

Development of an Information System for Industrial Practice Data Management in Electrical Engineering Education, Faculty of Engineering, Makassar State University

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Abstract—This research aims to design and create system information website -based industrial practices in the Department of Electrical Engineering Education, FT UNM and knowing level eligibility system information Website -based industrial practice in the Department of Electrical Engineering Education, Faculty of Engineering Makassar State University. Method the research used is Research and Development (R&D) with development model Prototyping. Development system This information uses PHP (Hypertext Preprocessor), system interface use bootstrap framework that can be used for various purposes device because bootstrap is responsive. Testing done to find out quality system developed information use ISO 9126 indicators consisting of from aspect functionality, reliability, portability and usability. The results of This research is (1) Information Systems Industrial Internship in the Department of Electrical Engineering Education, Faculty of Engineering, Makassar State University The system has three users, namely admin/coordinator, supervising lecturer, and student, where each user has features according to their needs. access rights held. (2) Test results system information industrial practices acquired mark function ality 1 (Good), testing reliability obtained by 100%, testing usability of 53.94% (High).

Keywords— Information System Industrial Practices, Website, ISO 9126, Prototyping.

I. INTRODUCTION

Makassar State University (UNM) as one of the from institutions education always trying to produce quality graduates. Various efforts done to be able to produce graduates who are ready to fulfill needs of the world of work. One of them The efforts made by UNM are equip students with technical competencies based on real experience developed depart from device estimated capabilities required for implementation of the assigned graduate tasks and leading to mastery device academic and professional abilities of graduates after follow a number of learning experiences. Formation academic, professional, and vocational abilities of educational programs requires systematic, gradual field experience. In line with with In this effort, the Faculty of Engineering, Makassar State University (FT UNM) included Subject Industrial Practices into eye compulsory lectures taken and passed by every student.

Tamrin (2008) Industrial Practice is included in the Field Experience Program course group. Non-educational, where student learning activities are carried out in companies or industries in a guided and integrated manner in accordance with expertise. field study, as vehicle formation academic ability (professional) student expertise.

Arini, D. (2011) Through Students' Industrial Practice is expected capable see, observe, understand and analyze the production process and other operational activities carried out by the Industry. With do observation at a time By carrying out these activities, it is hoped that students will also be able to find problems in the industrial world or world of work to be addressed as a thesis or final assignment topic

According to Guidelines Industrial Practice FT UNM (PI Team, 2016), the Industrial Practice Program, especially at FT UNM, is one of the... subject must with credit weight of 3 credits. Implementation will take a minimum of 2 months and 256 hours with system blocks in the odd semester and even semester. Industrial practice is carried out either individually or in groups guided by one Supervising Lecturer from the Department and one Supervisor Field from industrial parties.

Procedures implementation industrial practices are regulated in guidelines industrial practices in the form of printed books that have been distributed after get provisioning ongoing industrial practices. The guidelines provide overview of procedures implementation industry practices. However, these guidelines provide less information latest on implementation industrial practices.

So that industrial practices can walk with good and on target of course this activity must be organized with good. With the current management model, the coordinator industrial practices have experienced several difficulty in managing implementation industrial practices. One of the existing difficulties is management of incoming industrial practice proposals. Coordinator industrial practices also require a number of information as reference for determining the supervisor. Some required information among others, the burden guidance that the lecturer has, expertise industrial practices selected by participants or implementation areas industry practices. The lack of fast and accurate access to such information is certainly become constraint for coordinator to determine the supervisor for participants.

In selecting and determining Industrial Partners, there are guidelines skill for tailored participants with the study program taken. Limited distribution media information place industrial practices that are relevant to the expertise of the participants' study program become constraint for participants to determine place industry practices. Then, access information about the location industrial practices that the trainees are currently taking

information that is not fast and accurate is also a problem constraint for coordinator and supervising lecturer to monitor implementation industrial practices.

When carrying out industrial practice, participants must submit activity schedule and consult with the supervisor on a regular basis. To determine the time for guidance with the supervising lecturer Of course it's not an easy matter. A number of constraint existing guidance including time, location industrial practices, as well as inadequate guidance media.

Industry. According to guidelines industrial practice (PI Team, 2016) reports and exams industrial practices must be implemented no later than one month after industrial practice is completed. If the participant does not complete within the specified time limit, implementation industrial practices must repeated again.

After the report, exam and revision are completed, the supervisor give assessment of implementation participant industry practices referring to industry assessments of participants and reporting results industrial practice. The supervisor's assessment of the participants is still through some processes are manual and cannot be directly provided by lecturers through existing system so that the assessment process takes longer. Based on background behind it, it is necessary existence system information that helps manage industrial practice activities.

