

## Management of Student Requirements Data Collection for Graduation and Diploma Retrieval Activities

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### ABSTRACT

*University of KH. A. Wahab Hasbullah Jombang is a private university with a number of students reaching 2,300 in 2021. The large number of students demands manpower and time to provide administrative services to students. One of the student services that needs attention is the service for taking certificates and graduations which are still done manually. The purpose of this research is to make it easier for staff, prospective graduate students, and graduation committees to manage graduation activities and take certificates by utilizing digital media. This research was conducted at the University of KH. A. Wahab Hasbullah Jombang uses the experimental method. The development model used is the waterfall model. The test results of applications developed using the blackbox method show that the system developed is in accordance with the expected results. This means that the application developed is feasible to be applied to management activities for sending graduations and taking diplomas at University of KH. A. Wahab Hasbullah Jombang.*

**Keywords:** *Management; Digital Applications; Graduation; Certificate*

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### INTRODUCTION

University of KH. A. Wahab Hasbullah Jombang is a private university with a number of students reaching 2,300 in 2021. The large number of students demands manpower and time to provide administrative services to students. One of the student services that needs to be considered is the service for taking certificates and graduations which are procedural activities that must be carried out by students as a form of validating a bachelor's degree (Idris & Rahmah, 2022). The results of observations made at the graduation admissions service center at KH. A. Wahab Hasbullah Jombang pointed out that graduation service activities and diploma retrieval were still being carried out manually. Graduation registration uses a form obtained from the academic field which is then returned to the academic field after being filled in by prospective graduate students. The data of prospective graduates is then inputted manually by the academic field staff after the form is returned, where this process also applies to diploma retrieval activities. The amount of time and effort required in this activity raises several problems including the potential for errors in data input by academic staff and loss of student forms. Therefore, a breakthrough is needed to solve this problem, namely by utilizing a digital-based information system to facilitate student services by developing management applications for collecting graduation requirements and taking diplomas.

An information system is an organized combination of users, hardware, software, communication networks, and data sources that collect, transform, and disseminate information using a computer so that it has more value and is more useful in an organization (Anggraeni, 2017; Arizal & Puteri, 2020; Fiollita & Dijaya, 2022). The benefit of using information systems in the academic field is to make it easier for prospective graduates, staff, and graduation committees to manage prospective student data so that these activities become more effective and efficient (Ziaurrahman & Irfan, 2022; Sihotang & Wagin, 2020; Arizal & Puteri, 2020). Research by Idris & Rahmah (2022), shows that the development of a digital-based information system for graduation management can make it easier for students to register for graduation because it can be done anytime and anywhere without asking for a lot of time. The results of

research by Ziurrahman & Irfan (2022), also show that the development of a digital-based information system for graduation management is easier to control because data can be updated in real time, is more effective, efficient and systematic. According to Anisah, et al. (2021), the use of digital-based information systems in an organization has an important role in the survival of the organization. This is because the data archive is important information that can be used as evidence of accountability or as a supporting tool in making decisions. Based on this background description, the researcher is interested in developing a management application to collect data on student requirements for graduation activities and taking diplomas. The purpose of this research is to make it easier for staff, prospective graduate students, and the graduation committee to manage graduation activities and take certificates by utilizing digital media.

## **METHOD**

This research was conducted at the University of KH. A. Wahab Habullah Jombang uses the experimental method. The development model used is the waterfall model. This method is systematic in nature where software development is carried out sequentially (Arizal & Puteri, 2020; Hay's & Maulana, 2018). In addition, this method can be used on teams with fewer than 3 members (Agnarsson, et al., 2015). The devices needed in the development of this application include hardware and software. The hardware consists of a CPU, dual core processor, 1GB memory, 160GB hard drive, LCD, keyboard, mouse and printer. While the software needed in developing this application is Dreamweaver 8, Mozilla Firefox, and the Windows 7 operating system. Application development in the waterfall development model goes through several stages, namely system planning, system analysis, system design, implementation, and maintenance (Putra & Shinta, 2015).

- **System planning and analysis**

This stage begins with observations and interviews with the graduation committee and prospective graduates of KH.A. Wahab Hasbullah to find out the problems faced. The observation results show that prospective graduates complain about registration activities that are less effective and efficient. Furthermore, problem identification and problem solving are carried out based on the observational data obtained. The next step is to identify the software and programming language that will be used in building the application.

- **Desain Sistem**

The design of this system is very important to achieve the goals of a system. At this stage, the design is carried out repeatedly to match the desired appearance to build a system.

