

Design of Android-Based Financial Recording Applications in the Shoes Business

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ABSTRACT

Surf Skate Shop is a shop that sells various kinds of shoes in Purwokerto. In managing their finances, shop owners still use bookkeeping that is written manually on books. Records written in books may experience errors such as lost documents, difficulty in finding documents and errors in calculations. Therefore this research is directed to be able to assist shop owners in managing their finances. In making this application the researcher uses a type of qualitative data collection method, namely observation, interviews, literature study, and documentation. While in the development of the system using extreme programming method. The results of this study are in the form of an Android-based financial records application that can record sales data, record expense data, record item data, store data so that it is not easily lost and damaged, calculate the number of items sold, calculate total sales, calculate total expenses, calculate total profits, calculating the operational amount, calculating the total net profit and calculating the total that must be deposited to the supplier, searching for data by date, and displaying what items were sold to the supplier. Based on testing with the user acceptance testing method with the results of the respondents being 95% so that it is included in the category of approving the system to be an application that can help manage financial records.

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INTRODUCTION

A business will run well if it is run professionally. Today's competition is indeed more stringent with the inclusion of elements of information technology[1]. All promotional and administrative media are supported by computer technology. Companies in marketing a product are also currently using technological media. Currently, there are many marketplace platforms that provide product references for a company[2][3]. In addition to the marketplace, companies can also independently have special platforms. The platform that is currently the most widely used is Android technology[4]. Android support in smartphone media that is widely used by users all over the world. The author tries to reveal one of the businesses engaged in shoe products to direct their business to the Android platform[5][6].

Technological developments in administration today are many who have utilized technology, one of which is financial records. However, the application of technology to small businesses still does not utilize technology, such as notes that are still written manually in notebooks[7]. According to a diary, financial records are an important factor in business, because without good financial records and financial management, the business cannot develop and can even result in losses. Recording is done on the book will be quite inconvenient if the data recorded is very much[8][9]. Therefore the use of technology in business can be a solution for managing financial record data, because data management that was previously done manually becomes automatic and is presented as computerized data so that it can provide information quickly and precisely for entrepreneurs to maximize their business performance[10].

The problem faced by shop owners is when they provide reports on the results of sales to suppliers because reports are done by typing directly into WhatsApp chat so that if they are deleted, the report data will be lost[11]. The next problem is that in recording sales transactions, shop owners still make records in books that are prone to loss and damage. In addition, to make a report, it must be done carefully by checking and counting one by one sales transaction records because they are still in the form of notes written in a book so that if an error occurs, it must be repeated again[12]. Another problem is submitting reports to the suppliers because the one responsible for making the reports is the shop owner so if the shop owner doesn't tell how many items have been sold then the supplier won't know how much profit has been made and how many items have to be added to the Surf Skate shop[13].

Based on the existing problems, the researchers created a solution to help shop owners manage their finances by creating an Android application that can be used on smartphones. Because according other research, smartphone technology has functions and capabilities that are almost the same as computers which have the advantage of small device sizes so that they are easy to carry anywhere and anytime compared to desktop computer applications which are larger in size. In addition, Android-based smartphone mobile applications can run offline and online without using an internet connection compared to website-based application systems that require an internet connection to access them[14][15].

Based on observations and interviews, Surf Skate shop owners don't really understand how to use a computer or laptop. Therefore the author chose an Android smartphone because there are many Android smartphone users and almost everyone has it, including Surf Skate shop owners and Surf Skate shop suppliers. In addition, the author uses Google's firebase database which is provided free of charge to store the data, so there is no need to pay and no need to arrange for a database lease extension again. Therefore this android application is suitable to be used as a media for managing financial records to help Surf Skate store owners manage their store's financial records.

