Application of Point of Sales Technology in Mobile-Based Bayu Kusuma Stores with Rapid Application Development Method

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Abstract

Bayu Kusuma Wholesale Store currently has problems recording transactions. Recording transactions at this grocery store uses a conventional method. Where employees record transactions on the books. This is very detrimental because the number of transactions with available stock is often manipulated. In its completion, a Point of sales technology is needed. transactions made by Bayu Kusuma Wholesale Store via WhatsApp are less effective in providing an online shopping experience. This is because the product catalog and available inventory cannot be displayed directly, making purchasing difficult for customers. In solving this problem, Android-based Point Of Sales technology is needed to record transactions and stock from stores. The Rapid Application Development method is used to solve store problems so that the system is built according to the needs of the store and completes the review of the store that occurs. The results showed that POS used to help process transactions can increase productivity and efficiency in job responsibilities. This can be seen where customers do not need to come to the store to get the product, but order first through the application then bring the item to the store and make payment in cash.

Keywords: Information System, *Point of Sales*, Android Studio, Kotlin, Firebase

1 Introduction

Technology can be used for data processing, including its storage, modification, storage, and processing. This system can also be used to make decisions. The use of technology is also used as a Point of Sales (Ikhwan, 2020; Princess, 2021). Point of sales or POS is where customers pay to buy products (Almira et al., 2021; Suendri et al., 2019). POS is usually in the form of a machine used for in-store transactions (L. Y. Siregar &; Nasution, 2020).

Online buying and selling transactions are also growing rapidly in Indonesia (Samsudin, 2019). In fact, it is not only widely used, but also used in home industries and home production, which began using the internet as a medium to sell their goods and services. This is because they have seen the efficiency of using the internet as a way to introduce their products to the public without having to meet directly with consumers (N. N. Siregar et al., 2021). Even with the Internet, the market reach of manufacturers is huge (Chandra, 2021).

Buying and selling transactions are carried out by Bayu Kusuma wholesale store. However, transactions made through WhatsApp are less effective in providing an online shopping experience. This is because the catalog of goods and existing stock cannot be displayed directly, this makes it difficult for customers to shop. The transaction recording process is also done manually, where Bayu Kusuma grocery store employees record orders in a book. Where these records can be manipulated at any time, so that expenses and income have inaccurate calculations.

The above problems can be overcome with an Android-based POS application. This application will handle the transaction process, record transactions and manage products at the Bayu Kusuma wholesale store where the products can be displayed online. This will make it easier for customers to find out what products are available in the store, along with how much stock is left. The

method used is Rapid Application Development. Where RAD method can help in the application development process.

Previous research with the title "Implementasi *E-Commerce* Sebagai Media Penjualan Online (Studi Kasus Pada Toko Pastbrik Kota Malang)" (Susilo, 2019). The use of internet technology and web-based applications to add value to data storage, inventory management, supplier and customer management, sales/purchase management and reporting. The weakness of the manual system lies in the difficulty of the company controlling inventory and transaction history that occurs within a certain period of time. The author conducted this research to develop a POS application that is expected to help and provide solutions to problems faced by business people. This research was conducted on a web-based local database where customers cannot make transactions directly in the application because the database used is not available online.

2 Methodologists

The research method used is the R&D (Research and Development) method. Research and development Research methods are research methods used to make products and test these products (Purwoko &; Tama, 2022).

According to Amile and Reesnes, R&D is a research method used to create a particular product and test its effectiveness. (Dwiyanti, 2022). First, researchers conduct research to collect the necessary data, then develop a system and test and evaluate the system created (Natalegawa &; Gunadi, 2021).


