Development and Implementation of the Fintrack Application as a Financial Planner for Students at Unika Soegijapranata Semarang

Johanes Arya Pramesta Nugraha[1], Ridwan Sanjaya[2], Freddy Koeswoyo[3]
[1,2]Information Systems Department, Faculty of Computer Science
[3]Accounting Deparment, Faculty of Economic and Business
Soegijapranata Catholic University, Indonesia
[1]johanesjohanes021@gmail.com, [2]ridwan@unika.ac.id, [3]freddy@unika.ac.id

Abstract— The increasing demand for financial literacy among students highlights the importance of effective financial management tools. Many students face challenges in managing their finances, such as budgeting, tracking expenses, and planning savings. Addressing these issues, the Fintrack application was developed as a financial planning tool tailored for students at Unika Soegijapranata Semarang.

The application utilizes modern technologies like Flutter for cross-platform development and Firebase for real-time data management. Its features include daily transaction recording, budget analysis with pie charts, and automated financial ratio calculations. The application also provides downloadable monthly financial reports, including detailed transaction logs and financial analyses, aiming to enhance user decision-making.

The primary goal of Fintrack is to empower students with tools to better manage their finances, improve their financial literacy, and make informed financial decisions. By integrating intuitive interfaces, automated financial insights, and practical features, the application serves as a reliable companion for students in overcoming financial challenges and achieving long-term financial stability.

Keywords— firebase, financial literacy, financial planning, flutter, student budgeting

I. INTRODUCTION

Financial literacy has become an important issue in the modern era, especially in the context of a society increasingly engaged in everyday financial activities. Good knowledge of financial management not only helps individuals plan for the future but also prevents them from making financial decisions that could have long-term adverse effects. Low financial literacy often leads individuals to fall into problems such as debt, unwise investments, and the inability to prepare for emergencies or retirement.

Students, as part of the younger generation who will become the pillars of the future economy, face similar challenges. According to Siregar and Anggraeni, the higher the financial literacy of students, the better their ability to make financial decisions, including investments [1]. However, many students in Indonesia still exhibit low levels of financial literacy. This lack of knowledge hinders them from managing expenses, understanding investment risks, and increases the likelihood of falling into poorly managed debt. Consequently, it reduces their ability to plan for long-term finances, such as saving or preparing funds for further education.

Recognizing the challenges students face in managing their finances, the author saw the need to develop a smart financial planning application. This application is designed with features specifically addressing needs such as easily accessible budget management, automatic expense

recording, and simple yet informative investment guidance. Through this application, students are expected to be better assisted in managing their daily finances. Hence, this smart financial planner is anticipated to become an intelligent financial management tool.

The application will be developed using the Flutter programming language, enabling cross-platform application development with a responsive and user-friendly interface [2], [3]. In this application, users can record their daily income and expenses, including categories such as investments, savings, leisure, and others. Additionally, the application will feature a dashboard that displays diagrams providing clear visualizations of users' income and expense proportions. At the end of each month, the application will generate automatic analyses based on recorded data, helping users evaluate their financial habits and offering recommendations to improve financial management in the following month.

II. RESEARCH METHODOLOGY

2.1 Source of Data
1. Primary Data Sources

Primary data sources are data that come from a collection of words spoken orally, and carried out by research subjects [4]. In this study, primary data sources were obtained from interviews and questionnaires to students of Soegijapranata Catholic University Semarang.

2. Secondary Data Sources

Secondary data sources are data that do not provide data directly to researchers [4]. In this study, secondary data sources were obtained from books, journals, and research that discuss smart financial planning applications.

2.2 Type of Data
1. Qualitative Data

Qualitative data is raw data in the form of detailed descriptions, direct quotes, and documents [5]. Qualitative data in this study were obtained from direct interviews with

students of Soegijapranata Catholic University, Semarang.

2. Quantitative Data

Quantitative data is data in the form of numbers and will later be analyzed using a mathematical approach [6]. In this study, quantitative data were obtained from the results of questionnaires filled out by students of Soegijapranata Catholic University, Semarang.

2.3 Data Collection Technique
1. Interview Technique

Interviews are a technique for collecting data by asking questions to respondents, and later the answers will be recorded [7]. In this study, interviews will be conducted by asking students of Unika Soegijapranata Semarang

2. Questionnaire Technique

A questionnaire is a technique for collecting data by giving several questions to respondents [8], who are students of Unika Soegijapranata Semarang. In this study, the questionnaire technique will collect data about what features students need regarding financial planning applications.