The integration of information technology and the actions of individuals who utilize it to aid operations and management are what make up information systems, according to Kroeke (2008). In a very broad sense, the term system frequently used information refers to interaction between people, algorithmic processes, data, and technology. In this sense, the term is used to refer to not only on use information and communication technology (ICT) organizations, but also for the ways in which people interact with this technology in supporting business processes.

Information System According to Turban et al. (2006), it is a process that carries out the function of collecting, processing, storing, producing and distributing information for the purpose certain. Information system built to achieve a number of purposes such as for economic process data into information / knowledge. Various abilities main system information, namely providing communication fast, accurate, and inexpensive within and between companies, enabling communication and collaboration anywhere and anytime, improving effectiveness and efficiency people who work in groups in a places / in some location anywhere.

According to Kristanto, (2003) system information is gathering from hardware and devices soft computer as well as device human beings who will process data using hardware and devices the software. In general the system information is

combination from people, hardware, devices software, network communications networks, and data sources that are collected, transformed, and undergo a flow process in a organization.

Based on understanding system information from the various sources above, can it is said that system information is a set of processed data uses computer technology to collect, process, store, analyze and disseminate accurate, timely, relevant and quality information.

II. RESEARCH METHODS

A. Types of assessment

Development research system information Industrial practice data processing was carried out at the UNM Parang Tambung Campus, Faculty of Engineering, PTE Department. research and development (R&D), R&D is method research used to produce certain products, and test them the feasibility of the product. The results of certain products are used for research that is of a needs analysis nature and to test the effectiveness of the product so that it can utilized by the community area, then required research to test the effectiveness of the product (Sugiyono, 2003).

This research was conducted for 3 months to find out validity of this application. In the type of research used in this research is study development (*research development*) where the method research used to produce system information industrial practice data processing that can used by admins, lecturers and students. Steps study R&D has 10 steps, namely (1) Potential and problems, (2) Data collection, (3) Product design, (4) Design validation, (5) Design revision, (6) Product testing, (7) Product revision, (8) Testing usage, (9) Product revision, and (10) Production mass, but in this research the author only used 6 steps from 10 steps R&D research according to Sugiyono, because this research does not will mass produced and is an application that is used as material thesis. Steps the research, namely: (1) Potential and problems, (2) Data collection, (3) Product design, (4) Design validation, (5) Design revision, (6) Product trial. This research and development process is simplified in accordance with conditions of time, cost, place and use practical in the field. Product trials are conducted using the ISO 9126 Standard with 4 Characteristics, namely (1) Functionality, (2) Portability, (3) Reliability, and (4) Usability using their respective instruments.

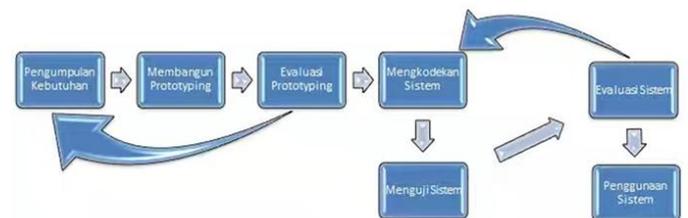


Fig. 1. Stages Method *Prototype*

(Source: Myrson 2008)

B. Development Model

Under development system information This industrial practice data collection, using the *Prototyping* model. The *Prototyping model* is a simple software model that allows users to have a basic overview of the program and do testing

beginning. *Prototyping* provides facility for developers and users to interact with each other during the manufacturing process, so that developer can easily model device software created. In designing system with method *This prototyping*, to show the business process overview which is a collection of processes that contain a collection of structured and interrelated activities.

C. Research Instruments

1. Instrument Aspect Functionality

Instrument study aspect functionality in the form of Checklist of functions of the information system being developed. Checklist of functions used for testing. aspect functionality shown in table 1 below:

TABLE I. Instruments Testing Aspect Functionality

No	Function	Results	
		Yes	No
1	Navigation walk with Good without There is broken link		
2	See PI information		
3	Viewing industry data		
4	See PI guidelines		
5	Do log into the system		
6	Do logout from system		
Admin			
7	View the list of PI information		
8	Add PI information		
9	Change information I		
10	Delete PI information		
11	View student list		
12	Add student data		
13	Change student data		
14	Delete student data		
15	View list of mentors		
16	Add mentor data		
17	mentor data		
18	Delete mentor data		
19	Change admin data		
20	View the list of industries		
21	Adding industry data		
22	Changing industry data		
23	Deleting industry data		
24	View student grade list		
25	Adding student grade data		
26	Changing student grade data		
27	Deleting student grade data		
28	View value monitoring data industrial practices		
Supervisor			
29	View mentor data		
30	View the list of supervising lecturers		
31	View the list of guidance		
32	Add guidance data		
33	Add comment guidance		
34	Delete guidance data		
35	View student grade list		
36	Change student grade data		
Student			
37	View student profiles		
38	Change student profile		
39	Register place new industry practices		
40	industry practice data		
41	View the list of guidance		
42	Adding guidance data		
43	Add comment guidance		
44	View value data industrial practices		

2. Instrument Aspect Reliability

Testing reliability is carried out to test reliability or trustworthiness system. Testing reliability done with the Web Server Stress Tools application with do testing performance system when currently working. Testing Stress Testing will do simulation visit to the system with various variants amount visitors. This is for see ability system when accessed by many client with heavy workload.

