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Designing an Completeness Medical Record Document Website Using Waterfall Model

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***Abstrak*—The development of information technology makes aspects of life using computers. At Hidayah Hospital, Boyolali, the analysis of the completeness of medical record documents is still manual. This implementation raises the problem of the absence of a report on the results of the completeness analysis. In this case, the researcher conducted observations, interviews and literature studies on the assembling and reporting officer. From the process of inputting patient data, doctor data, ward data, form data and diagnostic data, processed with a website that analyzes the completeness of medical record documents then stored and produces output in the form of completeness analysis reports, incomplete performance reports and IMR and DMR reports. By using the waterfall method. The design uses the PHP programming language with Dreamweaver applications and MySQL databases.**

Keywords—Website, Medical record, Analysis completeness.

I. INTRODUCTION

Information technology in the era of the industrial revolution 4.0 as it is today, is very important for hospitals. In Law No. 44 of 2009 [1] that hospitals organize complete individual health services that provide inpatient, outpatient and emergency services, to manage patient health services along with medical data relating to hospital patients requiring support from the medical record unit . The medical record processing system consists of several subsystems, namely assembling, coding, indexing, analyzing reporting and filing. As part of processing the medical record file assembling has the task of checking the completeness of filling in the medical record files and forms that must be in the file [2]. After the files are compiled and assembled, the completeness of the files will be examined. Analysis of the completeness of medical record documents is needed to determine deficiencies in recording medical record files so that they can be immediately corrected and completed. The problem with checking the completeness of medical record documents is still manually. The existence of WEB-based programming can simplify and accelerate the work of IMR and DMR reports and reduce workload and for time efficiency and improve the quality of medical record work so that it can generate output in the form of reports of incomplete filling of medical record documents that are shown to the head of medical records, and have added value. which can be given is to provide system security by logging in (user and password), can input data quickly and precisely, reduce.

II. METHOD

This research uses descriptive research with a cross-sectional approach, namely data collected within a certain period of time [3]. The subjects of this study were 1 assembling officer. The object is the recording and processing of inpatient assembling data. Data collection techniques by observation, interviews and literature studies to obtain theoretical support for the chosen research problem, it is necessary to read a lot of literature books [4]. Primary data sources were obtained from observation of inpatient forms and conducting interviews with medical record officers. Secondary data in this research are SPO, medical record organizational structure and hospital profile.

The system development method used is the waterfall model with a system development life cycle (SDLC). the system development process is divided into different sequences [5] . But all refer to standard processes namely: identification, analysis, design, implementation and maintenance.

a. Identification

Conducted a preliminary survey to find out the problems with the completeness analysis process at Hidayah Boyolali Hospital. Researchers also determine the information system project to be developed.

b. Analysis

Studying old systems by gathering information and identifying system requirements.

c. Design

The stages change needs that are still in the form of concepts to become real systems. With logical and physical design.

d. Implementation

Testing the program code that is generated and can be applied to the project to be developed. Researchers test the feasibility of the program whether it meets the needs and operate the system after the program passes the trial.

e. Maintenance

The result of this stage is a new version of the system that has been operated so that it is expected that the system can be used in accordance with evolving needs.

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III. RESULTS

The design of the website for analyzing the completeness of medical record documents at Hidayah Boyolali Hospital, starting from medical record documents that have not been sorted are taken to the assembling section and sorted according to the form number. After that, the documents that have been ordered by the officer are looking for data on whether the DRM belongs to the new / old patient. The procedure for new patients, the officer enters the patient's identity / DRM in the quantitative analysis computerized application, while for the old patient the officer immediately enters the completeness analysis data, the computerized analysis of completeness application The procedure if the patient's DRM is complete, the DRM is submitted to the filing section to store the DRM in order to make it easier for officers to search for DRM again. If the document is incomplete, the officer will print the result sheet of the completeness analysis, then the incomplete DRM is returned to the service unit that treats patients to complete the DRM. Data is stored with a database so that it is easy to use or display again. Go through the following stages:

a. Identification

Figure 1 depicts the DRM starting from the patient being brought home to the assembling section, sequenced and analyzed. If the DRM is incomplete, write down the incompleteness and return it so that it is completed, but if it is complete, submit it to the filling section.

