
Custom Menu Msme Goods Management Application System Based On Android

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ABSTRACT

The Android-based inventory management application for MSMEs is designed to enhance efficiency and accuracy in inventory management for micro, small, and medium enterprises (MSMEs). The application offers features such as adding, reducing, and updating stock items, tracking transaction history, and generating real-time stock and sales reports. With an intuitive and user-friendly interface, this application simplifies inventory management for users. User data security is ensured through secure authentication, data encryption, and regular backups. Continuous maintenance and user support are also provided to ensure the application remains stable and meets user needs. This application contributes to the digitalization process of MSMEs, helping them improve operational efficiency and compete in an increasingly digital market.

Keywords: Inventory Management Application, MSMEs (Micro, Small, and Medium Enterprises), Inventory Management, Android

INTRODUCTION

The role of MSMEs in improving community welfare cannot be underestimated. MSMEs have been proven to be able to survive in the midst of an economic crisis, and are even able to support the national economy (Srijani, Kadeni, 2020). Not only that, MSMEs also contribute significantly to national production, the number of business units and entrepreneurs, as well as employment (Maula et al., 2021). The current COVID-19 pandemic has had a significant impact on the sustainability of MSMEs in Indonesia. As many as 75% of MSMEs have experienced a large decline in sales (Diah et al., 2021). However, the role of MSMEs in reducing unemployment and poverty remains one of the government's main priorities. To strengthen the resilience of MSMEs during the pandemic, superior human resource management strategies are needed. Apart from that, developing marketing strategies through digital marketing is also the key to maintaining the continuity of MSME businesses (SHIRATINA & AFFINI, 2022).

In today's digital era, information and communication technology plays an important role in increasing business efficiency and productivity. One solution that can be implemented is the development of an Android-based goods management application that can help MSMEs manage inventory more efficiently and effectively. This application is designed with customizable features (custom menu), according to the specific needs of each MSME, thereby providing flexibility and ease of use. Apart from that, the use of digital media such as social media and e-commerce is also an effective marketing strategy for MSMEs to expand market reach and increase sales. This is in line with the trend of shifting consumer preferences in shopping, from offline to online.

Good inventory management is critical to ensuring product availability, avoiding stockouts, and minimizing excessive storage costs. However, many MSMEs still use manual methods for recording and tracking inventory, such as using notebooks or spreadsheets. This method is prone to human error, time consuming, and difficult to access or update in real-time. Digital financial management can help MSMEs manage their inventory more efficiently. With digital inventory management software or systems, MSMEs can track inventory in real-time, automate the ordering process, and make more accurate forecasts (Yolanda et al., 2023). Apart from that, the use of digital technology can also help MSMEs record financial transactions more systematically, analyze sales trends, and create more accurate and timely financial reports.

The implementation of digital marketing provides various benefits for MSMEs, including increased brand visibility, access to a wider market, more affordable marketing costs, and the ability to monitor and analyze consumer behavior more effectively (Arumsari et al., 2022). Then, to speed up the digital adoption process, MSMEs can take advantage of government assistance programs, such as digital marketing training, providing incentives, or financing schemes.

One of the main advantages of Android-based applications is their ability to provide customizable features (custom menus). Each MSME has unique business needs and characteristics, so one-size-fits-all solutions are often ineffective. With a customizable Android application, MSMEs can integrate features according to their specific needs, such as stock recording, automated orders, sales tracking, and business analytics. This flexibility allows MSMEs to increase operational efficiency, reduce costs, and make more informed business decisions. Apart from that, the Android application also makes access and mobility easier for MSME owners. They can monitor and manage inventory from anywhere, even when out of the office. The development of an Android-based goods management application can be an effective solution for MSMEs to increase their productivity and competitiveness in the digital era.

With this background, the development of an Android-based MSME goods management application with a custom menu feature is expected to provide an effective solution. This application will not only increase efficiency and accuracy in inventory management, but also support the digitalization of MSMEs, encouraging them to adapt to technology in an effort to increase competitiveness in the market.

