1738191359

1738191359

Shri Vile Parle Kelavani Mandal

Document Details

Submission ID
trn:oid:::9832:80503546

Submission Date
Jan 29, 2025, 10:56 PM UTC

Download Date
Jan 29, 2025, 10:57 PM UTC

File Name
2_Production_353_Jintisari.docx

File Size
1023.8 KB

21 Pages

2,416 Words

14,853 Characters

7% Overall Similarity

The combined total of all matches, including overlapping sources, for each database.

Filtered from the Report

- Bibliography
- Quoted Text
- Cited Text

Match Groups

14 Not Cited or Quoted 7%
Matches with neither in-text citation nor quotation marks

0 Missing Quotations 0%
Matches that are still very similar to source material

0 Missing Citation 0%
Matches that have quotation marks, but no in-text citation

0 Cited and Quoted 0%
Matches with in-text citation present, but no quotation marks

Top Sources

1% Internet sources
2% Publications
7% Submitted works (Student Papers)

Integrity Flags

0 Integrity Flags for Review

No suspicious text manipulations found.

Our system's algorithms look deeply at a document for any inconsistencies that would set it apart from a normal submission. If we notice something strange, we flag it for you to review.

A Flag is not necessarily an indicator of a problem. However, we'd recommend you focus your attention there for further review.

Match Groups

- **14** Not Cited or Quoted 7%
  Matches with neither in-text citation nor quotation marks
- **0** Missing Quotations 0%
  Matches that are still very similar to source material
- **0** Missing Citation 0%
  Matches that have quotation marks, but no in-text citation
- **0** Cited and Quoted 0%
  Matches with in-text citation present, but no quotation marks

Top Sources

1% Internet sources
2% Publications
7% Submitted works (Student Papers)

Top Sources

The sources with the highest number of matches within the submission. Overlapping sources will not be displayed.

1	Submitted works	Gulf College Oman on 2023-06-04 — 1%
2	Submitted works	Higher Education Commission Pakistan on 2017-03-13 — 1%
3	Submitted works	University of Sunderland on 2022-10-12 — <1%
4	Submitted works	Monash University on 2018-10-19 — <1%
5	Submitted works	University of Reading on 2020-05-14 — <1%
6	Internet	www.coursehero.com — <1%
7	Submitted works	INTI University College on 2010-07-03 — <1%
8	Publication	Samsudin Samsudin, Riri Syafitri Lubis. "Development Of Alumni Portal Applicatio... — <1%
9	Submitted works	California Southern University on 2025-01-19 — <1%
10	Submitted works	Central Queensland University on 2019-02-08 — <1%

11 Submitted works

Queen Mary and Westfield College on 2021-05-19 <1%

12 Submitted works

CTI Education Group on 2024-11-15 <1%

13 Submitted works

University of Greenwich on 2024-11-30 <1%

Design Of Mobile Stock Management Application Integrated with Application Programming Interface (Case Study on One of The SMEs In Bandung)

Abstract

Rapid Application Development (RAD) is a software development methodology prioritizes speed and flexibility. This study uses this approach to design and develop a web-based augmented reality furniture marketing information system by integrating a popularity-based ranking model in D FURNITURE. The RAD method was chosen because it can accelerate the software development process through an iterative cycle involving users in every development stage. This development cycle includes four phases: needs analysis, design, development, and implementation.

The first stage is needs analysis, which collects data through interviews and surveys with D FURNITURE management and potential system users. This process aims to identify users' primary needs and preferences, including augmented reality visualization features and popularity-based ranking mechanisms. The data obtained becomes the basis for compiling the specifications of the system to be developed.

The second stage is design, where an initial prototype of the system is developed based on the results of the needs analysis. This prototype includes the user interface design, augmented reality technology integration, and a popularity-based ranking algorithm. Users then test this prototype to obtain feedback on functionality and user experience.

