APPLICATION DEVELOPMENT WARUNG INDONESIA IN YANGSAN SOUTH KOREA BASED ON ANDROID

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ABSTRACT

Warung Indonesia currently is faced with various problems such as manual data collection processes, information and menu prices are not in accordance with the buyer's receipt, so making it difficult to know what kind of menu available at these place. There was also a problem for employees in making the bill of sale. Therefore, authors are interested in building applications Warung Indonesian in Yangsan South Korea based on android to make it easier for buyers and employees because of the Android provides an open platform for developers to create their own applications as expected. Warung Indonesian application is an application that was built using the waterfall method by Kristanto. For modeling of software using the object-oriented programming using the Unified Modeling Language (UML) as a tool to build applications warung Indonesia. Several menus are available in the application, include ordering, order history, and about.

Application development Warung Indonesia in Yangsan South Korea based on android, simplify the ordering process in the Warung Indonesia so that in the ordering process will be easier, practical, simple and efficient where customers do not need to come directly to the Warung Indonesia to make a reservation, only through the android smartphone.

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Keywords: Warung Indonesia, Android, Waterfall, Object Oriented Programming, Unified Modeling Language (UML).

1 PRELIMINARY

1.1 Background

According BNP2TKI, the number of Indonesian workers (TKI) in South Korea occupy the first rank that as many as 9387 people. Other countries that quite a lot of manpower dispatched to South Korea. Among others Cambodia 8802, Thailand 8010, Philippines 6087, 5234 Nepal, Srilanka 4.838 and 3.994 Myanmar people. With these the data, it can not be denied that in the future migrant workers in South Korea will continue to grow. Because in South Korea is in need of foreign workers (TKA).

Warung Indonesia is an enterprise engaged in the field of food. Built by a group of Indonesian workers (TKI) that aims to help the people of Indonesia in South Korea Yangsan in particular areas who wish to enjoy Indonesian food. Moreover, it could be tenpat gather with fellow Indonesian citizens. The place have facilities such as karaoke, billiard and free wifi..

Based on the results of a brief interview with the employee warung Indonesia, explained that warung Indonesia does not have an advanced booking system. For meal reservations, generally customers come to warung Indonesia or send a message or call to employees. If the buyer does not have a pulse to send a message or call, they should come directly to the shop Indonesia to make a reservation. And makes meals take too long because The chef that there is only one so that when orders had to wait a little longer to be able to eat the food ordered..

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Based on the problems, the place need a media for help warung Indonesia and customers. So we need a mobile application that can be used for the booking in order to further simplify, accelerate and more practical. One of the mobile media that are widely used android. Android is the latest operating system has advantages compared to other mobile devices. Widely android operating system used by the public and businessmen since it is open source, the which means allowing users to create reviews their own software or applications. Technological advances, especially in the field of mobile, android aplenty provide benefits and also can provide convenience in savings of time and labor savings

[1]. With the mobile application design to be made, it is expected that customers can see the food menu, prices and order directly only from android smartphones and warung Indonesai can do menagemen that facilitate and assist the performance of employees.

The way it can be used by users operates practical, easy and not troublesome. Process application very efficient fore more helpful to review the conduct booking food anytime where customers do not need to come directly to the Warung Indonesia so as to save time, power and save costs. Therefore, the authors intend to provide solutions to problems that have been presented with the title "Development Application Warung Indonesia in Yangsan South Korea based Android".

1.2 Purpose and Objectives

The purpose of this research is development application warung Indonesia in Yangsan South Korea based android.

