ABSTRACT

Inventory data collection activities in schools are still manual and the data tracking system is not yet available because the inventory data collection system in schools is not well managed so that it often makes it difficult to search for data on existing items. The inventory data collection system running at SDN 07 Sindang Danau still uses a simple computerized system utilizing standard office (Microsoft Office Excel and Word). This allows for many errors in processing inventory data, and causes inventory data collection managed by SDN 07 Sindang Danau to be less efficient. As well as resulting in difficulties in searching for data and taking up a relatively long time in preparing reports. To help solve this problem, researchers plan to build an information system related to website-based inventory of goods. This research aims to obtain and simplify the process of recording data on incoming goods, increasing the number of goods and recording damaged or lost goods. To build the information systems, researcher using the FAST concept (framework for the application of system thinking) which has 6 stages of scope definition, problem analysis, requirements analysis, logical design, decision analysis and physical design. The results of the research carried out by researchers were successful in building a goods inventory information system at SDN 07 Sindang Danau.

Keywords: Systems, Inventory, FAST Method, Framework, Information System

1. INTRODUCTION

Current advances in information technology continue to experience significant improvements, this improvement itself of course means that all activities can be carried out precisely, quickly and accurately (Al Amin & Devitra, 2021; Maniah & Lestari, 2022; Putri & Nada, 2020). Information technology plays a role as a means of obtaining various information according to the needs of an individual or an organization (Listiani, 2021; Pasaribu, 2021). In this research, the implementation of the information system itself can provide various benefits both personally and organizationally. In an agency, if it is supported by an information system, adequate equipment and systems, costs and resources, of course the agency will be able to function optimally. Inventory is one of the things that is needed in an agency. Inventory itself is an activity of recording items or arranging existing items to make it easier to search for archives if at any time the institution needs them with the aim that they can be found easily and quickly (Handayani et al., 2023; Listiyan & Subhiyakto, 2021; Usnaini, Yasin, & Slamipar, 2021). In the world of education, information systems also have an important role because with a computerized system schools can control goods and maintain goods in such a way as to minimize lost or damaged goods (Alfaini, Wulandari, & Nadliir, 2021; Ramdani, Lestari, & Parwati, 2020).

SDN 07 Sindang Danau is one of the schools in Watas village, Sindang Danau, South OKU. In this research, based on interviews conducted by researchers with the principal at SDN 07 Sindang Danau, inventory management at the school is still done manually by recording it in books. This causes a lot of existing goods or item data not to be inventoried and of course it takes a lot of time to create information on goods data totaling 25 items consisting of chairs, tables, laptops, printers, speakers, and so on. In the process of collecting data on incoming goods inventory or data collection, goods are damaged and lost, the impact is that when goods are about to be returned, sometimes goods are lost because their location is unknown, and making the report will take a long time, is not accurate and is not real time.

Based on these problems, in this research the researcher plans to build an information system related to website-based inventory of goods. This research aims to obtain and simplify the process of recording data on incoming goods, increasing the number of goods and recording damaged or lost goods. This planning is also based

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on several previous studies conducted by Antonius Oko Pranoto and Eko Sediyono, where in this research, researchers conducted research with results in the form of designing a web-based goods inventory information system by making Kusik Batu Lapu Village, West Kalimantan as an object of research. Which was carried out by Sri Hartati, in this research produced an inventory information system for goods at the notary's office and PPA T RA LIA KHO LILA, SH using Visual Studio Code. To build or development process an good inventory information system, researchers used the Framework for the Application System Though (FAST) method. FAST method is a development method for application systems which is able to make the management of data and information more efficient, effective, accurate and timely. Based on this method, there are 6 stages that researchers use, namely Scope Definition, Problem Analysis, Requirements Analysis, Logical Design, Decision Analysis, and Physical Design (Parulian, Alam Wijaksono, & Fazrie, 2022; Puspitasari & Budiman, 2021). The advantage of using this method is that it is classified as a science paradigm by having a structured and flexible framework so that it can produce a high quality system in a short time or quickly, using object-oriented UML, which can include analysis, design and implementation. Not only that, the use of this method can also make users play an active role in system development (Aldo, Habibie, & Susie, 2021; Warjiyono, Fandhilah, Rais, & Ishaq, 2020). The information systems use PHP as the programming language which is then integrated with MySQL as the database. The expected result of this research is the creation of an information system that can be accessed online, where the system will include the process of collecting data on incoming goods, quantity of goods, damaged or lost goods and reporting goods data.

