

The Utilization of Smart Price Application Based Android

Very Karnadi¹, Sunarsan Sitohang²

Teknik Informatika, Universitas Putera Batam

veryshredder@gmail.com¹, ssunarsan@gmail.com²

Abstract

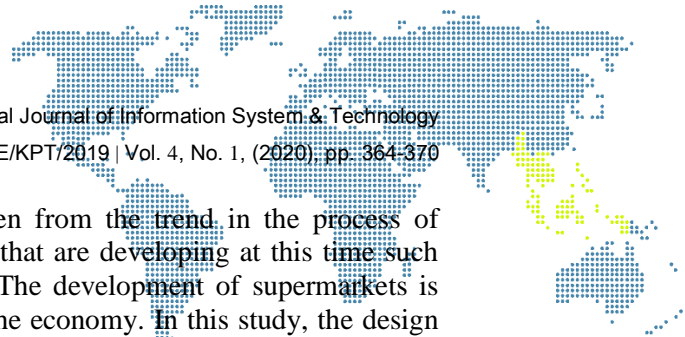
The increasing purchasing power of consumers in purchasing products at large stores nowadays often displays only samples of goods. So that customers often feel confused to see in detail the form of goods to be purchased, so that customers often feel confused and seek employees to ask questions about the details of the item to be purchased. The main objective of this research is to create, design and build a front end database server that is useful for consumers in increasing customer convenience in shopping at the mini market retail business. The use of the application that will be made is in the form of a barcode scanning feature where in each individual there is information in the form of item details such as id, name, dimensions, quantity, color, price, and images of goods obtained from the scanned items that have been entered into their respective identities description of goods. The app also features a fast checkout feature. The use of this application can be searched using an internet application, and can be accessed wherever the customer is because the cashier programming is directly connected to the web server provided by the supermarket.

Keywords: Android, Mini Market, Barcode, Label, Price

1. Introduction

The development of technology and applications is currently increasing, this can be seen from the many results of applications that have increased. So that it has a big impact on human life to learn and develop the knowledge they have. In an efficient and effective technology is a reference so that in every step of using and utilizing technology to get maximum results. According to Lucas research (1994) Supermarkets are a very large place, offering a wide range of products for their products. "The point of the above is a retail trade organization that sells and offers a wide variety of products. The advantage of supermarkets is that the size of the shopping area is very large compared to traditional grocery stores. Shopping system customers can choose goods according to customer interests and needs by selecting goods and put into a cart or shopping cart and paying for the merchandise into a counter that has been provided by the minimarket. [1]. The problem that occurs in purchasing at a supermarket is customer dissatisfaction with the services provided, this is due to differences in opinion between owners, waiters and customers. Efforts to improve service to customers is a problem that often occurs today. Problems that occur are inefficient forms of payment because customers take a very long time to check out, with this problem it is hoped that there will be an application that can help and improve efficiency so that servants can improve good service so that customers get satisfaction [2].

The purpose of this study is to create a shopping cart system for customers who are shopping, read barcode codes from groceries, and find out the weight of the groceries that are already in the shopping cart. This research was conducted using the research and development method developed by Brog & Gall. The basic principles are the characteristics of the research and development method of the 4 stages of the Brog & Gall Model, namely: (1) the analysis stage, (2) the design stage, (3) the development stage, (4) the testing phase. Shopping Basket Research Results. Current applications can adopt



increasingly developed technology, this can be seen from the trend in the process of identifying identification in an object. Applications that are developing at this time such as manifactor applications, libraries and hospitals. The development of supermarkets is one part of commercial development in improving the economy. In this study, the design of a database system for management and use of SQL [3].

2. Research Methodology

2.1. Application program

Application program or application software is software that is used by computer users to perform certain tasks to simplify a job. The term application appeared around 1993 in the field of information technology. Ordinary applications are abbreviated as App [4].