3. Instrument Aspect Portability

Testing Portability done with field tests with different tools, or using help a website that is capable give simulation walking system in various environment. Testing portability from This system uses testing web testing tools namely powermapper.com and crossbrowsetesting.com to see testing on various types web browser, okay desktop and mobile versions.

4. Instrument Aspect Usability

Instruments for testing *usability* using sheet evaluation in the form of questionnaire from Arnold M. Lund, namely *the USE Questionnaire* (Lund, 2001). *USE Questionnaire* consists of from four quality components, namely *usefulness*, *satisfaction*, *ease of use* and *ease of learning*. The scale used in the questionnaire this *usability* is Likert scale consisting of five points to obtain ordinal data. The scale includes strongly agree (SS), agree (S), neutral (N), disagree (D), agree (TS), strongly disagree agree (STS) (Meshack Muderedzwa and Emanuel Nyakwende, 2010). The instrument for conducting *usability* tests is shown in the following table 2:

TABLE 2.

No	Question
Usefulness	
1	System this helps me become more effective in accessing relevant data with industrial practices.
2	System this helps me be more productive in accessing information industrial practices.
3	System This is useful for industrial practice activities.
4	System This helps me to have more control over related activities. with industrial practices.
5	System this makes it easier I reach related matters with industrial practices.
6	System This saves me time in getting information industrial practices.
7	System this fulfills need I.
8	System it works according to What do I expect.
Ease of use	
9	System it is easy to use
10	System it is practical to use
11	System it is easy to operate
12	Steps use System it's not difficult
13	System this is flexible / can customized with need
14	Use System is this easy/ not need struggling sucks.
15	I can use System this without must read guide written.
16	I do not find inconsistencies in the System This.
17	High level users (coordinators) and regular users (supervising lecturers /students) will like System This.
18	I can overcome obstacles easily and quickly
19	I can use System this with smooth every time.
Ease of Learning	
20	I learned to use System this with fast.
21	I can remember how to use This system is easy.
22	System it's easy to learn method its use.
23	I can control method use System this with fast.
Satisfaction	

24	I feel satisfied with System This.
25	I will recommend this system to my friend
26	This system is fun to use.
27	System it works according to desire I
28	System this looks good
29	I feel need System This
30	System it is comfortable to use.