The objectives to be achieved in this peneniltian are:

1. Accelerate for booking process online.
2. Make it easier to get information about the menu, and the price of food through the application.
3. presence system Information for booking online at warung Indonesia to can help the boarding costs and services

1. RESEARCH CONTENTS

2.1 Android

Nazrudin Safaat H said [2] Android is an operating system for Linux-based mobile devices that includes an operating system, middleware, and applications. Android provides an open platform for developers to create their own applications for use by a variety of mobile devices. Android is a new generation mobile platform that provides an opportunity for developers to develop as expected. Initially, Google Inc. buy Android.Inc who are newcomers who make software for mobile phones. Then to develop Android, formed the Open Handset Alliance, a consortium of 34 companies for hardware, software, and telecommunications, including Google, HTC, Intel, Motorola, Qualcomm, T-Mobile, and Nvidia. Android application developers are allowed to distribute their applications under a license scheme whatever they want. Developers have several options to create applications based on Android. However, most developers are using Eclipse as an IDE for designing their applications. It diikarenakan Eclipse received direct support from Google to become the Android application development IDE. The main advantages of Android is free and open source, which makes the Android smartphones sold cheaper than the Blackberry or iPhone even features (hardware) offered better Android. Some of the main features of Android include a WiFi hotspot, Multi-touch, multitasking, GPS, Java support, supporting multiple networks (GSM / EDGE, IDEN, CDMA, EV-DO, UMTS, Bluetooth, WiFi, LTE, and WiMAX) and also the ability of mobile phone base in general.

2.2 Waterfall

Kristanto said [3] Waterfall is a classic model of a simple linear system stream output of each stage of the input for the next stage.

The stages in the waterfall method is as follows:

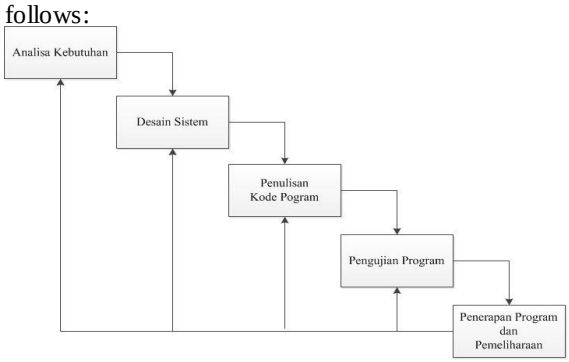


Figure 2.1 Figure waterfall method according to Kristanto

The method of making these applications using the Waterfall method Kristanto said that includes :

a. Requirements Analysis

Requirements analysis is the decomposition of a whole system into its component activities, with a view to identify and evaluate the problems, opportunities, barriers that occur and needs expected that the amendments can be proposed. In this step is an analysis of the needs of the system. Collecting data in this stage can make a research, such as interviews described at the outset to collect and dig up as much information to assist authors in the making of the future system.

b. System Design

System design is the preparation of design implementation that illustrates how a system was established in the form of depiction, planning and making sketches or arrangement of several separate elements into a unified whole and functioning, involving in it the configuration of software components and hardware of a system. At this stage the author will design a system design tailored to the needs of users in this case stalls Indonesia.

c. Code Writing Program

Translating the results of the design process into a form that is understandable by a computer program the computer machine. Writing code program will be an arduous task for the author because here all the information and design will be made into a real programming language and integrated so that will form the information system applications

d. Testing Program

Trial software is a critical element of the SQA (Software Quality Assurance) and present a comprehensive new review of the specification, design and coding. Testing program presented an abnormality that occurs in software development. At this stage the application will be tested whether it is appropriate and feasible to be used or not.

e. Implementation and Maintenance

At the stage of implementation of all elements and activities together with setting up a system of physical facilities, setting up users and do the simulation. Applications that have been made and has been implemented in Indonesia stall surely will someday have problems or changes in the application so that at this stage do maintenance regularly.

2.3 Understanding System

Jogiyanto said application [4] is the use of a computer, the instruction (instruction) or a statement (statement) that was structured so that the computer can process inputs into outputs. According to the Dictionary of Indonesian Language, "Application is the application of a system designed to process the data using rules or provisions of a specific programming language". Application is a computer program made to do and carry out special tasks of the user. Application is a series of events or commands to be executed by the computer. The program is a collection instruction set to be executed by the processor, in the form of software. A computer can be thought as stipulated by the program. This program controls all the activities that exist in processing. The program contains logic constructions made by humans, and has been translated into machine language in accordance with the existing format in the instruction set.

2.4 Booking

Booking is an activity carried out by the consumer before the purchase. To achieve customer satisfaction, the company must have a good reservation system. According to the Indonesian big dictionary meaning of the message is a command, advice, requests, mandate delivered through others. An order is a request going to buy (in order to be sent, made and so on); the goods ordered. Subscribers are people who booked (places, things, and so on). Depdiikbud said [5] booking is a process, act, how to order or book.

