INFORMATION OF MEDICINE'S INVENTORY SYSTEM AT PUSKESMAS TELUKNAGA

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ABSTRACT

Puskesmas Teluknaga is one of puskesmas with a lot of patients, each day can reach 100-150 patients. Therefore, the service to treat all the patients must be done quickly so that the patients have no complaints. While in medicines area, the information system is stil using a simple method by using manual record in the book / paper. To save the administration reports, pharmacies and warehouses rely solely on Microsoft excel applications. Manual data consists of many datas. In addition, the file storage for manual data can be damaged. Therefore the author created a strategy in developing the information systems of data processing to assist the process of making medicine reports. To obtain an effective and efficient information system, the system was designed in the Final Report entitled "INFORMATION OF MEDICINES INVENTORY'S SYSTEM IN PUSKESMAS TELUKNAGA". The system will be built by using PHP and MySQL programming language for database design, visual paradigm for UML design, notepad ++ as text editor and xampp v3.2.2 as localhost.

Keyword*: information system, medicines entry, medicines out, report.*

PRELIMINARY
Introduction
Pusat Kesehatan Masyarakat, known as Puskesmas, is a fungsional organization that performs public health services that are comprehensive, integrated, equitable, acceptable and affordable by people, with the active participation of the community and by using the appropriate science and technology, at a cost that can be borne by the government and society. Health services are peformed to a wider community to achieve optimal health degree, without neglecting the quality of service to individuals.

Pharmacies and medicine warehouse are facilities at puskesmas that responsible for managing medicines starting from receiving, keeping, distributing, recording. And also creating monthly inventory balance report. Various tasks related to drug management make pharmacies should manage the drug data in well record.One of the tasks is receiving medicines from Dinas Kesehatan, making LPLPO (Laporan Pemakaian dan Lembar Permintaan Obat) in paper sheets, administering medicines to Puskesmas patients, and administering Drug supplies**.**

Puskesmas Teluknaga has a weakness especially in medicine information system. Those particular problems including ease, speed and accuracy. The management is still using manual record on books or papers. Thus there are many obstacles related to the drug management system. By using manual record may lead to incorrect datas and double datas, and beside that the management still keeps hard copy documents.There are some problems if they still keep hard copy documents, the documents will be missing, and difficult to find when they need urgently**.**

Based on those problems, we performed a research entittled"Informationof Medicine Inventory's System on Puskesmas Teluk Naga".

Research Purposes

The objectives of this research are:

1. Seting up a system to record and view the needed data
2. To ease in recording the data and minimize the error in recording the data.

Literature Review

To avoid in creating the duplicate method, we have identified the same research in this area. Some of the previous researches are:

1. Researched by Minarni & Susanti (2014). The research's title is "Sistem Informasi Inventory Obat Pada Rumah Sakit Umum Daerah (RSUD) Padang" The research's conclusion based on the test result is that the new drug inventory system canfacilitate in viewing inventory in and out so there will be no mistake in last inventory balance. With this application, the information's outcome can be in graphic model so that the viewer can notice the inventory fluctuation for all transanctions thus it can increase the effective and efficiency in creating reports[1]
2. Researched by Mareta Verdina Indrayanti Dkk (2013). The type of Information System of Medicine's inventory at Puskesmas Pringkuku is conventional, which is the inventory records have many weaknesses, required time to search the datas and also in creating reports. The new information system is applied to organize the medicine lists thus it can be used to search medicine faster than the old system. [2]
3. Researched by Saifudin Zuhri (2013), The availability of medicines at Puskesmas is one of the most important keys in curing the patients. The Medicines records at this Puskesmas are done manually which make it less efficient. If they want to know how many inventory in the store, they have to look it manually by using hard copy evidence. This practice is not accountable and has a high risk. The hard copy can be damaged, missing and no back up records. Based on that practice they set up an a new inventory system.[3]
4. Researched by Cholis Mayestika (2014), The medicines record at Pharmacy store at Dinas Kesehatan Lamandau is using manual and semi manual system. While current condition they need an effective and efficient system. To overcome that problem they set up a web basedinformation system to organize the medicine inventory. The system is set up by using PHP and MySQL. They develop the method by using SDLC (System Development Life cycle) method. This is an observational research by using a qualitative approach. The upgraded web based inventory record system can synchronize to warehouse inventory system,[4]

METHODOLOGY

System

As stated by Marliana B. Winanti, S.Si. M.Si in Mangement Information System (2014: 4). The system is a set of components that are connected and cooperate to achieve several goals.[5] While according toRusdiana dan Moch. Irfan (2014:28) The word "system" comes from the Greek, which is systema, that means parts or components that are connected regularly. Besides that, it can be interpreted as a set of independent elements, but related as a whole part and connected to one another. [6]

