



## Development of National University Web-Based Digital Library Information System

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### ABSTRACT

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The library is one of the sources to acquire science. In the library: There's a collections of good science at form of: books, journals, Proceedings, & Thesis as well as other types of reading. With the development of information technology and the implementation of information systems in various aspects of life: there are also many libraries that utilize information technology as a tool in place to facilitate operational activities in the library. In the field of education, schools and colleges, libraries are: the one condition for college to stand. One of the colleges that have also utilized the information Technology Library: National University. UNAS's Perpustakaan also used information systems to manage books and other reading resources in the library. In addition, the process of borrowing and refunding and registration of members has been made also computerized with presence of library information system. Library members can also: Use the catalogue of books found in the columns the library to search for the desired library title. Therefore, authors developed a "Digital at Library" web-based at: "Development at Digital of Library Information System WEB based National University" so this makes it easier for members to be able to also access the library title from elsewhere, without having to come into the library.

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## 1. Introduction

With the development of information technology and the application of information systems in various aspects of life: there are also many libraries that use information technology as a tool in place to facilitate operational activities in the library. In the field of education, both schools and colleges, libraries are: a condition for higher education to stand up (Wiyati, 2017).

One of the tertiary institutions which has also utilized library information technology is: National University. The National Library of Indonesia UNAS has also used an information system to manage books and other reading sources in the library (Wiyati, 2017).

In addition, the loan and repayment process and member registration have also been made computerized by the existence of a library information system. Library members can also: use the book catalog system found in columns in the library to search for the desired library titles (Wiyati, 2017).

So from that the authors developed a website-based "Digital Library" with the title: "Development of the National University Web-Based Digital Library Information System" so that this makes it easier for members to also be able to access library titles from other places, without having to come into the library.

## 2. Literature Review

### 2.1 Theoretical basis

In drafting on his research, the authors use an algorithm, some software and programming languages as follows:

### 2.2 Definition of Library



The library comes from the word: library which means book or book, while in English it is called library. As for the understanding of the library rather than: is a room / place that contains: library materials both in the form of books and non-books that are arranged and classified from the system in certain rules for use by readers (Kurniawan, 2016).

Based on the conclusions in the above column, the conclusion is also: the library is a collection place for storing library materials: willing books and e-books: managed systematically until it can be used for learning facilities and sources in: information (Kurniawan, 2016).

## 2.3 Digital Definition

Digital / Digitus starts with words in Greek: fingers. This digital concept also turns out: some images are the opposite of several conditions.

Psychologically, human nature is formed in two qualities: good and bad. The concept of Yin and Yang is apparently also touched by: digital concept ("Wikipedia: Digital," 2020).

## 2.4 Definition of Digital Library

The new challenge of the informant technologist, in particular: The informant is: how to transmit the information by: precise, fast also in general. De is one example of an important informant in the search for information to answer these challenges: the embodiment of a digital-de/digital-Library on the Computing network (Kurniawan, 2016).

## 2.5 Definition of the Internet

The Internet is: the network on each other's computer: regarding standardization from: TCP/IP as: in the world. The biggest internet frame called: Internet ("Wikipedia: the Internet," 2020).

## 2.6 Definition Online

Daring (English: Online) has: the meaning of telecommunications which also means: the state of being connected. This can also mean: a state of a computer that is connected and can exchange information on the internet.

This concept has been expanded from the meaning of computing and telecommunications into: the field of human interaction and conversation. For example: discussions that often occur during an "online" meeting ("Wikipedia: Dalam dan Luar Jaringan," 2020).

## 2.7 Website Definition

The web site is: a set of pages that will be interconnected, and also on the server in general: also view and collect a collection of available information: individuals, groups, or organizations. Websites are also often placed on servers on: Internet, or Network: local area (LAN) in the URL page ("Wikipedia: Situs Website," 2020).

## 2.8 Definition of Information Systems

That is: the case of the organizational system consists of various daily processing of transactions of a need and in managerial support from operations, and the strategy of activities in an organization by outsiders with a report on their needs. (Pinem & Pakpahan, 2019).

