
THE COMPARATIVE ANALYSIS OF TEKNO LIBRARY INFORMATION SYSTEM (LIBRARY MANAGEMENT SYSTEM) WITH SLiMS (SENAYAN LIBRARY MANAGEMENT SYSTEM) BASED ON ISO 9126

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ABSTRACT

Technology is rapidly develop in various aspects of life, especially in the field of education. In the world of education, technological developments are applied to the use of library information systems. Nowadays many developers have offered the system for free, one of them is TeknoLIB and SLiMS. This study aims to measure the quality of a library information system using TeknoLIB (Library Management System) and SLiMS (Senayan Library Management System) based on ISO 9126 standards. This study uses 4 research methods, among others: questionnaires, interviews, observation, and documentation. Data analysis was obtained by grouping data from experiment result and personal observation, direct answer to resource person, giving some statement with informant consent, and giving conclusion related to library information system. It can be used as a reference for developers in building a library information system to be able to create a better system. The results of this study indicate that Information Library System TeknoLIB is more qualified in terms of system look compared to SLiMS based on ISO 9126 standards.

Keywords: comparison, information system, comparison journal

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1. INTRODUCTION

Today technology is experiencing rapid growth. These technological developments are pervasive in various aspects of life such as, economic, social, cultural, educational, health, political, defense, security, and many other aspects that begin to follow the development of technology. One of the technological developments that we can feel today is the creation of an information system that can be used to facilitate users in obtaining information.

Library information system is a system in which there is a public service organization and aims to reconcile the needs of library transactions in order to support operational library that is managerial (Siregar, 2007: 137). This system helps librarians in accomplishing their administrative work in addition, library information system can also help the visitors in getting information related books available in the library.

One of the library information system that can be obtained free of charge is SLiMS (Senayan Library Management System). SLiMS is an open source library management system software licensed under the GPL v3. This application was first developed and used by the Library of the Ministry of National Education, Information Center and Public Relations, Ministry of National Education. As time goes by, this app is then developed by the user community and SLiMS activists. The SLiMS system is built using PHP, MySQL database, and Git version controllers (Senayan Developer Community, 2015: 2).

The advantages of this SLiMS which is this system can be obtained and used for free, able to meet the needs of library automation, SLiMS built using the programming language interpreter other than that the system is developed by local human resources, the further advantages are installation of this system feels very easy, the system it is also capable of running on windows and linux operating system, another advantage is that the

system has complete documentation, clear development prospects, and the latter has a communication forum between users and developers making it easier to exchange information (Azizah, 2013: 9). In addition to the advantages, this system also has a deficiency of the recommended web browser compatibility using only Mozilla Firefox and the sharing of file permissions that still need to be fixed (Azizah, 2013: 13).

In addition to SLiMS, TeknoLIB (Library Management System) can also be used as an alternative to meet the needs of library information systems and also can be obtained for free. This web-based information system using PHP programming language with CI Framework (Codeigniter), and MySQL as its data base. In the operation of this system can be integrated with barcode scanner so as to speed up the process of recording the code of books and members, in addition the use of barcodes can minimize the error of librarians in entering data.

The advantage of TeknoLIB is to have a free library mail feature that can be used to complete the administration of the users in need, the visitor presence feature to facilitate the officer in recaping the visitors, the report print feature is adapted to the needs of the library, and the last is the display menu more easy to understand by the librarian. In addition to the advantages, this system also has deficiencies such as this system only, in addition in the regulation of the amount of fines on each book has the same nominal while the nominal amount of fines per book should be different, and in this system is still found the length of borrowing equally leveled, while each books have different interests and lengths of borrowing.

A software is assessed through certain measures through software testing. One of the ISO 9126 software quality benchmarks made by International Organization for Standardization (ISO) and International Electrotechnical Commission (IEC). ISO 9126 defines the quality of software products, models, quality characteristics, and related metrics used to evaluate and define the quality of a software product. There are 6 quality measures defined by ISO 9126, namely functionality, reliability, usability, efficiency, portability, and maintainability.

The purpose of this study was to compare the quality of information systems of a library by using information library systems TeknoLIB and SLiMS based on ISO 9126 standards. In addition, this research is also expected to provide benefits to developers of library information systems and as a recommendation that the information system to be built can meet the library's functional requirements are independent of ISO 9126 standards.

2. RESEARCH METHOD

Data collection in this research is done through 4 ways namely questionnaire, observation, interview, and documentation. The questionnaire technique is some questions or written statements about factual data or opinions relating to the opinions of respondents, and considered facts or truths that have been known and need to be answered by respondents (Anwar, 2009: 168). Questionnaire technique in the form of questionnaire of research instrument with some statement based on ISO 9126 standard then developed and adapted to functional requirement of library. The next step is to test the instrument to Librarian SMK Tekno-SA Surakarta who has experience in using both information systems such as TeknoLIB and SLiMS.

