




Design of Testing E-Form and Reminder of Calibration Schedule for Operation Facility Testing Equipment

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Abstract. Infrastructure testing is carried out to ensure that railway infrastructure such as operating facilities, lines, and buildings can meet safety, technical and operational feasibility, and reliability standards in accordance with the regulations that have been made. This final project discusses the creation of a testing e-form website and a testing tool calibration schedule reminder. This aims to help shorten and maximise the work of testers, assistant testers, and tool PIC whose jobs are also responsible as assistant testers, so that test result data is not lost and data can be submitted in real time according to field conditions. It is also hoped that the testing tool will not experience delays in calibration so that the tool can be monitored for its condition so as to produce accurate measurement results. This online website development uses the RAD method. The database design uses MySQL on PhpMyAdmin while the website user interface programming is prepared using Visual Studio Code. The reminder utilises the fonnte platform to connect the website with WhatsApp. Function testing on the website is carried out using the Blackbox testing method while user satisfaction testing is analysed using the ServQual method. From testing the website with these tests, it can be seen that the website made is in accordance with the design. All navigation buttons made have functioned according to their functions, and the e-form can be used and filled in the field using the internet network. Furthermore, for reminders that have been done several times, the website successfully sends reminder notifications via whatsapp 2 days before the calibration deadline.

Keywords: Website E-Form, Reminder, Visual Studio Code

1 Introduction

1.1 Background of the Study

Infrastructure testing is an effort made to determine the suitability between the condition of existing infrastructure with technical requirements and the function of the infrastructure. This is done to ensure that railway infrastructure such as operating facilities, tracks, and buildings can meet safety standards, technical and operational feasibility, and reliability in accordance with the regulations that have been made.

Infrastructure function tests can be carried out to ensure that the infrastructure can operate in accordance with the design, technical specifications, and regulations that have been set. These tests can be conducted directly in the field by observing infrastructure components.

This testing activity, carried out during the day (free time) or night (window time) and will take place regardless of the weather. This can happen because the implementation of testing activities has a limited time in accordance with the agreement, so that the target on each day of the testing period must still be achieved. In the testing activities of the operating facility function test, each tester and assistant tester

will be responsible for entering test data on a sheet of paper containing a form detailing the components tested. Testers and assistant testers admit that they often lose the data entered on the paper due to damage to the paper due to tearing, shabby, or exposed to rain, fading of pen ink on the paper, and unclear or unreadable writing on the paper. This is very ineffective because it can lead to the delivery of data that is not real or not in accordance with the conditions in the field. In addition, the results of the paper also cannot be directly used as an attachment to the Minutes of the test results. So that testers and assistant testers must work twice at the expense of their rest time to move the data to ms word or excel to be processed into attachments that will be included in the Minutes. As a result, the paper used by the examiner during testing becomes useless and is usually immediately discarded, so it can cause waste.

When testing takes place, testers often get inaccurate results that can stall the test time. This can occur due to the lack of attention to calibration activities on the testing tool because the PIC (Person In Charge) of the tool has difficulty in monitoring the tool calibration schedule according to the calibration due time. This calibration time marker is attached to the tool. So, the PIC must often check carefully one by one the calibration stickers attached to the tool.

Given that the PIC of this tool is not only responsible for tool management, but this PIC also works as an assistant examiner. So, the calibration schedule monitoring activity will often be missed because the PIC will be more busy in testing activities.

2 Literature Review

2.1 Railway Operating Facilities

Operating facilities are one part of the railway infrastructure. There are 3 aspects to this operating facility such as signaling, telecommunications, and electrical installations. In the testing stage of railway operating facilities, a tester must be guided by the technical requirements regulations that have been set [6].

2.2 Operation Facility Testing Tools

Testing tools are the media used by testers to do their work. There are various kinds of testing tools, such as the following:

1) *Clamp Meter*

This tool can be used to measure the amount of electric current in an electrified conductor cable using its clamp, so there is no need to open the cable [1].

2) *Digital Earth Tester*

Measurement of grounding resistance in an installation will be influenced by the type of soil where the grounding electrode is planted, the second layer of soil, soil moisture and temperature. In supporting accurate results, it is necessary to apply a digital system that can work quickly. This tool is equipped with a sensor and the data that has been processed will appear on the display of the measuring instrument [12].

