



GROUP ASSIGNMENT

TECHNOLOGY PARK MALAYSIA

CT038-3-2-ODJ

OBJECT ORIENTED DEVELOPMENT WITH JAVA

APU2F2109CS(DA)_APD2F2109CS(DA)

HAND OUT DATE: 23 SEPTEMBER 2021

HAND IN DATE: 3 DESEMBER 2021

WEIGHTAGE: 50%

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INSTRUCTIONS TO CANDIDATES:

- 1 Submit your assignment at the administrative counter**
- 2 Students are advised to underpin their answers with the use of references (cited using the Harvard Name System of Referencing)**
- 3 Late submission will be awarded zero (0) unless Extenuating Circumstances (EC) are upheld**
- 4 Cases of plagiarism will be penalized**
- 5 The assignment should be bound in an appropriate style (comb bound or stapled).**
- 6 Where the assignment should be submitted in both hardcopy and softcopy, the softcopy of the written assignment and source code (where appropriate) should be on a CD in an envelope / CD cover and attached to the hardcopy.**
- 7 You must obtain 50% overall to pass this module.**

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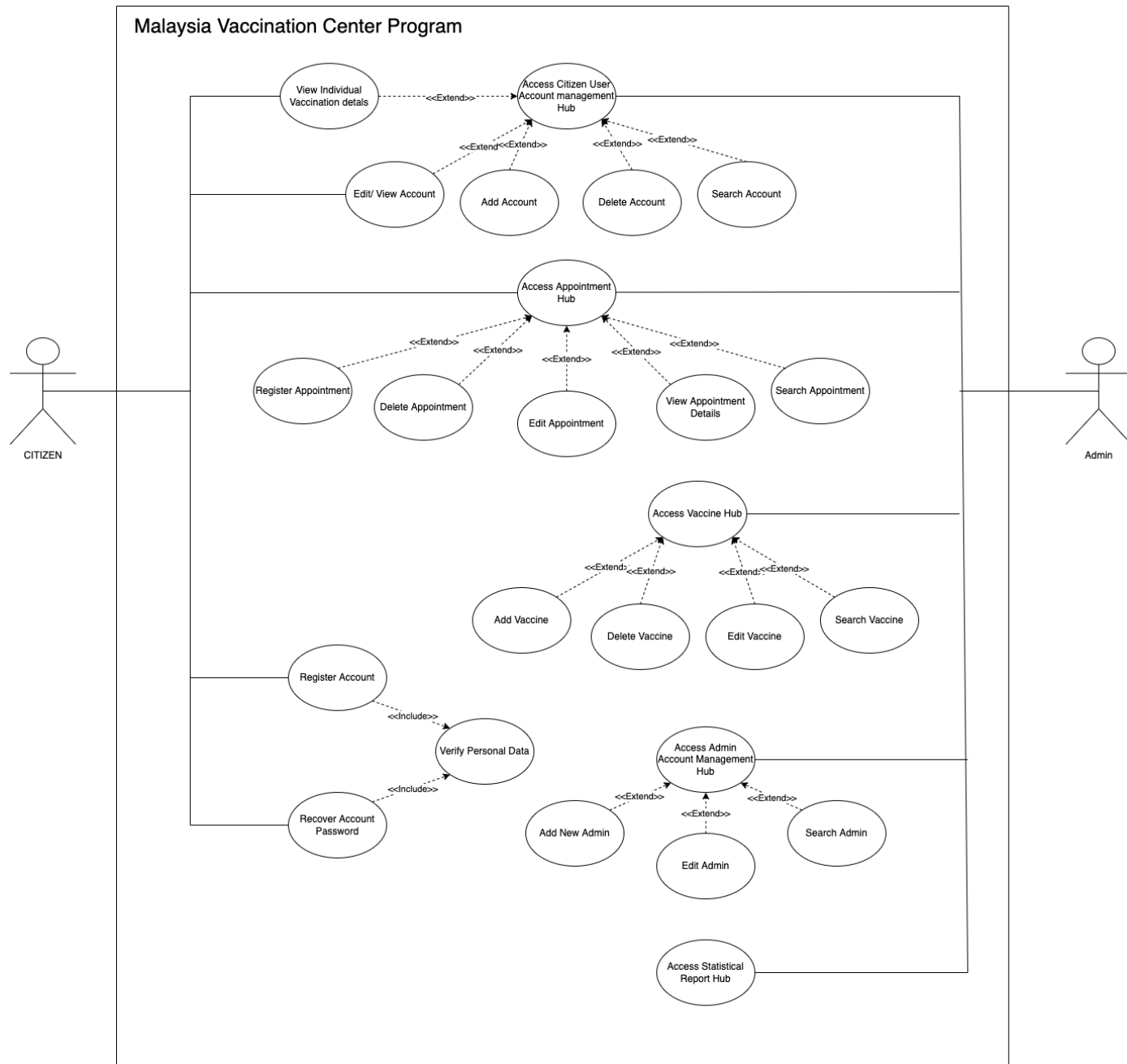
1.0 Assumption

With assumption that the system is completed according to the requirements requested, the program should be to:

- All users must login according to their credential before accessing the system.
- Citizen can register a new profile to be able to access the system.
- Citizen could recover their account if they forgot their password.
- Citizen can view and modify their own account's credentials.
- Citizen can submit an appointment towards the admin using the system.
- Citizen can cancel their appointment if they still have not received the vaccine.
- Citizen can view their Vaccination Status.
- Admin can view, search, modify, and delete citizens' profile.
- Admin can view, approve, reject/delete, search, and modify citizens' appointments.
- Admin can view, search, modify, and delete vaccines' data.
- Admin can view, search, modify, register, and delete each other's data.
- Admin can generate and view statistical report based on the system's data.
- All Admin's modification will need verification before executed.
- The system will be able to automatically update citizens' vaccination status to Fully Vaccinated after all conditions has been made (14 Days & 2 Dose / 28 Days & 1 dose) according to the vaccine's requirements.
- The system will be able to store all necessary data into a .txt files and will be able to read from said .txt files.

2.0 Diagram

2.1 Use Case Diagram & Specification Table



Use Case	Access Citizen User Account Management Hub
Brief Description	Allow the admin to access and see all the citizen account and their personal data
Actors	Admin
Preconditions	Admin must register their account and able to log in
Main Flow	1. Admin log-in to the system 2. Admin clicks the "Citizen" button on the menu
Alternative	1a. If the admin doesn't have an account, the admin requires an assist from other admin to register an account 1b. If the admin forgets their password, the admin requires an assist from other admin to recover their password

Use Case	View Individual Vaccination Status
Brief Description	Allow the citizen to view their individual vaccination status details
Actors	Citizen
Preconditions	Citizen must register their account and able to log in
Main Flow	1. Citizen log-in to the system 2. Citizen clicks the "Vaccination Status" button on the menu
Alternative	1a. If the citizen doesn't have an account, the citizen must register an account first 1b. If the citizen forgot their account's password, the user can click the "Recover Account Password" button to recover their password

Use Case	Edit/View Account
Brief Description	Allow the citizen to view and edit their account that contain their personal details
Actors	Citizen
Preconditions	Citizen must register their account and able to log in
Main Flow	1. Citizen log-in to the system 2. Citizen clicks the "Profile" button on the menu 3. Click the "Modify" button to modify personal data
Alternative	1a. If the citizen doesn't have an account, the citizen must register an account first 1b. If the citizen forgot their account's password, the user can click the "Recover Account Password" button to recover their password

Use Case	Add Account
Brief Description	Allow the admin to add/register new citizen account
Actors	Admin
Preconditions	Admin must register their account and able to log in
Main Flow	1. Admin log-in to the system 2. Admin clicks the "Citizen" button on the menu 3. Clicks the "Register" button
Alternative	1a. If the admin doesn't have an account, the admin requires an assist from other admin to register an account 1b. If the admin forgets their password, the admin requires an assist from other admin to recover their password

Use Case	Delete Account
Brief Description	Allow the admin to delete citizen account
Actors	Admin
Preconditions	Admin must register their account and able to log in
Main Flow	<ol style="list-style-type: none"> 1. Admin log-in to the system 2. Admin clicks the "Citizen" button on the menu 3. Click the citizen account on the table 4. Click the "Delete" button
Alternative	<ol style="list-style-type: none"> 1a. If the admin doesn't have an account, the admin requires an assist from other admin to register an account 1b. If the admin forgets their password, the admin requires an assist from other admin to recover their password

Use Case	Search Account
Brief Description	Allow the admin to search citizen account
Actors	Admin
Preconditions	Admin must register their account and able to log in
Main Flow	<ol style="list-style-type: none"> 1. Admin log-in to the system 2. Admin clicks the "Citizen" button on the menu 3. Click the "Search" button
Alternative	<ol style="list-style-type: none"> 1a. If the admin doesn't have an account, the admin requires an assist from other admin to register an account 1b. If the admin forgets their password, the admin requires an assist from other admin to recover their password

Use Case	Access Citizen User Appointment Hub
Brief Description	Allow the admin and citizen to access the appointment hub menu
Actors	Admin and citizen
Preconditions	Admin and citizen must register their account and able to log in
Main Flow	1. User log-in to the system 2. User clicks the "Appointment" button on the menu
Alternative	1a. If the admin doesn't have an account, the admin requires an assist from other admin to register an account 1b. If the admin forgets their password, the admin requires an assist from another admin to recover their password 1c. If the citizen doesn't have an account, the citizen must register an account first 1d. If the citizen forgot their account's password, the user can click the "Recover Account Password" button to recover their password

Use Case	Register Appointment
Brief Description	Allow the admin and citizen to register an appointment
Actors	Admin and citizen
Preconditions	Admin and citizen must register their account and able to log in
Main Flow	<ol style="list-style-type: none"> 1. User log-in to the system 2. User clicks the "Appointment" button on the menu 3. Click "Register" button
Alternative	<ol style="list-style-type: none"> 1a. If the admin doesn't have an account, the admin requires an assist from other admin to register an account 1b. If the admin forgets their password, the admin requires an assist from another admin to recover their password 1c. If the citizen doesn't have an account, the citizen must register an account first 1d. If the citizen forgot their account's password, the user can click the "Recover Account Password" button to recover their password

Use Case	Delete Appointment
Brief Description	Allow the admin and citizen to delete appointment
Actors	Admin and citizen
Preconditions	Admin and citizen must register their account and able to log in
Main Flow	<ol style="list-style-type: none"> 1. User log-in to the system 2. User clicks the "Appointment" button on the menu 3. Click "Cancel Appointment" button
Alternative	<ol style="list-style-type: none"> 1a. If the admin doesn't have an account, the admin requires an assist from other admin to register an account 1b. If the admin forgets their password, the admin requires an assist from another admin to recover their password 1c. If the citizen doesn't have an account, the citizen must register an account first 1d. If the citizen forgot their account's password, the user can click the "Recover Account Password" button to recover their password