2.4 Application Development Technique
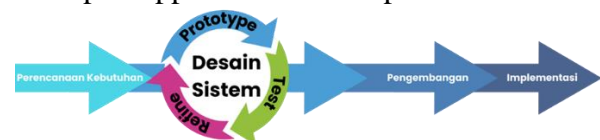1. Rapid Application Development

Figure 3. 1 Rapid Application Development

The Rapid Application Development (RAD) method will be used in this study due to its short development time, low cost, and flexibility. RAD involves four stages: needs planning, system design, development, and implementation [9], [10], [11]. During needs planning, developers identify user requirements, while in system design, a prototype is created and tested with user input for improvements. In the development stage, the system is fully built, integrating components like databases and user interfaces. Finally, during implementation, the application undergoes thorough testing, including black box

testing, to ensure it meets specifications and functions correctly before final deployment [11], [12].

III. RESULTS AND DISCUSSION

3.1 Preliminary Study

The author analyzed feature preferences in student financial planning applications by surveying 32 students of Soegijapranata Catholic University Semarang. The features offered include daily expense recording, reminder notifications, transaction reports, ratio analysis, expense graphs, security, and interconnection. Transaction categories include income (salary, stock dividends), savings, expenses (such as food, transportation, bills, education, and debt), and investment (stock purchases).

3.2 Questionnaire Results

Figure 3.1 features offered by the author

In Figure 3.1 of the 7 financial planning application features offered by the author, as many as 29 votes chose the daily expense recording feature, followed by the transaction report feature with 27 votes, the graph feature with 23 votes, the savings ratio analysis with 18 votes, the reminder notification with 5 votes, the security feature with 3 votes, and the interconnection with 2 votes. Therefore, the author took the 4 features with the most votes to create a student financial planning application.

3.2 Implementation Results

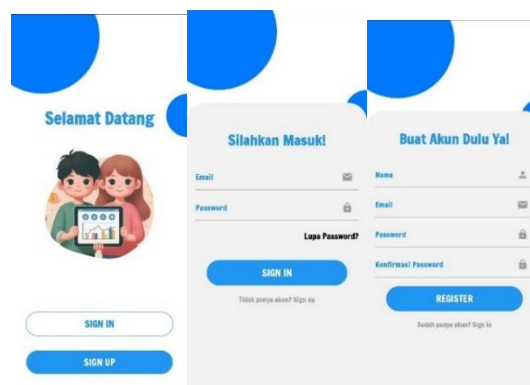1. Welcome, Login, and Sign Up Screen

Figure 3.2 Welcome, login, and signup screen

Figure 3.2 is the welcome, login, and signup page, which is designed in a minimalist way. The welcome page presents a button to make it easier for users to enter the application. If the user already has an account, they can immediately press sign in, but if not, they can go to sign up.
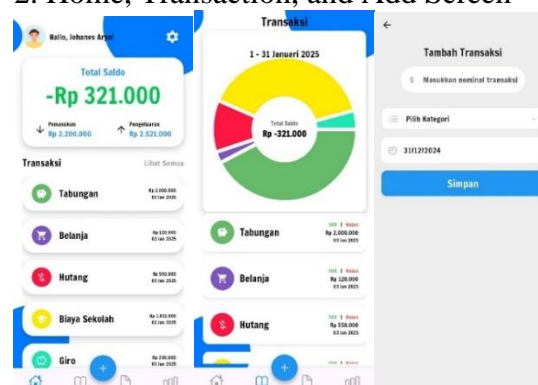
2. Home, Transaction, and Add Screen

Figure 3.3 Home, transaction, and add screen

Figure 3.3 is the main page, transactions, and adding transactions. The main page displays the user name, settings icon, widget that displays the total balance along with income and expenses. Below it is a list of transactions that have been inputted by the user, with a 'see all' button that will later lead to see all transactions that have been inputted by the user this month. The transaction page displays data visualization using a pie chart obtained from transactions during the current month, and all transactions that can be edited and deleted. This data visualization is intended so that

users can understand and conclude the data obtained [5], [13].

On the add transaction page, users can input the nominal, type, and date of the transaction, which will later enter the data into Firebase. The use of Firebase helps authors to be able to build applications without having to create backend infrastructure from scratch, equipped with features such as data storage, authentication, etc [14].

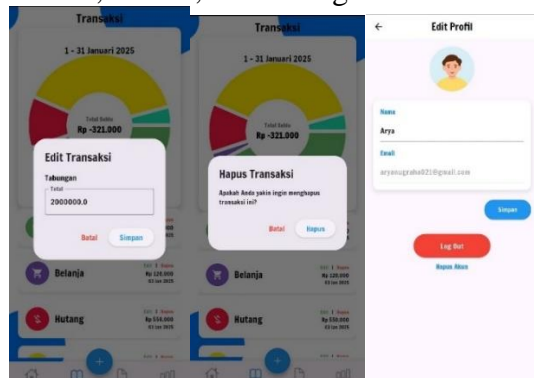## 3. Edit, Delete, and Change Name Screen