2.2. Extreme programming programming method (XP)

In this research method using the extreme method. The stages of this method can be seen in the image below [5]:

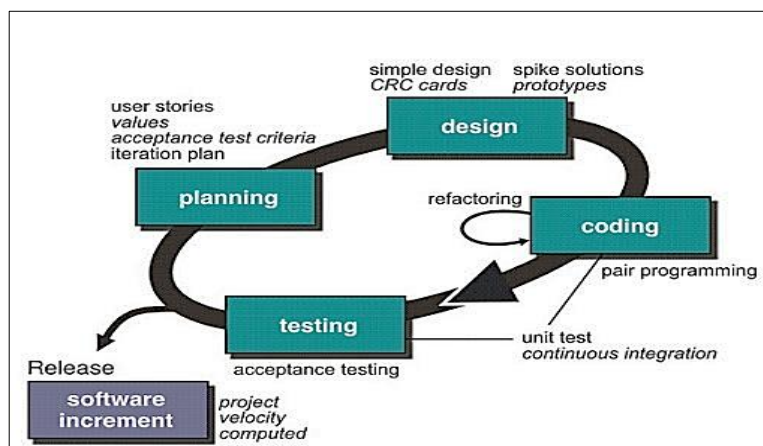
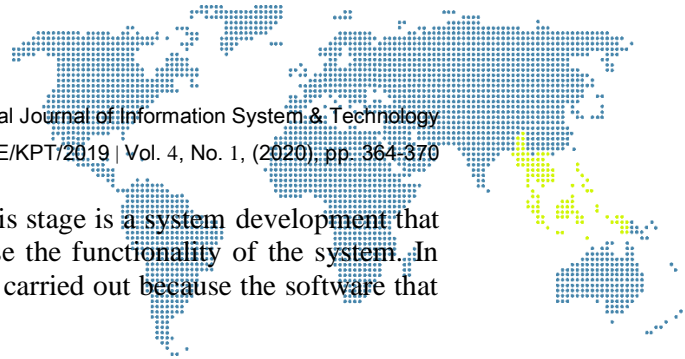


Figure 1. Stages in the extreme programming method

The stages in this study using an inventory system design at a minimarket are:

- a) Planning (Planning) This stage is an activity to understand the ongoing business processes and understand the business processes for the system to be built in order to get a clear picture of the main features, system functionality and expected outputs.
- b) Design (Design) The design is done by making a system model based on the results of the analysis in the previous stage. Database modeling is also made at this stage which aims to describe the relationship between data and between processes to be carried out. System modeling is done using the Unified Modeling Language (UML). Some of the diagrams used in this design are Use-Case Diagrams, Activity Diagrams, Component Diagrams and Deployment Diagrams.
- c) Coding (coding) After the design is done, the design is implemented into a program code which will produce a furniture inventory system at CV Profestama Kurnia Nisa. In building this furniture inventory system, the PHP programming language is combined with HTML, CSS and Javascript and the database uses MySQL as a database.
- d) Testing (Testing) The process carried out at this stage is to test the furniture inventory system being built. Some of the things that are tested are: the overall functionality of the furniture information system. The method used to test the furniture information system is Black-Box Testing, namely by testing the input and output of the furniture inventory system.



- e) Software increment (Software Improvement) This stage is a system development that has been made gradually which aims to increase the functionality of the system. In this study, the software increment stage was not carried out because the software that was built was still new to be.

3. Results and Discussion

3.1. Design Analysis

A sales system on an Android-based mobile device uses a web service with Java as the programming language and MySQL as a database manager and a web service as a link between Android and MySQL. The system can work in the internet network, providing services to officers to record item codes into the system. The item code is sent to the central server to process the payment. In addition, the item code is sent to the packing section of the goods the customer has ordered. Therefore, consumers can carry out the shopping process effectively and efficiently without having to bring groceries to the cashier.

