

Assignment 3 (E1800176 & E1800182)

by I Made Siva Aditya Surya

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BIT302 SOFTWARE ENGINEERING

Assignment 3

**HELP COVID-19 Testing Information System
(CTIS) Website – Design Specification Document**



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1. Assignment 1 and 2 Follow Up

1.1. Updates Analysis Design / Documentation

1.1.1 Expanded Use Cases, System Sequence Diagrams, & Contracts

1. Login

Prepared by: Ida Bagus Gede Awidya Andika

- Expanded Use Case

Use Case	Log in
Goal in Context	Allow User to login to the system
Primary Actor	Test Centre Officer and Patient
Secondary Actor	-
Typical Course of Events	
Actor Actions	System Response
1. Process begins when the Test Centre Officer/Patient input their username or email and password then click the login button	2. System will verify the input data, whether it matches the data in database or not
	3. System will navigate the user to their dashboard
Alternative Course	
1a: If Test Centre Officer or Patient inputs incorrect username or email and password, then the system will display a warning notification that includes an instruction to try log in again	

- System Sequence Diagram

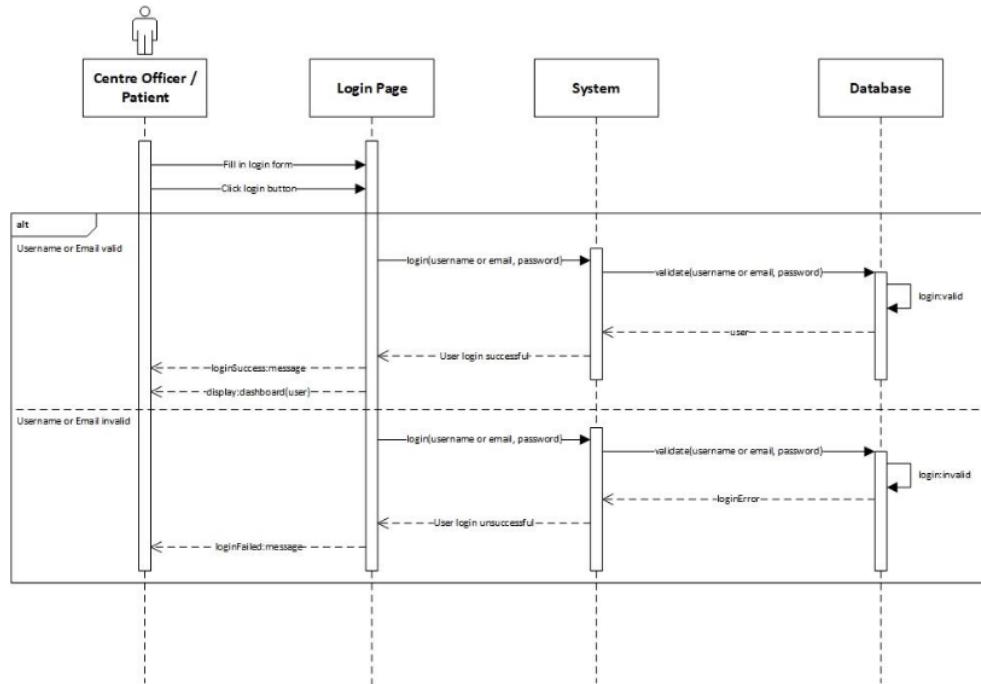


Figure 1. Login System Sequence Diagram

- Contract

Cross References	Login
Operation	login(username or email, password)
Responsible	To access the user's dashboard.
Pre-conditions	<ul style="list-style-type: none"> User object must be available A valid username or email and password
Post-conditions	<ul style="list-style-type: none"> Session was created (instance creation) Session was associated with the User (association formed)
Cross References	Login
Operation	login(username or email, password)
Responsible	To access the user's dashboard.

Pre-conditions	<ul style="list-style-type: none"> User object must be available Invalid username or email and password
Post-conditions	<ul style="list-style-type: none"> Session was not created

2. View Test Kit

Prepared by: Ida Bagus Gede Awidya Andika

- Expanded Use Case

Use Case	View Test Kit
Goal in Context	Allow Officer to view a list of test kit and stock
Primary Actor	Test Centre Officer
Secondary Actor	-
Typical Course of Events	
Actor Actions	System Response
1. Process begins after Test Centre Officer has successfully login to system	2. System will navigate Test Centre Officer to their dashboard
3. Test Centre Officer clicks Test Kit menu	4. System displays a list of Test Kit data
Alternative Course	
-	

- System Sequence Diagram

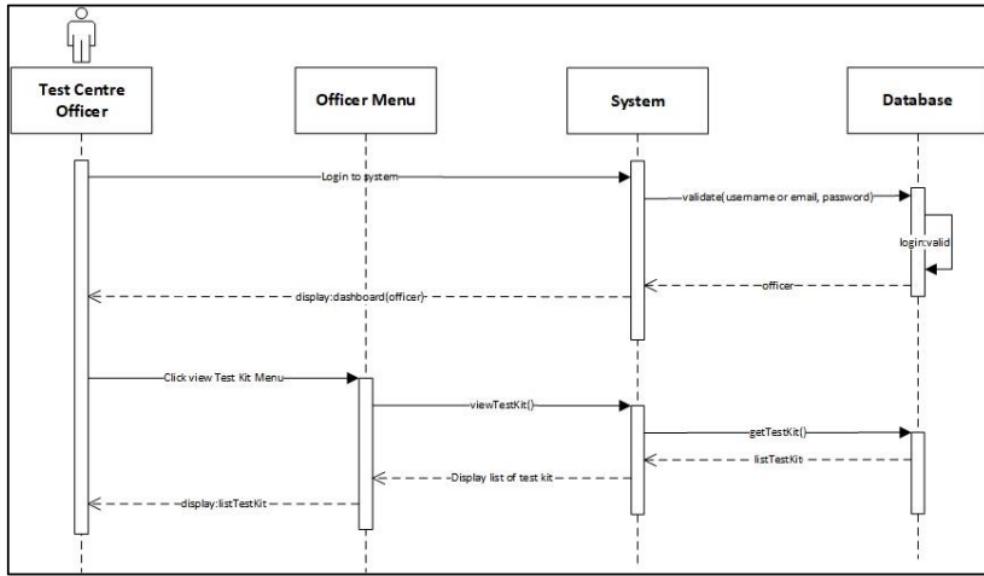


Figure 2. View Test Kit System Sequence Diagram

- Contract

Cross References	View Test Kit
Operation	login(username or email, password)
Responsible	To access the officer's dashboard.
Pre-conditions	<ul style="list-style-type: none"> Officer object must be available A valid username or email and password
Post-conditions	<ul style="list-style-type: none"> Session was created (instance creation) Session was associated with the Officer (association formed)
Cross References	View Test Kit
Operation	viewTestKit()
Responsible	To view a list of all Test Kit data.
Pre-conditions	testKit object must be available
Post-conditions	<ul style="list-style-type: none"> ListTestKit was created (instance creation)

	<ul style="list-style-type: none"> • ListTestKit was associated with viewMenu (association formed)
--	---

3. Manage Test Kit Stock

Prepared by: Ida Bagus Gede Awidya Andika

- Expanded Use Case

Use Case	Manage Test Kit Stock
Goal in Context	Allow Test Centre Manager to add Test Kit or update Test Kit stock
Primary Actor	Test Centre Manager
Secondary Actor 2	-
Typical Course of Events	
Actor Actions	System Response
1. Process begins after Test Centre Manager has successfully login to system	2. System will navigate Test Centre Manager to their dashboard
3. Test Centre Manager clicks Test Kit menu	4. System will display a list of Test Kit data
5. Test Centre Manager clicks Add Data	6. System will navigate Test Centre Manager to Add Test Kit page and display Test Kit data form
7. Test Centre Manager fills in the data for the name of the test kit and the amount of stock on the form provided, then clicks the save button	8. System will store the data that has been entered by the Test Centre Manager into the database then Test Centre Manager will be directed to the Test Kit page and a message that notifies success in adding the Test Kit is displayed
Alternative Course	

5a: If the test kit has been recorded in the database, the Test Center Manager will be able to update the amount of test kit stocks available when pressing the edit button on the Test Kit menu

- System Sequence Diagram

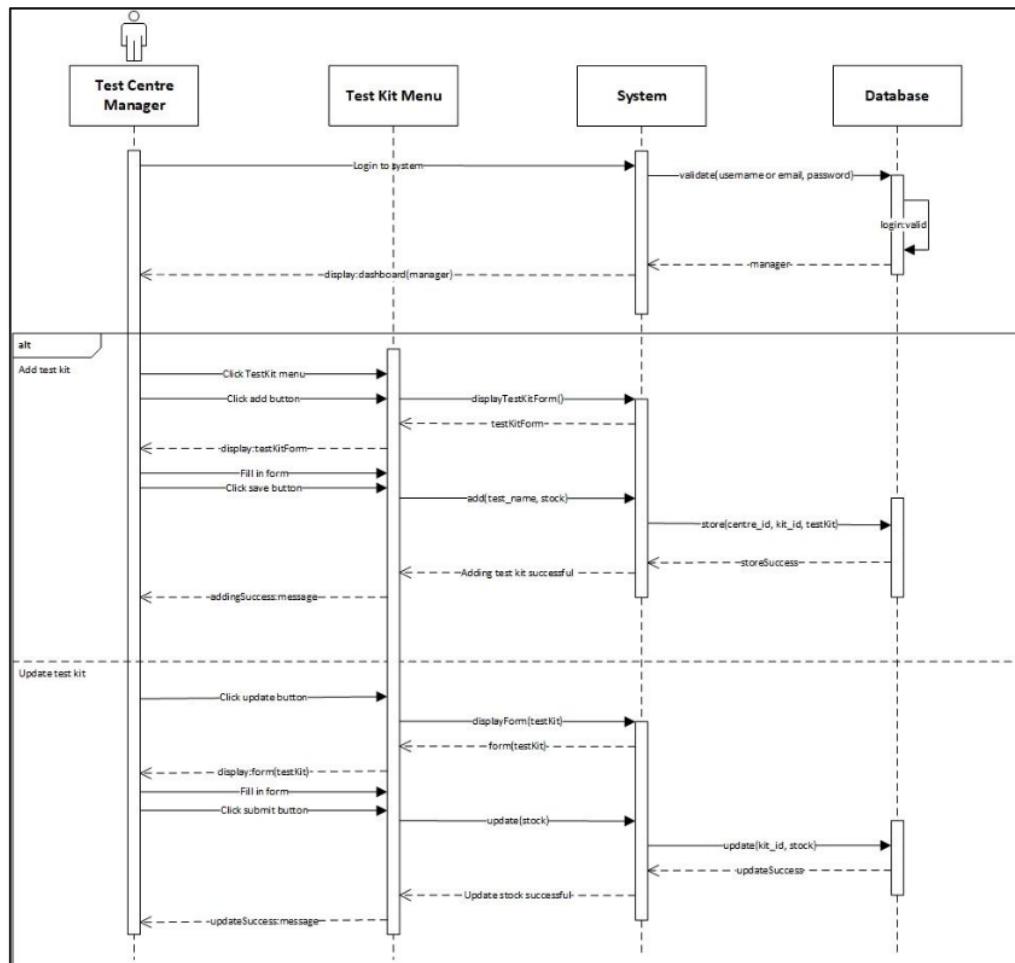


Figure 3. Manage Test Kit Stock System Sequence Diagram

- Contract

Cross References	Manage Test Kit Stock
Operation	login(username or email, password)
Responsible	To access the manager's dashboard.
Pre-conditions	<ul style="list-style-type: none"> • Manager object must be available • A valid username or email and password
Post-conditions	<ul style="list-style-type: none"> • Session was created (instance creation) • Session was associated with the Manager (association formed)
Cross References	Manage Test Kit Stock
Operation	add(test_name, stock)
Responsible	To add new test kit with name and available stock.
Pre-conditions	<ul style="list-style-type: none"> • Manager object must be available • TestCentre object must be available • Session must already be created • Test name and stock data is available
Post-conditions	<ul style="list-style-type: none"> • TestKit was created (instance creation) • kit_id was generated (attribute modification) • TestKit was associated with the Test Centre (association formed)
Cross References	Manage Test Kit Stock
Operation	update(stock)
Responsible	To update available stock from test kit.
Pre-conditions	<ul style="list-style-type: none"> • Manager object must be available • Session must already be created • TestKit object must be available • Stock data is available
Post-conditions	Stock was updated (attribute modification)

4. Register Test Centre

Prepared by: Ida Bagus Gede Awidya Andika

- Expanded Use Case

Use Case	Register Test Centre
Goal in Context	Allow Test Centre to be created and recorded for the Manager
Primary Actor	Test Centre Manager
Secondary Actor	-
Typical Course of Events	
Actor Actions	System Response
1. Process begins when Test Centre Manager first login to the system	2. System will navigate Test Centre Manager to register test centre page and display test centre data form
3. Test Centre Manager fills in the name, address, postal code, phone and city of the test centre on the form provided and then clicks the save button	4. System will store the data that has been inputted by the Test Centre Manager into the database, then Test Centre Manager will be directed to the test centre page and a message that notifies success in registering the test centre is displayed
Alternative Course	-

- System Sequence Diagram

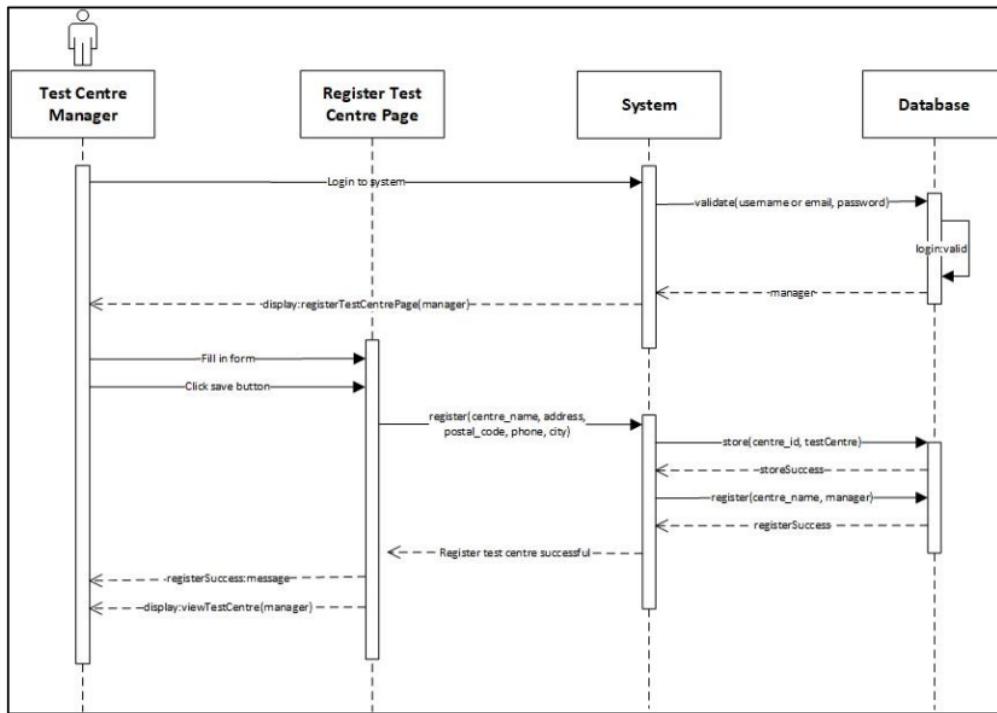


Figure 4. Register Test Centre System Sequence Diagram

- Contract

Cross References	Register Test Centre
Operation	login(username or email, password)
Responsible	To access the manager's dashboard.
Pre-conditions	<ul style="list-style-type: none"> Manager object must be available A valid username or email and password
Post-conditions	<ul style="list-style-type: none"> Session was created (instance creation) Session was associated with the Manager (association formed)
Cross References	Register Test Centre
Operation	register(centre_name, address, postal_code, phone, city)

Responsible	To register test centre and record for the manager.
Pre-conditions	<ul style="list-style-type: none"> Manager object must be available Session must already be created Test centre is not registered for Manager Test centre data is available
Post-conditions	<ul style="list-style-type: none"> TestCentre was created (instance creation) centre_id was generated (attribute modification) Manager was associated with the TestCentre (association formed)

5. View Test Centre Officer

Prepared by: Ida Bagus Gede Awidya Andika

- Expanded Use Case

Use Case	View Test Centre Officer
Goal in Context	Allow Officer to view a list of all employed Officer in their Test Centre
Primary Actor	Test Centre Officer
Secondary Actor	-
Typical Course of Events	
Actor Actions	System Response
1. Process begins after Test Centre Officer has successfully login to system	2. System will navigate Test Centre Officer to their dashboard
3. Test Centre Officer clicks Test Centre Officer menu	4. System will display a list of Test Centre Officer data
Alternative Course	
-	

- System Sequence Diagram

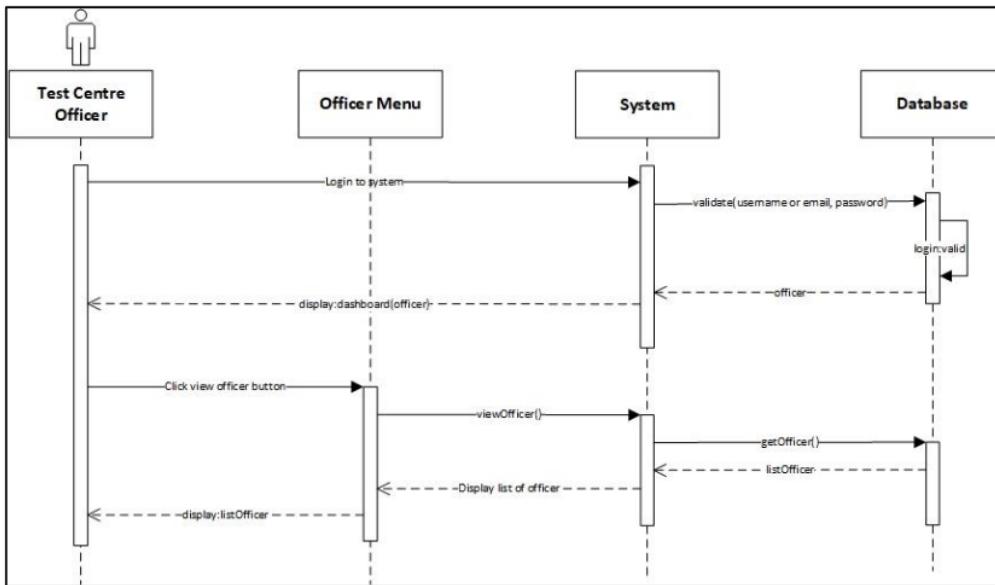


Figure 5. View Test Centre Officer System Sequence Diagram

- Contract

Cross References	View Test Centre Officer
Operation	login(username or email, password)
Responsible	To access the officer's dashboard.
Pre-conditions	<ul style="list-style-type: none"> Officer object must be available A valid username or email and password
Post-conditions	<ul style="list-style-type: none"> Session was created (instance creation) Session was associated with the Officer (association formed)
Cross References	View Test Centre Officer
Operation	viewOfficer()
Responsible	To view a list of test centre data.
Pre-conditions	<ul style="list-style-type: none"> Officer object must be available Session must already be created
Post-conditions	<ul style="list-style-type: none"> ListOfficer was created (instance creation) ListOfficer was associated with viewMenu (association formed)

6. Record Tester

Prepared by: Ida Bagus Gede Awidya Andika

- Expanded Use Case

Use Case	Record Tester
Goal in Context	Allow Manager to record Officer as Tester
Primary Actor	Test Centre Manager
Secondary Actor	Test Centre Officer
Typical Course of Events	
Actor Actions	System Response
1. Process begins after Test Centre Manager successfully login to system	2. System will navigate Test Centre Manager to their dashboard
3. Test Centre Manager clicks Test Centre Officer menu	4. System will display a list of Test Centre Officer data
5. Test Centre Manager clicks edit button on the Test Centre Officer whose position is going to be changed to tester	6. System will navigate Test Centre to the Test Centre Officer edit page and display the Test Centre Officer data form
7. Test Centre Manager changes the position of Test Centre Officer from "officer" to "tester"	8. System will store the data that has been entered by the Test Centre Manager into the database then the Test Centre Manager will be navigated to the Tester page and a message appears that notify success in recording tester is displayed
Alternative Course	
5a: If there are no test centre officer that has been recorded in database or test centre manager wants to record new test centre officer with position "tester", then the test centre manager will click add centre officer button and fill in all the required data in the form as well as setting the position to "tester". Test centre manager will click the submit button to	

record the tester into database, then a message that notify success in recording tester is displayed