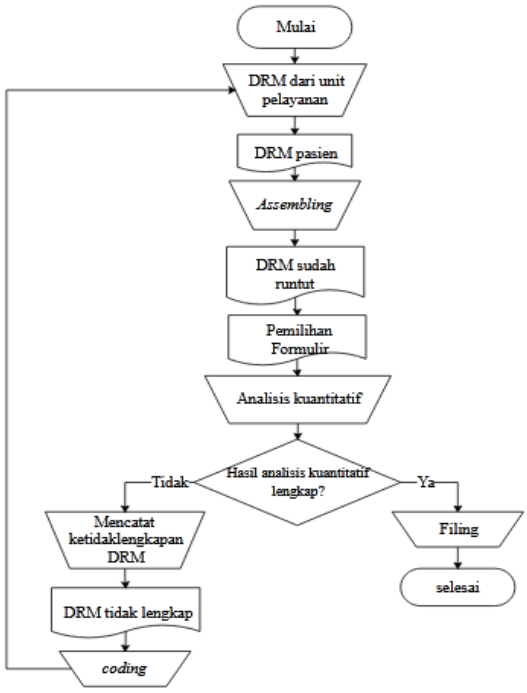

Figure 1 Flow of analysis of the completeness of DRM

b. Analysis

Figure 2 illustrates the flow of the analysis of the completeness of medical record documents starting from the patient's DRM, sorted in the assembling section, looking for old / new patient data. Input new patient identities on computerized completeness analysis. For old patients, the data input completeness analysis. If it is complete, submit it to the filling chart. After the completeness analysis produces a report output and the process is complete.

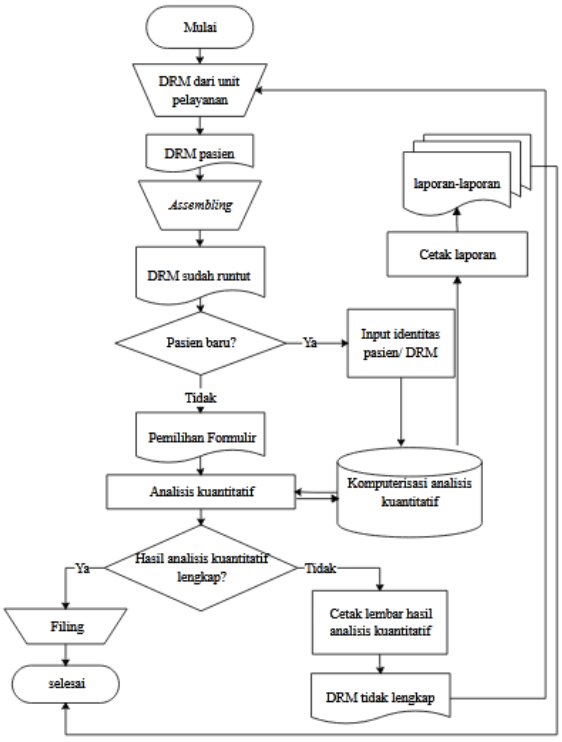

Figure 2 The System Built in the Hospital Hidayah Boyolali

c. Design

Figure 3 illustrates the requirements regarding the data and processes used in the new system.