3) *OTDR (Optical Time Domain Reflectometer)*

OTDR (Optical Time Domain Reflectometer) is a Fibre Optic testing tool by displaying information on the results of measuring insertion loss distance in units of length, reflection, and loss that appears at each point [5].

2.3 Electronic forms

Electronic forms or e-forms are data input media that can be displayed on an electronic information media device such as laptops / PC, mobile phones, and others.

This is done with an integrated system. The system on the device can input, store, and provide or display form data [4].

2.4 Reminder

Reminder or reminder is a useful media to provide information on people's activities to manage the schedule or time owned by each person. On the web reminder will help its users to help remind its users by providing notifications at a predetermined time [9].

2.5 Website

Websites are several digital pages containing information in the form of text, images, sound, video and so on. The information is connected to the internet so that it can be accessed by anyone and anywhere [8].

2.6 XAMPP

XAMPP application is software that supports many operating systems and as a localhost or stand-alone server. The name XAMPP stands for X (cross-platform), A (Apache), M (MySQL / MariaDB), P (PHP), and P (Perl). In addition, XAMPP also provides modules such as OpenSSL and PhpMyAdmin [2].

2.7 HTML (*Hyper Text Markup Language*)

HTML (Hyper Text Markup Language) is a collection of symbols or tags written in files to display pages in a web browser. Tags or symbols give information to the browser about how to display a complete web page to the user [2].

2.8 JavaScript (JS)

JavaScript (JS) is a programming language introduced in 1995 at Netscape by Brendan Eich. This scripting language was created to run on the Netscape Navigator Browser. At first the name was Mocha and then changed to LiveScript. At that time LiveScript received a lot of criticism, so over time Netscape and Sun who developed the programming language "Java" collaborated to develop this programming language and gave the name JavaScript [8].

2.9 Quasar

Quasar is a frontend framework for vue.js that is licensed by MIT (Massachusetts Institute of Technology). This framework is opensource which is useful for developing Android and iOS-based applications. This development is a hybrid using HTML, CSS, and JavaScript, where the display is made natively. By providing responsive display features Quasar can be used to create Android, iOS, Web Apps, and PWAs applications [10].

2.10 PHP (*Hypertext Preprocessor*)

PHP (Hypertext Preprocessor) is one of the programming languages with its commands will be carried out by the server and the results can appear on the client computer. PHP is a programming language that is integrated with HTML because the syntax or code arrangement rules in PHP will be written together with HTML syntax. Therefore, it can be said that these two languages reinforce each other [2].

2.11 Visual Studio Code (VS Code)

Visual Studio Code (VS Code) is a text editor developed by Microsoft that can be operated on several platforms such as Linux, MacOS, and Windows. This text editor supports several programming languages such as JavaScript, Typescript, Node.JS, C++, C#, Python, and others. The type of programming language in VS Code can be identified and each function in the code set will be given a different colour variation [11].

2.12 MySQL

MySQL is a database that can receive and send data very quickly. This database can be used as a server and client. That is, if MySQL is positioned as a server, it can be used freely without having to pay for the licence. Meanwhile, when MySQL is positioned as a client, it can also access MySQL databases that are positioned as servers [3].

3 RESEARCH METHODOLOGY

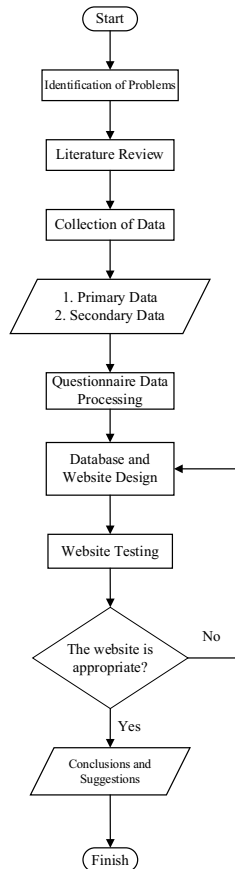


Figure 1 Flowchart of the research

3.1 Data Collection Methods

1) Primary Data

In this study, primary data was obtained by making questionnaire questions on Google Form. With the questionnaire, the author can find out this website is needed. This questionnaire contains 10 questions, of which 6 questions about the needs of the test form website menu and 4 questions about the needs of the test equipment calibration reminder website menu. The target respondents in this study were employees with the positions of assistant testers and testers in the infrastructure section, especially operating facilities. In this study using saturated sampling, namely making all populations as samples because the population is small, which is less than 30. The target respondents in this questionnaire were 22 operating facility employees [14].