D. Design Model system

1. Flow chart

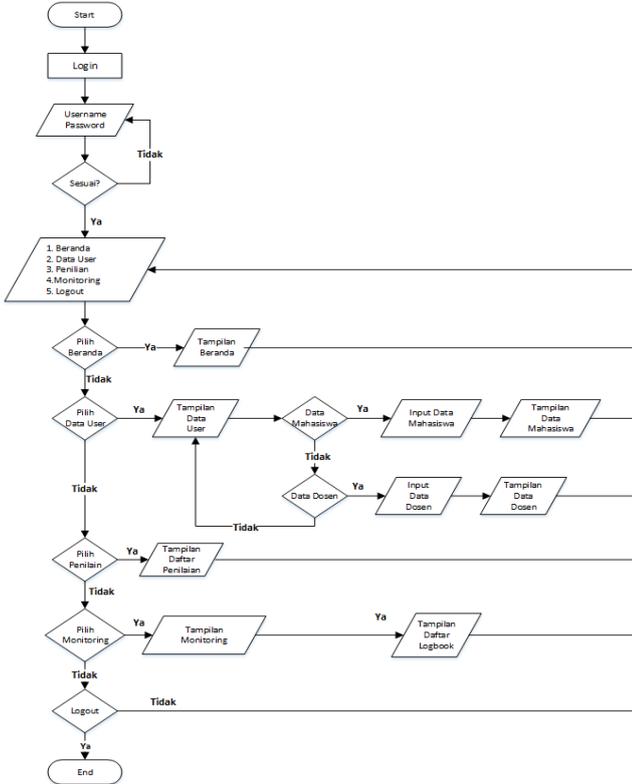


Fig. 2. Flow chart

2. DFD

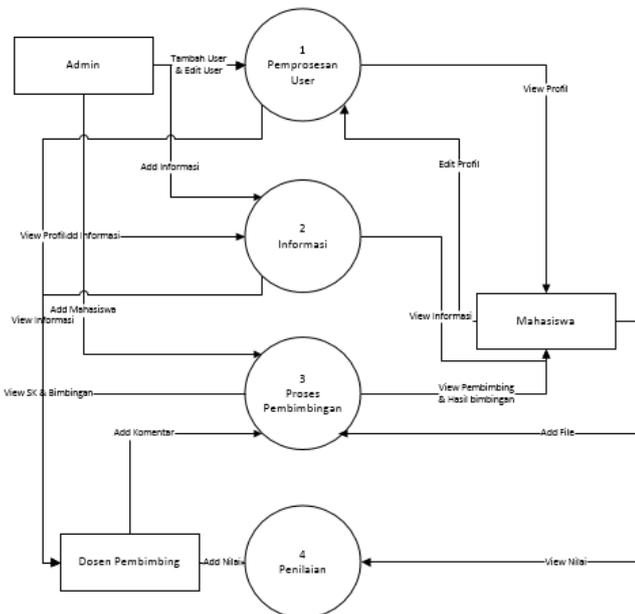


Fig. 3. DFD Level 1

3. Use Case

Use case diagrams describe interaction between one or more actors with system information created. Use case diagrams are used to find out functions what is in a system information and who is entitled use the function.

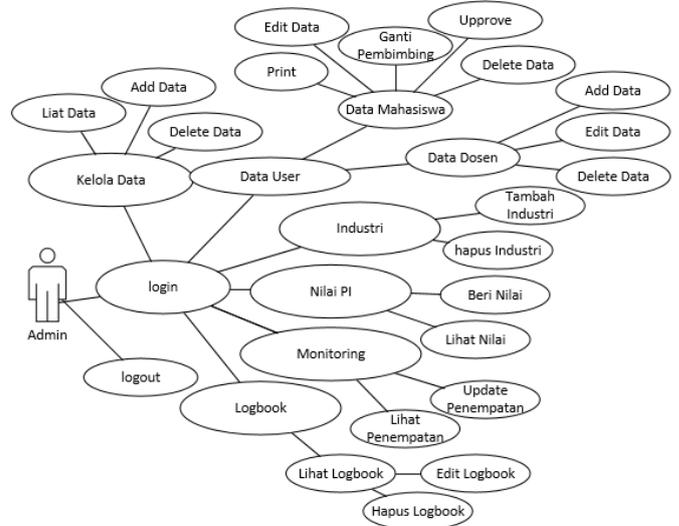


Fig. 4. Use case Admin

Admin is actors who have right overall access. In this system, what is meant by with admin is coordinator industrial practices. Admin can manage user data (supervisor, students and admin himself), manage information, managing industry, managing placement, management value, and monitoring the results of internship with login moreover formerly. In each use case, the admin can add, change, and delete data.

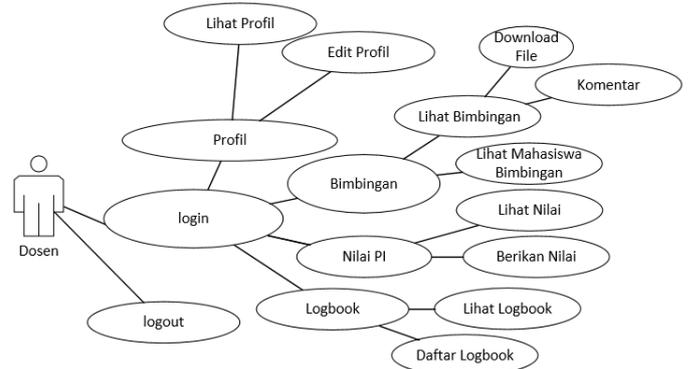


Fig. 5. Use case lecturer

Supervisor is actors who have access rights to manage grades, see the list of scholarships guidance, managing profiles, and managing guidance data with login first formerly.

Student is actors who can enter industrial location, change profile, view industrial practice status, add guidance data, view guidance data, and view industrial practice results value.

III. RESEARCH RESULT

Based on research that has been done, then obtained a system information industrial practices in the Department of Electrical Engineering Education, Faculty of Engineering, University of North Sumatra. This information system provides a number of features that can help in data management and do guidance and provision information around implementation industrial practices in the Department of Electrical Engineering Education, FT UNM, namely, student data, lecturer data, industrial data, guidance, agenda, documentation, and reports implementation industrial practices. This information system is only managed One only the administrator will later managed by the Electrical Engineering Education Department operator Faculty of Engineering, Makassar State University.

Information System Development industrial practice in the Department of Electrical Engineering Education Faculty of Engineering, Makassar State University begins with stage data collection through interviews that were used base design system, then tested with use ISO 9126 standard, which finally validated by validator and tested to object researcher. Results of needs analysis system can be seen in the attachment.

Model used in design system is using a prototyping model so that during system testing, if object study still not satisfied with the system created, then will done redesign accordingly level need object study.

