

Android-Based Core Fiber Optic Management Information System Design In PT. Telkom Kebumen

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Abstract

The study aims to design the information system of fiber optic core management based on Android at PT.Telkom Kebumen. This study used qualitative method with a descriptive approach. Data collection techniques are carried out by observation and literature study that related to research. The software development method used waterfall. The problem of the research result are data processing of core management still using Ms.Excel so that the data received by technicians is not accurate because the data changes and data additions are slowly, and to looking for data is too difficult because the data that saved on Ms.Excel is too much. There are suggestions that submitted, designing a new information system that can help the job so that can be more effective and efficient. By utilizing the advanced android technology which owned by all technicians.

Keywords: *Information System, Android, Core Mangement, Fiber Optic.*

1. Introduction

Technology continues to develop from year to year very rapidly and increasingly, especially in the field of information both information from print and electronic media that presents information in the form of text, sound and images. For the community, they must be very clever to choose information sources that can be trusted and can be accounted for. Almost everyone needs information that is fast, practical, effective, and economical in presenting information.

In the era of smartphone technology, it is not only used as a medium for communication, but has been equipped with many other features. These features include: Camera, Mp3 Player, Games, and other applications that have more specific functions. A mobile phone that is equipped with an operating system like a computer, practical, highly capable is called a smartphone, its ability to install various applications to support the needs of its users.

PT. Telkom Kebumen whose basic is information and communication technology, smartphones are very important to support its development. PT. Telkom Kebumen itself, besides selling home telephone services, also sells internet and cable TV services, commonly called Indihome. The development of the digital era is now not only offices or companies that subscribe to Indihome, but also not a few home customers who subscribe to Indihome. Because the internet has now become a basic need for the people of Indonesia, especially Kebumen.

Many information systems at PT. Telkom Kebumen that use Android. Starting from the customer side, there is an application called MyIndihome that is useful for viewing packages that are owned, checking bills, adding services, and reporting complaints or disruptions that occur in the service. On the employee side there are also applications on staffing, such as applications for Absences, filing leave, salary slips, and so forth. Up to applications to help simplify the work of all android-based.

There are several engineering divisions at PT.Telkom Kebumen, such as installation or provisioning technicians, repair or assurance technicians and maintenance technicians. The jobdesc of the assurance technician himself is to

troubleshoot and repair the Fiber Optic network which causes customers to not be able to enjoy indihome services. Like looking for fiber optic cable breaking points, fixing fiber optic distribution points and so on. In the fiber optic cable there is a core fiber called a core. There are many cores that function as data paths. One fiber optic cable contains 12 cores to 288 cores. So it needs management for the distribution of these cores so that they are structured and easy to troubleshoot when fibercut occurs.

Based on the description above, the writer is interested in raising a title, namely "Designing Android-based Core Fiber Optic Management Information System at PT.Telkom Kebumen". The author intends to create an Android-based application design that is useful to help facilitate the work of employees, especially repair or assurance technicians at PT. Telkom Kebumen. The choice of using Android because all technicians at PT. Telkom Kebumen are required to use an Android smartphone, also Android applications are easier to access by all smartphone brands.

2. Research Methodology

The method used in data collection is descriptive method. The data collection techniques are carried out as follows:

a) Observation Method

In this case the authors collect data directly by observing and recording also various other things needed in the research process, this activity is carried out to find out what problems exist in the optical fiber core management system of PT. Telkom Kebumen.

b) Interview Method

The author conducted interviews with field technicians who manage fiber optic core (mancore) management to find out data and information on problems in terms of managing fiber optic mancore at PT. Telkom is faced today.

c) Literature Study

Collecting data and information by utilizing reference books from the internet and various discourses related to core fiber optic management information systems relating to core fiber optic management information systems that can be used as a reference in the completion of this report.

d) Documentation Method

In this case the agency provides reference data as a reference for making the Core Fiber Optic Management Information System at PT. Telkom Kebumen.

3. Results and Discussion

3.1. Problem Analysis

Based on the analysis of the system currently running at PT. TELKOM Kebumen for core management processing systems, has not used an efficient and effective system. Therefore, the authors propose to create an Android-based Core Fiber Optic Management Information System so that technicians are facilitated to repair Fiber Optic cables and reduce errors due to Core Management data that is not updated and inaccurate.

