

## Transformation of conventional libraries into digital

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### ABSTRACT

This research uses the library of the Faculty of Engineering, Muhammadiyah University, Jakarta as a case study. Conventional mode interactions make students face limitations in accessing references due to limited visiting time, manual searches, and limited published information for available, unavailable, or borrowed items. This research aims to make it easier for students to access the library of the Faculty of Engineering, Muhammadiyah University of Jakarta and find reference books or journals that they need in the library more easily, flexibly without time, space and distance limitations. SDLC methodology with a waterfall model was chosen for e-library development to change conventional interactions into digital. Preliminary tests have been carried out through questionnaires to evaluate interactions in the library compared to conventional interactions. A total of fifty students were involved in learning, and were asked whether reference books and journals in the library helped them in doing the assignments given. The result

5.4% of students responded can help and 94.6% said no.

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### 1. Introduction

There are differences between conventional libraries and digital libraries, usually called electronic libraries or e-libraries.

Conventional libraries use print-based collections, while digital libraries use computer-based work procedures and digital resources that can be accessed online.

In the library system.( Putra P. 2018 )

Conventional education is one of the causes of decreased motivation for students

use library facilities. Therefore, with digital

The library is expected to be a solution to answer the need for obtaining and providing information sources

interesting activities in the learning process.Wardana (2015)

According to Teed (2005), a digital library is a collection of electronic resources that allows activities for creating, searching and access electronic resources. Then in its development efforts that in storing, searching for information and manipulating data in text, image, sound or image media that can be distributed over networks.

One of the factors that helps the learning process so that it is hoped that it will make it easier to obtain information and knowledge is the existence of e-library media. Didin, Afiani (2014)

Differences between conventional and digital libraries, (Husna N. 2018)

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1. Collections: Conventional libraries have collections of books, journals and other printed materials, while digital libraries have collections in the form of e-books, electronic journals and other digital information resources.

2. Borrowing and Returning: Furthermore, conventional libraries have physical regulations, while digital libraries use an online system where users can download or access the material they want.

Accessibility: In conventional libraries, visitors come to the place to get collections and services, while digital libraries can be accessed online from anywhere and at any time via the internet.

From the differences that exist, it can be concluded that digital library services are better than conventional library services. However, by considering the advantages and disadvantages of the library system, as well as user behavior, it seems that the type of digital library is still the one chosen by many users. (Bamgbade et al., 2015)

## 2. Material and Methods

This research takes a case study of the engineering faculty library at Muhammadiyah University, Jakarta, which is known to still use a conventional system.

Some of the problems that exist in the library include:

1. Activities in the library still use a manual system, starting from registering as a member, borrowing books, searching for books and getting other sources of information.

2. Getting book titles is still done manually, there are no facilities available to search for book titles online.

3. There are no e-books, e-journals or other information available that can be downloaded or read by students.

Based on these problems, it is necessary to make a transformation from a conventional library to a digital library.

In this way, the existence of an E-library is expected to make it easier for students to obtain sources of information to support the learning process, especially for students in fulfilling their study needs, such as completing course assignments, for thesis materials, or to search for other information.

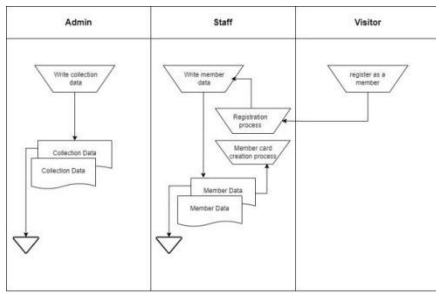
Apart from that, users can access information without having to visit the library.

## Systems Analysis

At this stage the aim is to find out existing problems with the system. These problems can be used to analyze user needs, so that it is clear what will be done in the application.

There are three procedures, including registration procedures, borrowing, returning, extending and searching for books

The following is a flow map of the system running on registration procedures, searching for books, borrowing books, returning books:



Picture 1. Flowmap of the registration running system

In this study the author used three data collection techniques according to (Rada, 2021)

including:

1. Observation, data collection techniques by means make direct observations of conditions or situation on a subject study.
2. Questionnaire by asking questions research subject.
3. Literature study, data collection techniques using scientific journals.