2. LITERATURE REVIEW

There are several previous studies that researchers used in this research. The first research was research conducted by Antonius Oko Pranoto and Eko Sediyono. In this research, researchers conducted research related to designing a web-based goods inventory information system by using Kusik Batu Lapu Village, West Kalimantan as the research object. For the continuity of the research, the methods used are Interview, Documentation and Literature Study methods. The results of this research itself are in the form of a computerized inventory system. Having a computerized system will certainly make it easier for users to manage inventory data, there by making work more effective and efficient. This system itself can carry out the process of searching for incoming and outgoing goods data, and can create inventory data reports quickly and accurately so that there will be no duplication of data in Kusik Batu Lapu Village, West Kalimantan (Pranoto & Sediyono, 2022).

The second research is research conducted by Sri Hartati in which in this research, the researcher carried out a design related to the goods inventory information system at the notary's office and PPA T RA LIA KHO LILA, SH using Visual Studio Code. For the continuity of the research, the method used is the data collection method which consists of interview, reference and observation methods. Meanwhile, system design starts from database design and the appearance of the system. The results of this research are in the form of a web-based goods inventory information system built using Visual Studio Code which makes it easy to access anywhere and anytime as long as there is an internet connection to goods inventory data at the notary's office and PPA LIA KHO LILA, SH. In this case it can also be dynamically input data which can be stored directly in the database (Hartati, 2020).

From these two studies, researchers also plan to create a goods inventory information system at SDN 07 Sindang Danau. For the continuity of this research, the Framework for the Application System Thought (FAST) method will be used. With the results of the research in the form of a web-based inventory information system that can be used to carry out data collection processes related to inventory, including the process of collecting data on incoming goods, quantity of goods, damaged or lost goods, up to goods data report.

3. METHOD

In this research, researchers used qualitative methods to collect data and information based on the respondents' views. The qualitative method is an investigative process that aims to gain an understanding of a problem or social phenomenon that is occurring in society which is carried out through an inductive thinking process. Understanding itself is obtained through respondents as subjects who can share their own answers and feelings to get a holistic general picture of something being research (Mayasari, Supriani, & Arifudin, 2021). By using this method, researchers will conduct observations or field studies at SDN 07 Sidang Danau which is the object or place where the research is carried out and conduct interviews with the Principal of SDN 07 Sidang Danau to obtain data and information, especially related to inventory. Researchers also use the Framework for the Application System Thought (FAST) method which is used for system development. The Framework for the
Application System Though (FAST) method is a development method for application systems which is able to make the management of data and information more efficient, effective, accurate and timely (Parulian et al., 2022; Puspitasari & Budiman, 2021).

![FAST Method Diagram](image)

The stages in the FAST method are:

1. **Scope Definition**
   At this stage, it is the initial stage of research where the researcher will identify by defining an existing problem with the aim of developing a system and applying boundaries to the scope of the research. In this research, researchers will create a goods inventory information system at SDN 07 Sidang Danau.

2. **Problem Analysis**
   At this stage, the researcher will analyze the problems that exist in the current system by gaining an understanding of the problems that exist for system development at the research location.

3. **Requirements Analysis**
   At this stage, researchers will determine what system requirements are needed in an information system, namely user needs and system requirements.

4. **Logical Design**
   At this stage, the researcher began planning to determine whether the system being built would be able to display an appearance to the user and make the system easy to use in web form. Application design uses UML modeling in the form of Use Case Diagrams. The Use Case Diagram itself functions to describe an interaction between one or more actors regarding a system that will be designed and built.

