



Provision of Application of Reporting on Outpatient at Soemitro Air Force Hospital Surabaya

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ABSTRACT

The process of reporting outpatient visits in Soemitro Air Force Hospital Surabaya as yet conducted manually through recording their patient visits onto Microsoft Excel and book report. Thus, the researchers developed an application which could help the process of data input to easily generate the reporting of outpatient visits. The aim of this study is to explain the process the development of an application which allows the user in reporting of outpatient visits by using Visual Basic 6.0, and Crystal Report 8.5 in Medical Record unit. Research method used in this study is Research and Development (R&D). Observation and Interviewing were used as methods of collecting qualitative data as part of this study, and displayed through System Development Life Cycle (SDLC) in waterfall model which has steps of; (1) Requirement, (2) Design, (3) Implementation, and (4) Testing. The visits reporting application was made using Visual Basic 6.0 to create its application, SQL Server 2000 as a database and Crystal Report 8.5 to display the report. The results of this study shows flawless running of menu functions in the outpatient visit reporting application and to simplify the process the reporting of Soemitro Air Force Hospital Surabaya runs well according to their respective functions. In addition this application can generate reports of patient visits per period whether month, year, and date. This study concluded that researchers have succeeded in analyzing the need for problem solving in the process of reporting outpatient visits by providing a desktop application for reporting outpatient visits in the medical record unit of Soemitro Air Force Hospital Surabaya.

Keywords: reporting applications, waterfall, reports hospitals, visits reports, System Development Life Cycle

I. INTRODUCTION

Medical record aims to documenting all medical service and action on a patient in every hospital. As regulated in Indonesian Regulation of the Minister of Health (Permenkes Republik Indonesia) No. 269/Menkes/Per/III/2008 [1]; medical record involves the data of all notes, documents, patient's identity, medical check-up, medicine treatment, and any medical treatment given to the patient. In the other words, information sits on the tremendous place in the world of medical services. The medical record management in hospitals carries the medical recording, in which it gives a path to the expansion of medical record field into Medical Information Management walks parallel with the technology development. Moreover, medical record no longer collects the notes, patient's progress report, patient's summary, doctor's order, or resume [2].

Information Systems could be set out as a strategic tool by hospital to provide best medical services to patients. Furthermore, implementing technology into the hospital significantly upgrade the quality of the services, as computers helps the hospital workers to provide services to patients effectively and also for the patients could easily and rapidly could acquire the medical services they need. Besides, the computerization in the

hospital could support the administration of the hospital workers.

However, several units in the hospital are yet from being able to adapt the computerization [3]. Thus, hospitals are expected to manage every resources as good as they can. In order to meet the expectation, a strategic tool such as computer application is needed to help hospitals to achieve the better, faster, and more accurate services to patients. As regulated in Indonesian Regulation of the Minister of Health (Permenkes Republik Indonesia) No. 1171/MENKES/PER/VI/ 2011 about Hospital Information System (HIS), every hospitals needs to gather, analyze, and present the hospital's data through HIS [4]. From this regulation, it is obvious that hospitals need to leave manual note taking and Microsoft sheets and fully adapt technology and its development to their managerial level up to the services level in order to maintain the quality of the hospitals' services. As it is proven that most of the problem solving and solution findings of problems could easily and precisely obtained through adaptation of technology by using computer software [5].

As the result of the observation, the manual process of reporting outpatients visits through re-orting books and Microsoft sheets input were still exist in TNI AU Soemitro Hospital. Therefore, this study aimed to develop a computer software in order to helps the hospital employees to acquire and process the outpatient visits data. The researchers thus denoted to write this study of "Provision of Application of Reporting on Outpatient at Soemitro Air Force Hospital Surabaya".

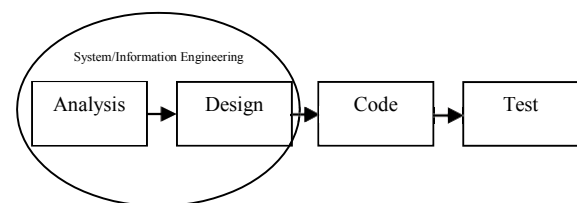
II. RESEARCH METHOD

Observation and interviewing were used as methods of collecting the qualitative data in this study. The flow of the process of recording and reporting the outpatient data were directly observed during the course of the observation, and the interview was used to gather the insight of every variables that was needed in the making

of software to handle the process recording and reporting the outpatient data in TNIAU Soemitro Surabaya Hospital.

