Design and development of a website-based information system for receiving diplomas in the information management department of the Fakfak State Polytechnic

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A R T I C L E I N F O

ABSTRACT

The need for fast and accurate information is really needed by universities, because fast information will influence policies or steps taken. This requires universities to take concrete steps in providing information. Fakfak State Polytechnic, especially the Informatics Management Department, in the process of collecting, managing and providing information on the requirements for receiving or taking a diploma is still manual. Using technology is one of the right solutions for the rapid dissemination of information. Design of a web-based development diploma recipient information system at the Department of Information Management, Fakfak State Polytechnic. This system emerged as a solution aimed at assisting informatics management students in obtaining their diplomas. The method used by the author in creating this system is the waterfall method starting from the process of planning, analysis, design, writing program code, program testing and program design and system maintenance. The results of this research produced a website that is used to provide information and accommodate files which are a prerequisite for obtaining a diploma.

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1. INTRODUCTION

The increasingly rapid development of information systems technology is currently being felt by universities (Andi Roy et al., 2021). Moreover, there are many demands from various university management parties (Riyadh Arridha et al., 2020). This requires universities to take concrete steps in providing information on the use of technology (Permadi et al., 2020). Not only is the use of tools in the form of sophisticated computers with high specifications, but accurate information is also needed by interested users (Ismail & Kuppusamy, 2022). The need for fast and accurate information is very much needed by universities, because if the information is not obtained quickly it will affect the policies or steps taken. So the need for effective and efficient information becomes a basic need for a university (Putri et al., 2022). Moreover, information is related to student lecture activities which are basically carried out by the academic department under the study program (Arridha et al., 2022).

Fakfak State Polytechnic, Department of Informatics Management, in the process of obtaining and providing information regarding collecting and managing data on the requirements for receiving or taking a diploma is still manual (Mualo et al., 2023). Researchers think that the Informatics Management Department certainly needs an information system to provide precise and accurate information in the form of requirements for obtaining a diploma which can help in processing file collection data safely, quickly, effectively, efficiently and accurately in storing files to

be able to get a diploma, so you can find out who has completed or collected the files through an information system.

Based on the problems found, the author created a website design which can help provide information and facilitate the process of collecting and processing data on recipients of diploma files. with the title Design and Development of a Web-Based Diploma Recipient File Information System.

2. RESEARCH METHOD

Method of Collecting Data

To obtain the data needed in this research, the author used several data collection methods, namely as follows: a) Observation Method, data collection was carried out deliberately and systematically (Andi Roy & Riyadh Arridha, 2020). The author made direct observations in the Informatics Management Department, in order to obtain the data needed by the author in compiling this research. b) Interview Method, the author conducted questions and answers directly to the Head of the Informatics Management Department and Alumni to find out the necessary data related to information systems as material for preparing research (Mantik et al., 2022). c) Literature Study Method, data collection methods in library studies, the author conducted studies from several books, e-books, e-journals and learning modules that are closely related to this research (Magfirah et al., 2022).

Software Development Methods

The software development method is a framework used to structure, plan and control the development process of an information system (Rohman & Brilian, 2023). The method used by the author is the waterfall method (Aceng Abdul Wahid, 2020). The Waterfall method is a method that provides a sequential or ordered software life flow approach." The stages in the waterfall method are as follows (Khoza & Marnewick, 2020).
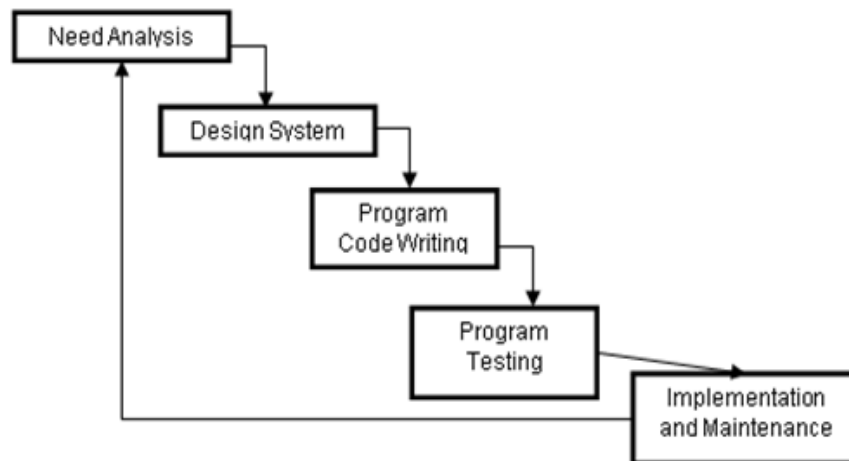