The third stage is development, where the designed system is developed into a fully functional version. At this stage, the development team refines the prototype based on the feedback provided during the design stage. Testing is carried out periodically to ensure that each system component works according to specifications and user needs.

The final stage is implementation, which integrates the system into the D-FURNITURE operational environment. At this stage, end users receive training to ensure they can utilize all system features optimally. In addition, the integrated ordering system via WhatsApp media is also tested to ensure smooth communication between customers and the company.

Using the RAD method, this study succeeded in developing a marketing information system that is responsive, adaptive, and responsive to user needs. The iterative development cycle ensures that the resulting system is technically efficient and provides an optimal user experience.

Keywords : *Design, Mobile Application, Stock Management*

INTRODUCTION

The fashion industry is a business sector that consistently expands in response to consumer trends and demands. Numerous design items, mainly bags, are witnessing heightened sales and varied consumer interest, rendering bags a vital component of contemporary lifestyles. Fashion in Indonesia has evolved swiftly (Khan et al., 2022). It has been integrated into people's daily lives (Mourtzis et al., 2019). The growth of fashion trends transpires rapidly alongside technological advancements, with new fashion goods and designs coming virtually year, monthly, and even daily, conceived by designers (Affia & Aamer, 2022).

Technological advancement in life commences with basic processes in daily activities and evolves to achieve personal and societal fulfillment. This improvement affects society, the nation, and the state, as every individual seeks to use and gain from these developments (Tan & Sidhu, 2022).

One of the SMEs in Bandung functions within the fashion sector, focusing on imported bags. It adjusts to evolving circumstances by utilizing online e-commerce platforms like

Shopee and Tokopedia for marketing purposes. This online bag retailer encounters difficulties in controlling its inventory across various platforms. Incremental inventory management across each platform is time-consuming and inefficient. The inconsistencies between the actual inventory and the listings on sales platforms impede the store's capacity to cultivate consumer confidence successfully.

Basic Concepts of Stock Management

Stock management is a procedure that supervises a company's inventory of commodities or products, encompassing planning, purchase, storage, distribution, and assessment. Stock management seeks to guarantee adequate goods availability to satisfy consumer demand while avoiding surplus inventory that could adversely affect the organization (Machado et al., 2023).

Inventory management entails the systematic organization and regulation of stock to guarantee the availability of products in the correct quantity (right quality), at the proper time (right time), and in the designated location (right place), all while minimizing.

E-Commerce

Peter & Mulyawan (2024) defines e-commerce as buying and selling online goods and services.

Today, E-commerce enterprises provide online platforms where consumers browse hundreds of products, place orders, select preferred delivery options and execute payments via ATMs, mobile banking, or credit cards (Leonardo et al., 2020).

Apllication Programming Interface (API)

An Application Programming Interface (API) delineates the functionalities of application programming interfaces, enabling an application to be accessed and exploited by external entities without modifying its core code architecture or system database. It also enables communication between systems, regardless of differing platforms (Aquije et al., 2022).

APIs are essential in software development, facilitating easy interaction among various applications and services. They enable developers to utilize existing functions and data without constructing things from the ground up. This accelerates development and promotes innovation, enabling developers to design new apps that integrate features from diverse sources. Furthermore, APIs enhance system scalability, enabling organizations to augment their services and features as required. Consequently, utilizing APIs has emerged as a conventional approach to developing versatile and adaptable software solutions.

Mobile Applications

Mobile applications are software developed explicitly for mobile phones intended to execute smartphone functions (Firmansyah & Utami, 2024).

These mobile applications have emerged as one of the most prevalent and swiftly advancing technologies. They provide multiple functions, including communication, information dissemination, entertainment, education, and business activities (Haaerun & Mardhiyyah, 2024).

