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## APPLICATION OF UCD METHOD IN DESIGNING SIMPLE SAVINGS APPLICATION AT MTS AL-MANAR BASED ON WEBSITE

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	ABSTRACT
	Student savings information system to avoid errors in the saving process, one of the problems that occurs at MTS Al-
	at MTS Al-Manar still uses manual methods. With information conveyed orally, this causes the information received by
Keywords:	students to be less accurate, not up to date, and easily lost and forgotten. This is less effective because the lack of accuracy in
Student savings,	conveying and receiving information becomes an obstacle in
UCD (User Centered	processing student savings. This system is designed to make it
Design).	easier to manage student savings as expected. The main focus of this system is to avoid errors in recording, loss of savings books, savings books, and managing savings data. You can use online media in the form of a website to make it easier for treasurers to manage savings and compile reports quickly and accurately. Researchers created a simple websitebased savings application at MTS Al-Manar using the UCD method. So that MTS Al-Manar Medan uses it, and provides optimal benefits for all parties involved. The goal with this savings application
	is to make it easier for school administration to input student savings data, and students can monitor each student's savings data on the savings application portal, thereby avoiding school savings application administrator errors.
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## INTRODUCTION

In this modern era, information technology has experienced rapid development and become an important part of everyday life. One aspect affected by advances in information technology is the financial system, including the management of student savings in educational institutions. This technological advancement is something that cannot be avoided in life, because it will run in accordance with the progress of science. Technology also provides many conveniences in obtaining constant and accurate information, both directly and indirectly, humans have also enjoyed many benefits brought by technological innovations that have been produced in the last decade, including in all aspects of life and education. (Saepudin et al., 2021) Student savings is a form of activity that aims to teach students about the importance of saving and good financial management. Student savings at MTs Al-Manar help students prepare for the future, develop saving habits, and understand the importance of discipline in managing finances. Student savings as a means to accustom students to saving and saving diligently. One of the benefits of accustoming students to saving is the formation of student character, increasing the level of trust of students' parents in school financial management so that students like to save at school. Madrasah Tsanawiyah (MTS) AL-MANAR is an Islamic educational institution like a boarding school in the middle of Medan city. In addition to teaching and learning activities, it also holds other school programs, one of which is Simple savings. The system that runs for managing simple savings is still not computerized, which is carried out by recording in a savings book. Recording and storing data is written in the master book and savings book per student, and the calculations are still done with the help of a calculator. The savings deposit process by meeting the school Treasurer officer, namely in a place that has been provided, they submit savings books and money to be written in the savings books of 2 students and in the savings manager's cash book as a deposit transaction. For withdrawals themselves, they can be taken at any time. Therefore, an innovative solution is needed through the development of a simple savings application based on a website which is expected to overcome administrative obstacles. The savings data processing process can use online media in the form of a website to make it easier for treasurers to manage savings and prepare reports quickly and accurately. Avoid errors in recording, losing savings books, savings summary books, and making it easier for admins and students in the entire savings process at Mts AL-Manar. Previous research conducted by Muhammad Iqbal, et al entitled Application of UCD (User Centered Design) Method in Android-Based Emergency Application Design, The purpose of this study was to produce an emergency application system design using the User Centered Design (UCD) method to analyze system requirements. This study produced an emergency application that meets user needs consisting of condition, call, news, directions, login, register, and edit profile features, then for the system design the user chooses the Times New Roman font, font size, and color. (Iqbal, Marthasari, Nuryasin, 2020). According to other research conducted by Jehan Saptia Kurnia, et al entitled Application of UCD (User Centered Design) method for web-based employee payroll information system in employee cooperatives, The purpose of this study is to provide convenience in searching for reports and printing reports, both employee data, employee salary reports and E-SlipGaji. (Saptia Kurnia, Awaludin, 2023). Departing from several previous studies, the researcher is interested in taking the title of the application of the UCD method in designing a Simple savings application at Mts Al Manar based on a website, the purpose of using the UCD method is to help Mts Al Manar to get display results that are easy to understand by users so that they can be used optimally, and facilitate the saving process and accurate results, because UCD is a method that focuses on users as the main focus in design.

## UCD (User Contered Design)

User Centered Design (UCD) is a method in a design design that focuses on user needs. In relation to Information Systems, User Centered 10 Design is part of the SDLC (System Development Life Cycle), so that the application design developed through UCD will be optimized and focused on end-user needs so that it is expected that the application will follow user needs and users do not need to change behavior to use the application. To run UCD properly, experiments, iterations and experiences when experiencing failure are needed. Therefore, there are principles in UCD that can be used as a guide in running UCD, including:

- 1. Understand the user clearly, along with the work being done and also the environment in which the user is located.
- 2. The design is made based on the evaluation carried out at each iteration..