Figure 1. Stages in the waterfall method

The following are the specifications for the requirements for a website-based information system for diploma acceptance in the information management department of the Fakfak State Polytechnic which is described in the form of a DFD (Data Flow Diagram)(Simatupang & Nafisah, 2020).
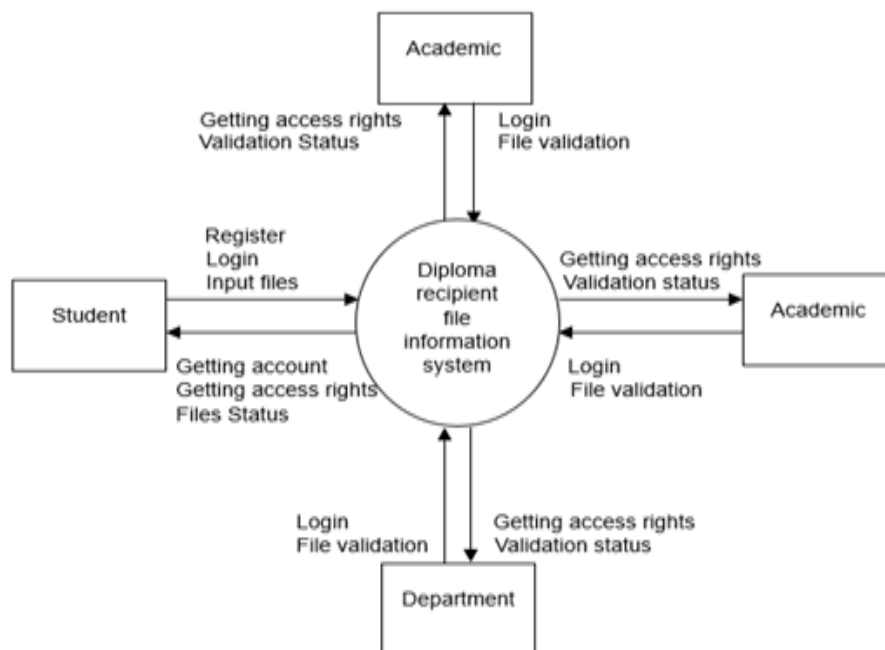
Figure 2. DFD level 0

Figure 3 shows the flow of information from input processing to output in a system starting from students registering or creating an account. Login and input free library files and requirements for obtaining a diploma(Sugito, 2021). Along with the officer's flow which starts from logging in, checking files and validating files(Geofann Nerissa Arviana, 2021).
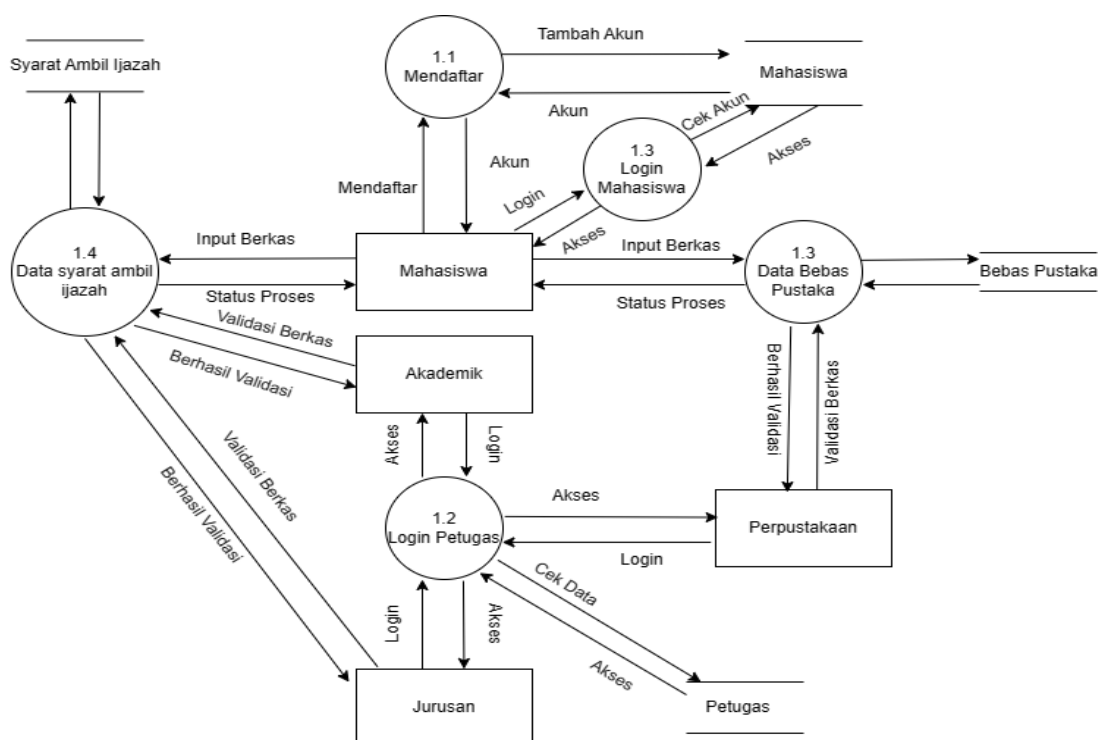