**Problem Solving Analysis**

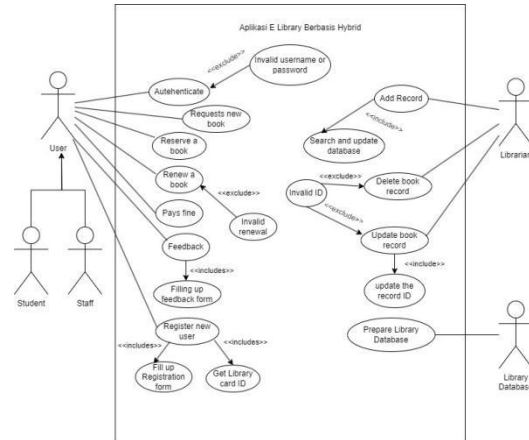
Below is a description of the Use Case diagram image for the E library application.

Students can carry out online activities such as registration, ordering books, searching for book titles.

Then librarians can manage the library in digital mode.

So that users can easily access library collections from anywhere and at any time through the application to increase information accessibility.

The e-library application is equipped with a search feature with the ability to manage personal collections, making it easier for users to search and organize information.

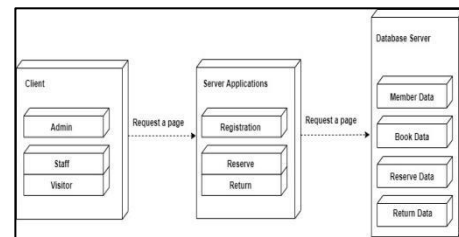


Picture 2. Use case E library

Deployment Diagram provides a picture of how the system will physically look like Seen. (Adi, N. 2010)

Deployment diagrams are used to depict the distribution of software components into a physical environment or infrastructure.

In e-library applications, deployment diagrams can be used to show how software components (such as applications, databases, and servers) are distributed within a computer network.

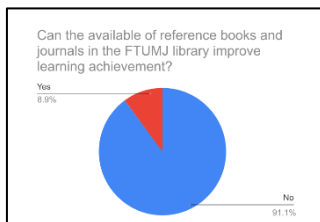


Picture 3. Deployment Diagram

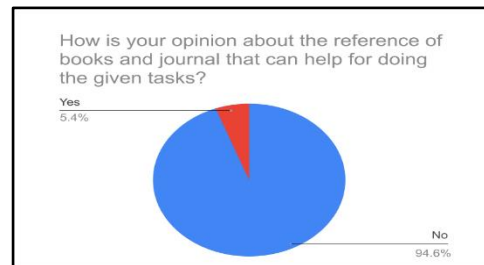
Picture 5. Reference books

**Results and Discussions**

How easy is it for students to find books based on the title they are looking for in the FTUMJ library? Based on the following diagram, it is known that 10.7% said it was moderate, 5.4% said it was difficult, 10.7% said it was very easy and 10.7% said it was easy. Look pic 4



Further data regarding user experience in searching for book and journal references, whether it can help in carrying out the tasks given. As many as 5.4% said it could help, the remaining 94.6% did not. Look at pic. 6

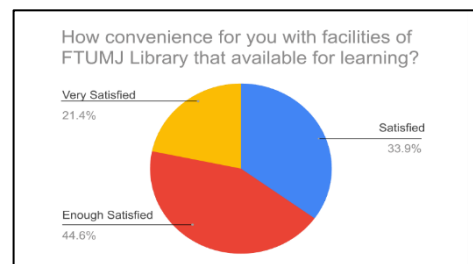


Picture 6. Help in carrying out the tasks



Picture 4. Students to find books

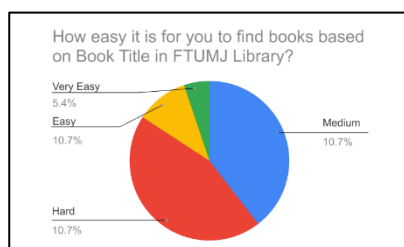
Furthermore, regarding comfort with the facilities provided for studying in the FTUMJ library. Known 21.4% to be Very satisfied, 44.6% enough satisfied, and 33.9% satisfied. See pic 7



Picture 7. Comfort with the facilities

The next question is: How do you think looking for book and journal references in the FTUMJ library can help you in doing the assignments given?

The following results are research regarding whether reference books in the library can help in carrying out the assignments given. With the results, 91.1% of respondents did not help and 8.9% said they could help. See pic 5



**Conclusion**

Discussion space has been provided. But still conventional. First come, first serve. The disadvantage of conventional library spaces is that there is no system that provides for ordering places, books or information sources online.

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Based on this research, it is necessary to create an e-library application that can access information sources and spaces online.

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