The second way of collecting data is by observation technique. Sutrisno Hadi, in (Sugiyono, 2007: 203) argues that, observation is a complex process, a process composed of various biological and psychological processes. Two of the most important are the processes of observation and memory. At this stage the researchers observe directly and simulate TeknoLIB and SLiMS to obtain the necessary data. In this technique researchers try the features contained in each information system to determine the involvement of ISO 9126 in building the system.

The third technique is the interview. Interviews are data collection techniques that are based on self-report or at least on self-knowledge and belief (Sugiyono, 2007: 194). This stage is done by collecting data through question and answer session unilaterally done in a systematic way and based on research objectives. This step is done by asking questions directly about the development of ISO 9126 with the availability of system features to SMK Tekno-SA Librarian Surakarta.

Documentation is to search and collect data about things in the form of notes, transcripts, books, newspapers, magazines, notes, newsletters, agendas, etc. (Arikunto, 2006: 158). This stage is done by studying information related to TeknoLIB and SLiMS.

3. RESEARCH RESULT AND DISCUSSION

After the research data collected, then library information system TeknoLIB and SLiMS analyzed based on ISO 9126 standard. Table 1. is a table comparison system using ISO 9126 standards that have been developed.

Table 1. Comparison of Systems Based on ISO 9126

No.	Indicator / aspect compared	TeknoLIB	SLiMS
A. Fulfillment the functional needed			
1.	The features on each system are capable of delivering accurate results	Yes	Yes
2.	The web-based library information system flow is not opposed to the SOP (Standad Operating Procedure) library in the borrowing transaction	Yes	Yes
3.	The web-based library information system flow is not opposed to the SOP (Standad Operating Procedure) library in the return transaction	Yes	Yes
4.	Web-based library information system simplifies library transaction process by librarian	Yes	Yes
5.	The features on this system are very complete	No	Yes
B. The Ease of use of the system			
6.	The data flow in each of these system features is easy to understand	Yes	No
7.	This system provides module facilities to simplify system processing	Yes	Yes
8.	The menu view and features of this system are easy to understand so it is easy to operate the system	Yes	No
C. The effectiveness of the system in performing its functions			
9.	This system provides a quick response when performing its function	Yes	Yes
D. Ease of system in adapting			
10.	This system is easy to pair on other devices	Yes	Yes

The Table 1 shows there are some indicators that can not be fulfilled by each system, as in indicator feature completeness provided by system. In this indicator SLiMS get the assessment has a more complete feature as in Figure 1, compared with TeknoLIB with a minimalist look like in Figure 2.



Figure 1. The display of the feature menu on SLiMS



Figure 2. The display of feature menu on TeknoLIB

The next indicator is the ease in understanding the flow of data on each system on the table it can be concluded that TeknoLIB has a data flow more easily understood as in Figure 3, compared with SLiMS as in Figure 4.

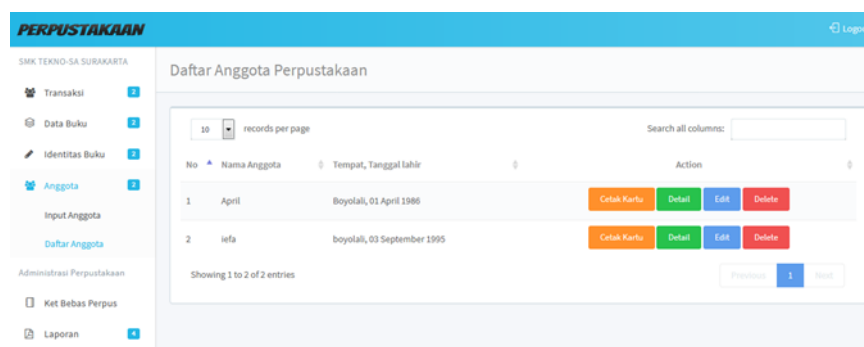


Figure 3. The display of members print menu on TechnoLIB

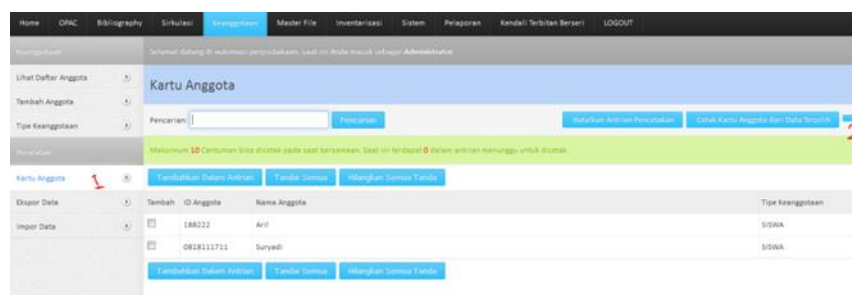


Figure 4. The display of members print menu on SLiMS

The last indicator is on the easy-to-understand system menu display. In this case TeknoLIB has more value that can be seen in Figure 5 compared to SLiMS which can be seen in Figure 6.