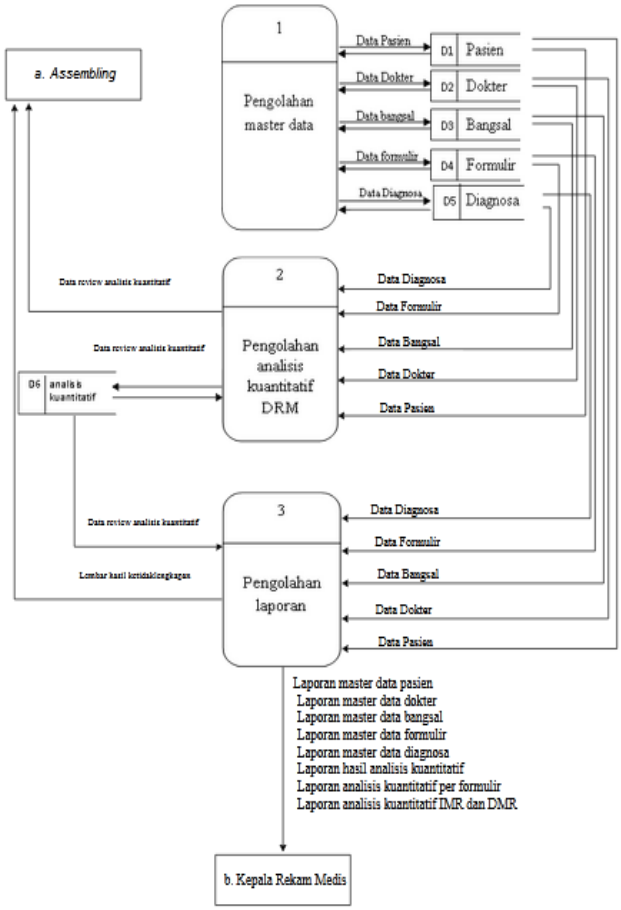

Figure 3 Data Flow Diagram (DFD) Level 0

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Figure 4 is the relationship between the master table and the quantitative analysis table of inpatient medical record documents at Hidayah Boyolali hospital, there are five master tables and one analysis table.

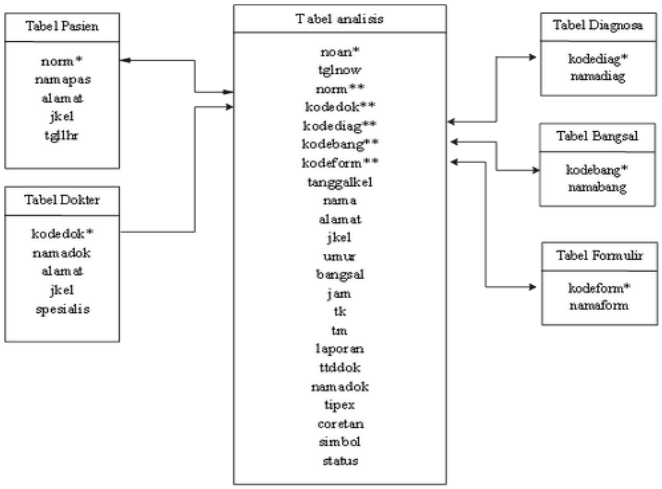


Figure 4 Relations between Tables

Figure 5 design of medical resume page design with options (complete, incomplete and missing).

