

## Website Development for Alumni of Education Information Technology and Computer

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### ABSTRACT

The Institute of Teacher Training and Education of the Indonesian Teachers Association (IKIP-PGRI) Pontianak as an educational institution that requires information technology to assist activities within the Pontianak IKIP-PGRI environment. Based on the results of observations by conducting interviews, it is known that the study program has an information system website that contains information about study programs, but in the information system there are several shortcomings, namely the news and job vacancies have not been updated and there is no special alumni data information system to manage alumni data. . Based on these observations, the researcher intends to develop a web-based information system for the alumni database using the R&D method and the ADDIE approach. The designed information system will be analyzed according to needs, and then will be designed and developed based on the needs analysis. The development will be implemented and evaluated. The results of the system development were validated by 2 system experts to see the percentage of feasibility. The alumni information system has been tested for feasibility in terms of usability, functionality, and visual communication aspects. The overall average value in these aspects is 4.20 and 4.65, both values are included in the "Very Good" criteria.

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## INTRODUCTION

The development of technology today has progressed very rapidly. Technological developments can be seen from the many discoveries and innovation developed at this time. Technology is the application of knowledge for a practical purpose [1]. Inventions and technological innovations have had an impact on society, resulting in changes in various areas of people's lives. If technology is implemented properly, technology will have a positive impact on humans. Technology that continues to develop at this time, one of the

technologies that exist at this time is technology in the field of information. Information has been agreed internationally as a result of data processing which in principle has value [2]. Information technology is defined as a technology that combines computers with high-speed communication lines, which carry data, voice, and video. [12] Information technology is all forms of technology that help humans in terms of creating, storing, or disseminating information. Along with the times, information technology is more associated with high-speed computing and communication such as computers and mobile phones. Information technology is a very important thing today, where everyone has the right to access the same information at any time. Where information is data or facts that have been processed and have qualities such as [3]: (1) Accurate, (2) Up to Date, and (3) Relevant. An information is determined by two things including the benefits and costs in obtaining the information. Information technology is a technology for processing data, including processing, obtaining, compiling, storing and manipulating data in various ways to produce quality information, namely information that is relevant, accurate, and timely. [10] However, an information is more valuable if it is useful compared to the cost to obtain it [4], namely: (1) Accuracy, (2) Relevance, (3) Cost Effectiveness, (4) Completeness, (5) Auditability, end (6) Reliability. Information technology has a central role, due to the important role of information for personal, business, organizational, government and educational institutions. Information technology is a technology for processing data, including processing, obtaining, compiling, storing and manipulating data in various ways to produce quality information, namely information that is relevant, accurate, and timely [5]. Information technology in educational institutions is generally needed in two parts, namely education and management. The information technology education section serves to assist the teaching and learning process while the information technology management section assists in managing the resources of the institution. Information technology in educational institutions is generally needed in two parts, namely education and management. In the information technology education section, it functions to assist the teaching and learning process while in the information technology management section it helps in managing the resources of the institution [11].

The Institute of Teacher Training and Education of the Indonesian Teachers Association (IKIP-PGRI) Pontianak as an educational institution that requires information technology to assist activities within the Pontianak IKIP-PGRI environment. One of the applications of technology needed is in the Study Program at IKIP PGRI Pontianak. The use of information technology at the study program level will certainly facilitate the work of the study program in the alumni information system section. An information system is a system consisting of various components that are united to achieve a goal which is to provide information for those in need [6]. Alumni are a group of people who graduated from schools, colleges and universities. A college really needs information about alumni data, year of graduation, where the alumni work and much more. Alumni data is a collection of information about people who have graduated from a school or college. Alumni data is useful for knowing educational outcomes, tracer studies for accreditation, monitoring the

distribution of graduates, building relationships with alumni and as material for higher education evaluations [7]. An information system is a system consisting of various components that are united to achieve a goal which is to provide information for those who need it [13].

Some universities in Indonesia still have problems coordinating alumni data, including using a manual system for data collection, this is very difficult for the universities. Management of alumni data that still uses documents in the form of files results in data management cannot be carried out optimally. This problem can be overcome with a system that is developing, namely an information system. This information system is expected to help manage alumni data in the P. TI study program and can produce information that is effective and efficient in managing alumni data. So far, there has been no implementation of a web-based alumni data information system in the P. TI Study Program.

Based on the results of observations by conducting interviews on May 28, 2021, it is known that in the P. TI study program there is an information system website that contains information about the study program, but in the information system that already exists in this study program, there are several shortcomings, namely in the news section and job vacancies listed. not updated and there is no special alumni data information system to manage alumni data for P. TI study programs.

