



Design and Build Daily Android-Based Financial Applications

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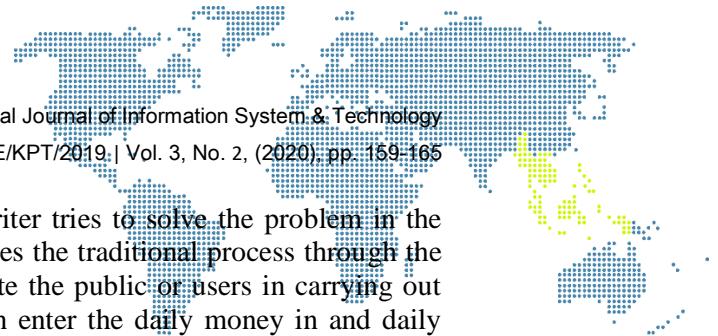
Abstract

The rapid development of information and communication technology is directly proportional to the community's need for fast and accurate information, especially the development of technology on mobile phones (cellphones) that present smartphones with various sophisticated features. Smartphones are becoming a necessity for society today not only as a communication device, but also as a source of information. In general, the community carries out daily financial management in the traditional way by taking notes using a writing instrument, where the paper media as its documentation and the help of a calculating tool is a calculator to calculate financial income and expenditure. Constraints that occur are that the public needs stationery to do every recording of transactions that are carried out every day. So it requires quite a lot of money, the time required will take a long time to record financial transactions that are carried out every day by the process of writing on paper media, in addition to that the public is also often confused by financial records that are lost or damaged due to paper documents. This Mobile Based Daily Financial Registration Application aims to help its users in financial management using a mobile device, so that users can expect to be able to manage their finances optimally, both income and expenditure. As a result of the application, the public can enter the daily money in and daily money out data along with their information and then the data will be displayed on the front page of the application menu, in addition to the data that has been entered can also be edited and deleted as needed and accompanied by making features money entry data reports and money out data in the form of graphs and pdfs.

Keywords: Daily Finance Application, Mobile-based

1. Introduction

The rapid development of information and communication technology is directly proportional to the people's need for fast and accurate information. Information relating to communication technology that is supported by computer technology so that data can be processed accurately to produce useful information. Financial management is an action to achieve financial goals in the future [1]. With the high level of busyness in the community, it causes people to be less efficient in managing their finances if by manual means by using financial journals. Because we are not possible to carry financial journals everywhere we go and also we need too long to record expenses that have been made at that time so sometimes we will forget to record the small expenses that have been made. Now, in general, the community carries out daily financial management in the traditional way by taking notes using stationery, where the paper media as its documentation and the help of a counting tool is a calculator to calculate financial income and expenditure. Constraints that occur are that the public needs stationery to do every recording of transactions that are carried out every day. So it requires quite a lot of money, the time required will take a long time to record financial transactions that are carried out every day by the process of writing on paper media, besides that the public is also often confused by financial records that are lost or damaged due to the paper-shaped documentation. Mobile applications are ready-made programs that carry out certain functions installed on mobile devices [2].



Based on the problems mentioned above, the writer tries to solve the problem in the process of recording daily financial data that still uses the traditional process through the help of a mobile-based application that will facilitate the public or users in carrying out financial records. In this application, the public can enter the daily money in and daily money out data along with their information and then the data will be displayed on the front page of the application menu, in addition to the data that has been entered can also be edited and deleted as needed and also accompanied by the feature of making data reports money in and money out in the form of graphs and pdfs.

2. Research and Methodology

2.1. Mobile Application

Mobile applications come from two words, namely applications and mobile. In terms, an application is a ready-made program created to carry out a function for other users or applications while mobile is a move from one place to another[2]. More fully, a mobile application is a ready-made program that carries out certain functions that are installed on a mobile device. By using a mobile application, it can easily do a variety of activities ranging from entertainment, selling, studying, doing office work, browsing and so forth.

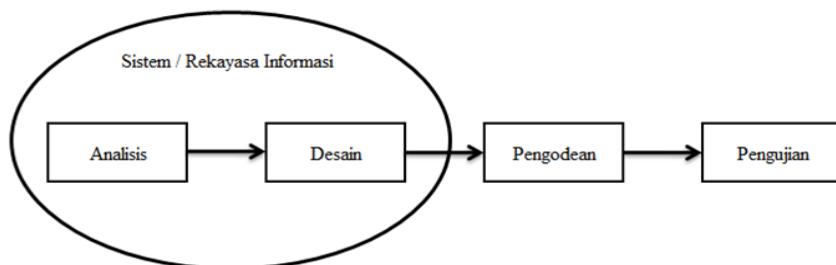
Mobile applications are built with several mobile programming languages. Examples of mobile programming for mobile phones include JavaFx mobile, J2ME, C++, C # .NET and Flash Lite.

