

CHAPTER 5

IMPLEMENTATION AND RESULTS

5.1. Implementation

The following is an overview of the programs that have been tested, including the following:



Figure 5.1 Home Menu UI Display

The picture above is an initial view of the menu that will be tested. To search for your own menu, you can use the existing search bar menu. For example, if we just enter the ASM4 code, the Diagram dan Master Kerusakan menu will appear. Then there is the Filter Data button which is useful for searching for existing data. On the Filter Data button menu there are sections that you want to find. For example there are Companies, Categories, Product Groups, Catalogs and Descriptions. Then at the bottom there are several buttons as well, namely Delete, Edit and buttons just to view.

After the Filter Data button, there are several more buttons, namely New, Upload, and Download Buttons.

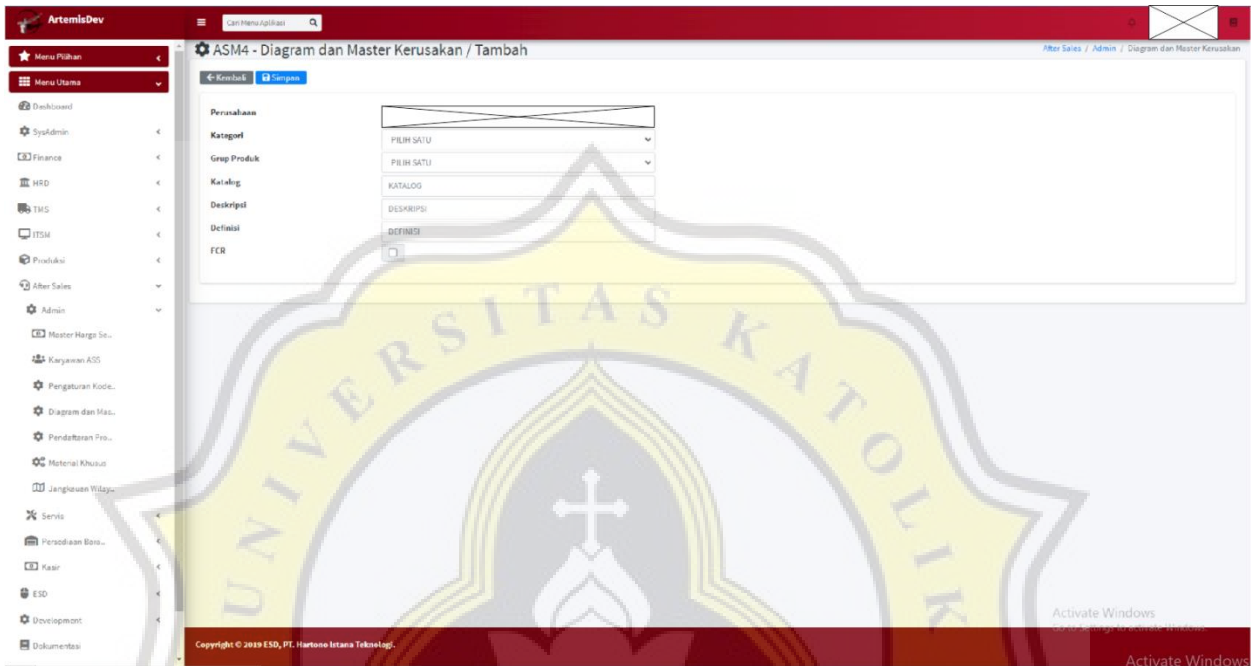


Figure 5.1 New Button UI Appearance

Next there is an overview of the menu display on the Create New button. In the new button menu display there are several things or sections that must be filled in according to existing needs. The first to be filled are Company, Category, Product Group, Catalog, Description, Definition and the last FCR will be filled automatically if needed. In the Category and Product Groups section there is a dropdown. The dropdown itself will be tested whether it can display the data needed when creating new data.