## RESEARCH METHOD

This research method is research and development (Research and Development). Research and Development (R&D) is a research method used to produce certain products and test the effectiveness of these products [8]. The resulting product will be subjected to a needs analysis and feasibility test so that this research can be implemented. The design in this study uses the ADDIE model. The ADDIE stage consists of five steps, namely: (1) Analyze, (2) Design, (3) Development, (4) Implementation, end (5) Evaluation [9].

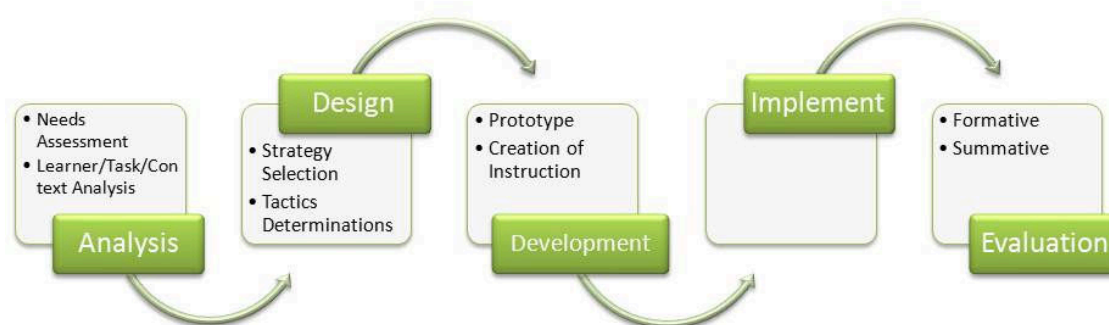


Figure 1. ADDIE Stage

ADDIE stages in research include: (1) Analyze is a systematic process to identify problems and desired conditions. Includes literature review, observation, or observation. At this stage of analysis, the researcher conducted interviews with the study program parties regarding the needs analysis that would be developed in the information system related to alumni. (2) Design is the stage after the analysis stage where the researcher already knows the analysis of the needs that will be developed in the alumni information system, so in this design stage the researcher makes a flowchart, UML type Use Case Diagram, ERD. (3) Development, namely making a website-based system based on a design using the PHP and MySql programming language which is used as a database. (4) Implementation aims to test the use of new products. New products are tested to see how feasible the products that have been developed are. (5) Evaluation is the last stage to see an assessment based on suggestions and field trials. In this case, the researcher evaluates what deficiencies must be added in the product being developed [14].

Data collection techniques used in this study are: (1) Communication techniques by interviewing respondents using unstructured interview guidelines. and (2) Documentation technique by distributing closed questionnaires given to system experts. The scale used is a Likert scale with a score of 1-5. The Likert scale will be measured and translated into variable indicators. Then the indicator is used as a starting point for compiling instrument items which can be in the form of statements [15].

The types of data in this study are qualitative and quantitative data. Qualitative data in the form of criticisms and suggestions put forward by website experts are used as material to improve the Alumni Data Information System product. While quantitative data in this study uses descriptive statistics, in the form of statements Very Good, Good, Enough, Less, Very Poor which is converted into quantitative data with a scale of 5, namely by scoring from 1 to 5. Calculate the average score of each aspect with the formula as following:

$$\bar{x} = \frac{1}{total\ validator/responden} \times \frac{\sum_i^n x}{n}$$

The steps in data analysis include: 1) collecting raw data, 2) scoring, 3) the score is converted to a value on a scale of 5 using the conversion reference, which can be seen in the following table:

Table 1. Data Conversion Scale

Quantitative Data	Range	Qualitative Data
5	$X > X_i + 1,8 S_b$	Very Good
4	$X_i + 0,6 S_b < X \leq X_i + 1,8 S_b$	Good
3	$X_i - 0,6 S_b < X \leq X_i + 0,6 S_b$	Enough
2	$X_i + 1,8 S_b < X \leq X_i - 0,6 S_b$	Not Enough
1	$X \leq X_i - 1,8 S_b$	Very Less

These conversion guidelines are used to determine the eligibility criteria for the developed product. The developed Alumni Data Information System product can be said to be feasible if the results of the field trial research are at least in good criteria.

## RESULTS AND DISCUSSION

### Analysis

A systematic process to identify problems and desired conditions. Includes literature review, observation, or observation. At this stage of analysis, the researcher conducted interviews with the Head of the Study Program and the Secretary of the Study Program regarding what data was needed in the alumni data collection process. According to the Secretariat of the Study Program, the data needed for alumni data collection are as follows: a) Name, b) Full Name, c) Gender, d) Email, e) Password, f) Place of Birth, g) Date of Birth, h) Address, i) Employment Status, j) Occupation, and k) Field of Work.