2.5 Definition of Mobile Applications

Buyens said [6], is derived from the Mobile Application and mobile application. Application which means the implementation, application, use. In terms of applications is a ready-made program designed to perform a function for users or other applications and may be used by the intended target while the mobile can be defined as the movement from one place to another. Mobile terms have the meanings move or migrate, so that mobile applications, Stimulate Purnama said [7] is the designation for applications running on mobile devices. By using mobile applications, can easily perform various aktifitasi from entertainment, sell, learn, do office work, browsing, etc.

2.6 Firebase

Firebase is Baas (Backend as a Service), which is now owned by Google. Firebase this is a solution offered by Google for Mobile Apps Developer job easier. With the Firebase, apps developers can focus on developing applications without having to give a great effort for the affairs of the backend.

Firebase Database also features offline and online support. For example, we make changes to the data and at the same time the connection to the cloud Firebase not available. So cleverly, those changes will be stored in the local first, until the new available connection will be a change in the server. Everything is done automatically, the synchronization is done by the library Firebase.

2.7 UML (Unified Modelling Language)

UML (Unified Modeling Language) is a very powerful tool in the world of object-oriented systems development. This is due to the UML provides a visual modeling language that allows for system developers to create the blueprints on their vision in the form of standardized, easy to understand and are equipped with an effective mechanism for sharing (sharing) and communicate their designs with others.

According to Nugroho [8] UML (Unified Modeling Language) is the 'language' modeling for system or software paradigm "object-oriented". Modeling (modeling) are actually being used for simplification of complex problems such that it is easier to learn and understand.

UML is the unity of the modeling language developed by Booch, Object Modeling Technique (OMT) and Object Oriented Software Engineering (OOSE). Grady Booch Booch method is very well known by the name of Object Oriented Design method. This method makes the process of analysis and design into four iterative stages, namely: identification of classes and obyekobyek, identification of object relationships and semantics of these classes, interfaces and implementation details. Excellence Booch method is in detail and rich as the notation and elements. Modeling developed by Rumbaugh OMT is based on a structured analysis of an entity-relationship modeling. The main stages in this methodology is the analysis, system design, object design and implementation. The advantages of this method is in penotasian that supports all of the OO concepts. OOSE method of Jacobson more emphasis on the use case. OOSE has three stages that make the model requirements and analysis, design and

implementation, and testing models (test model). The advantages of this method is easy to learn because it has a simple notation but covers all the stages in software engineering.

Design UML, methods of Booch, OMT and OOSE combined by removing elements that are not practical coupled with elements of other methods that are more effective and new elements that did not exist in the methods earlier so that UML is more expressive and uniform than other methods.

2.8 Analysis System

Stair and Reynolds said [9] analysis is a system that determines the phase of system development information system what to do to solve the problem by studying existing systems and work processes to identify strengths, weaknesses and opportunities for improvement.

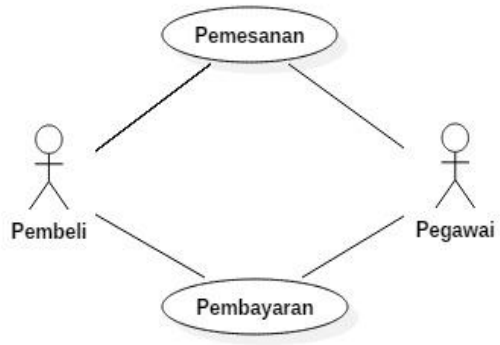
Meanwhile, Laudon and Laudon said[10] The analysis system consists of identifying the problem, identify the cause, determine solutions and identify the needs of the information required by the system. Thus it can be concluded that the analysis system is problem-solving techniques in a way to unravel and learn the system and work processes in order to identify strengths, weaknesses and opportunities to be improved by defining the problem, identify the problem, identify the cause, determine solutions and identify the information needs required of the system.