The proliferation of mobile applications has revolutionized human interaction with technology and information accessibility. With user-friendly interfaces and a diverse array of functionalities, mobile applications improve comfort and efficiency in daily tasks. Businesses increasingly utilize mobile applications to directly engage customers, enhance service

delivery, and collect important data on consumer behavior. With the advancement of mobile technology, the possibility for creative applications expands, offering increasingly integrated solutions that address users' changing demands and preferences.

Android

Android is an operating system used in mobile applications. It was created by Android Inc. utilizing touchscreen technology founded on Linux (Khan et al., 2022), as referenced in Leonardo & Ratnawati (2020).

This project aims to offer an MSME in Bandung a solution for managing inventory efficiently and in real-time. The research seeks to assist the firm in optimizing operations, minimizing waste, and improving decision-making by implementing a comprehensive stock management system. This solution will enhance inventory precision and allow the organization to react promptly to market demands and shifts in consumer behavior. The objective is to foster the growth and sustainability of MSMEs in a competitive market.

METHOD

This study will utilize a mixed-methods approach to develop a mobile stock management application incorporating APIs. A thorough requirements assessment will be performed via surveys and interviews with prospective users, including small business proprietors. This will assist in identifying essential features and functionalities necessary for efficient stock management. Furthermore, focus group talks will collect qualitative information regarding user expectations and the problems encountered in existing inventory methods. The gathered data will elucidate the application's functional and non-functional requirements.

After the needs assessment, the research will encompass the design and prototype of the application interface, employing wireframes to illustrate user experience. The development phase will implement Agile approaches, facilitating iterative advancement and user feedback. The application will be developed utilizing appropriate programming frameworks, and API integration will be strategized to guarantee flawless functionality. Testing phases, encompassing unit and user acceptability testing, will be executed to assess the application's performance before deploying it in a real-world environment. User input will be evaluated to determine the application's efficacy and pinpoint opportunities for improvement.

RESULT AND DISCUSSION

Analysis of Ongoing Procedures

Ongoing Business Process

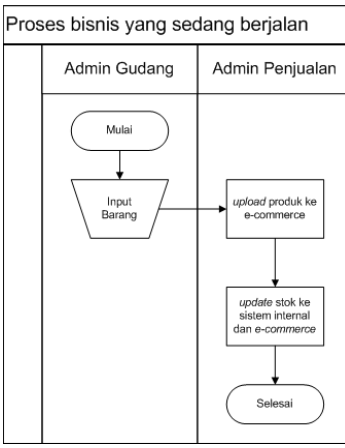


Figure 1. Flowmap in progress

Actor Identity and Description

Table 1. Actors and Current Descriptions

No	Actor	Description
1	Warehouse Admin	Doing stock and inputting goods into Microsoft Excel
2	Sales Admin	Managing Products on E-Commerce Shoppe and Tokopedia

Evaluation of the running system

Table 2. Evaluation of the Current System Using SWOT Analysis

Strength	Weakness
• Have a solid team in cooperation • The products sold have good quality and quantity	• Managing stock in stages on each platform is time-consuming and not conducive • The mismatch between existing stock and that listed on the sales platform is an obstacle for stores to be able to gain consumer trust properly.
Opportunity	**Threat**
• Can reduce stock discrepancies between internal systems and those in E-Commerce • Increase stock management efficiency through automation and reduce duplication of work in product and stock management • Design a mobile application for bag stock management integrated with E-Commerce API	Corrupt database caused by irresponsible people

6

Proposed New System

6

Use Case Diagram

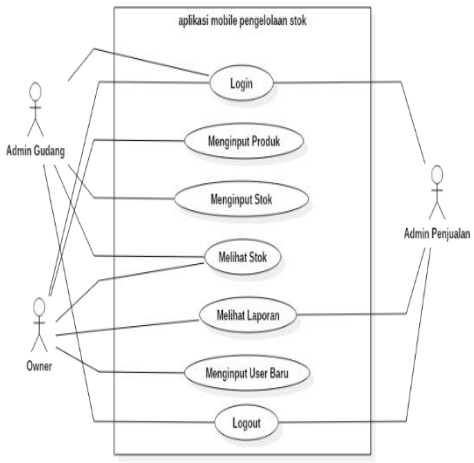


Figure 2. Use Case Diagram of Stock Management

Proposed Actors and Descriptions

Table 3. Proposed Actors and Descriptions

No	Actor	Description
1	Warehouse Admin	In charge of inputting stock and viewing stock
2	Sales Admin	In charge of viewing reports
3	Owner	Responsible for inputting new users, inputting products, viewing stock, and viewing reports.