Stature 1 Research Stage &; Development

This research also uses Rapid Application Development (RAD) which is a life cycle methodology that aims to provide faster development and higher quality results (Kurniawan et al., 2021). RAD is a combination of various structural techniques with prototyping techniques and general application development techniques to accelerate system/application development. From the definition of the RAD concept, it seems that application development using the RAD methodology can be done in a relatively short time. (Hidayat &; Hati, 2021).
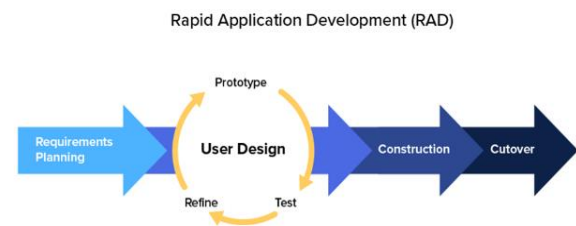
Stature 2 Stages of Fast Application Development
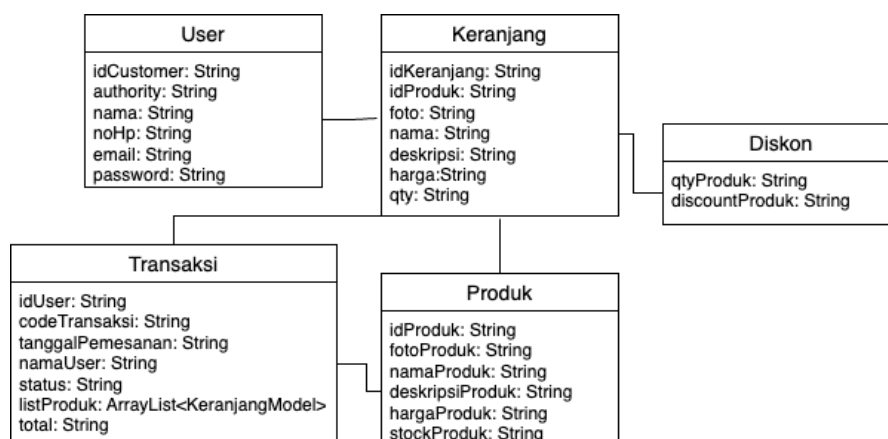
Stature 3 Database

RAD stages consist of 4 stages that are structured and interdependent on each stage, namely (Sugiantoro et al., 2020):

1. Designing User Needs.

RAD starts by defining the requirements of the project. In this phase, the team must determine the needs that will be met in the project. These needs don't have to be specific. But they are very common and can be many. Only then does the team decide which needs should be prioritized. After getting a clear need, the team defines things in more detail. For example, the necessary goals, schedules, and budgets.

2. System Design

Next, create a system design. Developers create the desired application model as quickly as possible. Comes with various features and functions. The purpose is simply to verify that the resulting model meets customer needs. However, this step can be repeated. Sometimes it also applies to users.

3. Development

In this phase, the created and approved system design is changed to the beta version and the application is changed to the final version. In this phase, developers should continue development and integration efforts with other parties, taking into account user or customer feedback. If the process goes well, then it can skip the next step, whereas if the developed application does not meet the requirements, the developer returns to the system design stage.

4. Implementation

In this phase, the developer implements the system design approved in the previous phase. Before implementing the system, first go through a software testing process to detect errors in the system to be developed. Usually at this stage, provide feedback on the system under construction and ask the developer to sign off on the system under construction.

3   Results and Discussion

Developers create the desired application model as quickly as possible. Comes with various features and functions. The purpose is simply to verify that the resulting model meets customer requirements.
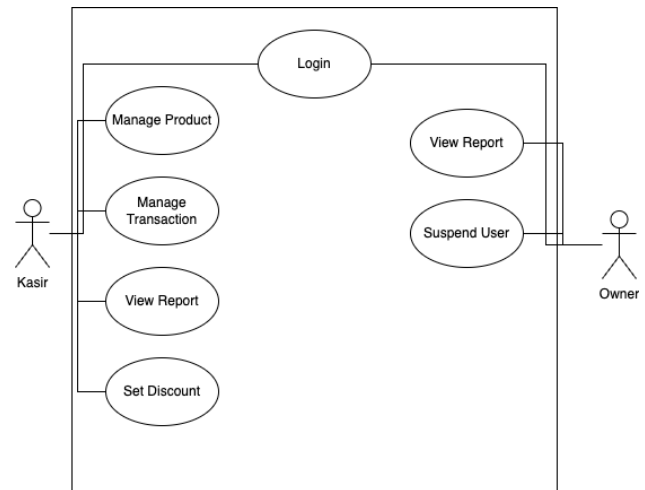