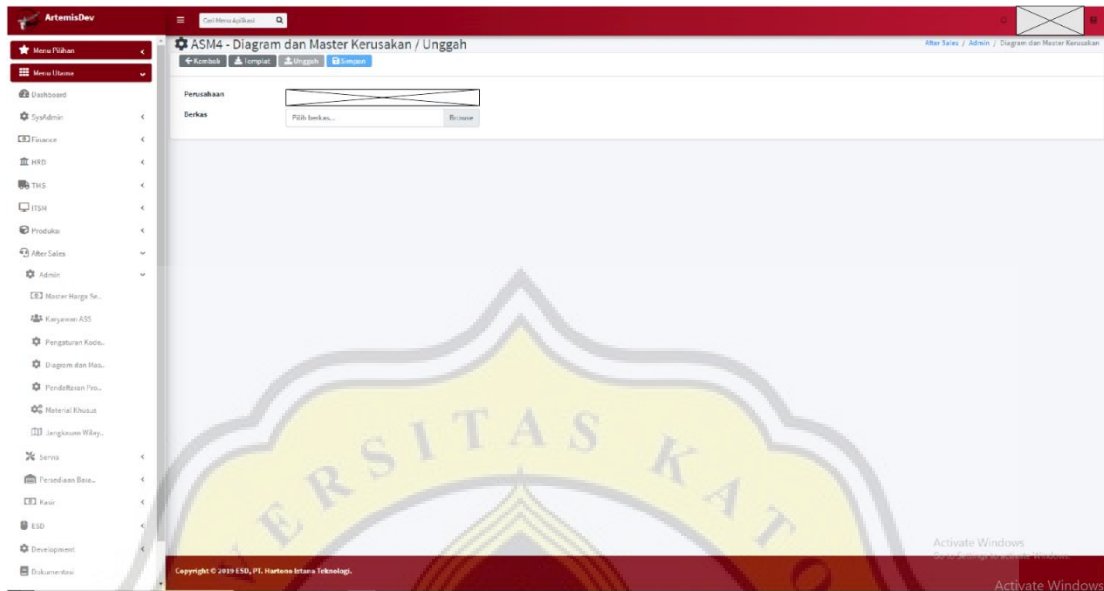


Figure 5.1 Upload button UI display

Then the last sample image has an overview of the Upload button UI display menu. In the Upload menu, there are several buttons in it, namely the Template, Upload, and Save buttons. The template button itself is used to download files with excel format that have been provided to be filled and uploaded. Then there is the Upload button, the Upload button itself by default will be disabled at the beginning or access cannot. For the order of use itself, starting from the user downloading the template file that has been provided and filled in according to the data that has been determined. After that the user will upload the file that was created earlier by searching for the file in the File section and clicking on the Browse section to find the file to be uploaded. If the file to be uploaded has been selected, the Upload button will automatically be active and can be accessed to carry out the file upload process. After that, wait a few moments, the program will read whether the uploaded file matches the specified data. If the uploaded file is correct then the save button will be activated and can be accessed to save the correct file. However, if the wrong file is uploaded or the

data contained in the file is still wrong, a rejection notification will appear that the uploaded file or data is still wrong and must be corrected before re-uploading.

5.2. Results

In this chapter, the researcher will present the results of his research. The data is taken from the test results of the existing menus, data display and the buttons in it.

Here are the results and explanations.