Use Case	Edit Appointment
Brief Description	Allow the admin and citizen to edit the appointment
Actors	Admin and citizen
Preconditions	Admin and citizen must register their account and able to log in
Main Flow	<ol style="list-style-type: none"> 1. User log-in to the system 2. User clicks the "Appointment" button on the menu 3. User can directly edit the appointment
Alternative	<ol style="list-style-type: none"> 1a. If the admin doesn't have an account, the admin requires an assist from other admin to register an account 1b. If the admin forgets their password, the admin requires an assist from another admin to recover their password 1c. If the citizen doesn't have an account, the citizen must register an account first 1d. If the citizen forgot their account's password, the user can click the "Recover Account Password" button to recover their password

Use Case	View Appointment Details
Brief Description	Allow the admin and citizen to view the appointment details
Actors	Admin and citizen
Preconditions	Admin and citizen must register their account and able to log in
Main Flow	1. User log-in to the system 2. User clicks the "Appointment" button on the menu
Alternative	1a. If the admin doesn't have an account, the admin requires an assist from other admin to register an account 1b. If the admin forgets their password, the admin requires an assist from another admin to recover their password 1c. If the citizen doesn't have an account, the citizen must register an account first 1d. If the citizen forgot their account's password, the user can click the "Recover Account Password" button to recover their password

Use Case	Search Appointment
Brief Description	Allow the admin and citizen to search the appointment
Actors	Admin and citizen
Preconditions	Admin and citizen must register their account and able to log in
Main Flow	1. User log-in to the system 2. User clicks the "Appointment" button on the menu 3. Click "Search" button
Alternative	1a. If the admin doesn't have an account, the admin requires an assist from other admin to register an account 1b. If the admin forgets their password, the admin requires an assist from another admin to recover their password 1c. If the citizen doesn't have an account, the citizen must register an account first 1d. If the citizen forgot their account's password, the user can click the "Recover Account Password" button to recover their password

Use Case	Access Vaccine Hub
Brief Description	Allow the admin to access and see all the available vaccine details and data
Actors	Admin
Preconditions	Admin must register their account and able to log in
Main Flow	1. Admin log-in to the system 2. Admin clicks the "Vaccine" button on the menu
Alternative	1a. If the admin doesn't have an account, the admin requires an assist from other admin to register an account 1b. If the admin forgets their password, the admin requires an assist from other admin to recover their password

Use Case	Add Vaccine
Brief Description	Allow the admin to add new vaccine
Actors	Admin
Preconditions	Admin must register their account and able to log in
Main Flow	1. Admin log-in to the system 2. Admin clicks the "Vaccine" button on the menu 3. Click "Register" button
Alternative	1a. If the admin doesn't have an account, the admin requires an assist from other admin to register an account 1b. If the admin forgets their password, the admin requires an assist from other admin to recover their password

Use Case	Delete Vaccine
Brief Description	Allow the admin to delete the available vaccine
Actors	Admin
Preconditions	Admin must register their account and able to log in
Main Flow	1. Admin log-in to the system 2. Admin clicks the "Vaccine" button on the menu 3. Click the vaccine name in the table 4. Click "Delete Vaccine" button
Alternative	1a. If the admin doesn't have an account, the admin requires an assist from other admin to register an account 1b. If the admin forgets their password, the admin requires an assist from other admin to recover their password

Use Case	Edit Vaccine
Brief Description	Allow the admin to edit the vaccine data
Actors	Admin
Preconditions	Admin must register their account and able to log in
Main Flow	1. Admin log-in to the system 2. Admin clicks the "Vaccine" button on the menu 3. Click the vaccine name in the table 4. Click "Modify" button
Alternative	1a. If the admin doesn't have an account, the admin requires an assist from other admin to register an account 1b. If the admin forgets their password, the admin requires an assist from other admin to recover their password

Use Case	Search Vaccine
Brief Description	Allow the admin to Search the vaccine
Actors	Admin
Preconditions	Admin must register their account and able to log in
Main Flow	1. Admin log-in to the system 2. Admin clicks the "Vaccine" button on the menu 3. Click "Search" button
Alternative	1a. If the admin doesn't have an account, the admin requires an assist from other admin to register an account 1b. If the admin forgets their password, the admin requires an assist from other admin to recover their password

Use Case	Register Account
Brief Description	Allow the Citizen to register their account
Actors	Citizen
Preconditions	The program system must be run
Main Flow	1. The citizen click on the "Register Account" button on the main menu of the system
Alternative	No alternative

Use Case	Recover Account Password
Brief Description	Allow the Citizen to recover their account password
Actors	Citizen
Preconditions	The citizen must already register an account
Main Flow	1. The citizen click on the "Forgot password" button on the main menu of the system
Alternative	No alternative

Use Case	Verify Personal data
Brief Description	A user input from the citizen to verify their personal data
Actors	Citizen
Preconditions	When the user registers an account or recovering their account password
Main Flow	1a. The citizen clicks on the "Register Account" button on the main menu of the system 1b. The citizen clicks on the "Forgot password" button on the main menu of the system 2. The citizen fill in their personal data
Alternative	No alternative

Use Case	Access Admin Account Management Hub
Brief Description	Allow the admin to access and see all the Admin account and their personal data
Actors	Admin
Preconditions	Admin must register their account and able to log in
Main Flow	1. Admin log-in to the system 2. Admin clicks the "Admin" button on the menu
Alternative	1a. If the admin doesn't have an account, the admin requires an assist from other admin to register an account 1b. If the admin forgets their password, the admin requires an assist from other admin to recover their password

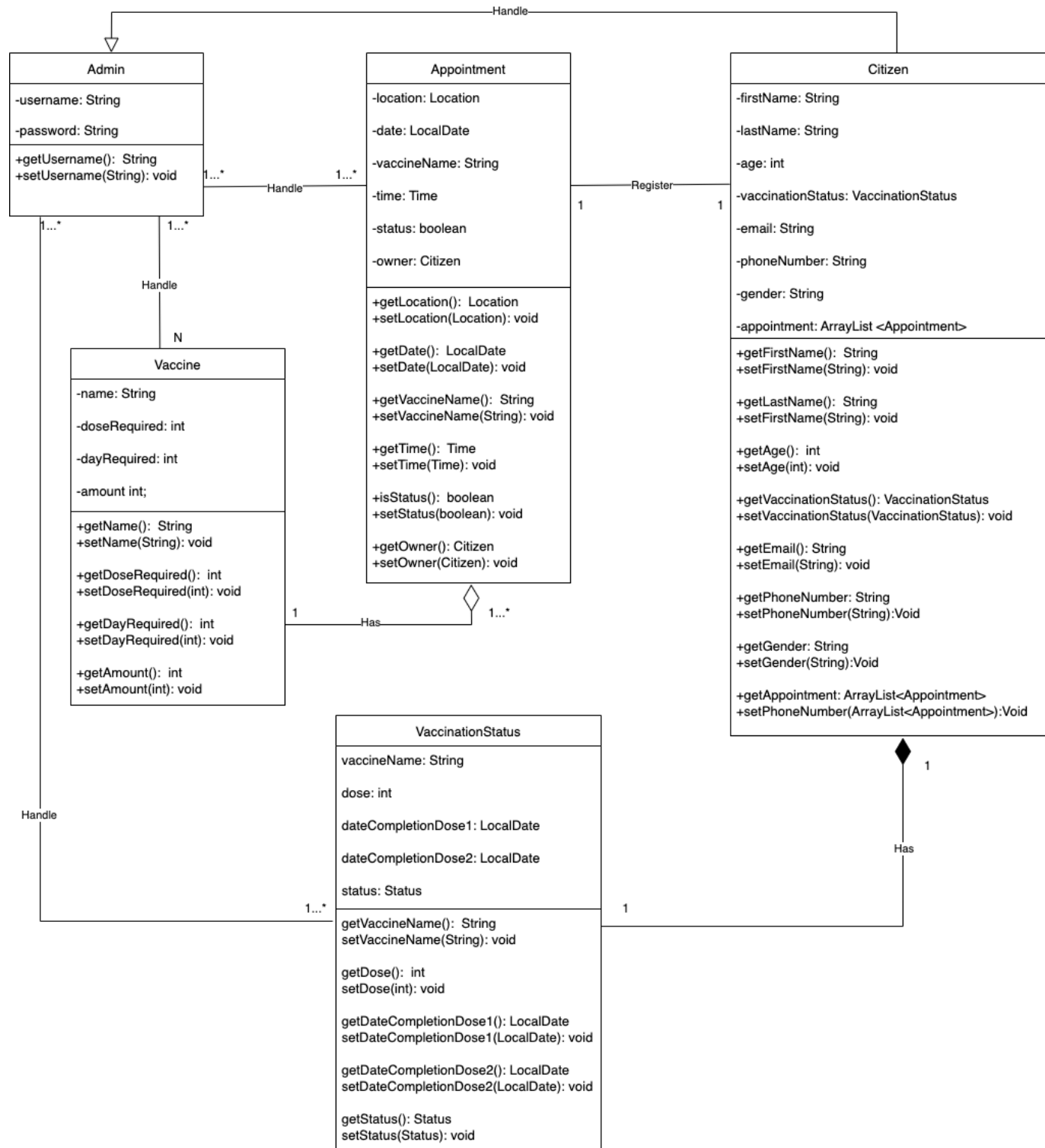
Use Case	Add New Admin
Brief Description	Allow the admin to add/register new admin account
Actors	Admin
Preconditions	Admin must register their account and able to log in
Main Flow	1. Admin log-in to the system 2. Admin clicks the "Admin" button on the menu 3. Clicks the "Register" button
Alternative	1a. If the admin doesn't have an account, the admin requires an assist from other admin to register an account 1b. If the admin forgets their password, the admin requires an assist from other admin to recover their password

Use Case	Edit Admin
Brief Description	Allow the admin to edit the admin account
Actors	Admin
Preconditions	Admin must register their account and able to log in
Main Flow	1. Admin log-in to the system 2. Admin clicks the "Admin" button on the menu 3. Click the admin name on the table 4. Click "Modify" button
Alternative	1a. If the admin doesn't have an account, the admin requires an assist from other admin to register an account 1b. If the admin forgets their password, the admin requires an assist from other admin to recover their password

Use Case	Search Admin
Brief Description	Allow the admin to search the admin account
Actors	Admin
Preconditions	Admin must register their account and able to log in
Main Flow	<ol style="list-style-type: none"> 1. Admin log-in to the system 2. Admin clicks the "Admin" button on the menu 3. Click "Search" button
Alternative	<ol style="list-style-type: none"> 1a. If the admin doesn't have an account, the admin requires an assist from other admin to register an account 1b. If the admin forgets their password, the admin requires an assist from other admin to recover their password

Use Case	Access Statistical Report Hub
Brief Description	Allow the admin to Access the statistical report hub
Actors	admin
Preconditions	admin must be able to login into the system
Main Flow	<ol style="list-style-type: none"> 1 The user log-in to the system 2 The user clicks the "Report" button on the menu 3 Click the button to see the statistical report
Alternative	<ol style="list-style-type: none"> 1a. If the admin doesn't have an account, the admin must register an account first 1b. If the admin forgets their password, the admin requires another admin help to recover their password

2.2 Class Diagram



3.0 System Documentation

3.1 User Manual

3.1.1 Home Page

When the program first executed, the homepage will be loaded first, asking for the user's username and password. The system will have 5 buttons, "Register", "Login", "Forgot Password?", "Admin Login", and "Exit".