Stature 4 Use Case Diagram

3.1   Login

This page is used by users to sign in to the application. Where users enter their email and password to be able to access the features of the Point of Sales application, both as admin and owner.
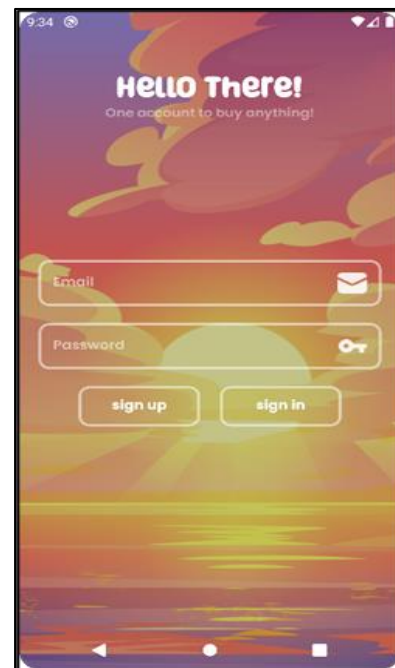

Stature 5 Login

3.2   List

If the admin does not have an account, the cashier must register first. To register as a cashier, you must provide your full name, mobile number, email address, and password.
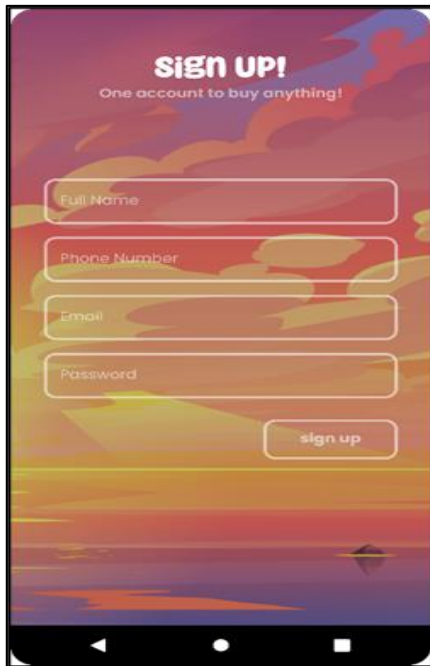
Stature 6 List

3.3 Product Details

The product *detail* page displays the full product description. This page describes the product in detail along with the price and product name. Detailed products also have the ability to add products to the shopping cart.
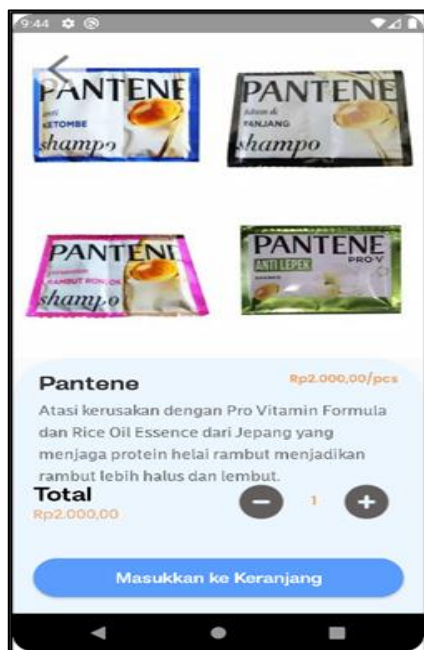
Perawakan 7 Detail Produk

3.4 Cart

The shopping cart page displays a list of products purchased by customers. This page will also display the total amount of purchases that will be paid later during the transaction process. If the product is purchased in accordance with the applicable discount conditions, the *customer* will get a discount.
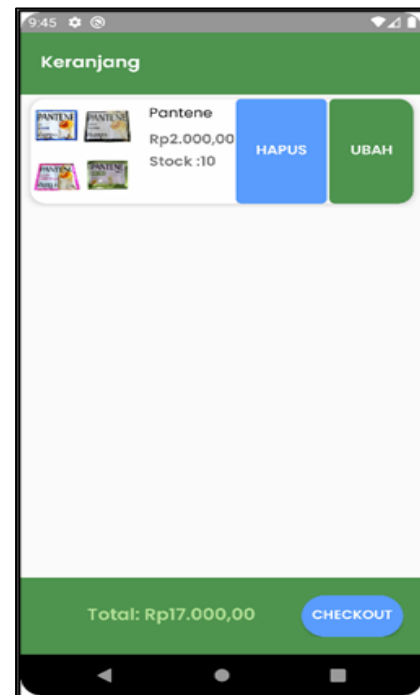
Stature 8 Carts