The scale used in measuring this questionnaire is a Guttman scale which has two answer intervals, namely yes and no. With a value of 1 (one) for the answer yes, and a value of 0 (zero) for the answer no [14].

2) Secondary Data

1. Operating facility test form
2. Attachment of Minutes and Attachment of test results
3. Operating facility testing tool data
4. Previous research as a reference with topics related to e-form and reminder website design..

3.2 Data Processing Methods

1) Questionnaire Data Processing

Table 1 Tabulation of questionnaire answers

Respondents	Question										Amount
	1	2	3	4	5	6	7	8	9	10	
1	0	1	1	1	1	1	1	0	1	1	7
2	1	1	1	1	1	1	1	1	1	1	9
3	0	0	1	1	1	1	0	0	0	0	5
4	1	1	1	1	1	1	1	1	1	1	10
5	0	0	1	1	1	1	1	0	1	1	7
6	0	0	1	1	1	1	1	0	0	1	6
7	1	0	1	1	1	1	1	0	1	1	8
8	0	0	1	1	1	1	0	0	1	0	5
9	0	0	1	1	1	1	1	1	1	1	8
10	0	0	0	0	0	0	1	0	1	0	3
11	0	0	1	1	1	1	1	1	1	1	8
12	1	1	1	1	1	1	1	0	1	1	9
13	0	0	1	1	1	1	1	0	1	1	7
14	0	0	1	1	1	1	1	1	1	1	8
15	0	0	1	1	0	0	0	0	0	1	3
16	1	0	1	1	1	0	1	1	1	1	8
17	0	1	1	1	1	1	0	0	1	1	7
18	0	0	1	1	1	1	1	0	1	1	7

The data above is the result of tabulation of respondents' answers to the questionnaire. Furthermore, the data will be tested for validity and reliability. The analysis used in this validity test is if the $r\text{-count} > r\text{-table}$ value where the r value is positive, then the question can be declared valid. While the reliability test decision is based on the Cronbach Alpha method, which uses a limit of 0.6. the data will be processed using SPSS software. With DF (Degree of Freedom) or degrees of freedom equal to $n-2$ at a significance level of 5%. The following are the results of data processing on SPSS.

Table 2 Comparison of R table and R count

Question	R Table	R Count	Description
x1	0.468	0.615	Valid
x2	0.468	0.483	Valid
x3	0.468	0.512	Valid
x4	0.468	0.512	Valid
x5	0.468	0.746	Valid
x6	0.468	0.545	Valid
x7	0.468	0.556	Valid
x8	0.468	0.588	Valid
x9	0.468	0.545	Valid
x10	0.468	0.624	Valid

Table 3 Reliability data processing results on SPSS
Reliability Statistics

<i>Cronbach's Alpha</i>	<i>N of Items</i>
0.770	10

From the results of the calculation on SPSS it can be seen that, in the validity test, the r-count value of validity is more than the value on the r-table. While the reliability test produces a value of more than the predetermined limit, namely $0.770 > 0.6$. The questions asked for the questionnaire can be declared valid and reliable, so the questionnaire is only distributed once.

2) Website Design

The RAD (Rapid Application Development) method is a method whose application can overcome delays when using conventional methods. This method will produce software that is needed urgently and has a short time in making it. As if the design of information systems generally takes 180 days, then with this method the information system will be completed in a shorter period of 30 to 90 days. By prioritising user involvement in the process of analysing and designing the system, so that user needs can be met [7].



Figure 2 The RAD Development Model

3.3 Data Analysis Methods

Testing on this website is done with 2 (two) methods. Test the function of the User Interface using the Blackbox testing method. This method is one of the testing methods used in the development of websites, applications, and other software. The test prioritises the test of software functional specifications, where the UI/UX design and programming code are not tested. With this method, testing can be done by knowing

the functioning of navigation on the website, connecting the front end and back end through the framework, and managing the database on the website.