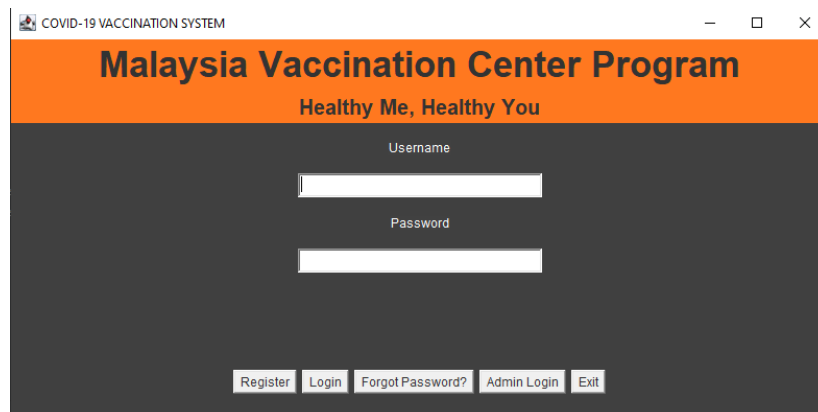


Figure 3.1.1.1 Home Page GUI

If the user clicked "Exit", then the program will shut down.

3.1.2 Citizen Register and Forgot Password

If the user clicked “Register”, then they will be moved to Citizen register function, where they can fill in their credentials to create a Citizen Account.

If they press “Register”, then if their data will be accepted if they meet the requirements and will be saved on the file. If they press “Cancel”, then it will return them to Home Page.

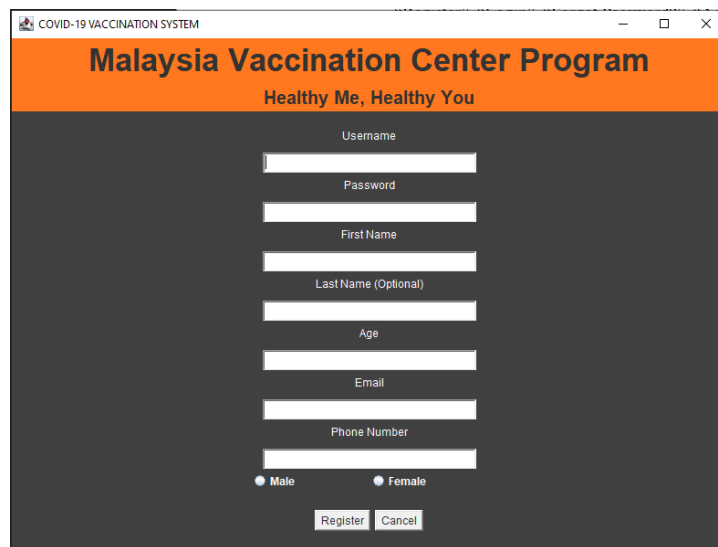
The screenshot shows a web application window titled "COVID-19 VACCINATION SYSTEM". The main header is orange with the text "Malaysia Vaccination Center Program" and "Healthy Me, Healthy You". The background is dark grey. The registration form consists of several white input fields stacked vertically: Username, Password, First Name, Last Name (Optional), Age, Email, and Phone Number. Below these fields are two radio buttons for "Male" and "Female". At the bottom of the form are two buttons: "Register" and "Cancel".

Figure 3.1.2.1 Citizen Register GUI

3.1.3 Admin

3.1.3.1 Admin Hub

If an admin logged in from the homepage, the admin will be moved to the Admin Hub Page, where they can access all admin’s functionalities.

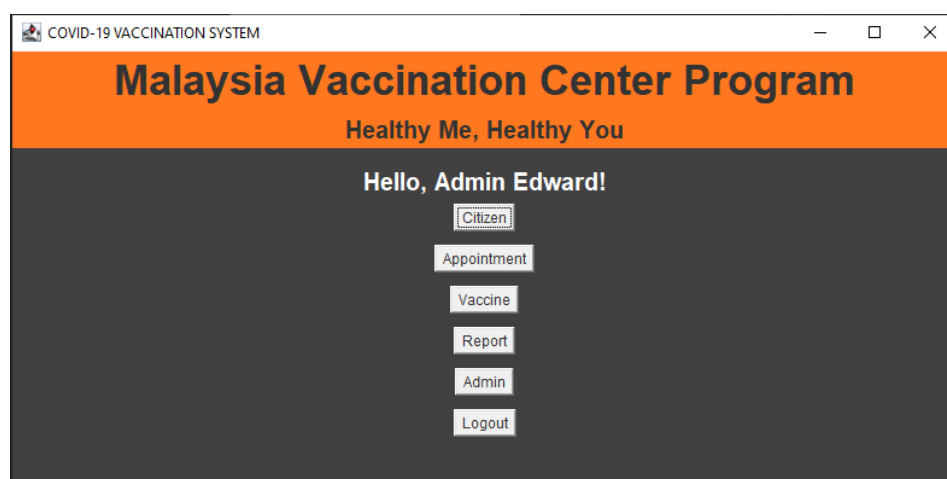
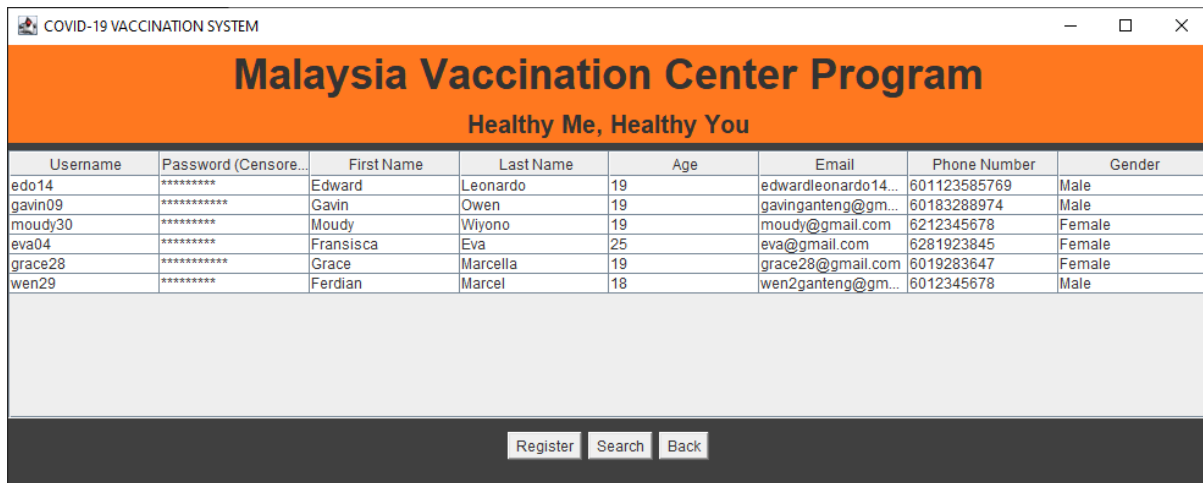
The screenshot shows a web application window titled "COVID-19 VACCINATION SYSTEM". The main header is orange with the text "Malaysia Vaccination Center Program" and "Healthy Me, Healthy You". The background is dark grey. Below the header, it says "Hello, Admin Edward!". There is a button labeled "Citizen" with a dashed border. Below it are several buttons stacked vertically: "Appointment", "Vaccine", "Report", "Admin", and "Logout".

Figure 3.1.3.1.1 Admin Hub GUI

3.1.3.2 Admin – Citizen Hub

If admin clicked “Citizen” Button from the hub, they will be able to see all citizens’ data.

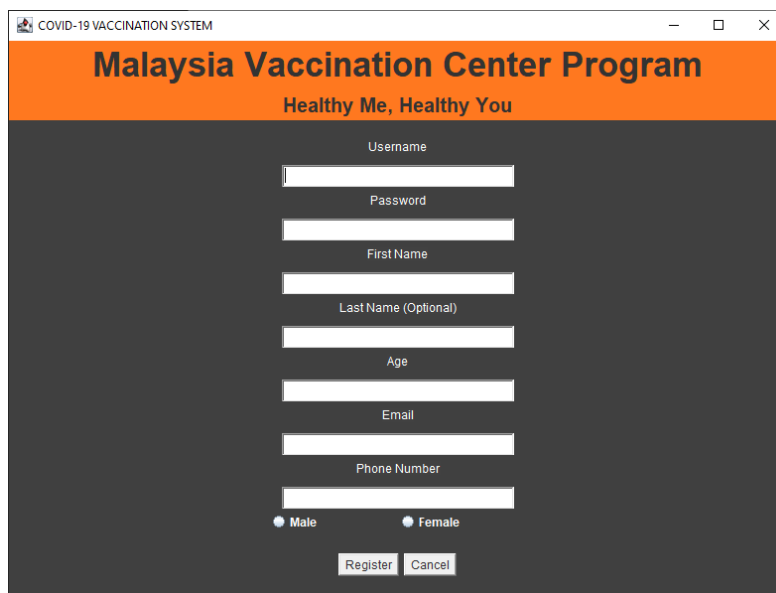


Username	Password (Censored)	First Name	Last Name	Age	Email	Phone Number	Gender
edo14	*****	Edward	Leonardo	19	edwardleonardo14...	601123585769	Male
gavin09	*****	Gavin	Owen	19	gavinganteng@gm...	60183288974	Male
moudy30	*****	Moudy	Wiyono	19	moudy@gmail.com	6212345678	Female
eva04	*****	Fransisca	Eva	25	eva@gmail.com	6281923845	Female
grace28	*****	Grace	Marcella	19	grace28@gmail.com	6019283647	Female
wen29	*****	Ferdian	Marcel	18	wen2ganteng@gm...	6012345678	Male

Figure 3.1.3.2.1 Admin – Citizen Hub GUI

3.1.3.3 Admin – Citizen Register

Admin can register a new citizen from the citizen hub by clicking “Register”.



Username

Password

First Name

Last Name (Optional)

Age

Email

Phone Number

☐ Male ☐ Female

Register Cancel

Figure 3.1.3.3.1 Admin – Citizen Register GUI

3.1.3.4 Admin – Citizen Search

Admin can search for any Citizen by clicking “Search” and then entering the citizen’s username. If any citizen has the inputted username, their data will be listed inside the list.