3. Prioritize user experience.

4. Involve clients in the creation and design of designs.

User Centered Design Stages Process The process in UCD requires designers to combine investigative elements (eg: surveys and interviews) and generative elements (eg: brainstorming) to provide and define user needs. In general, the UCD process is in the form of iteration, namely repetition and evaluation carried out in each process before continuing to the next process. In general, there are 4 stages in the UCD process, namely:



Figure 1. UCD Method Stages

## System development methods

Prototype method is a software development method that allows interaction between system developers and system users, so that it can overcome the incompatibility between developers and users. Often customers define a number of general software goals, but cannot identify detailed requirements specifications for the functions and features that the software to be developed will have. In other cases, software developers may feel uncertain about the efficiency of an algorithm to be used in software development, or also feel uncertain about the ability of the software to adapt to the human-computer used. In cases like these and in many other situations, the prototyping paradigm may offer the best approach.

## **Research procedures**

Research procedures are the stages used in compiling research reports that are carried out in a planned and systematic manner to obtain predetermined objectives and optimal results. This study uses quantitative data collection methods and the researcher's system development method uses the prototype method. This study has stages that are summarized in the flow of research activities as shown in the following figure:



Figure 2. Research Flow

## System Design

System design is part of the research methodology and development of a software that is carried out after the analysis stage which aims to provide a detailed description. System design aims to provide a general description to users in creating a new system design to facilitate data processing, so that later the application created is expected to be better than manual data processing.

## Use Case Diagram

Designing a use case diagram is done to find out user activities on the information system being developed to find out the actors and use cases that will be used, then actor identification and use case identification are carried out. After getting the actors and use cases, the use case diagram can be described.



Figure 3. Use Case Website



Figure 4. Use Case Diagram Admin

## **RESULTS AND DISCUSSION**

System view refers to the user interface of a system, application, or software. System view involves visual and interactive design that aims to present information effectively, efficiently, and easily understood by users.

1. Admin Login View

The login view is part of the user interface on an application, website, or system that serves to identify and verify the user before the user (user interface) can access or not certain features or content. Login forms are usually used to secure access to parts that require authorization or special access rights.

Login Administrator Username Password	Login Administrator Username Password Login Batal
Username Password	Username Password Login Bata
Password	Password Login Batal
	Login Batal

Figure 5. Login View

HALAMAN ADMIN     X     C → X     C → Localboxt/tsbungag/logic php		(Å	**	=r	- 6	•	× :
Construction of the second sec	localhost menyatakan Anda berhasil login Oke					-	

Figure 6. Successful Login Notification Display

If the user fails to enter the username and password correctly, a notification will appear saying 'You failed to log in, please check your account'. The failed login notification display is shown in the image below.

			~	 ٦	×
← → X () localhost/tabungan/login.php		e t	2 =	-	:
	localhost menyatakan Anda gagal untuk login, silahkan periksa akun anda Oke				

Figure 7. Login Failed Notification Display

## 2. Main Menu Display

The Main Menu Display is a user interface specifically designed to be managed and accessed by administrators (Employees/Treasurers) or managers of a system, application, or website. The Main Menu Display provides access to various administrative features and functions that allow users to have high authority to manage, supervise, and control various aspects of the student savings application system. The Main Menu Display is shown in Figure below.

ADMIN <sup>2</sup>	Search for	admin 🤰
😰 Beranda	Dashboard	
INTERFACE	SALDO SISWA Rp. 700.000,00         DEBIT SISWA Rp. 350.000,00         KREDIT SISWA Rp. 50.0000,00         RREDIT SISWA A	2
ADDONS Im. Transaksi	Nadya 2024	

Figure 8. Main Menu View

## 3. Master Data Menu Display

The Master Data Menu Display is a user interface specifically designed to be managed and accessed by administrators (Employees/Treasurers). In this application, Master Data consists of 3 options, namely Class Data, Student Data and Employee Data. The Class Data Menu Display functions to display the class id, class name, and number of students.