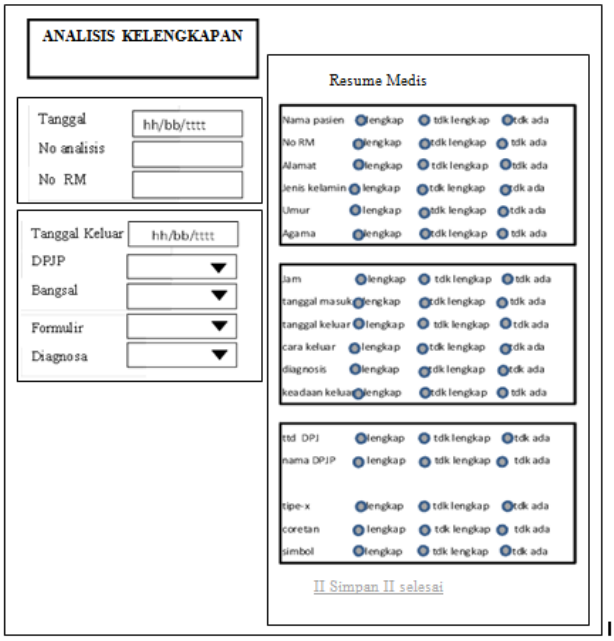


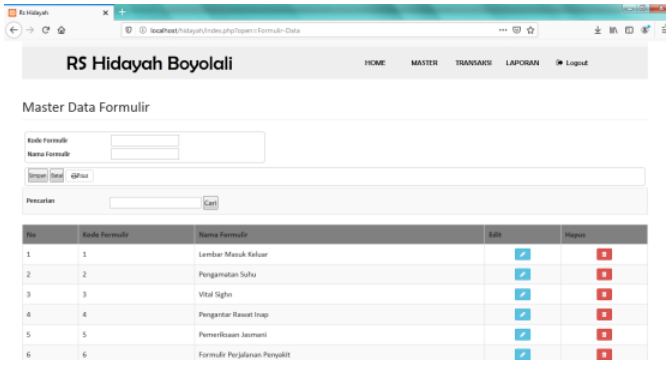
Figure 5 Transaction Design Analysis of Medical Record Document Completeness

d. Implementation

The first step to running a web-based Completeness Analysis program is access via a web browser and activate the web server, namely XAMPP. Access the system by entering the link http: // localhost / hidayah. The program that has been run with the first appearance of this program is the login form, fill in the username and password correctly, press the enter button to display the form menu. Here are some of the results that can be displayed from the web:

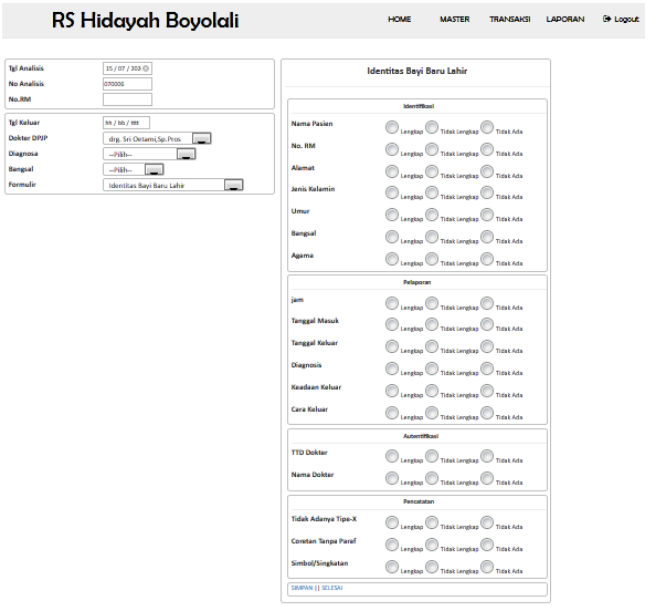
1. Master Form Data

In the form master sub menu, you can add form data, by filling in the form code and form name. Then click the save button to save data, the cancel button to cancel data storage.



2. Master of completeness analysis

To analyze, you can add transaction data, by filling in the medical record number, date of discharge, the doctor in charge of the patient, diagnosis and ward then selecting the form to be analyzed, then the form that has been selected will be analyzed for completeness



3. Completeness analysis report

To print the report, click the print button on the patient data master. The display will appear as below, then click the print button.

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IV. CONCLUSION

The web-based completeness analysis system designed and applied computerized consists of patient tables, diagnostic tables, ward tables, doctor tables, form tables, analysis tables, review tables, and completeness analysis tables. This system was built using the PHP programming language and SQL database, then it will generate information in the form of a completeness analysis report, patient incompleteness reports, doctor incompleteness reports, ward incompleteness reports, incompleteness reports forms, reports of incompleteness per review, reports of incompleteness of IMR and DMR.

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