- System Sequence Diagram

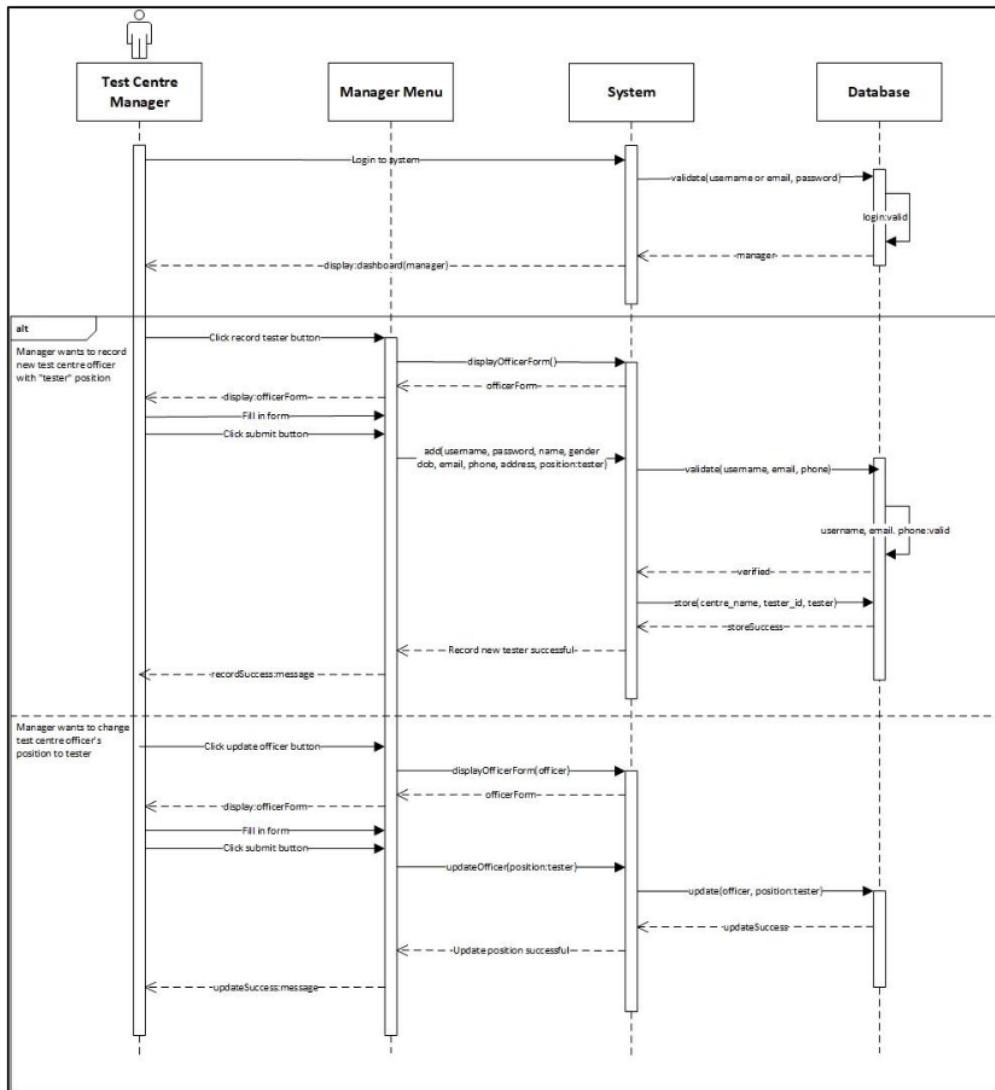


Figure 6. Record Tester System Sequence Diagram

- Contract

Cross References	Record Tester
Operation	login(username or email, password)
Responsible	To access the manager's dashboard.
Pre-conditions	<ul style="list-style-type: none"> • Manager object must be available • A valid username or email and password
Post-conditions	<ul style="list-style-type: none"> • Session was created (instance creation) • Session was associated with the Manager (association formed)
Cross References	Record Tester
Operation	updateOfficer(position:tester)
Responsible	To update the position of test centre officer to tester.
Pre-conditions	<ul style="list-style-type: none"> • Manager object must be available • Session must already be created • Officer object must be available
Post-conditions	Position was updated (attribute modification)
Cross References	Record Tester
Operation	add(username, password, name, gender, dob, email, phone, address, position:tester)
Responsible	To record Tester
Pre-Conditions	<ul style="list-style-type: none"> • Manager object must be available • Session must already be created • TestCentre object must be available • Tester data must be available • A valid tester username, email, phone
Post-Conditions	<ul style="list-style-type: none"> • Tester was created (instance creation) • officer_id was generated (attribute modification) • Tester was associated with the TestCentre (association formed)

7. Record Officer

Prepared by: Ida Bagus Gede Awidya Andika

- Expanded Use Case

Use Case	Record Officer
Goal in Context	Allow Manager to record new Officer
Primary Actor	Test Centre Manager
Secondary Actor	Test Centre Officer
Typical Course of Events	
Actor Actions	System Response
1. Process begins after Test Centre Manager successfully login to system	2. System will navigate Test Centre Manager to their dashboard
3. Test Centre Manager clicks Test Centre Officer menu	4. System will display a list of Test Centre Officer data
5. Test Centre Manager clicks Add Test Centre Officer button	6. System will navigate Test Centre Manager to Add Test Centre Officer page and display Test Centre Officer data form
7. Test Centre Manager fills in the data for username, password, and other Test Centre Officer data on the form provided and then clicks the save button	8. System will store the data that has been entered by Test Centre Manager into the database then Test Centre Manager will be navigated to the Test Centre Officer page and a message that notifies success in recording Test Centre Officer is displayed
Alternative Course	
<ul style="list-style-type: none"> - 7a: If username, email or phone is already exists. Then the system will display a warning notification that includes an instruction to try full fill form again 	

10
- System Sequence Diagram

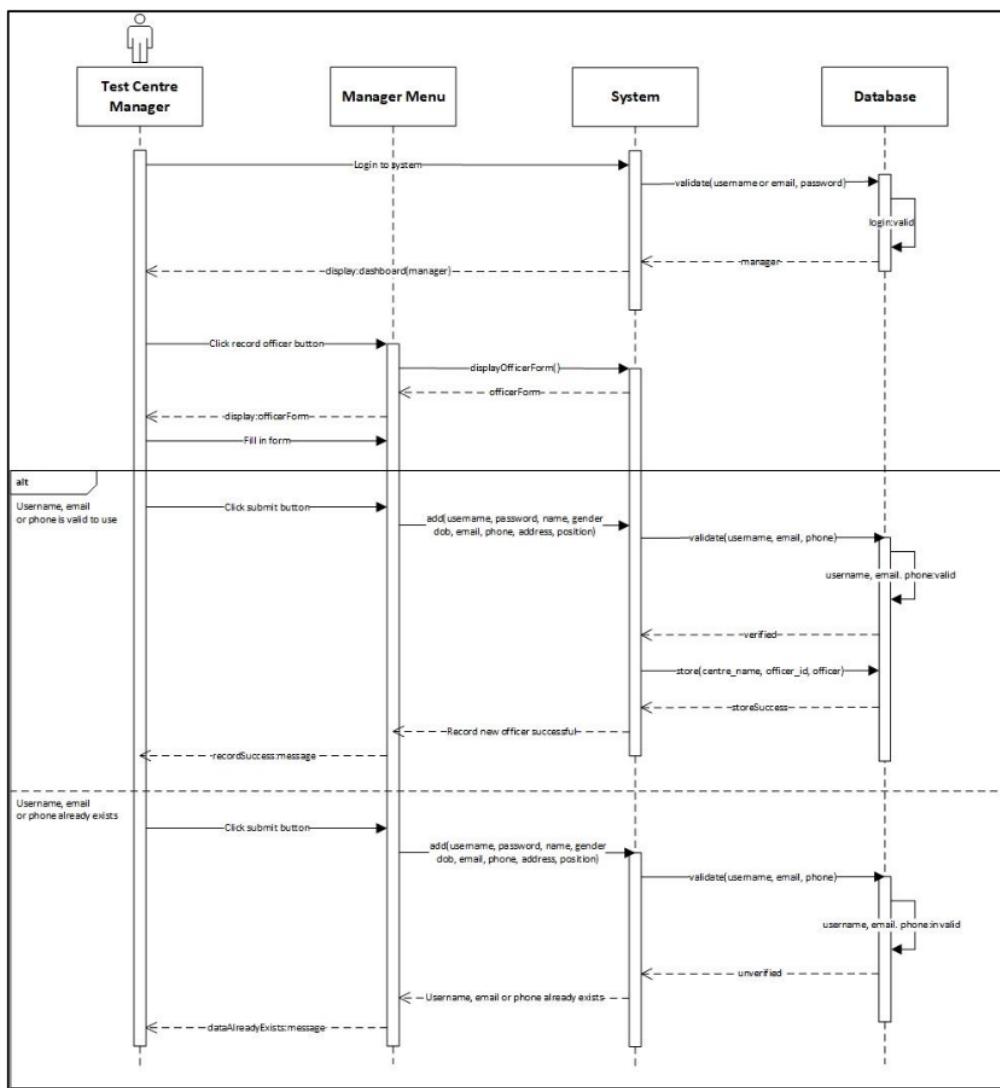


Figure 7. Record Officer System Sequence Diagram

- Contract

Cross References	Record Officer
Operation	login(username or email, password)
Responsible	To access the manager's dashboard.
Pre-conditions	<ul style="list-style-type: none"> • Manager object must be available • A valid username or email and password
Post-conditions	<ul style="list-style-type: none"> • Session was created (instance creation) • Session was associated with the Manager (association formed)
Cross References	Record Officer
Operation	add(username, password, name, gender, dob, email, phone, address, position)
Responsible	To record Officer
Pre-conditions	<ul style="list-style-type: none"> • Manager object must be available • Session must already be created • TestCentre object must be available • Officer data must be available • A valid officer username, email, phone
Post-conditions	<ul style="list-style-type: none"> • Officer was created (instance creation) • officer_id was generated (attribute modification) • Officer was associated with the TestCentre (associate modification)
Cross References	Record Officer
Operation	add(username, password, name, gender, dob, email, phone, address, position)
Responsible	To record Officer
Pre-conditions	<ul style="list-style-type: none"> • Manager object must be available • Session must already be created • TestCentre object must be available • Officer data must be available
Post-conditions	<ul style="list-style-type: none"> • Officer was not created

8. Record New Test

Prepared by: I Made Siva Aditya Surya

- Expanded Use Case

Use Case	Record New Test
Goal in Context	Allow Tester to record New Covid Test data
Primary Actor	Tester
Secondary Actor	Patient
Typical Course of Events	
Actor Actions	System Response
1. Process begins after Tester successfully login to system	2. System will navigate Tester to their dashboard
3. Tester clicks Covid Test menu	4. System will display a list of Covid Test data
5. Tester clicks add New Test button	6. System will navigate Tester to Add New test page and display Covid Test data form
7. Tester fills in the patient name, test date, type test, symptoms and result date in the form provided and then clicks the save button	8. System will store the data that has been entered by Tester into the database then the Tester will be directed to the Covid Test page and a message that notifies success in recording new test is displayed
Alternative Course	
-	

- System Sequence Diagram

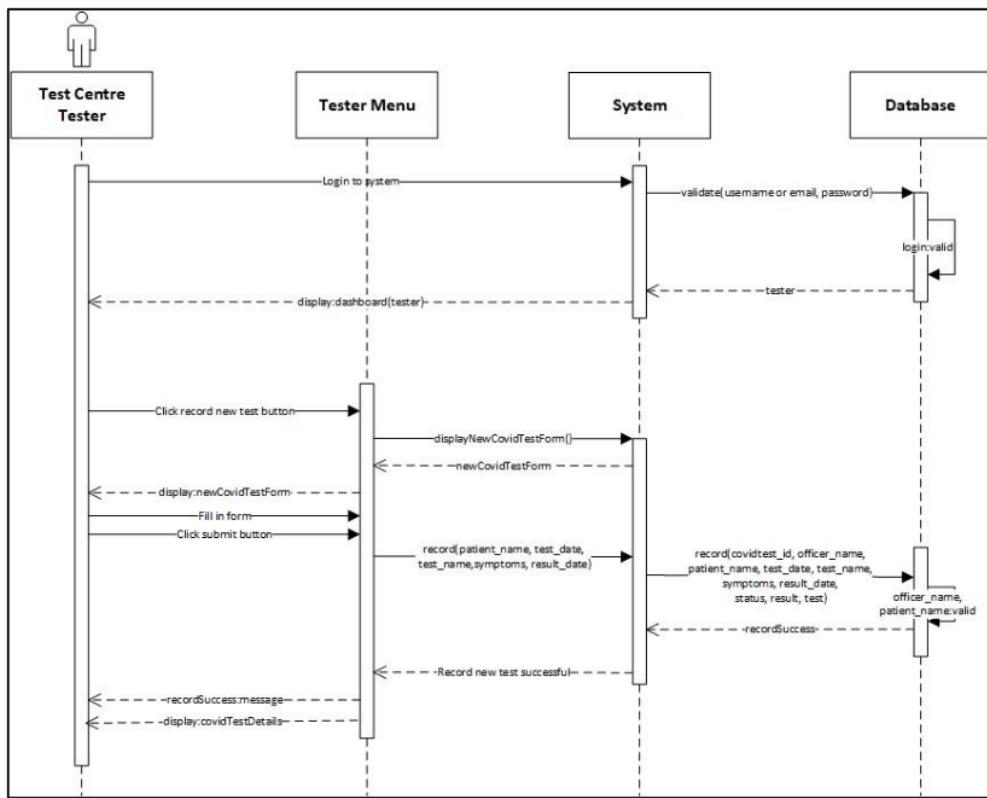


Figure 8. Record New Test System Sequence Diagram

- Contract

Cross References	Record New Test
Operation	login(username or email, password)
Responsible	To access the tester's dashboard.
Pre-conditions	<ul style="list-style-type: none"> • Tester object must be available • A valid username or email and password
Post-conditions	<ul style="list-style-type: none"> • Session was created (instance creation) • Session was associated with the Tester (association formed)
Cross References	Record New Test
Operation	record(patient_name, test_date, test_name, symptoms, result_date)
Responsible	To record Covid Test data from Patient.
Pre-conditions	<ul style="list-style-type: none"> • Tester object must be available • Session must already be created • TestKit object must be available • Patient data is available • A valid patient officer_name, patient_name
Post-conditions	<ul style="list-style-type: none"> • Patient was created (instance creation) • patient_name was generated (attribute modification) • Tester was created (instance creation) • officer_name was generated (attribute modification) • CovidTest was created (instance creation) • covidtest_id was generated (attribute modification) • test_date was generated (attribute modification) • status was generated (attribute modification) • result was generated (attribute modification) • CovidTest was associated with the Tester (association formed) • CovidTest was associated with the TestKit (association formed) • CovidTest was associated with the Patient (association formed)

9. Update Test Result

Prepared by: I Made Siva Aditya Surya

- Expanded Use Case

Use Case	Update Test Result
Goal in Context	Allow Tester to update Patient's test result and status
Primary Actor	Tester
Secondary Actor	Patient
Typical Course of Events	
Actor Actions	System Response
1. Process begins after Tester successfully login to system	2. System will navigate Tester to their dashboard
3. Tester clicks Covid Test menu	4. System will display a list of Covid Test data
5. Tester clicks the edit button on the Covid Test data that needs to be updated	6. System will navigate Tester to edit Covid Test page and display Covid Test data form
7. Tester updates result date, status and result	8. System will store the data that has been entered by Tester into the database then Tester will be navigated to the Covid Test page and a message that notifies success in updating Covid Test data is displayed
Alternative Course	
-	

- System Sequence Diagram

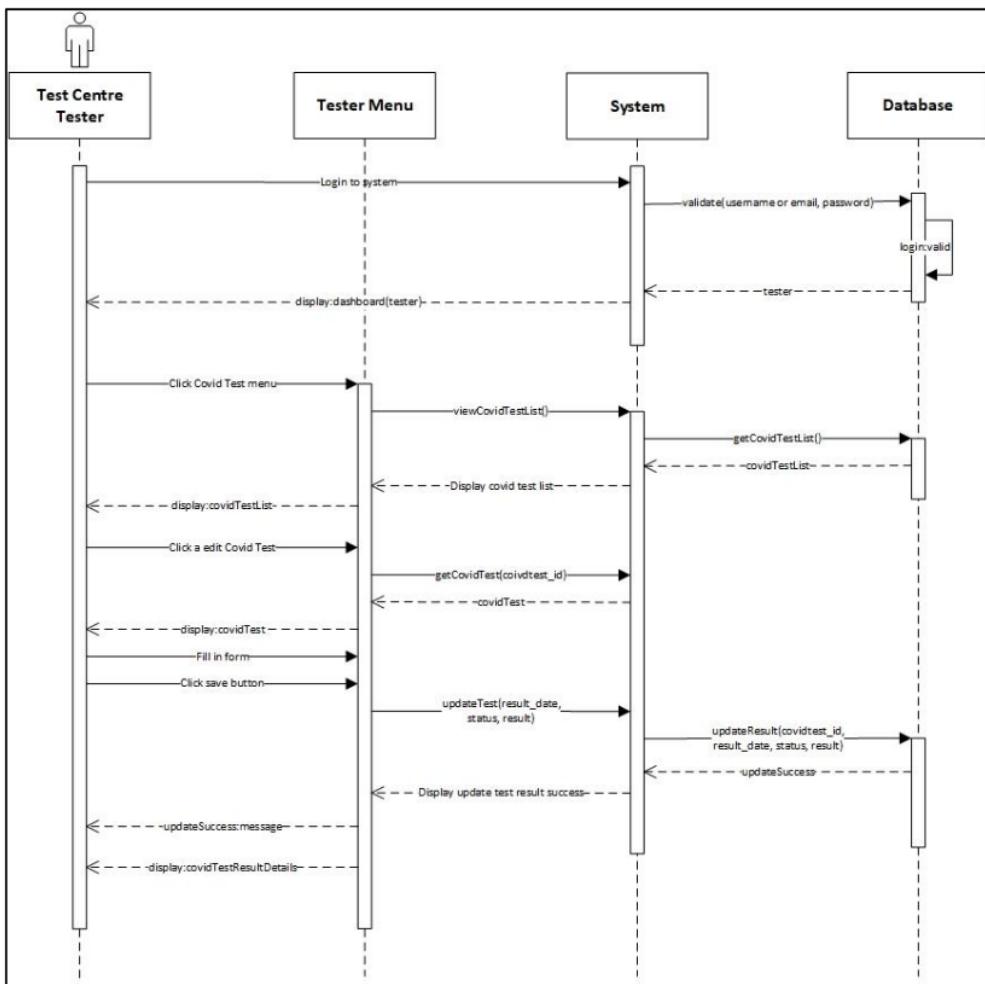


Figure 9. Update Test Result System Sequence Diagram

- Contract

Cross References	Update Test Result
Operation	login(username or email, password)
Responsible	To access the tester's dashboard.
Pre-conditions	<ul style="list-style-type: none"> • Tester object must be available • A valid username or email and password
Post-conditions	<ul style="list-style-type: none"> • Session was created (instance creation) • Session was associated with the Tester (association formed)
Cross References	Update Test Result
Operation	updateTest(result_date, status, result)
Responsible	To update the test result and status.
Pre-conditions	<ul style="list-style-type: none"> • Tester object must be available • Session must already be created • CovidTest object must be available • Patient data must be available • Test result data must be available
Post-conditions	<ul style="list-style-type: none"> • result_date was updated (attribute modification) • status was updated (attribute modification) • result was updated (attribute modification)

10. Generate Test Report

Prepared by: I Made Siva Aditya Surya

- Expanded Use Case

Use Case	Generate Test Report
Goal in Context	Allow Officer to generate a list of test report that are administered in their Test Centre
Primary Actor	Test Centre Officer
Secondary Actor	-
Typical Course of Events	

Actor Actions	System Response
1. Process begins after Test Centre Officer successfully login to system	2. System will navigate Test Centre Officer to their homepage
3. Test Centre Officer click Covid Test menu	4. System will display a list of all Covid Test report on the test centre which the officer is employed at
Alternative Course	
-	