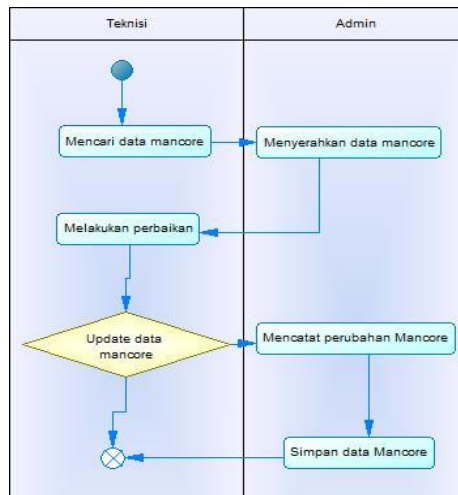


Figure 1. Activity diagram that runs

3.2. Proposed System Design

a) Use Case Diagram

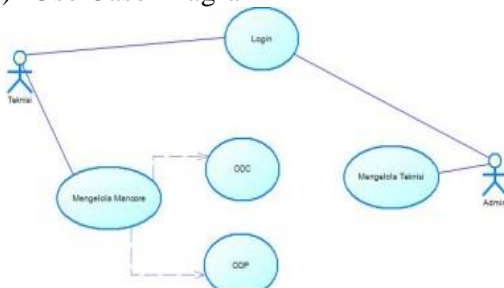


Figure 2. Proposed Use Case Diagram

b) Use Case Diagram

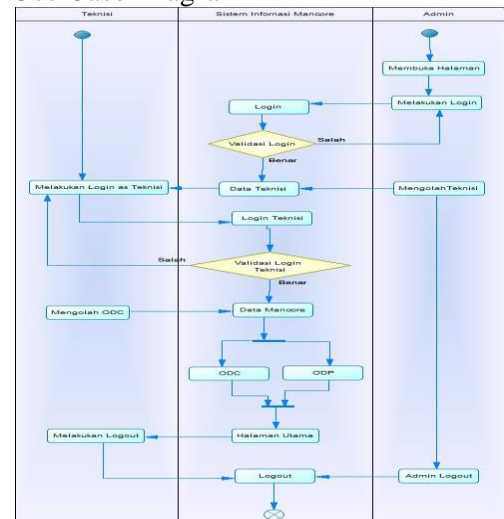


Figure 3. Proposed Activity Diagram

c) Class Diagram

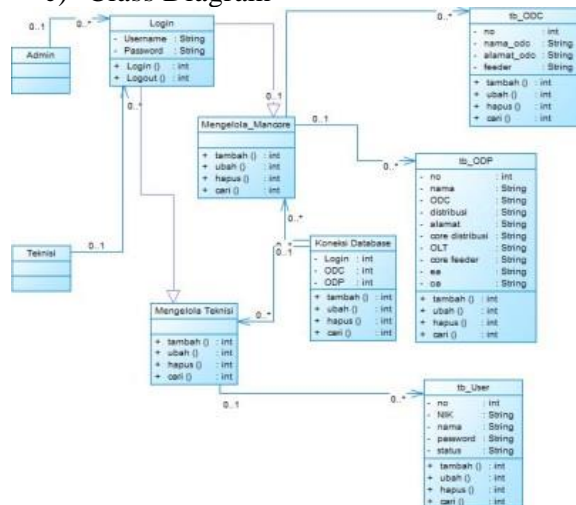


Figure 4. Proposed Class Diagram

d) Statechart Diagram

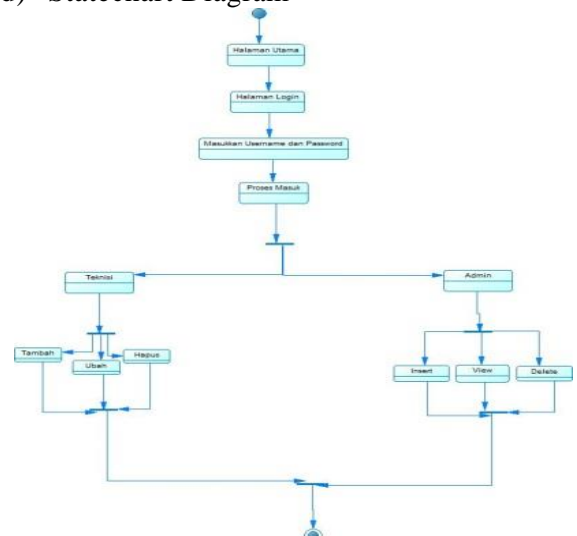


Figure 5. Proposed Statechart Diagram

3.3. System Interface Implementation

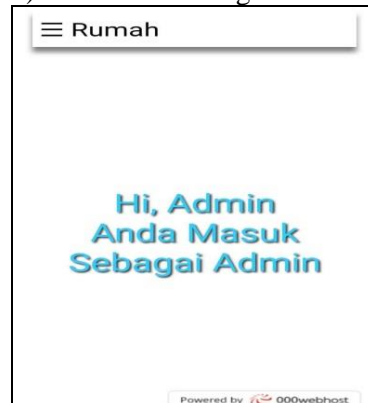
a) Login Page



The login page features the Telkom Akses and Telkom Indonesia logos at the top. The main heading is 'SISTEM INFORMASI MANAJEMEN CORE'. Below this, there are input fields for 'NIK', 'Kata Sandi', and a dropdown menu for 'Masuk Sebagai'. A green 'Masuk' button is positioned below the input fields. The footer includes the copyright notice '@copyright by Telkom Indonesia'.