While in user satisfaction testing, every answer from respondents will be collected and analysed using the ServQual method. This method is commonly used to analyse the level of software user satisfaction. This method is able to assess service quality by showing a negative gap between expectations and perceptions of respondents. This will support the higher quality of service on the website, so improvement efforts are needed [13].

In addition, this website also tests data input and output on the e-form, as well as testing the suitability of the e-form with the original form.

4 RESULTS AND DISCUSSION

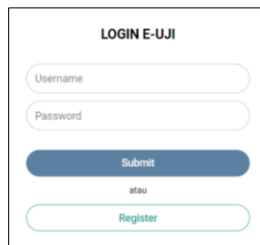
4.1 Database Implementation

In making the e-form website for testing and reminder of calibration of operating facility testing tools, it requires a database that is used to store data. This database creation uses MySQL server which will then be hosted so that it can be accessed online. The following is the database on this website.

- a. Users table
- b. Data logger, power supply, and fire alarm tables
- c. Table SDSH dan SCADA
- d. Axle counter table
- e. Electrical signals table
- f. Wesel table
- g. Transmission media table
- h. Selective dialing, voice clarity, and voice recorder table
- i. List data form test results table
- j. Reminder table

4.2 User Interface Implementation

When accessing the website, the initial display that will appear is the login page. Which on this page the user or admin must enter the username and password that has been created previously.



The image shows a login form with the following elements:

- Title: LOGIN E-UJI
- Input field: Username
- Input field: Password
- Button: Submit (blue)
- Text: atau
- Button: Register (green)

Figure 3 Website login display

If the user or admin logs in successfully, they will enter the main page which contains a pie chart of the number of e-forms that have been filled in and several e-form and reminder menu options.

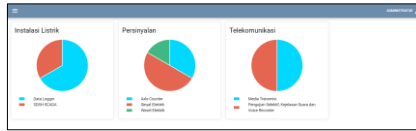


Figure 4 Website main page view on admin

The menu displayed on the admin and user accounts will be different. The admin will display a complete menu, namely there is a reminder menu and e-form.

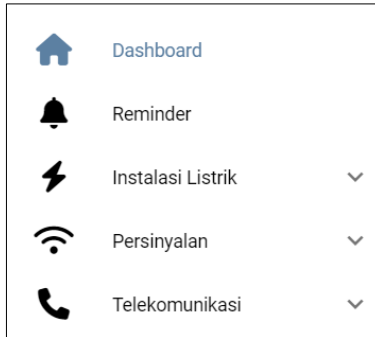


Figure 5 Tampilan menu *website* pada admin

The reminder menu can be accessed through the admin account, when clicked there will be a list of tool data and PIC data.







ALAT UJI	PIC	Tambah Alat Uji
Nama Alat	Tanggal Kalibrasi	
Clamp Amperemeter	01-09-2024	 
Earth Resistivity Resistance Tester Kyoritsu	01-09-2024	 
Optical Time Domain Reflector EXFO	25-03-2024	 

Figure 6 Display list of operation facility testing tools

ALAT UJI	PIC	Tambah PIC
Nama PIC	No Telepon	
PIC ALAT FASOP	081217181790	 
PIC ALAT FASOP 2	0881082344658	 
PIC ALAT FASOP 3	087724592847	 

Figure 7 Display of PIC list

When a user or admin selects an e-form, before entering the input page, a list of e-form data that has been filled in by the user or admin will appear.

Proses	Link	Atas	Detail Data
1	1	1	1

PENGUJIAN AXLE COUNTER

Presisi : 2
 Lokasi : 2
 Hari Uj : 2

No	Nama	Kategori				Jenis Pengujian (J)				Takaran Perencanaan (M)				Ruang Sertifikasi (S)		Kompetensi No. ES	Keterangan
		Ban	Lelah	Head	Defleksi	Batas Bermanfaat	Teknologi	Dilakukan secara online	Dilakukan secara manual	I	J	M	K	Kapan	Kiri		
Tabel data data																	

Terdapat 0 Data

Keterangan :

Berhasil
 Tidak Berhasil

Standar Referensi :

Tanggal :

Figure 11 Electronic form axle counter display

PENGUJIAN SINYAL ELEKTRIK

Presisi : 2
 Lokasi : 2
 Hari Uj : 2

No	Nama	Kategori				Ruang Sertifikasi (S)		Jenis Pengujian (J)		Takaran Perencanaan (M)			Keterangan
		Tang	Lelah	Head Lamp	Teknologi	Kiri	Kanan	I	J	M	K		
Tabel data data													