5. **Decision Analysis**
   At this stage, researchers conducted interviews and observations by directly observing the system being implemented. The researcher will also collect data used in the system, then the researcher will carry out an analysis of the system that will be developed.

6. **Physical Design**
   At this stage, the researcher will plan the interface of the system and database, where for the database itself the researcher uses MySQL which is integrated with the PHP programming system.

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4. RESULT & DISCUSSION

4.1 Scope Definition
For the Goods Inventory Information System at SDN 07 Sidang Danau there will be two website pages, namely the infrastructure admin and the school principal. In the admin menu there is a menu for managing master data, managing transaction data, managing incoming/outgoing and damaged/lost goods data, and managing user data. On the page, the principal receives data reports and data reports on damaged and lost items.

4.2 Problem Analysis
At this point, Researchers conducted an analysis of the problems at SDN 07 Sidang Danau. The problems that data researchers have succeeded in include the following:
- a. Recording of goods data transactions is still done manually
- b. Searching for data is inefficient in terms of time and energy because it searches first in the document archive.
- c. Inaccurate location of goods.
- d. Not properly documented archives of incoming and outgoing goods as well as damaged/lost goods.
- e. Delays in the reporting process.

4.3 Requirement Analysis
At this point, the researcher has determined the needs for the goods inventory information system at SDN 07 Sidang Danau including user needs and system requirements and specifications of the computer system including hardware and software. For clarity, it is as follows:

4.3.1 User Needs and System Requirements
For the needs of users or actors themselves, it is defined into two terms, namely Admin Sapras and Principal. The Sapras Admin himself has authority over limited administrator access. Meanwhile, the Principal is only a user with limited access authority. For details, see the table below:

<table>
<thead>
<tr>
<th>Number</th>
<th>User</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Admin Sapras</td>
<td>Administrator</td>
</tr>
<tr>
<td>2</td>
<td>Principal</td>
<td>Is a user with limited access authority</td>
</tr>
</tbody>
</table>

Based on the table above, the Sapras Admin is a user with limited administrator access authority, which means that the user can add and delete users, update items, and view incoming/outgoing items as well as damaged/lost items. Meanwhile, the Principal is a user with limited access authority, which means that the school principal can find out goods data reports, incoming/lost goods data reports. After knowing the results of the analysis of user needs, in this case it is also necessary to consider matters related to system requirements, which requirements are addressed to the previous two users. For admins, they can provide access rights to change user login access, manage all data items. Meanwhile, for Principals, they can provide an item report form to display item data.

4.3.2 Computer System Specifications
At this point, the researcher will carry out an analysis regarding the specifications of the computer system used in developing the goods inventory information system at SDN 07 Sidang Danau. The specifications themselves include hardware and software specifications, for details, see the table below:

<table>
<thead>
<tr>
<th>Hardware</th>
<th>Software</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Processor : AMD Dual Core A4-9125, up to 2.6 GHz, 4GB RAM, 1TB Hard Disk</td>
<td>Operating System : Microsoft Windows 10</td>
</tr>
<tr>
<td>USB Optical Mous</td>
<td>Script Language : PHP and HTML</td>
</tr>
</tbody>
</table>

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4.4 Logical Design

4.4.1 Use Case

The infrastructure admin actor and the school principal actor log in to enter the system. Sarpras admins are given access rights to manage master data consisting of item categories, item conditions, etc., manage incoming item data, manage data on increasing the number of items, manage data on damaged/lost items, and manage user data from the system. Meanwhile, the principal actor can only see data on goods and data on damaged/lost goods based on data input by the admin.

4.4.2 Activity Diagram of Admin

In the Activity Diagram of Admin there are processes related to application management. The Activity Diagram of Admin can be seen in the image below.
Based on the image above, in the initial stage the admin will log in first and start managing item data, then the item investment information system will display item data, in this case it will add or show the existing options for adding items, editing items to deleting items and if this has been done commands according to the admin's needs, especially counting goods, the system will display the results, results that are successfully displayed will of course be visible to the admin.