2.9 Ongoing System

The system is running at the moment is the buyers come directly to the location of an employee then gives the food menu to the buyer, If there are foods that fit the buyer will make a reservation and then clerks write the buyer's order book into the transaction. And the system can be seen in the picture below usecase.

2.9.1 Ongoing Usecase

Use case is a series / description of a group of interrelated and form a system of regularly performed or supervised by an actor. Roughly speaking, the use case is used to determine what function is in an information system and who is entitled to use those functions.

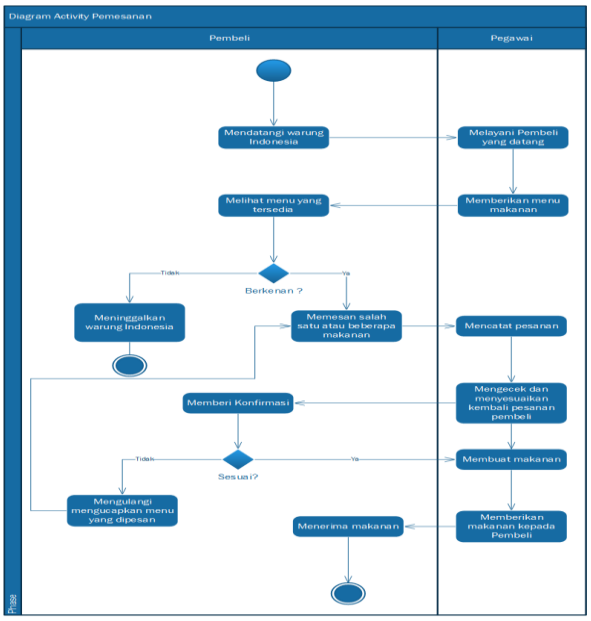


Gambar 2.2 *Usecase Ongoing* System

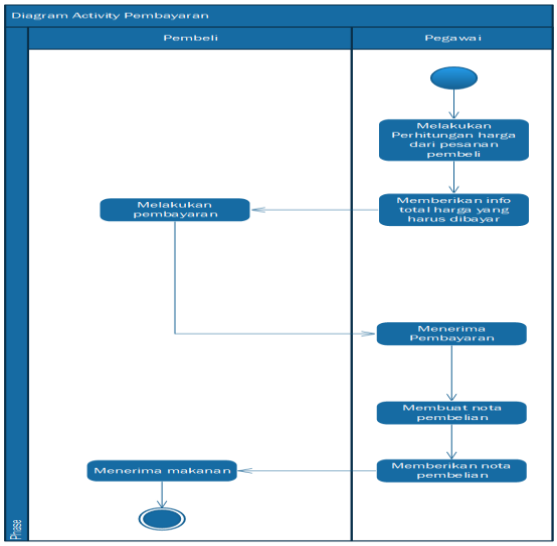
Usecase evident from the existing system in Indonesia stalls in the booking process there are two actors who play a role in it, namely: the buyers and employees. In this system is the mechanism that runs Use case sales of food.

2.9.2 Diagram Activity Ongoing

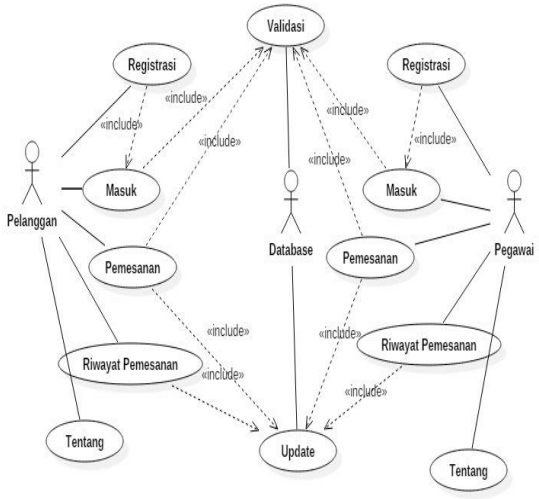
Activity diagram is used to describe activities that exist in a system. This diagram is similar to flowcahart, the advantage with the making of this diagram to help you understand the whole process. In order to better understand the system being designed, it needs to be made activity diagram of the system is running, while the activity diagram walking ordering food at Warung Indonesia is as follows :



Gambar 2.3 Booking Diagram Activity



Gambar 2.4 Payment Diagram Activity



Gambar 2.5 Proposed *Use case* diagram

2.10 System Design

The system design is done when the phase of system analysis has been completed. The design of the system is a precondition for the development of the system. The design of this system regarding the estimation of physical needs, manpower and funds needed to support the development of the system and to support its operations after being applied. The system is designed broken into multiple parts that can be formed into a component system.