Proposed Use Case Definition

Table 4. Proposed Use Cases

No	Use Case	Description
1	Login	The process of logging into the stock management mobile application.
2	Inputting Products	The process of uploading products to the application.
3	Inputting Stock	The process of adding product stock.
4	View Stock	The process of viewing product stock.
5	View Reports	Process to view stock and product reports.
6	Entering New User	The process of adding application users to access the application.
7	Logout	The process of exiting the application.

Proposed Use Case Scenario

The proposed use case scenarios include the login, input product, input stock, view stock, view report, input new user, and logout scenarios.

Proposed Activity Diagram

The suggested activity diagrams for each system component encompass the login activity diagram, the input product activity diagram, the input stock activity diagram, the view stock activity diagram, the view report activity diagram, the input new user activity diagram, and the logout activity diagram.

SYSTEM DESIGN

Class Diagram Design

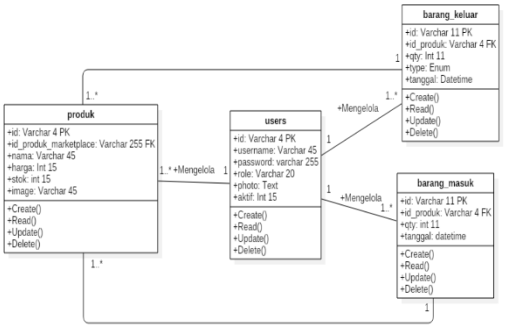


Figure 3. Proposed Class Diagram

Table Structure Design

Table 5. Users Table

No	Field	Type	Length	Primary	Description
1	id	Varchar	4	PK	ID *User*
2	username	Varchar	45		*Username*
3	password	Varchar	255		*Password*
4	role	Varchar	20		Hak Akses
5	photo	Text			Photo *user*
6	aktif	Int	15		Status aktif *user*

Table 6. Product Table

No	Field	Type	Length	Primary	Description
1	id	Varchar	4	PK	ID Produk
2	id_produk_marketplace	Varchar	255	FK	ID Produk *Marketplace*
3	nama	Varchar	45		Nama Produk
4	harga	Int	15		Harga Produk
5	stok	Int	15		Stok Produk
6	image	Varchar	45		Gambar Produk

Table 7. Incoming Goods Table

No	Field	Type	Length	Primary	Description
1	id	Varchar	11	PK	ID Barang Masuk
2	id_produk	Varchar	4	FK	ID Produk
3	qty	Int	11		Kuantitas
4	tanggal	Datetime			Tanggal masuk barang

Table 8.Outgoing Goods Table

No	Field	Type	Length	Primary	Description
1	id	Varchar	11	PK	ID Barang Keluar
2	id_produk	Varchar	4	FK	ID Produk
3	qty	Int	11		Kuantitas
4	type	Enum			Tipe marketplace
5	tanggal	Datetime			Tanggal masuk barang