Information System

As stated by Tata Sutarbi (2014) Information system is a system within the organization that combines between the need of processing daily transactions that support managerial operational function and strategic activities of an organization that provides the required reports to certain external parties [7]

Inventory
As stated by Mulya (2010:214) inventories are assets that are available to sale in normal business activities, inventory in work in progress or goods in transit or raw material or equipment are used in production process or service.[8]

UML (*Unified Modeling Language*)
As stated by Chonoles in Muhamad Muslihudin (2016:58) Language means that UML has Sintaks and semantik. When we create a model using UML concept there are rules to obtain. The elements on that models that we create can correlate to one another and must follow the existing standard.[9] UML is not jus a diagram but it also describe its context. And stated by Nugroho (2010:6), "UML (*Unified Modeling Language*) is a programming language for system or software that focuses on object oriented. Modeling is used to simplify the complex problems so that it will be easier to learn and understand.[10]

FINDINGS AND DISCUSSIONS
Analysis of the system non the Use Case Diagram
This research uses *Unified Modelling Language* (UML) program to describe the current procedures and process .
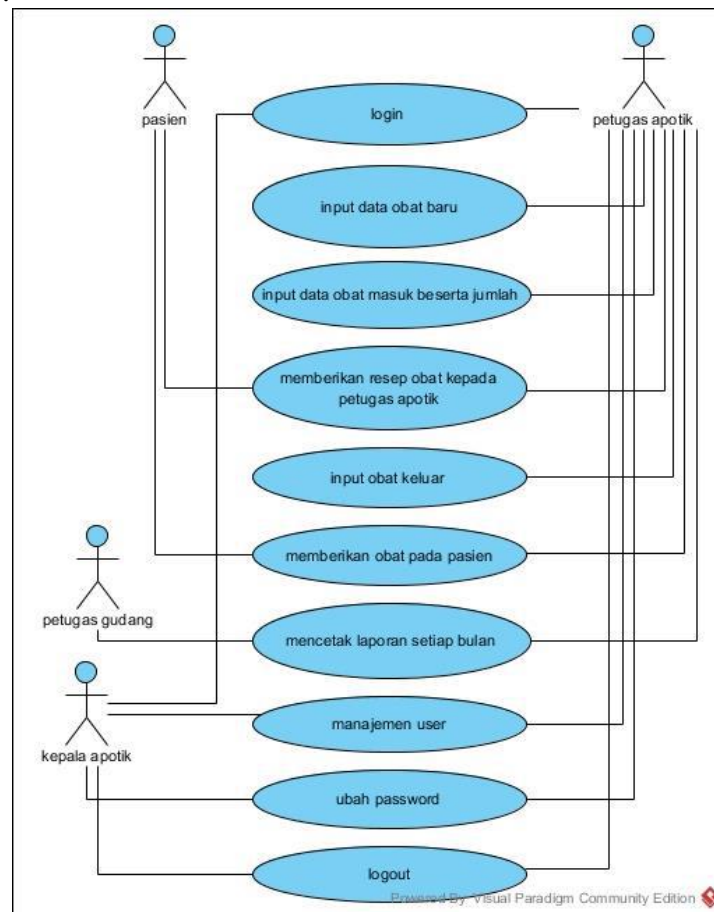
Figure 1. used case diagram

Analyzed System on Diagram Activity
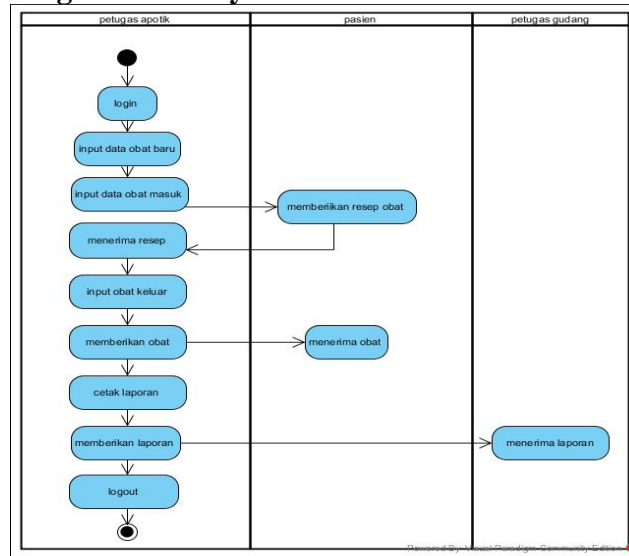
Figure 2. Diagram Activity to create tax invoice