3.5 Kasir Rumah

Home cashiers provide information related to products and related POS applications that can be managed by management here related to product management, discounts and recording transactions.and receiving payments then the update button is used to change the status to complete.
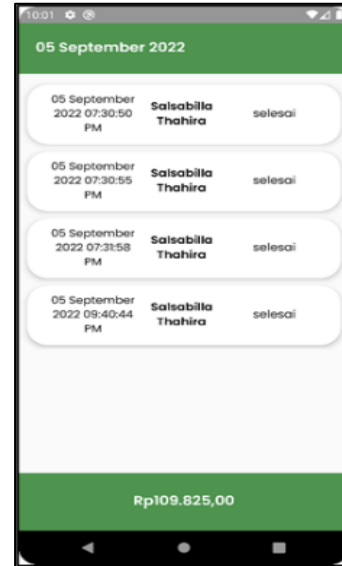
Stature 9 Home Cashier

3.6 Add Product

This page describes how administrators can incorporate products into their applications. To enter a product into the app, an administrator must enter an image, product name, product description, and product price.
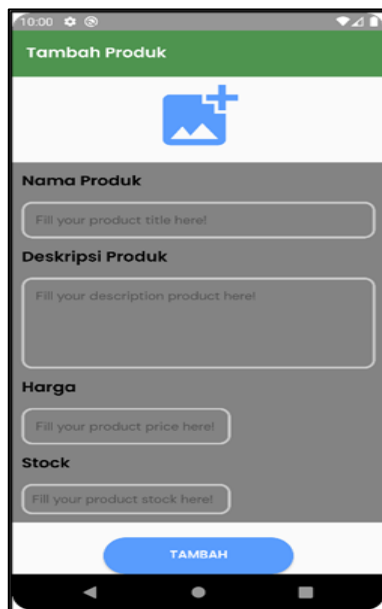

Stature 10 Add Products

3.7 Report

This page is used to remove and modify products. When changing products, the items that can be changed are the product name, product description, and product price. The product may also be removed if it is no longer available in the store.
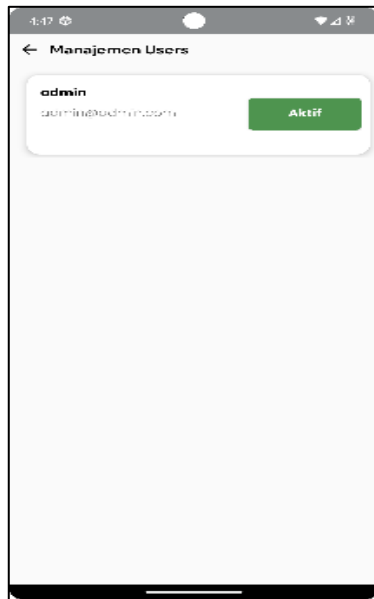

Perawakan 11 Laporan

3.8 Homeowner

Homeowners display products that sell well. This is what homeowners look like.
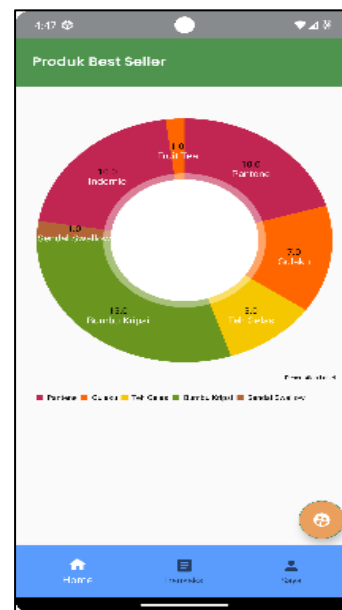
Stature of 12 Homeowners

3.9 Suspend Users

This feature is used to manage access from the cashier.

