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Design and Implementation of Web-Based Archive Management Information System

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ABSTRACT

The purpose of this research is to create an archive management information system. Most of the study programs within the University have not used a web-based archive management information system, even though this is a supporting factor in college and university accreditation. The research method used is the prototype development method. In this method there are 4 (four) stages, namely: (1) Communication, (2) Quick Plan and Modeling Quick Design, (3) Construction Of Prototype, (4) Deployment Delivery & Feedback. At the Deployment Delivery & Feedback stage, the researcher uses a testing method with a black-box testing approach. In this black box testing phase, there are three testing processes, namely (1) Incorrect functions, both input and output, (2) Interface errors, (3) Errors in data structure or database access. From the research conducted to obtain good results and from these results the researchers concluded that the web-based archive management information system is in accordance with the research objectives and is suitable for use in the data archiving process.

Keywords: *Archives, Information Systems, Web, Prototype*

INTRODUCTION

Archives have an important role that can be used as material for decision making or programming in an organization. Archives are also useful as a place to store backup documents if

there are lost documents. In managing archives, it takes dexterity and concentration to ensure the data to be stored is in the right place. So if at any time needed, it can be searched in the archive.

Archives are archiving activities such as recording incoming and outgoing letters, storing documentation, determining expired archives requiring good and efficient processing and management, so that operational activities can run well. Information systems are systems as interrelated parts that operate together to achieve certain goals or purposes (Gordon B. Davis in Al-Bahra Bin Ladjamudin, 2013). The system is a collection of elements that interact with each other in a unit to carry out a process of achieving a main goal (Sutarman, 2009). Web technology is a page that stores documents in the form of text, images, sound, animation, and video (Hasugian, 2018). If the page is more than one and connected to each other then it is called a website. Adaptive Software Development is the creation of prototypes starting with communication between the software development team and customers. The software development team will meet with stakeholders to define overall goals for the software to be developed, identify requirements specifications, and describe areas where further definition in the next iteration is mandatory. The tester as the person who will test the software that has been made will be able to define a collection of input conditions and perform tests on the program's functional specifications (Sidi et al. 2015:34).

Archival data that continues to grow causes archive management with manual models such as hardcopy storage which is considered less efficient. For example: finding the required data is very time consuming, the archives are getting full, and the possibility of losing important archive data.

Most of the study programs within the University have not used a web-based archive management information system, even though this is a supporting factor in college and university accreditation. Information and Communication Technology Education is a major in Universitas Negeri Manado. In the administration of the Department, data archiving still uses hardcopy form. Archive collections are only stored in shelves and cabinets in the administration room. This is now a problem in the Department because if there is data that is needed as soon as possible, it really takes a long time in the data search process because the data has accumulated a lot, and is not neatly organized. The aim of this research is to create an archive management information system.

METHOD

The method of data collection is by conducting interviews by interviewing the existing Study Program Administration employees regarding the process of making the archive management information system. The tools used in designing the archive management information system are: 1. Using a laptop with the following specifications: a. Procesor Intel(R) Core(TM) i5- 8265U CPU @ 1.80GHz b. 12GB RAM 2. Software (Software) a) Windows 10 Pro 64-bit Operating System b) The text editor used by Visual Studio Code c) Google Chrome Browser d) XAMPP Web Server v3.2.2.

The method used in this research on the design and implementation of a filing management information system is a prototype method shows in Figure 1.

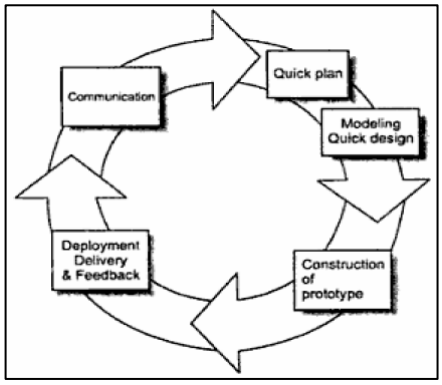

Figure 1. Prototype method flow

RESULTS AND DISCUSSION

The results of the research referring to the stages of the *prototype development model* that have been carried out. The following are the steps that have been carried out as follows:

1. *Communication*
   Admin is required to *login* before entering the information system for receiving textbooks and reference books. After *logging* in, the data in the form of master data and transaction data are inputted by the *admin* , then the *admin* is in charge of entering the master data and transaction data.
2. *Quick Plan and Modeling Quick Design*
   a. Data Modeling
   Figure 1.1 below explains that:
   - *Level* table *user corresponds to the users* table
   - *Level* table *user* related to *menu table*
   - And system archive_lists corresponds to system archive_category