Database Design

Class diagram is used on the application and database as a media to save the data and help the program to display the data. There are some designs that will propose based on the result of the systemthat has been analyzed. From that design we will create a database that will easier to look the files and it's contain. This is the proposed database design that has been created in class diagram.
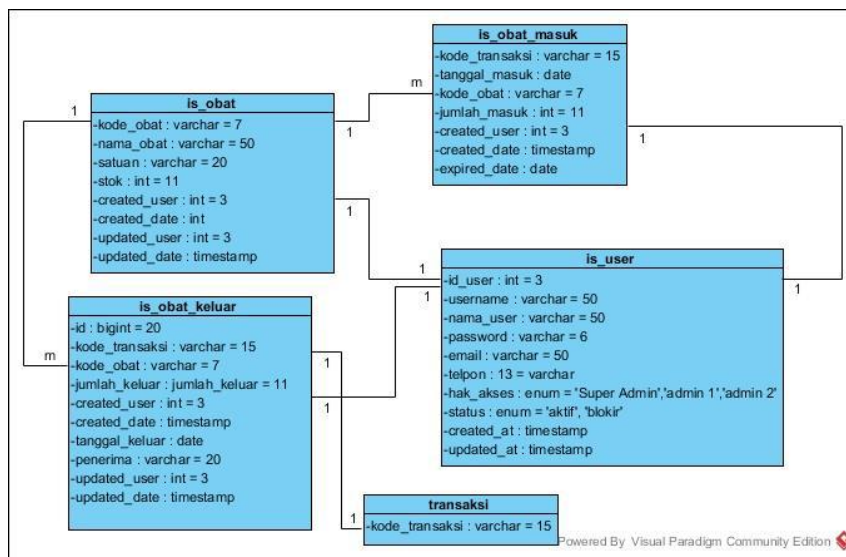
Figure 3. Proposed class diagram

The outcome of database design on medicine's inventory sytem in Puskesmas Teluknaga
Administrator's Login Page
Administrator login page will be seen as the first page when administrator key in to the web.
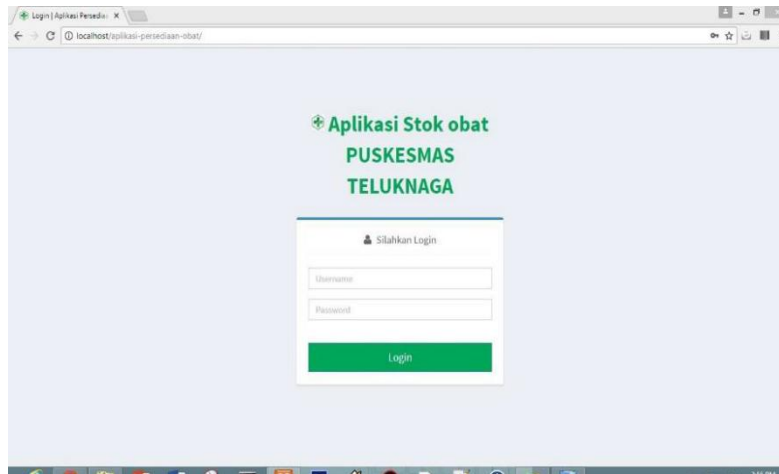
Figure 4. Administrator Login Page

Home page
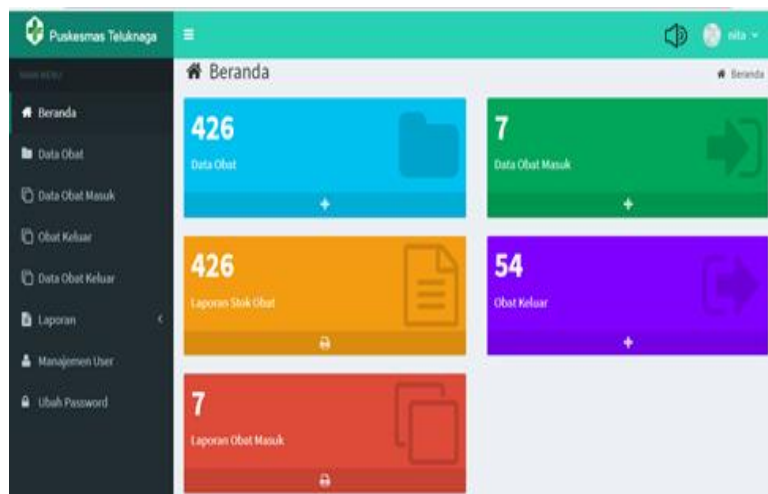
Figure 5. Super administrator home page

