



Artikel

Implementation of XMPP Protocol on Android Pulse Filling Application

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A B S T R A C T

Along with the increasing capabilities of mobile devices, the need for pulses is also growing rapidly. Currently resellers only utilize the technology SMS (Short Message Service) in conventional to conduct transactions. To assist in the more efficient pulse delivery process, it was built using the XMPP protocol. In this study using Extreme Programming design method with 4 (four) stages of process planning, design process, coding process and testing process. The results of testing conducted by using black box testing as well as questionnaires from the resellers, applications that help in the transaction pulse, and improve the efficiency of time in the process of pulse delivery.

INTRODUCTION

The development of mobile technology such as mobile phones is so rapid that the ability is not just for communication alone, along with the increasing mobile phone capabilities, the need for pulses is also growing rapidly. But in the sale of credit transactions, there are several formats that must be reselled. Because the format of the message is so complicated that it can lead to inefficient time at the time of the transaction. Not only lead to inefficient time but can also lead to errors when typing the message format. The development of mobile phone technology is expected to have an impact on technological advances in pulse sales. Currently, resellers only use SMS (Short Message Service) technology conventionally to conduct transactions, whereas the majority of resellers use mobile phones with android operating system, so if the built application delivery pulse based on instant messaging can maximize the existing capabilities in the mobile phone android

reseller pulsa that is able to assist in recording every transaction pulse, facilitate reseller to do transaction without having to type in existing format so as able to minimize human error and create efficiency time when transaction happened, because delivery of message takes place in real time.

Extensible Messaging and Presence Protocol (XMPP) is a text-based real-time, voice and video communication standard with open XML technology. XMPP can be used in the following areas: instant messaging, presence, multi-party chat, voice and video calls, collaboration, lightweight middleware, content syndication, and generalized routing of XML data.

I. METHOD

The method used includes 2 (two) main sections of data collection methods and methods of design.

Collecting Data Method

a. Literature Review

This method is done by collecting previous theories and research related to application development from books, articles, journals and internet.

b. Questionnaire

This method is done by distributing questionnaires to get information that can help the development of applications include user needs questionnaire and app evaluation questionnaire.

Design Method

The design method used is Extreme Programming, one of the Agile software development approach (agile). The development process is divided into 4 (four) main activities, namely:

1. *Planning Process*

At this stage, understand the problems that arise and define all the constraints, then the authors determine the purpose and purpose in identifying all obstacles that will be faced.

The steps - stages are:

- a. Finding a problem in the process of delivery transaction.
- b. Define the problem.
- c. Determine the purpose of the system.

- d. Identify constraints in the system.
- e. Make a feasibility study.
- f. Prepare research proposal system.

2. *Design Process*

Determining the needs of processes and data on the new system we will design, here are the steps:

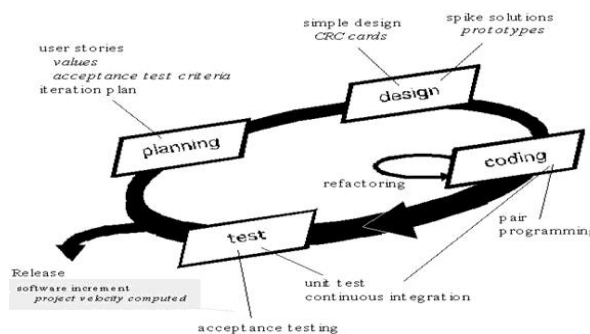
- a. Prepare system design.
- b. Identify system configuration.
- c. Test the result of system configuration

3. *Coding Process*

The coding process in XP starts with building a series of unit tests. After that developers will focus to implement it. In Extreme Programming introduced the term Pair Programming where the process of writing the program done in pairs.

4. *Testing Process*

This stage is done testing the code on the unit test. In Extreme Programming, introduced XP acceptance test or commonly called customer test. This test is performed by the customer who focuses on the features and functions of the system as a whole. This acceptance test comes from user stories that have been implemented.