G ADMIN <sup>2</sup>	Search fo	۹.			admin 🤰
🙆 Beranda	Cari Data	search			
INTERFACE	++Kelas				
🌶 Laporan 🔹 💙	No	ID Kelas	Nama Kelas	Jumlah Siswa	Aksi
ADDONS	1	1001	8A	22	2   4
Im Transaksi	2	1002	88	22	<b>B</b>   <b>4</b>
C					
	Nadya 202	4			

## Figure 9. Class Data Menu View

	Search for	admin 🧕
🙆 Beranda	Edit Data	
	84	
	22	
	Update	

Figure 10. Edit Class Data Menu View

G ADMIN <sup>2</sup>	Search for Q	admin 🤱
🙆 Beranda	Add Data Kelas	
INTERFACE		
Ø Master >	1003	
⊮ Laporan →	Nama Ketas	
ADDONS	Jumlah Siswa	
📖 Transaksi		
•	Simpan Reset	



admin <sup>2</sup>	Searc	ch for	٩			admin 🤰
🙆 Beranda	Cari Da	ata	l search			
	++Si	iswa				
	No	Nama Siswa	No Rekening	siswa	Saldo	Aksi
	1	Juhril Sandi Tarigan	2024060022	8A	Rp. 150.000	<b>B</b>   <b>4</b>
	2	Zahra Alizah	2024060021	8A	Rp. 200.000	<b>Z</b>   2
	3	Shafilah Azriani	2024060020	88	Rp. 150.000	<b>Z</b>   <b>2</b>
	4	Shopia Nabila	2024060019	8A	Rp. 200.000	<b>Z</b>   <b>2</b>
	Nadya 2	2024				

Figure 12. Student Data Menu View

🤪 ADMIN <sup>2</sup>	Search for Q	admin 🤶
🙆 Beranda	Edit Data Siswa	
INTERFACE	Juhrit Sandi Tarigan	
⊮ Laporan →	2024060022	
ADDONS	BA	
lin. Transaksi	150000	
	juhrit.	
	Update	
	Nadya 2024	



ADMIN <sup>2</sup>	Search for	admin 🤰
🙆 Beranda	Add Data Siswa	
NTERFACE	Nama Siswa	
⊮ Laporan →	No Rekening	
ADDONS	Nama Ketas 8A	~
	Masukan Saldo	
	Masukan Username	
	Masukan Password	
	Simpan Reset	
	Nadya 2024	

Figure 14. Add Student Data Menu Display

G ADMIN <sup>2</sup>	Search for		٩	admin 👧
🙆 Beranda				
INTERFACE	Cari Dat	ta [	] search	
© Master >	++			
≁ Laporan →	No	Username	Password	Aksi
ADDONS Im Transaksi	1	admin	827ccb0eea8a706c4c34a16891f84e7b	<b>⊠</b>   <b>⊄</b>
0	2	nadya	827ccb0eea8a706c4c34a16891f84e7b	Ø   ₫
	Nadya 2024			

Figure 15. Employee Data Menu View

G ADMIN <sup>2</sup>	Search for Q
🙆 Beranda	Edit Data
INTERFACE	
Aaster >	admin
∲ Laporan >	
ADDONS	Update
🖿 Transaksi	Nadya 2024
C	

## Figure 16. Employee Data Edit Menu Display

## 4. Report Menu View

ADMIN <sup>2</sup> Se	arch for		٩					
>	No	Tanggal	Nama Siswa	Rekening	Kelas	Saldo	Debit	Kredit
>	1	2024-08-24	Juhril Sandi Tarigan	2024060022	8A	Rp. 150.000	Rp. 100.000	Rp. 50.000
	2	2024-08-25	Zahra Alizah	2024060021	88	Rp. 200.000	Rp. 100.000	Rp. 0
	3	2024-08-25	Shafilah Azriani	2024060020	8A	Rp. 150.000	Rp. 50.000	Rp. 0
	4	2024-08-25	Shopia Nabila	2024060019	8A	Rp. 200.000	Rp. 100.000	Rp. 0

Figure 17. Report Menu View

5. Transaction Menu Display

Transaction Menu Display is a user interface display that functions to display transaction dates, student account numbers, student names, debit balances, credit balances, and final balances stored. The transaction menu also has a cash deposit process and a cash withdrawal process.

ADMIN <sup>2</sup>	Sear	Search for Q									
🙆 Beranda	No	Nama Siswa	No Rek	Kelas	Saldo	Debit	Kredit	Tanggal	Aksi		
INTERFACE											
Ø Master >	1	Juhril Sandi Tarigan	2024060022	8A.	Rp. 150.000	Rp. 100.000	Rp. 50.000	2024-08-24	Setor		
/ Laporan >	S								Tarik		
ADDONS	2	Zahra Alizah	2024060021	8A	Rp. 200.000	Rp. 100.000	Rp. 0	2024-08-25	Setor		
In Transaksi									< >		
									Tarik		
	3	Shafilah Azriani	2024060020	8A	Rp. 150.000	Rp. 50.000	Rp. 0	2024-08-25	Setor		
	-								Талк		
	4	Shopia Nabila	2024060019	8A	Rp. 200.000	Rp. 100.000	Rp. 0	2024-08-25	Setor < > Tarik		

Figure 18. Transaction Menu Display

## 6. Cash Deposit Menu Display

The Cash Deposit Menu display is a user interface display that contains an input form containing the transaction ID, customer ID, date of the 67th cash deposit transaction, the amount of cash deposit you wish to save, and information.