Terdapat 0 Data

Keterangan :

Berhasil
 Tidak Berhasil

Standar Referensi :

Tanggal :

Figure 12 Electrical signal e-form display

PENGUJIAN WESEL

Presisi : 15
 Lokasi : 15
 Hari Uj : 15

No	Nama	Kategori				Jenis Pengujian (J)				Takaran Perencanaan (M)				Ruang Sertifikasi (S)	Kompetensi No. ES	Keterangan
		Head	Lelah	Teknologi	Perawatan	Ban	Teknologi	Teknologi	Teknologi	I	J	M	K			
Tabel data data																

Terdapat 0 Data

Keterangan :

Berhasil
 Tidak Berhasil

Standar Referensi :

Tanggal :

Figure 13 Electric wesel e-form display

PENGUJIAN DATA LOGGER, CATU DAYA, FIRE ALARM DAN PENTANAHAN

Presisi : 15
 Lokasi : 15
 Hari Uj : 15

MAIN/ BACK UP : (Km)

No	Nama	Jenis Pengujian (J)		Takaran Perencanaan (M)	Ruang Sertifikasi (S)	Keterangan
		Perang P2 (J)	Comunication (J)			
Tabel data data						

Terdapat 0 Data

Keterangan :

Standar Referensi :

Tanggal :

Figure 14 Transmission media e-form display

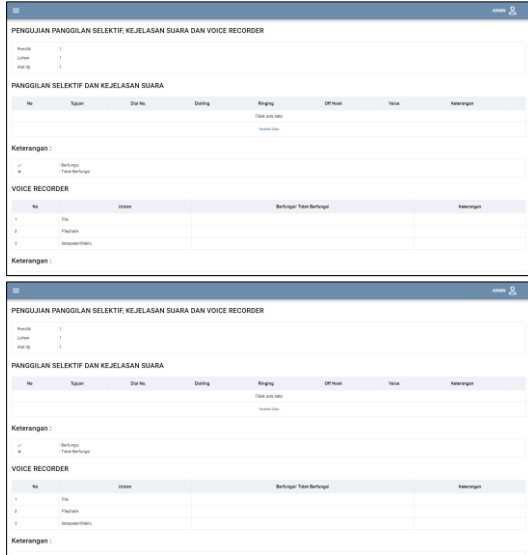


Figure 15 Selective call e-form display, voice clarity, and voice recorder

4.3 Implementation of WhatsApp Reminder Notification

The implementation of this reminder is done by connecting the website with WhatsApp using fonnte. Reminder notification experiments via WhatsApp owned by PIC. Conducted in a way, the admin inputs the test tool data with the calibration date is 06 June 2023. The results of this test, the notification was successfully sent to the PIC of the tool 2 days before the due time on the calibration of the tool, namely 04 June 2023.



Figure 16 Reminder notification on WhatsApp

4.4 Implementation of Website Testing

- a) Functional testing on the website using the Blackbox testing method
 - 1. Login menu

Table 4 Button and input testing on the login page

No	Testing	Results	Description
1	Submit button	Masuk ke halaman utama	Successfully enter the main page
2	Register button	Masuk ke halaman register	Successfully enter the register page

No	Testing	Results	Description
3	Login button	Masuk ke halaman login dan data input tersimpan pada database	Successfully enter the login page and the input data is stored in the database
4	Input username on login	Data ter-input pada form	Successfully input data on the form
5	Input password on login	Data ter-input pada form	Successfully input data on the form
6	Input name on register	Data ter-input pada form	Successfully input data on the form
7	Input username on register	Data is inputted on the form	Successfully input data on the form
8	Input password on register	Data is inputted on the form	Successfully input data on the form