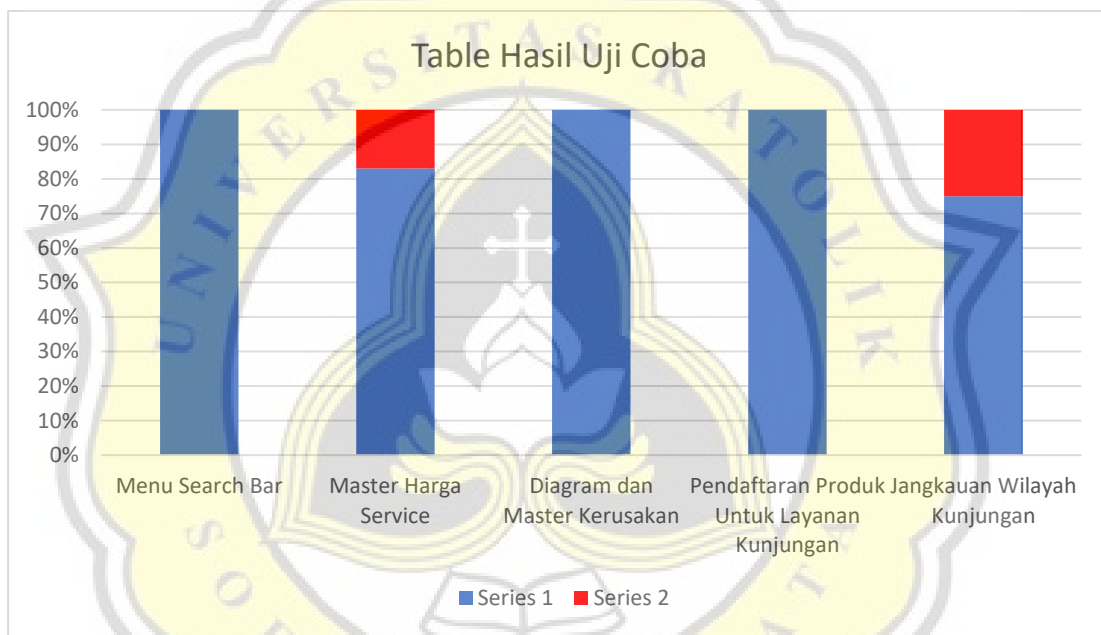


Figure 5.2 Table of test results for the Trial and Error Method

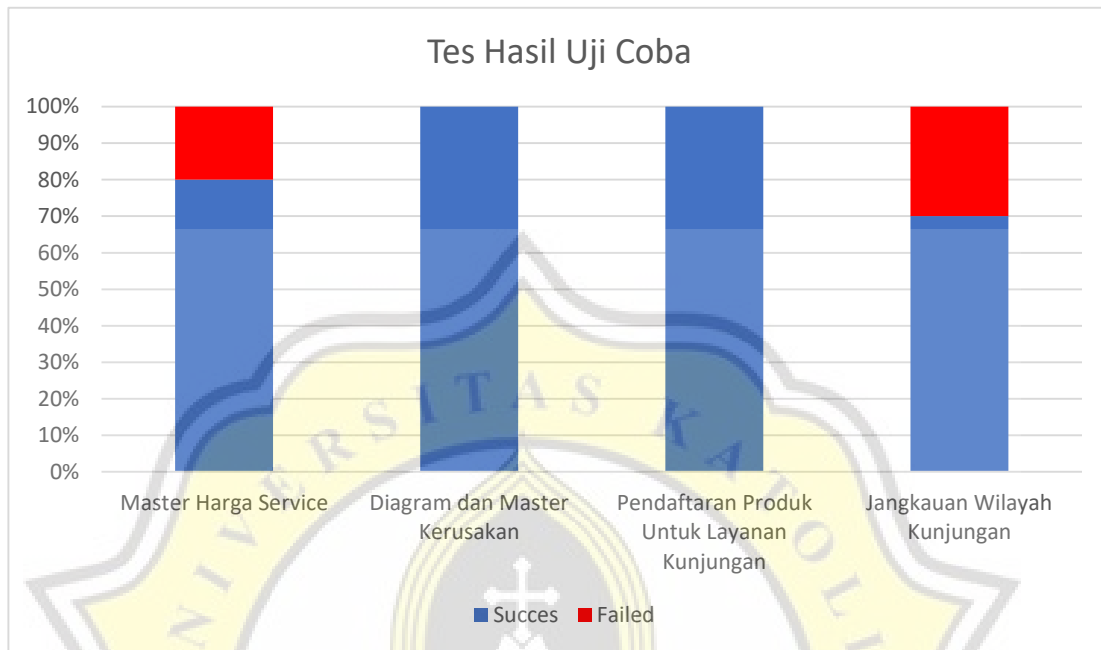


Figure 5.2 Table of test results for the Integration testing method

The following is a table of test results from test cases that have been made previously. For the first, there is a bar chart of the Search Bar Menu which has been tested 10 times. The search bar menu itself is useful for searching for more specific menus, such as the Diagram menu and Damage Master by entering the specified code to search for the menu. For the number of menus sought there are 4 different menus. Each menu is tried 10 times and everything works so the diagram shows 100%.

Next there is a bar chart from the Service Pricing Master menu. The test was also carried out 10 times. In testing this menu there are several buttons and data displays that must be tested. The first is the Filter Data button, it is used to search for data that is already in the menu and get 100% results. Next there is the Create New button. This button is useful for creating or adding new data that is already set in it. Please note that each New Create button on some menus must be different because the data on each menu is different. Testing this Create New button got 100% result. Proceed to the next

button, which is the Upload button. The Upload button itself is useful for uploading files with the excel format that has been provided in it and can be downloaded for templates. For test results, the Upload button itself gets 100% results. Furthermore, there is a Download button which is useful for downloading pre-existing data. For the test results the Download button itself gets 0% results or fails, because in the test there is an error in it so it can't download or download existing files. Then there is the Delete button which is useful for deleting the data you want to delete. On the Delete button itself there are 2 places that must be checked, namely on the initial menu display and the database. The Delete button alone gets 100% results. Finally on the Service Pricing Master menu there is a Database button. The Database button itself is useful for displaying in the Database section the data storage that has been created and deleted. The database button must be careful in testing because it relates to the correct data or not. For the Database button itself the result is 100%. So from all the results obtained from the Master Pricing Service menu with several buttons tested, the results were 83% successful and 17% failed.

Next there is the Diagram and Master Damage menu. The test was also carried out 10 times. In testing this menu there are several buttons and data displays that must be tested. The first is the Filter Data button, it is used to search for data that is already in the menu and get 100% results. Next there is the Create New button. This button is useful for creating or adding new data that is already set in it. Testing this Create New button got 100% result. Proceed to the next button, which is the Upload button. The Upload button itself is useful for uploading files with the excel format that has been provided in it and can be downloaded for templates. For the test results, the Upload button itself gets 100% results. Furthermore, there is a Download button which is useful for downloading pre-existing data. For the test results the Download button itself gets 100% results. Then there is the Delete button which is useful for deleting the data you want to delete. On the Delete button itself there are 2 places that must be checked, namely on the initial menu display and the database. The Delete button alone gets 100%

results. Finally on the Service Pricing Master menu is the Database button. The Database button itself is useful for displaying in the Database section the data storage that has been created and deleted. Database button must be careful in testing because it deals with correct data or not. For the Database button itself the result is 100%. So from all the results obtained from the Master Price Service menu, with several buttons tested the results were 100% successful and 0% failed.

Next there is a Product Registration menu for Visiting Services. The test was also carried out 10 times. In testing this menu there are several buttons and data displays that must be tested. The first is the Filter Data button, it is used to search for data that is already in the menu and get 100% results. Next there is the Create New button. This button is useful for creating or adding new data that is already set in it. Testing this Create New button got 100% result. Proceed to the next button, which is the Upload button. The Upload button itself is useful for uploading files with the excel format that has been provided in it and can be downloaded for templates. For test results, the Upload button itself gets 100% results. Furthermore, there is a Download button which is useful for downloading pre-existing data. For the test results the Download button itself gets 100% results. Then there is the Delete button which is useful for deleting the data you want to delete. On the Delete button itself there are 2 places that must be checked, namely on the initial menu display and the database. The Delete button alone gets 100% results. Finally on the Service Pricing Master menu there is a Database button. The Database button itself is useful for displaying in the Database section the data storage that has been created and deleted. The database button must be careful in testing because it relates to the correct data or not. For the Database button itself the result is 100%. So from all the results obtained from the Master Pricing Service menu, with several buttons tested the results are 100% successful and 0% failed.