METHOD

This research uses the System Development Life Cycle (SDLC) method to develop and evaluate an Android-based Custom Menu MSME goods management application system. SDLC is a structured framework used to plan, develop, test, and maintain information systems. The SDLC method used consists of several main stages, namely: planning, analysis, design, development, testing, implementation and maintenance.

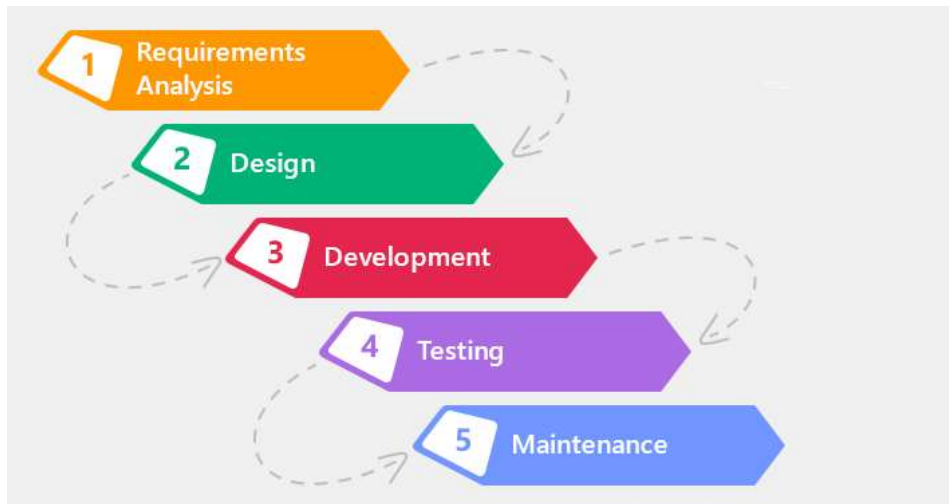


Figure 1. System Development Life Cycle (SDLC)

1. Requirements Analysis
Requirements Analysis stage is a crucial step in developing an Android-based MSME goods management application using the SDLC method. This stage aims to identify, collect and document user and system requirements.
2. Design
The design stage in the SDLC method for developing Android-based MSME goods management applications includes system architecture design, database design and user interface (UI) design. This design aims to ensure that the application being built will meet all the needs that have been identified during the requirements analysis stage.
3. Development
The development stage in the SDLC method for developing Android-based MSME goods management applications includes implementing the design into a functional application. This stage involves writing code, feature integration, and initial testing.
4. Testing
The testing stage in the SDLC method for developing Android-based MSME goods management applications is very important to ensure that the application functions according to specifications, is free from bugs, and meets user needs.
5. Maintenance
The maintenance stage in the SDLC method for developing Android-based MSME goods management applications is an important step to ensure the application continues to function well after launch, and is able to adapt to changes in user and technological needs. Maintenance involves continuously monitoring, repairing, and improving applications.

RESULTS AND DISCUSSION

The Custom Menu application is an application created and designed for the smartphone platform with the Android operating system. This application has several

features, including counting items, taking notes and making a list of items. On the main page there are 2 menu options, namely start and exit. The start menu will enter the operation section and the exit menu will exit the application. On the start menu, you will enter the stage of entering the shop name, followed by the compression page section, including creating a list of items, counting items and making notes.

In the item list menu section there is a 'submit' button to print the list and an 'add' button to create a list of items such as item names and item prices as well as item descriptions. For the item calculation menu section, there is a 'process' button to print the subtotal and print the input items such as item name, item price and item quantity. The subtotal is for information on the total price of goods as well as payment and remaining payment. And the notes menu section has an 'add' button to create a new note, a 'save' button to save a note, edit a note as well as options for sharing notes and deleting notes.