### Design

This information system uses the PHP programming language supported by a browser that is designed in such a way that it is easy to understand and use by alumni. In general, PHP's ability to provide components and a reliable programming language makes it possible to create applications as desired with the existing appearance and capabilities.

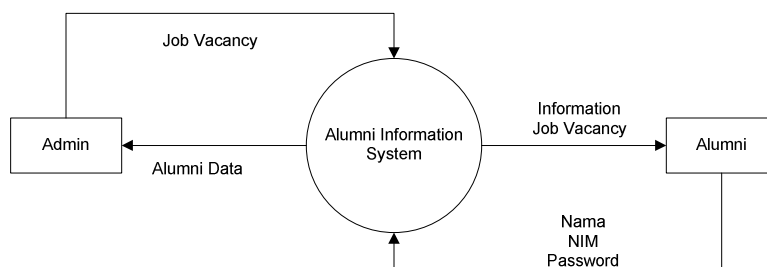


Figure 2. Data Flow Diagram Alumni Information System

The data flow in this system is used by admin and alumni entities. Admin can add types of job vacancies according to the area of expertise. Admin can manage alumni data that has been validated by the system. Meanwhile, alumni can enter their name, number, and password as registration data. After alumni become alumni information system accounts, alumni can obtain information on vacancies available in the information system.

**Development**  
The development in this study was made using the PHP and MySQL programming languages as alumni data storage and vacancies information.



Figure 3. Home Menu

The home menu has features that can be accessed, namely: profiles, testimonials, information, logins, tracer studies, and contacts. The login feature is used by alumni for full access to the alumni information system. Where alumni can see the latest types of vacancies according to their field of expertise.

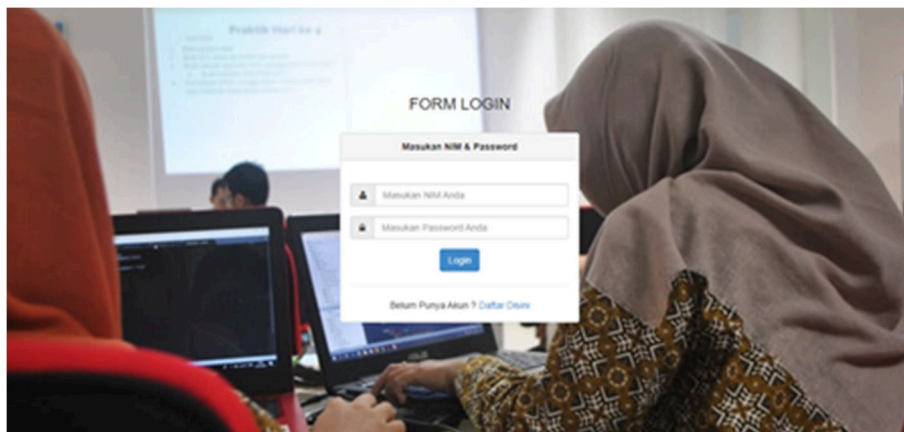


Figure 4. Login Menu

The login menu is devoted to alumni who have become official accounts on the alumni information system. By entering the username and password, alumni can get services from the system. The number entered in the login menu is only in the form of numbers, while the password is a combination of letters and numbers. If the alumni enter a number and password that do not comply with the provisions, the alumni cannot access the system.

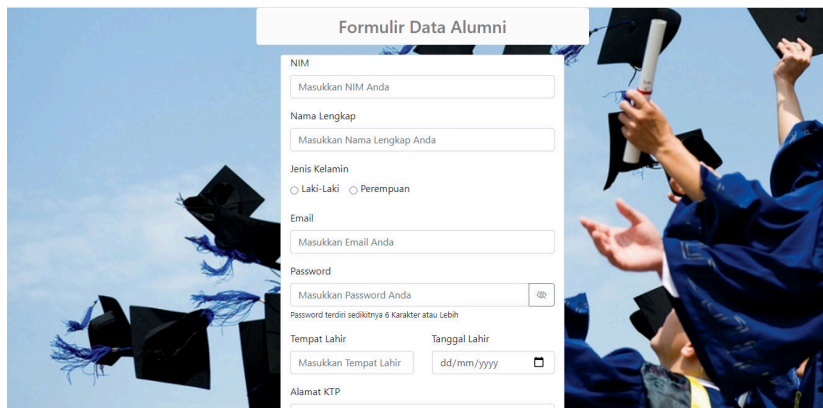


Figure 5. Registration

The registration menu is specifically for alumni who do not have an account. By completing the form, the system will validate. If an error occurs, the system will provide feedback in the form of a warning from the error.