- System Sequence Diagram

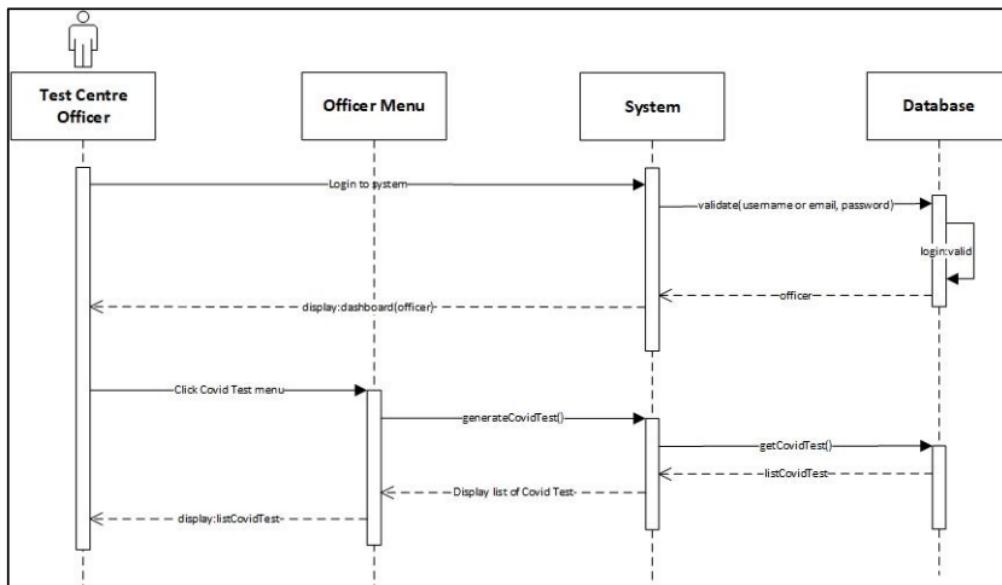


Figure 10. Generate Test Report System Sequence Diagram

- Contract

Cross References	Generate Test Report
Operation	login(username or email, password)
Responsible	To access the officer's dashboard.
Pre-conditions	<ul style="list-style-type: none"> Officer object must be available A valid username or email and password
Post-conditions	<ul style="list-style-type: none"> Session was created (instance creation) Session was associated with the Officer (association formed)
Cross References	Generate Test Report
Operation	generateCovidTest()
Responsible	To view a list of all Covid Test data.
Pre-conditions	<ul style="list-style-type: none"> Officer object must be available Session must already be created CovidTest object must be available
Post-conditions	<ul style="list-style-type: none"> ListCovidTest was created (instance creation) ListCovidTest was associated with viewMenu (association formed)

11. View Testing History

Prepared by: I Made Siva Aditya Surya

- Expanded Use Case

Use Case	View Testing History
Goal in Context	Allow Patient to view their testing history
Primary Actor	Patient
Secondary Actor	-
Typical Course of Events	
Actor Actions	System Response
1. Process begins after Patient has successfully login to system	2. System will navigate Patient to their dashboard

- | | |
|----------------------------------|--|
| 3. Patient click COVID Test menu | 4. System will display a list of COVID Test data |
|----------------------------------|--|

Alternative Course

-

- System Sequence Diagram

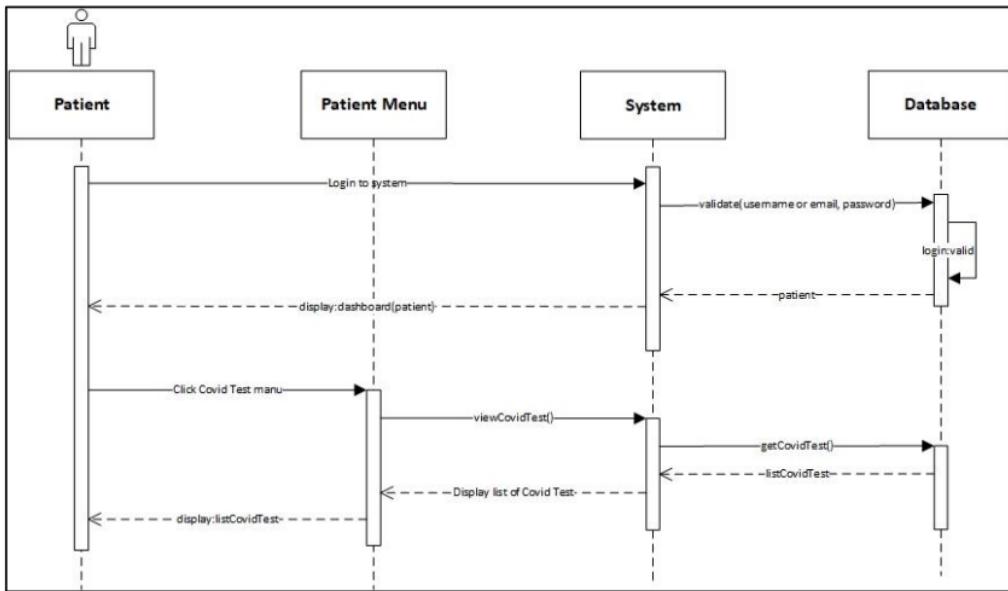


Figure 11. View Testing History System Sequence Diagram

- Contract

Cross References	View Testing History
Operation	login(username or email, password)
Responsible	To access the patient's dashboard.
Pre-conditions	<ul style="list-style-type: none"> • Patient object must be available • A valid username or email and password
Post-conditions	<ul style="list-style-type: none"> • Session was created (instance creation) • Session was associated with the Patient (association formed)
Cross References	View Testing History

Operation	viewCovidTest()
Responsible	To view a list of Covid Test.
Pre-conditions	<ul style="list-style-type: none"> Patient object must be available Session must already be created CovidTest object must be available
Post-conditions	<ul style="list-style-type: none"> ListCovidTest was created (instance creation) ListCovidTest was associated with viewMenu (association formed)

12. Log Out

Prepared by: Ida Bagus Gede Awidya Andika

- Expanded Use Case

Use Case	Log Out
Goal in Context	Allow User to log out from the system
Primary Actor	Test Centre Officer and Patient
Secondary Actor	-
Typical Course of Events	
Actor Actions	System Response
1. Process begins after Test Centre Officer/Patient has done everything they want to do on the system and wants to log out	
2. Test Centre Officer/Patient clicks logout button	3. System will display a message questioning whether Test Centre Officer/Patient really wants to log out from system
4. Test Centre Officer/Patient clicks Yes on the message	5. System will end the login session of the Test Centre Officer/Patient and redirect to login page
Alternative Course	

4a: If the officer/patient clicks on the No button, the log out process will be canceled

- System Sequence Diagram

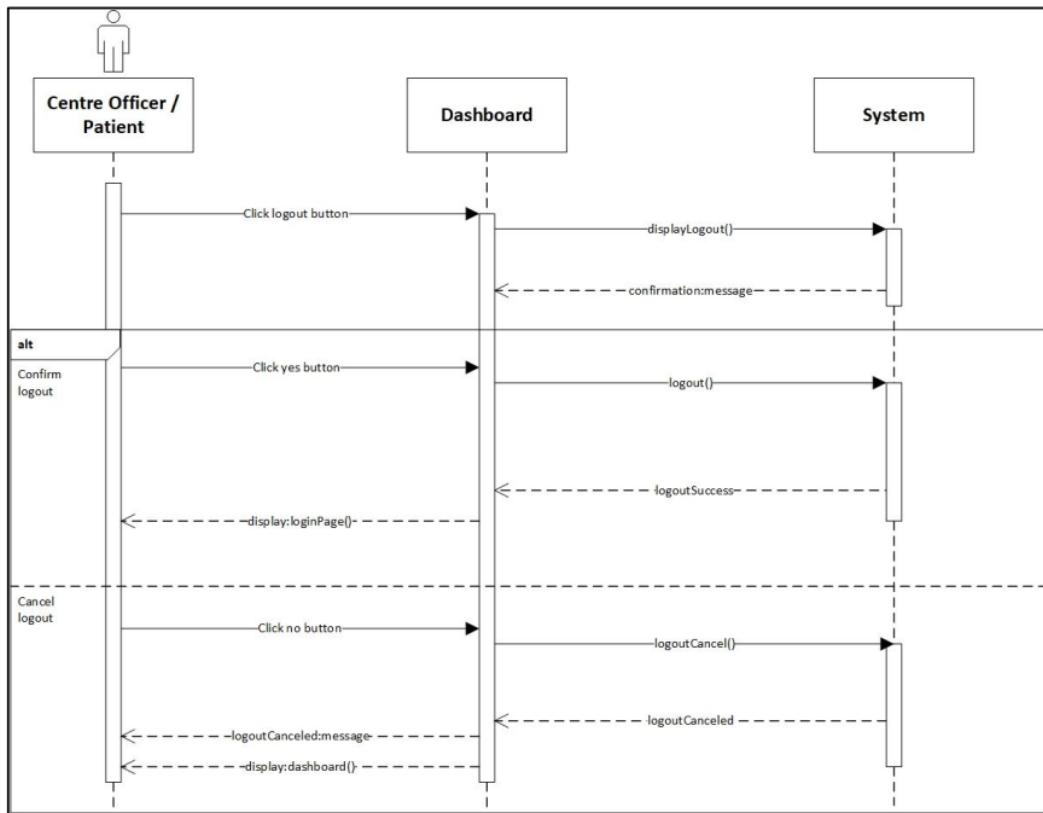


Figure 12. Log Out System Sequence Diagram

- Contract

Cross References	Logout
Operation	logout()
Responsible	To log out or exit from the system
Pre-conditions	<ul style="list-style-type: none"> • User object must be available • Session must already be created • Confirm to logout
Post-conditions	Session was destroyed (instance deletion)
Cross References	Logout
Operation	logoutCancel()
Responsible	To cancel log out or exit from the system
Pre-conditions	<ul style="list-style-type: none"> • User object must be available • Session must already be created • Confirm to cancel logout
Post-conditions	Session was not destroyed

13. Record Patient

Prepared by: Ida Bagus Gede Awidya Andika

- Expanded Use Case

Use Case	Record Patient
Goal in Context	Allow Tester to record new patient
Primary Actor	Tester
Secondary Actor	Patient
2 Typical Course of Events	
Actor Actions	System Response
1. Process begins after Tester successfully login to system	2. System will navigate Tester to their dashboard
3. Tester clicks Patient menu	4. System will display a list of Patient data

5. Tester clicks Add Patient button	6. System will navigate Tester to Add Patient page and display Patient data form
7. Tester fills in the data for username, password, and other Patient data on the form provided and then clicks the save button	8. System will store the data that has been entered by Tester into the database then Tester will be navigated to the Patient page and a message that notifies success in recording Patient is displayed
Alternative Course	
<ul style="list-style-type: none"> - 7a: If username, email or phone is already exists. Then the system will display a warning notification that includes an instruction to try full fill form again 	

- System Sequence Diagram

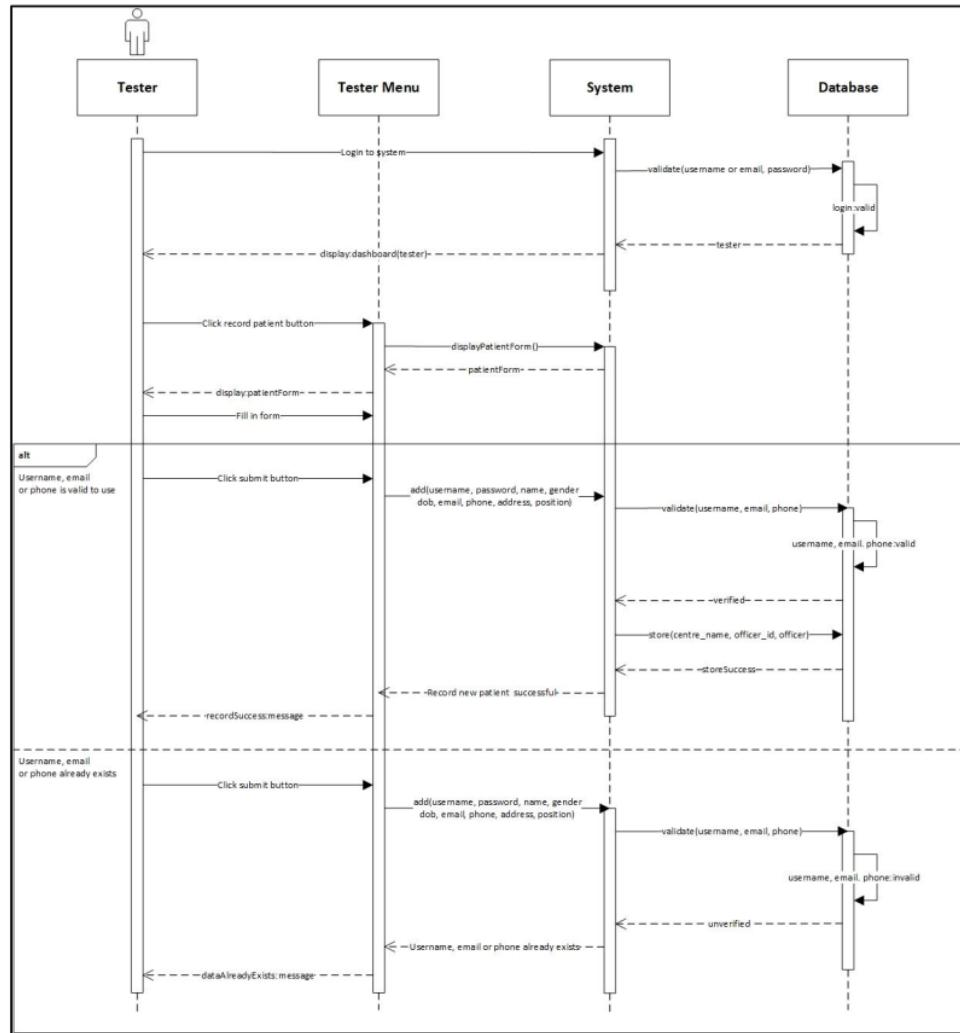


Figure 13. Record Patient System Sequence Diagram

- Contract

Cross References	Record Patient
Operation	login(username or email, password)
Responsible	To access the tester's dashboard.
Pre-conditions	<ul style="list-style-type: none"> • Tester object must be available • A valid username or email and password
Post-conditions	<ul style="list-style-type: none"> • Session was created (instance creation) • Session was associated with the Tester (association formed)
Cross References	Record Patient
Operation	add(username, password, name, gender, dob, email, phone, address, position)
Responsible	To record Patient
Pre-conditions	<ul style="list-style-type: none"> • Tester object must be available • Session must already be created • TestCentre object must be available • Patient data must be available • A valid patient username, email, phone
Post-conditions	<ul style="list-style-type: none"> • Patient was created (instance creation) • patient_id was generated (attribute modification) • Patient was associated with the TestCentre (associate modification)
Cross References	Record Patient
Operation	add(username, password, name, gender, dob, email, phone, address, position)
Responsible	To record Patient
Pre-conditions	<ul style="list-style-type: none"> • Tester object must be available • Session must already be created • TestCentre object must be available • Patient data must be available
Post-conditions	<ul style="list-style-type: none"> • Patient was not created

1.1.2 Use Case Diagram

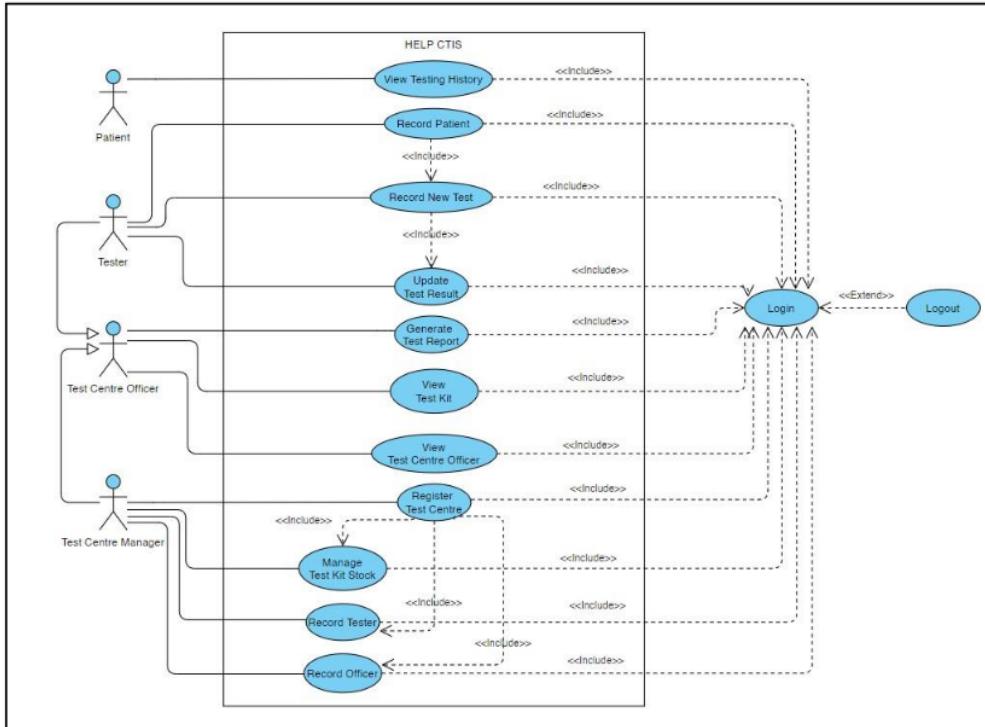


Figure 14. Use Case Diagram

In the second iteration of our project, we added one new use case which is “Record Patient” making the total of use cases in this project to be 13 use cases. Record Patient function was blended together in the use case “Record New Test” and was run simultaneously in the first iteration, then we decided to divide the use case into two parts, where the patient record must be done first before carrying out the new test record which we have clarified by adding the include relation to the 2 use cases. We hope that the addition of this use case can clarify the flow of the system that we developed.

Furthermore, we have added several new “include” relation between our use cases to represent the correct behaviour of the use cases in the developed system.

1.1.3 Design Class Diagram

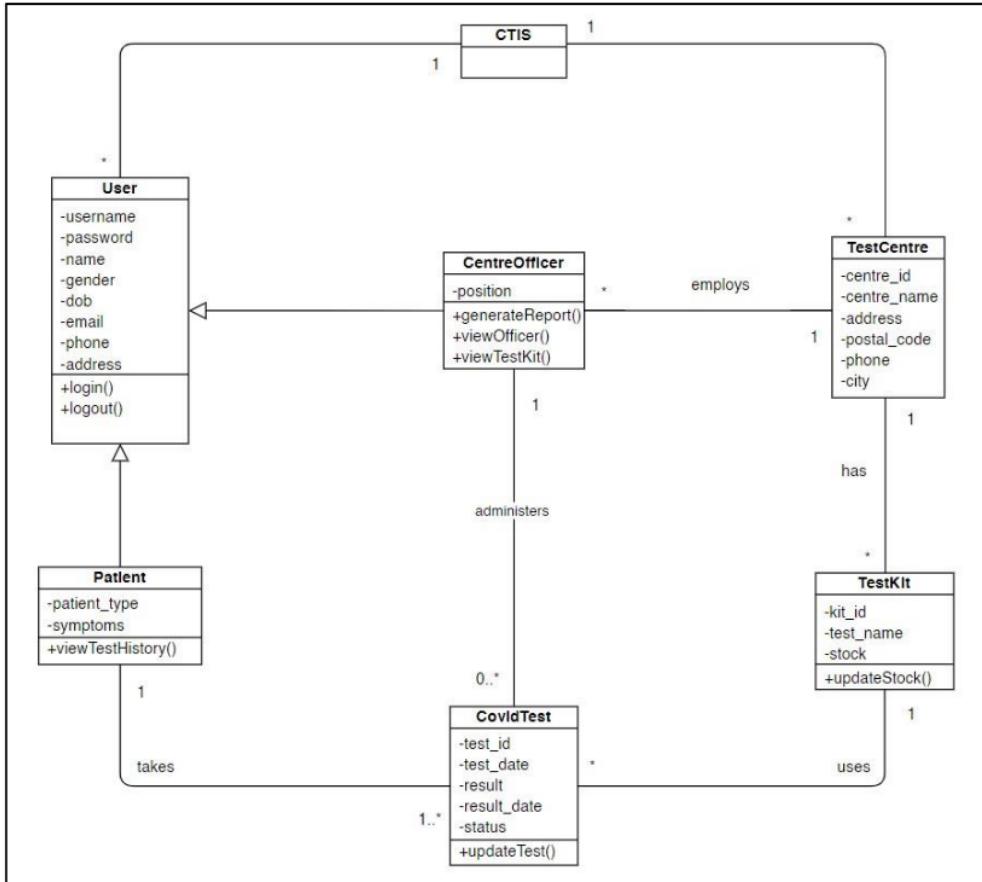


Figure 15. Design Class Diagram

There are no changes in this project's design class diagram from the first iteration.