Application Design

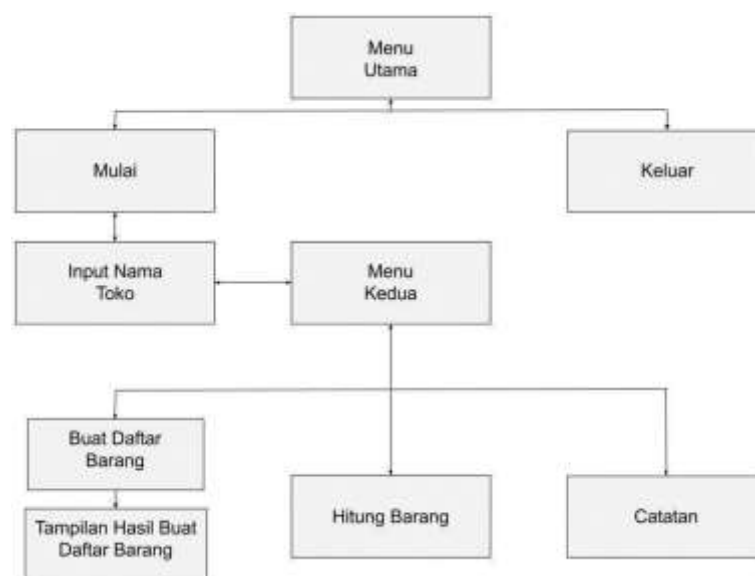


Figure 2. Application Navigation Structure

Figure 2. It is known that there is a main menu display which has 2 menu options, namely start and exit. If you select the exit menu, it will direct you to exit the application and if you select the start menu, it will direct you to the store name input page. After inputting the shop name, you will enter the second menu display which has 3 menu options including creating a list of goods, counting goods and notes. If you select the create item list menu, the item list creation display will appear and after creating the item list, the output display for item creation will appear in the Create Item List Result Display section. If you select count items, the item count will appear and if you select notes, the create note display will appear.

Implementation of Application Creation



Figure 3. Implementation of Creating a New Project Application

Next there will be several project templates offered for creating applications, select Empty Activity and click Next as in Figure 4



Figure 4. Implementation of Creating an Activity Template Selection Application

Then fill in the application name and adjust the project storage location. The package name will match the application name. For the programming language, there are 2 choices, namely Java and Kotlin, select Java and if so, click finish. An example is in Figure 5