3.2. Use case Diagram

The following is a use case diagram that will be implemented on the new system:

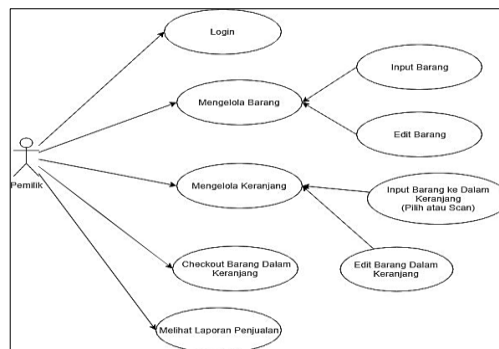


Figure 2. Use Case Diagram

3.3. Activity Diagram

The activity diagrams that will be implemented in the new system. Activity Basket Management Diagram The basket management activity diagram that the researcher designed can be seen in the following figure:

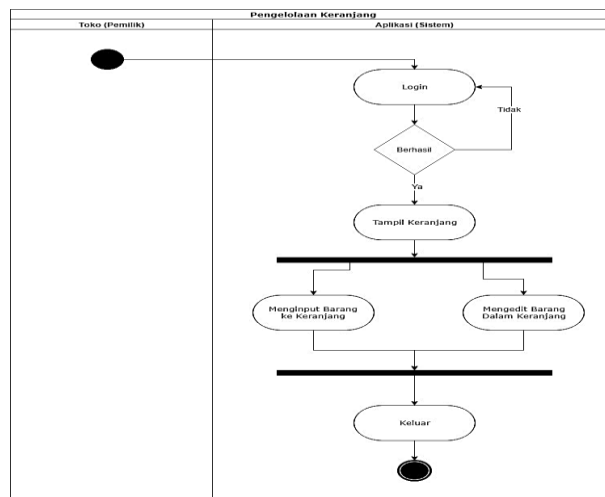
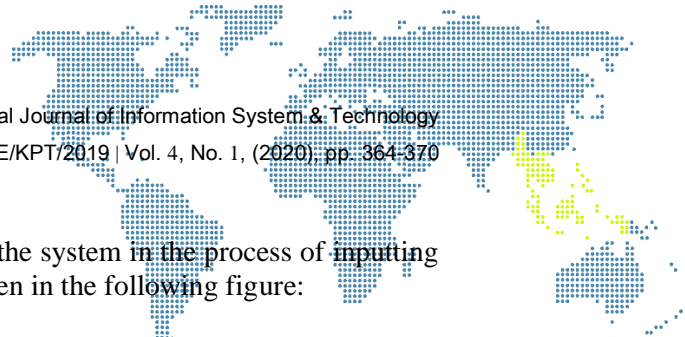


Figure 3. Basket Management Activity Diagram



3.4. Sequence Diagram

Describes the interaction between the owner and the system in the process of inputting goods to the basket. The sequence diagram can be seen in the following figure:

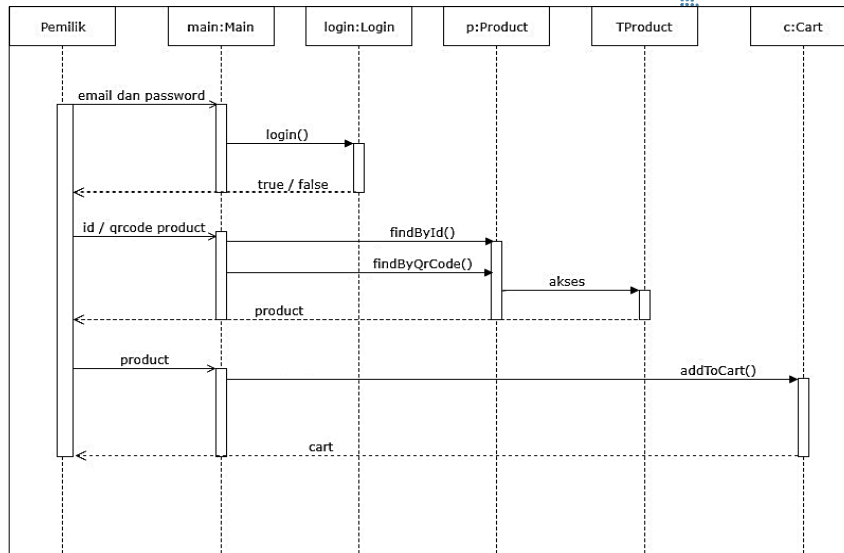


Figure 4. Sequence Diagram of Item Input to Basket

3.5. Class diagram

The following is a class diagram that the author designed and will use in the new system. The class diagram can be seen in the following image:

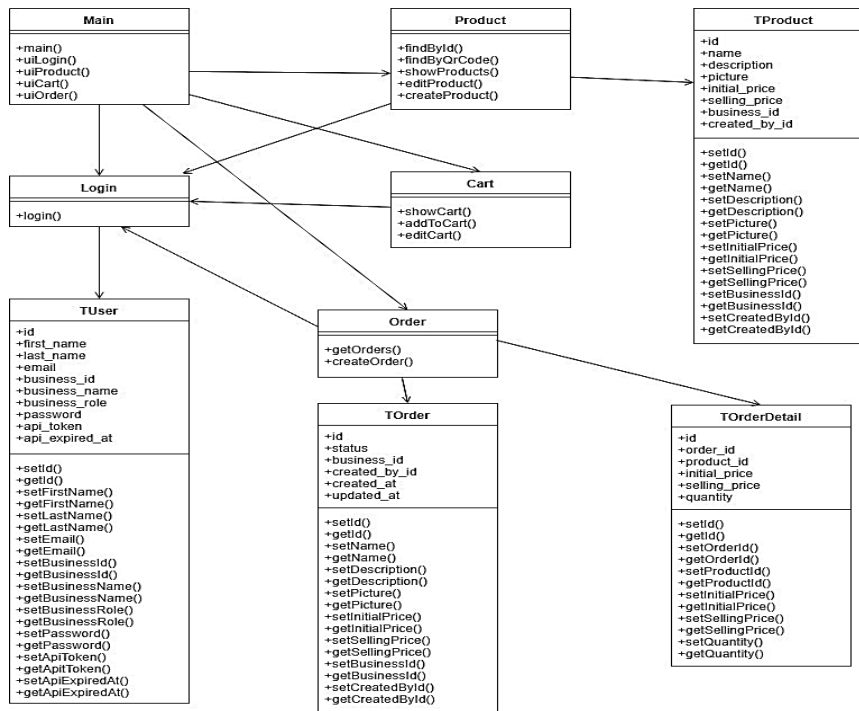
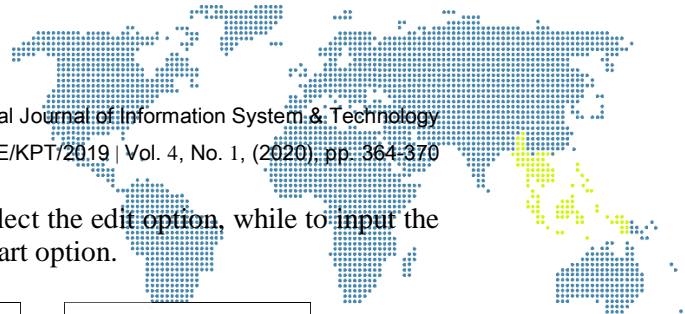


Figure 5. Class Diagram

a) Product Page Design

This page contains product data that has been entered by the owner. Owners can input new data through this page by pressing the plus button located in the upper right corner.



To edit an item, the owner can select the item and select the edit option, while to input the item into the basket the owner can select the add to cart option.