1.1.4 Database Design

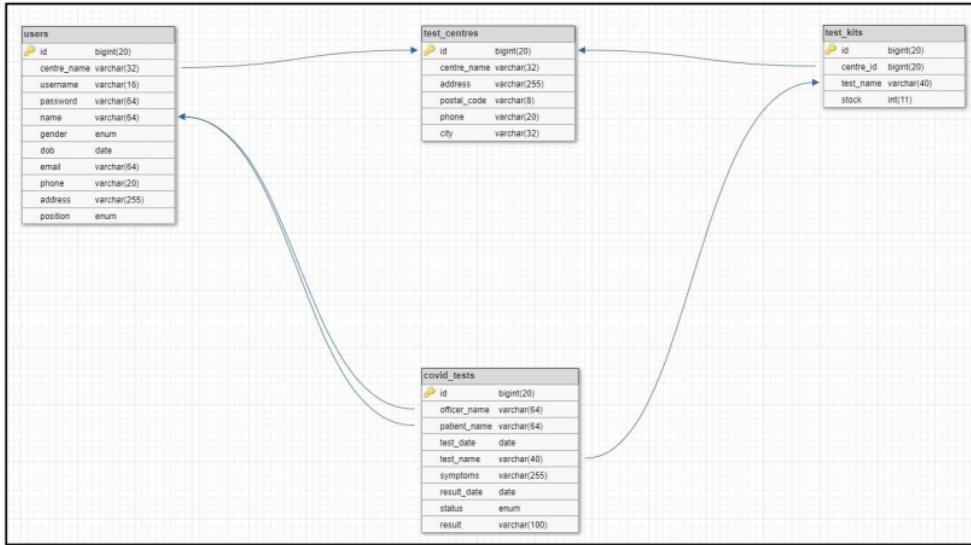


Figure 16. Database Design

We have updated our database design with consideration of the effectiveness of using our website framework. We merged the officer and patient tables in our previous design database into the user table in the second iteration of this project. We also updated the characteristics of the data in our tables which can be reviewed further in the next part which is the database dictionary of our database.

1.1.5 Database Dictionary

5 “users” Table

Field Name	Data Type	Field Size	Description	Example
id	bigint	20	A test centre officer's unique ID number	1
centre_name	varchar	32	Name of the test centre that a test centre officer is employed at	Bali Med

username	varchar	16	Test centre officer unique account username for login	manager
password	password	64	Test centre officer account password for login	mangakan
name	varchar	64	Name of test centre officer	Manager
gender	enum		Gender of test centre officer	Male
dob	date		Birth date of test centre officer	1998-01-03
email	varchar	64	Email of test centre officer	manager@gmail.com
phone	varchar	20	Phone number of test centre officer	085734903945
address	varchar	255	Home address of test centre officer	Jl. Perum Permai, No: 22
position	enum		Employee position of test centre officer	manager

5
“test_centres” Table

Field Name	Data Type	Field Size	Description	Example
id	bigint	20	A test centre's unique ID number	1
centre_name	varchar	32	Name of test centre	Bali Med
address	varchar	255	Address of test centre	Jl. Mahendra 12x
postal_code	varchar	8	Postal code of the address	80119
phone	varchar	20	Hotline call centre number of test centre	(0361) 423215
city	varchar	32	City/region where the test centre is located	Denpasar

5
“test_kits” Table

Field Name	Data Type	Field Size	Description	Example
id	bigint	20	A test kit's unique ID number	1
centre_id	bigint	20	ID number of the test centre that owns the test kit	1
test_name	varchar	40	Name of test kit	COVID-19 Antigen Rapid Testing (RTK-Ag)
stock	int	11	Available stock of test kit	100

5
“covid_tests” Table

Field Name	Data Type	Field Size	Description	Example
id	bigint	20	A test centre's unique ID number	1
officer_name	varchar	64	Name of the test centre officer who administered the test	David Nurbi
patient_name	varchar	64	Name of the patient who took the test	Sarah Wija
test_date	date		The date on which the test is performed	2021-04-03
test_name	varchar	40	Name of test kit which is used to perform the test	1
symptoms	varchar	255	COVID-19 symptoms of patient	Fever, sore throat, loss of taste and smell, dry cough, and difficulty of breathing.
result_date	date		The date on which the test results are issued	2021-04-06

status	enum		Status of the test	Completed
result	varchar	100	Result of the test	HEALTHY and NEGATIVE rapid test results with the COVID-19 Rapid Test

1.1.6 ERD

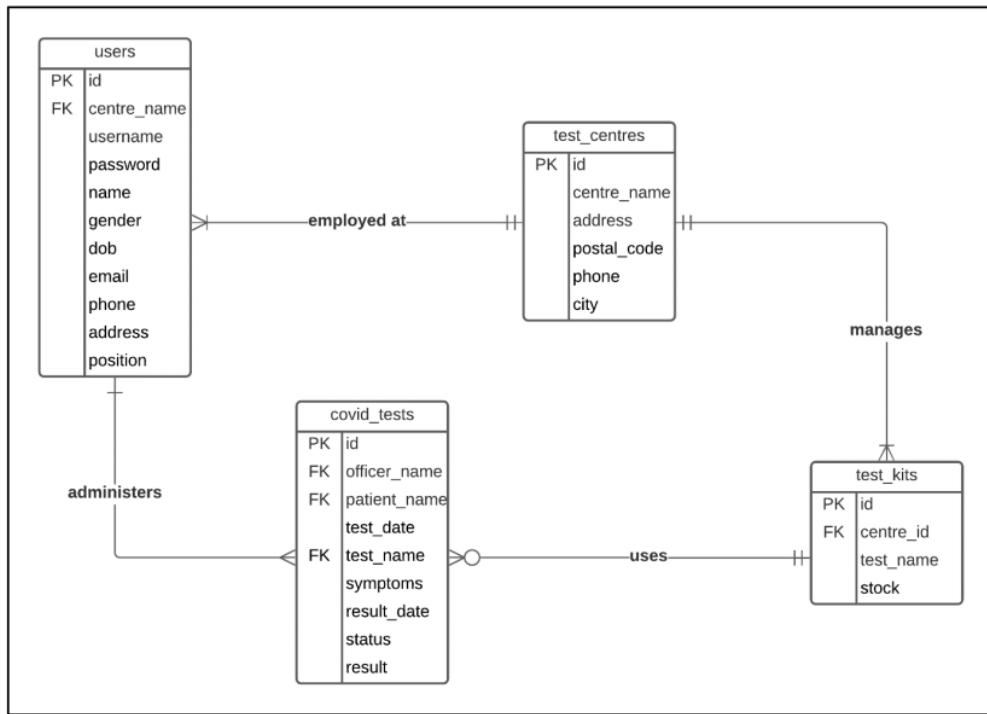


Figure 17. ERD

We have updated our ERD design with the same consideration of the database design updates of our project.

1.2. Problem in Iteration 1

In iteration 1, we did not find any significant problems. However, there is additional validation in the use case Register Test Center, where when the Manager has not added Test Center, the system will automatically deploy the Manager to the Register Test Center menu.

2. Iteration 2

2.1. Identification of Use Cases

On the first iteration, we have run 3 use cases out of 12 existing use cases such as login, register test center, all this usecase which were developed by Ida Bagus Gede Awidya Andika. On the second iteration, there is the addition of a new use case, namely the Record Patient. All remaining usecases are already completed.

No	Use Case	Developed by	Development & Testing
1	Login	Ida Bagus Gede Awidya Andika	Iteration 1
2	Logout	Ida Bagus Gede Awidya Andika	Iteration 1
3	Register Test Centre	Ida Bagus Gede Awidya Andika	Iteration 1
4	Manage Test Kit Stock	Ida Bagus Gede Awidya Andika	Iteration 2
5	Record Officer	Ida Bagus Gede Awidya Andika	Iteration 2
6	Record Tester	Ida Bagus Gede Awidya Andika	Iteration 2
7	View Test Kit	Ida Bagus Gede Awidya Andika	Iteration 2
8	View Test Centre Officer	Ida Bagus Gede Awidya Andika	Iteration 2
9	Generate Test Report	I Made Siva Aditya Surya	Iteration 2
10	Record Patient	I Made Siva Aditya Surya	Iteration 2
11	Record New Test	I Made Siva Aditya Surya	Iteration 2
12	Update Test Result	I Made Siva Aditya Surya	Iteration 2
13	View Testing History	I Made Siva Aditya Surya	Iteration 2

2.2.Screenshots

1. Login

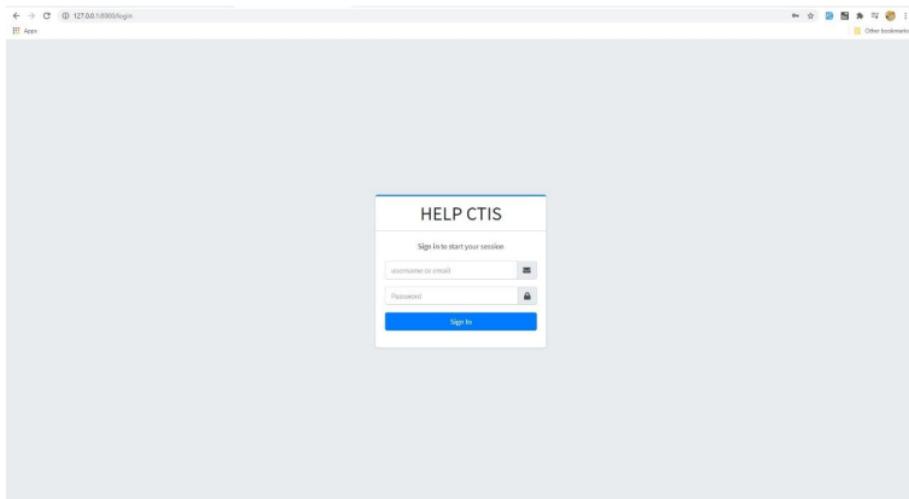


Figure 18. Login

Validation for Login

- If the user leaves empty field

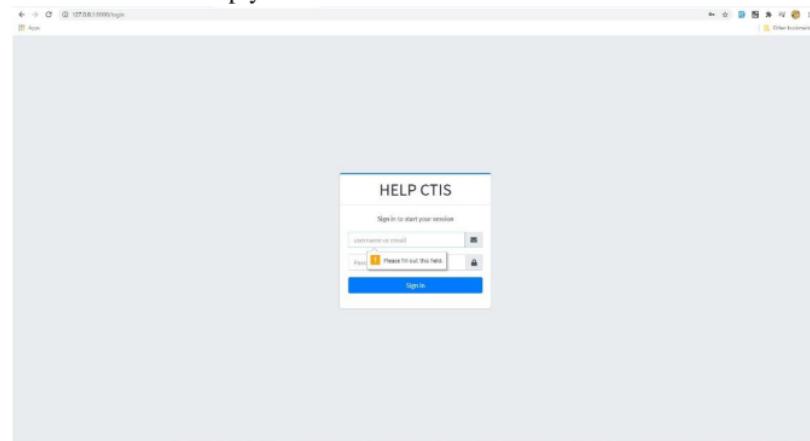


Figure 19. Validation Login (empty field)

- If the user enters wrong input

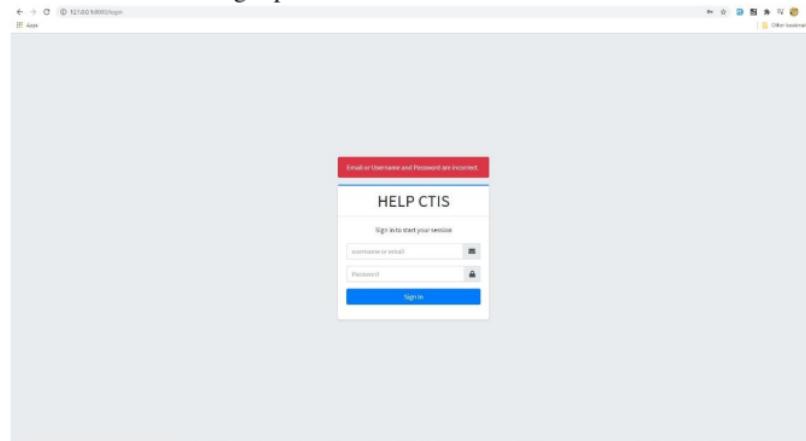


Figure 20. Validation Login (empty field)

2. Register Test Centre

A screenshot of a web application interface titled 'Test Centre'. The left sidebar shows navigation links: 'Dashboard', 'Helpdesk', and 'Logout'. The main content area has a title 'Add Data' and a form for entering test center information. The form fields include 'Centre Name*', 'Phone*', 'Postal Code*', 'City*', 'Address*', and a 'Save' button. The URL in the address bar is '127.0.0.1:8080/Home'.

Figure 21. Register Test Centre (add data)

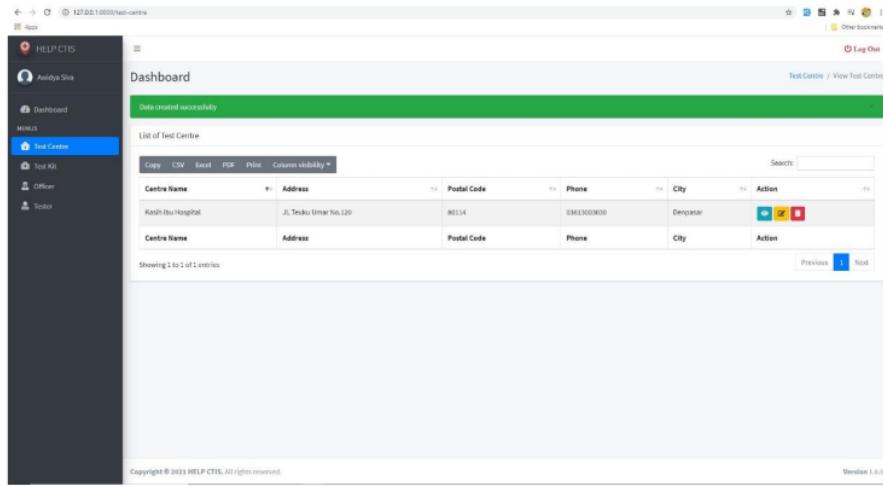


Figure 22. Register Test Centre (success)

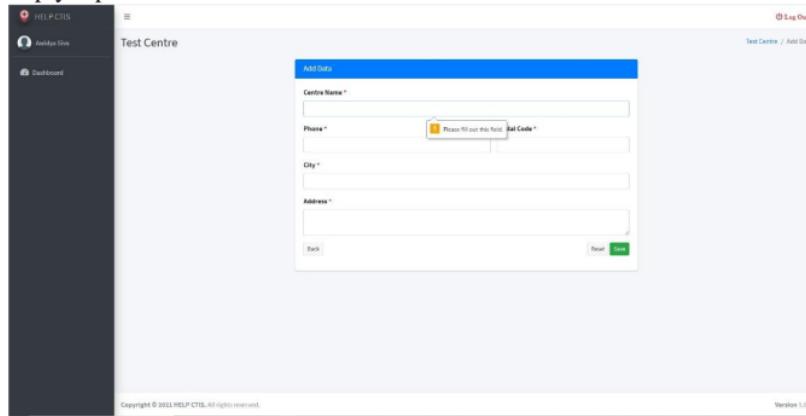
Validation for Register Test Centre

- Data already exists

This screenshot shows the 'Add Data' form for 'Test Centre'. It features a red error box at the top stating: 'Message from your server or database with your input.' followed by three bullet points: 'The centre name has already been taken.', 'The address has already been taken.', and 'The phone has already been taken.'. Below the error box are fields for 'Centre Name*', 'Phone*', 'Postal Code*', 'City*', and 'Address*'. Each field has a small note below it indicating it has been taken. At the bottom right of the form are 'Reset' and 'Save' buttons. The footer is identical to Figure 22.

Figure 23. Validation Register Test Centre (data already exists)

- Empty input



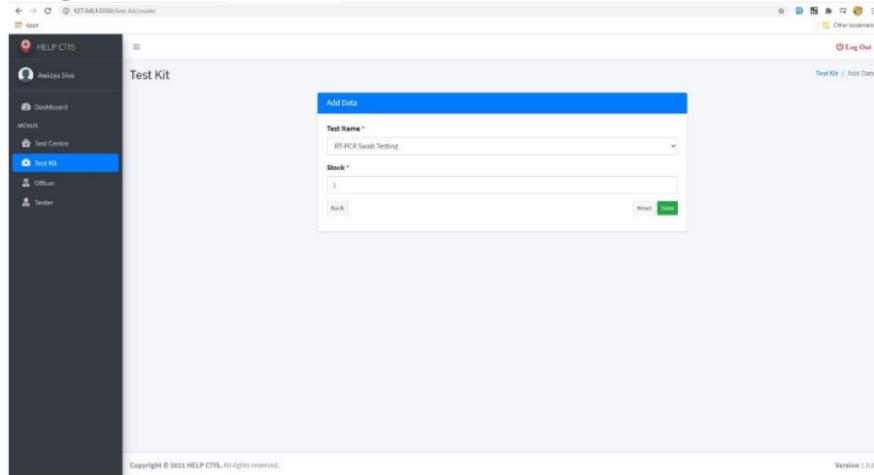
The screenshot shows a web-based application for managing test centers. On the left is a dark sidebar with navigation links: 'Dashboard', 'Test Centre', 'Test Kit' (which is highlighted in blue), 'Officer', and 'Tester'. The main content area has a header 'Test Centre' and a sub-header 'Add Data'. Below this is a form titled 'Add Data' with the following fields:

- 'Centre Name *': An empty text input field.
- 'Phone *': An empty text input field with a yellow validation message 'Please fill out this field.' above it.
- 'Post Code *': An empty text input field.
- 'City *': An empty text input field.
- 'Address *': An empty text input field.

At the bottom right of the form are two buttons: 'Reset' and 'Save'.

Figure 24. Validation Register Test Centre (empty input)

3. Manage Test Kit Stock



The screenshot shows a web-based application for managing test kit stock. On the left is a dark sidebar with navigation links: 'Dashboard', 'Test Centre', 'Test Kit' (which is highlighted in blue), 'Officer', and 'Tester'. The main content area has a header 'Test Kit' and a sub-header 'Add Data'. Below this is a form titled 'Add Data' with the following fields:

- 'Test Name *': A dropdown menu showing 'RT-PCR Swab Testing'.
- 'Stock *': A text input field containing the value '1'.

At the bottom right of the form are two buttons: 'Reset' and 'Save'.

Figure 25. Manage Test Kit Stock (add data)

Test Kit

Test Name *
RT PCR Swab Testing

Stock *
5

Save

Figure 26. Manage Test Kit Stock (edit)

Data created successfully

No	Test Centre	Test Name	Stock	Action
1	Kash IIS Hospital	RT PCR Swab Testing	5	

Figure 27. Manage Test Kit Stock (success add data)

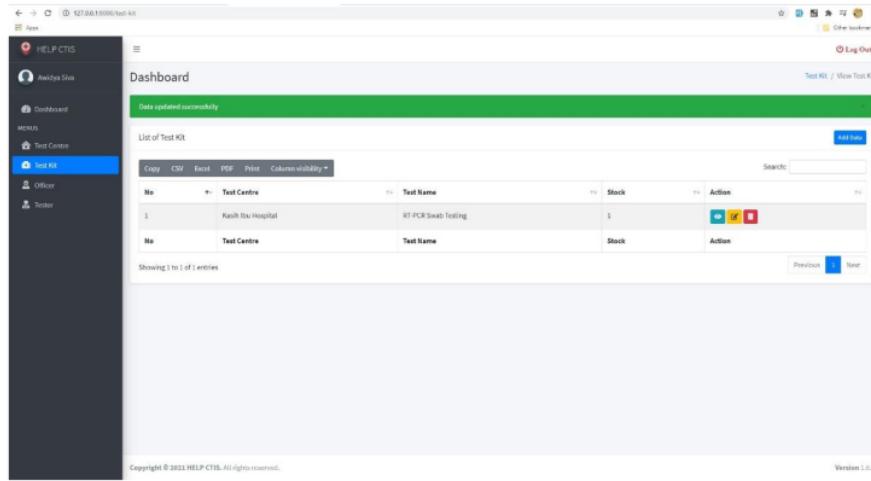


Figure 28. Manage Test Kit Stock (success edit)

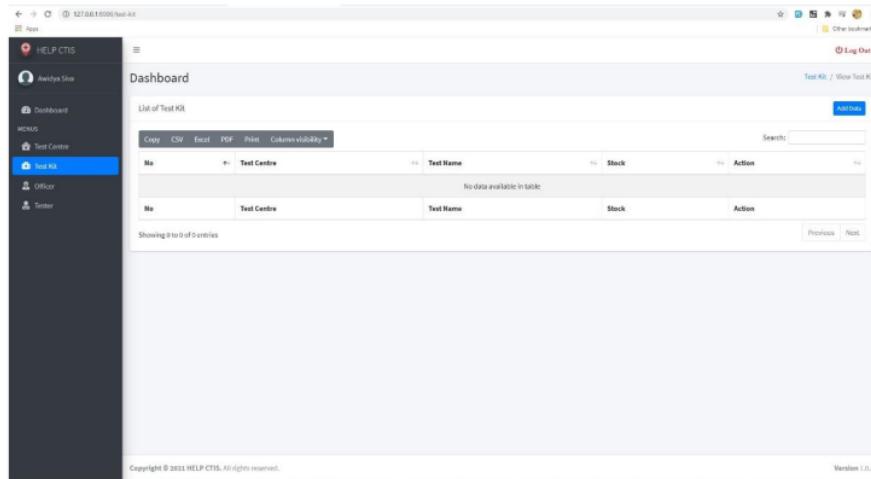


Figure 29. Manage Test Kit Stock (view)

Validation for Manage Test Kit Stock

- Adding same data

The screenshot shows a web application interface for managing test kit stock. On the left is a dark sidebar with icons for 'Dashboard', 'Test Centre', 'Office', and 'Tester'. The main area has a header 'Test Kit' and a sub-header 'Add Data'. A red error message box contains the text 'Sorry, you cannot add the same test name!'. Below it are input fields for 'Test Name' (with a dropdown arrow) and 'Stack'. At the bottom right are 'Reset' and 'Next' buttons.