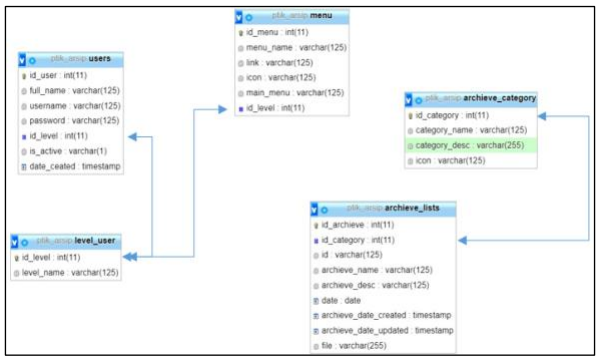

Figure 2. System *Relational Diagram*

In figure 2, it is explained how the flow of the system created using a business *flowchart is explained*

3. *Use Case Scenario*
   b. *Activity Diagrams*

Describes the activities carried out by the Admin with a system that describes data processing in the form of master data from the information system for receiving textbooks and reference books. Before managing admin data, you are first required to *login* by entering your *username* and *password.* If the *login* is successful, the *admin* can process data in the form of archive category data, and archive data with the features of adding, changing, deleting, searching

- *Activity Diagram* Leader. See figure 3

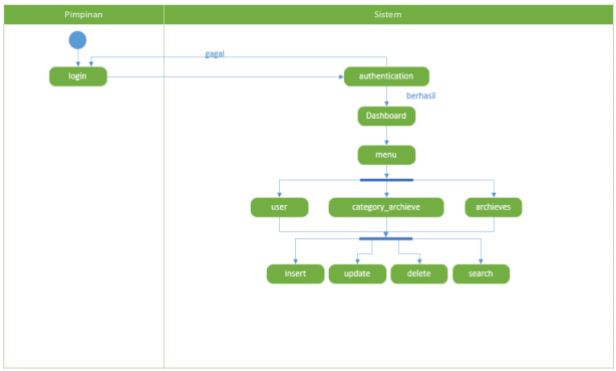

Figure 3. Activity Diagram Leader

- *Activity Diagram User* or Visitor. See figure 4

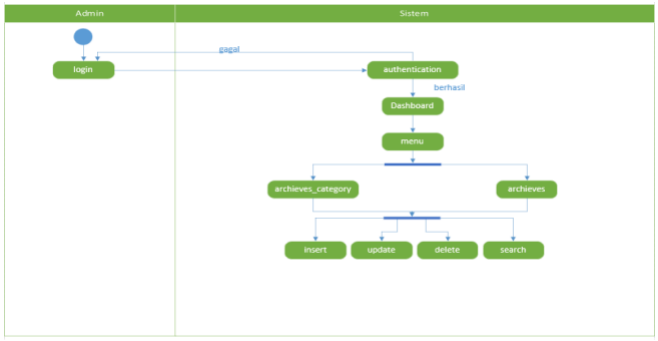

Figure 4. Activity Diagram Admin

- *Activity* Diagram. See figure 5

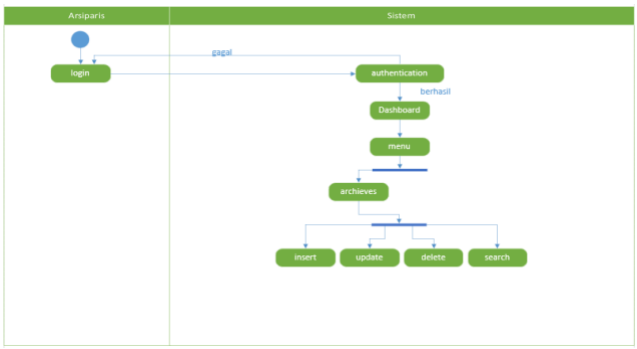

Figure 5. Activity Diagram Archives

4. *Construction Of Prototype*
   - *Login* Page. See figure 6.

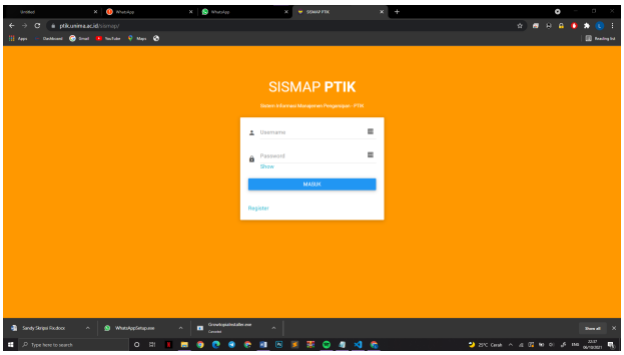

Figure 6. Admin Login Page

   - *Form* page Add Category Archive. See figure 7.

