and accessible, making it easier for users to perform the main functions of the system. The colors, layout, and visual identity of the institution are consistently arranged to create a professional impression and increase the user's comfort in interacting with the system. The Dashboard page looks as follows:

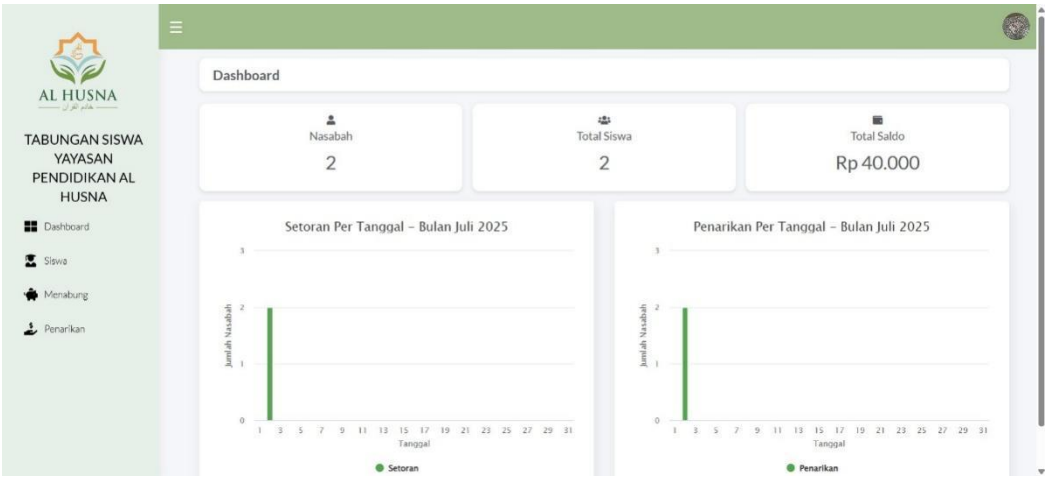

Figure 2. Dashboard Page

- Student Data Page
  The student data interface is designed to facilitate the management of student information that is a customer in the savings system. This display presents student data in the form of a table that is systematically arranged and easy to read, making it easier for admins to record, search, update, and delete data (Patria dkk., 2023). The page also comes with functions to add new data, edit, and delete as well as a table navigation feature that allows users to adjust the amount of data displayed, perform a quick search, and move between data pages. This interface supports the ease of use and efficiency of admins in managing student data as a whole, and is designed with a neat layout that is consistent with the rest of the system. The Student Data Page looks as follows:

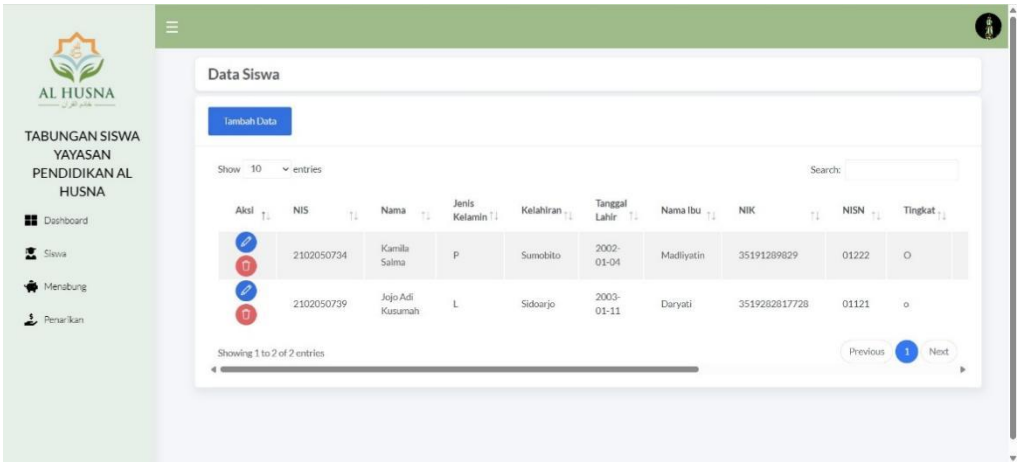

Figure 3. Student Data Page

- Add Student Data

  The student data add form interface is designed to make it easier for users to input new student data into the system. This form displays a number of fills needed to record complete student information such as Parent Number, Student Name, Gender, Birth, Date of Birth, Mother's Name, NIK, NISN, Level, Rombel, Ortu Mobile Phone Number, Address, Date of Entry, Incoming Academic Year and Status in accordance with the needs of savings management within the Al-Husna Education Foundation. The form display is compiled systematically and responsively, making it easier for admins to fill in data quickly and accurately. The interface design also takes into account visual comfort and consistency with other pages in the system, in order to maintain uniformity of appearance and ease of use. The implementation of this form is an important part of the digital student data management process, which aims to improve the efficiency, accuracy, and neatness of school administration data recording. The View of Add Student Data is as follows:

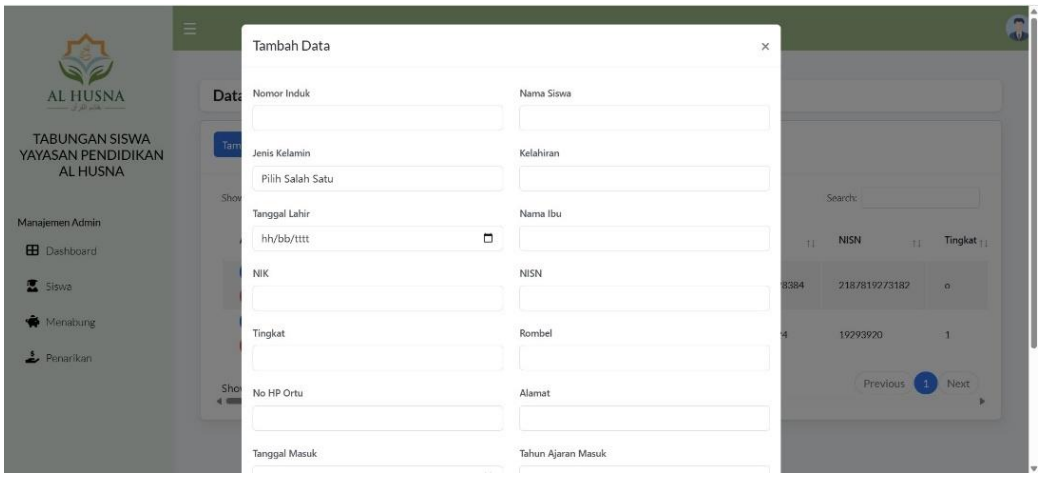

Figure 4. Add Student Data Display

- Student Updates

  The Data Update interface is designed to facilitate admins in updating student data in a structured manner. This form is presented in the form of a pop-up window that contains a number of data related to student identity and information. All input elements are divided into two columns for easy reading and filling in by the user. The form includes some important data such as Parent Number, Student Name, Gender, Birth, Date of Birth, Mother's Name, NIK, NISN, Level, Rombel, Ortu Mobile Number, Address, Date of Entry, Incoming Academic Year and Status. Some fields such as date of birth and entry date use a date picker component to make it easier to select a date and minimize input errors. Meanwhile, the gender fill uses a dropdown option to ensure the data entered is consistent. The interface also comes with navigation elements that allow users to move to other pages such as dashboards, student data, savings, and withdrawals. With a clean and organized design, this interface supports a fast and accurate data entry process in the student savings information system. The Student Update display is as follows:

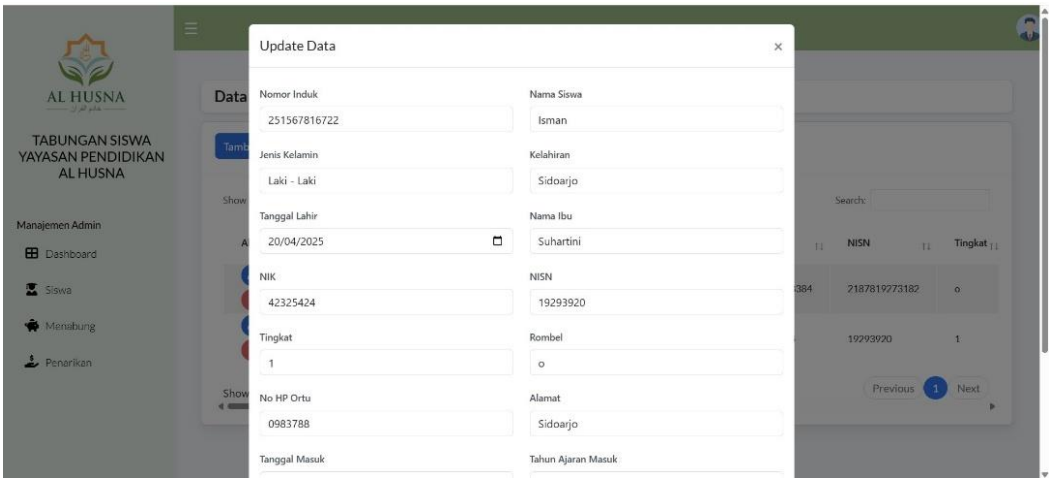

Figure 5. Student Update Display

- Saving Page
  The saving page interface is designed to facilitate the process of recording student savings deposit transactions digitally. This page presents information on total deposits for the current month as well as a clear and structured list of deposit transaction details. Users can make new deposits through the action buttons provided, as well as access the overall deposit recapitulation. The transaction table displays the full details of each deposit, including the transaction ID, NIS, student name, transaction time, operator name, description, as well as initial balance, deposit amount, and final balance information. This display not only supports the ease of data input and monitoring, but also helps maintain transparency and accuracy in student financial records. The simple design and intuitive navigation make it easy for admins to manage deposit data efficiently. The appearance of the Saving page is as follows:

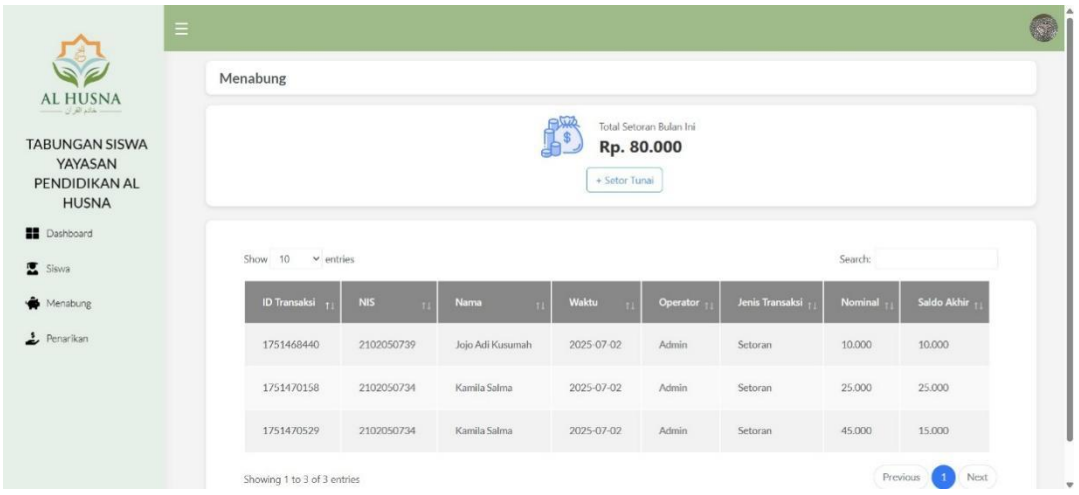

Figure 6. Saving Page

- Cash Deposit Display
  The Cash Deposit interface is designed as a pop-up form to make it easier for admins to record deposit transactions from students (customers). This form comes with a customer search by name feature, which automatically displays the identity data and last balance of the selected customer. After selecting a customer, the admin can directly input the deposit amount in the available column. There are two action buttons, namely the "Cancel" button to cancel the input process, and the "Deposit" button to save deposit transactions into the system. This interface design supports operational efficiency with a compact and responsive interface, and minimizes input errors through the display of pre-balance information. This interface plays an important role in ensuring transaction accuracy and speeding up the process of administering student savings. The Cash Deposit display is as follows:

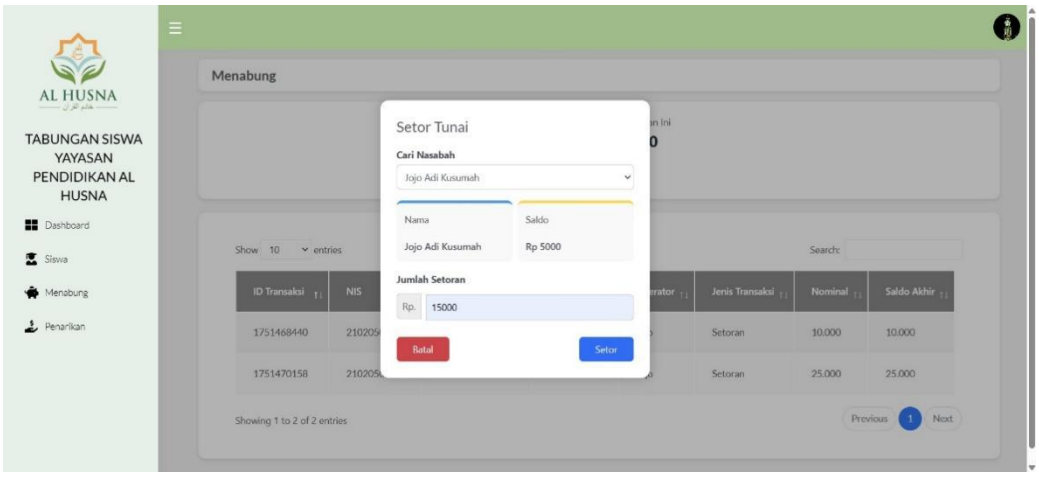

Figure 7. Cash Deposit Display

- Withdrawal Page
  This page displays information related to student withdrawal transactions in the savings system. At the top is a summary of the total number of withdrawals made in the current month. Just below it are two main action buttons, namely the button to record cash withdrawals and the button to view a recap of the withdrawal data. Users can filter the data by month using the dropdown located on the right side. Below it is displayed a table containing the details of the student's withdrawal transaction, which includes information such as the transaction ID, NIS, student name, transaction time, operator name, transaction type, initial balance before withdrawal, nominal amount withdrawn, and final balance after the transaction. The interface is designed to be simple and informative to make it easy to manage data efficiently. The Withdrawal page looks as follows:

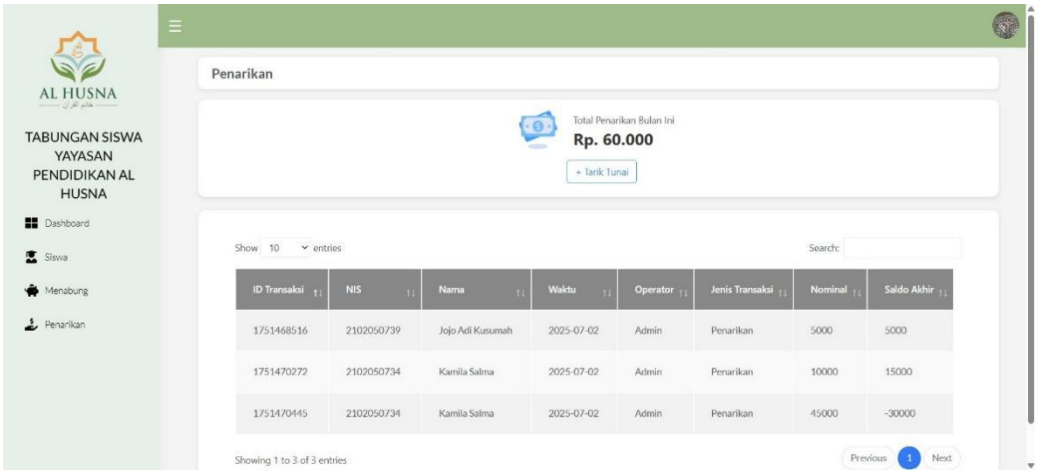

Figure 8. Withdrawal Page

- Cash Withdrawal Display
  This page displays the pop-up interface used to perform the student cash withdrawal process. This interface starts with a search field to select the name of the student who wants to make a withdrawal. Once the student's name is selected, the system will automatically display the information of the student's name and the amount of balance held by the student. Under the balance information, there is an input column to fill in the nominal amount of money to be withdrawn. Users can enter the amount according to the student's needs, but still consider the available balance. The interface features two action buttons: the Cancel button to cancel the process, and the Deposit button (presumably this label should be Withdraw) to save the withdrawal transactions made. The design is made simple and focuses on the ease of data input and balance verification. The Cash Withdrawal display is as follows:

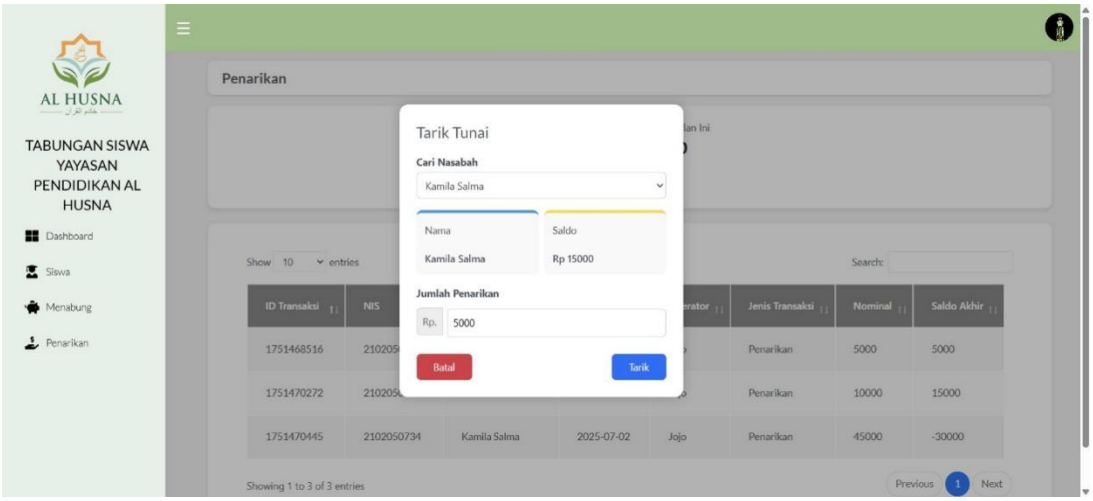

Figure 8. Cash Withdrawal Display

Discussion

By conducting a thorough test, it is hoped that the system can run stably, free from errors, and be able to provide services that are in accordance with the operational needs of student savings management. A summary of the results of this test is presented in the following table:

Table 1. Black Box Testing

Testing Items	**Test Details**	**Test Method**
Login Admin	*Username* *Password*	*Black Box*
Add Students	*Student Name* *Birth* *Mother's Name* *NISN* *Rumble* *Address* *Incoming School Year* *Identification Number* *Gender* *Date of Birth* *NIK* *Level* *About HP Ortu* *Entry date* *Status*	*Black Box*
Edit Student Data	*Student Name* *Birth* *Mother's Name* *NISN* *Rumble* *Address* *Incoming School Year* *Identification Number* *Gender* *Date of Birth* *NIK* *Level*	*Black Box*

	About HP Ortu *Entry date* *Status*	
Cash Deposit	*Find Clients* *Nominal*	*Black Box*
Cash Withdrawal	*Find Clients* *Nominal*	*Black Box*

1. Login Testing

Table 2. Login Testing

Case Data and Test Results (True Data)	
Input Data	Username : **super** Password : **super**
What to expect	Data is received and displayed, as well as entered Go to the System Dashboard Page
Observation	Show login and sign-in notifications to the website page
Conclusion	Accepted
Case Data and Test Results (Incorrect Data)	
Input Data	Username : **super** Password : **123456**
What to expect	A notification appears **"*Login failed, Recheck your account*"**
Observation	Error message appears **"*Login failed, Check your account again*"**
Conclusion	Accepted