2. Main page

Table 5 Main page test results

No	Testing	Results	Description
1	Dashboard view	Display user profile come	Successfully display the user profile page
2	Reminder menu	Display list of test equipment data and PIC data	Successfully displayed the test equipment data page and PIC data
3	Electrical installation menu	Shown sub menu	Successfully display the sub menu
4	Data logger, power supply, fire alarm, and grounding sub menus	Display the test result data list page and add related test form data	Successfully display the test result data list page and add related test form data
5	SDSH and SCADA sub menu	Shown page list of test result data and add related test form data	Successfully display the test result data list page and add related test form data
6	Signalling menu	Shown sub menu	Successfully display the sub menu
7	Axle counter sub menu	Display the test result data list page and add related test form data	Successfully display the test result data list page and add related test form data
8	Electrical signalling sub menu	Shown the test result data list page and add related test form data	Successfully display the test result data list page and add related test form data
9	Electric money order sub menu	Display the test result data list page	Successfully display the test result data list page and add related test form data

No	Testing	Results	Description
		and add related test form data	
10	Telecommunication menu	Shown sub menu	Successfully display the sub menu
11	Transmission media sub menu	Display the test result data list page and add related test form data	Successfully display the test result data list page and add related test form data
12	Selective testing, voice clarity, and voice recorder sub menu	Display the test result data list page and add related test form data	Successfully display the test result data list page and add related test form data

3. Reminder menu

Table 6 Reminder menu test results

No	Testing	Results	Description
1	Add test equipment button	Display the input form page	Successfully display the input form page
2	Edit test equipment button	Data edit page displayed	Successfully display the data edit page
3	Delete test tool button	Data deleted	Data successfully deleted
4	Test tool cancel button	Return to the test equipment data list page	Successfully returned to the test equipment data list page
5	Input test tool name	Can be input in the input field	Successfully inputting in the input column
6	Input test equipment calibration date	Can be input in the input column	Successfully inputting in the input column
7	Save test equipment button	Saved in the database	Successfully saved the data to the database
8	Add PIC button	Display the input form page	Successfully display the input form page
9	Edit PIC button	Display the data edit page	Successfully display the data edit page
10	Delete PIC button	Data deleted	Data successfully deleted
11	PIC cancel button	Return to the PIC data list page	Successfully returned to the PIC data list page
12	PIC save button	Saved in the database	Successfully saved the data to the database
13	PIC name input	Can be input in the input column	Successfully inputting in the input column
14	PIC calibration date input	Can be input in the input column	Successfully inputting in the input column

b) Testing data input on e-forms

This test is carried out by entering data on all e-forms. The following is one of the experiments carried out in this test, namely on the Data Logger, Power Supply, Fire Alarm, and Grounding sub menus.

Table 7 The results of testing the input of the data logger sub menu, power supply, fire alarm, and grounding

No	Testing	Results	Description
1	NEW ADD LIST button	Display the ownership data input form	Successfully displayed the ownership data input form
2	Owner data input	Can be input on the form	Successfully input data on the form
3	Location data input	Can be input on the form	Successfully input data on the form
4	Test equipment data input	Can be input on the form	Successfully input data on the form
5	View details button	Display the test form	Successfully display the test form
6	Cancel button	Return to the list of test result data	Successfully returned to the list of test result data
7	SAVE button	Can be stored in the database	Successfully save data to the database
8	SAVE button on the form	Can be stored in the database	Successfully save the data to the database
9	Print button on the form	Display the test result form ready to print	Successfully display the ready-to-print test result form
10	Function/non-function checklist input	Can be input on the form	Successfully input data on the form
11	Input description	Can be input on the form	Successfully input data on the form
12	Input of grounding measurement results I, II, III	Can be input on the form	Successfully inputting data on the form
13	Date input	Can be input on the form	Successfully input data on the form

c) Testing data output on e-form

This test is carried out by entering data on all e-forms. Here is one of the experiments carried out in this test, namely on the axle counter sub menu.

Table 8 Axle counter sub menu output test results

No	Testing	Results	Description
1	Owner data output	Shown in the list of test result data	Successfully display the list of test result data
2	Location data output	Shown in the list of test result data	Successfully display the test result data list