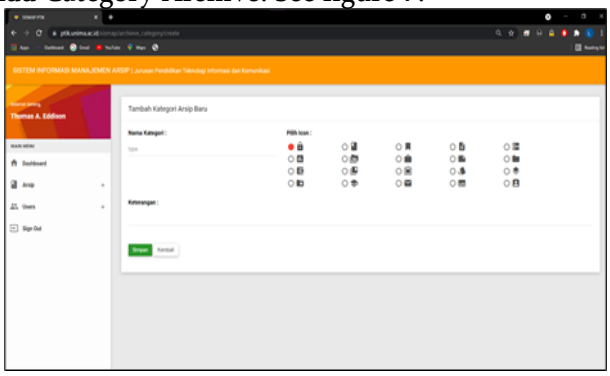

Figure 7. Archive Category Form Pages

   - Archive Category Update *form* page. See figure 8

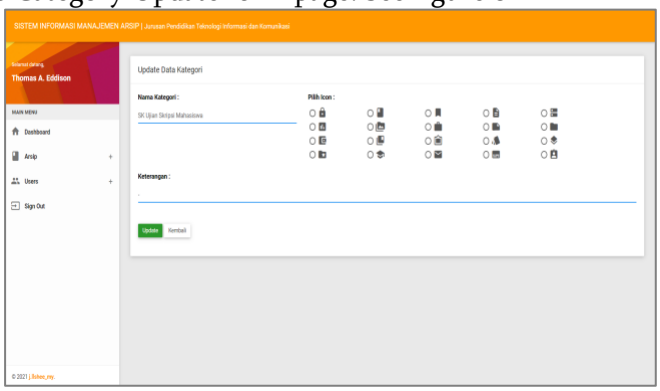

Figure 8. Archive Category Update Form Pages

   - *Form* Page Delete Archive Category. See figure 9.

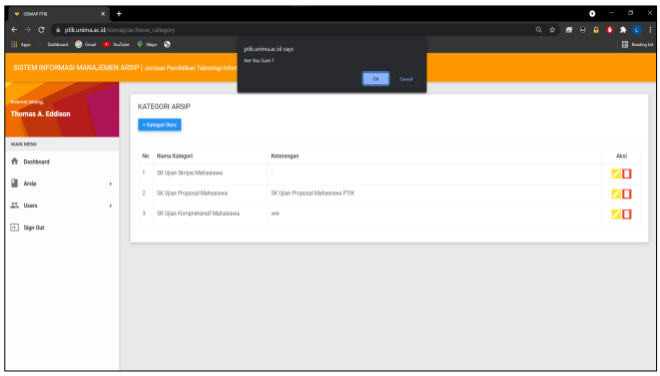

Figure 9. Form Pages Delete Archive Category

- *Form* page Add Archive Data. See figure 10

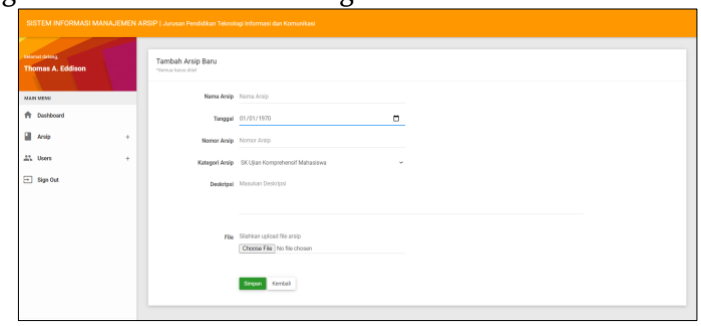

Figure 10. New Archive Insert Pages

- *Form* page Archive Data Update. See figure 11.