Implementation system information industrial practice data processing Department of Electrical Engineering Education Faculty of Engineering, Makassar State University, this is a process for assessing product feasibility. Testing done by six expert experts who have been entrusted with validating instrument products, systems and content with good validation results, so that This system is worth using.

implementation was carried out after the system was validated by experts, so that this system would be implemented in the industrial practice activities of the Electrical Engineering Education Department, Faculty of Engineering, Makassar State University. To understand the program interface, below is a partial image of the program structure that includes the forms in the information system. The following is the interface of the industrial practice information data processing system in Department of Electrical Engineering Education, Faculty of Engineering, Makassar State University.

Home page is the page that will be appear on the Implementation of the home page or system homepage information website -based industry practices are shown by the fig. 7:



Fig. 7. Home Page

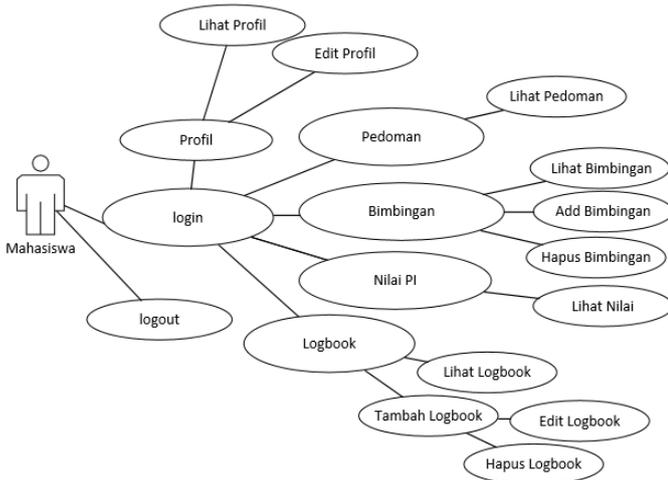


Fig. 6. Use case student

E. Instrument Data collection

The data analysis technique used in this study was descriptive analysis. This descriptive analysis technique was carried out with grouping information obtained from qualitative data in the form of Input, responses, criticism, and suggestions for improvement contained in the questionnaire and interview results are then used to strengthen data and revise the product. Meanwhile, statistical analysis descriptive used to analyze data with method describe or depict the data that has been collected from the development results, validator responses and student responses in each trial (Functionality, Portability, Reliability, and Usability) to obtain product practicality. Category validity of each aspect or the whole the aspects assessed are determined based on criteria categorization quality device, calculation percentage descriptive with formula as following:

Percentage results (DP)

$$DP = \frac{n}{N} \times 100\% \dots \dots \dots \text{(Equation 1)}$$

Where: DP = descriptive percentage
n = Score obtained
N = Ideal score

Percentage results above are then compared to with Liker scale, which is a scale used to measure attitudes, opinions, and perceptions a person or group of people about something incident grouping level percentage according to the Liker scale, namely in Table 3.

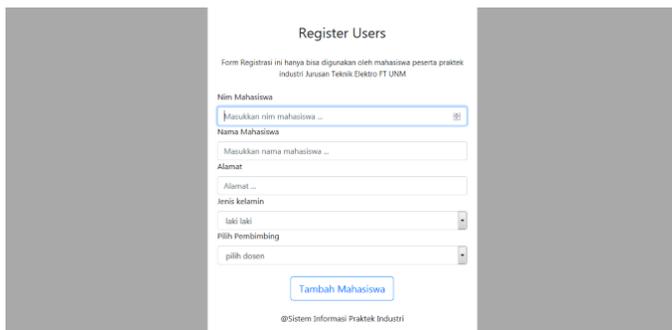
TABLE 3. Table Interpretation of Likert Scale Scores.

Score Percentage	Information
0% - 20%	Not good
21% - 40%	Not good
41% - 60%	Currently
61% - 80%	Good
81% - 100%	Very good

Based on Table 3 above functions and objectives from clarification category levels based on intervals to find out to what extent success and achievement from each indicator of each instrument. This application is said to suitable for use if all aspects in the questionnaire get percentage by > 60% with criteria good and very good.

On the homepage or homepage it consists of from description system, and a button to login and registration. Display beginning made simple to display information regarding industrial practice activities and speed up load time when first accessed. To enter the user page according to access rights owned, users must login first first. Users can Press the “Login” button on the homepage or select the registration button if you don't have the right yet access to create a user account as a login menu on the menu options then system will redirect the user to the login page.

Page Select registration button if you don't have the right yet access to create a user account as a login menu on the menu options then system will redirect the user to the login page Fig. 8.



The registration form includes fields for:

- Nim Mahasiswa
- Nama Mahasiswa
- Alamat
- Jenis kelamin (laki laki)
- Pilih Pembimbing

 A "Tambah Mahasiswa" button is at the bottom.