Pic 1. Metode Extreme Programming

II. RESULT

Requirment Elicitation

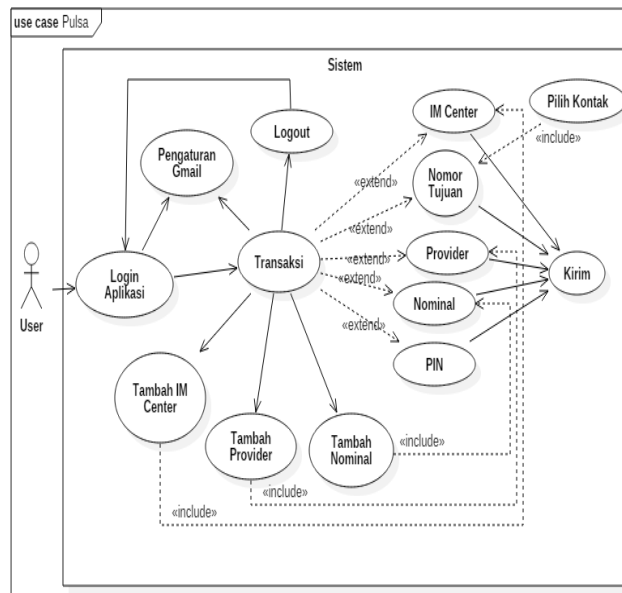
To meet the needs of users then researchers need to conduct a survey to some people who understand in the manufacture of pulse

delivery applications. Where the respondent's answer is a statement what is needed in making the application made by researchers, which will be intended for the development of this application for the better.

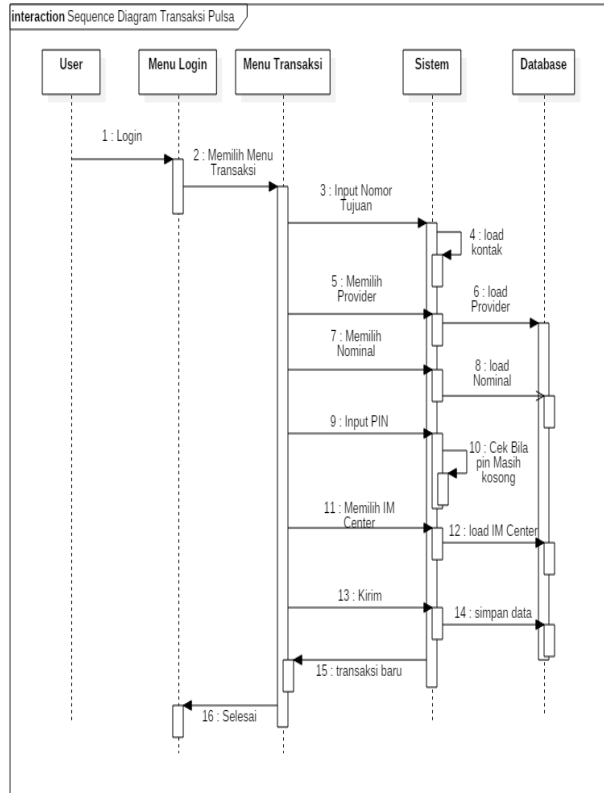
Table 3.3 Requirement Elicitation

No.	User Requirement	Information
1	Easy to use app	√
2	There is a login menu in the application	√
3	Applications using good Indonesian	√
4	The app has an interesting look	√
5	There is a notification message from the app	X
6	The app can select the destination number from the phone contact list	√
7	Applications can check balance remaining	√
8	Application can add Center	√
9	Applications can add nominal pulses	√
10	Reseller pulse can use special code on the application	√
11	Applications can perform the 2nd (two) transactions on the same number of days	X
12	Applications can check the nominal price of the credit	X
13	Resellers can make balance transfers to other resellers pulse	X
14	The PIN code is not visible in the app	√
15	There is a pulse transaction report menu	√
16	Use the internet to send messages	√
17	There is a security key in the app	X
18	The app can use 2 different Gmail accounts	X
19	Applications can be used on operating systems other than Android	X
20	Applications can print transaction reports	X

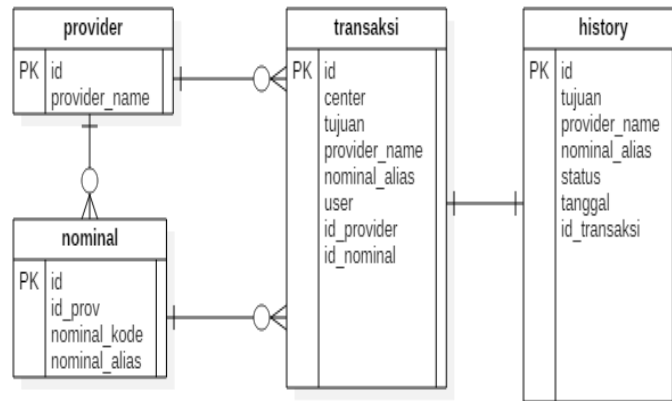
Application Design



Pic 2. Use Case Transaction Menu



Pic 3. Sequence Diagram Transaction Menu



Pic 4 ERD Design

Interface Design

Tambah Nominal

Pilih Provider:

Kode Nominal

Nama Nominal

Simpan

Pic 5 Menu Add Nominal

1:53 PM 0.06K/s 94%

Kirim Transaksi

User Gmail : tes

IM Center :

No Tujuan: - Nomor Tujuan -

Provider

Nominal

PIN : - PIN - Kirim

Pic 6 Transaction Menu

III. TESTING

Black Box Testing

Black box testing aims to show software functions on how to operate, whether the input data output has been running as expected and whether the information stored externally is always maintained kemutakhirannya.