Finally, there is the Range of Visiting Areas menu. The test was also carried out 10 times. In testing this menu there are several buttons and data displays that must be tested. The first is the Filter Data button, it is used to search for data that is already

in the menu and get 100% results. Next there is the Create New button. This button is useful for creating or adding new data that is already set in it. Testing the New Create button gets 0% results or fails because when displaying the required data it does not appear. Proceed to the next button, which is the Upload button. The Upload button itself is useful for uploading files with the excel format that has been provided in it and can be downloaded for templates. For the test results, the Upload button itself gets 50% results, this upload button should work but there is a format error in the excel template used so that the file is correct but when uploaded is still wrong. Furthermore, there is a Download button which is useful for downloading pre-existing data. For the test results the Download button itself gets 100% results. Then there is the Delete button which is useful for deleting the data you want to delete. On the Delete button itself there are 2 places that must be checked, namely on the initial menu display and the database. The Delete button alone gets 100% results. Finally on the Service Pricing Master menu is the Database button. The Database button itself is useful for displaying in the Database section the data storage that has been created and deleted. Database button must be careful in testing because it deals with correct data or not. For the Database button itself the result is 100%. So from all the results obtained from the Master Price Service menu with several buttons tested, the results were 75% successful and 25% failed.

5.3. Test Truth Benchmark

This section discusses the standard of truth that was carried out for this test. The goal is that the reader does not wonder about the standard of truth of this test. The following is an example of each menu.

5.3 Menu Master Kerusakan

Benchmark the truth from testing the button or search bar menu in the Damage Master menu.

ACCESS ROLE			
Group User :	ADM_MasterData + Company		
	Access Mode	Button	Status
	Read + Write	Data Filter	Active
		New	Active
		Download as	Active
		Upload	Active
USER ROLE			
TIPE HAK	JENIS USER		
COMPANY	ADM_MasterData		
UI & LOGIC			
AS/M4 - Diagram and Defect Settings			

Figure 5.3 Benchmark of truth for search bar menu testing

In the concept for the Menu Search Bar section, all menu concept models must be the same, so here I take the Menu Search Bar section. At the beginning there must be an overview of the concept of Access Role, the purpose of which is to give access rights to certain people so that they can enter certain menus by setting the access role. Then there is the User Role, which is useful for knowing the type of rights and the type of user from the person who wants to access the menu. Then there is a code to access a certain menu (each menu has a different code).

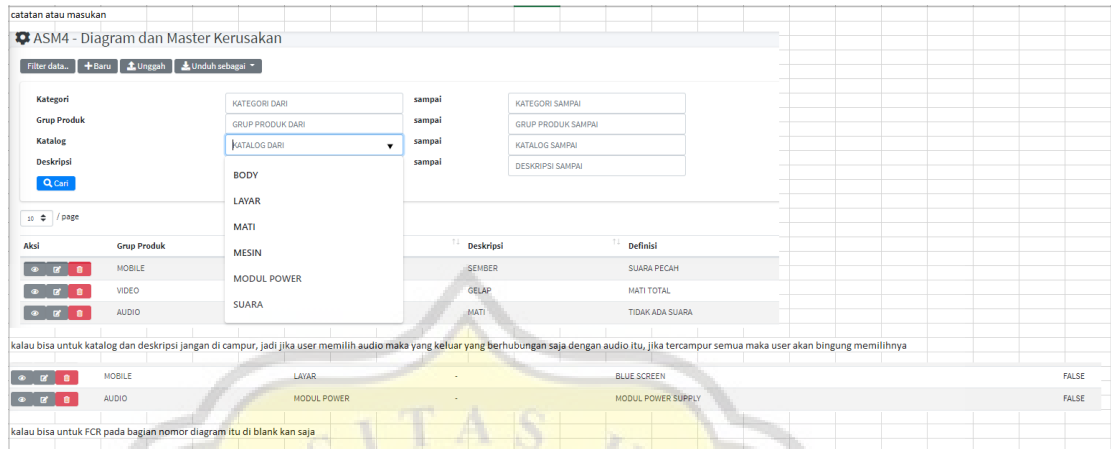


Figure 5.3 Result benchmarks for the correctness of the menu master kerusakan

The picture above is the result of testing on the damage master menu. Because when it was checked, it was in accordance with the standard of truth in the concept design. So what is written is only notes and input when the test is finished.

5.3 Menu Master Harga Sparepart dan Jasa

Benchmark for the truth of the test in the Master Spare Parts and Service Price menu.

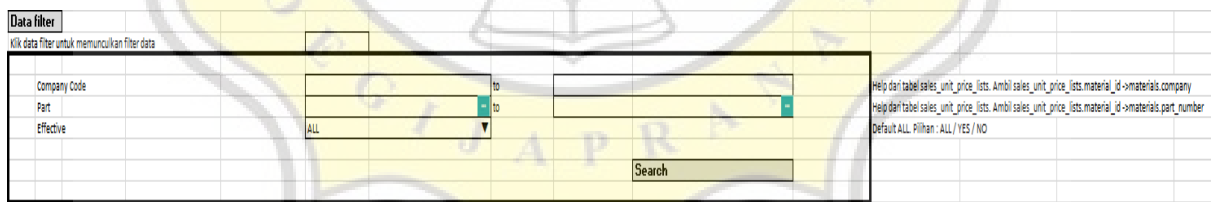


Figure 5.3 Benchmark of truth for testing Data Filter

For each concept the Data Filter on each menu must be the same. ie there is an option to display some data in another menu and match whether it is the same as that in the menu other than this data filter. Then there is information on the side to make it easier during the testing process by looking at the benchmark for the truth of the information available.