Code Design

Users Table

Id_user, consists of 4 digits

Example Id_user: US00

US : User

00 : User Sequence Number

Product Table

Id_product, consists of 4 digits

Example Id_ product: PD00

PD : Product Materials

00 : Nomor Urut Produk

Outgoing Goods Table

Id, consists of 11 digits

Example of outgoing ID : K2308200000

K : outgoing

230820 : Year Month Date

00 : Issue Sequence Number

Incoming Goods Table

Id, consists of 11 digits

Example of login ID: M2308200000

M : login

230820 : Year Month Date

0000 : Entry Sequence Number

Menu Structure Design

Owner Menu Structure Design

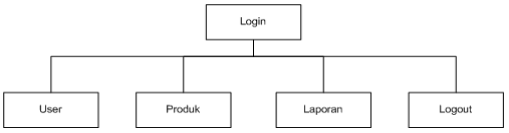


Figure 4.2 Owner Menu Structure Design

Warehouse Admin Menu Structure Design

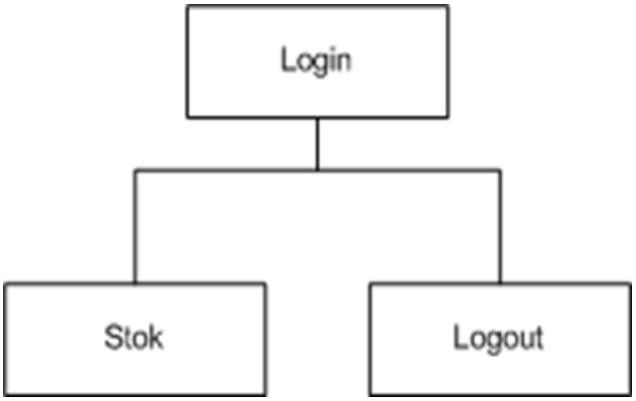


Figure 5. Design of the Warehouse Admin Menu Structure

Sales Admin Structure Design

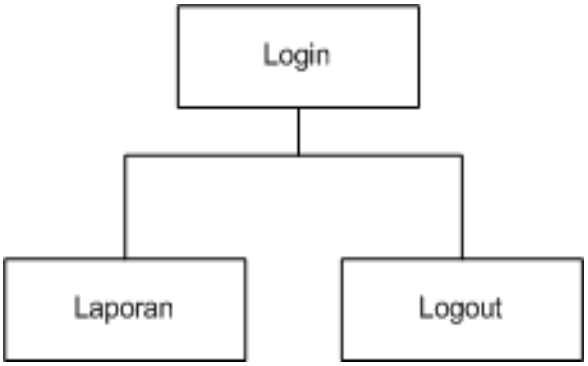


Figure 6. Design of Sales Admin Menu Structure

Login Page Input Design

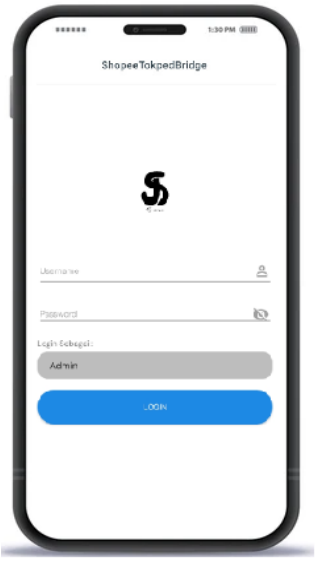


Figure 7. Login Page

Owner Dashboard Page

Figure 8. Owner Dashboard Page

2 **Product Page**

Figure 9. Product Page

Add Product Page

Figure 10. Add Product Page

Warehouse Admin Dashboard Page

Figure 11. Warehouse Admin Dashboard Page

Sales Admin Dashboard Page

Figure 11. Sales Admin Dashboard Page

Report Page

Figure 12. Report Page

User Page

Figure 13. User Page

Add User Page

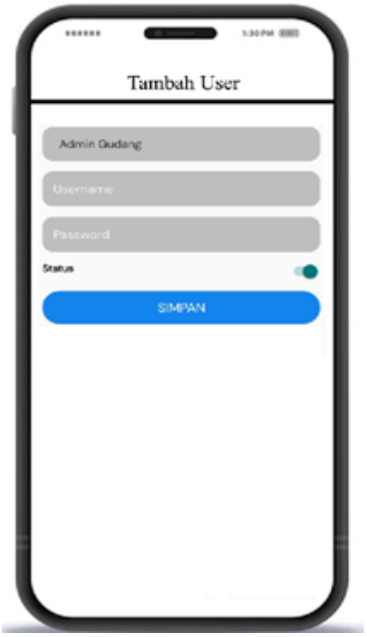


Figure 14. Add User Page

Incoming Goods Page