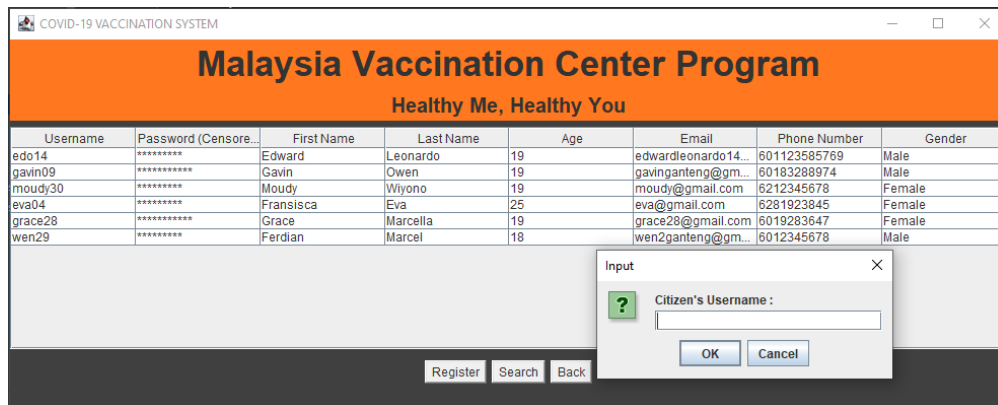


Figure 3.1.3.4.1 Admin – Citizen Search GUI

3.1.3.5 Admin – Citizen View

Admin can view citizen’s data by clicking on their data on the list, the system will automatically open the citizen’s profile.

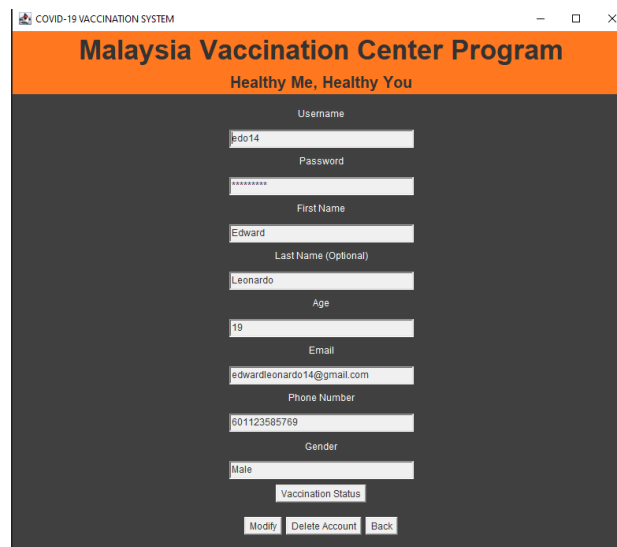
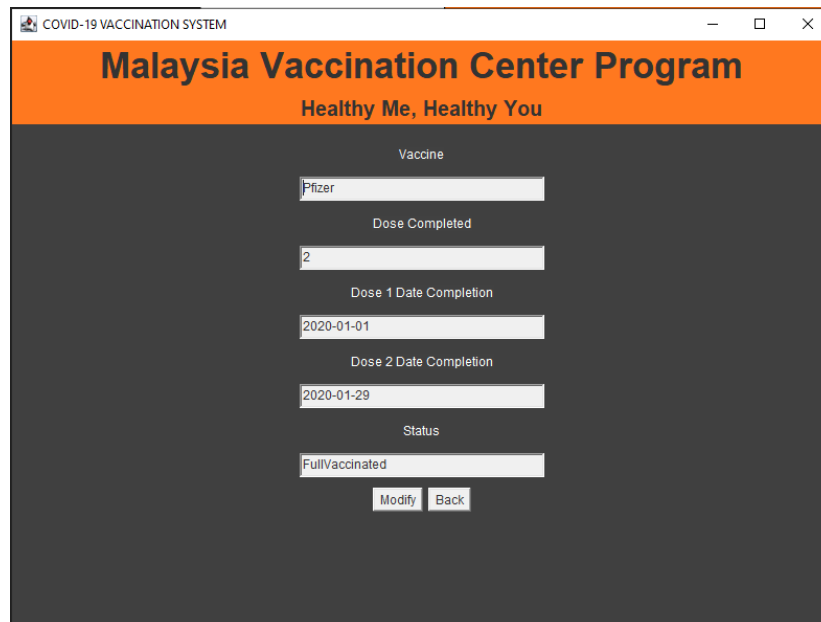


Figure 3.1.3.5.1 Admin – Citizen View GUI

3.1.3.6 Admin – Citizen Vaccination Status

Admin can view citizen's Vaccination Status by clicking "Vaccination Status" on Admin – Citizen View.



COVID-19 VACCINATION SYSTEM

Malaysia Vaccination Center Program

Healthy Me, Healthy You

Vaccine

Pfizer

Dose Completed

2

Dose 1 Date Completion

2020-01-01

Dose 2 Date Completion

2020-01-29

Status

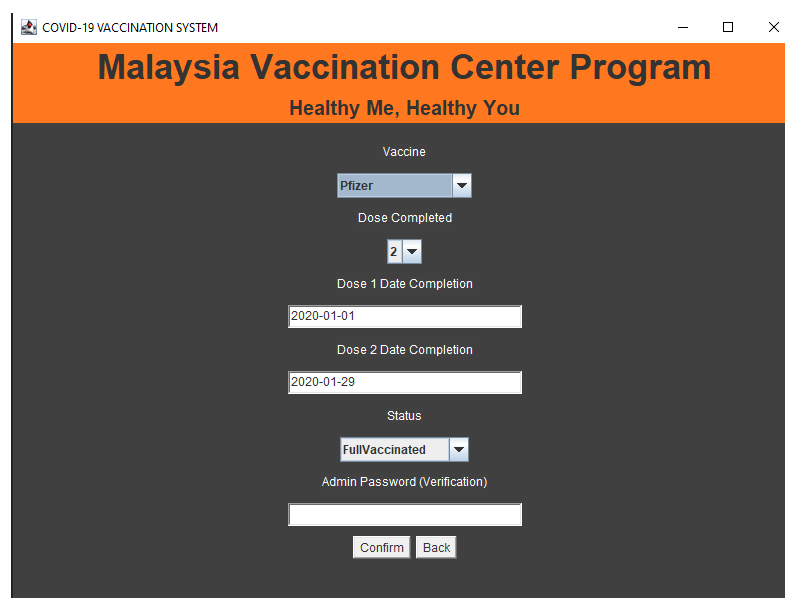
FullVaccinated

Modify Back

Figure 3.1.3.6.1 Admin – Citizen Vaccination Status GUI

3.1.3.7 Admin – Citizen Vaccination Status Modify

Admin can modify citizen's vaccination status by clicking Modify on Admin – Citizen Vaccination Status. The admin needs to enter their password before the modification took effect.



COVID-19 VACCINATION SYSTEM

Malaysia Vaccination Center Program

Healthy Me, Healthy You

Vaccine

Pfizer

Dose Completed

2

Dose 1 Date Completion

2020-01-01

Dose 2 Date Completion

2020-01-29

Status

FullVaccinated

Admin Password (Verification)

Confirm Back

Figure 3.1.3.7.1 Admin – Citizen Vaccination Status Modify GUI

3.1.3.8 Admin – Citizen Modify

Admin can modify the citizen's data except from their username and password by clicking modify on Admin – Citizen View. The admin needs to enter their password before the modification took effect.

COVID-19 VACCINATION SYSTEM

Malaysia Vaccination Center Program

Healthy Me, Healthy You

Username
wen29

Password

First Name
Ferdian

Last Name (Optional)
Marcel

Age
18

Email
wen2ganteng@gmail.com

Phone Number
6012345678

☒ Male ☐ Female

Admin Password (Verification)

Confirm Cancel

Figure 3.1.3.8.1 Admin – Citizen Modify GUI

3.1.3.9 Admin – Citizen Delete

Admin can delete the selected citizen's data (including all their appointments) by clicking “Delete” on Admin – Citizen View. The admin needs to enter their password before the deletion took effect.

COVID-19 VACCINATION SYSTEM

Malaysia Vaccination Center Program

Healthy Me, Healthy You

Username: wen29

Password: *****

First Name: Ferdian

Last Name (Op): Marcel

Age: 18

Email: wen2ganteng@gmail.com

Phone Number: 6012345678

Gender: Male

Vaccination Status:

Buttons: Modify, Delete Account, Back

Modal Dialog: Enter Verification Password to delete the Data! (OK, Cancel)

Figure 3.1.3.9.1 Admin – Citizen Delete GUI

3.1.3.10 Admin – Appointment Hub

If admin clicked “Appointment” Button from the hub, they will be able to see all citizens' data.

COVID-19 VACCINATION SYSTEM

Malaysia Vaccination Center Program

Healthy Me, Healthy You

Owner Username	Location	Date	Time	Vaccine	Status
edo14	BukitJalilStadium	2020-01-01	10:00	Pfizer	true
edo14	BukitJalilStadium	2020-01-29	10:00	Pfizer	true
moudy30	KLCC	2021-11-29	12:00	Moderna	true
gavin09	IOICity	2021-11-30	08:00	Johnson&Johnson	true
moudy30	KLCC	2021-12-27	12:00	Moderna	true
grace28	BukitJalilStadium	2021-12-03	08:00	AstraZeneca	false
wen29	AxiataArena	2021-12-01	10:00	AstraZeneca	true
wen29	AxiataArena	2021-12-29	10:00	AstraZeneca	true

Buttons: Register, Search, Back

Figure 3.1.3.10.1 Admin – Appointment Hub GUI

3.1.3.11 Admin – Appointment Register

Admin can register a new appointment for a citizen by clicking “Register” button from the hub. The system will check if the citizen is eligible for an appointment.