2.11 Proposed Design Procedure

The design procedure is the beginning of the manufacturing system to be created, which can be seen from any processes that will be needed in the manufacture of a system. While the design of the proposed procedure is the stage to correct or improve the work efficiency. This design includes the use case diagrams, activity diagrams, sequence diagrams, class diagrams that generate a better system. Designed process broken down into several parts that can be formed into a single unit system.

2.11.1 Use Case Diagram

Use case is a picture functionality of the system, so that users understand the system and understand the usefulness of the system to be built. Based on the analysis that has been done before, the design proposed in Application Development Warung Indonesia in Yangsan South Korea-based Android can be seen in the image below :

2.11.2 Activity Diagram

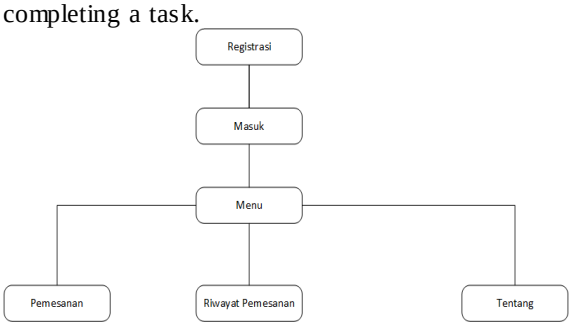
Activity diagrams illustrating the flow of work or activity of a business process. Activity diagram describes the system activity is not what actors do, so activities that can be done by the system and explain the menu that will be on software.



Gambar 2.6 Proposed Activity diagram

2.12 Design Proposed menu

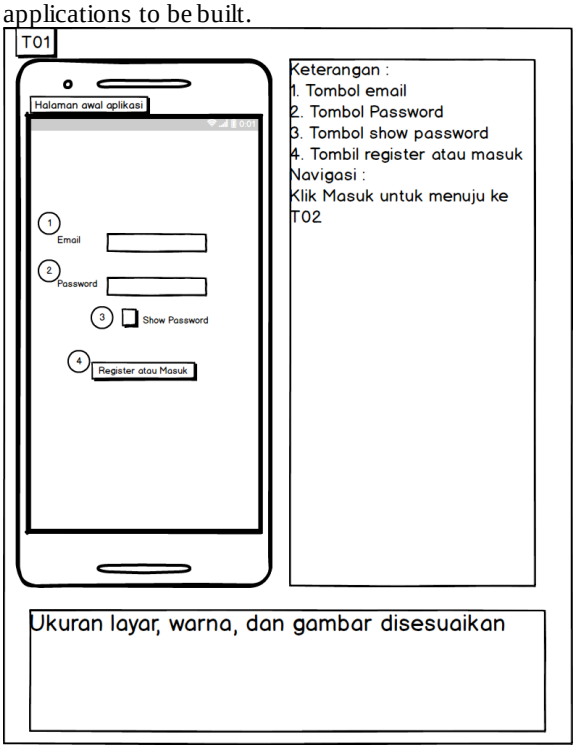
The structure menu is a common form of program design that aims to assist users in completing a task.



Gambar 2.7 Design Proposed menu

2.13 Proposed menu interface

The design of the interface is made to describe the look of the program that will be used by the user to interact with the application. The design is based on the interface display both input and output to be generated when the application is implemented. The design of the interface is needed to represent the true state of the application to be built. Here is an example of the interface design of applications to be built.