Figure 30. Manage Test Kit Stock (adding same data)

- Empty fill

The screenshot shows a web application interface for managing test centres. On the left is a dark sidebar with icons for 'Dashboard', 'Test Centre', 'Office', and 'Tester'. The main area has a header 'Test Centre' and a sub-header 'Add Data'. There are four input fields: 'Centre Name', 'Phone', 'City', and 'Address'. Each field has a validation message: 'Please fill out this field.' for 'Phone', 'Post Code' for 'City', and 'Address' for 'Address'. At the bottom right are 'Reset' and 'Next' buttons.

Figure 31. Manage Test Kit Stock (empty fill)

- Input less than 1

The screenshot shows a web application interface for managing test kit stock. On the left is a dark sidebar with navigation links: 'Dashboard', 'Test Centre', 'Test Kit', 'Officer' (which is highlighted in blue), and 'Tester'. The main content area has a header 'Test Centre' and a sub-header 'Test Centre / Add Data'. Below this is a form titled 'Add Data' with fields for 'Centre Name', 'Phone', 'City', and 'Address'. A validation message 'Please fill out this field.' is displayed above the 'Phone' field. At the bottom right of the form are 'Back', 'Reset', and 'Save' buttons.

Figure 31. Manage Test Kit Stock (invalid input)

4. Record Officer

The screenshot shows a web application interface for adding a new record officer. The left sidebar includes 'Dashboard', 'Test Centre', 'Test Kit', 'Officer' (highlighted in blue), and 'Tester'. The main area has a header 'Centre Officer' and a sub-header 'Centre Officer / Add Data'. It contains two side-by-side forms: 'Bio' and 'Account Detail'. The 'Bio' form requires 'Name', 'Gender' (Male or Female), 'Phone', and 'Address'. The 'Account Detail' form requires 'Username', 'Password', 'Retype Password', and 'Position'. Both forms have 'Back', 'Reset', and 'Save' buttons at the bottom right. The status bar at the bottom indicates 'Copyright © 2021 HELP CTIS. All rights reserved.' and 'Version 1.0.0'.

Figure 32. Record Officer (add)

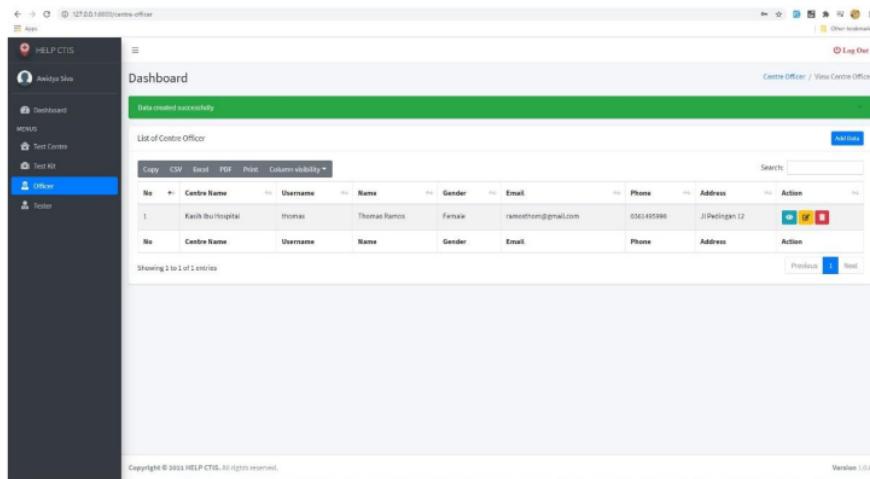


Figure 33. Record Officer (add data success)

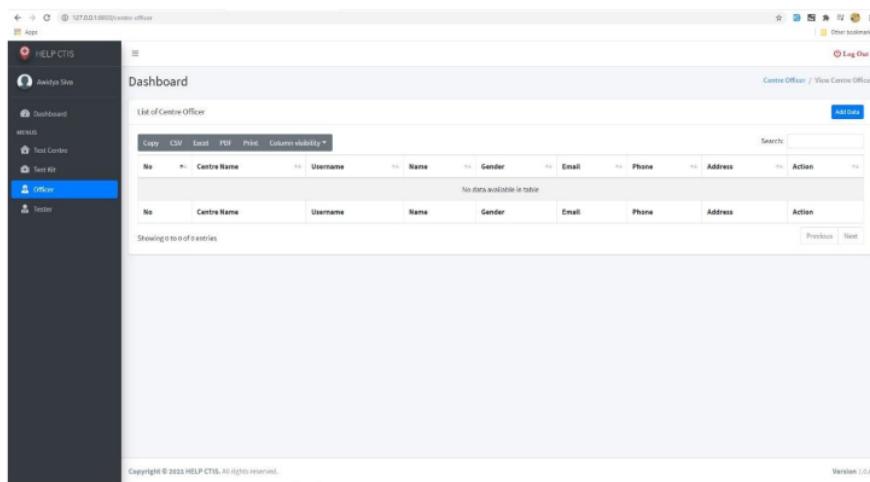


Figure 34. Record Officer (view)

Validation for Record Officer

- Data validation

The screenshot shows a software interface for 'Centre Officer' data entry. A red error box at the top left indicates validation issues:

- The password confirmation does not match.
- The username has already been taken.
- The email has already been taken.
- The phone number has already been taken.
- The position field is required.

The main form fields include Name*, Gender (Male/Female), Date of Birth, Phone, Email, Address, and Position. A secondary 'Account Detail' panel shows fields for Username, Password, Retype Password, and Position. The bottom status bar shows 'Copyright © 2021 HELP CTIS. All rights reserved.' and 'Version 1.0.0'.

Figure 35. Record Officer (data validation)

- Empty input

The screenshot shows the same software interface as Figure 35, but with all input fields empty. A yellow error message 'Please fill out this field.' is displayed above the 'Email' field. The rest of the fields are empty, including Name, Gender, Date of Birth, Phone, Email, Address, and Position. The 'Account Detail' panel also has empty fields for Username, Password, Retype Password, and Position. The bottom status bar shows 'Copyright © 2021 HELP CTIS. All rights reserved.' and 'Version 1.0.0'.

Figure 36. Record Officer (empty input)

5. Record Tester

The screenshot shows the 'Centre Officer' add form. The 'Position' field is pre-filled with 'Tester'. The 'Address' field contains 'Jl. Mocaherka, No: 11'. The 'Email' field contains 'msocia@gmailinator.com'. The 'Phone' field contains '081244443'. The 'Name' field contains 'Jada Pueres'. The 'Gender' field has 'Female' selected. The 'Date of Birth' field contains '13/07/1973'. The 'Username' field contains 'azhal'. The 'Password' field contains 'msocia'. The 'Retype Password' field also contains 'msocia'. The 'Position' field is set to 'Tester'. The 'Save' button is visible at the bottom right.

Figure 37. Record Tester (add)

The screenshot shows the 'List of Tester' page. A green banner at the top says 'Data created successfully'. Below it is a table with one row. The table columns are: No, Centre Name, Username, Name, Gender, Email, Phone, Address, and Action. The single entry is: 1, Kach Bus Hospital, azhal, Jada Pueres, Female, msocia@gmailinator.com, 081244443, Jl. Mocaherka, No: 11. The 'Action' column contains three icons: edit, delete, and view.

Figure 38. Record Tester (success add)

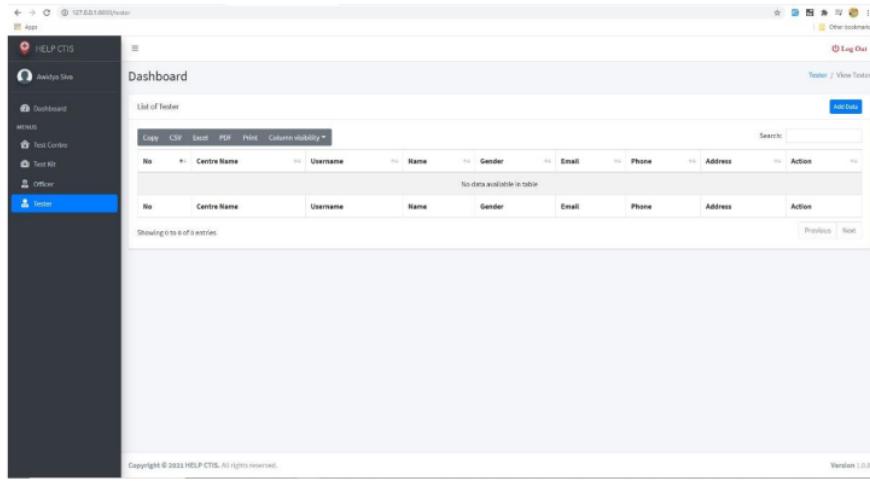


Figure 39. Record Tester (view)

Validation for Record Tester

- Data validation

Figure 40. Record Tester (data validation)

- Empty input

The screenshot shows the 'Centre Officer' registration interface. On the left, a sidebar menu includes 'Dashboard', 'Test Kit', 'Office', and 'Trainee'. The 'Office' option is selected. The main area has two tabs: 'Bio' and 'Account Detail'. The 'Bio' tab contains fields for 'Name*', 'Gender*' (Male or Female), 'Phone*', 'Email*', and 'Address*'. The 'Account Detail' tab contains fields for 'Username*', 'Password*', 'Retype Password*', 'Position*' (Patient or Doctor), and a 'Save' button.

Figure 41. Record Officer (empty input)

6. Record Patient

The screenshot shows the 'Patient' registration interface. On the left, a sidebar menu includes 'Dashboard', 'Test Kit', and 'Patient'. The 'Patient' option is selected. The main area has two tabs: 'Patient Bio' and 'Patient Account Detail'. The 'Patient Bio' tab contains fields for 'Name*', 'Gender*' (Male or Female), 'Phone*', 'Email*', and 'Address*'. The 'Patient Account Detail' tab contains fields for 'Username*', 'Password*', 'Retype Password*', 'Position*' (Patient or Doctor), and a 'Save' button.

Figure 42. Record Patient (add)

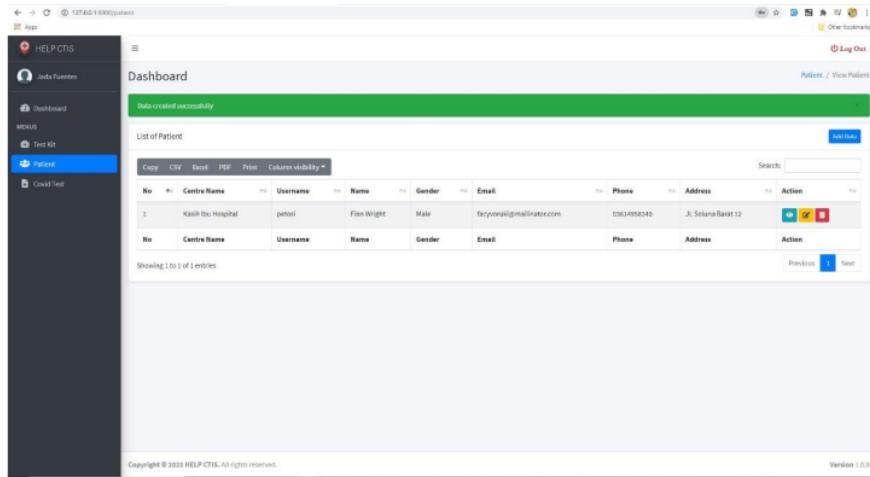


Figure 43. Record Patient (success add)

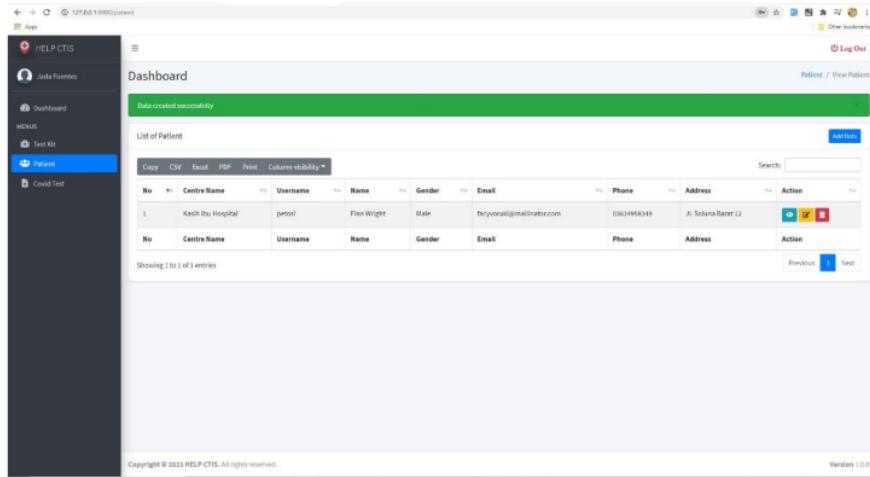


Figure 44. Record Patient (view)

Validation for Record Patient

- Data validation

The screenshot shows the HELP CTIS software interface. On the left is a dark sidebar with icons for Dashboard, MyVHS, Test Kit, and Patient (which is highlighted). The main area has a header 'Patient' and a sub-header 'Patient'. Below this are two forms: 'Patient Info' and 'Patient Account Detail'. The 'Patient Info' form includes fields for Name*, Gender (Male or Female), Date of Birth (dd/mm/yyyy), Phone*, Email*, and Address*. The 'Patient Account Detail' form includes fields for Username*, Password*, Retype Password*, and Position (Patient). A red error box at the top of the page contains the message: 'Error! There were some problems with your input.' followed by a bulleted list: 'The password and reiteration does not match.', 'The username has already been taken.', 'The email has already been taken.', and 'The phone has already been taken.'. At the bottom of the page, it says 'Copyright © 2021 HELP CTIS. All rights reserved.' and 'Version 1.0.0'.

Figure 45. Record Patient (data validation)

- Empty input

This screenshot is similar to Figure 45 but shows empty input validation. In the 'Patient Info' form, the 'Name*' field has a yellow warning icon with the text 'Please fill out this field.' The other fields (Gender, Date of Birth, Phone, Email, Address) appear to have valid input. The 'Patient Account Detail' form also appears to have valid input. The rest of the interface is identical to Figure 45, including the sidebar, header, and footer.

Figure 46. Record Patient (empty input)

7. Record New Test

The screenshot shows a web-based application interface for recording a new COVID test. The main title is "Covid Test". On the left, there's a sidebar with "HELP CTIS" and "Java Fuentes" branding, along with links for Dashboard, MENUS, Test Kit, Patient, and Covid Test (which is highlighted). The main content area has a form titled "Add Data". It includes fields for "Patient" (with a dropdown menu), "Test Date" (set to 28/04/2021), "Type Test" (dropdown menu), "Symptoms" (text input field), and "Result Date" (date input field set to 00/00/1900). At the bottom of the form are "Back", "Reset", and "Save" buttons. The footer of the page includes copyright information ("Copyright © 2021 HELP CTIS. All rights reserved.") and a version number ("Version 1.0.0").

Figure 47. Record New Test (add)

The screenshot shows the "Dashboard" page after a new COVID test has been successfully recorded. A green banner at the top says "Data created successfully.". Below it, a table titled "List of Covid Test" displays one record. The table columns are: No., Centre Name, Tester, Patient, Test Date, Test Type, Symptoms, Result Date, Status, Result, and Action. The single row shows: No. 1, Centre Name: Kailash Hospital, Tester: Java Fuentes, Patient: Pavan Wright, Test Date: 2021-04-28, Type Test: RT-PCR Scratch Testing, Symptoms: Flu and Fever, Result Date: 2021-04-28, Status: Pending, Result: Your test is being processed by the tester, and Action buttons. The footer includes copyright information and a version number.

Figure 48. Record New Test (success add)

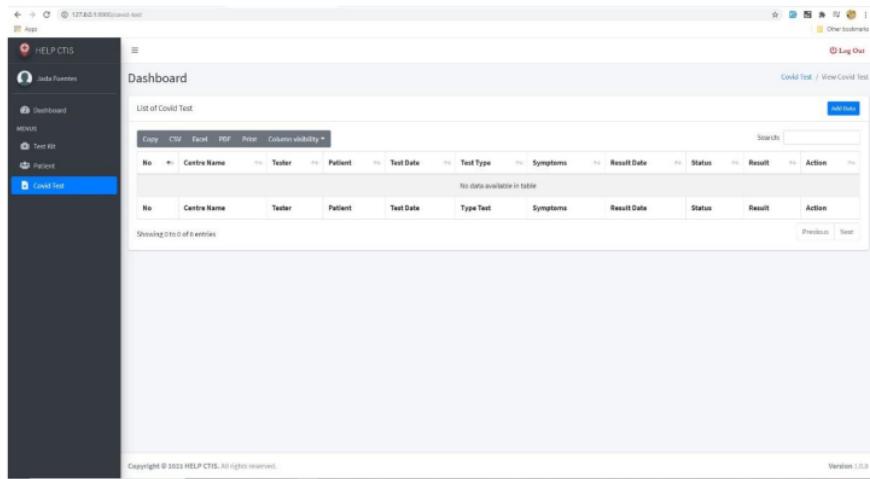


Figure 49. Record New Test (success view)

Validation for Record New Test

- Current day

The screenshot shows the 'Add Data' form for a 'Covid Test'. The form has several input fields: 'Patient *' (dropdown menu), 'Test Date *' (date picker showing '28/04/2021'), 'Type Test *' (dropdown menu showing 'RT-PCR Sero Testing'), 'Symptoms *' (dropdown menu showing 'Fever and Cough'), and 'Result Date *' (date picker showing '28/04/2021'). Below the date picker is a calendar grid for April 2021. At the bottom right of the form, there are 'Next' and 'Save' buttons. The status bar at the bottom right of the screen says 'Version 1.0.0'.

Figure 50. Record New Test (current day)

- Stock empty

The screenshot shows the 'Covid Test' section of the HELP CTIS application. At the top, there is a red error message box containing the text 'Sorry, test kit stock is empty!'. Below this, there are several input fields: 'Patient *' (with a dropdown menu for 'Patient Name'), 'Test Date *' (set to '28/04/2021'), 'Type Test *' (with a dropdown menu for 'Type Test'), 'Symptoms' (an empty text area), and 'Result Date *' (set to '28/04/2021'). At the bottom right of the form, there are 'Back', 'Reset', and 'Save' buttons.

Figure 51. Record New Test (stock empty)

8. Update Test Result

This screenshot shows the 'Covid Test' section of the HELP CTIS application, but it appears to be an edit mode. The 'Patient *' field now contains the text 'Flax Weight'. The other fields are identical to Figure 51: 'Test Date *' (28/04/2021), 'Type Test *' (RT-PCR Swab Testing), 'Symptoms' (Flu and Fever), 'Result Date *' (28/04/2021), and 'Status *' (Completed). The 'Result *' field is set to 'Negative'. The bottom right of the form has 'Back', 'Reset', and 'Save' buttons.

Figure 52. Update Test Result (edit)

No	Centre Name	Tester	Patient	Test Date	Type Test	Symptoms	Result Date	Status	Result	Action
1	Kasthbu Hospital	Jade Fuentes	Rinn Wright	2021-04-28	RT-PCR Sero Testing	Fu and Fever	2021-04-28	Completed	HEALTHY and NEGATIVE COVID test results with the COVID-19 RT-PCR Sero Testing	

Figure 53. Update Test Result (success edit)

Validation for Update Test Result

- Current day

Patient *	<input type="text" value="Rinn Wright"/>
Test Date *	<input type="text" value="28/04/2021"/>
Type Test *	<input type="text" value="RT-PCR Sero Testing"/>
Symptoms *	<input type="text" value="Fu and Fever"/>
Result Date *	<input type="text" value="28/04/2021"/>
<input style="float: right;" type="button" value="Next"/>	

Figure 54. Update Test Result (current day)

9. Generate Test Report

Covid Test

Detail Centre

Centre Name	Kashif Ibu Hospital
Tester	Jada Fuentes

Detail Covid Test

Patient Name	Rin Wright
Test Date	2022-04-29 00:00:00
Type Test	RT-PCR Swab Testing
Symptoms	Flu and Fever
Result Date	2022-04-29 00:00:00
Status	Completed
Result	HEALTHY and NEGATIVE COVID test results with the COVID-19 RT-PCR Swab Testing

Back

Figure 55. Generate Test Report (show detail)

Dashboard

List of Covid Test

No	Centre Name	Tester	Patient	Test Date	Type Test	Symptoms	Result Date	Status	Result	Action
1	Kashif Ibu Hospital	Jada Fuentes	Rin Wright	2022-04-29	RT-PCR Swab Testing	Flu and Fever	2022-04-29	Completed	HEALTHY and NEGATIVE COVID test results with the COVID-19 RT-PCR Swab Testing.	