2. Testing Add Students

Table 3. Student Plus Testing

Case Data and Test Results (True Data)	
Input Data	*Student Name: Jojo Adi Kusumah* *Birth: Sidoarjo* *Mother's Name: Salma* *NISN: 2102050739* *Rombel: o* *Address: Hamlet Sawo RT9 RW2 Sukodono* *Incoming Academic Year : 20/01/2025* *Parent Number: 110123* *Gender: Male* *Date of Birth: January 11, 2003* *NIK: 21983928184912* *Level: 1* *No HP Ortu: 081227542003* *Entry date: May 12* *Status: Active*
What to expect	Data is received and appears on the table
Observation	Show notifications ***"Data Works Added"***

Conclusion	Accepted
Case Data and Test Results (Incorrect Data)	
Input Data	*Student Name: Jojo Adi Kusumah* *Birth: Sidoarjo* *Mother's Name: Salma* *NISN:* *Rombel: o* *Address: Hamlet Sawo RT9 RW2 Sukodono* *Incoming Academic Year : 20/01/2025* *Parent Number: 110123* *Gender: Male* *Date of Birth: January 11, 2003* *NIK:* *Level: 1* *No HP Ortu: 081227542003* *Entry date: May 12* *Status: Active*
What to expect	A notification appears ***"There is a blank field"***
Observation	Error message appears ***"There is a blank field"***
Conclusion	Accepted

3. Student Edit Testing

Table 4. Student edit testing

Case Data and Test Results (True Data)	
Input Data	*Student Name: Jojo Adi Kusumah* *Birth: Jombang* *Mother's Name: Salma* *NISN: 2102050739* *Rombel: o* *Address: Hamlet Sawo RT9 RW2 Sukodono* *Incoming Academic Year : 20/01/2025* *Parent Number: 110123* *Gender: Male* *Date of Birth: January 11, 2003* *NIK: 21983928184912* *Level: 1* *No HP Ortu: 081227542003* *Entry date: May 12* *Status: Active*
What to expect	Data is received and appears on the table
Observation	Show notifications ***"Successfully Updated Data"***
Conclusion	Accepted
Case Data and Test Results (Incorrect Data)	

Input Data	*Student Name: Jojo Adi Kusumah* *Birth: Sidoarjo* *Mother's Name: Salma* *NISN:* *Rombel: o* *Address: Hamlet Sawo RT9 RW2 Sukodono* *Incoming Academic Year : 20/01/2025* *Parent Number: 110123* *Gender: Male* *Date of Birth: January 11, 2003* *NIK:* *Level: 1* *No HP Ortu: 081227542003* *Entry date: May 12* *Status: Active*
What to expect	A notification appears ***"No data changed"***
Observation	Error message appears ***"No data changed"***
Conclusion	Accepted

4. Cash Deposit Testing

Case Data and Test Results (True Data)	
Input Data	*Student Name: Jojo Adi Kusumah* Nominal: Rp.100.000
What to expect	Data is received and appears on the table
Observation	Show notifications ***"Successful Deposit on Deposit"***
Conclusion	Accepted
Case Data and Test Results (Incorrect Data)	
Input Data	*Student Name: Jojo Adi Kusumah* Nominal:
What to expect	A notification appears ***"The nominal must be filled in"***
Observation	Error message appears ***"The nominal must be filled in"***
Conclusion	Accepted

5. Cash Pull Testing

Table 5. Cash Withdrawal Testing

Case Data and Test Results (True Data)	
Input Data	*Student Name: Jojo Adi Kusumah* Nominal: Rp.100.000
What to expect	Data is received and appears on the table
Observation	Show notifications ***"Successful withdrawal of Rp.5000"***
Conclusion	Accepted
Case Data and Test Results (Incorrect Data)	

Input Data	*Student Name: Jojo Adi Kusumah* Nominal:
What to expect	A notification appears ***"The nominal must be filled in"***
Observation	Error message appears ***"The nominal must be filled in"***
Conclusion	Accepted

CONCLUSION

Based on the results of research and design conducted by the researcher, the researcher can conclude the following:

- This research resulted in the development of a website-based student savings management system to minimize errors in recording transactions that are done manually.
- This website-based student savings management system can manage student data, saving, withdrawal, and recap of student data at the Al-Husna Education Foundation.
- This website-based student savings management system can improve student savings management services at the Al-Husna Education Foundation by providing a better and easy-to-use system.

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