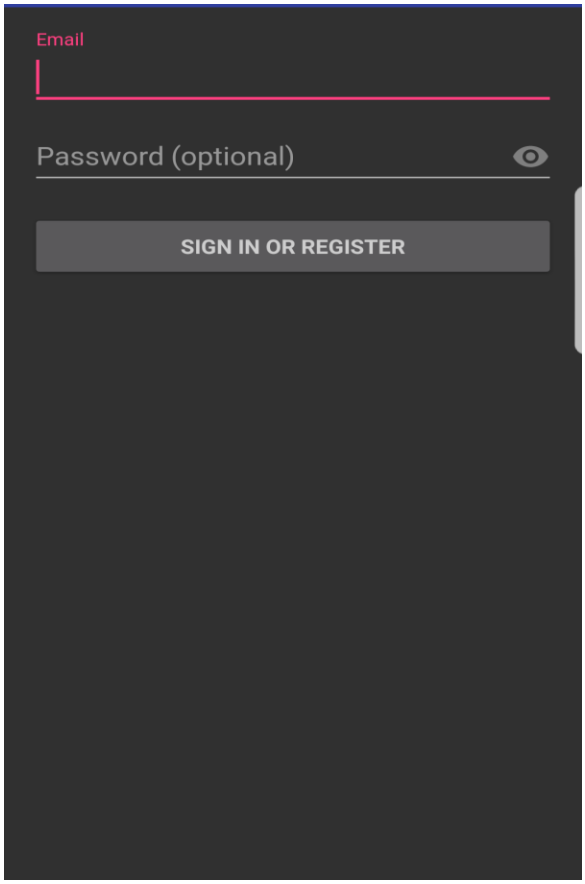
Gambar 2.8 Proposed menu interface Registrasition or Login

2.14 Implementation

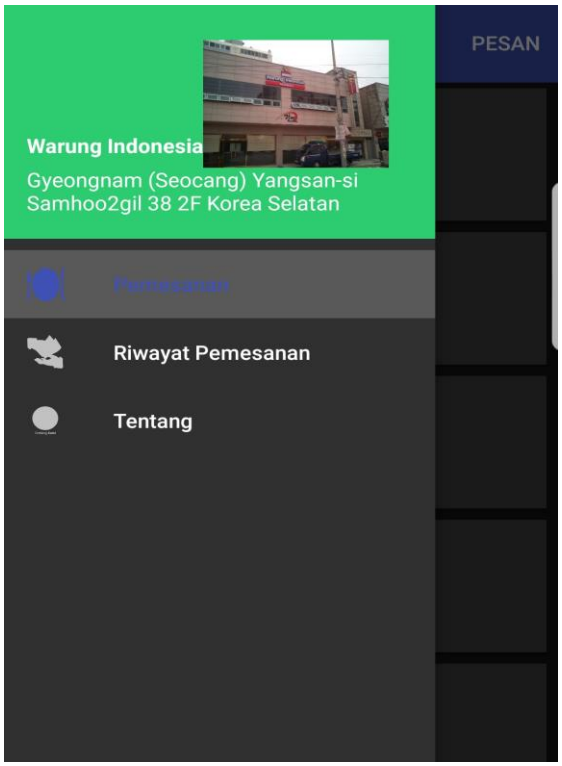
Implementation is the process of implementation of the program design or implementation of the application has been made in implementing information systems are built in accordance with the objectives expected from the application program. Implementation of activities conducted on the basis of which has been planned in the design stage. At this stage it is described on the implementation of the software, hardware implementation, the implementation of the database, the implementation of the program installation, use and implementation of the program interface.

2.15 Inteface Implementation

Implementation of the interface is the interface displays on stalls Indonesia applications. A software interface is very important, because a good program is a program that can create a good medium between the reader and the system anyway.



Gambar 2.9 Implementation of Registration



Gambar 2.10 Menu Implementation

2.16 Testing System

Testing of the system is the most important thing being done to find flaws and errors in the software being tested. The test is intended to determine the software that created already meet the appropriate criteria.

In this study the tests performed on the system: black box testing method that focuses on the functional requirements of the system built.