Showing 1 to 1 of 1 entries

Previous **Next**

Figure 56. Generate Test Report (view)

10. View Test Kit

The screenshot shows a web-based application interface for 'HELP CTIS'. The left sidebar has a dark theme with icons for Dashboard, Test Centre, Test Kit (selected), Officer, Tester, Patient, and Covid Test. The main content area is titled 'Dashboard' and shows a table titled 'List of Test Kit'. The table has columns: No, Test Centre, Test Name, Stock, and a search bar at the top right. One entry is visible: '1 Kashi Ibu Hospital RT-PCR Swab Testing 0'. Below the table, it says 'Showing 1 to 1 of 1 entries'. At the bottom, there are links for 'Copyright © 2021 HELP CTIS. All rights reserved.' and 'Version 1.0.0'.

Figure 57. View Test Kit

11. View Test Centre Officer

The screenshot shows the same application interface as Figure 57. The left sidebar shows 'Test Kit' is selected. The main content area is titled 'Dashboard' and shows a table titled 'List of Centre Officer'. The table has columns: No, Centre Name, Username, Name, Gender, Email, Phone, and Address. One entry is visible: '1 Kashi Ibu Hospital thomas Thomas Ramos Female rameothong@gmail.com 0361492990 J/Pedagog 12'. Below the table, it says 'Showing 1 to 1 of 1 entries'. At the bottom, there are links for 'Copyright © 2021 HELP CTIS. All rights reserved.' and 'Version 1.0.0'.

Figure 58. View Test Centre Officer

12. View Testing History

Covid Test

Detail Centre

Centre Name	Kash Ibu Hospital
Tester	Jacinta Fuentes

Detail Covid Test

Patient Name	Ron Wright
Test Date	2021-04-20 00:00:00
Type Test	RT-PCR Swab Testing
Symptoms	Fever and Cough
Result Date	2021-04-21 00:00:00
Status	Completed
Result	HEALTHY and NEGATIVE COVID test results with the COVID-19 RT-PCR Swab Testing
Notes: None	

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Version 1.0.0

Figure 59. View Testing History (show detail)

Dashboard

List of Covid Test

No	Centre Name	Tester	Patient	Test Date	Test Type	Symptoms	Result Date	Status	Result	Action
1	Kash Ibu Hospital	Jacinta Fuentes	Ron Wright	2021-04-20	RT-PCR Swab Testing	Fever and Cough	2021-04-21	Completed	HEALTHY and NEGATIVE COVID test results with the COVID-19 RT-PCR Swab Testing	<button>View</button>

Showing 1 row of 1 entries

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Version 1.0.0

Figure 60. View Testing History (history)

13. Logout

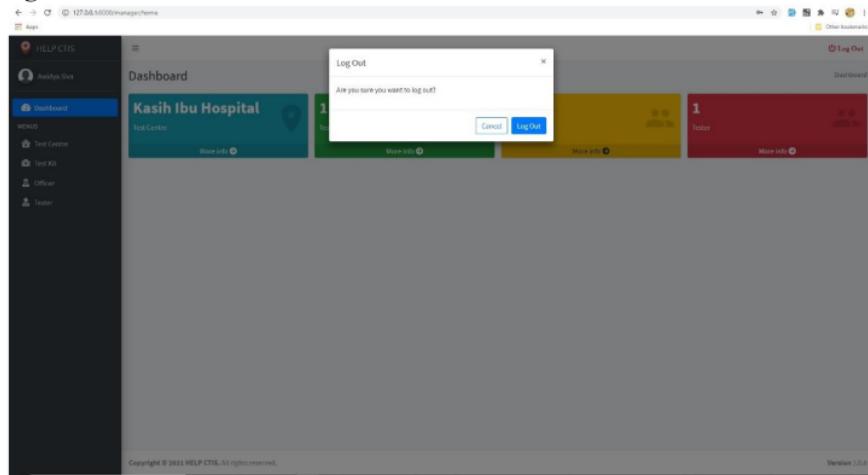


Figure 61. Logout

14. Dashboard Manager



Figure 62. Dashboard Manager

15. Dashboard Officer

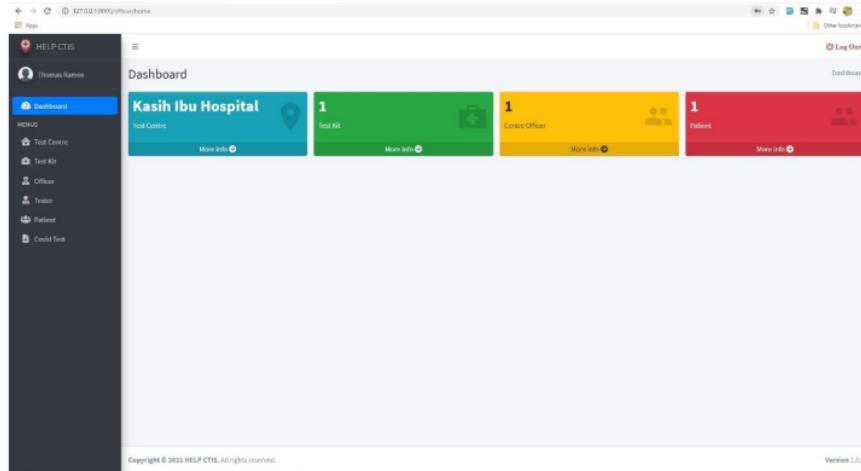


Figure 63. Dashboard Officer

16. Dashboard Patient



Figure 64. Dashboard Patient

17. Dashboard Tester



Figure 65. Dashboard Tester

18. Index

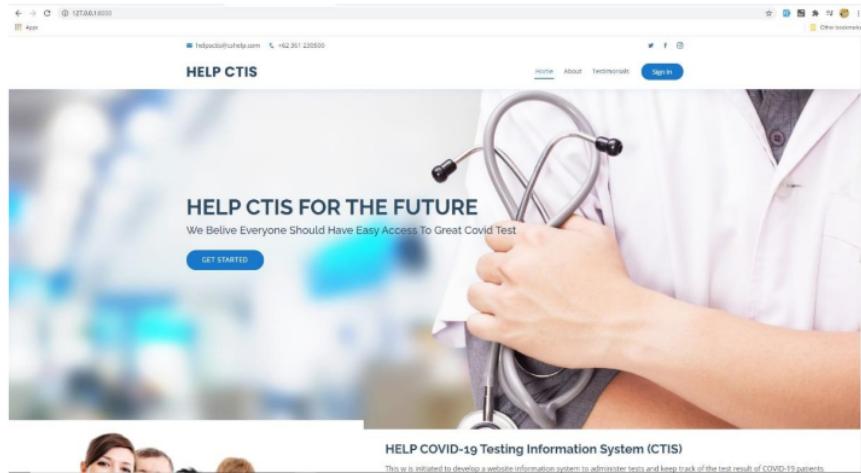


Figure 66. Index Page (I)



Figure 67. Index Page (2)



Figure 68. Index Page (3)

2.3. Test Objectives

The test objectives of the testing for the result of the first iteration of our project
are to test the three use cases developed in this iteration based on the functional and
non-functional requirements. Here is the list of the objectives that have to be fulfilled
for the first iteration testing of this project:

- The system can be used on various computer devices such as PCs, laptops and smartphones
- The user interface runs according to its function, from buttons, links, forms, pages according to the role / position of the user
- The system can direct users to their dashboards when logged in based on their position
- All users can end their session via the logout process
- Manager can Register Test Center data
- Manager can Manage Test Kit Stock
- Manager can record Test Centre Officer
- Manager can record Tester
- Tester can Record Patient
- Tester can Record New Test
- Tester can Update Test Result
- Test Centre Officer can Generate Test Report
- Test Centre Officer can View Test Kit
- Test Centre Officer can View Centre Officer
- Patient can View Testing History

2.4. Test Plan

Type of Testing	Strategy/Approach	Tools (if any)	Schedule
Unit Testing - Login - Register Test Centre - View Testing History - Record Patient - Record New Test - Update Test Result - Generate Test Report - View Test Kit - View Test Centre Officer - Manage Test Kit Stock - Record Tester - Record Officer - Logout	Black Box	PHP Storm	From gantt chart 4/5/21 – 4/6/21
Integration Testing	Black Box	PHP Storm	From gantt chart 4/7/21 – 4/7/21
Functional Testing	Black Box	PHP Storm	From gantt chart 4/7/21 – 4/7/21
Non-Functional Testing	Black Box	Google Chrome	From gantt chart 4/8/21 – 4/8/21

2.5. Test Cases

2.5.1. Unit Testing

Prepared by: Ida Bagus Gede Awidya Andika

Test ID	R-001		
Use Case	Login		
Test Description	Allow User to login to the system		
Source Code	<pre> public function login(Request \$request) { \$input = \$request->all(); \$this->validate(\$request, ['username' => 'required', 'password' => 'required',]); \$fieldType = filter_var(\$request->username, FILTER_VALIDATE_EMAIL) ? 'email' : 'username'; if(auth()->attempt(array(\$fieldType => \$input['username'], 'password' => \$input['password']))){ if (auth()->user()->position == 'manager') { return redirect()->route('manager-home'); } else if(auth()->user()->position == 'officer') { return redirect()->route('officer-home'); } else if(auth()->user()->position == 'tester') { return redirect()->route('tester-home'); } else if(auth()->user()->position == 'patient') { return redirect()->route('patient-home'); } else { return redirect()->route('home'); } }else{ return redirect()->route('login') ->with('error','Email or Username and Password are incorrect.'); } } </pre>		
Test Data	Expected Output	Actual Output	Remark(s)

Test Case 1:	Username : Password:	A warning notification will be displayed	A warning notification will be displayed	Pass
Test Case 2:	Username: manager Password: manager	Directed to the Manager dashboard page	Directed to the Manager dashboard page	Pass
Test Case 3:	Username: tester Password: tester	Directed to the Tester dashboard page	Directed to the Tester dashboard page	Pass
Test Case 4:	Username: officer Password: officer	Directed to the Officer dashboard page	Directed to the Officer dashboard page	Pass
Test Case 5:	Username: patient Password: patient	Directed to the Patient dashboard page	Directed to the Patient dashboard page	Pass
Test Case 6:	Username: user Password: manager	A warning message that user input wrong Email or Username and Password are incorrect will be notify	A warning message that user input wrong Email or Username and Password are incorrect will be notify	Pass

Test ID	R-002
Use Case	Register Test Centre
Test Description	Allow Test Centre to be created and recorded for the Manager
Source Code	<pre>public function store(Request \$request) { \$centre_name = auth()->user()->centre_name; \$data = DB::table('test_centres')->where('centre_name', \$centre_name)->first(); if(\$data){ return redirect()->route('test-centre.index') ->with('error', 'Sorry, you already created test centre'); }else{ \$request->validate(['centre_name' => 'required unique:test_centres max:32', 'address' => 'required unique:test_centres max:255', 'postal_code' => 'required max:8', 'phone' => 'required unique:test_centres max:20',]); } }</pre>

	<pre> 'city' => 'required max:32',]); User::where('id', \$request->user()['id'])->update(['centre_name' => \$request->centre_name]); TestCentre::create(\$request->all());¹ return redirect()->route('test-centre.index') ->with('success','Data created successfully'); } } </pre>			
	Test Data	Expected Output	Actual Output	Remark(s)
Test Case 1:	Test Centre Name: Address: Postal Code: Phone: City:	A warning notification will be displayed	A warning notification will be displayed	Pass
Test Case 2:	Test Centre Name: Bali Med Address: Jl. Buana Kubu No. 65 DPS, BR/Link. Sari Buana Postal Code: 80119 Phone: 085858839746 City: Denpasar	The data will be displayed on the Test Centre Dashboard	The data will be displayed on the Test Centre Dashboard	Pass
Test Case 3:	Test Centre Name: Bali Med Address: Jl. Buana Kubu No. 65 DPS, BR/Link. Sari Buana Postal Code: 80119 Phone: 085858839746 City: Denpasar	A warning message 'Sorry, you already created test centre' will be notify	A warning message 'Sorry, you already created test centre' will be notify	Pass
Test Case 4:	Test Centre Name: Bali Med	A warning message will be notify: - The centre name	A warning message will be notify: - The centre name	Pass

	Address: Jl. Buana Kubu No. 65 DPS, BR/Link. Sari Buana Postal Code: 80119 Phone: 085858839746 City: Denpasar	has already been taken - The address has already taken - The phone has already taken	has already been taken - The address has already taken - The phone has already taken	
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Test ID	R-003
Use Case	Manage Test Kit Stock
Test Description	Allow Test Centre Manager to add Test Kit or update Test Kit stock
Source Code	<pre> public function store(Request \$request) { \$request->validate(['centre_id' => 'required', 'test_name' => 'required', 'stock' => 'required max:11',]); \$data = DB::table('test_kits') ->join('test_centres', 'test_kits.centre_id', '=', 'test_centres.id') ->join('users', 'test_centres.centre_name', '=', 'users.centre_name') ->where('users.name', Auth::user()->name) ->where('test_name', \$request->test_name) ->first(); if(\$data){ return redirect()->route('test-kit.create') ->with('error','Sorry, you cannot add the same test name!'); }else{ TestKit::create(\$request->all()); return redirect()->route('test-kit.index') ->with('success','Data created successfully'); } } public function update(Request \$request, TestKit \$testKit) { \$request->validate(['test_name' => 'required', 'stock' => 'required max:11',]); } </pre>

	<pre>]);</pre> <pre> \$testKit->update(\$request->all());</pre> <pre> return redirect()->route('test-kit.index') ->with('success','Data updated successfully');</pre> }			
	Test Data	Expected Output	Actual Output	Remark(s)
Test Case 1:	Test Name: Stock:	A warning notification will be displayed	A warning notification will be displayed	Pass
Test Case 2:	Test Name: RT-PCR Swab Testing Stock: 1	The data will be displayed on the Test Kit menu	The data will be displayed on the Test Kit menu	Pass
Test Case 3:	Test Name: RT-PCR Swab Testing Stock: 1	A warning message 'Sorry, you cannot add the same test name!' will be notify	A warning message 'Sorry, you cannot add the same test name!' will be notify	Pass
Test Case 4:	Test Name: RT-PCR Swab Testing Stock: 0	A warning message 'Value must be greater than or equal to 1' will be notify	A warning message 'Value must be greater than or equal to 1' will be notify	Pass

Test ID	R-004
Use Case	Record Officer
Test Description	Allow Manager to record Officer
Source Code	<pre> public function store(Request \$request) { \$request->validate(['centre_name' => 'required', 'password' => ['required', 'string', 'confirmed', 'alpha_dash'], 'username' => 'required unique:users max:16 alpha_dash', 'name' => 'required max:64', 'gender' => 'required', 'dob' => 'required', 'email' => 'required unique:users max:64', 'phone' => 'required unique:users max:20', 'address' => 'required max:255', 'position' => 'required',]); \$request['password'] = bcrypt(\$request->password); }</pre>

	<pre>User::create(\$request->all()); if(\$request->position == 'tester'){ return redirect()->route('tester.index') ->with('success','Data created successfully'); } else { return redirect()->route('centre-officer.index') ->with('success','Data created successfully'); }</pre>			
	Test Data	Expected Output	Actual Output	Remark(s)
Test Case 1:	Name: Gender: Date of Birth: Phone: Email: Address: Username: Password: Retype Password: Position:	A warning notification will be displayed	A warning notification will be displayed	Pass
Test Case 2:	Name: David Chris Gender: Male Date of Birth: 30/12/1990 Phone: 08181229403 Email: davidchris@gmail.com Address: Jl. Danggala No: 05 Username: david Password: officer Retype Password: officer Position: officer	The data will be displayed on the Test Centre Officer menu	The data will be displayed on Test Centre Officer menu	Pass
Test Case 3:	Name: David Chris Gender: Male Date of Birth: 30/12/1990 Phone: 08181229403 Email: davidchris@gmail.com Address: Jl. Danggala No: 05 Username: david Password: officer Retype Password: asd	A warning message will be notify: <ul style="list-style-type: none">- The username has already been taken- The email has already been taken- The phone has already been taken	A warning message will be notify: <ul style="list-style-type: none">- The username has already been taken- The email has already been taken- The phone has already been taken	Pass

	Position:	- The password confirmation does not match - The position field is required	- The password confirmation does not match - The position field is required	
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Test ID	R-005			
Use Case	Record Tester			
Test Description	Allow Manager to record Tester			
Source Code	<pre> 1 public function store(Request \$request) { \$request->validate(['centre_name' => 'required', 'password' => ['required', 'string', 'confirmed', 'alpha_dash'], 'username' => 'required unique:users max:16 alpha_dash', 'name' => 'required max:64', 'gender' => 'required', 'dob' => 'required', 'email' => 'required unique:users max:64', 'phone' => 'required unique:users max:20', 'address' => 'required max:255', 'position' => 'required',]); \$request['password'] = bcrypt(\$request->password); User::create(\$request->all()); return redirect()->route('tester.index') ->with('success','Data created successfully'); } </pre>			
	Test Data	Expected Output	Actual Output	Remark(s)
Test Case 1:	Name: Gender: Date of Birth: Phone: Email: Address: Username: Password: Retype Password: Position:	A warning notification will be displayed	A warning notification will be displayed	Pass

Test Case 2:	Name: Adena Dodson Gender: Female Date of Birth: 19/12/1997 Phone: 085473985765 Email: adenadodson@gmail.com Address: Jl. Kebo Iwa Selatan, No: 1B Username: adena Password: tester Retype Password: tester Position: tester	The data will be displayed on the Tester menu	The data will be displayed on Tester menu	Pass
Test Case 3:	Name: Adena Dodson Gender: Female Date of Birth: 19/12/1997 Phone: 085473985765 Email: adenadodson@gmail.com Address: Jl. Kebo Iwa Selatan, No: 1B Username: adena Password: tester Retype Password: asd Position: tester	A warning message will be notify: <ul style="list-style-type: none">- The username has already been taken- The email has already been taken- The phone has already been taken- The password confirmation does not match	A warning message will be notify: <ul style="list-style-type: none">- The username has already been taken- The email has already been taken- The phone has already been taken- The password confirmation does not match	Pass

Test ID	R-006
Use Case	Record Patient
Test Description	Allow Tester to record Patient
Source Code	<pre>public function store(Request \$request) { \$request->validate(['centre_name' => 'required', 'password' => ['required', 'string', 'confirmed', 'alpha_dash'], 'username' => 'required unique:users max:16 alpha_dash', 'name' => 'required max:64', 'gender' => 'required',]); }</pre>

	<pre> 'dob' => 'required', 'email' => 'required unique:users max:64', 'phone' => 'required unique:users max:20', 'address' => 'required max:255', 'position' => 'required',); \$request['password'] = bcrypt(\$request->password); User::create(\$request->all()); return redirect()->route('patient.index') ->with('success','Data created successfully'); } </pre>			
	Test Data	Expected Output	Actual Output	Remark(s)
Test Case 1:	Name: Gender: Date of Birth: Phone: Email: Address: Username: Password: Retype Password: Position:	A warning notification will be displayed	A warning notification will be displayed	Pass
Test Case 2:	Name: Surya Ramadan Gender: Male Date of Birth: 03/11/1975 Phone: 081575567589 Email: suryaramadan@gmail.com Address: Jl. Pattimura Permai, No: 22 Username: surya Password: patient Retype Password: patient Position: patient	The data will be displayed on the Patient menu	The data will be displayed on Patient menu	Pass
Test Case 3:	Name: Surya Ramadan Gender: Male Date of Birth: 03/11/1975 Phone: 081575567589 Email: suryaramadan@gmail.com	A warning message will be notify: - The username has already been taken	A warning message will be notify: - The username has already been taken	Pass