Figure 3. DFD level 1

The following is the interface design for the information system for accepting diplomas in the information management department of the Fakfak State Polytechnic based on a website. Figure 4. This is the Student Dashboard page.
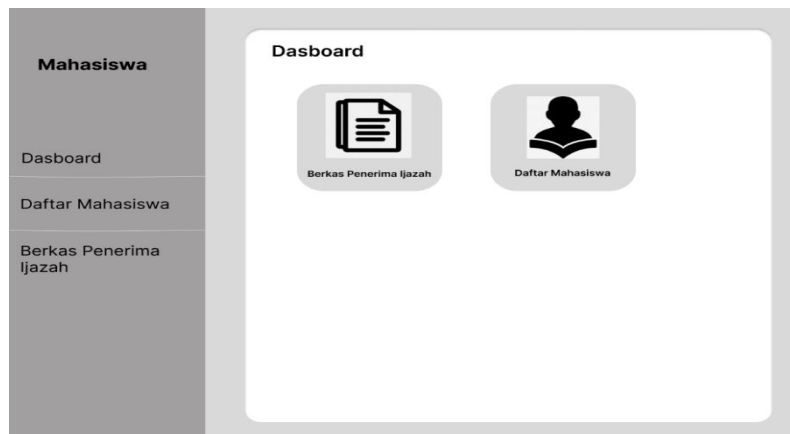

Figure 4. Student dashboard

In figure 5 is the System Design of the Student Registration Page which contains the completeness of the files for students who have or have not completed the files.

Figure 5. Student list

Figure 6 contains a page for inputting files that must be completed as a condition for obtaining a diploma.

Figure 6. Upload files

3.   RESULTS AND DISCUSSIONS

The design of a web-based diploma recipient information system is a website created specifically to help informatics management students in collecting their diplomas. This system emerged as a solution aimed at assisting informatics management students in obtaining their diplomas. This system design covers various aspects, including interface design, Entity Relationship Diagram (ERD) to describe relationships between entities, Data Flow Diagram (DFD) to describe and analyze more deeply an information system, Flowchart to logically describe the flow chart of the entire system, Waterfall to enable systematic and sequential development stages, and testing using the Black Box method, test results can be seen in Table 1.

Table 1. Black Box Testing

No	Testing	Test Plan	Expected Results	Test Result
1	Create a student account	Fill out the form to create a student account	Successfully created a student account	Succeed
2	Student Login	Enter your username (student number) and password	Successfully entered the student dashboard page	Succeed
3	Library-Free Input	Fill in library-free data	Successfully Input Library Free File	Succeed
4	Input the requirements for taking the diploma	Fill in the required data for obtaining a diploma	Successfully input data for diploma requirements	Succeed
5	Officer Login	Enter username, password and status	Successfully entered the officer dashboard page	Succeed
6	Library staff Validate library free data	Provides status and messages in the form of correct or incorrect files	The system will provide status and messages in the form of correct or incorrect files	Succeed
7	The department officer checks the data on the requirements for taking the diploma	Giving a message in the form of students going to academics to get their diplomas	The system will give the student a message to the academic to collect the diploma	Succeed
8	The Academic Officer validates the requirements for taking the diploma	Give a message that students have taken their diplomas	The system will provide a message that the student has taken the diploma	Succeed

The results of testing using the Black Box method show that the system or website runs according to plan and is able to provide effective information and requirements for obtaining diplomas for users based on the results of the following questionnaire distribution: a) The first question with a percentage of 93.3% indicates that the majority of respondents stated that they strongly agreed that this website helped in obtaining a diploma. b) The second question with a percentage of 89.3% indicates that the website is easy to use. c) The third question with a percentage of 93.3% indicates that this system is useful in obtaining diplomas. d) The fourth question with a percentage of 93.3% indicates that this website makes it easier to obtain a diploma. e) The fifth question with a percentage of 85.3% indicates that this website is easy to understand. e) The sixth question with a percentage of 84.0% indicates that the security of this website is satisfactory. f) The seventh question with a percentage of 92.0% indicates that this website can help in knowing the requirements for obtaining a diploma. g) The eighth question with a percentage of 90.6% indicates that this website can store data on the requirements for obtaining a diploma. h) The ninth question with a percentage of 89.3% indicates that this website is still running without any problems. i) The tenth question with a percentage of 90.6% indicates that overall the website is quite satisfying for users.

4.   CONCLUSION

Based on the discussion previously explained, the author concludes that the Web-Based Information System for Diploma Recipients in the Informatics Management Department of the Fakfak State Polytechnic is a web information system for presenting prerequisite files for taking diplomas by Alumni. This information system makes it easier for departments, academics, libraries in the process of validating files which is a requirement for obtaining a diploma. This website can provide assistance in terms of time efficiency in collecting data on completeness of student files and better file management.

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