Fig. 8. Registration Page

login page is used to access the user page according to access rights held. Users must fill in Nim and password (for students) or NIP and password (for supervisors and admins) on the form provided Then Click the “Login” button. Next, the system will perform an authentication process to check whether the user is registered on the system and has the right to enter the system. If the authentication process successful, the user will redirected to the user's page accordingly access rights held, as example of a user ho has access rights as administrator then will redirected to the administrator page. If the authentication process failed, then system will display message error that the authentication process failed and system will directing the user to the login page again, can be seen in Fig. 9. below.



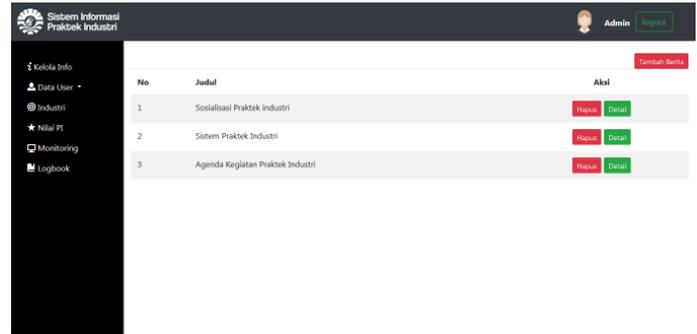
The login form includes fields for:

- masukkan nim
- Password
- Pilih level

 A "login" button is at the bottom.

Fig. 9. Description Page

Homepage admin on this system is the manage page information. On this page there is a list of information that has been stored in the database. To add information can click the “add” button news” in red above, then system will redirects the user to the add page news. To delete data, the admin must select the data to be selected with method click the “delete” button next to the title of the information then Clicking on the red one. To see detailed information data, the admin can Click the green detail button, as can be seen in image 4 below.



No	Judul	Aksi
1	Sosialisasi Praktek Industri	Hapus Detail
2	Sistem Praktek Industri	Hapus Detail
3	Agenda Kegiatan Praktek Industri	Hapus Detail

Fig. 10. Admin Page

The first page that appears after the supervisor succeed login. on this page there are information about the profile of the supervising teacher. To do this profile data changes, users can clicking the edit profile button. Then system will directs the user to the page to change the supervisor 's profile. On the supervisor 's access rights page There is a profile menu, student guidance list, grades industrial practice and logbook. For each menu on the supervisor 's access rights page, please see the attachment page, as shown in Fig. 11 below.

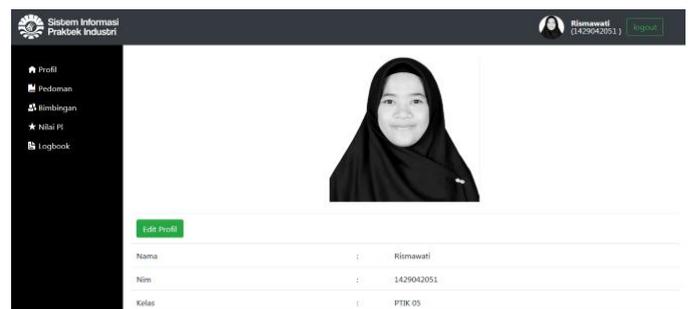


Profile information for Suhartono, S.Kom., M.Kom:

- Nama: Suhartono, S.Kom., M.Kom
- NIP: 1968116032010121002
- Kontak: 82292560222

Fig. 11. Supervisor Page

In this view there are student access rights page after succeed login. The first time a student uses In this system, students are in a state where they have not registered place industry practices of his choice and do not have approval yet availability of supervising lecturers. To register the industry that will made into as place internship as well as approval of the supervisor, students must contact industrial work practice coordinator with clear reasons Then coordinator or administrator will Adding student placement data and supervisor approval. The implementation of the function page for each actor (administrator, supervisor, student) can be seen on the attachment page, as shown in Fig. 12 below.



Profile information for Rismawati:

- Nama: Rismawati
- Nim: 1429042051
- Kelas: PTK-05

Fig. 12. Student Page

This section will discuss software testing based on ISO 9126 for the final product, an information system. As discussed in the previous chapter, this study focuses on four characteristics: functionality, portability, reliability, and usability. Each characteristic will be tested using a separate instrument, some of which will be a questionnaire.

A. Functionality Quality Factor

Functionality characteristic testing uses the black box testing method where the tester will assess based on an instrument in the form of a test case. The functionality testing instrument contains 42 questions. The functionality instrument is validated by two expert lecturers. After validation, several inputs are provided to enhance the validity of the instrument. For each function that works well, the examiner will provide a checklist on the "Yes" tab. If the function does not work well, the examiner will provide a checklist on the "No" tab.