## 3. Research Methods

The method in designing this uses: the method of the System Development Life Cycle (SDLC), the reason for this method is: in this stage the system can make improvements from the previous system.

SDLC phases can also be done in descending order from: planning, analysis, design, implemented in the development of Web-based information systems.

It is hoped that this system can make it easier: to manage data in this digital library it can also reduce the use of paper counts and also the errors of transactions in the library.

Tools to model the system that will be used are: UML (includes: Use Case, Class Diagram and Activity Diagram).



Fig 1. SDLC method (Sugeng, 2017).

- Planning**  
At this stage, the analyst starts doing what is needed.
- Requirements Analysis**  
At this stage, in doing data collection: what information is needed in the program design.
- Design**  
Must be in the design stage of a concept design and appearance of a program.
- System Development**  
Implementation phase of the design to build: Application of this Digital Library.
- Testing**  
Testing researchers conducted trials: applications in order to get the results of an application that runs well.
- Implementation.**  
At this stage the researcher prepares: all the needs related to building applications so that they can be immediately implemented in the UNAS (Univ. National) campus space.

## 4. Results and Discussion

In making the application later, we will also need a design of various flows, and the design is also determined as in general design is: a collection of flow's performance of the current application and also the results of the implementation of the application.

### 4.1 Flowchart of the Running System

To see and also know the flow in the current system can be seen in the picture about the flow (flow) on the existing system of digital libraries that have existed below:

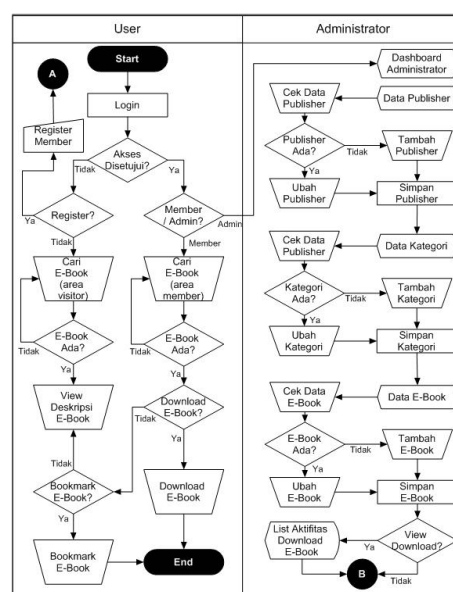


Fig 2. Flowchart of the Running System

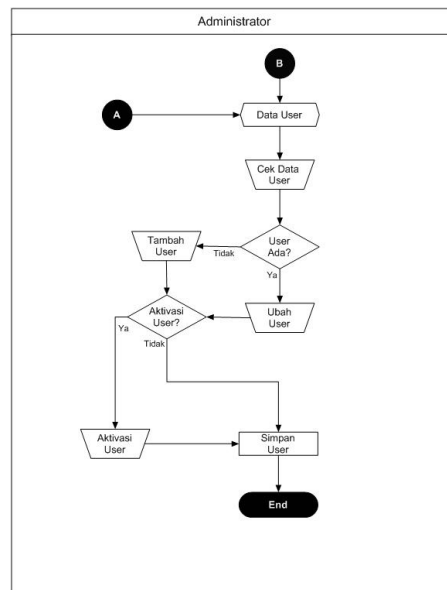


Fig 3. Flowchart of the "User Activation" System

## 4.2 Proposed Use Case System

The following is an example of a use case that will also be proposed for making this system, which can be seen in the image below:

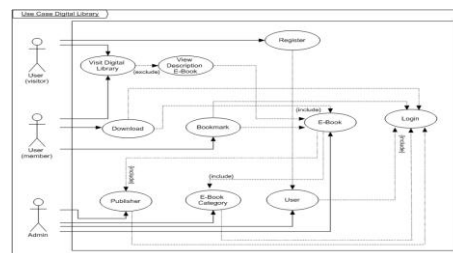


Fig 4. Use Case Digital Library System

## 4.3 Class Diagram of the Proposed System

The following are examples of class diagrams that will be proposed for making this system, which can be seen in the figure below:

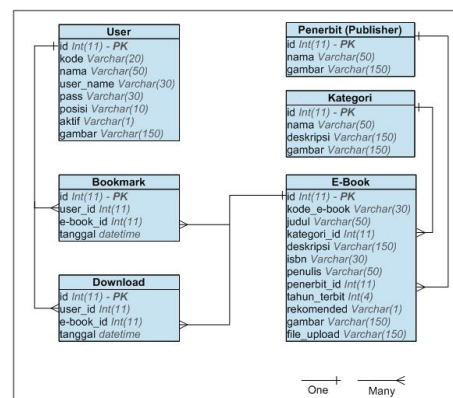


Fig 5. Digital Library System Class Diagram

## 4.4 Activity Diagram of the Proposed System

The following is an example of a set of: activity diagrams that will also be proposed in making this system, which can be seen in the picture below:

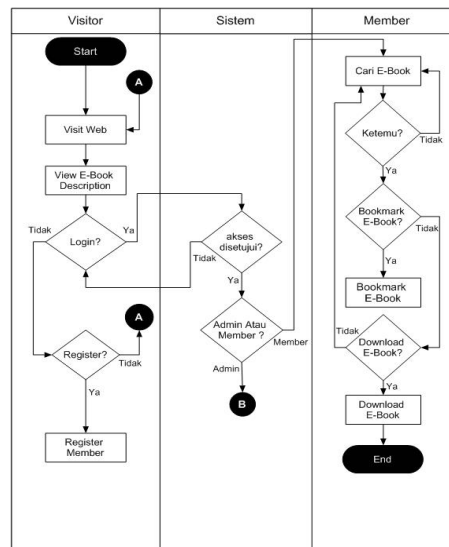


Fig 6. Digital Library System Activity Diagram

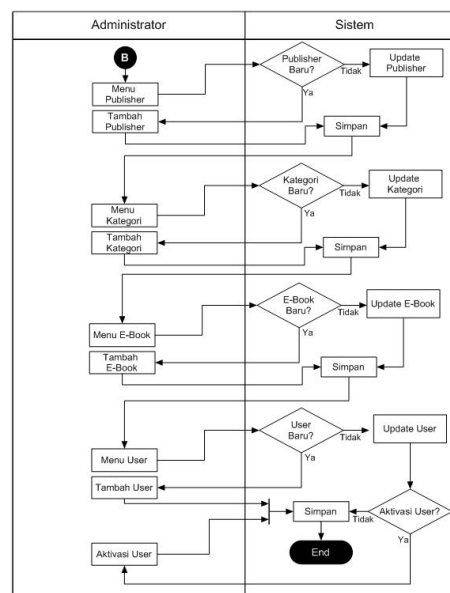


Fig 7. Digital Library System Activity Diagram (User Activation)

#### 4.5 Implementation on the Website

The following are the results of implementing a website that has been created:

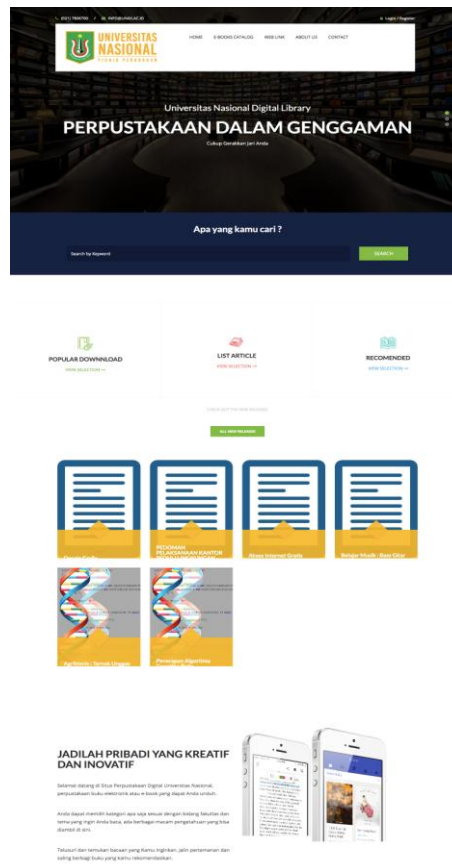


Fig 8. Start page in the Digital Library

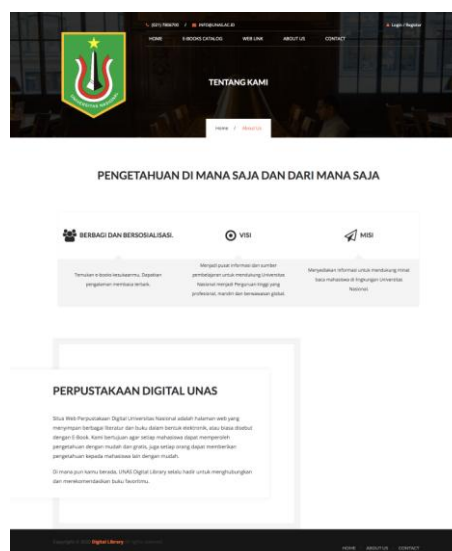


Figure 9 Information page in the Digital Library



**Fig 10.** Contact page in the Digital Library

**Fig 11.** Login page with "Multi User" in the Digital Library

**Fig 12.** Register page for Members in the Digital Library

In this start page there is a function: from the book search you want to look for in more specific and detailed, there is also a useful login feature in "multi user" which also means the user and admin login is done on this one page only, also in it there are features register for users to register themselves and there are also information and contact features that users need.



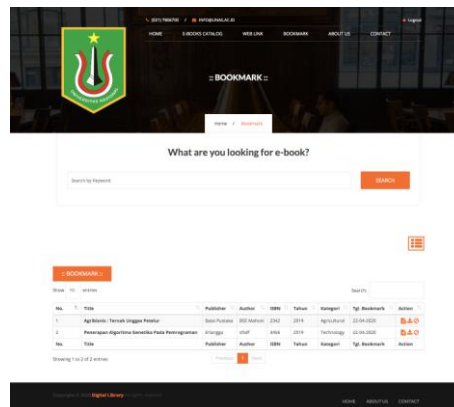


Fig 13. Bookmark page in the Digital Library

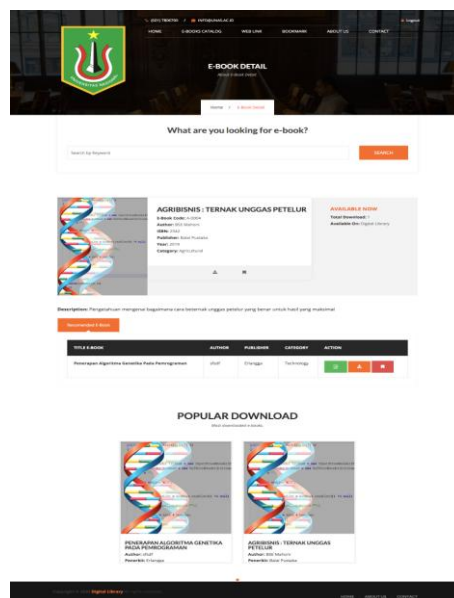


Fig 14. Book Download page in the Digital Library

After logging in on the start page, we can also benefit from existing features, on the book page, there are features that exist when the user has logged in, such as: bookmarks and downloads.