Figure 3.4 Edit, delete, and change name screen

Figure 3.4 is the edit page, and delete transactions, and change the user name. On the edit and delete page, use a pop up to be able to edit the nominal and delete transactions, so as not to take up a lot of storage. Then on the page to edit the username. Contains the name and email of the user that can be edited, and has a button to log out and delete the account.
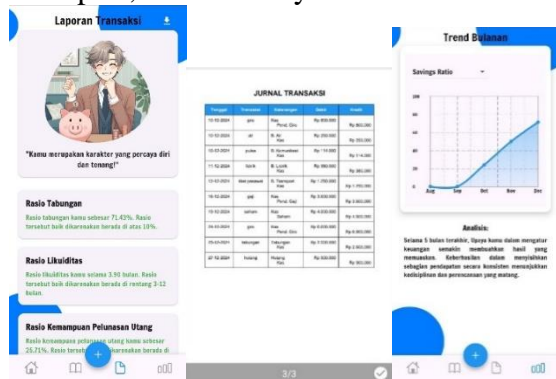
4. Report, and Monthly Trend.

Figure 3.5 Report, and monthly trend screen

Figure 3.5 is a monthly report and trend page. On the report page, there are ratio analysis results that are colored green if the ratio is good, and red if the ratio is not good. The ratios used are savings ratios, to assess how much money can be saved. Liquidity ratios, to show how ready a person is to meet their needs. And debt repayment ability ratios, to see how ideal an individual's ability is to pay off their debts [15], [16], [17]. The formulas are:

$$SR = \frac{total\ savings\ per\ month}{total\ income} \quad ....(1)$$

$$LR = \frac{cash\ or\ cash\ equivalent}{total\ monthly\ expenses} \quad ....(2)$$

$$DSR = \frac{total\ debt}{total\ income} \quad ....(3)$$

In addition, it is equipped with a transaction report download feature in the upper right corner with a white download icon. When clicked, users will get 3 sheets. On the first page, there are images and quotes that will vary according to the results of the ratio analysis, accompanied by the results of the savings ratio analysis, liquidity, and debt repayment ability. On the second page, there is a report of all transactions that occurred in that month. And on the third page, there is a transaction journal of the transactions that occurred. On the monthly recap page, using different intervals on the Y-Axis, where the maximum Y value for the savings ratio and debt repayment ability ratio is 100, because it uses a percentage, while the maximum Y value for the liquidity ratio is 12 because it uses months, and ratio analysis for the last 5 months. In addition, it is equipped with a dropdown button that functions so that users can freely choose which ratio they want to see the monthly recap.

3.3 Blackbox Testing

The testing of the student financial planning application is carried out technically, namely using the blackbox testing method, which functions to assess the performance of the system that has been created. Through this method, it is expected that the application system that has been

developed meets the needs of users, especially the features needed by students of Soegijapranata Catholic University Semarang. Blackbox Testing will focus on whether the application that has been created meets the specifications and needs of the user.

Table 1 BlackBox Testing of Financial Planning Applications

	BlackBox Testing		
	Testing Activities	**Expected Realization**	**Conclusion**
1	User inputs transactions into the application.	Users can input transactions, and transactions that have been inputted will appear in the transaction list.	Success
2	Users view and download transaction reports.	Users can view a list of previously entered transactions, and can download them in pdf format.	Success
3	Testing pie charts for variable costs, fixed costs, expenses, and income.	Pie charts can display any transaction according to the selected category (variable costs, fixed costs, expenses, or income) in percentage form.	Success
4	Testing ratio analysis.	The calculations that the system performs regarding the savings ratio, liquidity ratio, and debt repayment ability ratio are correct, and can be conveyed to the user via the report page.	Success

V. CONCLUSION

The student financial planning application is designed to help students manage their personal finances more effectively. Some of the key features identified include daily transaction recording that makes it easy for students to record income and expenses, and the presentation of transaction data in the form of pie charts that help visual understanding. The application also provides automatic analysis of savings ratio, liquidity ratio, and debt repayment ability ratio, allowing students to evaluate their financial health. In addition, the application provides transaction reports and journals that can be downloaded per month, making it easier for students to track their expenses and income. The use of modern technologies, such as Firebase for data management and Flutter for cross-platform interface development, supports these features by providing automatic financial analysis and informative data visualization. These visualizations allow students to see the comparison between income and expenses, and evaluate their monthly spending patterns.

The application also provides recommendations based on financial ratio analysis, which helps students identify areas that need improvement, such as increasing savings or reducing certain expenses. With this application, students can improve their financial literacy and manage their personal finances better, preparing them to face financial challenges in the future.

For further research, it is recommended that this application can be integrated with the Application Programming Interface (API) of digital payment services, which allows automatic transaction recording without the need for manual processing. This will allow financial data to be presented in real-time with a higher level of accuracy. In addition, there needs to be a focus on optimizing the user interface (UI/UX), with the development of a more

intuitive design, dashboard personalization, and interactive visual elements such as graphic animations or educational illustrations. These steps are expected to not only increase the efficiency of the application but also provide a better, more attractive, and more relevant user experience, so that it can support student financial management more effectively and efficiently.

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