From both examiners state that every test case that is carried out get results that match its function. Analysis of testing functionality use descriptive analysis techniques, as in equation 1. The values obtained are from each test case item can be seen in table 4 below:

TABLE 4. Percentage Eligibility Testing Functionality

Answer	S score by Validator	
	Validator 1	Validator 2
Yes	42	42
No	-	-

$$\begin{aligned}
 & (Total\ score / question\ item) * 100\% \\
 & = (42/42) \times 100\% \\
 & = 100\%
 \end{aligned}$$

From the results of the descriptive analysis in table 2, they are then converted into table conversion value and percentage results obtained the application eligibility is worth 100% and has an interpretation Very good

B. Portability Quality Factor

Testing aspect Portability is done with try operate system information Industrial practice data processing, Department of Electrical Engineering Education Faculty of Engineering, Makassar State University through Desktop- based browsers. Testing in a desktop environment includes using various browsers. This testing is conducted both live and in simulation. use web. Test result data aspect Portability is listed in Fig. 13. Test result data aspect portability.



Fig. 13. Test Results on Windows 7

Information Systems industrial practice data processing can walk with Good without problems with the Windows 8 operating system can be seen in figure 8 below



Fig. 14. Test Results on Windows 8

Information Systems industrial practice data processing can walk with Good without problems with the Windows 10 operating system can be seen in image 9 below



Fig. 15. Test Results on Windows 10

C. Reliability Quality Factor

Testing reliability of the system information one of them with method stress testing. One way to assess resilience, which is the ability of a software program to function even under duress, is through stress testing, which pushes it beyond its typical usage. Purpose from This test is for forcing a program to crash and find out how this program can get back to work as soon as possible, crash can caused by Because many access request from many users at the same time. For example that the website is visited by several visitors and each visitor do different activities. Each activity carried out visitors recorded and performed analyze whether the website can still be used running as expected. The stress test results are grouped based on visitors and page URLs. The test results are shown in Fig. 16.

Clicks in figure is a simulation from the user to click send request to the server. A "click" or picture that is successfully answered by the server results in a page request to the server. Number of unsuccessful clicks is the error.

View Logfile Results							
Logfiles	Results per User (Complete Test)				Results per URL (Complete Test)		
User No.	Clicks	Hits	Errors	Avg. Click Time [ms]	Bytes	kbit/s	Cookies
1	80	80	0		42	267,830	641.62
2	80	80	0		43	267,830	620.11
3	80	80	0		41	267,830	660.27
4	80	80	0		50	267,830	530.84
5	80	80	0		40	267,830	667.11
6	80	80	0		40	267,830	675.87
7	80	80	0		53	267,830	501.88
8	80	80	0		54	267,830	492.99
9	80	80	0		47	267,830	575.63
10	80	80	0		47	267,830	565.99
11	80	80	0		43	267,830	625.12
12	80	80	0		42	267,830	636.34
13	80	80	0		39	267,830	686.40
14	80	80	0		39	267,830	689.15
15	80	80	0		87	267,830	306.82
16	80	80	0		45	267,830	600.12
17	80	80	0		42	267,830	638.06
18	80	80	0		43	267,830	621.39
19	80	80	0		47	267,830	573.60
20	80	80	0		52	267,830	516.91

Fig. 16. Stress Testing Results Based on Each Visitor

3	79	90	87.78%	SB
4	84	90	93.33%	SB
5	85	90	94.44%	SB
6	87	90	96.67%	SB
7	88	90	97.78%	SB
8	84	90	93.33%	SB
9	67	90	74.44%	B
10	85	90	94.44%	SB
11	89	90	98.89%	SB
12	82	90	91.11%	SB
13	74	90	82.22%	SB
14	86	90	95.56%	SB
15	78	90	86.67%	SB
16	77	90	85.56%	SB
17	78	90	86.67%	SB
18	81	90	90.00%	SB
19	81	90	90.00%	SB
20	79	90	87.78%	SB
Average			90.11%	SB

Based on the test results usability above can known that percentage for each assessment is as following:

Total items	: 452 + 354 + 32 + 0 + 0	: 838
Strongly Agree (SS)	: (452 / 838) x 100%	: 53.94%
Agree (S)	: (354 / 838) x 100%	: 42.25%
Hesitation (RR)	: (32 / 838) x 100%	: 3.82%
No Agree (TS)	: (0 / 838) x 100%	: 0%
Absolutely Not	: (0 / 838) x 100%	: 0%
Agree (STS)		

From the calculation results percentage for each of the above assessments, can known that percentage quality device soft from side ease of use (usability) based on indicator usefulness, ease of use, ease of learning, satisfaction is 53.94% of users strongly agree, 42.25% of users agree, 3.82% of users are neutral, 0% of users do not agree, and 0% of users strongly disagree agree.