	Address: Jl. Pattimura Permai, No: 22 Username: surya Password: patient Retype Password: asd Position: patient	<ul style="list-style-type: none"> - The email has already been taken - The phone has already been taken - The password confirmation does not match 	<ul style="list-style-type: none"> - The email has already been taken - The phone has already been taken - The password confirmation does not match 	
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Test ID	R-007
Use Case	Record New Test
Test Description	Allow Tester to record Covid Test data 7
Source Code	<pre> public function store(Request \$request) { \$request->validate(['officer_name' => 'required max:64', 'patient_name' => 'required max:64', 'test_date' => 'required', 'test_name' => 'required', 'symptoms' => 'required max:255', 'result_date' => 'required',]); \$data = DB::table('test_kits') ->join('test_centres', 'test_kits.centre_id', '=', 'test_centres.id') ->where('test_centres.centre_name', Auth::user()->centre_name) ->where('test_kits.test_name', \$request->test_name) ->where('test_kits.stock', '>', '0') ->first(); if(\$data){ TestKit::where('test_name', \$request->test_name)->decrement('stock', 1); }else{ return redirect()->route('covid-test.create') ->with('error','Sorry, test kit stock is empty!'); } } CovidTest::create(\$request->all()); return redirect()->route('covid-test.index') </pre>

	<pre> ->with('success','Data created successfully'); } </pre>			
	Test Data	Expected Output	Actual Output	Remark(s)
Test Case 1:	Patient: Test Date: Type Test: Symptoms: Result Date:	A warning notification will be displayed	A warning notification will be displayed	Pass
Test Case 2:	Patient: Surya Ramadan Test Date: 27/04/2021 Type Test: RT-PCR Swab Testing Symptoms: Flu and Fever Result Date: 28/04/2021	The data will be displayed on the Covid Test menu	The data will be displayed on Covid Test menu	Pass
Test Case 3:	Patient: Surya Ramadan Test Date: 27/04/2021 Type Test: RT-PCR Swab Testing Symptoms: Flu and Fever Result Date: 28/04/2021	A warning message 'Sorry, test kit stock is empty!' will be notify	A warning message 'Sorry, test kit stock is empty!' will be notify	Pass

Test ID	R-008			
Use Case	Update Test Result			
Test Description	Allow Tester to update Patient's test result and status 11			
Source Code	<pre> public function update(Request \$request, CovidTest \$covidTest) { \$request->validate(['symptoms' => 'required max:255', 'result_date' => 'required', 'status' => 'required', 'result' => 'required max:100',]); \$covidTest->update(\$request->all()); return redirect()->route('covid-test.index') ->with('success','Data created successfully'); } </pre>			
	Test Data	Expected Output	Actual Output	Remark(s)
Test Case 1:	Patient: Test Date: Type Test:	A warning notification will be displayed	A warning notification will be displayed	Pass

	Symptoms: Result Date: Status: Result:			
Test Case 2:	Patient: Surya Ramadan Test Date: 27/04/2021 Type Test: RT-PCR Swab Testing Symptoms: Flu and Fever Result Date: 28/04/2021 Status: Completed Result: HEALTHY and NEGATIVE COVID test results with the COVID-19 Antibody Testing	The data will be displayed on the Covid Test menu	The data will be displayed on Covid Test menu	Pass

Prepared by: I Made Siva Aditya Surya

Test ID	R-009		
Use Case	View Testing History		
Test Description	Allow Patient to view their testing history		
Source Code	<pre>public function index() { \$data = DB::table('covid_tests') ->join('users', 'covid_tests.officer_name', '=', 'users.name') ->join('test_centres', 'test_centres.centre_name', '=', 'users.centre_name') ->where('test_centres.centre_name', Auth::user()->centre_name) 1 ->select(['covid_tests.*', 'test_centres.centre_name']) ->paginate(5); return view('covid-test.index', compact('data')) 2 ->with('i', (request()->input('page', 1) - 1) * 5); }</pre>		
Test Data	Expected Output	Actual Output	Remark(s)

Test Case 1:	Click Covid Test Menu	System will display a list of Covid Test data	System will display a list of Covid Test data	Pass
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Test ID	R-010			
Use Case	Generate Test Report			
Test Description	Allow Officer to generate a list of test report that are administered in their Test Centre			
Source Code	<pre> public function index() { \$data = DB::table('covid_tests') ->join('users', 'covid_tests.officer_name', '=', 'users.name') ->join('test_centres', 'test_centres.centre_name', '=', 'users.centre_name') ->where('test_centres.centre_name', Auth::user()->centre_name) [1] ->select(['covid_tests.*', 'test_centres.centre_name']) ->paginate(5); return view('covid-test.index', compact('data')) ->with('i', (request()->input('page', 1) - 1) * 5); } </pre>			
	Test Data	Expected Output	Actual Output	Remark(s)
Test Case 1:	Click Covid Test Menu	System will display a list of Covid Test data	System will display a list of Covid Test data	Pass

Test ID	R-011			
Use Case	View Test Kit			
Test Description	Allow Officer to view a list of test kit and stock			
Source Code	<pre> public function index() { \$testkit = TestKit::latest()->paginate(5); \$data = DB::table('test_kits')->join('test_centres', 'test_kits.centre_id', '=', 'test_centres.id') ->select(['test_kits.*', 'test_centres.centre_name'])->get(); [1] return view('test-kit.index', compact('testkit', 'data')) ->with('i', (request()->input('page', 1) - 1) * 5); } </pre>			
	Test Data	Expected Output	Actual Output	Remark(s)
Test Case 1:	Click Test Kit Menu	System will display a list of Test Kit data	System will display a list of Test Kit data	Pass

Test ID	R-012
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Use Case	View Test Centre Officer			
Test Description	Allow Officer to View Test Centre where he works			
Source Code	<pre> public function index() { \$centreofficers = DB::table('users')->where('position', 'officer')- >paginate(5); return view('centre-officer.index', compact('centreofficers')) ->with('i', (request()->input('page', 1) - 1) * 5); } </pre>			
	Test Data	Expected Output	Actual Output	Remark(s)
Test Case 1:	Click Test Centre Menu	System will display a list of Test Centre data	System will display a list of Test Centre data	Pass

Test ID	R-013
Use Case	Logout
Test Description	Allow the user to logout from the application
Source Code	<pre> <div class="modal fade" id="logoutModal" tabindex="-1" role="dialog" aria-labelledby="exampleModalLabelLogout" aria-hidden="true"> <div class="modal-dialog" role="document"> <div class="modal-content"> <div class="modal-header"> <h5 class="modal-title" id="exampleModalLabelLogout">Log Out</h5> <button type="button" class="close" data-dismiss="modal" aria-label="Close"> &times; </button> </div> <div class="modal-body"> <p>Are you sure you want to log out?</p> </div> <div class="modal-footer"> <button type="button" class="btn btn-outline-primary" data- dismiss="modal">Cancel</button> Log Out <form id="logout-form" action="{{ route('logout') }}" method="POST" class="d-none"> @csrf </form> </div> </div> </div> </pre>

	</div> </div>			
	Test Data	Expected Output	Actual Output	Remark(s)
Test Case 1:	Click log out button	Confirmation message will be displayed	Confirmation message will be displayed	Pass
Test Case 2:	Click cancel button in the confirmation message	Return to previous page	Return to previous page	Pass
Test Case 3:	Click log out button in the confirmation message	Directed to login page	Directed to login page	Pass

2.5.2. Integration Testing

Prepared by: Ida Bagus Gede Awidya Andika & I Made Siva Aditya Surya

Manager : Login

Test ID	R-001			
Use Case	Manager : Login			
Test Description	Allow the user for login their account			
	Test Data	Expected Output	Actual Output	Remark(s)
Test Case 1:	Username : Password:	A warning notification will be displayed	A warning notification will be displayed	Pass
Test Case 2:	Username: manager Password: manager	Directed to the Manager dashboard page	Directed to the Manager dashboard page	Pass
Test Case 3:	Username: tester Password: tester	Directed to the Tester dashboard page	Directed to the Tester dashboard page	Pass
Test Case 4:	Username: officer Password: officer	Directed to the Officer dashboard page	Directed to the Officer dashboard page	Pass
Test Case 5:	Username: patient Password: patient	Directed to the Patient dashboard page	Directed to the Patient dashboard page	Pass
Test Case 6:	Username: user Password: manager	A warning message that user input wrong Email or Username and	A warning message that user input wrong Email or	Pass

		Password are incorrect will be notify	Username and Password are incorrect will be notify	
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Manager : Login → Register Test Centre

Test ID	R-002			
Use Case	Manager : Dashboard → Register Test Centre			
Test Description	Allow Test Centre to be created and recorded for the Manager			
	Test Data	Expected Output	Actual Output	Remark(s)
Test Case 1:	Test Centre Name: Address: Postal Code: Phone: City:	A warning notification will be displayed	A warning notification will be displayed	Pass
Test Case 2:	Test Centre Name: Bali Med Address: Jl. Buana Kubu No. 65 DPS, BR/Link. Sari Buana Postal Code: 80119 Phone: 085858839746 City: Denpasar	The data will be displayed on the Test Centre Dashboard	The data will be displayed on the Test Centre Dashboard	Pass
Test Case 3:	Test Centre Name: Bali Med Address: Jl. Buana Kubu No. 65 DPS, BR/Link. Sari Buana Postal Code: 80119 Phone: 085858839746 City: Denpasar	A warning message 'Sorry, you already created test centre' will be notify	A warning message 'Sorry, you already created test centre' will be notify	Pass
Test Case 4:	Test Centre Name: Bali Med Address: Jl. Buana Kubu	A warning message will be notify: - The centre name has already been	A warning message will be notify: - The centre name has already been	Pass

	No. 65 DPS, BR/Link. Sari Buana Postal Code: 80119 Phone: 085858839746 City: Denpasar	taken - The address has already taken - The phone has already taken	taken - The address has already taken - The phone has already taken	
--	--	---	---	--

Manager : Register Test Centre → Manage Test Kit Stock

Test ID	R-003			
Use Case	Manager : Register Test Centre → Test Kit			
Test Description	Allow Test Centre Manager to add Test Kit or update Test Kit stock			
	Test Data	Expected Output	Actual Output	Remark(s)
Test Case 1:	Test Name: Stock:	A warning notification will be displayed	A warning notification will be displayed	Pass
Test Case 2:	Test Name: RT-PCR Swab Testing Stock: 1	The data will be displayed on the Test Kit menu	The data will be displayed on the Test Kit menu	Pass
Test Case 3:	Test Name: RT-PCR Swab Testing Stock: 1	A warning message 'Sorry, you cannot add the same test name!' will be notify	A warning message 'Sorry, you cannot add the same test name!' will be notify	Pass
Test Case 4:	Test Name: RT-PCR Swab Testing Stock: 0	A warning message 'Value must be greater than or equal to 1' will be notify	A warning message 'Value must be greater than or equal to 1' will be notify	Pass

Manager : Register Test Centre → Record Officer

Test ID	R-004			
Use Case	Manager : Register Test Centre → Record Officer			
Test Description	Allow Manager to record Officer			
	Test Data	Expected Output	Actual Output	Remark(s)
Test Case 1:	Name: Gender: Date of Birth: Phone: Email:	A warning notification will be displayed	A warning notification will be displayed	Pass

	Address: Username: Password: Retype Password: Position:			
Test Case 2:	Name: David Chris Gender: Male Date of Birth: 30/12/1990 Phone: 08181229403 Email: davidchris@gmail.com Address: Jl. Danggala No: 05 Username: david Password: officer Retype Password: officer Position: officer	The data will be displayed on the Test Centre Officer menu	The data will be displayed on Test Centre Officer menu	Pass
Test Case 3:	Name: David Chris Gender: Male Date of Birth: 30/12/1990 Phone: 08181229403 Email: davidchris@gmail.com Address: Jl. Danggala No: 05 Username: david Password: officer Retype Password: asd Position:	A warning message will be notify: <ul style="list-style-type: none">- The username has already been taken- The email has already been taken- The phone has already been taken- The password confirmation does not match The position field is required	A warning message will be notify: <ul style="list-style-type: none">- The username has already been taken- The email has already been taken- The phone has already been taken- The password confirmation does not match The position field is required	Pass

Manager : Register Test Centre → Record Tester

Test ID	R-005
Use Case	Manager : Register Test Centre → Record Tester
Test Description	Allow Manager to record Tester

	Test Data	Expected Output	Actual Output	Remark(s)
Test Case 1:	Name: Gender: Date of Birth: Phone: Email: Address: Username: Password: Retype Password: Position:	A warning notification will be displayed	A warning notification will be displayed	Pass
Test Case 2:	Name: Adena Dodson Gender: Female Date of Birth: 19/12/1997 Phone: 085473985765 Email: adenadodson@gmail.com Address: Jl. Kebo Iwa Selatan, No: 1B Username: adena Password: tester Retype Password: tester Position: tester	The data will be displayed on the Tester menu	The data will be displayed on Tester menu	Pass
Test Case 3:	Name: Adena Dodson Gender: Female Date of Birth: 19/12/1997 Phone: 085473985765 Email: adenadodson@gmail.com Address: Jl. Kebo Iwa Selatan, No: 1B Username: adena Password: tester Retype Password: asd Position: tester	A warning message will be notify: <ul style="list-style-type: none">- The username has already been taken- The email has already been taken- The phone has already been taken- The password confirmation does not match	A warning message will be notify: <ul style="list-style-type: none">- The username has already been taken- The email has already been taken- The phone has already been taken- The password confirmation does not match	Pass

Tester : Login → Record Patient

Test ID	R-006
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Use Case	Tester : Login → Record Patient			
Test Description	Allow Tester to record Patient			
	Test Data	Expected Output	Actual Output	Remark(s)
Test Case 1:	Name: Gender: Date of Birth: Phone: Email: Address: Username: Password: Retype Password: Position:	A warning notification will be displayed	A warning notification will be displayed	Pass
Test Case 2:	Name: Surya Ramadan Gender: Male Date of Birth: 03/11/1975 Phone: 081575567589 Email: suryaramadan@gmail.com Address: Jl. Pattimura Permai, No: 22 Username: surya Password: patient Retype Password: patient Position: patient	The data will be displayed on the Patient menu	The data will be displayed on Patient menu	Pass
Test Case 3:	Name: Surya Ramadan Gender: Male Date of Birth: 03/11/1975 Phone: 081575567589 Email: suryaramadan@gmail.com Address: Jl. Pattimura Permai, No: 22 Username: surya Password: patient Retype Password: patientasd Position: patient	A warning message will be notify: <ul style="list-style-type: none">- The username has already been taken- The email has already been taken- The phone has already been taken- The password confirmati	A warning message will be notify: <ul style="list-style-type: none">- The username has already been taken- The email has already been taken- The phone has already been taken- The password confirmati	Pass

		on does not match	on does not match	
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Tester : Record Patient → Record New Test

Test ID	R-007			
Use Case	Tester : Record Patient → Record New Test			
Test Description	Allow Tester to record Covid Test data			
	Test Data	Expected Output	Actual Output	Remark(s)
Test Case 1:	Patient: Test Date: Type Test: Symptoms: Result Date:	A warning notification will be displayed	A warning notification will be displayed	Pass
Test Case 2:	Patient: Surya Ramadan Test Date: 27/04/2021 Type Test: RT-PCR Swab Testing Symptoms: Flu and Fever Result Date: 28/04/2021	The data will be displayed on the Covid Test menu	The data will be displayed on Covid Test menu	Pass
Test Case 3:	Patient: Surya Ramadan Test Date: 27/04/2021 Type Test: RT-PCR Swab Testing Symptoms: Flu and Fever Result Date: 28/04/2021	A warning message 'Sorry, test kit stock is empty!' will be notify	A warning message 'Sorry, test kit stock is empty!' will be notify	Pass

Tester : Record New Test → Update Test Result

Test ID	R-008			
Use Case	Tester : Record New Test → Update Test Result			
Test Description	Allow Tester to update Patient's test result and status			
	Test Data	Expected Output	Actual Output	Remark(s)
Test Case 1:	Patient: Test Date: Type Test: Symptoms:	A warning notification will be displayed	A warning notification will be displayed	Pass

	Result Date: Status: Result:			
Test Case 2:	Patient: Surya Ramadan Test Date: 27/04/2021 Type Test: RT-PCR Swab Testing Symptoms: Flu and Fever Result Date: 28/04/2021 Status: Completed Result: HEALTHY and NEGATIVE COVID test results with the COVID-19 Antibody Testing	The data will be displayed on the Covid Test menu	The data will be displayed on Covid Test menu	Pass

Patient: Login → View Testing History

Test ID	R-009			
Use Case	Login → View Testing History			
Test Description	Allow the user to register for a new account.			
	Test Data	Expected Output	Actual Output	Remark(s)
Test Case 1:	Click Covid Test Menu	System will display a list of Covid Test data	System will display a list of Covid Test data	Pass

Test Centre Officer: Login → Generate Test Report

Test ID	R-010			
Use Case	Test Centre Officer: Login → Generate Test Report			
Test Description	Allow Officer to generate a list of test report that are administered in their Test Centre			
	Test Data	Expected Output	Actual Output	Remark(s)
Test Case 1:	Click Covid Test Menu	System will display a list of Covid Test data	System will display a list of Covid Test data	Pass

Test Centre Officer: Login → View Test Kit

Test ID	R-011			
Use Case	Test Centre Officer: Login → View Test Kit			
Test Description	Allow Officer to view a list of test kit and stock			
	Test Data	Expected Output	Actual Output	Remark(s)

Test Case 1:	Click Test Kit Menu	System will display a list of Test Kit data	System will display a list of Test Kit data	Pass
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Test Centre Officer: Login → View Test Centre Officer

Test ID	R-012			
Use Case	Test Centre Officer: Login → View Test Kit			
Test Description	Allow Officer to View Test Centre where he works			
	Test Data	Expected Output	Actual Output	Remark(s)
Test Case 1:	Click Test Centre Menu	System will display a list of Test Centre data	System will display a list of Test Centre data	Pass

Manager: Login → Logout

Test ID	R-013			
Use Case	Manager : Login→ Logout			
Test Description	Allow the user to register for a new account.			
	Test Data	Expected Output	Actual Output	Remark(s)
Test Case 1:	Click log out button	Confirmation message will be displayed	Confirmation message will be displayed	Pass
Test Case 2:	Click cancel button in the confirmation message	Return to previous page	Return to previous page	Pass
Test Case 3:	Click log out button in the confirmation message	Directed to login page	Directed to login page	Pass

2.5.3. System Testing

Prepared by: Ida Bagus Gede Awidya Andika & I Made Siva Aditya Surya

- Functional Req

Test ID	R-001			
Use Case	Login			
Test Description	Testing login process by the user. To ensure the user can login to the system.			
	Test Data	Expected Output	Actual Output	Remark(s)
Test Case 1:	1. Username : “manager” 2. Password: “manager”	Redirect to Manager Dashboard	Redirect to Manager Dashboard	Pass

Test Case 2:	1. Username : “officer” 2. Password: “officer”	Redirect to Officer Dashboard	Redirect to Officer Dashboard	Pass
Test Case 3:	1. Username : “tester” 2. Password: “tester”	Redirect to Tester Dashboard	Redirect to Tester Dashboard	Pass
Test Case 4:	1. Username : “patient” 2. Password: “patient”	Redirect to Patient Dashboard	Redirect to Patient Dashboard	Pass

Test ID	R-002			
Use Case	Register Test Centre			
Test Description	Allow the user to register for a new account			
	Test Data	Expected Output	Actual Output	Remark(s)
Test Case 1:	Test Centre Name: “Bali Med” Address: “Jl. Buana Kubu No. 65 DPS, BR/Link. Sari Buana” Postal Code: “80119” Phone: “085858839746” City: “Denpasar”	The data will be displayed on the Test Centre Dashboard	The data will be displayed on the Test Centre Dashboard	Pass

Test ID	R-003			
Use Case	Manage Test Kit Stock			
Test Description	Allow Test Centre Manager to add Test Kit or update Test Kit stock			
	Test Data	Expected Output	Actual Output	Remark(s)
Test Case 1:	Test Name: “RT-PCR Swab Testing” Stock: “1”	The data will be displayed on the Test Kit menu	The data will be displayed on the Test Kit menu	Pass
Test Case 2:	Test Name: “RT-PCR Swab Testing” Stock: “10”	The data will be displayed on the Test Kit menu	The data will be displayed on the Test Kit menu	Pass

Test ID	R-004			
Use Case	Record Officer			
Test Description	Allow Manager to record Officer			
	Test Data	Expected Output	Actual Output	Remark(s)
Test Case 1:	Name: "David Chris" Gender: "Male" Date of Birth: "30/12/1990" Phone: "08181229403" Email: "davidchris@gmail.com" Address: "Jl. Danggala No: 05" Username: "david" Password: "officer" Retype Password: "officer" Position: "officer"	The data will be displayed on the Test Centre Officer menu	The data will be displayed on Test Centre Officer menu	Pass