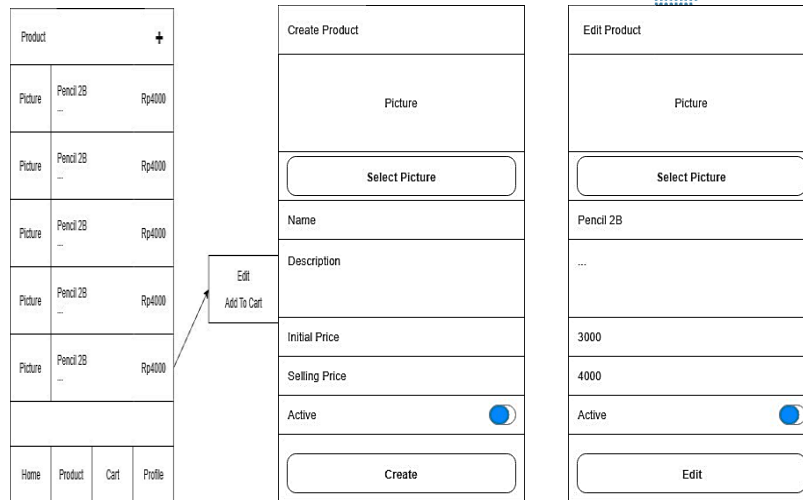


Figure 6. Product Page Design and Design of Item Input and Edit Pages

b) Basket Page Design

The basket page contains data on items that have been inputted in the basket. The data in the basket is temporary and you can edit the quantity and price. Owners can also input using the Qr Code by pressing the button located on the top right corner.

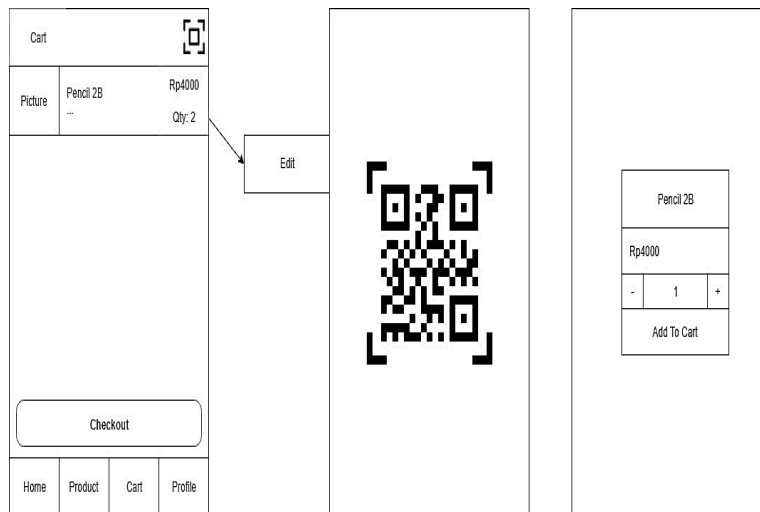


Figure 7. Basket Page Design and Design of Qr Code Scan and Input

c) File Design

The final result of the research in making the application of ANDROID-BASED SMART PRICE APPLICATION is