Medicines list page

Figure 6. *Medicine inventory page*

Medicines' incoming page

Figure 7. *Medicines incoming page*

Medicines outgoing page

Figure 8. *Medicine outgoing page*

Medicines inventory report page

Figure 9. Medicines inventory report page
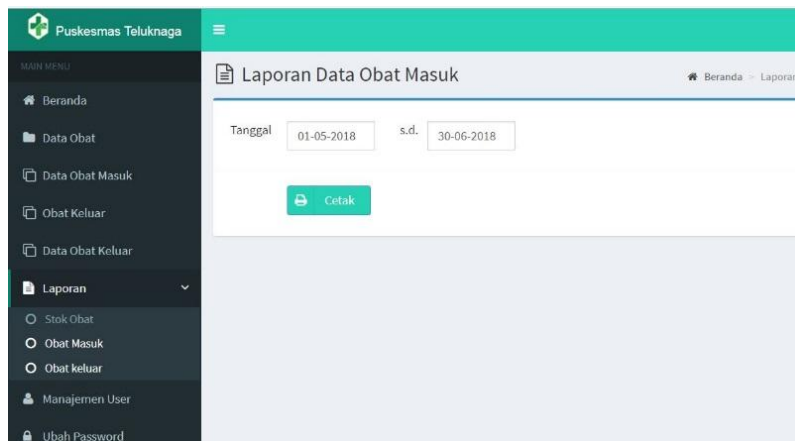
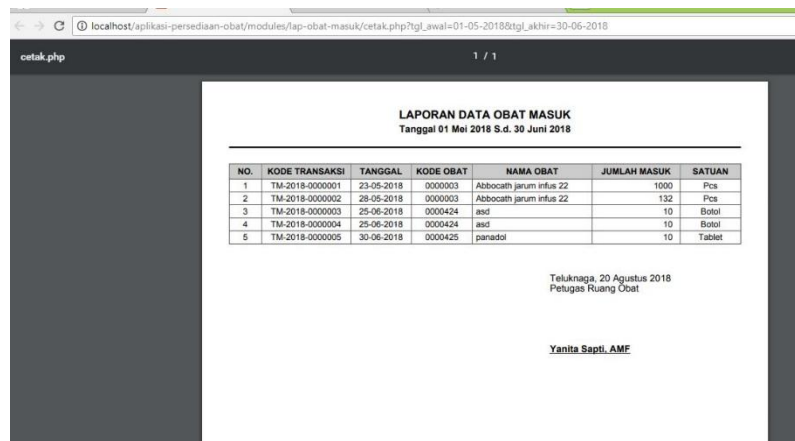**Incoming medicine report page**

Figure 10. Incoming medicine report first page

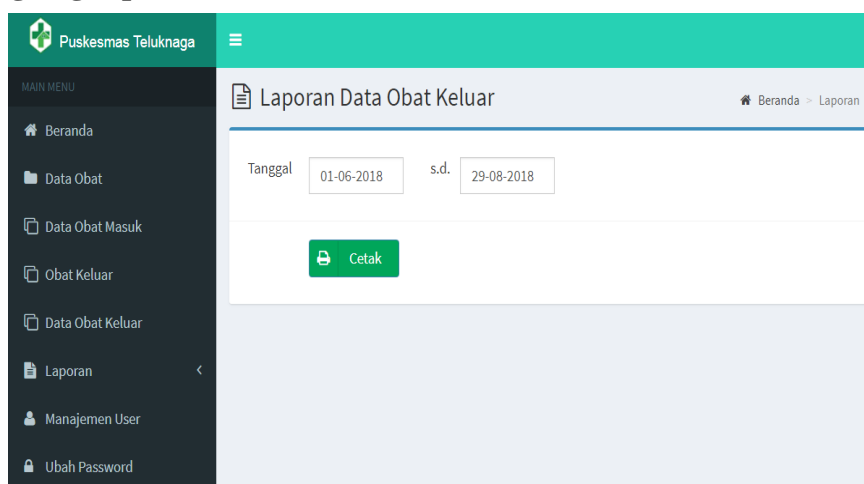**Figure 11.** incoming medicine report

Medicine outgoing report

Figure 12. Outgoing medicine report first page

Figure 13. outgoing medicine report

User access

We created 2 users in this system, one is Super administrator and second is administrator. Super administrator is asigned to Chief Pharmacist and Warehouse Chief. Administrator is assigned to pharmacist or warehouse man. Super Administrator can access all menus in the application while administrator can only key in to incoming and outgoing medicine. Below is the user screen:

Figure 14. Super Administrator log on screen

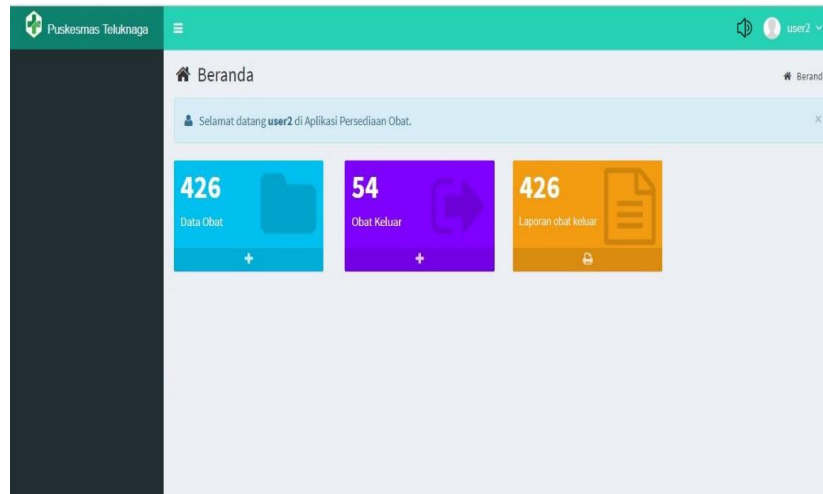**Figure 15.** Super Administrator home page

Figure 16. Administrator home page

Pop up notification

Figure 17. Pop up Notification

This page will notify user if they reach minimum stock, thus they must create purchase order for particular medicine

WEAKNESSES
Based on the analysis that has been described on previous chapter, the author note as follows:
1. The current practice of medicines distribution system at Puskemas Teluknaga is not efficient. It requires a long process to record the incoming and outgoing medicines both in pharmacy and warehouse.
2. The 3 pharmacist at Puskesmas is insufficient to serve all patients. They should have one officer to prepare drugs , 1 officer to distribute drugs and 1 officer to record outgoing medicine in the system.
3. Unavailibility of computerized system for recording incoming and outgoing medinices. The recordings of incoming and outgoing medicines are done manually thus it will need time to provide the inventory reports.

CONCLUSION
The aim of this paper was to set up a system that will help the staffs at Puskemas Teluknaga. The objectives are:
1. Creating a system for medicine inventory, starting from recording incoming and outgoing medicines so that the current inventory balance reports can be viewed at any times.

2. The person in charge for recording incoming medicine and outgoing medicine should be performed by two different people. This is for the internal control at Puskesmas, so that the inventory balance reports cannot be manipulated.

REFERENCES

[1]   Minarni , Susanti. 2014. "*Sistem Informasi Inventory Obat Pada Rumah Sakit Umum Daerah (Rsud) Padang*". Jurnal Momentum Vol.16 No.1. Februari 2014.

[2]   Mareta Verdina Indrayanti, Dkk. 2013. *"Sistem Informasi Pengelolaan Obat Pada Puskesmas Pringkuku Kabupaten Pacitan"*. Indonesian Jurnal On Computer Science Speed Fti Unsa- ijcss.unsa.ac.id.

[3]   Saifudin Zuhri, Rara Sri Artati Rejeki. 2013. *"Sistem Inventory Obat Pada Puskesmas Sukorejo"*. Dinamika Informatika – Vol.5 No. 1,Maret 2013.

[4]   Cholis Mayestika. 2015. *"Sistem Informasi Pengelolaan Obat Berbasis Web Di Gudang Farmasi Dinas Kesehatan Kabupaten Lamandau"*. Dokumen Karya Ilmiah Tugas Akhir Universitas Dian Nuswantoro : Semarang.

[5]   Marliana B. Winanti,S.Si.,M.Si. 2014. "*Sistem Informasi Manajemen*". Bandung.

[6]   Dr. H.A. Rusdiana, M., & Moch. Irfan, S. M. 2014." *Sistem Informasi Manajemen*". Bandung: Pustaka Setia.

[7]   Sutarbi Tata. 2014. "*Sistem Informasi Manajemen (Edisi Revisi)*". Andi: Yogyakarta.

[8]   Hadri Mulya. 2010. *"Pendekatan Eknis Siklus Akuntansi"*. Mitra Wacana Media: Jakarta.

[9]   M. Muslihudin, Oktafianto. 2016 . "*Analisis Dan Perancangan Sistem Informasi Menggunakan Model Terstruktur Dan Uml*". Andi : Yogyakara.

[10] Adi Nugroho. 2010. "*Rekayasa Perangkat Lunak Berbasis Objek Dengan Metode Usdp*". Andi: Yogyakarta.