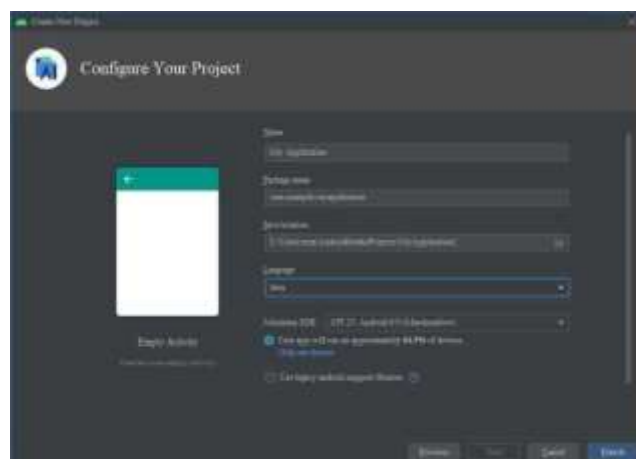


Figure 5. Implementation of Creating a Project Configuration Application

Main Menu Page

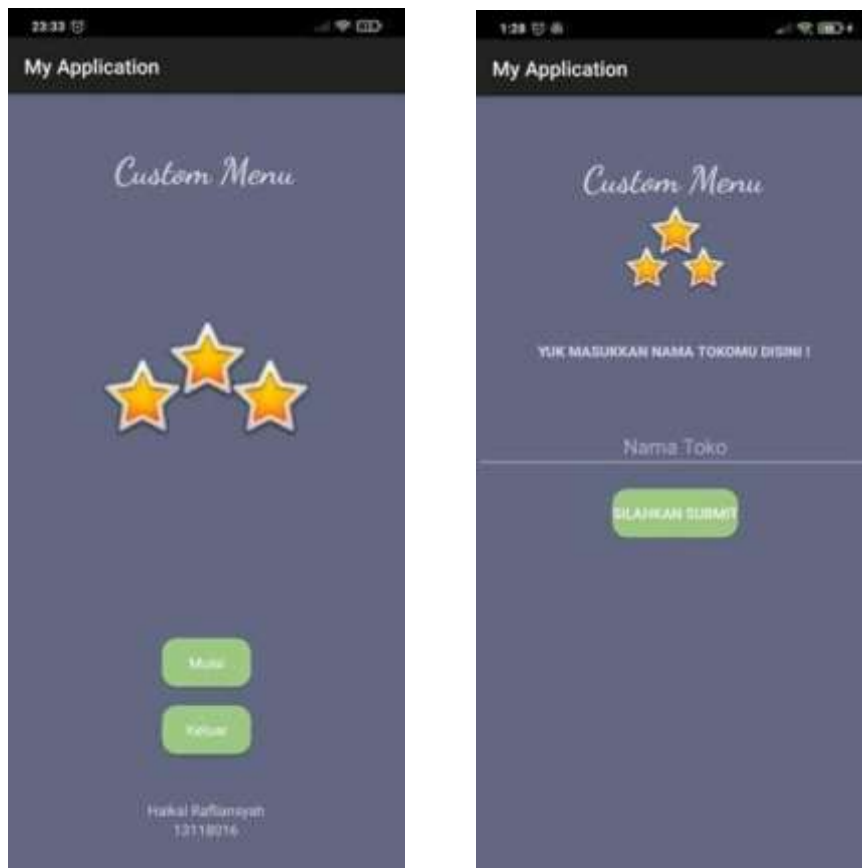


Figure 6. Main Menu Page and Store Name Input Page

The display of the second menu contains 1 text and 3 buttons. The 3 buttons here include creating a list of items, counting items and notes. For 1 the text displays the shop name. The second menu display is in Figure 7



Figure 7. Implementation of Creating the Second Menu Page

The item list display has 1 text that shows the description of the operation page, namely 'Your Item List'. Apart from that, there are 2 'add' buttons to add rows and a 'Create List' button to process prints such as. Then there is also information on each line to provide information about the goods, including the information 'Available', 'Not Available', 'Processing' and 'Under Delivery'. Below is figure 8



Figure 8. Create Item List page and Create Output Item List page

Trials After the application is implemented, the application must go through testing before being used. This trial is useful to find out whether the application runs well or not and reduces errors when the system is implemented. Tests were carried out on several smart phones, below are the test results in table 1.

Table 1. Application Trial Table

No	Cell Phone Type	Cell Phone Specifications	Test Description for Each Page
1	Redmi Note 7	Android versi 10 CPU Octa-core Max 2.20 Ghz RAM 4.00 GB Internal Storage 64 GB	Main Menu: Very Good Store Name Input: Very Good Second Course: Very Good Make a List of Items: Very Good Item Count: Very Good Note: Very Good
2	Redmi Note 4	Android versi 6.0 Marshmallow CPU Deca-core 2.1 GHz RAM 3.00 GB Internal Storage 32 GB	Main Menu: OK Input Store Name: OK Second Menu: Not Good Make a List of Items: OK Count Items: OK Note: Very Good
3	Samsung Galaxy J7	Android versi 6.0.1 Marshmallow CPU Quad-core 1.4 GHz Cortex RAM 1.5 GB Internal Storage 16 GB	Main Menu: OK Input Store Name: OK Second Menu: Not Good Make a List of Items: Good Count Items: Fairly Good Note: Very Good

After testing on several smart phones, it turns out that the Custom Menu application has been running quite well. As for some of the displays during testing, they do not match the results of other smartphone tests. However, this does not reduce the use of the application.

CONCLUSION

The development of an Android-based MSME goods management application is an innovative solution designed to increase efficiency and accuracy in inventory management for micro, small and medium enterprises (MSMEs). Based on the analysis and implementation that has been carried out, the following are the main conclusions of this project: This application allows MSMEs to manage stock more efficiently through features such as adding, reducing and updating stock, as well as tracking transaction history. The use of barcode/QR code technology further speeds up the data input process and reduces manual errors. This application was designed and created using Android Studio software. Based on what has been implemented, this application has been successfully created. The features of this application include making a list of items, counting items and taking notes. This application is expected to make it easier for MSMEs in the process of managing goods so that they become more effective and structured in their usage time.

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