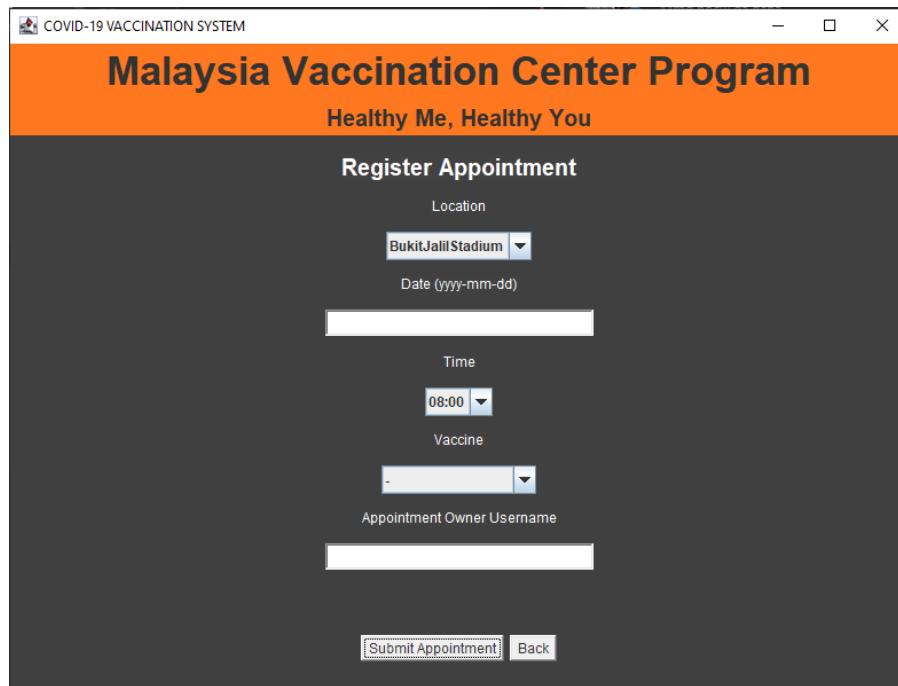
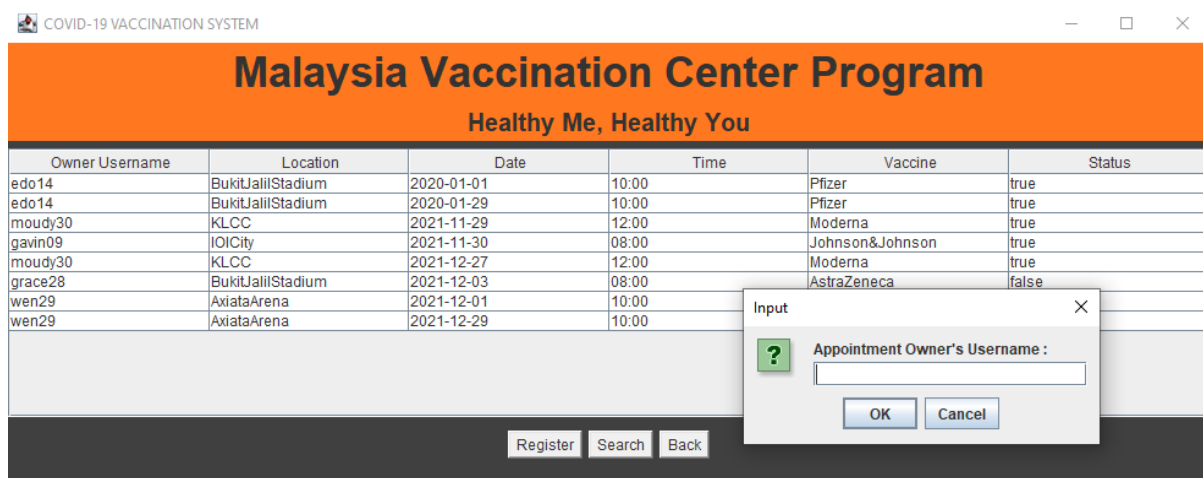


Figure 3.1.3.11.1 Admin – Appointment Register GUI

3.1.3.12 Admin – Appointment Search

Admin can search for any appointment by entering the appointment owner’s username, where the system will search and display the data if found.

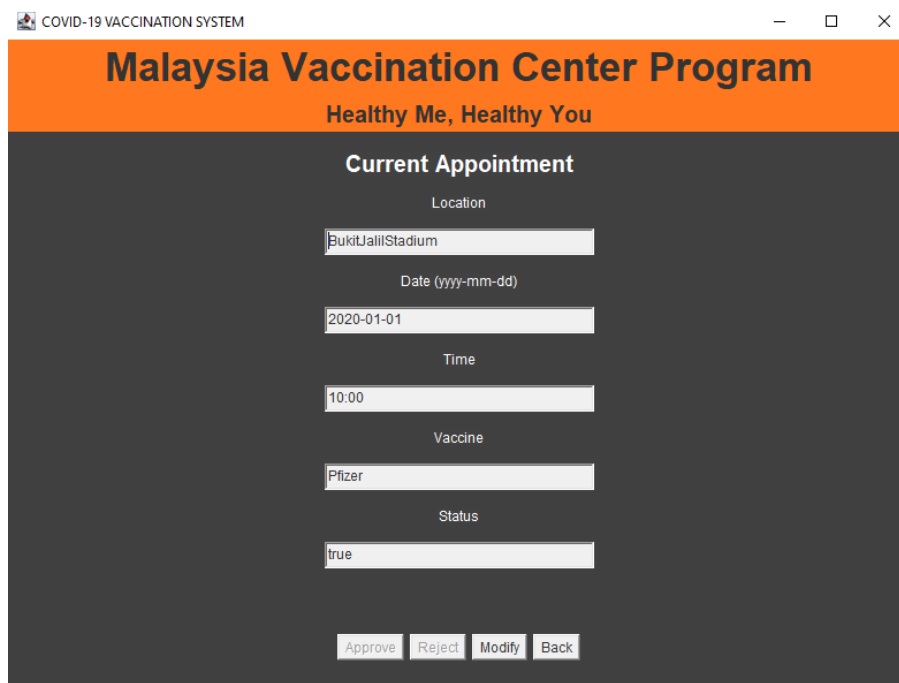


Owner Username	Location	Date	Time	Vaccine	Status
edo14	BukitJalilStadium	2020-01-01	10:00	Pfizer	true
edo14	BukitJalilStadium	2020-01-29	10:00	Pfizer	true
moudy30	KLCC	2021-11-29	12:00	Moderna	true
gavin09	IOICity	2021-11-30	08:00	Johnson&Johnson	true
moudy30	KLCC	2021-12-27	12:00	Moderna	true
grace28	BukitJalilStadium	2021-12-03	08:00	AstraZeneca	false
wen29	AxiataArena	2021-12-01	10:00		
wen29	AxiataArena	2021-12-29	10:00		

Figure 3.1.3.12.1 Admin – Appointment Search GUI

3.1.3.13 Admin – Appointment View

Admin can view appointment's data by clicking on their data on the list, the system will automatically open the Appointment's details.



The screenshot displays the 'COVID-19 VACCINATION SYSTEM' window. The title bar includes the system name and standard window controls. The main header is orange with the text 'Malaysia Vaccination Center Program' and the slogan 'Healthy Me, Healthy You'. Below this, the section is titled 'Current Appointment'. It contains a form with the following fields: 'Location' (BukitJalilStadium), 'Date (yyyy-mm-dd)' (2020-01-01), 'Time' (10:00), 'Vaccine' (Pfizer), and 'Status' (true). At the bottom, there are four buttons: 'Approve', 'Reject', 'Modify', and 'Back'.

Figure 3.1.3.13.1 Admin – Appointment View GUI

3.1.3.14 Admin – Appointment Approve

Admin can approve the submitted appointment by pressing “Approve” button on the Appointment View. If an appointment has been approved, that means the appointment has been done, and the vaccine supply amount will automatically be deducted according to the customer’s needs. A second dose appointment will also be automatically registered if necessary.

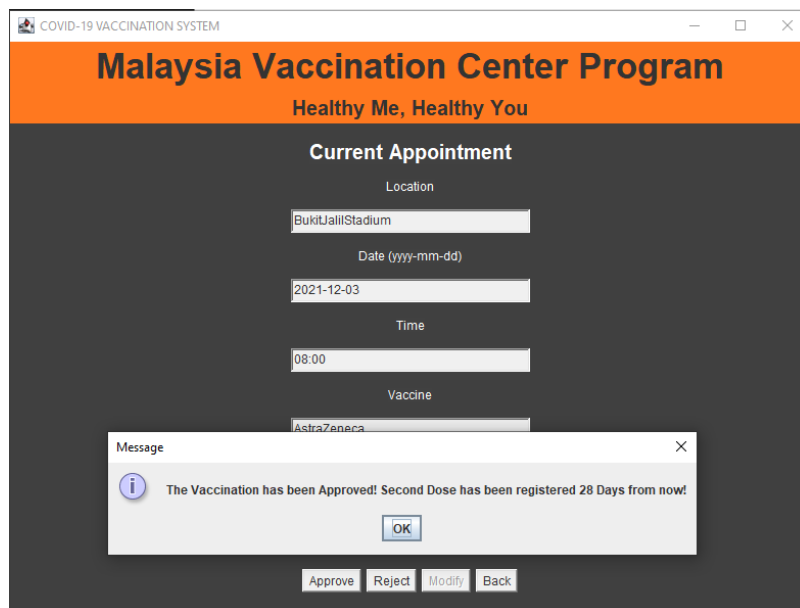


Figure 3.1.3.14.1 Admin – Appointment Approve GUI (2 Dose)

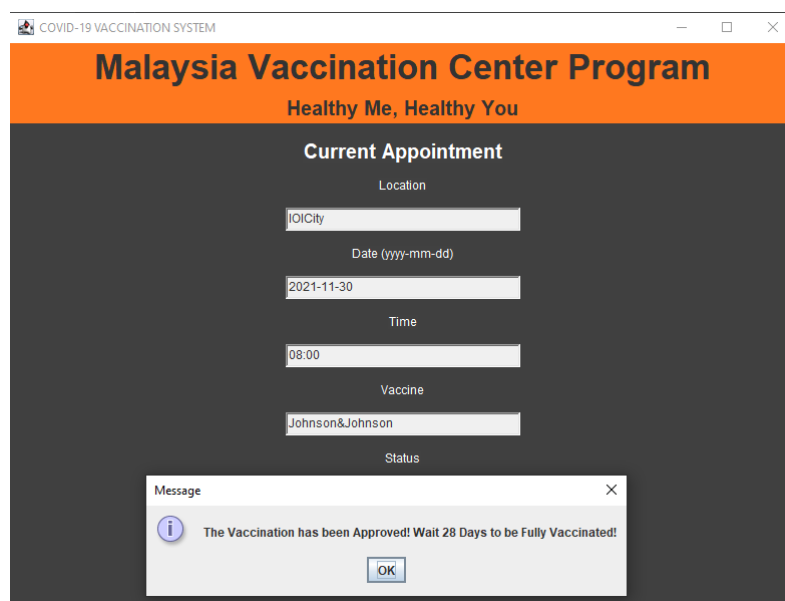


Figure 3.1.3.14.2 Admin – Appointment Approve GUI (Single Dose)

3.1.3.15 Admin – Appointment Reject

Admin can also reject and delete the appointment record by pressing the “Reject” button on the Appointment View.

