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Research Article

Implementation of Simagin (Industrial Internship Information System) Based on a Website at Politeknik Negeri Media Kreatif PSDKU Makassar, , Indonesia

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Abstract.
The research article presents the implementation of the SIMAGIN (Industrial Internship Information System) at Politeknik Negeri Media Kreatif PSDKU Makassar to address the inefficiencies in managing industrial internship activities. The system, developed using the extreme programming (XP) methodology, aims to streamline the internship process by facilitating registration, monitoring student activities, and enabling transparent information about available internship positions. The web-based system was designed to benefit students by providing efficient access to internship partner companies and enhancing the quality of their internship experiences. The research also emphasizes the use of black-box testing to ensure the system's functionality. The study concludes that the implemented system successfully improves the industrial internship process and recommends further refinements, including the exploration of mobile applications. Overall, the research aims to significantly benefit the institution and students participating in the industrial internship program by enhancing the quality and efficiency of the internship experience.

Keywords: technology integration, student activities, internship program

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1. Introduction

Politeknik Negeri Media Kreatif is a vocational education institution that focuses on the creative industry. As part of the curriculum, students are required to take part in an internship program in the industry for several months. Industrial internship activities are carried out so that students have work experience which can later increase their knowledge and experience during industrial internships. However, in its implementation there are still many obstacles faced by students who will carry out industrial internship activities, such as the difficulty of finding internship partner companies and the lack of transparency of information regarding available internship positions and also an obstacle for supervisors who want to know the presence of students in industrial

internship locations and the lack of information about daily activities carried out by students.

This research uses an information system which means a combination of technology, procedures, and human resources whose role is to collect, store and inform data used to support decision making, coordination, and control in an organization [11]. Information systems consist of a mixture of people, technology, and procedures used to collect, process, store send, and notify data that is useful for an organization. [6].

Website-based information system development using the XP (Extreme Programming) method as a software engineering methodology that is widely used to develop applications by developers [12]. With its advantages, namely being able to adjust quickly to changes that occur during application development [7]. It is also suitable for projects that have dynamic requirements or projects that have various unclear requirements [10].

In the previous literature review, there were various efforts to improve the effectiveness of industrial internship programs in various vocational education institutions. Research conducted by [9] investigated the aspect of finding internship partners through online platforms, but has not specifically focused on the needs of students at Politeknik Negeri Media Kreatif PSDKU Makassar. On the other hand, research conducted by [2] explores the concept of paperless office in the context of document management in educational institutions, but has not integrated aspects of monitoring student attendance and daily reporting during industrial internships.

In the context of information system development methodology, some studies, such as the one conducted by [1], emphasize the advantages of Extreme Programming (XP) method to overcome the challenges of dynamic requirement changes in application development. However, this research will make further contributions by focusing on specific needs in the context of industrial internships at Politeknik Negeri Media Kreatif PSDKU Makassar.

In addition, this research will also involve several stakeholders, such as supervisors, internship partner companies, and students. In system testing and evaluation of website-based industrial internship information systems using black box, which means the application system functionality test method to show errors in the application system such as errors in application system functions, as well as missing application menus [3].

It is hoped that this research can provide significant benefits for Politeknik Negeri Media Kreatif PSDKU Makassar and students who take part in industrial apprenticeship programs. With the implementation of an effective website-based industrial internship

information system, it is hoped that students can get a better quality internship experience and in accordance with their interests and competencies, and can improve their abilities and competencies in the field of creative industries.

Overall, although previous research has provided valuable insights, there has been no research that comprehensively integrates the search for internship partners, document management based on the concept of paperless office, and daily monitoring of students during industrial internships in one website-based information system. Therefore, this research is expected to be a significant contribution by combining these elements, especially in the context of Politeknik Negeri Media Kreatif PSDKU Makassar.

2. Methods

2.1. Extreme Programming

The System Development Method in system design uses the XP (Extreme Programming) method as a widely employed software engineering methodology for developing applications by developers [10]. One of its strengths is its ability to adapt to changes that occur during application development. It is also suitable for projects with dynamic requirements or various unclear requirements. The stages of software development with XP include Planning, Design, Coding, and Testing.

Planning: Understanding the system context, determining outputs, and specifying application features.

Design: This stage emphasizes the simple design of the application.

Coding: To create a software prototype, the system models that have been designed are implemented in the source code.

Testing: Testing existing application features to ensure compliance with client (customer) business procedures and the absence of errors.