METHOD

This study uses the Extreme Programming (XP) method. Extreme Programming (XP) is a software engineering process that tends to use an object-oriented approach and the goal of this method is teams that are formed on a small to medium scale and this method is also suitable if the team is faced with unclear requirements or changes in requirements occur. which is very fast. Extreme Programming (XP) consists of several stages, namely planning, design, coding and testing:

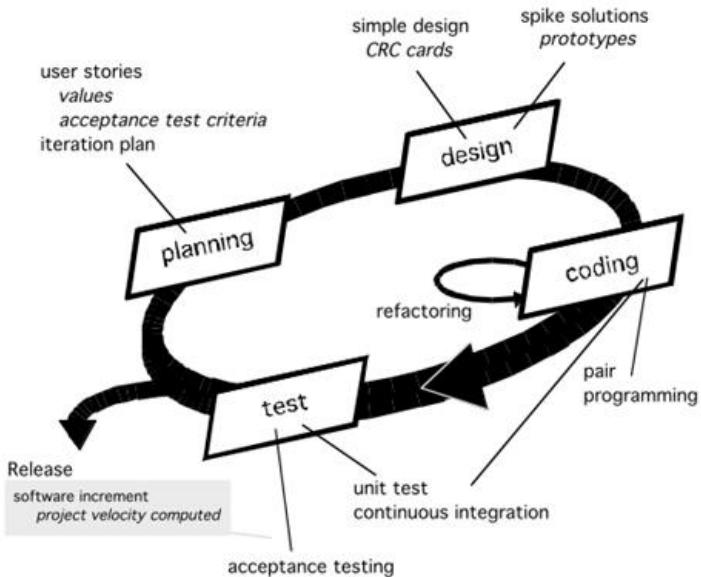


Figure 1. Extreem Programming Model.

1. Planning.

This stage is the first step in system development using the Extreme Programming (XP) method where several planning activities are carried out at this stage to get an overview of what kind of application will be made.

2. Design.

At this stage, system modeling is carried out based on the results of the needs analysis obtained. Besides that, database modeling is also made to describe the relationship between data. The modeling system used is the Unified Modeling Language (UML) which consists of several diagrams including Use Case Diagrams, Activity Diagrams, Sequence Diagrams, and Class Diagrams.

3. Coding.

This stage is the implementation of the system model design that has been made into the program code. In this study the authors used the Android Studio software to code using the Kotlin programming language.

4. Testing

At this stage the researcher conducts testing with the aim of knowing that the existing system features are functioning properly. In this testing phase, the researcher used the user acceptance testing method to find out the responses from system users by using a questionnaire.

RESULT & DISCUSSION

Based on interviews and observations it is known that the user needs of the application made are, namely, recording sales data, recording expenditure data, recording goods data, storing data, calculating total sales, calculating total expenses, calculating the number of items sold, calculating the total profit, calculating the total operating costs incurred, calculating the total net profit, calculating the total money that must be deposited to suppliers, searching for data by date, and displaying data on what items were sold to suppliers.

At the design stage of the system design researchers use UML (Unified Modeling Language) to model the system to be created. The diagrams that researchers use for UML modeling include Use Case Diagrams, Activity Diagrams, Sequence Diagrams and Class Diagrams. The following is a use case diagram in the application design that will be made which can be seen in Figure 2:

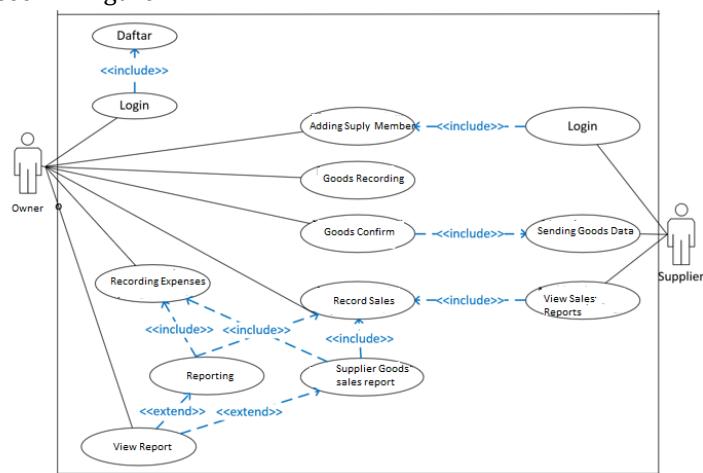


Figure 2, Use Case Model.