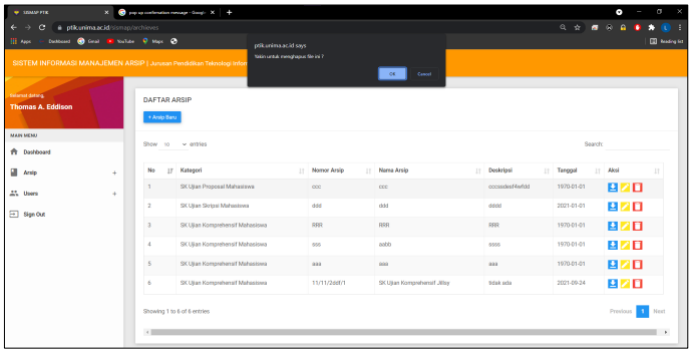

Figure 11. Form Pages Delete Archive Data

- Add User Data *Form* page. See figure 12

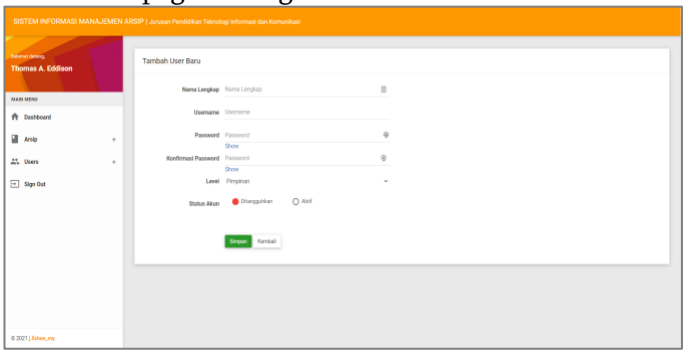

Figure 12. New User Insert Form Pages

- User Data Update *form* page. See figure 13.

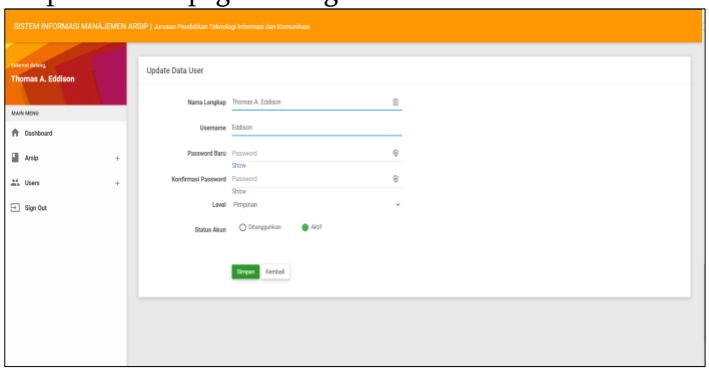

Figure 13. User Data Update Form Pages

- *Form* page Delete *User Data.* See figure 14.

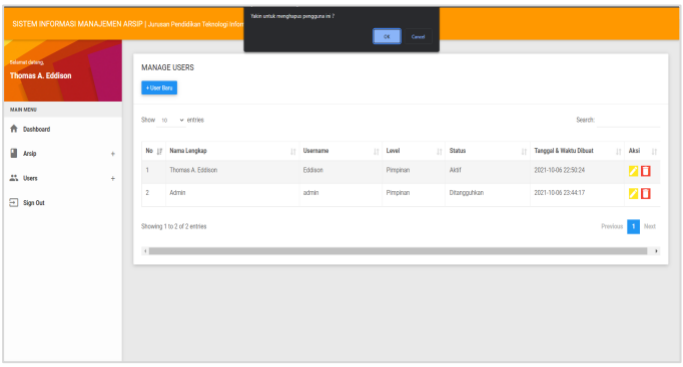

Figure 14. Form Pages Delete User Data

5. *Deployment Delivery & Feedback*
   At this stage, the researcher uses a testing method with a *black-box testing approach* . *Black box* testing, which is an approach to test whether every function in the program can run properly. The following are some of the processes carried out by researchers in this test, namely:
   a. Incorrect functions, both *input* and *output*
   b. *Interface* error
   c. Error in data structure or *database access*

Below is a table 1 of test results from the implementation of the archive management information system of the UNIMA Information and Communication Technology Education study program:

Table 1. Test Results With Black Box Testing Approach

No	Function	Statement	Results	Conclusion
1	*Authentication*	Function to *login*	In accordance	Valid
2	Add Archive Category data	Archive Category data entry function	In accordance	Valid

3	Change Archive Category data	Function change Archive Category data	In accordance	Valid
4	Delete Archive Category data	The function of deleting textbook data	In accordance	Valid
5	Add Archive data	Function of adding Archive data	In accordance	Valid
6	Change Archive data	The function of changing Archive book data	In accordance	Valid
7	Delete Archive data	File delete function	In accordance	Valid
8	Add User data	Function to add User data	In accordance	Valid
9	Change User data	Function to change User data	In accordance	Valid
10	Delete User data	User data delete function	In accordance	Valid

As has been discussed in the background of the previous problem. In carrying out archiving tasks as one of the leading study programs at Manado State University, which still uses a manual system, it causes delays in presenting data when the data is needed.

The author hopes that through the information system created, it can cover the weaknesses in the Information and Communication Technology Education Study Program - Manado State University and make it easier for archivists and also the administration department of the study program to do their jobs easily.

CONCLUSION

Based on the results of research and testing of the Archives Management Information System implementation that has been made, it can be concluded that: 1. The success of successful researchers in creating a PTIK Archives Management Information System. 2. The Archiving process is no longer time consuming. 3. Searching data for bias reporting is done quickly and precisely.

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