2.2. Black Box Testing

The system testing method uses the black box method. Black box testing is a software testing method that does not require showing detailed software outcomes. In black box testing, the focus is observing output values based on the input values themselves [8]. There are many types of testing techniques in Black Box testing, one of which is the Equivalence Partitioning technique, which divides the input data of the software unit into several data partitions from which test cases can be derived. In principle, test cases

are designed to cover each partition at least once. This technique attempts to define test cases that reveal error classes, thus reducing the number of test cases that need to be developed [5]. Testing using black box is done by 10 users to find out whether the functional system can work or not.

2.3. SUS (System Usability Scale)

The SUS method focuses on developing a web-based usability evaluation system through the approach of asking users to subjectively evaluate websites. Usability can be defined as the quality of a software's ability to assist users in completing a task and the extent to which the system can be used by users to achieve a particular goal [13]. SUS testing using 10 Respondents.

Formula:

$$x\boxtimes = \frac{\Sigma x}{n}$$

x⊠ average score

Σx = sum of SUS scores

n = number of respondents

3. Result and Discussion

3.1. Ongoing System Analysis.

System analysis decomposes a comprehensive system into component elements to identify and evaluate emerging issues. Researchers examine the system already in use at Politeknik Negeri Media Kreatif PSDKU Makassar to compare the workflow of the existing system with the one being designed by the researcher. The current system is depicted in the flowchart diagram below.

The procedures of the ongoing system are described in the following Flowmap:

3.2. Proposed System Analysis

The author explains the results of the formulation or design of a new system that will be developed in this analysis. The author can suggest solutions using the proposed design by examining the current system's shortcomings.

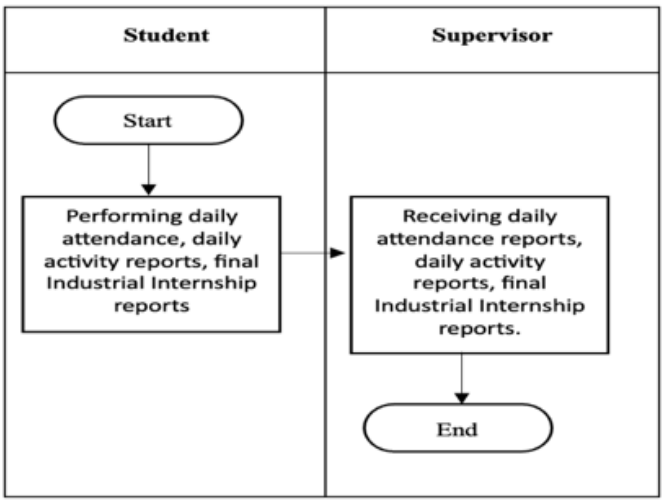


Figure 1: (a) Flow map Diagram of the ongoing system.

The proposed system has three users: Admin, who manages the system, including student data, materials, videos, schedules, and information. Supervisors are responsible for monitoring student Industrial Internship activities. Students are responsible for reporting their Industrial Internship activities.

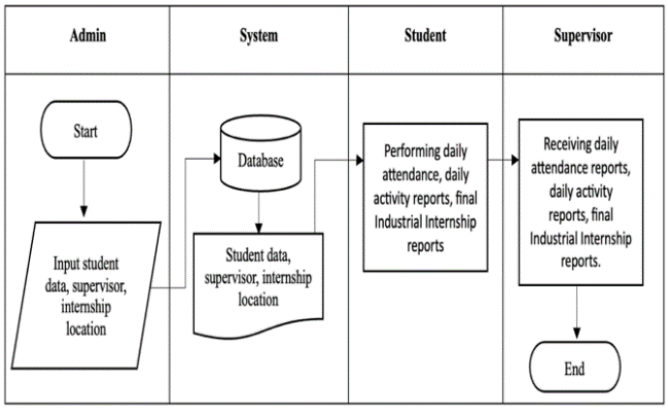


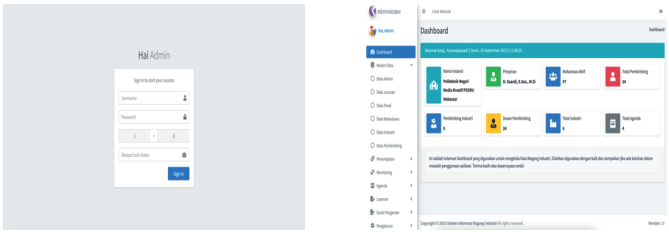
Figure 2: (a) Flow map of the Proposed System.

3.3. Implementation System

System Implementation is the part of applying the previously conceptualized design.

The main page on the Simagin website only displays information about accessible links, including a link for industry information, agenda information, guidance, information services, a supervisor portal, and a student portal.