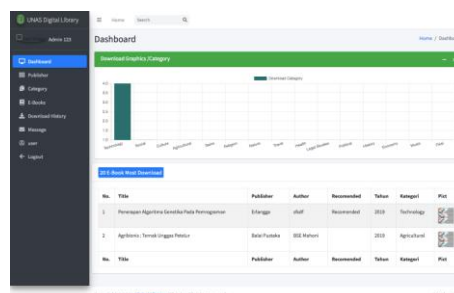


Fig 15. Monitoring Dashboard Page in Digital Library (Admin Feature)



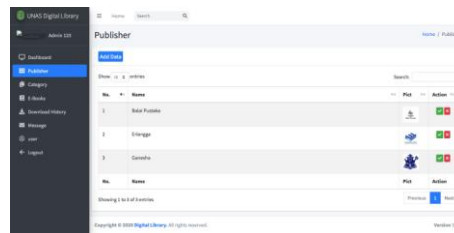


Fig 16. Manage Publisher Pages in the Digital Library (Admin Feature)

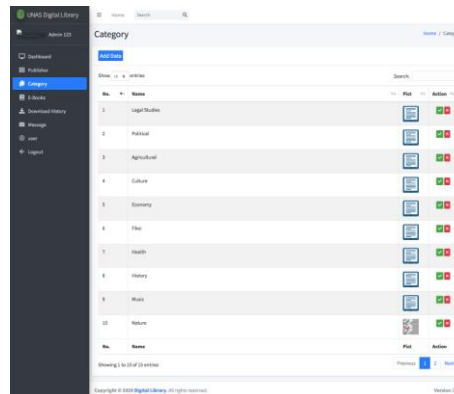


Fig 17. Manage Categories of E-Book pages displayed in the Digital Library (Admin Feature)

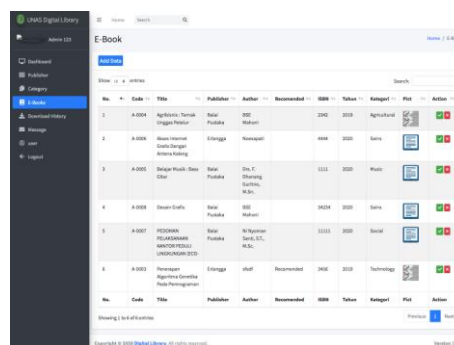


Fig 18 Manage Details of E-Book pages in the Digital Library (Admin Feature)

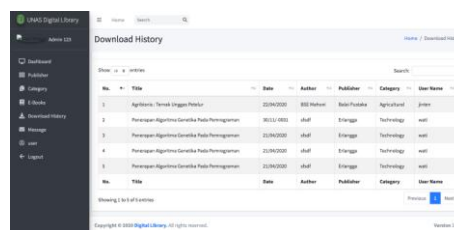


Fig 19 Manage Manage Download History pages in the Digital Library (Admin Feature)

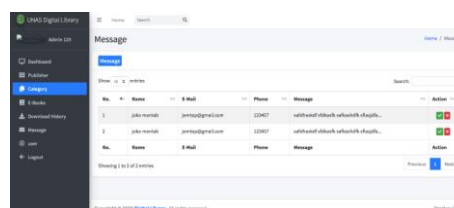


Fig 20. Manage Message from User page in Digital Library (Admin Feature)

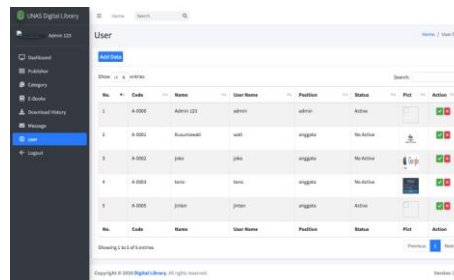


Fig 21. Manage Users Page on the Digital Library (Admin Feature)

In this admin panel we can set the functions we want such as: managing publisher data, categories, e-book details, download history from users, managing messages from users, and also most importantly managing users themselves, features These features are also in accordance with admin requirements

## 5. Conclusion

Based on the discussion with the results of the above study regarding "The Development of the National University Web-Based Digital Library Information System has been concluded as follows:

- a) Management in a development of managing digital libraries and routines carried out every day is good.
- b) With the existence of this digital library, it can reduce the impact of excessive paper usage in the library managerial.
- c) Supporting factors in management in digital libraries at the National University are qualified according to scientific experts.

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