Test ID	R-005			
Use Case	Record Tester			
Test Description	Allow Manager to record Tester			
	Test Data	Expected Output	Actual Output	Remark(s)
Test Case 1:	Name: "Adena Dodson" Gender: "Female" Date of Birth: "19/12/1997" Phone: "085473985765" Email: "adenadodson@gmail.com" Address: "Jl. Kebo Iwa Selatan, No: 1B" Username: "adena" Password: "tester" Retype Password: "tester" Position: "tester"	The data will be displayed on the Tester menu	The data will be displayed on Tester menu	Pass

Test ID	R-006			
Use Case	Record Patient			
Test Description	Allow Tester to record Patient			
	Test Data	Expected Output	Actual Output	Remark(s)
Test Case 1:	Name: "Surya Ramadan" Gender: "Male"	The data will be displayed	The data will be displayed	Pass

	Date of Birth: "03/11/1975" Phone: "081575567589" Email: "suryaramadan@gmail.com" Address: "Jl. Pattimura Permai, No: 22" Username: "surya" Password: "patient" Retype Password: "patient" Position: "patient"	on the Patient menu	on Patient menu	
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Test ID	R-007			
Use Case	Record New Test			
Test Description	Allow Tester to record Covid Test data			
	Test Data	Expected Output	Actual Output	Remark(s)
Test Case 1:	Patient: "Surya Ramadan" Test Date: "27/04/2021" Type Test: "RT-PCR Swab Testing" Symptoms: "Flu and Fever" Result Date: "28/04/2021"	The data will be displayed on the Covid Test menu	The data will be displayed on Covid Test menu	Pass

Test ID	R-008			
Use Case	Update Test Result			
Test Description	Allow Tester to update Patient's test result and status			
	Test Data	Expected Output	Actual Output	Remark(s)
Test Case 1:	Patient: "Surya Ramadan" Test Date: "27/04/2021" Type Test: "RT-PCR Swab Testing" Symptoms: "Flu and Fever" Result Date: "28/04/2021" Status: "Completed" Result: "HEALTHY and NEGATIVE COVID test results	The data will be displayed on the Covid Test menu	The data will be displayed on Covid Test menu	Pass

	with the COVID-19 Antibody Testing”			
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Test ID	R-009			
Use Case	View Testing History			
Test Description	Allow Patient to view their testing history			
	Test Data	Expected Output	Actual Output	Remark(s)
Test Case 1:	Click Covid Test Menu	System will display a list of Covid Test data	System will display a list of Covid Test data	Pass

Test ID	R-010			
Use Case	Generate Test Report			
Test Description	Allow Officer to generate a list of test report that are administered in their Test Centre			
	Test Data	Expected Output	Actual Output	Remark(s)
Test Case 1:	Click Covid Test Menu	System will display a list of Covid Test data	System will display a list of Covid Test data	Pass

Test ID	R-011			
Use Case	View Test Kit			
Test Description	Allow Officer to view a list of test kit and stock			
	Test Data	Expected Output	Actual Output	Remark(s)
Test Case 1:	Click Test Kit Menu	System will display a list of Test Kit data	System will display a list of Test Kit data	Pass

Test ID	R-012			
Use Case	View Test Centre Officer			
Test Description	Allow Officer to View Test Centre where he works			
	Test Data	Expected Output	Actual Output	Remark(s)
Test Case 1:	Click Test Centre Menu	System will display a list of Test Centre data	System will display a list of Test Centre data	Pass

Test ID	R-013			
Use Case	Logout			

Test Description	Testing the logout function. User able to logout from the system			
	Test Data	Expected Output	Actual Output	Remark(s)
Test Case 1:	Click logout button	Confirmation message will be displayed	Confirmation message will be displayed	Pass
Test Case 2:	Click cancel button in the confirmation message	The system will return to previous page	The system will return to previous page	Pass
Test Case 3:	Click log out button in the confirmation message	The system will show the login page	The system will show the login page	Pass

- Non-Func – run on Google Version 89.0.4389.114 (Official Build) (64-bit)

Test ID	R-001			
Use Case	Login			
Test Description	Allow User to login to the system			
	Test Data	Expected Output	Actual Output	Remark(s)
Test Case 1:	Username : Password:	A warning notification will be displayed	A warning notification will be displayed	Pass
Test Case 2:	Username: “user” Password: “manager”	A warning message that user input wrong Email or Username and Password are incorrect will be notify	A warning message that user input wrong Email or Username and Password are incorrect will be notify	Pass
Test Case 3:	Username: “user” Password: “manager”	Text box = “***” User password in user table is encrypted	Text box = “***” User password in user table is encrypted	Pass

Test ID	R-002			
Use Case	Register Test Centre			
Test Description	Allow Test Centre to be created and recorded for the Manager			
	Test Data	Expected Output	Actual Output	Remark(s)
Test Case 1:	Test Centre Name: Address: Postal Code: Phone:	A warning notification will be displayed	A warning notification will be displayed	Pass

	City:			
Test Case 2:	Test Centre Name: "Bali Med" Address: "Jl. Buana Kubu No. 65 DPS, BR/Link. Sari Buana" Postal Code: "80119" Phone: "085858839746" City: "Denpasar"	A warning message 'Sorry, you already created test centre' will be notify	A warning message 'Sorry, you already created test centre' will be notify	Pass
Test Case 3:	Test Centre Name: "Bali Med" Address: "Jl. Buana Kubu No. 65 DPS, BR/Link. Sari Buana" Postal Code: "80119" Phone: "085858839746" City: "Denpasar"	A warning message will be notify: - The centre name has already been taken - The address has already taken - The phone has already taken	A warning message will be notify: - The centre name has already been taken - The address has already taken - The phone has already taken	Pass

Test ID	R-003			
Use Case	Manage Test Kit Stock			
Test Description	Allow Test Centre Manager to add Test Kit or update Test Kit stock			
	Test Data	Expected Output	Actual Output	Remark(s)
Test Case 1:	Test Name: Stock:	A warning notification will be displayed	A warning notification will be displayed	Pass
Test Case 2:	Test Name: "RT-PCR Swab Testing" Stock: "1"	A warning message 'Sorry, you cannot add the same test name!' will be notify	A warning message 'Sorry, you cannot add the same test name!' will be notify	Pass
Test Case 3:	Test Name: "RT-PCR Swab Testing" Stock: "0"	A warning message 'Value must be greater than or equal to 1' will be notify	A warning message 'Value must be greater than or equal to 1' will be notify	Pass

Test ID	R-004			
Use Case	Record Officer			
Test Description	Allow Manager to record Officer			
	Test Data	Expected Output	Actual Output	Remark(s)
Test Case 1:	Name: Gender: Date of Birth: Phone: Email: Address: Username: Password: Retype Password: Position:	A warning notification will be displayed	A warning notification will be displayed	Pass
Test Case 2:	Name: "David Chris" Gender: "Male" Date of Birth: "30/12/1990" Phone: "08181229403" Email: "davidchris@gmail.com" Address: "Jl. Danggala No: 05" Username: "David" Password: "officer" Retype Password: "asd" Position: ""	A warning message will be notify: <ul style="list-style-type: none">- The username has already been taken- The email has already been taken- The phone has already been taken- The password confirmation does not match- The position field is required	A warning message will be notify: <ul style="list-style-type: none">- The username has already been taken- The email has already been taken- The phone has already been taken- The password confirmation does not match- The position field is required	Pass

Test ID	R-005			
Use Case	Record Tester			
Test Description	Allow Manager to record Tester			
	Test Data	Expected Output	Actual Output	Remark(s)

Test Case 1:	Name: Gender: Date of Birth: Phone: Email: Address: Username: Password: Retype Password: Position:	A warning notification will be displayed	A warning notification will be displayed	Pass
Test Case 2:	Name: "Adena Dodson" Gender: "Female" Date of Birth: "19/12/1997" Phone: "085473985765" Email: "adenadodson@gmail.com" Address: "Jl. Kebo Iwa Selatan, No: 1B" Username: "adena" Password: "tester" Retype Password: "asd" Position: "tester"	A warning message will be notify: <ul style="list-style-type: none">- The username has already been taken- The email has already been taken- The phone has already been taken- The password confirmation does not match	A warning message will be notify: <ul style="list-style-type: none">- The username has already been taken- The email has already been taken- The phone has already been taken- The password confirmation does not match	Pass

Test ID	R-006			
Use Case	Record Patient			
Test Description	Allow Tester to record Patient			
	Test Data	Expected Output	Actual Output	Remark(s)
Test Case 1:	Name: Gender: Date of Birth: Phone: Email: Address: Username: Password: Retype Password:	A warning notification will be displayed	A warning notification will be displayed	Pass

	Position:			
Test Case 2:	Name: "Surya Ramadan" Gender: "Male" Date of Birth: "03/11/1975" Phone: "081575567589" Email: "suryaramadan@gmail.com" Address: "Jl. Pattimura Permai, No: 22" Username: "surya" Password: "patient" Retype Password: "asd" Position: "patient"	A warning message will be notify: <ul style="list-style-type: none">- The username has already been taken- The email has already been taken- The phone has already been taken- The password confirmation does not match	A warning message will be notify: <ul style="list-style-type: none">- The username has already been taken- The email has already been taken- The phone has already been taken- The password confirmation does not match	Pass

Test ID	R-007			
Use Case	Record New Test			
Test Description	Allow Tester to record Covid Test data			
	Test Data	Expected Output	Actual Output	Remark(s)
Test Case 1:	Patient: Test Date: Type Test: Symptoms: Result Date:	A warning notification will be displayed	A warning notification will be displayed	Pass
Test Case 2:	Patient: "Surya Ramadan" Test Date: "27/04/2021" Type Test: "RT-PCR Swab Testing" Symptoms: "Flu and Fever" Result Date: "28/04/2021"	A warning message 'Sorry, test kit stock is empty!' will be notify	A warning message 'Sorry, test kit stock is empty!' will be notify	Pass

Test ID	R-008			
Use Case	Update Test Result			
Test Description	Allow Tester to update Patient's test result and status			

	Test Data	Expected Output	Actual Output	Remark(s)
Test Case 1:	Patient: Test Date: Type Test: Symptoms: Result Date: Status: Result:	A warning notification will be displayed	A warning notification will be displayed	Pass

2.6. Test Analysis Report

We have completed all of the system's functional and non-functional testing requirements. Based on the outcome of the tests, we can assume that the system is operationally reliable and met all of the requirements. The system and codes are operational, having passed the unit, integration, and system testing phases. During our testing, we discovered no glitches or errors on our system. Therefore, we concluded that our system as whole has met all the requirements stated in the first assignment without errors.

3. Closing and Review

3.1. Final Gantt Chart

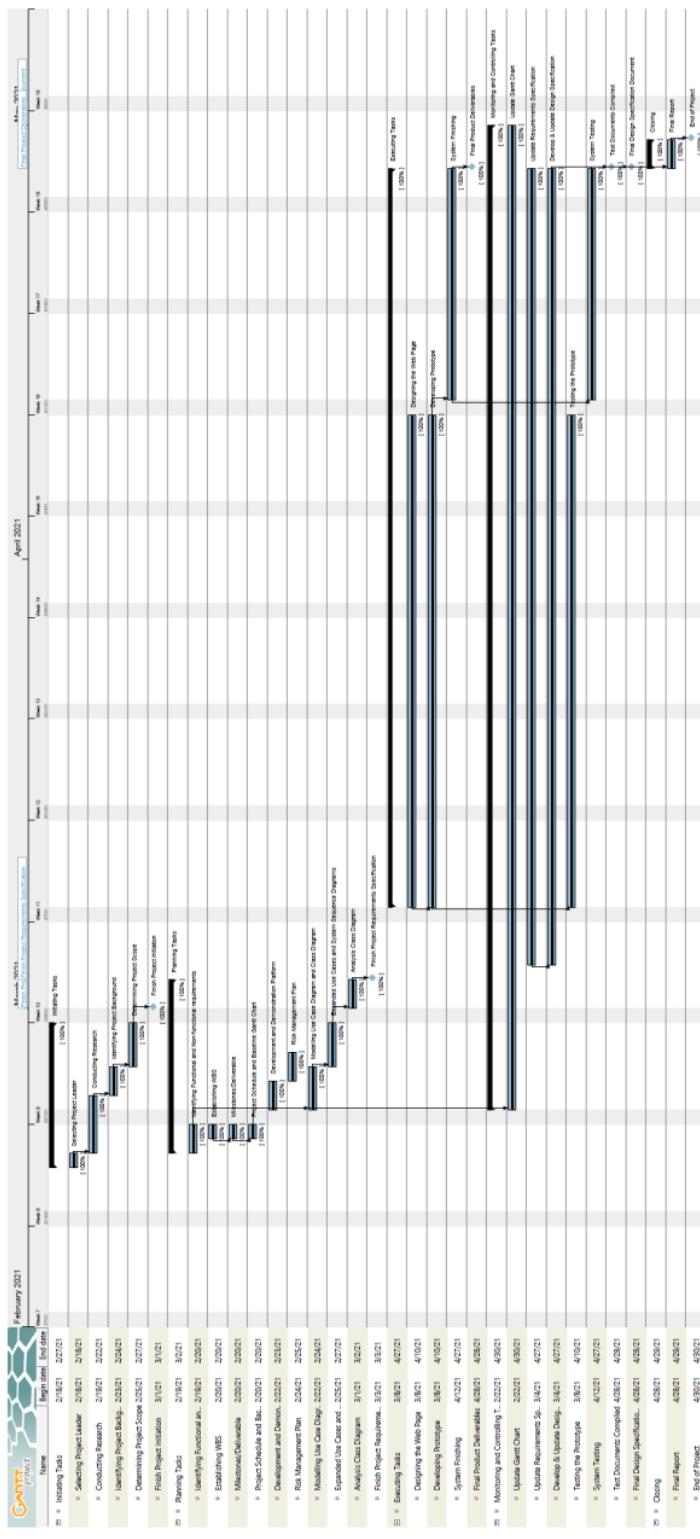


Figure 69. Gantt Chart

There are no issues with our schedule, everything went well according to plan. There were no over deadlines works or any schedule changes.

3.2. Collaboration via GitHub

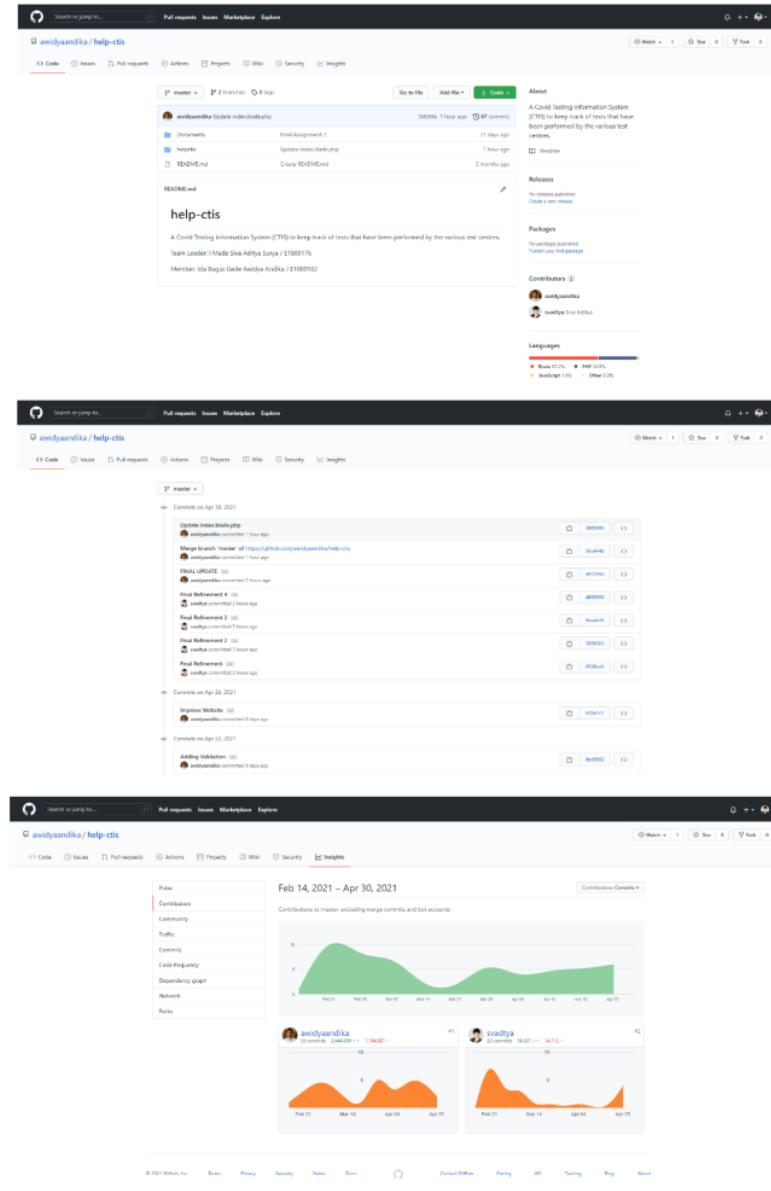


Figure 70. GitHub Page

We use GitHub as our software development collaboration tool which can be accessed through this link <https://github.com/awidyaandika/help-ctis>. Our GitHub was updated throughout the duration of the project which starts from February 2021 until end of April 2021. We have two branches, branch master which contains project files and branch assignment which contains assignment files such as word documents and diagrams.

3.3. Conclusion/Review

Review by: Ida Bagus Gede Awidya Andika

- Did the group meet the objectives defined in Assignment 1?**

During the project from assignment 1 until assignment 3, project or website system built always updated until finally that fulfilled the predetermined project objectives. Both from website system that runs perfectly and the website can be accessed either via PC or smartphone devices.

- What went wrong and what went right?**

- Went wrong in our project are there is still lack of understanding about making good and correct System Design such as System Sequence Diagram, Contracts and Database Design. Also happened during Architectural Design work such as Design Class Diagram, ERD, and Site Map. So these two things are done based on our knowledge that we have and references that we get from internet and materials that we have studied in previous courses.
- Went right in our project are during website system creation, everything was done based on System Design and Architectural Design that had been made, even some additional features on the website system that we built outside of System Design that had been made because of our great sense of enthusiasms and curiosity. Besides that, project system that we made done on time and ran perfectly.

- What you would have done differently?**

Website system that we built done using the Laravel framework, where we have no experience and never use the framework.

The reason we use Laravel framework because it feels easy to use which is had good error handler feature so that if there is error it will immediately told where the error is. Beside that it is automatically connected to the database server, so that can create database directly from Laravel without making manual in PHPMyAdmin and it is easy making CRUD (Create, Read, Update, Delete) because automatically formed in the controller and just adjust as needed. Not because this is our first experience using Laravel, the website system we built is imperfect, instead with help Laravel the website that we built can done quickly and the results exceed our expectations.

Review by: I Made Siva Aditya Surya

- **Did the group meet the objectives defined in Assignment 1?**

I feel that our group has succeeded in fulfilling the project objectives that we stated in assignment 1. The project initiation has been carried out quite well, equipped with supporting documents. Design specifications have been made in accordance with functional and non-functional requirements, there are several adjustments in terms of database design that are designed to support the effectiveness of using the framework on the website. All use cases have been implemented properly, the final product of the website is able to support our project goals, namely: to produce a system that supports good clinical management of COVID-19 testing and is able to carry out direct-to-patient reporting of COVID-19 test results. The test plan has been well designed, and all testing has been carried out for every existing use case with satisfactory results. Therefore, we can conclude that we think we have implemented and ended this HELP CTIS Website project quite well.

- **What went wrong and what went right?**

- What went wrong - In terms of document creation there is still a lack of references in making design specification documents so that some of the resulting diagrams and contracts do not meet the standards and rules for making proper document design software. I also feel that the class diagram still doesn't represent the website system as a whole, only important entities are represented in the diagram.
- What went right - We have worked on the project according to the project scope that we have stated in our project plan. so that all use cases can be implemented fairly well and done on time. We have added several features outside of our project scope, but the work has been controlled so that it does not interfere with the schedule plan that we have set.

- **What you would have done differently?**

We are working on this project using a framework which we are very unfamiliar with. This is the biggest obstacle as well as the biggest challenge in working on this project. We spent a lot of time studying the framework before we could use it to implement our use case. In working on other projects, we want to develop the project using a framework that we have mastered so that we can use development time to

implement additional features that are outside the scope of the project and are the result of impromptu brainstorming, but we believe we can significantly improve the quality of our system in terms of design and functionality.

We also want to improve the quality of our design specification documents so that they meet standards and are able to better represent our system to the public and other developers.

Overall Review

We have worked on this project well in accordance with the project objectives, project scope, and project schedule that we have set in the first assignment. The thing that we feel the most lacking is the quality of our design documents which is still low due to the lack of references so that they do not follow good design standards. In the future, we want to develop a project with a framework that we have fully mastered so that the results can be even better.

Bibliography

Sommerville, I. (2016). *Software engineering 10th Edition*. Pearson Education.

Assignment 3 (E1800176 & E1800182)

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