	Search for Q	admin 🧟
🙆 Beranda	Data Setor	
	150000	
	100000	
	Update	
Ma Transaksi	Nadva 2024	

Figure 19. Cash Deposit Menu Display

7. Cash Withdrawal Menu Display

he Cash Withdrawal Menu display is a user interface display that contains an input form containing the transaction ID, customer ID, cash withdrawal date, the amount of cash withdrawal that the customer/student wants to withdraw, and information..

admin <sup>2</sup>	Search for	admin 🤰
🙆 Beranda	Data Tarik	
INTERFACE	150000	
🌾 Laporan 💦 💙	50000	
ADDONS	Update	
	Nadya 2024	

Figure 20. Cash Withdrawal Menu Display

#### 8. Generated Report View

Data Laporan	Tabungan	Siswa
--------------	----------	-------

MTs Al-N	ITs Al-Manar						
Filter Berdssarkan							
Tampikan Res	et Filter						
Semua Data T	abungan						
	[						
Tanggal	Nama Siswa	Rekening	Kelas	Saldo	Debit	Kredit	
24-08-2024	Juhril Sandi Tarigan	2024060022	8A	Rp.150.000,00	Rp.100.000,00	Rp.50.000,00	
25-08-2024	Zahra Alizah	2024060021	8A	Rp.200.000,00	Rp.100.000,00	Rp.0,00	
25-08-2024	Shafilah Azriani	2024060020	8A	Rp.150.000,00	Rp.50.000,00	Rp.0,00	
25-08-2024	Shopia Nabila	2024060019	8A	Rp.200.000,00	Rp.100.000,00	Rp.0,00	
Total			8	Rp. 700.000,00	Rp. 350.000,00	Rp. 50.000,00	

Figure 21. View of the Report to be Generated

## 9. Student Login View

The login view is part of the user interface on an application, website, or system that serves to identify and verify the user before the user (user interface) can access or not certain features or content. Login forms are usually used to secure access to parts that require authorization or special access rights.

MIL A MANAGEMENT	Selamat Datang Tabungan Simpanan Pelajar MTs Al-Manar Medan	MTS ALMANDERMAN
	Login Administrator	
	Username	
	Password	
	Login Batal	

Figure 22. Student Login View

10. Student Home View

JUHRIL <sup>2</sup>					juhrit 🧕
Dashboard	Dashboard				
	SALDO Rp. 150.000	Dest Rp. 100.000	Rp. 50.000	0 — \$	
	No Nama Siswa	No Rekening Kelas	Saldo Debit	Kredit	Tanggal
	1 Juhril Sandi Tarigan	2024060022 8A	Rp. 150.000 Rp. 100.	000 Rp. 50.000	2024-08-24
			Copyright @ Your Website 2021		

Figure 23. Student Home View

## Discussion

In designing the system using the UCD (User Centered Design) method which focuses on users as the main focus in designing the interface display. In each stage, the MTs Almanar Student Savings Website is designed by creating new features desired by users. This study shows that the UCD method approach involves users in every stage of design and can produce a MTs Al-Manar Student Savings website that is more in accordance with the needs of students at MTS Al-Manar. The use of interviews as a tool for collecting information and feedback is very helpful and identifies changes needed to improve the quality of the website. The design of the Student Savings Website at MTs Al-Manar aims to make it easier for employees, especially treasurers at MTs Al-Manar schools, to store student savings data. Where the website that has been designed consists of several main menus that have their respective functions according to user needs. Which consists of a login page, homepage, class data, student data, employee data, transaction reports, period transaction reports, transaction reports per customer/student, transaction menu, cash deposit menu and cash withdrawal menu. That way, students are expected to be more diligent in carrying out savings activities.

## CONCLUSION

From the results obtained for the design of a simple savings application at MTs Al-Manar Medan, the author can draw the following conclusions: This website-based simple savings application provides convenience for schools in the savings process and makes it easier to use the simple savings application. Avoiding potential errors in the savings system, as well as avoiding recording errors, losing savings books, summary books and others, can be avoided. Providing convenience in designing simple savings, which focuses on user needs. By using a computerized system and application design, all data can be stored neatly, data or information processing can be done properly compared to a system that has not been computerized. Based on the results of the system feasibility test with a black box, it was found that the features contained in the website-based simple savings application can run well and according to needs.

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