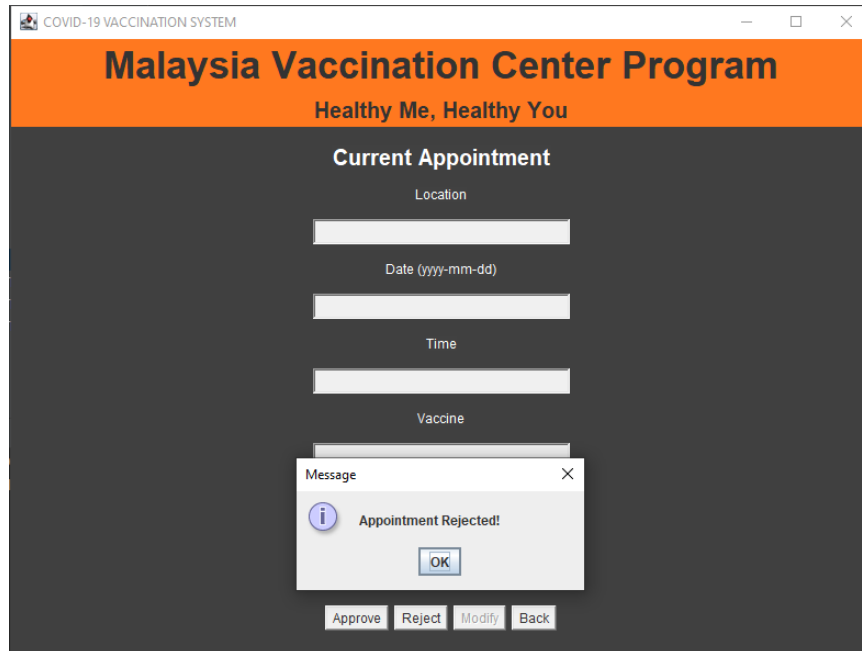
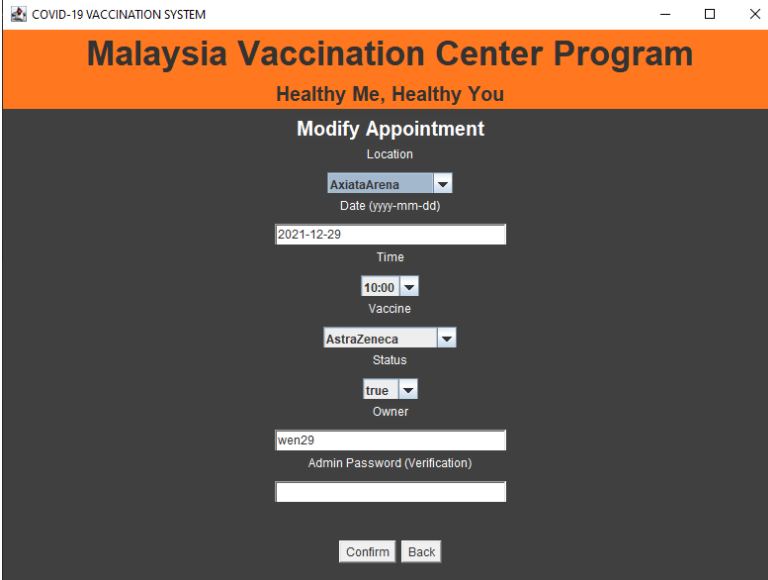


Figure 3.1.3.15.1 Admin – Appointment Reject GUI

3.1.3.16 Admin – Appointment Modify

Admin can also modify an appointment if the status is already “true” (approved) by pressing the “modify” button on the Appointment View. The admin needs to enter their password before the modification took effect.



COVID-19 VACCINATION SYSTEM

Malaysia Vaccination Center Program

Healthy Me, Healthy You

Modify Appointment

Location
AxiaArena

Date (yyyy-mm-dd)
2021-12-29

Time
10:00

Vaccine
AstraZeneca

Status
true

Owner
wen29

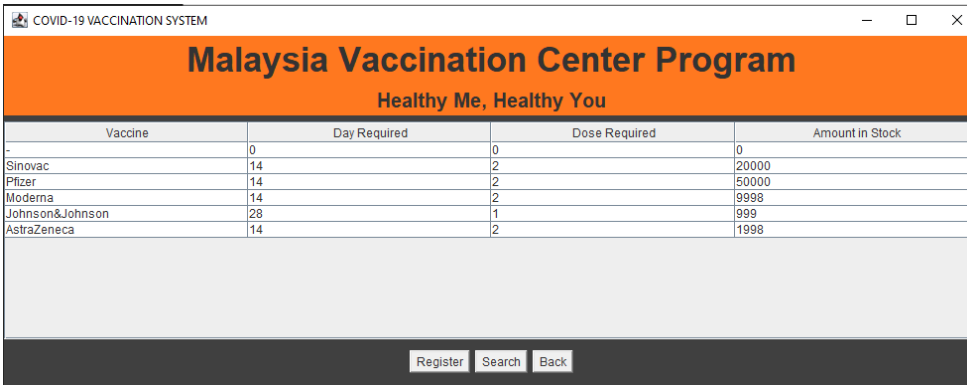
Admin Password (Verification)

Confirm Back

Figure 3.1.3.16.1 Admin Appointment Modify GUI

3.1.3.17 Admin – Vaccine Hub

If admin clicked “Vaccine” Button from the hub, they will be able to see all Vaccine’s data. The first data is only a placeholder for the data of the citizen that have not done any vaccination yet.



COVID-19 VACCINATION SYSTEM

Malaysia Vaccination Center Program

Healthy Me, Healthy You

Vaccine	Day Required	Dose Required	Amount in Stock
-	0	0	0
Sinovac	14	2	20000
Pfizer	14	2	50000
Moderna	14	2	9999
Johnson&Johnson	28	1	999
AstraZeneca	14	2	1999

Register Search Back

Figure 4.1.3.17.1 Admin – Vaccine Hub GUI

3.1.3.18 Admin – Vaccine Register

Admin can register a new vaccine into the system by clicking “Register” button from the hub. The admin needs to enter their password before the addition took effect.

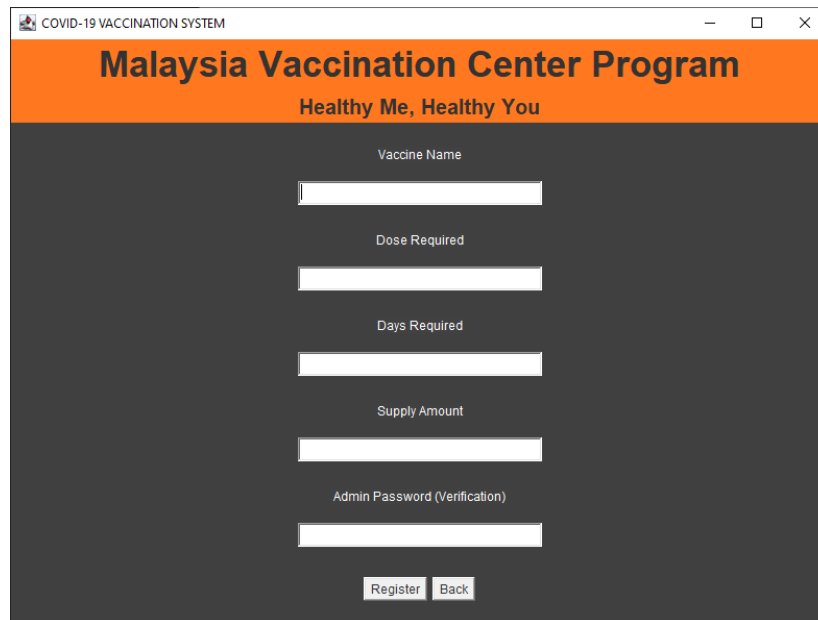
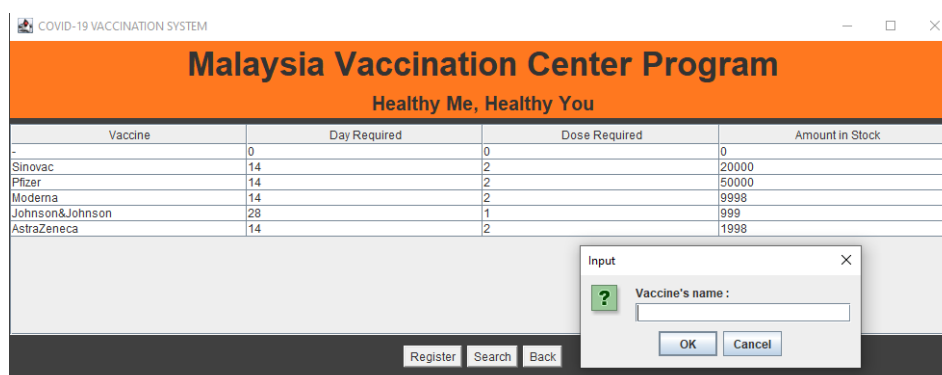


Figure 3.1.3.18.1 Admin – Vaccine Register GUI

3.1.3.19 Admin – Vaccine Search

Admin can search for any Vaccine by entering the Vaccine’s name, where the system will search and display the data if found.

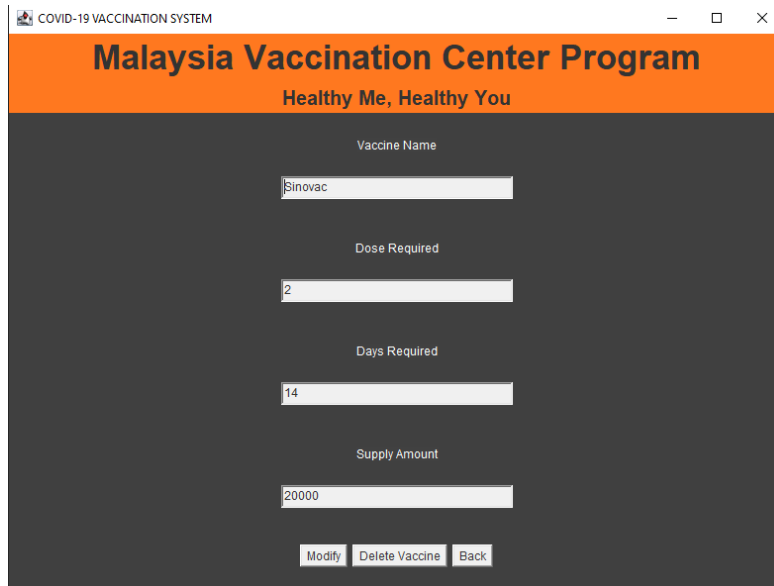


Vaccine	Day Required	Dose Required	Amount in Stock
-	0	0	0
Sinovac	14	2	20000
Pfizer	14	2	50000
Moderna	14	2	9998
Johnson&Johnson	28	1	999
AstraZeneca	14	2	1998

Figure 3.1.3.19.1 Admin – Vaccine Search GUI

3.1.3.20 Admin – Vaccine View

Admin can view vaccine's data by clicking on their data on the list, the system will automatically open the vaccine's details. The placeholder data cannot be accessed.