Figure 15. Incoming Goods Page

SYSTEM IMPLEMENTATION

Hardware Implementation

The hardware used to implement the system is:

1. Processor : Mediatek MT6769 Helio G85
2. Storage : 128 GB
3. RAM : 4 GB

Software Implementation

The software utilized for system implementation is:

Operating system : Android 13

Bahasa Pemrograman : Android Java

Database : MySQL

Database Implementation

User Table

#	Nama	Tipe data	Panjang/Batas	Tidak t...	Ijinkan ...	Zerofill	Default
1	id	VARCHAR	4				Tidak ada nilai a...
2	username	VARCHAR	45				''
3	password	VARCHAR	255				''
4	role	VARCHAR	20				''
5	photo	TEXT					Tidak ada nilai awal
6	aktif	INT	15				0

Figure 16. Users table

Incoming Goods Table

#	Nama	Tipe data	Panjang/Batas	Tidak t...	Ijinkan ...	Zerofill	Default
1	id	VARCHAR	11				Tidak ada nilai awal
2	id_produk	VARCHAR	4				''
3	qty	INT	11				0
4	tanggal	DATETIME	20				''

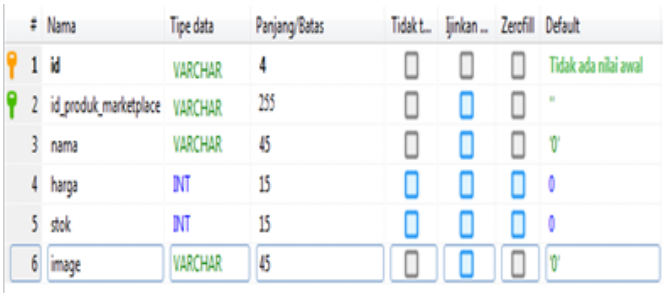
Figure 17. Incoming Goods Table

Outgoing Goods Table

#	Nama	Tipe data	Panjang/Batas	Tidak t...	Ijinkan ...	Zerofill	Default
1	id	VARCHAR	11				Tidak ada nilai awal
2	id_produk	VARCHAR	4				''
3	qty	INT	11				0
4	type	ENUM	'Tokopedia','Shopee'				'0'
5	tanggal	DATETIME	20				''

Figure 18. Outgoing Goods Table

Product Table



#	Nama	Tipe data	Panjang/Batas	Tidak t...	Ijinkan ...	Zerofill	Default
1	id	VARCHAR	4				Tidak ada nilai awal
2	id_produk_marketplace	VARCHAR	255				''
3	nama	VARCHAR	45				'0'
4	harga	INT	15				0
5	stok	INT	15				0
6	image	VARCHAR	45				'0'