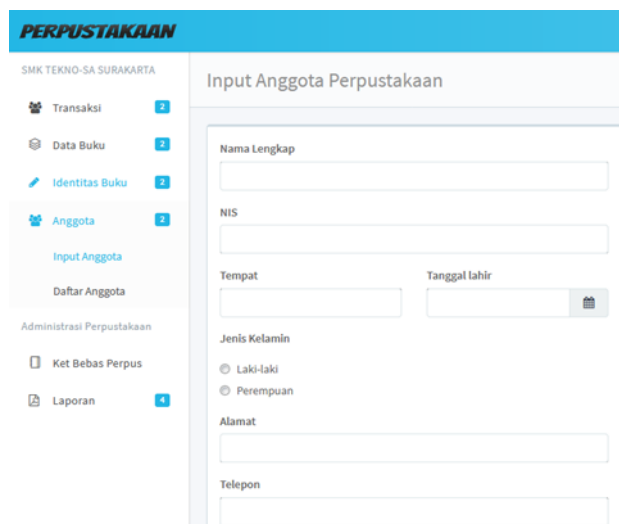
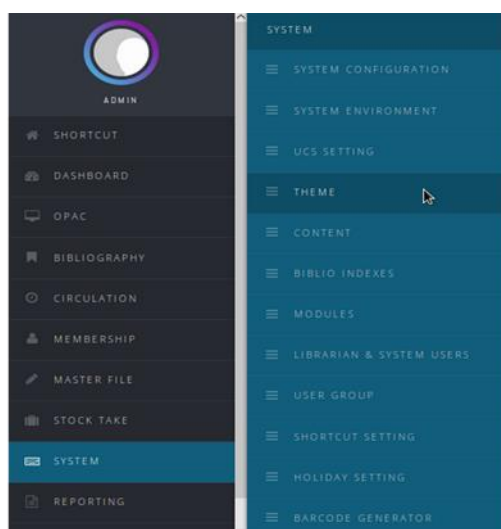


Figure 5. The display of system menu on TeknoLIB



Gambar 6. The display of system menu on SLiMS

From the interview, the authors draw the actual conclusions of each system has shortcomings and advantages. For TeknoLIB this system has the disadvantage of having features that are not too complete compared with SLiMS, besides TeknoLIB still need more development to be able to provide features more and better. The advantages of this system is the menu display that is easy to understand, this system has a print report feature that produces reports with a more orderly arrangement, in addition this system also has a feature of visitor presence that we do not find on SLiMS.

While in SLiMS, this system also has some disadvantages and advantages, among others, the lack of this system is the display menu that is too many features so it looks very confusing, this feature also provides print report feature but the report printed has a format that is not in accordance with the required, Other features not available in this system are new book procurement request features, and the latter does not provide visitor attendance features. The advantages of SLiMS is that this system has a large selection of features that can be utilized to meet the needs of users

In the observational research technique the researchers found some deficiencies and advantages in each system. TeknoLIB system has its drawbacks i.e. many of the features provided is still minimalist since it only refers the quality of the system on the functional needs of the Tekno-SA Vocational High School Surakarta's library. In addition to support in making the system, it still considered deficient. But there are some advantages of this system is the availability of visitor attendance features that are not found on SLiMS, the availability of new

procurement suggestions book features, reporting features that produce print reports with a more organized format

4. CONCLUSION

Based on the above research can be concluded that TeknoLIB has shortcomings and advantages, among others, TeknoLIB has a minimalist feature compared with SLiMS as in Table 1 number 5 so there are still many libraries that still have to use manual system so that this system needs to be developed. The advantages of this system is to have a visitor attendance feature and book procurement advice feature that is not owned SLiMS, this system also has a report feature that produces print reports more suitable than SLiMS for the needs of SMK Tekno-SA Surakarta, and the last advantage is this system has menu features that are more easily understood than SLiMS as in Table 1 number 8.

The shortcomings of SLiMS are in the display features of the menu is too complicated, making it difficult for librarians to complete the task as shown in Table 1 number 8, in addition to reporting features generate print reports that are still not organized neatly and data flow on the system is too complicated to be understood as the extent of Table 1 is number 6, so the librarian still uses manual way to create reports. The advantages of this system lies in the many features that are provided, so it helps the librarian in completing the task there is a description of Table 1 number 5.

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