Black box testing focuses on the functional requirements of the software. This test allows the system analyst to obtain a set of input conditions that will work all the functional requirements of the program.

No	Description	Expected Results	Test Results
1	Login Menu	Showing 1 button 1 textview, and 2 edittext ie: 1. Login button 2. Edit Username 3. Edit Password 4. Account Settings Text	Matching
2	The Transaction menu consists of: 2 edittext, 3 spinner, 1 listview, and 5 buttons, namely: <i>Edit Nomor Tujuan</i> 1. <i>Edit Destinasi Number</i> 2. <i>Edit Pin</i> 3. <i>Spinner Center</i> 4. <i>Spinner Provider</i> 5. <i>Spinner Nominal</i> 6. <i>Contact Button</i> 7. <i>Refresh button</i> 8. <i>Report Button</i>	Display 2 edittext, 3 spinner, 1 listview, and 5 Keys as follows: 1. <i>Edit Number, to input the destination number to be filled in the pulse.</i> 2. <i>Edit Pin, for PIN code input.</i> 3. <i>Spinner Center, displays a list of IM centers that have been tersimpnan in the database.</i> 4. <i>Spinner Provider, displays a list of Providers that have been stored in the database.</i>	Matching

9. <i>Send Button</i> 10. <i>Exit Button</i> 11. <i>List Message</i>	5. <i>Nominal Spinner, displays the nominal list that has been stored in the database.</i> 6. <i>The Contacts button, when clicked the phone contact list appears.</i> 7. <i>Refresh button, delete destination number, pin, set spinner center position, spinner provider, nominal spinner to initial position, re-login username and password to talk.google.com.</i> 8. <i>Report Button, when in the click display report menu.</i> 9. <i>Send button, send message to IM center containing nominal, destination number, and pin. If the destination number and pin are still empty, message destination and destination pin notification is still empty.</i> 10. <i>Exit button, when the click appears notification message exit the</i>
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		<p><i>application, contains 2 (two) options, namely "yes" and "no".</i></p> <p><i>11. List Message, displays the message log from application to IM Center.</i></p>	
4	Report Button	Display the report menu and login to talk.google.com based on username and password that has been saved in the settings menu.	Matchin ng
5	The Report menu consists of: 2 spinner, 1 listview, and 5 buttons, namely: 1. <i>Spinner Center</i> 2. <i>Spinner Date</i> 3. <i>List Message</i> 4. <i>Report button</i> 5. <i>Balance Check button</i> 6. <i>Back button</i> 7. <i>Refresh button</i> 8. <i>Exit Button</i>	<p>Display 2 spinner, 1 listview, and 5 Keys as follows:</p> <p>1. <i>Spinner Center, displays a list of IM centers that have been stored in the database.</i></p> <p>2. <i>Spinner Date, displays a list of dates containing numbers 1 (One) to 31 (Thirty one).</i></p> <p>3. <i>List Message, displays the message log from application to IM Center.</i></p> <p>4. <i>Send Button, send message to IM center to know delivery report based on date which has been chosen.</i></p> <p>5. <i>Balance check button, send a message to IM center to find out the remaining balance.</i></p>	Matchin ng

		<p>6. <i>Back button, return to transaction menu.</i></p> <p>7. <i>Refresh button, performing connection process to talk.google.com server.</i></p> <p>8. <i>Exit button, when the click appears notification message exit the application, contains 2 (two) options, namely "yes" and "no".</i></p>	
6	Setting Button	Displays the settings menu	Matchin ng

IV. CONCLUSION

Based on the trial and evaluation that have been done then it can be concluded as follows:

1. With this application makes it easier for resellers in making pulse delivery transactions.
2. This application can be used by all circles, be it reseller pulse and pulse agent.
3. With the application can improve the efficiency of time in the process of pulse delivery transactions.
4. From the implementation results stated that this application is quite well received by users with a percentage of 72.5% answered "YES" and 27.5% answered "NO".

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BIOGRAPHY

Aditiya Hermawan finishes Strata I (S1) in the year of Informatics Engineering Program, and completes Strata II (S2) in 2013 in Computer Science. Currently active as a Permanent Lecturer in Informatics Engineering Program, Buddhi Dharma University.