- **Development Process**

After the design is approved, it is changed in the application form. At this stage, the coding stage begins where you must continue to carry out development and integration activities with the parts from start to finish until the results of the application being developed are realized.

- **Product implementation or completion**

Before the system is implemented, a testing process is first carried out on the program to detect errors in the system being developed so that the system can run as expected. If deficiencies are found in the application, repairs can be made.

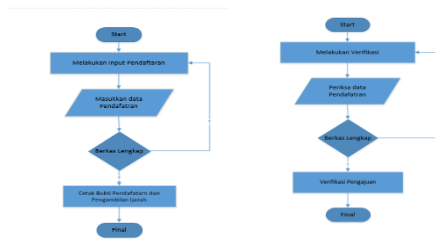
## **RESULT AND DISCUSSION**

This chapter discusses the planning and development of application systems. After the development stage is complete, testing of system performance is carried out in the application being developed.

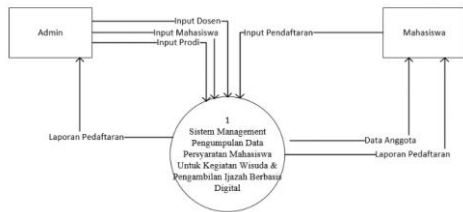
### **Result**

- **System Design**

This stage is carried out to design the system and/or improve the system being developed. The design of the application system in this study can be seen in Figure 1. Figure 1 shows that after the prospective graduates have inputted the data, the admin will verify the data, if the prospective graduates' data is complete, then the admin will verify the data submission. The main process of compiling the entire system as well as the relations between processes and data storage in the developed system (DFD level 0) can be seen in Figure 2. Figure 2 shows that at DFD level 0 there are four processes involved, namely member master, admin master, students, and registration report.



**Figure 1.** Research Flowchart Diagram



**Figure 2.** Level 0 Research DFD Diagram

- **System Application View**

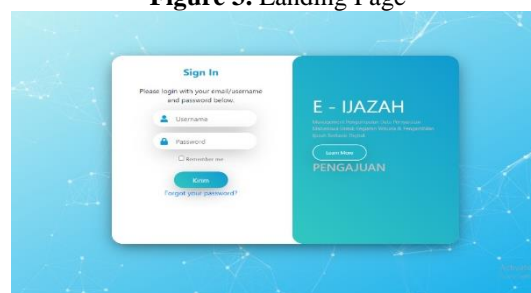
The appearance of the application that has been developed is as follows.

- **Lending Page**

The landingpage page (Figure 3), is the initial appearance when the website is opened. After that, the user will be directed to login to the account (Figure 4) and the year of graduation for students who will take the diploma (Figure 5).



**Figure 3.** Landing Page



**Figure 4.** Login Page



**Figure 5.** Student Graduation Year Page

- Backend Page

This page contains the dashboard menu and the user page. After the user has successfully logged in, then the user will be directed to the dashboard page. The dashboard page (Figure 6) contains a welcome message.



Figure 6. Dashboard

Then the user will be directed to the user menu (Figure 7). The user menu consists of the student menu which contains student data information (Figure 7a), the lecturer menu which contains lecturer data information (Figure 7b), and the study program menu which contains study program data information (Figure 7c).