Tabel 2.1 Kasus dan Hasil Pengujian

Pengujian Aplikasi warung Indonesia di Yangsan Korea Selatan Berbasis Android					
No	**Komponen Yang Diuji**	**Data Masukan**	**Hasil Yang di Terapkan**	**Pengamatan**	**Hasil Pengujian**
1	Halaman Registrasi	Masukan email dan password	Dapat masuk ke menu	Tombol registrasi dapat berfungsi sesuai yang diharapkan	[√] Diterima [ ] Ditolak
2	Halaman Pengisian userna	Memilih tombol “Sig in dan	Menampilkan halaman menu	Pengisian berfungsi sesuai	[√] Diterima [ ] Ditola

Pengujian Aplikasi warung Indonesia di Yangsan Korea Selatan Berbasis Android					
No	**Komponen Yang Diuji**	**Data Masukan**	**Hasil Yang di Terapkan**	**Pengamatan**	**Hasil Pengujian**
	me dan password	Register”		yang diharapkan	k
3	Halaman Masuk	Memilih tombol “Sib in or Register”	Dapat masuk ke halaman utama	Tombol masuk dapat berfungsi sesuai yang diharapkan	[√] Diterima [ ] Ditolak
4	Halaman Menu	Memilih tombol “Pemesanan, Riwayat Pemesanan, Tentang”	Menampilkan menu	Menu yang tersedia dapat dipilih	[√] Diterima [ ] Ditolak
6	Halaman Pemesanan	Memilih tombol “Pemesanan”	Menampilkan halaman Pemesanan	Pemesanan makanan dapat dilakukan	[√] Diterima [ ] Ditolak
		Memilih tombol “Makanan”	Terlihat tanda makanan yang dipesan	Makanan yang dipilih memiliki tanda berbeda	[√] Diterima [ ] Ditolak
		Memilih tombol “Banyak makanan yang dipesan”	Bisa memilih makanan lebih dari 1	Makanan yang dipilih dapat dirubah jumlahnya sesuai keinginan	[√] Diterima [ ] Ditolak
		Memilih “Pesan”	Menampilkan Pesanan behasil	Menampilkan makanan yang dipesan	[√] Diterima [ ] Ditola

Pengujian Aplikasi warung Indonesia di Yangsan Korea Selatan Berbasis Android					
No	**Komponen Yang Diuji**	**Data Masukan**	**Hasil Yang di Terapkan**	**Pengamatan**	**Hasil Pengujian**
				beserta jumlah pesanannya	k
7	Halaman Riwayat Pemesanan	Memilih "Riwayat Pemesanan"	Menampilkan waktu pemesanan	Data pesanan diurutkan sesuai waktu	[√] Diterima [ ] Ditolak
		Memilih tombol "Waktu pemesanan"	Menampilkan rincian Pesanan dan total harga	Data riwayat pemesanan sesuai dengan yang diharapkan	[√] Diterima [ ] Ditolak
8	Halaman Tentang	Memilih tombol "Tentang"	Menampilkan halaman info aplikasi	Data tentang sesuai dengan yang diharapkan	[√] Diterima [ ] Ditolak

2.17 Conclusion Testing Results

Based on the results of tests performed on the Indonesian stall Applications Yangsan South Korea showed that the Indonesian stall built application is running as expected according functionally release the results have been as expected.

2. CLOSING

3.1 Conclusing

Based on the findings of the Implementation and Testing System that done, then conclution the end of task titled "Application Development Warung Indonesia in Yangsan South Korea based on Android" That is as follows::

1. Fast booking food for Operates online so that customers get service, not need queue From the employee if want ordering food.
2. The menu and pricing information can be seen Easily in the Application.
3. Employee just look at the food ordering system so that it does not need to come to each table to ask customer mention food ordering only deliver food that has been finished to the customer.

3.2 Suggestion

In the Application Development Development Warung Indonesia in Yangsan South Korea based on android that has been built is still far from perfect and there are still many shortcomings. Therefore, it is necessary for the development and further refinement in order to meet the needs of users is increasing. As for suggestions on the development of instructional media for the future are as follows :

1. Add a list of drinks sold..
2. Equipped delivery order so that customers can enjoy eating food in home or workplace**.**
3. Notification status already finished food made by employees so that customers who order when it comes to the warung Indonesia stayed to enjoy the food without having to wait for the food is finished.

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