Figure 6. Login Page Display

b) Admin Main Page



The admin main page shows a hamburger menu icon and the text 'Rumah' at the top. The main content area displays a welcome message: 'Hi, Admin Anda Masuk Sebagai Admin'. At the bottom, it says 'Powered by 000webhost'.

Figure 7. Display Admin Main Page

c) Admin Menu



The admin menu is displayed on a dark background. It includes a hamburger menu icon and the text 'Rumah' at the top. The menu items are 'Rumah', 'Daftar Teknisi', 'Tambah Teknisi', and 'Keluar'. A welcome message 'Hi, Admin Anda Masuk Sebagai Admin' is visible on the right side.

Figure 8. Display Admin Menu

d) Register / Search User page

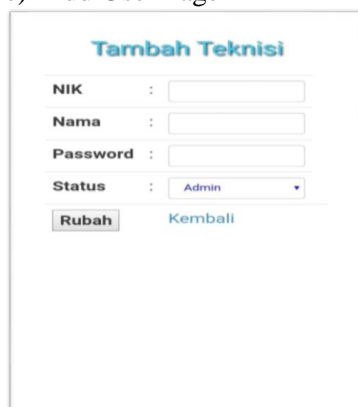


The register/search user page features a hamburger menu icon and the text 'Rumah' at the top. Below this, there is a section titled 'Daftar Teknisi' and a search input field labeled 'Kata Kunci'.

NIK	Nama	Password	Sl
150535601479	anis	1234567	ac
XXXXX	Deni	12345	te
150535601087	Aprilia Fauziah	098765	ac
98765	Jati	12345	te
Skoma2juta	Suhadi Rusdiantoro	Skoma2juta	te
cobacoba	arif	cobacoba	te
18950738	Ega Latif	qwerty	te

Figure 9. Display List Page / Search User

e) Add User Page



The add user page is titled 'Tambah Teknisi'. It contains input fields for 'NIK', 'Nama', and 'Password', and a dropdown menu for 'Status' (set to 'Admin'). Below these fields are two buttons: 'Rubah' and 'Kembali'.

Figure 10. Display Page Add User

f) Technician Main Page



The technician main page shows a hamburger menu icon and the text 'Rumah' at the top. The main content area displays a welcome message: 'Hi, Ega Latif Permana Selamat Datang di Sistem Informasi Manajemen Core'.

Figure 11. Display Main Page Technician

g) Technician Menu



Figure 12. Technician Menu Display

h) Register / Search ODP page



Figure 13. Display Main Page Technician

i) ODC List Page

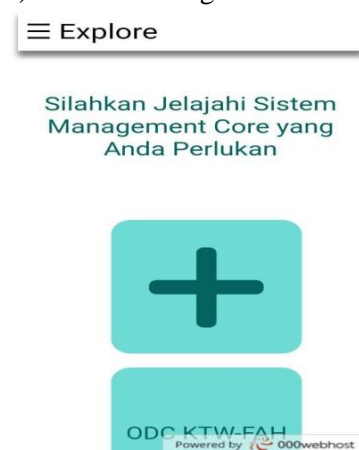


Figure 14. Display of the ODC List Page

j) ODC and ODP Details Page



Figure 15. Display of ODC and ODP Details Pages

4. Conclusion

The author concludes what has been explained namely as follows:

- The fiber optic core management system at PT.Telkom Kebumen is currently using a conventional system in the form of data stored in a file with Ms.Excel extension. So the addition of data or data changes are still slow and the data and information provided is not accurate.
- The problem that often occurs in the system used today is that many stored data are inaccurate with the conditions in the field so that it slows down / inhibits when troubleshooting fiber optic networks.
- To build an Android-based Core Fiber Optic Management Information System at PT. Telkom Kebumen requires scripting coding programming languages html, php, and css. To build its database requires MySQL and requires hosting so that it can be accessed online. The last is a web to apk converter needed to convert a dynamic web into an android application so that it can be installed on the smartphone of PT.Telkom Kebumen technician.

With the completion of this research writing, the writer wants to provide suggestions for the progress of the company, including:

- a) Data backups need to be done so that when the application error / lost there is still data backup.
- b) Need to do maintenance and maintenance of software.
- c) Socialization needs to be done before implementing a new mancore system.
- d) Update hosting to premium vresi so that hosting capacity is more adequate if, so it can hold more data.

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