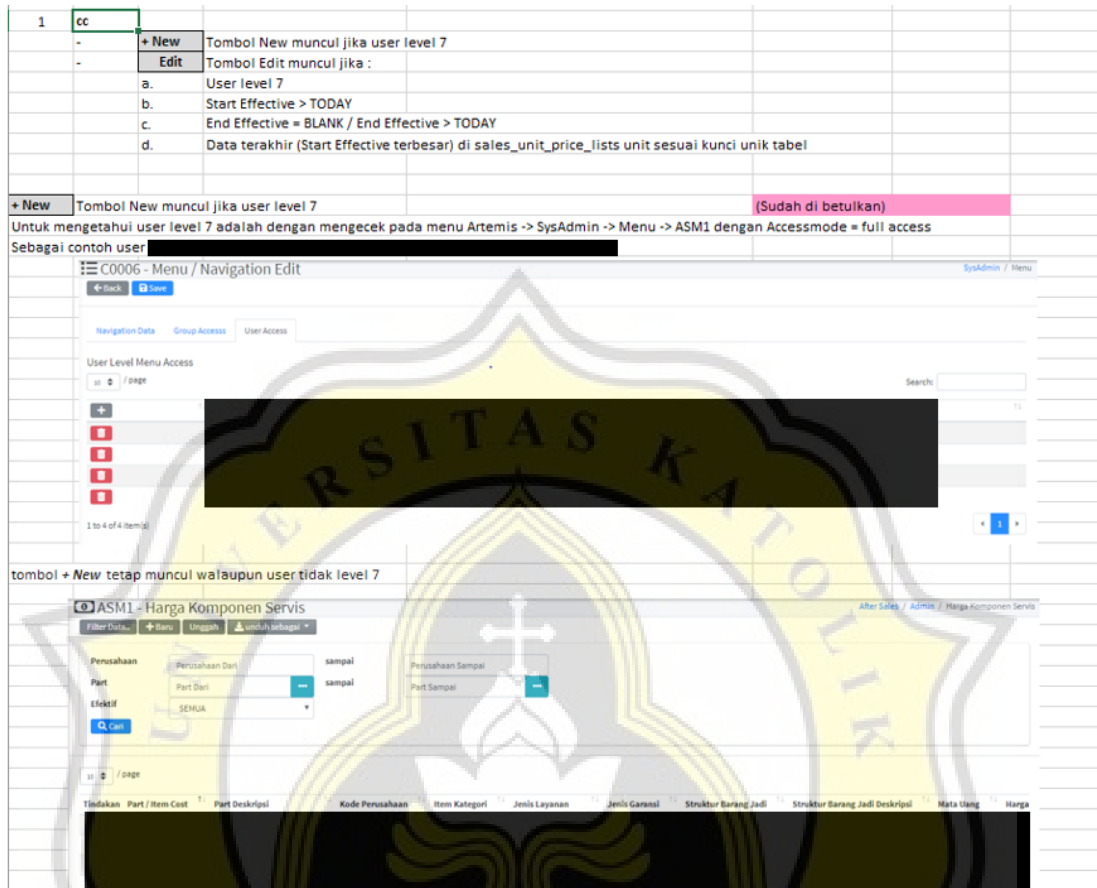


Figure 5.3 Result benchmarks for the correctness of the menu master harga sparepart dan jasa

The picture above is the result of testing on the Master Menu for Spare Parts and Services Prices. Actually there are some buttons as well which is tested but in this case it is taken on the create new button. Initially there was an error in the test after that it was recorded in the report. After that, it has just been corrected by the developer, it will automatically be replaced in the report "already corrected".

5.3 Menu Pendaftaran Jangkauan Wilayah Kunjungan

Benchmark for the correctness of the test on the registration menu for the coverage area of the visit.

+ New					
-	hanya muncul bila grup user memiliki level akses 7				
Back	Save				
Perusahaan	SKM				
SITE	KDS				
Kecamatan					

Keterangan:			
No.	Textbox	Field	Keterangan
1	COMPANY	mpany_id	disabled jika user role yang didaftarkan hanya 1, dropdown jika lebih dari 1
2	SITE	as.site_id	disabled jika user role yang didaftarkan hanya 1, dropdown jika lebih dari 1
3	KECAMATAN	as.district	Beri browse help data Bisa dipilih dengan multiple selection, sorting data sesuai Provinsi, Kota/Kabupaten, Kecamatan.

DATA KECAMATAN YANG BELUM DIDAFTARKAN		
search <input type="text"/>		
Kecamatan	Kota / Kabupaten	Provinsi
<i>sub_districts.d</i>	<i>sub_districts.city</i>	<i>sub_districts.province</i>
<input type="checkbox"/> BAE	KABUPATEN KUDUS	JAWA TENGAH
<input checked="" type="checkbox"/> DAWE	KABUPATEN KUDUS	JAWA TENGAH
<input checked="" type="checkbox"/> GEBOG	KABUPATEN KUDUS	JAWA TENGAH
<input type="checkbox"/> JEKULO	KABUPATEN KUDUS	JAWA TENGAH
<input type="checkbox"/> MEJOBLO	KABUPATEN KUDUS	JAWA TENGAH
<input type="checkbox"/> UNDAAN	KABUPATEN KUDUS	JAWA TENGAH

Figure 5.3 Benchmark the truth of the +New button test

For the +New button concept itself, initially it will be ensured that the user who will access it must have a certain level. The level setting is at the beginning, namely on the Access Role menu. Furthermore, the button that will display the data that will be used and the data taken or integrated from another menu must be checked whether the data displayed on the button is the same or not. Next there is an explanation of each part or button. Then there are examples of the results that have been created.