Coding is the implementation stage of the design stage that has been made. In making the financial records application at the Surf Skate store using Android Studio software. The programming language used is the Kotlin language, while the interface for the application page is made using the XML language in Android Studio. For data storage, use the firebase firestore database. Figure 3 is the main page when the shop owner successfully logs into the application. On this page there is information on the total profits, total expenses, and total income earned by the shop owner.

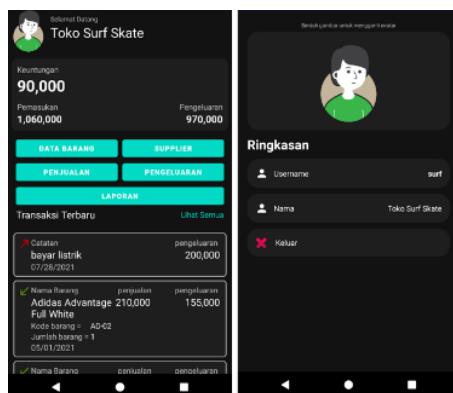


Figure 3, Dashboard Layout Model.

Figure 4 is an item data page that is used to manage item data available at the store. On this page the shop owner can view, add, change, delete, and confirm item data. On this page there is information on how many stocks are available in the store and there is a search feature by item code to make it easier to find item data.

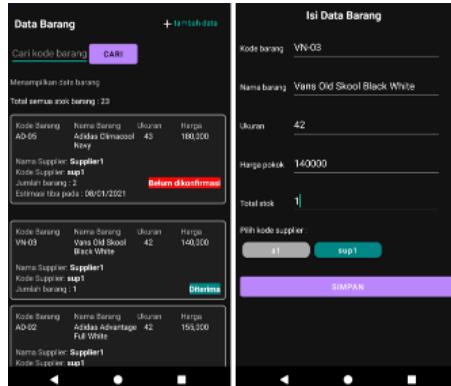


Figure 4, Design Model of Data Page.

Figure 5 is a sales data page that is used to record each data item sold at the store. On this page, store owners can view, add, modify, and delete sales data. In addition, shop owners can also search data by date.

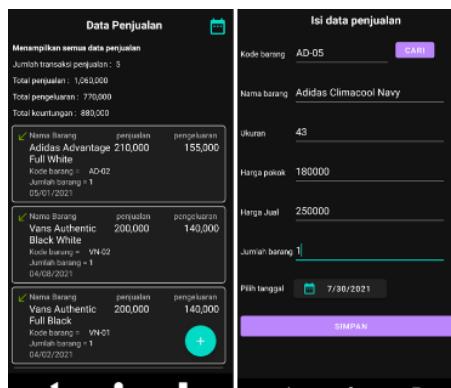


Figure 5, Sales Data Page.

Figure 6 is a supplier data page that is used to create a shop supplier account so that you can access the application as a supplier. This page can only be accessed by shop owners. On this page the shop owner can view, add, change and delete supplier data that will be used by suppliers to log in to the application.

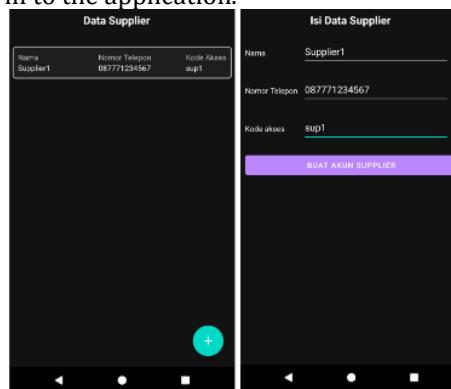


Figure 6, Supplier Data Page

Figure 7 is a report page that is used to view store report data. On this page the shop owner can see information on the number of items sold, total profit, total profit, total operations, total net profit and total to be deposited. Reports will be displayed based on the selected date.

