APPLICATION OF A WEB-BASED INFORMATION SYSTEM IN THE INSTITUTION OF RESEARCH, COMMUNITY SERVICE, AND INNOVATION (LP2MI) IKEST MUHAMMADIYAH PALEMBANG

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ABSTRACT

Background: Technology is something that cannot be separated in this modern era. With the emergence of technology, it can facilitate the operational activities of a higher education institution in processing data quickly and precisely. The research, community service and innovation institute (LP2MI) at IKesT Muhammadiyah Palembang in making reports and managing data currently has not implemented an application, so that the data collection process is not effective and efficient. Purpose: The purpose of this research is to be able to help LP2MI IKesT Muhammadiyah Palembang in processing and reporting of data quickly, precisely and accurately. Research Methods: This study uses data collection techniques using qualitative methods. Namely by interviews and observations as well as with the waterfall design. Results: The results of the research are making "Web-Based Information System Applications at the Institute for Research, Community Service and Innovation (LP2MI) IKesT Muhammadiyah Palembang". Conclusion: The conclusion of this research is that the Institute for Research, Community Service and Innovation (LP2MI) IKesT Muhammadiyah Palembang needs a system that can meet the needs of preventing or reducing difficulties in terms of administration, data loss, and data processing that takes a long time.

Keywords: Laravel Web Application, data processing (Mysql), Waterfall Method.

INTRODUCTION

Technological advancements in the contemporary globalization age have been quite rapid. One example is the advancement of information technology. Its usage in data management and management is critical in the advancement of information technology. Because this information technology has the advantage of producing exact and accurate information (al Adawiah et al., 2022).

The use of Information and Communication Technology (ICT) in the field of data management in higher education is a requirement, not only a status symbol or a management style of today’s higher education. However, universities have numerous challenges in incorporating ICT in the institutional data management process, including both technical and non-technical aspects (Abdul and Rindo, 2019).

The Institute for Research, Community Service, and Innovation (LP2MI) is an institution of IKesT Muhammadiyah Palembang that has the authority to handle all activities linked to the activities of study program lecturers in performing research and community service. Despite the fact that they already have an institution that regulates research and community service activities, they still face challenges in managing reports and data recording because the Institute for Research, Community Service, and Innovation (LP2MI) IKest Muhammadiyah Palembang still relies on manual input/data collection via Microsoft Word and Excel.

In terms of administration, data processing at the Institute for Research, Community Service, and Innovation (LP2MI) makes staff very difficult. LP2MI staff come to all study programs to collect lecturer data per year such as: Number of Intellectual Property Rights and Patents, Total research and
community service, and number of National and International research IKesT Muhammadiyah Palembang lecturers, so there is a possibility of data loss, as well as data processing that is not accurate. Even though the data is required for reporting, it is nonetheless stored in an irregular manner.

Based on the issues raised above, the Institute for Research, Community Service, and Innovation (LP2MI) at IKesT Muhammadiyah Palembang requires a system capable of preventing or reducing administrative difficulties, data loss, and data processing that takes a long time, as well as centralizing the data storage system so that data can be more easily retrieved/recorded. As a result, the researcher offers a solution for developing an information system application, with the title "Web-Based Information System Application in the Institute for Research, Community Service, and Innovation (LP2MI) IKesT Muhammadiyah Palembang."

REVIEW OF LITERATURE

a. INFORMATION SYSTEMS

An information system is a system within an organization that serves the demands of everyday transaction processing, supports operations, management, and strategic activities, and provides required reports to specific external parties. This system saves, retrieves, modifies, processes, and communicates data received from a computer system or other system equipment. 2020 (Wahyudi).

b. Web

The web is a software application that holds multimedia content (text, images, sound, animation, and video) and accesses them via the HTTP (Hypertext Transfer Protocol) protocol. The procedure is carried performed by components contained in the browser program, also known as the webengine. All browser-displayed web documents are translated (Puji et al., 2021).

c. Website

Website is defined as a group of pages consisting of several pages that contain information in the form of digital data in the form of text, images, video, audio and other animations provided via an internet connection (Putra, Riyanto and Zulfikar, 2020).

d. Information databases

A database is a well-organized collection of data. A database management system is required to add, access, and handle data stored in a computer database. XAMPP is the database management system application utilized in this work (Irawan and Simargolang, 2018).

Each user group keeps its own files to manage its own data processing application in traditional software development that uses file processing. As a result, data duplication, often known as redundancy, occurs (Widarma and Kumala, 2018).