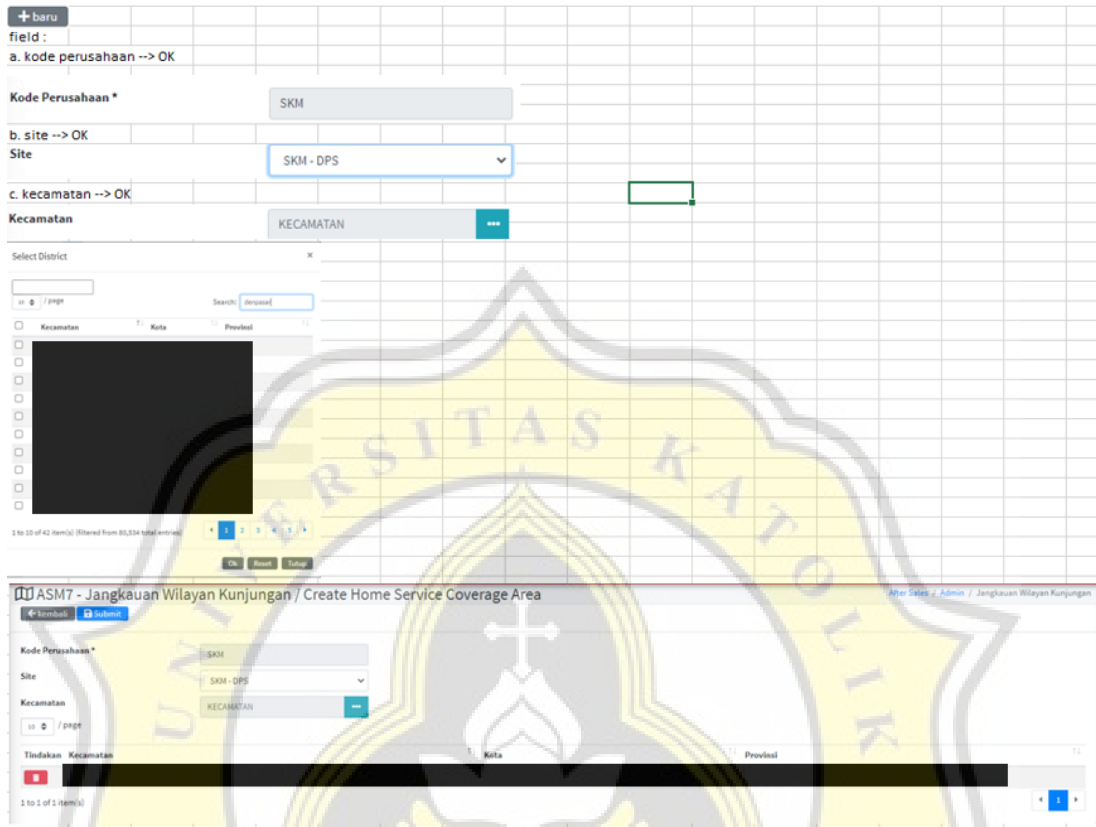


Figure 5.3 Result Benchmarks for the correctness of the Menu Pendaftaran Jangkauan Wilayah Kunjungan

The picture above is the result of testing on the Registration Menu for Visiting Areas. Actually there are some buttons as well which is tested but in this case it is taken on the create new button. Because there were no errors during the test, the examiner gave an "OK" statement.

5.3 Menu Pendaftaran Produk Untuk Layanan Kunjungan

Benchmark of truth testing on the Product Registration menu For Visiting Services.

Upload hanya digunakan untuk create data baru

Saat klik Upload, maka akan muncul form baru

Back Download Template Upload Download Data Master Level Upload Save

File Browse

Perusahaan	Child num Level	Group	Deskripsi Group	Message
SKM				validasi sama dengan save
SKM				OK
SKM				OK
SKM				OK
SKM				OK

Jika ada data yang tidak valid, maka posisi data berada di atas

Action :

a. Back Tutup pop-up

b. Template

Jika klik Template, maka akan download template excel (.xlsx) untuk upload data

Format template

company	child_num

ada 1 fitur baru, untuk mendownload master leveling produk untuk mempermudah user mengisi childnum

Download Data Master Leveling Produk

LEVEL	Child num lev	Description
0	123	HOME APPLIANCE
1	124	HOME APPLIANCE AC
2	125	HOME APPLIANCE AC INVENTER
3	126	HOME APPLIANCE AC INVENTER 0,5PK

c. Browse

Jika klik Browse, maka muncul pop up pilih file yang akan diupload

d. Upload

Jika klik Upload, maka cek :

1 Jika belum ada File yang dipilih untuk diproses upload, maka muncul error message

Please select file to upload

Jika tidak ada tolakan, maka cek validasi data :

Saat upload data, pastikan data sudah diurutkan sesuai kunci unik yang ada agar memudahkan dalam validasi terhadap data

e. Save

Muncul pop-up konfirmasi :

confirmation	
Are you sure you want to save?	
Yes	No

Figure 5.3 Benchmark of truth for Upload button test

Lastly, there is the concept of an Upload button. The first is an overview of the Upload menu which consists of several buttons. Then there is an explanation of the function of each button and there is also a rejection notification if an error occurs during upload. This chapter describes the standard of correctness of each menu tested. From each menu that is tested, it must have almost the same concept picture. So here I only take a few examples of benchmarks. The tests carried out are based on concepts that

already exist or have been created. So the results or the existing diagram table are the results of testing based on existing concepts and tested with two different methods.