COVID-19 VACCINATION SYSTEM

Malaysia Vaccination Center Program

Healthy Me, Healthy You

Vaccine Name

Sinovac

Dose Required

2

Days Required

14

Supply Amount

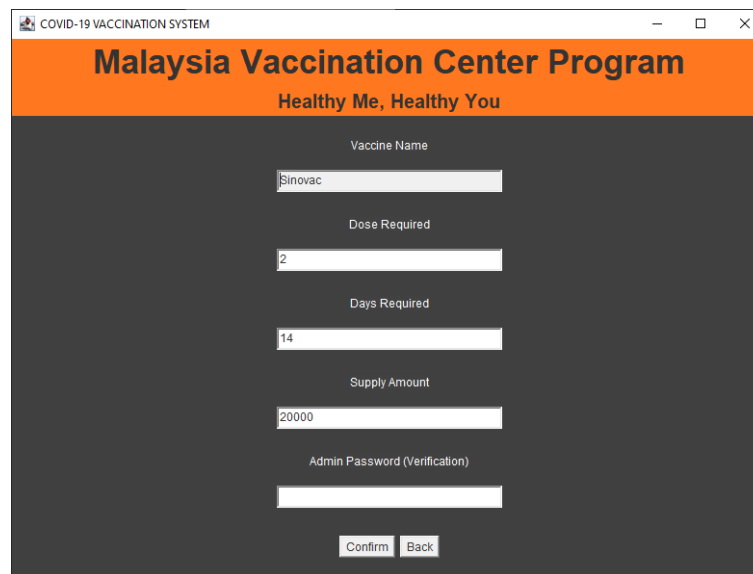
20000

Modify Delete Vaccine Back

Figure 3.1.3.20.1 Admin – Vaccine View GUI

3.1.3.21 Admin – Vaccine Modify

Admin can modify the vaccine's data by clicking “Modify” on the vaccine view page. The admin is only authorized to update the dose required, the days required, and current supply amount. The admin needs to enter their password before the Modification took effect. The system will also need to be restarted first before any changes will be available to use.



The screenshot shows a web application window titled "COVID-19 VACCINATION SYSTEM". The main header is orange with the text "Malaysia Vaccination Center Program" and "Healthy Me, Healthy You". The background is dark grey. The form contains the following fields and labels:

- Vaccine Name:
- Dose Required:
- Days Required:
- Supply Amount:
- Admin Password (Verification):

At the bottom, there are two buttons: "Confirm" and "Back".

Figure 3.1.3.21.1 Admin – Vaccine Modify GUI

3.1.3.22 Admin – Vaccine Delete

Admin can delete the vaccine's data by clicking "Delete" on the vaccine view page. The admin needs to enter their password before the Deletion took effect. The system will also need to be restarted first before any changes will be available to use.

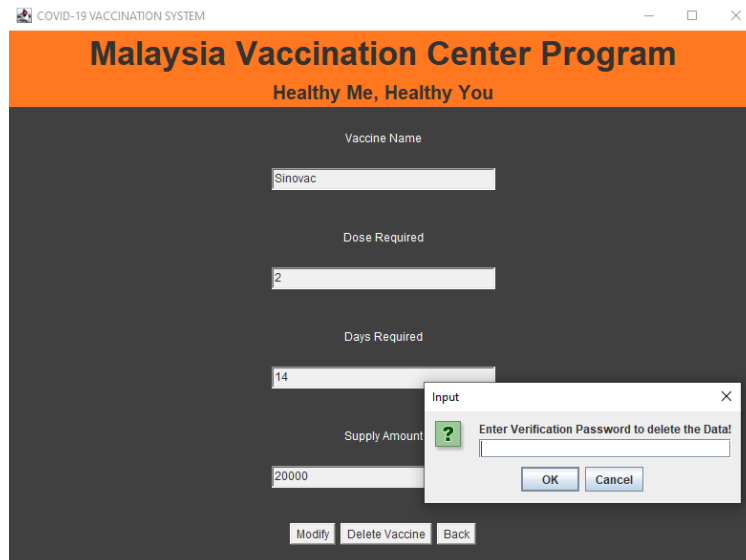


Figure 3.1.3.22.1 Admin – Vaccine Delete GUI

3.1.3.23 Admin – Report

Admin can also generate statistical report by clicking "Report" on the Admin Hub. The report then can be generated individually by clicking on each button.

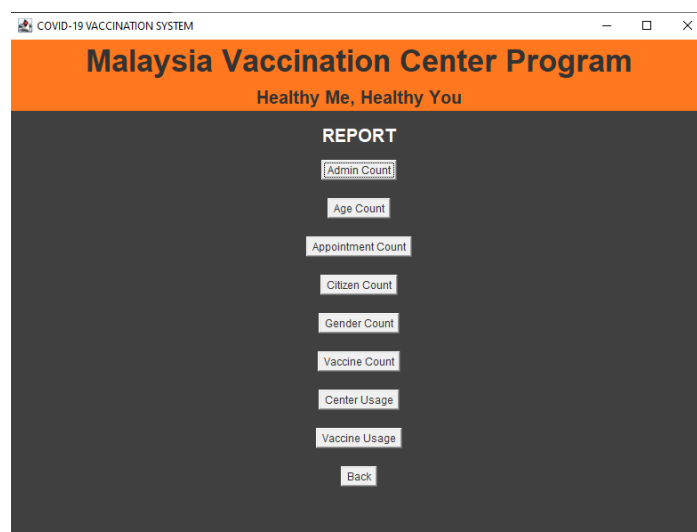


Figure 3.1.3.23.1 Admin – Report GUI

3.1.3.24 Admin – Report – Admin Count

Admin can generate how many active admin accounts in the system by clicking “Admin Count” button.

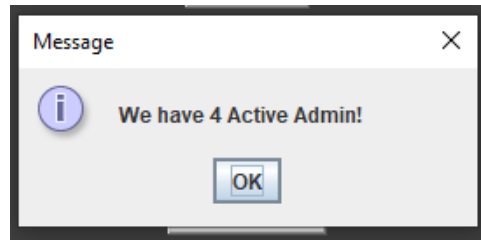


Figure 3.1.3.24.1 Admin – Report – Admin Count Result

3.1.3.25 Admin – Report – Age Count

Admin can generate what age and how many citizens recorded in that age in the system by clicking “Age Count” button.

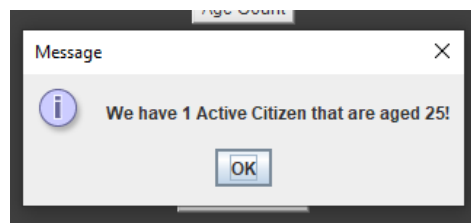


Figure 3.1.3.25.1 Admin – Report – Age Count Result 1

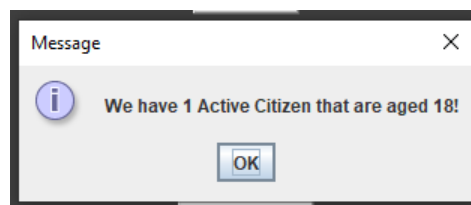


Figure 3.1.3.25.2 Admin – Report – Age Count Result 2

3.1.3.26 Admin – Report – Appointment Count

Admin can generate how many appointments available in the system by clicking “Appointment Count” button.

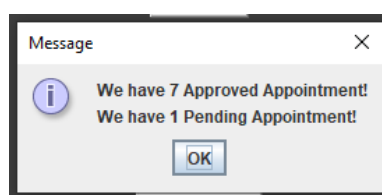


Figure 3.1.3.26.1 Admin – Report – Appointment Count Result

3.1.3.27 Admin – Report – Citizen Count

Admin can generate how many active citizen accounts in the system by clicking “Citizen Count” button.

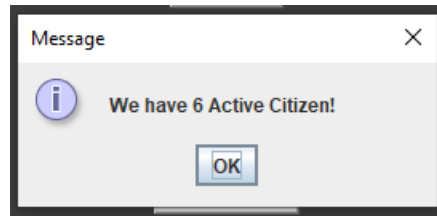


Figure 3.1.3.27.1 Admin – Report – Citizen Count Result

3.1.3.28 Admin – Report – Gender Count

Admin can generate how many active citizens based on gender available in the system by clicking “Gender Count” button.

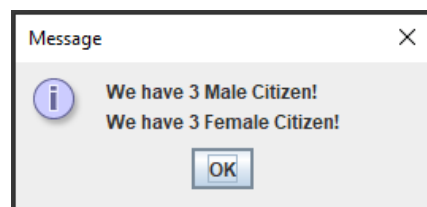


Figure 3.1.3.28.1 Admin – Report – Gender Count Result

3.1.3.29 Admin – Report – Vaccine Count

Admin can generate how many active vaccines available in the system by clicking “Vaccine Count” button.

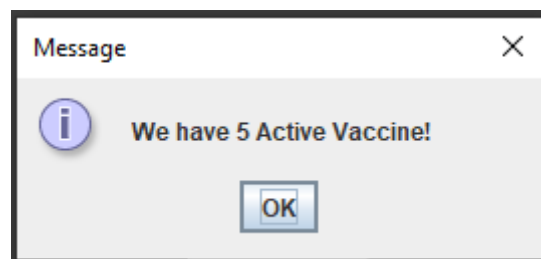


Figure 3.1.3.29.1 Admin – Report – Vaccine Count Result

3.1.3.30 Admin – Report – Center Usage

Admin can generate how many times a center has been used in the system by clicking “Center Usage” button.

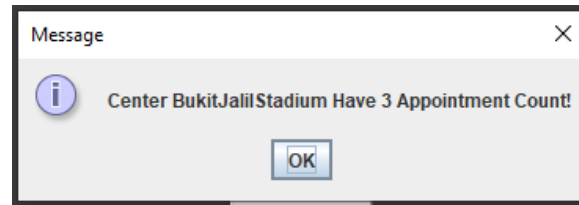


Figure 3.1.3.30.1 Admin – Report – Center Usage Result 1

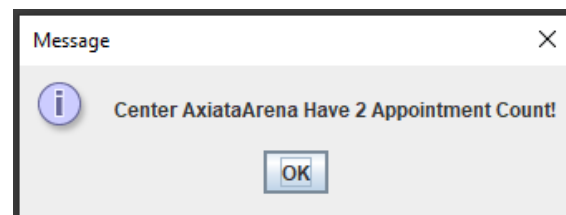


Figure 3.1.3.30.2 Admin – Report – Center Usage Result 2

3.1.3.31 Admin – Report – Vaccine Usage

Admin can generate how many times a vaccine has been used in the system by clicking “Vaccine Usage” button.