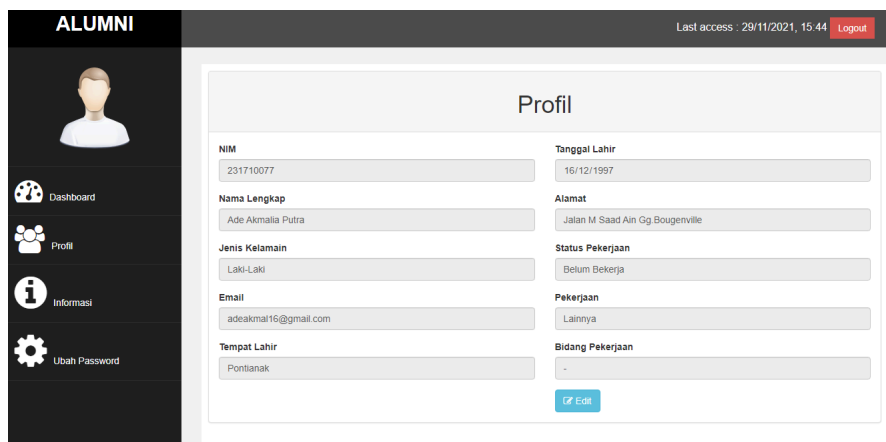


Figure 6. Alumni Profile

The profile menu is a display of personal biodata of each alumni who already have an account. The profile menu presents the data that has been entered on the registration form. If there is a data error, the alumni can update the data.

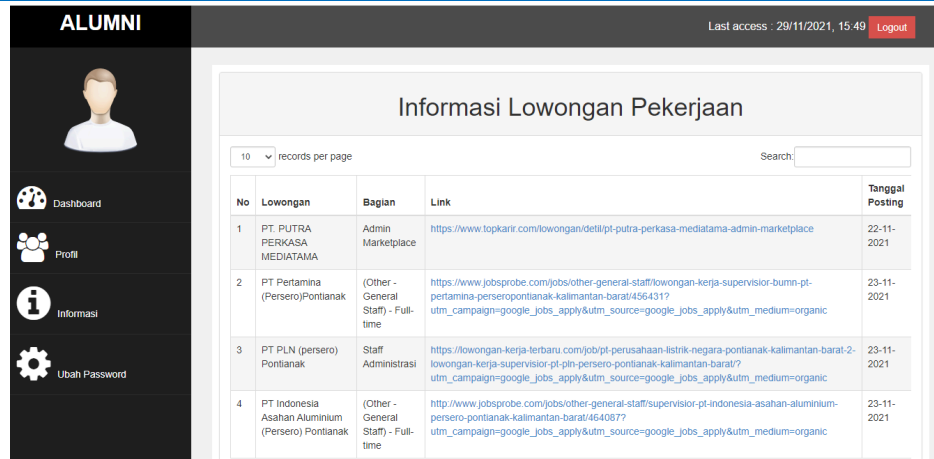


Figure 7. Job Vacancy Menu

The job vacancy information menu can only be accessed by alumni who already have an account. Job vacancies will be provided to all accounts, so alumni can get the latest job vacancies. Job information is equipped with hyperlinks that refer directly to any information from the vacancy.

This research data was obtained from the results of filling out the instrument in the form of a questionnaire given to two media experts to assess the feasibility of the alumni data information system that had been developed. Before the system expert filled out the questionnaire, each system expert tested the information system that had been developed. The results of the system expert test are in the form of suggestions and assessments. The results of these data can be seen in the following table.

Table 2. Eligibility of System Experts

System Experts	Usability	Functionality	Communication Visual	Amount	Average	Criteria
1	21	27	36	84	4,20	Very Good
2	24	34	35	93	4,65	Very Good
Amount	45	61	71	177	8,85	
Average	4,5	4,35	4,43	4,42	4,42	
Criteria	Very Good	Very Good	Very Good	Very Good	Very Good	

Based on the table above, it shows that the average feasibility in terms of usability, functionality, and visual communication aspects of the two media experts, namely the first media expert received an average score of 4.20 with the criteria of "Very Good", while the second media expert obtained an average score of 4. an average of 4.65 with the criteria of "Very Good". Based on the usability aspect, it obtained an average score of 4.5 with the criteria of "Very Good", the functionality aspect obtained an average value of 4.35 with the



criteria of "Very Good", and the visual communication aspect obtained an average value of 4.43 with the criteria of "Very good". The total of all aspects obtained from the two media experts is 4.42 with the criteria of "Very Good" so it can be concluded that the alumni data information system is categorized as very feasible to use.

### CONCLUSION

Based on the research results, it can be concluded that the alumni information system is designed using data flow diagrams and developed using the PHP programming language and MySQL as alumni data storage. The alumni information system has been tested for feasibility by 2 system experts in terms of usability, functionality, and visual communication aspects. The overall average value in these aspects is 4.20 and 4.65, both values are included in the "Very Good" criteria.

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