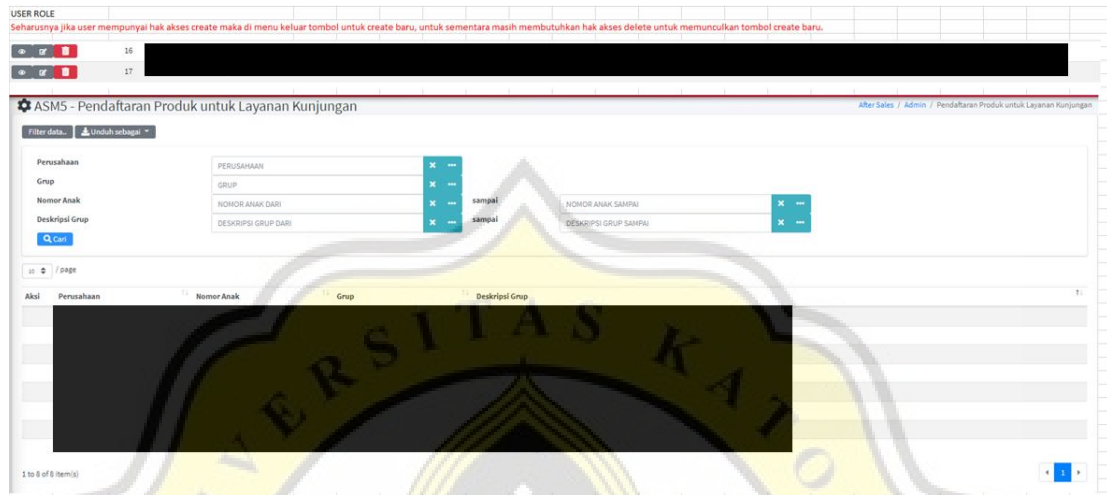


Figure 5.3 Result benchmarks for the correctness of Menu Pendaftaran Produk Untuk Layanan Kunjungan

The picture above is the result of testing on the Product Registration Menu for Visiting Services. Actually, there are several buttons that have been tested, but in this case, the access rights and data filter buttons are being tested. In testing, an error was found in setting the access rights of the user role, so in the report it is explained where the error is and is marked in red.

5.4. Binary Classification

5.4 Trial and error method

5.4 Table Matriks Trial and Error method

		Predicted	
		Positive	Negative
Actual	Positive	220	0
	Negative	30	0

Menu button Search Bar :

$$\text{Precision Trial and error} = \frac{TP}{TP + FP} = \frac{10}{10+0} = 1$$

$$\text{Recall Trial and error} = \frac{TP}{TP+FN} = \frac{10}{10+0} = 1$$

$$\text{Accuracy Trial and Error} = \frac{TP+TN}{TP+TN+FP+FN} = \frac{10+0}{10+0+0+0} = 1$$

Menu button Master Harga Servis :

$$\text{Precision Trial and error} = \frac{TP}{TP + FP} = \frac{50}{50+10} = 0,83$$

$$\text{Recall Trial and error} = \frac{TP}{TP+FN} = \frac{50}{50+0} = 1$$

$$\text{Accuracy} = \frac{TP+TN}{TP+TN+FP+FN} = \frac{50+0}{50+0+10+0} = 0,83$$

Menu button Diagram dan Master Kerusakan :

$$\text{Precision Trial and error} = \frac{TP}{TP + FP} = \frac{60}{60+0} = 1$$

$$\text{Recall Trial and error} = \frac{TP}{TP+FN} = \frac{60}{60+0} = 1$$

$$\text{Accuracy} = \frac{TP+TN}{TP+TN+FP+FN} = \frac{60+0}{60+0+0+0} = 1$$

Menu button Pendaftaran Produk Untuk Layanan Kunjungan :

$$\text{Precision Trial and error} = \frac{TP}{TP + FP} = \frac{60}{60+0} = 1$$

$$\text{Recall Trial and error} = \frac{TP}{TP+FN} = \frac{60}{60+0} = 1$$

$$\text{Accuracy} = \frac{TP+TN}{TP+TN+FP+FN} = \frac{60+0}{60+0+0+0} = 1$$

Menu button Jangkauan Wilayah Kunjungan :

$$\text{Precision Trial and error} = \frac{TP}{TP + FP} = \frac{40}{40+20} = 0,66$$

$$\text{Recall Trial and error} = \frac{TP}{TP+FN} = \frac{40}{40+0} = 1$$

$$\text{Accuracy} = \frac{TP+TN}{TP+TN+FP+FN} = \frac{40+0}{40+0+20+0} = 0,66$$

Overall calculation :

$$\text{Precision Trial and error} = \frac{TP}{TP + FP} = \frac{220}{220+30} = 0,88$$

$$\text{Recall Trial and error} = \frac{TP}{TP+FN} = \frac{220}{220+0} = 1$$

$$\text{Accuracy Trial and error} = \frac{TP+TN}{TP+TN+FP+FN} = \frac{220+0}{220+0+30+0} = 0,88$$

In this test there are 5 menus that are tested. How to test it yourself using the formula $\frac{TP}{TP + FP}$ as Precision and $\frac{TP}{TP+FN}$ as Recall. Overall Precision got 0.88 and Recall got 1.