2.2. Android

Android is a Linux-based operating system that is designed for touch screen mobile devices such as smartphones and tablet computers [3].

2.3. Software Development Model

The waterfall SDLC model is often also called the sequential linear model or classic life cycle[4]. The waterfall model provides a sequential or sequential software life cycle approach starting from the analysis, design, coding, testing, and support stages.



Sources: (Rosa & Shalahuddin, 2018)

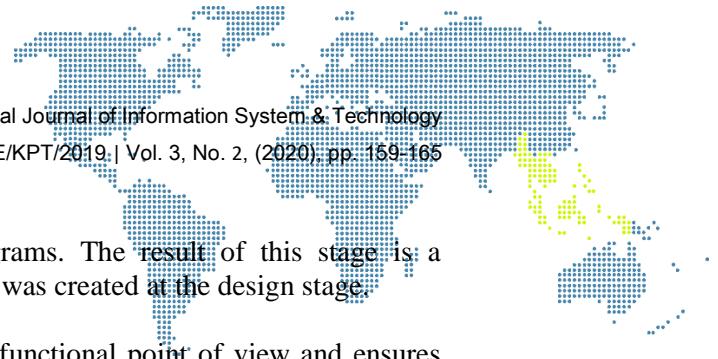
Figure 1. Illustration of the Waterfall Model

a) Software Requirements Analysis

The process of gathering needs is done intensively to specify software requirements so that software can be understood as what is needed by the user. Software requirements specifications at this stage need to be documented.

b) The design

Software design is a multi-step process that focuses on the design of software programming including data structures, software architecture, interface representation, and coding procedures. This stage translates software requirements from the needs analysis stage to the design representation so that it can be implemented into a program at a later stage. The design of software produced at this stage needs to be documented.



c) Program Code Making

Designs must be translated into software programs. The result of this stage is a computer program with following the design that was created at the design stage.

d) Testing

Testing focuses on software from a logical and functional point of view and ensures that all parts have been tested. This is done to minimize errors (errors) and ensure the resulting output as desired.

e) Support (Maintenance) or Maintenance (Maintenance)

it does not rule out the possibility of a software experience changes when it has been sent to the user. Changes can occur due to errors that appear and are not detected during testing or the system must adapt to the new environment. The support or maintenance stage can repeat the development process from specification analysis to changes to existing software, but not to create new software.

2.4. Entity Relationship Diagram (ERD)

Entity Relationship Diagram (ERD) is a diagram showing information created, stored, and used in business systems[5]. Entity Relationship Diagram (ERD) is a picture of data that is modeled in a diagram that is used to document data by determining what is contained in each entity and how the relationship between entities with one another.

3. Results and Discussion

3.1. Analysis of Application Requirements

a) User Needs

In the Daily Finance application the user has the following functions :

- 1) Register as an application user, used to be able to do financial records
- 2) Enter into the daily financial application
- 3) Add and manage income data (income)
- 4) Add and manage expenditure data
- 5) View data on income and expenditure categories
- 6) Add and manage data categories
- 7) View reports

b) System Requirements

- 1) To use this application, users must first install the application on an Android-based smartphone with a minimum version of Android Jelly Bean.
- 2) Users can register an account if it is the first time using this application.
- 3) The user must log in first before inputting financial data in this application.
- 4) Users can input financial data, edit, delete and print reports in this application.
- 5) The application can store, update and delete data according to user needs.
- 6) The application enables to filter the data displayed.
- 7) The application enables to display reports.

3.3. Implementation

Implementation of interface design :

a) Splashscreen page

Splashscreen page is the opening page when the application is first run



Figure 2. Splashscreen page



b) Sign In page

Sign In page is the page where the user enters email and password to be verified before entering the application.

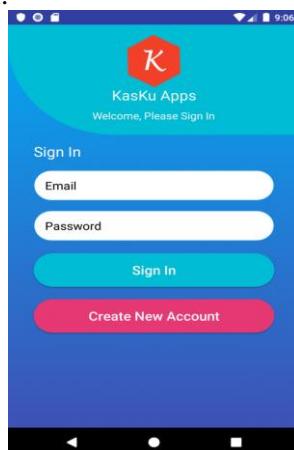


Figure 3. Sign In page

c) Sign Up page

Sign Up page is a page for registering personal data, namely name, email address, password and password confirmation to be registered in the application so that you can sign in.

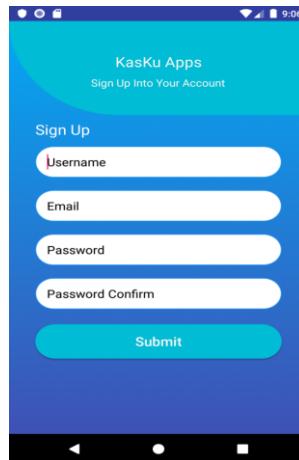


Figure 4. Sign Up page

d) Main Menu Page (Home)

The home page is the page that is first displayed when the user successfully enters the application.