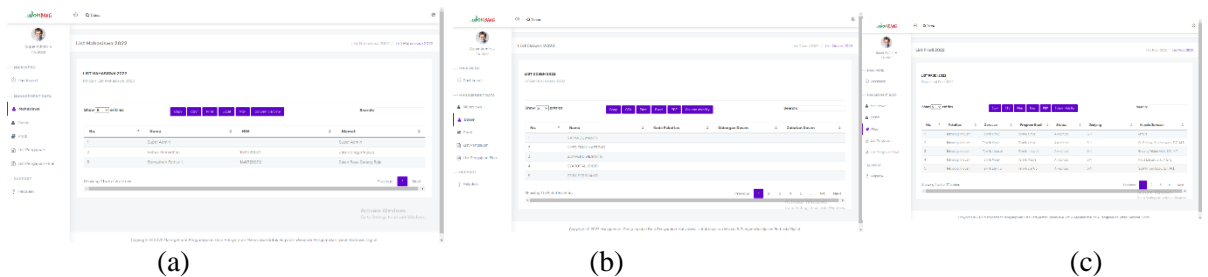


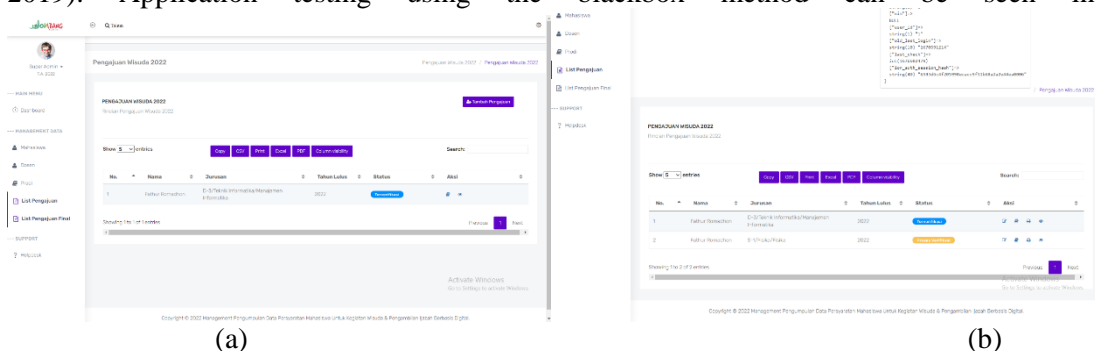
Figure 7. User page (a) student menu, (b) lecturer menu, (c) study program menu

- Submission Page

This page contains the submission menu (Figure 8). The application page (Figure 8a) contains options for submitting graduation registration or submitting a diploma retrieval form. After students complete the submission, the page display will change as shown in Figure 8b. Figure 8b also displays the add submission menu. If students choose the add menu, the page view will look like in Figure 8c. after the submission process is complete, students are directed to print proof of submission (Figure 8d).

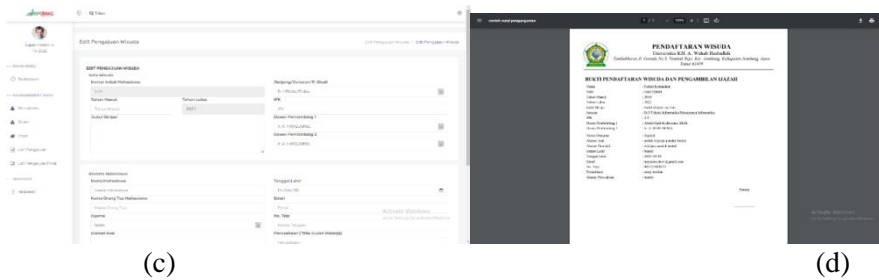
## Discussion

After the application development has been completed, the next step is to test the system that has been developed. Testing was carried out using the blackbox method (Idris & Rahmah, 2022). This test is based on functional tests to find out if there are errors in the application being developed (Huda & Nudin, 2019). Application testing using the blackbox method can be seen in Table 1.



(a)

(b)



**Figure 8.** Submission page, (a) submission list page, (b) fixed submission list page, (c) additional submission page, (d) printed proof of submission page

**Table 1.** System Testing Using the Blackbox Method

Tasted Form	Expected Result	Test Result	Description
Login Admin	If the admin successfully logs in, he can add student, lecturer, study program data and add submissions	Add student, lecturer, study program data and add submissions	Corresponding
Student login	If a student logs in using the correct username and password, a menu for the operator will appear.	Appears added application for graduation.	Corresponding
Student	Students apply for graduation	A successful notification appears and the data is recorded.	Corresponding
Student	Students fill out the required files	A successful notification appears and the data is recorded.	Corresponding
Admin	The admin verifies the application for graduation.	A successful notification appears and the data is recorded.	Corresponding

Table 1 shows that the system developed is in accordance with the expected results. These results are consistent with the research of Yazidinni'am & Harino (2019), which shows that the test uses blackbox testing with the results of the menu page as expected, which means the application being developed is ready to use. The test results also show that the developed application has good functional compatibility and runs correctly, meaning that the developed application is feasible to be applied to management activities for submitting graduations and obtaining diplomas at KH University. A. Wahab Hasbullah Jombang. The results of this study are in accordance with Fridayathie & Laksono's research (2017); Arizal & Putri (2020), which shows that digital-based application development is very helpful for prospective graduates and graduation committees to manage graduation data.

## CONCLUSION

Based on the results of the research and discussion, it can be concluded that the digital-based information system that has been developed is feasible to apply to management of graduation requirements and submission of diplomas at KH University. A. Wahab Hasbullah Jombang. The features of the application being developed are still simple, so it is hoped that further research will add features that support the benefits of the application. In addition, the application developed is still based on the website so it is hoped that for further research the application development can be based on Android to improve the quality of the application.

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