5.4 Integration Testing method

5.4 Table Matriks Integration testing method

		Predicted	
		Positive	Negative
Actual	Positive	130	0
	Negative	30	0

Menu button Master Harga Servis :

$$\text{Precision Trial and error} = \frac{TP}{TP + FP} = \frac{30}{30+10} = 0,75$$

$$\text{Recall Trial and error} = \frac{TP}{TP+FN} = \frac{30}{30+0} = 1$$

$$\text{Accuracy} = \frac{TP+TN}{TP+TN+FP+FN} = \frac{30+0}{30+0+10+0} = 0,75$$

Menu button Diagram dan Master Kerusakan :

$$\text{Precision Trial and error} = \frac{TP}{TP + FP} = \frac{40}{40+0} = 1$$

$$\text{Recall Trial and error} = \frac{TP}{TP+FN} = \frac{40}{40+0} = 1$$

$$\text{Accuracy} = \frac{TP+TN}{TP+TN+FP+FN} = \frac{40+0}{40+0+0+0} = 1$$

Menu button Pendaftaran Produk Untuk Layanan Kunjungan :

$$\text{Precision Trial and error} = \frac{TP}{TP + FP} = \frac{40}{40+0} = 1$$

$$\text{Recall Trial and error} = \frac{TP}{TP+FN} = \frac{40}{40+0} = 1$$

$$\text{Accuracy} = \frac{TP+TN}{TP+TN+FP+FN} = \frac{40+0}{40+0+0+0} = 1$$

Menu button Jangkauan Wilayah Kunjungan :

$$\text{Precision Trial and error} = \frac{TP}{TP + FP} = \frac{20}{20+20} = 0,5$$

$$\text{Recall Trial and error} = \frac{TP}{TP+FN} = \frac{20}{20+0} = 1$$

$$\text{Accuracy} = \frac{TP+TN}{TP+TN+FP+FN} = \frac{20+0}{20+0+20+0} = 0,5$$

Overall calculation :

$$\text{Precision Trial and error} = \frac{TP}{TP + FP} = \frac{130}{130+30} = 0,81$$

$$\text{Recall Trial and error} = \frac{TP}{TP+FN} = \frac{130}{130+0} = 1$$

$$\text{Accuracy Integration testing} = \frac{TP+TN}{TP+TN+FP+FN} = \frac{130+0}{1300+0+3+0} = 0,81$$

In this test there are 4 menus that are tested. How to test it yourself using the formula $\frac{TP}{TP + FP}$ as Precision and $\frac{TP}{TP+FN}$ as Recall. Overall Precision got 0.81 and Recall got 1.

5.4 F Score

F Score Trial and Error Method

$$F1 = 2 \cdot \frac{\text{precision} \cdot \text{recall}}{\text{precision} + \text{recall}} = \frac{TP}{TP + \frac{1}{2}(FP+FN)}$$

$$F1 = 2 \cdot \frac{0,88 \cdot 1}{0,88 + 1} = \frac{220}{220 + \frac{1}{2}(30+0)}$$

$$F1 = 2 \cdot \frac{0,88}{1,88} = \frac{220}{235}$$

$$0,93 = 0,93$$

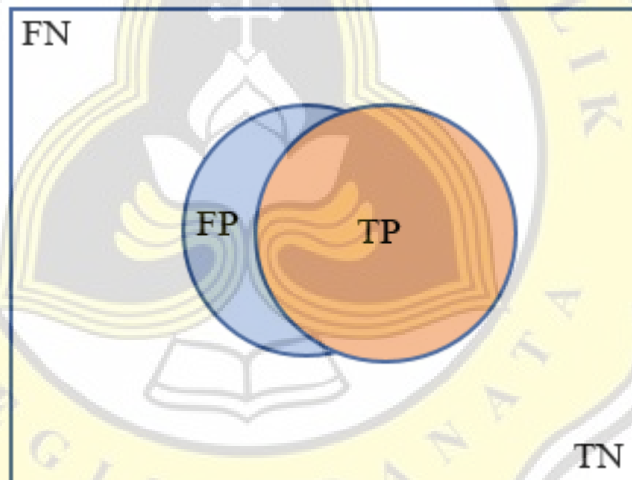
F Score Integration Testing Method

$$F1 = 2 \cdot \frac{\text{precision} \cdot \text{recall}}{\text{precision} + \text{recall}} = \frac{TP}{TP + \frac{1}{2}(FP + FN)}$$

$$F1 = 2 \cdot \frac{0,81 \cdot 1}{0,81 + 1} = \frac{130}{130 + \frac{1}{2}(3+0)}$$

$$F1 = 2 \cdot \frac{0,81}{1,81} = \frac{130}{145}$$

$$0,89 = 0,89$$



5.4 Diagram Venn High Recall High Precision

So, in this section, we describe the calculations to determine this study into the categories of Low-precision low recall, High-low-precision recall, Low-high-precision recall, and High-precision recall. In the Trial and Error method, the recall calculation is 100% and the precision is 88%. The results obtained are 220 True positive and 30 False positive, while for False negative and True negative the number is 0. Taken from testing the integration testing method from 5 different menus. In the integration test method, the recall calculation is 100% and the precision is 81%. The results obtained

are 130 True positive and 30 False positive, while for False negative and True negative the number is 0. Taken from testing the integration testing method from 4 different menus. True Positive itself is when the prediction is successful and the actual value is also successful. For False Positive itself is when the prediction is successful but for real results it fails or does not work. The results obtained from this test are included in the High Recall High Precision category. High Recall itself prefers False Positive to be better than False Negative, therefore in this test there is no False Negative found. For High Precision itself, it is more directed to the occurrence of True Positive so that it does not want False Positive. This test is more towards Precision because of the higher number of True Positives.