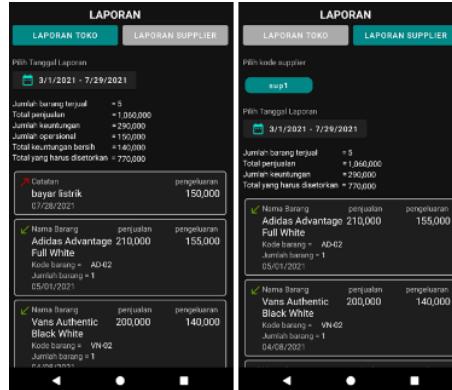


Figure 7, Report Owner.

Testing (testing) is the stage to test the results of the application that has been made. Testing is done to find out whether the application meets the requirements or there are still deficiencies. User acceptance testing method. The user acceptance testing method is used to find out the responses from system users by using a questionnaire. User acceptance testing is carried out using a questionnaire sheet to 2 respondents, namely shop owners and suppliers who will use the application. The following is the contents of the questionnaire given to Surf Skate store owners and suppliers which are displayed in tabular form:

Table 1, List of questioner.

No.	Question	Evaluation				
		SA	A	S	D	DS
1.	Easy to use application					
2.	The in-app menus and buttons are easy to understand					
3.	Features in the application are working properly					
4.	The application helps manage sales and expense records					
5.	The application helps submit reports on sales of goods					
6.	Applications are made according to needs					

Table 1 is the contents of the questions given to surf skate shop owners and suppliers. Inside there are assessment options, the following is the score of each assessment:

<i>Strongly Agree (SA)</i>	= 5
<i>Agree (A)</i>	= 4
<i>Simply Agree (S)</i>	= 3
<i>Disagree (D)</i>	= 2
<i>Strongly Disagree (SD)</i>	= 1

Table 2, Value Weight

Answer Scale	Criteria
Strongly Agree (SA)	80% - 100%
Agree (A)	60% - 79,99%
Simply Agree (SA)	40% - 59,99%
Disagree (D)	20% - 39,99%
Strongly Disagree (SD)	0% - 19,99%

After the questionnaires were distributed, the answers from the respondents were obtained which can be seen in Table 3. The following are the results of the questionnaire answers from the respondents who have counted:

Table 3, Questioner Result

Question	Evaluation					Audience	High Score (Y)	Sum	Index	Criteria
	SA	A	S	D	DS					
1	1	1	0	0	0	2	Y highest likert score × number of respondents	9	90%	Strongly Agree
2	0	2	0	0	0	2		8	80%	Strongly Agree
3	2	0	0	0	0	2		10	100%	Strongly Agree
4	2	0	0	0	0	2		10	100%	Strongly Agree
5	1	1	0	0	0	2	Y = 5 × 2 Y = 10	9	90%	Strongly Agree
6	2	0	0	0	0	2		10	100%	Strongly Agree

Table 3 shows the final results of the test from the answers to the respondent's questionnaire and the average index formula can be taken as follows:

$$(90 \% + 80 \% + 100 \% + 100 \% + 90 \% + 100\%) / 6 = 95\%$$

Based on the results of tests carried out using the user acceptance testing method, the results obtained from respondents were 95% so that they were included in the Strongly Agree category as an application that can help manage financial records at Surf Skate shops.

CONCLUSIONS

In the discussion of this paper, it has succeeded in creating a financial recording application at the Surf Skate store that can be used to record sales data, record expense data, record item data, store data so that it is not easily lost and damaged, calculate total sales, calculate total expenses, calculate the number of items sold, calculating the amount of profit, calculating the amount of operational costs incurred, calculating the total net profit and calculating the total money that must be deposited to the supplier, looking for data by date, and displaying data on what items were sold to suppliers. With this

application, it can help Surf Skate store owners manage their financial records and can help report sales data to suppliers.

The application has gone through black box testing, the results obtained are in accordance with the test plan and found no errors in carrying out application functions. In addition, testing was carried out using user acceptance testing with the results of the respondents being 95% so that it was included in the Strongly Agree category as an application that can help manage financial records at the Surf Skate shop.

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