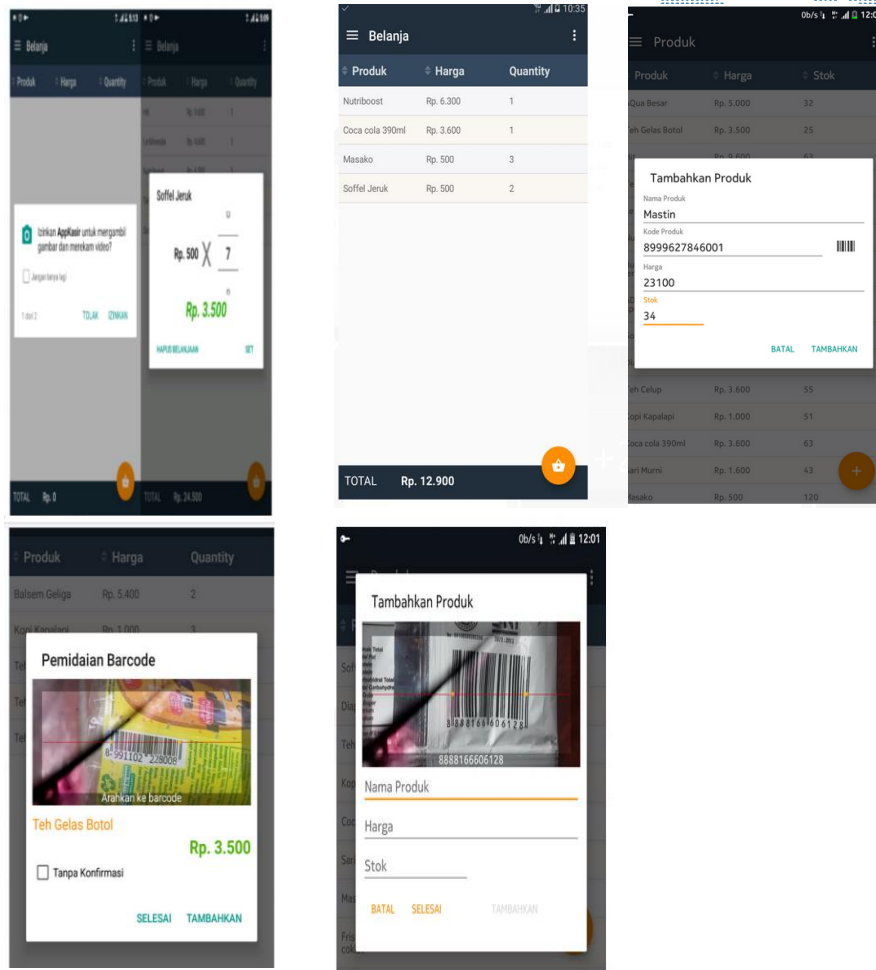


Figure 8. Reseach Result

4. Conclusion

This study builds a "Smart Price" application that is connected to an Android device to identify goods from minimarket customers to increase customer satisfaction and trust in the minimarket "Aska Mart". The process of scanning goods produces output in the form of attributes of all items that have been inputted from the database server. To find out the expected effectiveness of the system, several experiments and simulations were carried out such as:

- a) smart pricing application design based on android can be a new experience for shopping activities using an android smartphone so that customers get comfort in shopping.
- b) By designing this application, it is expected to be able to increase sales in minimarkets so that it has a positive impact on the producer side.

The suggestions from researchers regarding this research are:

- a) The application that is designed is limited to a minimarket, it is hoped that for further research the scope of the problem can be expanded.
- b) Periodic maintenance (maintenance) of applications is carried out to add application update features such as adding detailed and complex item attributes.
- c) The use of new technologies for application development such as augmented reality can be an added value for the development of this application



References

- [1] Pradipta, G. A. dkk. (2014). Sistem Check Out Kasir Pada Supermarket Grosir Dengan Menggunakan Passive RFID Technology. Seminar Nasional Teknologi Informasi Dan Komunikasi 2014 (SENTIKA 2014) Yogyakarta 15 Maret 2014., 2014(Sentika ISSN : 2089-9813), 1–13.
- [2] Saputra, R., Yuliatmojo, P., Diamah, A., Pendidikan, P., Elektronika, T., Pendidikan, P., Elektronika, T., Prodi, D., Teknik, P., Pengukuran, S., Berbasis, B., Monster, M., & Barcode, S. (2019). Prototype Keranjang Belanja Pintar. 2(2), 41–47.
- [3] Silalahi, M., & E, Y. (2019). Implementasi Extreme Programming Pada Sistem Inventory Mebel Pada Cv Profestama Kurnia Nisa. Klik - Kumpulan Jurnal Ilmu Komputer, 6(2), 197. <https://doi.org/10.20527/klik.v6i2.235>
- [4] Tanjung, M. I. R. (2018). Aplikasi Smart Kids Menggunakan Bahasa Indonesia Dan Inggris Berbasis Android. Journal of Chemical Information and Modeling, 53(9), 1689–1699.
- [5] Zikri, M., Muhaimin, & Aidi, F. (2018). Perancangan Alat Pembayaran Otomatis Pada Coffee Shop Menggunakan Debet RFID Berbasis Arduino. Jurnal Tekno, Vol. 2(1), 42–50.

Authors



1st Author

Very Karnadi

Lecturer of Universitas Putera Batam, Indonesia



2nd Author

Sunarsan Sitohang

Lecturer of Universitas Putera Batam, Indonesia