The study was conducted in Medical Record unit in TNI AU Soemitro Surabaya Hospital. System Development Life Cycle (SDLC) design in waterfall model was used as the research approach of this study. The waterfall model steps were (1) Requirement, (2) Design, (3) Implementation, and

(4) Testing. Waterfall model of Pressman was conducted in several steps [6], which are:



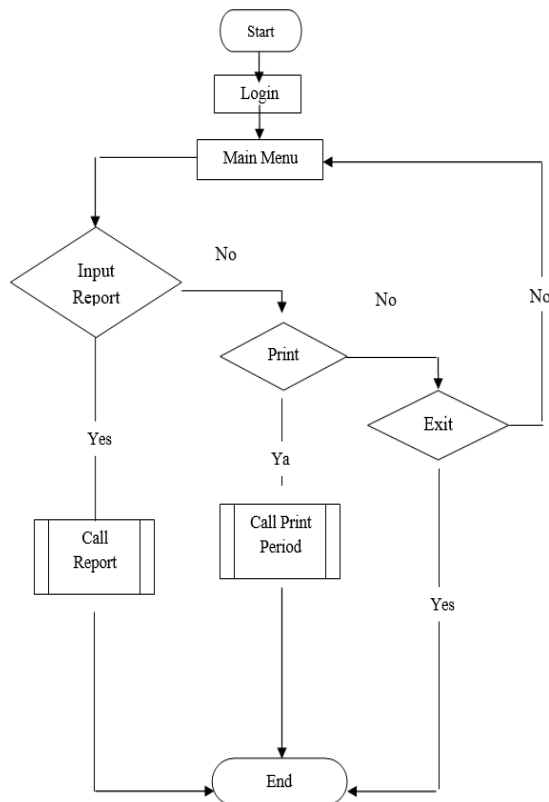
III. FINDINGS

Researchers conduct observation and interview as tools to gather the data from Medical Record team unit in TNIAU Soemitro Surabaya Hospital. Observation and interview were aimed to gather the data to understand the process of services to the patients, such as:

- Hospital's name,
- General condition of the hospital,
- Vision and mission of the hospital,
- Data and information related to the hospital,
- Problems faced by the hospital.

The process of reporting outpatient visits application was when the hospital custody notes and inputs patient data which consists of name, number of medical record, illness, clinic, and visit date. This process creates a report of outpatient visits the same as what has been recorded in the application and then it will be saved into the application in the course of time (daily, monthly, or even annually). The process of the reporting outpatient visits used in the application as presented in the flowchart below.

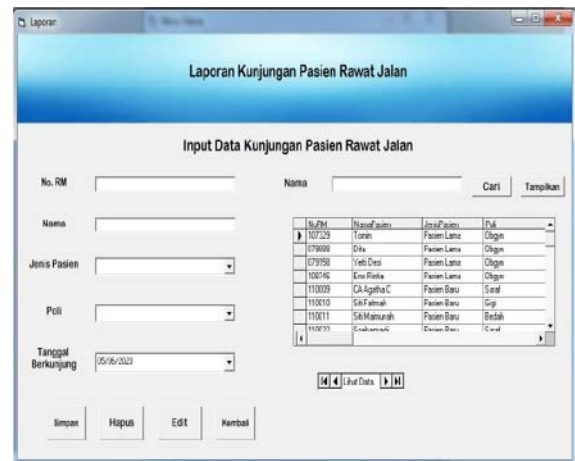
Picture II. Application Flowchart



The design was conducted by in accordance with the analysis of the needs in the application, subsequently followed by the designing database for the application and user interface. Furthermore, the researcher designed a form that has previously composed to be proceeded in coding the application and designing the user interface by using Visual

Basic 6.0, and SQL Server as the database management system. Within the database, there is one table that consist of a table, labelled as tabel laporan (report table) that consists of name of the file (pelaporan.dbo), table name, primary key (NoRM), and total field (five). The function of this table is to store the patient status and patient visits. The interface of the table as presented below.