Stature 13 Suspends Users

4 Conclusion

The results showed that POS used to help process transactions can increase productivity and efficiency in job responsibilities. This can be seen where customers do not have to come to the store to get products, but order terlebih dahulu melalui aplikasi kemudian membawa barang tersebut ke toko dan melakukan pembayaran secara tunai.

References

Almira, A., Suendri, S., & Ikhwan, A. (2021). Implementasi Data Mining Menggunakan Algoritma Fp-Growth pada Analisis Pola Pencurian Daya Listrik. *Jurnal Informatika Universitas Pamulang*, *6*(2).

Chandra, A. M. (2021). Pengembangan Sistem Point of Sale Pada Dago Cell. *Jurnal Ilmu Data*, *1*(2).

Dwiyanti, Y. H. (2022). Peran Research & Development Expenditures (R&D) Dan Advertising Expenditure (AD) Terhadap Nilai Perusahaan Pada Sektor Perbankan Di Bursa Efek Indonesia. *Jurnal Ekonomi Dan Bisnis*, *1*(1).

Hidayat, N., & Hati, K. (2021). Penerapan Metode Rapid Application Development (RAD) dalam Rancang Bangun Sistem Informasi Rapor Online (SIRALINE). *Jurnal Sistem Informasi STMIK Antar Bangsa*, *10*(1), 8–17.

Ikhwan, A. (2020). Pemetaan Akurat Lokasi Kerja Nyata Dengan Data Monografi Desa. *(JurTI) Jurnal Teknologi Informasi*, *4*(1), 7–12.

Kurniawan, M. A., Fitri, I., & Hidayatullah, D. (2021). Sistem Informasi Bimbingan Skripsi Menggunakan Metode Rapid Application Development Berbasis User Centered Design. *Jurnal Media Informatika Budidarma*, *5*(3).

Natalegawa, R. M. J., & Gunadi, S. (2021). Pengaruh Sistem Informasi Akuntansi Terhadap Efektivitas Pengendalian Piutang Pada PT. Wijaya Kusuma Terang Perkasa. *JSMA (Jurnal Sains Manajemen Dan Akuntansi)*, *13*(2).

Purwoko, H., & Tama, B. J. (2022). Aplikasi Penghitung Persoalan Teori Himpunan Berbasis Android Dengan Bahasa Pemprograman Kotlin. *Journal Theorems (The Original Research of Mathematics*, *6*(2), 97–107.

Putri, R. A. (2021). Aplikasi Simulasi Algoritma Penjadwalan Sistem Operasi. *(JurTI) Jurnal Teknologi Informasi2*, *5*(1), 98–102.

Samsudin. (2019). Mobile App Education Gangguan Pencernaan Manusia Berbasis Multimedia Menggunakan Adobe Animate CC. *Jurnal Teknologi Informasi*, *3*(2).

Siregar, L. Y., & Nasution, M. I. P. (2020). Perkembangan Teknologi Informasi Terhadap Peningkatan Bisnis Online. *HIRARKI: Jurnal Ilmiah Manajemen Dan Bisnis*, *2*(1), 71–75.

Siregar, N. N., Suendri, S., & Triase, T. (2021). Penerapan Algoritma Floyd Warshall Pada Sistem Informasi Geografis Lokasi Pariwisata Kota Padang Sidempuan Berbasis Android. *JISTech (Journal of Islamic Science and Technology)*, *6*(2).

Suendri, Triase, & Kurniawan. (2019). Sistem Informasi Geografis Pemetaan Lokasi Panti Asuhan di Kota Medan. *Journal of Islamic Science and Technology*, *3*(2), 118–126.

Sugiantoro, S., Alkaff, M., & Radam, I. F. (2020). Rancang Bangun Sistem Identifikasi Arus Lalu Lintas pada Simpang Tiga Menggunakan Database NoSQL. *Jurnal Teknik Informatika Dan Sistem Informasi*, *6*(2).

Susilo, H. (2019). Implementasi E-commerce Sebagai Media Penjualan Online (Studi Kasus Pada Toko Pastbrik Kota Malang). *Jurnal Administrasi Bisnis*, *29*(1), 1–9.