Figure 19. Product Table

Appearance

Login Page

Figure 20. Login Page

Owner Dashboard Page

Figure 21. Owner Dashboard Page

Product Pages

1

Figure 22. Product Page

Add Product Page

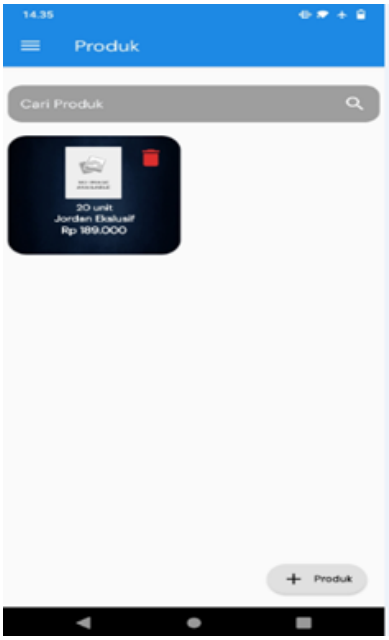


Figure 23. Add Product Page

Warehouse Admin Dashboard Page

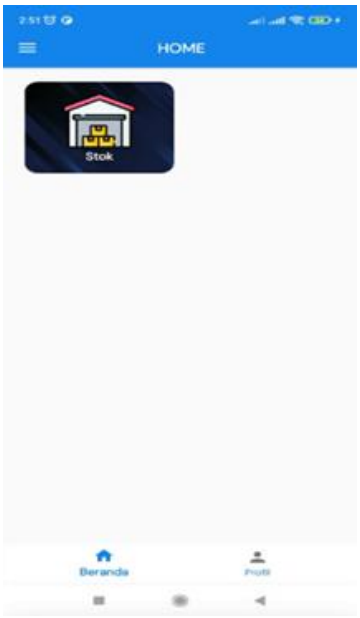


Figure 24. Warehouse Admin Dashboard Page

Sales Admin Dashboard Page

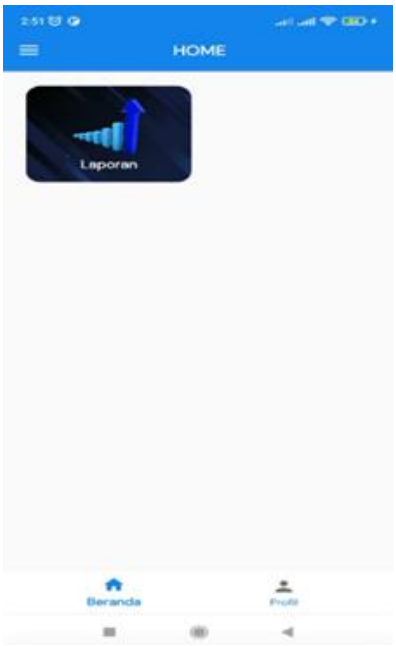


Figure 25. Sales Admin Dashboard Page

13 **Report Page**

Figure 26. Report Page

3 **User Page**

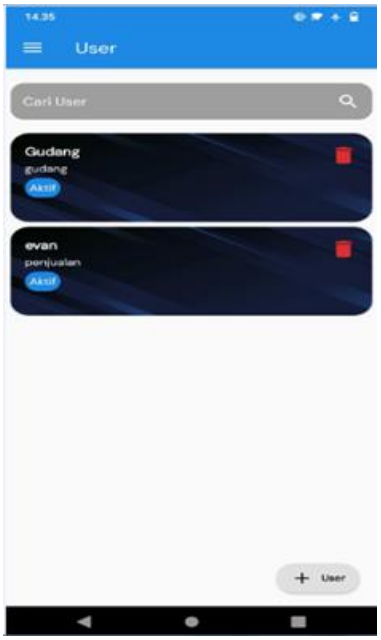


Figure 27. User Page

Add User Page

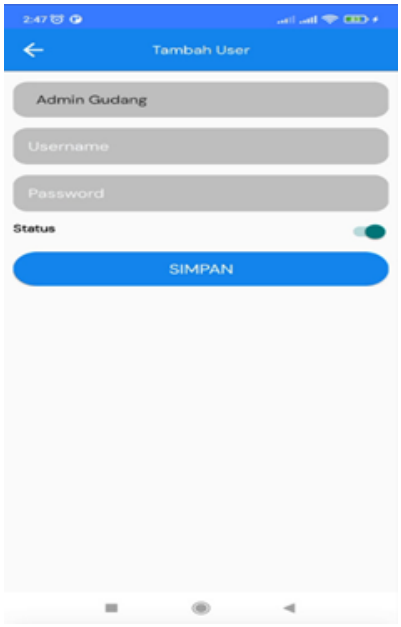


Figure 28. Add User Page

Incoming Goods Page

Figure 29. Incoming Goods Page

CONCLUSION

12

Research on the design of a mobile stock management application coupled with the Shopee and Tokopedia APIs yields many insights. The application cannot interface with these APIs due to unmet access authorization requirements from both platforms. This constraint underscores the necessity for additional advancement to meet the requisite criteria for API access.