No	Testing	Results	Description
3	Test equipment data output	Shown in the list of test result data	Successfully displaying on the list of test result data
4	Axle counter name output	Appropriate and appear on the ready-to-print test form	Successfully adjust and display on the print-ready test form
5	Axle counter completeness checklist output	Appropriate and displayed on the ready-to-print test form	Successfully adjust and display on the print-ready test form
6	Axle counter installation distance measurement result output	Appropriate and appear on the ready-to-print test form	Successfully customising and displaying on the print-ready test form
7	Output of grounding measurement results I, II, III	Appropriate and appear on the ready-to-print test form	Successfully adjust and display the ready-to-print test form
8	Output of right and left axle counter box clearance measurement results	Appropriate and appear on the ready-to-print test form	Successfully adjust and display on the print-ready test form
9	Correspondence output to ER	Appropriate and appear on the ready-to-print test form	Successfully customising and displaying on the print-ready test form
10	Caption output	Appropriate and appear on the ready-to-print test form	Successfully customising and displaying on the print-ready test form
11	Date output	Appropriate and appear on the ready-to-print test form	Successfully customising and displaying on the print-ready test form

d) Testing the conformity of the e-form with the original form

This test is carried out on all e-forms to ensure that the e-form is in accordance with the original form. Here is one of the experiments carried out in this test, namely on the transmission media sub menu.

Table 9 The result of testing the suitability of the transmission media e-form

No	Testing	Results	Description
1	E-form header	Already match with the original form	Successfully adapted to the original form
2	Title of e-form		
3	Ownership table		
4	Main/back up row		
5	Measurement result table		
6	Standard description table		
7	Test date table		

e) User satisfaction testing

Done by creating questionnaire questions on Google form based on the ServQual method. The following are the results of respondents' answers that have been processed by this method.

Table 10 Satisfaction percentage result

No	Dimensions	Percentage		Mean
		Perceptions	Expectation	
1	Tangible	82%	82%	82%
2	Tangible	82%	82%	82%
3	Tangible	82%	82%	82%
4	Reliability	80%	80%	80%
5	Reliability	80%	80%	80%
6	Reliability	80%	80%	80%
7	Responsiveness	81%	82%	81,5%
8	Responsiveness	81%	82%	81,5%
9	Assurance	84%	87%	85,5%
10	Assurance	84%	87%	85,5%
11	Empathy	88%	87%	87,5%
12	Empathy	88%	87%	87,5%
13	Empathy	88%	87%	87,5%
Mean				83,3%

In addition, the results of the answers from respondents were also processed into a Cartesian diagram as follows.

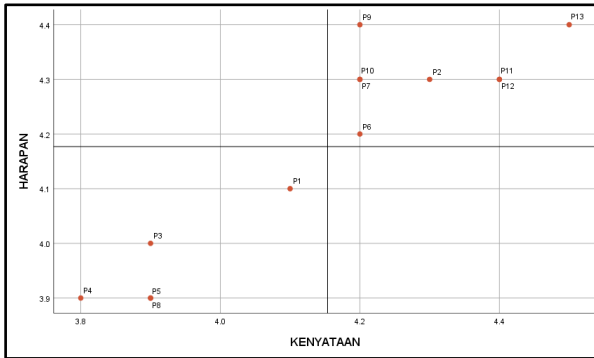


Figure 17 Cartesian diagram of the questionnaire results

Based on the results of the questionnaire, the total level of satisfaction that can be felt by respondents of the testing website and calibration schedule reminder using the ServQual method is 83.3%, which means that the respondents are in the satisfied category range. With 8 questions on dimensions that need to be maintained. There are also 5 questions that are considered less important to respondents in their implementation.

5 Conclusions

1. Creating a database server on PhpMyAdmin produces several tables for website creation. Each e-form has two database tables consisting of a list of e-forms and a test form table. While in the reminder there are two tables, namely the PIC table and the tool data table. In addition, there is also a table used to store user data. All data inputted by the user will be stored together in this database. Which the results of making this database will be uploaded to the hosting so that when the user logs in on a different device, the data stored in the user account will not be lost.
2. The creation of this website provides output in the form of a form that can be filled in online on a browser with the same or different devices. Where the results of making the user interface are simple and can be easily understood according to the needs of users and admins. The admin dashboard presents a pie chart containing the number of e-forms that have been filled in by users. In addition, the admin and user accounts will be equipped with buttons that can make it easier to input, edit, print, delete, and others.
3. A reminder notification message will be sent to the tool PIC 2 days before the calibration schedule is due. This message will be sent at 9am. The message will include the name of the tool to be calibrated and the due date of the calibration schedule.
4. Tests conducted on this website provide results in accordance with the design that has been made. In addition, the test also resulted in a satisfaction value of 83.3% which can be interpreted that the respondents were satisfied with the website that had been made.

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