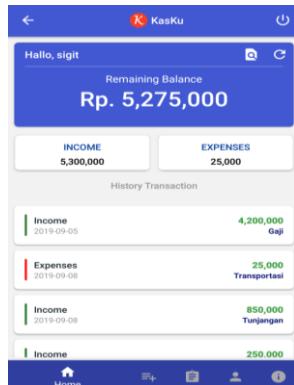
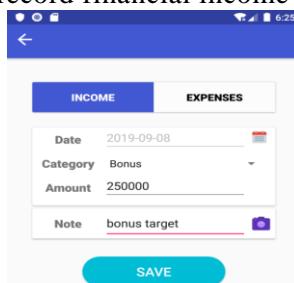


Figure 5. Home page



e) Add Income page

Income plus page is a page to record financial income data.

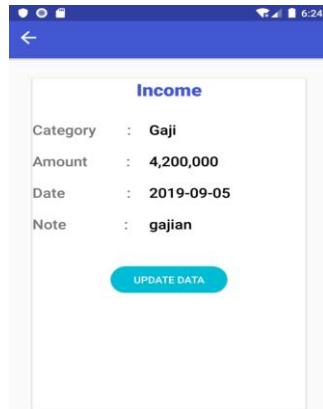


The screenshot shows a mobile application interface for adding an income entry. At the top, there are tabs for "INCOME" and "EXPENSES". Below the tabs, there are input fields for "Date" (set to 2019-09-08), "Category" (set to Bonus), "Amount" (set to 250000), and "Note" (set to bonus target). A blue "SAVE" button is at the bottom.

Figure 6. Income page

f) Entry Details Page

The income details page is a page to display financial income data that has been previously entered.

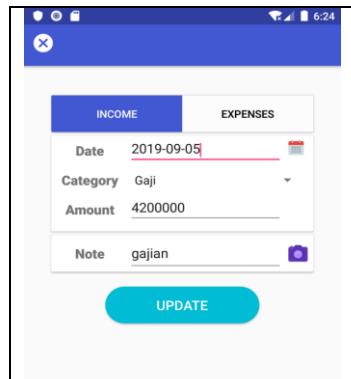


The screenshot shows a mobile application interface for viewing income details. It displays a single entry with the following information: Category : Gaji, Amount : 4,200,000, Date : 2019-09-05, and Note : gajian. A blue "UPDATE DATA" button is at the bottom.

Figure 7. Entry Detail page

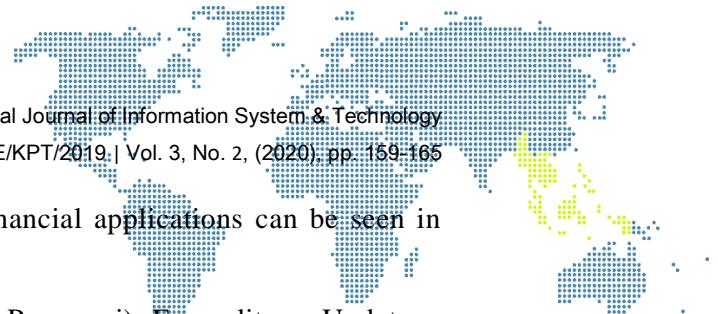
g) Entry Update page

Income update page is a page to change financial income data that has been entered previously.



The screenshot shows a mobile application interface for updating an income entry. The "INCOME" tab is selected. The entry being updated has a Date of 2019-09-05, Category of Gaji, Amount of 4200000, and Note of gajian. A blue "UPDATE" button is at the bottom.

Figure 8. Update page



For a complete design of daily android-based financial applications can be seen in the following picture:

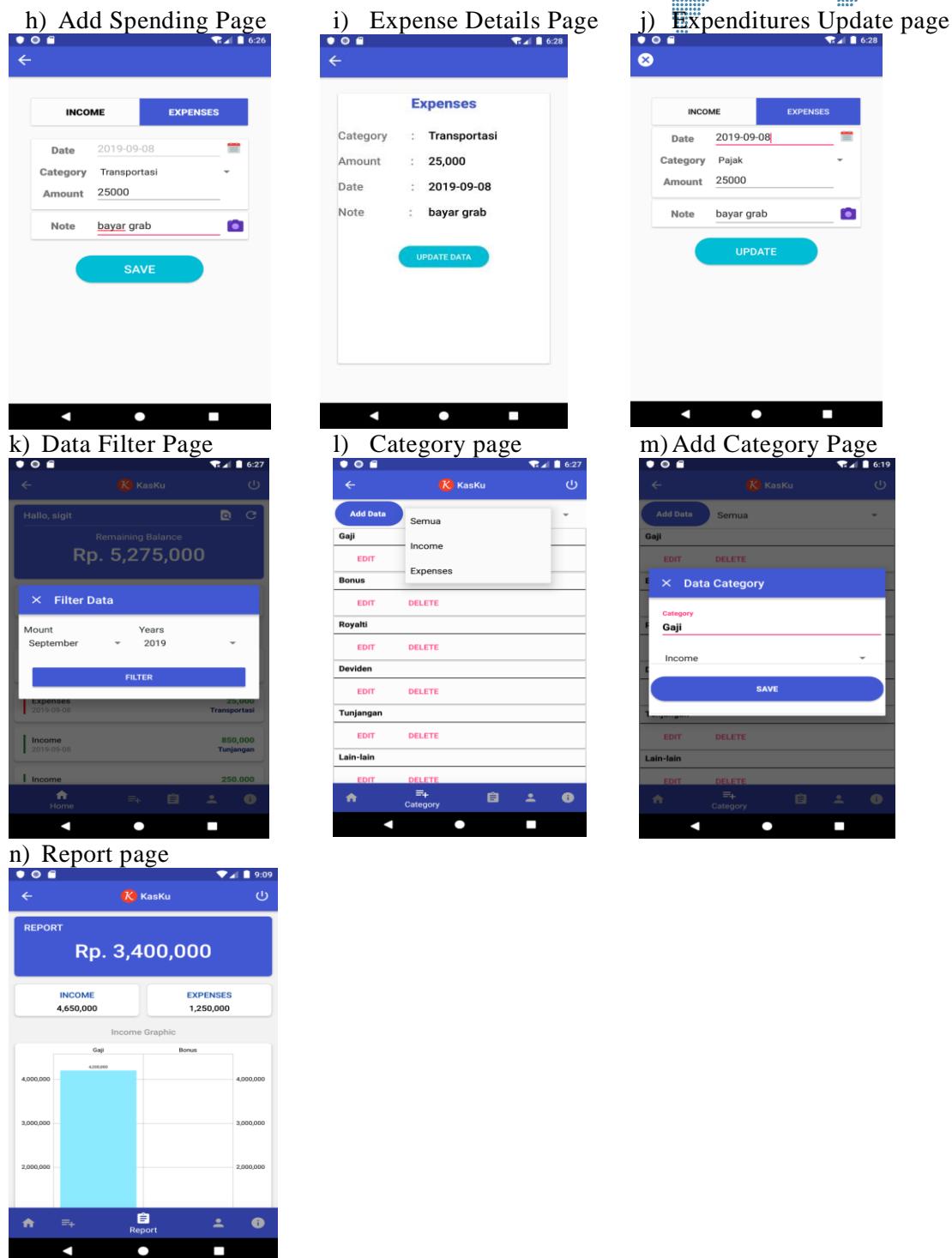
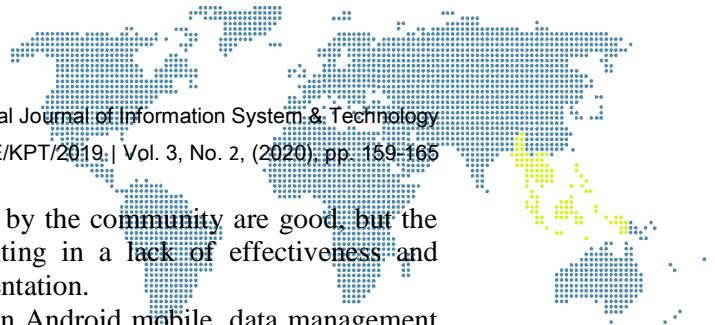


Figure 9. Android-based financial application design.

4. Conclusion

Some conclusions that the author can convey to the Android Mobile Based Daily Financial Application are as follows:



- a) The daily financial records that are usually done by the community are good, but the recording is still using manual methods. Resulting in a lack of effectiveness and efficiency in the process of recording and documentation.
- b) With the application of financial records based on Android mobile, data management will be done faster, more precisely and accurately. So that it can produce quality information and good documentation.
- c) The use of mobile applications is an effective means for the community to process financial records because now almost everyone has an Android-based smartphone.
- d) Facilitate the public in carrying out financial records using an Android-based smartphone that can be done anywhere and anytime.

As for some suggestions that I want to convey are as follows:

- a) To improve the recording process, it is expected to update the application regularly. It is expected that users back up data because the data is stored in internal memory, preventing if you forget the password or the application is deleted.
- b) It is necessary to develop the application regularly so that the application runs more optimally, and can add modules or features.
- c) There needs to be an application development for data storage space which currently still uses the internal memory of a mobile phone which can then be developed based on a server.

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