Notwithstanding this obstacle, the application can diminish stock differences between the internal system and the Shopee and Tokopedia marketplaces. Furthermore, it is set to improve stock management efficiency through process automation, thereby substantially minimizing redundant tasks. The application offers the capacity to optimize user inventory management.

REFERENCES

Affia, I., & Aamer, A. (2022). An internet of things-based smart warehouse infrastructure: design and application. *Journal of Science and Technology Policy Management*, *13*(1), 90–109. https://doi.org/10.1108/JSTPM-08-2020-0117

Aquije, L. E. P., Carranza, L. G. V., Pena, G. B. A., Cabanillas-Carbonell, M., & Andrade-Arenas, L. (2022). Design of a Mobile Application for the Logistics Process of a Fire Company. *International Journal of Advanced Computer Science and Applications*, *13*(9). https://doi.org/10.14569/IJACSA.2022.0130982

Firmansyah, Y. S., & Utami, W. S. (2024). RANCANGAN APLIKASI ANDROID UNTUK SISTEM PENJUALAN DI TOKO ROTI ASLI DENGAN METODE WATERFALL. *Jurnal Informatika Teknologi Dan Sains (Jinteks)*, *6*(4), 902–911. https://doi.org/10.51401/jinteks.v6i4.4865

Haaerun, H. A., & Mardhiyyah, R. (2024). PERANCANGAN MANAJEMEN APLIKASI INVENTORY OBAT BERBASIS ANDROID. *Jurnal Informatika Teknologi Dan Sains (Jinteks)*, *6*(4), 967–975. https://doi.org/10.51401/jinteks.v6i4.4897

Khan, M. G., Huda, N. U., & Zaman, U. K. U. (2022). Smart Warehouse Management System: Architecture, Real-Time Implementation and Prototype Design. *Machines*, *10*(2), 150. https://doi.org/10.3390/machines10020150

Leonardo, R., Arwani, I., & Ratnawati, D. E. (2020). Pemanfaatan Teknologi Firebase dalam Pengembangan Aplikasi Pengelolaan Stok Barang Berbasis Mobile pada Rumah Makan Nakamse Malang. *Jurnal Sistem Informasi, Teknologi Informasi, Dan Edukasi Sistem Informasi*, *1*(1). https://doi.org/10.25126/justsi.v1i1.1

Machado, C., Cunha, A., & Gouveia, A. J. (2023). Migration of a stock management application in the healthcare industry to a Web/Mobile environment: a project report. *Procedia Computer Science*, *219*, 184–192. https://doi.org/10.1016/j.procs.2023.01.280

Mourtzis, D., Samothrakis, V., Zogopoulos, V., & Vlachou, E. (2019). Warehouse Design and Operation using Augmented Reality technology: A Papermaking Industry Case

Study. *Procedia CIRP*, *79*, 574–579. https://doi.org/10.1016/j.procir.2019.02.097

Peter, P., & Mulyawan, B. (2024). Building a Web-Based Application for Transaction Recording and Inventory Management at Unipro Store. *Internet of Things and Artificial Intelligence Journal*, *4*(4), 733–755. https://doi.org/10.31763/iota.v4i4.827

Tan, W. C., & Sidhu, M. S. (2022). Review of RFID and IoT integration in supply chain management. *Operations Research Perspectives*, *9*, 100229. https://doi.org/10.1016/j.orp.2022.100229