4.4.3 Activity Diagram of Principal

In Activity Diagram of Principal there are processes related to the management of the application, which for this Activity Diagram of Principal can be seen in the image below.

![Figure 4 Activity Diagram of Principal](image)

Based on the picture above, in the initial stage the principal will log in to the system first, followed by a report request. The system will of course display reports which consist of item data reports, reports of damaged/lost goods. The information that has been obtained can of course be printed as a report regarding inventory of goods.

4.5 Decision Analysis

At this point, Decision Analysis is divided into two, namely interview and observation. For clarity, it is as follows:

1. Interview
   In collecting data, structured interviews are required by means of direct questions and answers with parties related to the research being conducted. By carrying out the interview process, problems that arise can be identified, so that the next step can be to analyze what the user’s needs are. With this interview, researchers can find out the responses of informants in providing feedback regarding the website that will be created.

2. Observation
   This stage is carried out directly at several object locations and several related places. Field observations carried out by researchers were to obtain relevant data as well as severa images of objects.

4.6 Physical Design

Design is one of the important phases in the software development methodology. This design phase is a crucial step in designing effective and efficient solutions. This detailed design must take into account the needs and desires of the user and maintain consistency and conformity with the established standards. At the beginning of the website, the design of this system itself contains the Tut Wuri Handayani logo. Apart from that, there are also the sentences "Welcome" and "SSN 07 Sindang Danau Goods Information System". And the column to log in by entering your username and password. For details, see Figure 5 below. The login display page is one of the important pages in a system that requires user authentication before being able to access features.

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After logging in, a display of the Dashboard page will appear, where in this section there is Data on Number of Items, Items Available, Items Borrowed and the Number of Borrowers accumulated in the form of numbers. For details, see Figure 6 below. The home page display is the first page which is the information center for all related activities.

There are several menus in the goods inventory information system at SDN 07 Sindang Danau, including: the Master menu, which is the central component in a web-based inventory information system. Which will record data regarding Brands, Categories, Transaction menu, where information about incoming and outgoing goods will appear on this menu. It can be said that this Transaction Page Display is a page for managing goods data in the goods inventory at SDN 07 Sindang Danau. From this page can see the process of incoming goods and outgoing goods. Next is Reports menu, on the menu there are reports of incoming goods, outgoing goods and stock items. This page is a page for finding out and making reports on stock, incoming goods and outgoing goods. Where there are the number, item code, item condition, input date, entry information, input date, and exit information after printing.

Then there is a menu for managing loans and returns. The Loan management page is a page that contains complete data regarding the process of borrowing goods. This includes the borrower ID, item code, item brand, item...
condition, date of borrowing, number of items when borrowing the item. If there is a need for changes or adjustments, the admin can manage data on the items to be borrowed, including correcting the stock of goods and the condition of the items to be borrowed. Sedangkan The Returns Management Page. On this page there is data on the return process which includes Loan ID, item condition and return date. It can be seen in Figure 7 below.

![Figure 7 Loan and Return Management Page](image)

Lastly is the Loan Report page. This page is a page that contains a form for making a loan report as of the date requested by the management to find out borrower data and serve as an archive for the year-end report. It can be seen in Figure 8 below.

![Figure 8 Loan Report Page](image)
5. CONCLUSION

Based on this research, it can be concluded that the aim of this researcher is to produce a website-based goods inventory information system at SDN 07 Sindang Danau. The conclusions is good inventory information system can helps admin staff manage inventory quickly and easily, and can be accessed anywhere and anytime because it only requires an internet connection and browser to access it. The system created can process data and present information. By using a website-based inventory information system, you can reduce errors when inputting incoming and outgoing goods. In the future, perhaps this information system could be more complex by adding several menus and users, the appearance of this system might also be more attractive while still paying attention to the main purpose of creating this website.

6. REFERENCES


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