Figure 3: (a) Main Page.



(a) (b)

Figure 4: (a) Admin Login; (b) Dashboard Admin.

Fig. 4 (a) This admin page is accessible only to administrators if information needs to be modified, such as student data for each program and data about various industries. Fig. 4 (b) The Dashboard page will display information such as the institution's name, leadership, active students, total supervisors, industrial supervisors, supervising professors, the total number of industries, and the total number of agendas.

3.3.1. Functional System Testing using Black Box Testing

TABLE 1: Black Box Testing of Login Page.

	Expected	Status
Correct Username and Password	Displays the admin dashboard page	(√) **Success** ( ) Fail
Username and Password are empty or incorrect	Displays an error message and cannot proceed	(√) **Success** ( ) Fail

Table 2: Black Box Testing of Department Data Page.

	Expected	Status
Select the Department Data menu	Display a page containing a table of department data	(√) **Success** ( ) Fail
Choose the Add button	Display a page containing a form for adding department data	(√) **Success** ( ) Fail
Select the Edit button	Display a page containing a form for editing department data	(√) **Success** ( ) Fail
Select the Delete button	Display a confirmation for deleting data before processing, and the department data can be deleted	(√) **Success** ( ) Fail

Table 3: Black Box Testing of Prodi Data Page.

	Expected	Status
Select the Department Data menu	Display a page containing a table of prodi data	(√) **Success** ( ) Fail
Choose the Add button	Display a page containing a form for adding prodi data	(√) **Success** ( ) Fail
Select the Edit button	Display a page containing a form for editing prodi data	(√) **Success** ( ) Fail
Select the Delete button	Display a confirmation for deleting data before processing, and the prodi data can be deleted	(√) **Success** ( ) Fail

3.4. System Usability Scale Testing

With the SUS (System Usability Scale) test results showing at 80.4 and getting an adjective rating value of “Excellent” and getting Grade “A”. This means that in terms of usability, this system is feasible and acceptable to users. Also, after being tested functionally, this system is already functioning properly.

4. Conclusion

Based on the results of research and testing of web-based industrial internship information systems that have been carried out, resulting in the conclusion that the Industrial

Table 4: Black Box Testing of Student Data Page.

	Expected	Status
Select the Department Data menu	Display a page containing a table of student data	(√) **Success** ( ) Fail
Choose the Add button	Display a page containing a form for adding student data	(√) **Success** ( ) Fail
Select the Edit button	Display a page containing a form for editing student data	(√) **Success** ( ) Fail
Select the Delete button	Display a confirmation for deleting data before processing, and the student data can be deleted	(√) **Success** ( ) Fail

Table 5: Black Box Testing of Industry Data Page.

	Expected	Status
Select the Department Data menu	Display a page containing a table of industry data	(√) **Success** ( ) Fail
Choose the Add button	Display a page containing a form for adding industry data	(√) **Success** ( ) Fail
Select the Edit button	Display a page containing a form for editing industry data	(√) **Success** ( ) Fail
Select the Delete button	Display a confirmation for deleting data before processing, and the industry data can be deleted	(√) **Success** ( ) Fail

Internship Information System was successfully built and implemented to assist the processing of industrial internship activities at Politeknik Negeri Media Kreatif PSDKU Makassar. By using the Extreme Programming method to be successful for campuses and students in the planning process to system testing. The results obtained integrate the search for internship partners, document management based on the concept of paperless office, and daily monitoring of students during industrial internships in one website-based information system. The average SUS score of respondents is 80.4. Based on the interpretation of the SUS score, the industrial internship information system made according to the respondents is in the grade “A” category with an adjective rating value of “Excellent” this means usability or usability, this system is feasible and acceptable to users.

Table 6: Black Box Testing of Supervisor Data Page.

	Expected	Status
Select the Department Data menu	Display a page containing a table of supervisor data	(√) **Success** ( ) Fail
Choose the Add button	Display a page containing a form for adding supervisor data	(√) **Success** ( ) Fail
Select the Edit button	Display a page containing a form for editing supervisor data	(√) **Success** ( ) Fail
Select the Delete button	Display a confirmation for deleting data before processing, and the supervisor data can be deleted	(√) **Success** ( ) Fail

Table 7: SUS Score Percentile Rank.

SUS Score	*Grade*	*Adjective Rating*
>80,3	*A*	*Excellent*
68 – 80,3	*B*	*Good*
67	*C*	*Okay*
51 - 66	*D*	*Poor*
>51	*E*	*Awful*

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