Picture III. Data Input for Outpatients

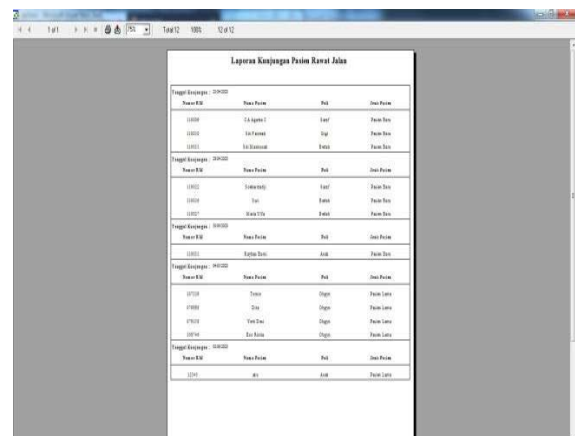


No. RM	Nama Pasien	Jenis Pasien	Poli
07923	Toni	Pasien Lama	Obat
07900	Dia	Pasien Lama	Obat
07950	Yeti Dwi	Pasien Lama	Obat
10014	Eva Rika	Pasien Lama	Obat
11009	CA Agatha C	Pasien Baru	Saraf
11010	Siti Aswari	Pasien Baru	Gigi
11011	SA Manurah	Pasien Baru	Bedah
11033	Endangmurti	Pasien Baru	Obat

Picture IV. Print Report



Picture V. Result



No. RM	Nama Pasien	Poli	Status Pasien
07923	Toni	Obat	Pasien Lama
07900	Dia	Obat	Pasien Lama
07950	Yeti Dwi	Obat	Pasien Lama
10014	Eva Rika	Obat	Pasien Lama
11009	CA Agatha C	Saraf	Pasien Baru
11010	Siti Aswari	Gigi	Pasien Baru
11011	SA Manurah	Bedah	Pasien Baru
11033	Endangmurti	Obat	Pasien Baru

IV. DISCUSSION

Researcher conducted the discussion by using SDLC method in waterfall model by Pressman [6]. In Requirement stage, the researcher gathered the requirements from the user and analyzed the problems based on the result of the interview. The result of this analysis occurred in the Medical Record unit in TNI AU Soemitro Surabaya Hospital, in which they still used manual recoding by using Microsoft Excel and record books.

After Requirement stage, the researcher moved to the next stage of Design. In the Design stage, the researcher selected the sub-application in the application. The selection of sub-system of the application was adapted from the general concept of application design and general looking of login access in order to adjust the familiarity of the users. Furthermore, the researcher selected the forms design to provide spaces to implement the sub-systems of the application. Thus the forms were uniquely designed based on the sub-applications. In Design stage, the researcher utilized Microsoft Visual Basic 6.0 as the software to create the interface of the application. The very last step of design stage is to create the report design in form of "report table" into database form by using SQL Server 2000 and provided every fields into the table as the report format.

Implementation After the Design stage, the researcher wrote the application code in Implementation stage. The design that previously made was implemented into form of language code that consists of commands for computer to execute. The researcher utilized Microsoft Visual Basic 6.0 in coding process of the application and SQL Server 2000 as the database management. Researcher manually code each of forms and its components such as combobox, DTPicker, commandbutton, and every components of the application.

After the application was completed, the researcher ran a run-testing of the reporting outpatient visits application in blackbox method testing. The study result shows that the researcher already conducted the run-test and obtained the result of the test thoroughly in each forms. The run-test showed the application ran smoothly and flawlessly in each of the functions and every scenario of the test.

V. CONCLUSION

All in all, the use of manual reporting in the hospital proven waste of time and effort. By using technology, hospital could improve the effectiveness of recording the reports, in which it could help the hospital to improve its quality in providing health services to patients. The researcher couraged the implementation of the application of reporting on outpatient in the TNI AU Soemitro Surabaya as it solves the problems in the hospital when the Medical Record unit conducts the process of writing the outpatient report effectively and smoothly by implementing technology based on the desktop computer as the function of the application has offered.

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