Redundancy in the data storage process, which occurs frequently, can generate a number of issues. First, a single logical update, such as entering data on the data journal and Haki numerous times: once for each file where the data is recorded, is required. This results in data duplication. Second, storage space is wasted when the same data is stored repeatedly, and this problem can be serious for large databases. Third, files representing the same data may become inconsistent. This can happen because the update is applied to some files but not to other files (Premana, 2019).

e. Internet Browsers

The web browser displays website results. Mozilla Firefox, Google Chrome, and Safari are popular browsers for the internet. It is recommended to use multiple web browsers to guarantee that the website design looks good in all browsers (Andriansah, Yuniva, and Safitri, 2019).

f. Programming Language for Websites

A programming language is a language that computers can understand. There are numerous programming languages that may be used to create websites, including HTML, CSS, Javascript, and the Laravel 9 Framework.

METHODS OF RESEARCH
The waterfall method was utilized by the writers in this investigation. The waterfall technique is defined as a sequence during the sequential software development process in which progress flows downward through the planning, modeling, implementation, and testing procedures (Kinaswara, Hidayati, and Nugrahanti, 2019). The waterfall approach has the following stages:

1. Needs Assessment Interviews and literature studies can be utilized to acquire data. Analysts will gather as much information as possible so that the system established is as effective as possible.

2. System Design Before coding, this stage will convert software requirements. Create data structures, software architectures, and program views during this procedure.

3. Program for Writing Code is the translation of a design into a language that a computer can understand. This is the real time to work on the system. At this point, the languages PHP, HTML, and Laravel 9 are commonly used.

4. Program Evaluation This is the final step of system design. The application can now be utilized by the user as a result of the many steps that have been completed.

5. Care and upkeep Software has numerous flaws and is sometimes difficult for users to understand, thus it needs to be readjusted. These modifications are the result of a variety of reasons, including environmental changes, new operating systems, and functional developments.

Techniques for Data Collection and Analysis

Qualitative data gathering strategies are used. Interviews were conducted with the heads and staff of the Research Institute, Community Service, and Innovation IKesT Muhammadiyah Palembang.

RESULTS AND DISCUSSION

In this study the authors used the waterfall method in their approach. The definition of the waterfall method is a sequence during the sequential software development process, where progress will continue to flow downward through the planning, modeling, implementation and testing processes.

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A. Needs Evaluation

The analysis of the data yields a solution to the issue at hand in this study. This need has three parts: input, process, and output. Finally, the result will also be discussed in the form of research article reports, Intellectual Property Rights, and Patents where there are inputs, user input, study programs, categories, and research data.

B. Design of Data Architecture

A systematic collection of data is called a database. A database management system is required to be able to add, access, and process data kept in a computer database. XAMPP is the DBMS application used in this investigation.

C. Program for Application

A language that computers can understand is a programming language. HTML, CSS, Javascript, and the Laravel 9 Framework are just a few of the programming languages that may be used to create websites.

D. Programming Tests

Program Evaluation The system design process is at its conclusion at this point. After undergoing a number of procedures, such as testing the application to look for clumsy behavior and faults on the system, it will be registered at the hosting and domain, after which the user will be able to use the program.
reports on the number of study program instructors, and journal publication accuracy. Additionally, finding data is quick.

SUGGESTION
After testing the web-based information system application, the suggestions that the author can give are as follows:

1. In order for web-based information system apps to function successfully, staff members need receive training on managing them.
2. To make it simpler for staff to manage data, such as reports and lecturer recaps per study program IKesT Muhammadiyah Palembang, we advise (LP2MI) IKesT Muhammadiyah Palembang to use this application.
3. In order to maximize results, this information system can be modified further to provide a more complicated system in accordance with the requirements.

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CONFLICT OF INTEREST
There is no conflict of interest in writing because research is conducted independently.

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LITERATURE
Abdul, O.; and Rindo, J. (no date) 'USE OF INFORMATION TECHNOLOGY APPLICATION PROGRAMS IN SUPPORTING EDUCATIONAL ACTIVITIES', Ar-Rashid Education Journal, 7(1).


Suharyanto, C.E., Chandra, J.E. and Gunawan, F.E. (2017) 'Web-Based Integrated Payroll Information System Design (Case Study at St. Elisabeth Hospital)', National Journal of Technology and

Edge, B.T. and Sujarwadi, A. (2020) ‘Design of a Web-Based School Inventory Information System (Case Study: Salam 2 Public Middle School)’, XV.