IV. CONCLUSION

- A. Based on the results of research and discussion on Development information system data processor Industrial practice of the Department of Electrical Engineering Education Faculty of Engineering, Makassar State University, which refers to the procedures research and objectives research, then from This research concludes that The system that has been designed is a system that has been converted into a system computerized web - based information. Where the party that will use this system can process inventory data effectively and efficiently and provide information about implementation of industrial practice activities which are then accessible to everyone.
- B. Information Systems This industrial practice data processor uses a design model prototyping. Where the results of testing expert (expert) shows that system This governance information is suitable for use with revision according to suggestions or comments expert with details evaluation as following: test results functionality show that existing functions according to needs analysis system. Quality device soft aspect usability is in the very good category, quality device soft portability show that device This software is capable of running in various

View Logfile Results						
Logfiles	Results per User (Complete Test)			Results per URL (Complete Test)		
URL No.	Name	Clicks	Errors	Errors [%]	Time Spent [ms]	Avg. Click Time [ms]
1	Halaman Index	200	0	0.00	3,185	16
2	Halaman register	200	0	0.00	2,725	14
3	Halaman Login	200	0	0.00	21,206	106
4	Halaman Index Mahasiswa	200	0	0.00	12,817	64
5	Halaman Pedoman Mahasiswa	200	0	0.00	5,019	25
6	Halaman Bimbingan Mahasiswa	200	0	0.00	13,413	67
7	Halaman Nilai Mahasiswa	200	0	0.00	8,060	40
8	Halaman Logbook Mahasiswa	194	0	0.00	8,227	42

Fig. 17. Stress Testing Results Based on Each URL

The results of stress testing can be used to determine reliability aspects of the application that has been created. The test results show that every visitor can with success carry out the scenario without found error on each tested URL page. Features on each tested URL page can also be walk with fluent Because No found error. Percentage error by 0% so that percentage success is by 100% and has passed according to Telcordia standard is more than 95%.

D. Usability Quality Factors

Testing aspect this usability is done to users consisting of 30 respondents of 28 students, 1 supervising lecturer, and 1 coordinator implementer industrial practices using the USE Questionnaire in the form of checklist. Table 5 below show test results usability for the system information website -based industrial work practices:

TABLE 5. Usability Calculation Percentage Results

Respo ndents	Total score	Expected score	Percentage eligibility	Category
1	76	90	84.44%	SB
2	82	90	91.11%	SB

environments and testing reliability concluded that system can walk with Good when accessed by 5 users simultaneously.

V. SUGGESTION

Based on the research results which state that Information Systems industrial practice data processing is already very well used, so that Some suggestions can be given, including:

- A. For *admin*, due to the possibility of a large amount of information data around implementation industrial practices that will be will changed along change of school year so that *admin* / operator who is responsible as holder all data is expected can examine and *update* student data every academic year.
- B. For other researchers or developers, are expected can examine in more depth and develop information systems this industrial practice data processor so that system can follow development era, adding more features as well as add features to establish cooperation with the parties concerned, use more attractive and interactive display, addition more complex information.

REFERENCES

- [1] Schneier, Applied cryptography: protocols, algorithms, and source code in C. USA: John Wiley & Sons, 2015

- [2] Sugiyono, Metode Penelitian Pendidikan Pendekatan Kuantitatif, Kualitatif, dan R & D. Bandung: Alfa Beta, 2009
- [3] Arini, D. (2011). Pengaruh Prestasi Praktik Kerja Industri dan Pengetahuan Kewirausahaan Terhadap Minat Berwirausaha Siswa Kelas 3 Teknik Bangunan SMK Negeri 2 Pengasih Tahun Ajaran 2010/2011. 11.
- [4] Agus Saputra & Feni Agustin. 2011. *Pemrograman CSS Untuk Pemula*. Jakarta: PT. Elex Media Komputindo.
- [5] Adiwinata, R., Sarwoko, E. A., & Indriyanti. (2012). Sistem Informasi Tugas Akhir dan Praktek Kerja Lapangan Berbasis Website Menggunakan Metode Unified Process. *Jurnal Masyarakat Informatika*.
- [6] Fakultas Teknik Universitas Makassar. 2016. *Pendoman Praktik Industri*. Makassar: Universitas Negeri Makassar.
- [7] Malik, ABD (Malik, 2013). Rancangan Sistem Informasi Administrasi Prktek Kerja Industri dan Skripsi pada Program Studi Pendidikan Teknik Informatika dan Komputer Jurusan Pendidikan Teknik Elektro Fakultas Teknik UNM.
- [8] Kroenke, D M. 2008. *Experiencing MIS*. PrenticeHall, Upper Saddk River, NJ
- [9] (Turban, Rainer R. Kelly, & Potter Richard, 2006)/ Turban, E., Rainer R. Kelly, J., & Potter Richard, E. (2006). *Introduction to information Technology, 3th ed*. Jakarta: Salemba Infotek.
- [10] Kristanto. (2003). *Perancangan Sistem Informasi*. Yogyakarta: Gava Media.
- [11] ISO/IEC. (2002). Software Engineering Product Quality - Part 2 - External Metric. Canada: International Technical Report.