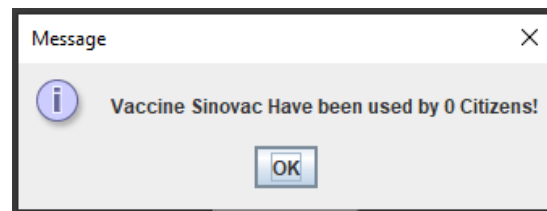


Figure 3.1.3.31.1 Admin – Report – Vaccine Usage Result 1

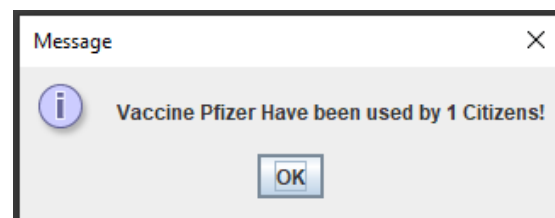


Figure 3.1.3.31.2 Admin – Report – Vaccine Usage Result 2

3.1.3.32 Admin – Admin Data Hub

Admin can view all the admin's data by clicking "Admin" button on Admin Hub. The admin can also click the table to modify or delete the admin data.



Figure 3.1.3.32.1 Admin – Admin Data Hub GUI

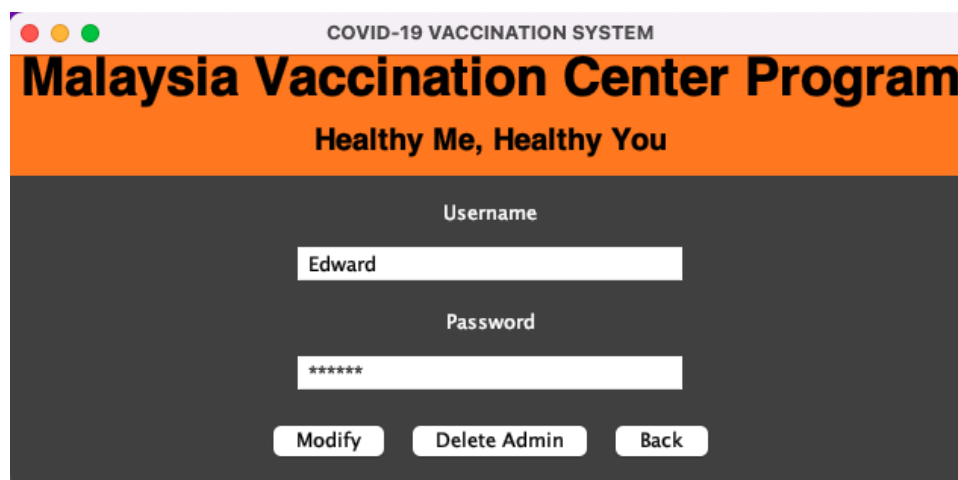


Figure 3.1.3.32.2 Admin – Admin Data Hub Click Table GUI

3.1.3.33 Admin – Admin Modify

Admin can modify the admin data by clicking "Modify" button after clicking the table on Admin Data Hub.

The screenshot shows a web application window titled "COVID-19 VACCINATION SYSTEM" with a header "Malaysia Vaccination Center Program" and the slogan "Healthy Me, Healthy You". The main content area has a dark background and contains three input fields: "Username" with the value "Edward", "Password" with the value "edo123", and "Admin Password (Verification)" with masked characters "*****". Below these fields are two buttons: "Confirm" and "Cancel".

Figure 3.1.3.33.1 Admin – Admin Modify GUI

3.1.3.34 Admin – Delete Admin

Admin can delete the admin data by clicking "Delete Admin" button after clicking the table on Admin Data Hub. A password is needed for verification.

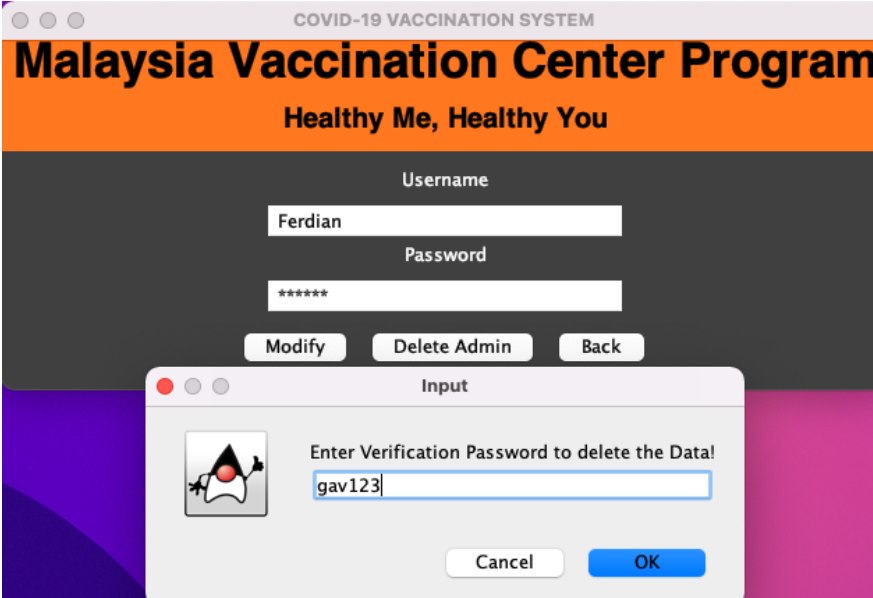
The screenshot shows the same web application window as Figure 3.1.3.33.1, but with the "Delete Admin" button highlighted. Below the main form, there is a modal dialog box titled "Input" with a cartoon character icon. The dialog contains the text "Enter Verification Password to delete the Data!" and an input field with the value "gav123". At the bottom of the dialog are "Cancel" and "OK" buttons.

Figure 3.1.3.34.1 Admin – Delete Admin GUI

3.1.3.35 Admin – Admin Register

Admin can register new admin by clicking “Register” button on Admin Data Hub.



Figure 3.1.3.35.1 Admin – Admin Register GUI

3.1.3.36 Admin – Admin Search

Admin can search the admin data by clicking “Search” button on Admin Data Hub.



Figure 3.1.3.36.1 Admin – Admin Search GUI

3.1.4 Citizen

3.1.4.1 Citizen Hub

If a citizen logged in from the homepage, the citizen will be moved to the citizen Hub Page, where they can access all citizen's functionalities.



Figure 3.1.4.1.1 Citizen – Citizen Hub GUI

3.1.4.2 Citizen – Profile

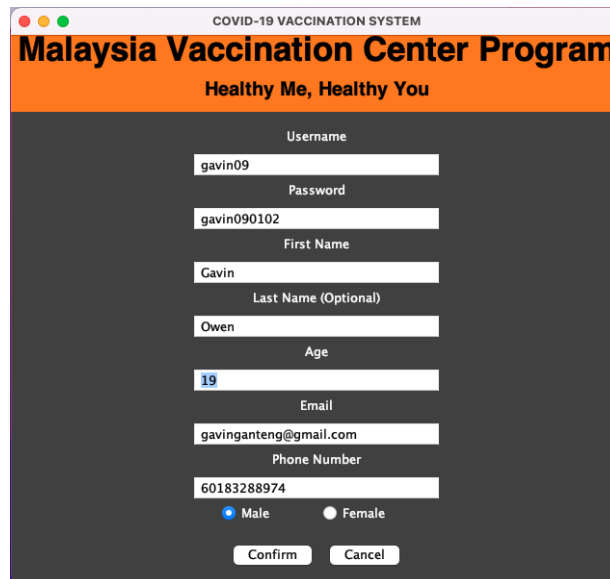
Citizen can view their profile data by clicking the "Profile" button on the citizen hub

A screenshot of a web application window titled "COVID-19 VACCINATION SYSTEM". The header is orange with the text "Malaysia Vaccination Center Program" and "Healthy Me, Healthy You". The main content area is dark gray and displays a form for editing profile information. The form fields are: Username (gavin09), Password (gavin090102), First Name (Gavin), Last Name (Optional) (Owen), Age (19), Email (gavinganteng@gmail.com), Phone Number (60183288974), and Gender (Male). At the bottom of the form are two buttons: "Modify" and "Back".

Figure 3.1.4.2.1 Citizen – Citizen Profile GUI

3.1.4.3 Citizen – Profile Modify

Citizen can modify their profile data by clicking the "Modify" button on the Citizen – Profile.



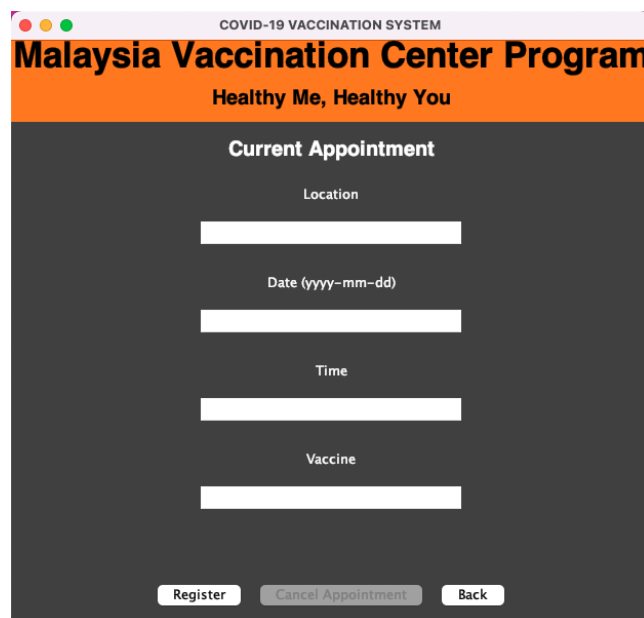
The screenshot shows a web application window titled "COVID-19 VACCINATION SYSTEM" with a subtitle "Malaysia Vaccination Center Program" and the tagline "Healthy Me, Healthy You". The form is for modifying a user's profile. It contains the following fields: Username (gavin09), Password (gavin090102), First Name (Gavin), Last Name (Optional) (Owen), Age (19), Email (gavinganteng@gmail.com), and Phone Number (60183288974). There are radio buttons for Gender (Male is selected, Female is unselected). At the bottom are "Confirm" and "Cancel" buttons.

Figure 3.1.4.3.1 Citizen – Profile Modify GUI

3.1.4.4 Citizen – Appointment

Citizen can view their appointment data by clicking the "Appointment" button on the Citizen Hub.

If the user has no appointment, it will show no appointment



The screenshot shows a web application window titled "COVID-19 VACCINATION SYSTEM" with a subtitle "Malaysia Vaccination Center Program" and the tagline "Healthy Me, Healthy You". The form is for viewing a current appointment. It contains the following fields: Location, Date (yyyy-mm-dd), Time, and Vaccine. At the bottom are "Register", "Cancel Appointment", and "Back" buttons.

Figure 3.1.4.4.1 Citizen – Appointment GUI

3.1.4.5 Citizen – Appointment Register

Citizen can register their appointment data by clicking the "Register" button on the Appointment page.

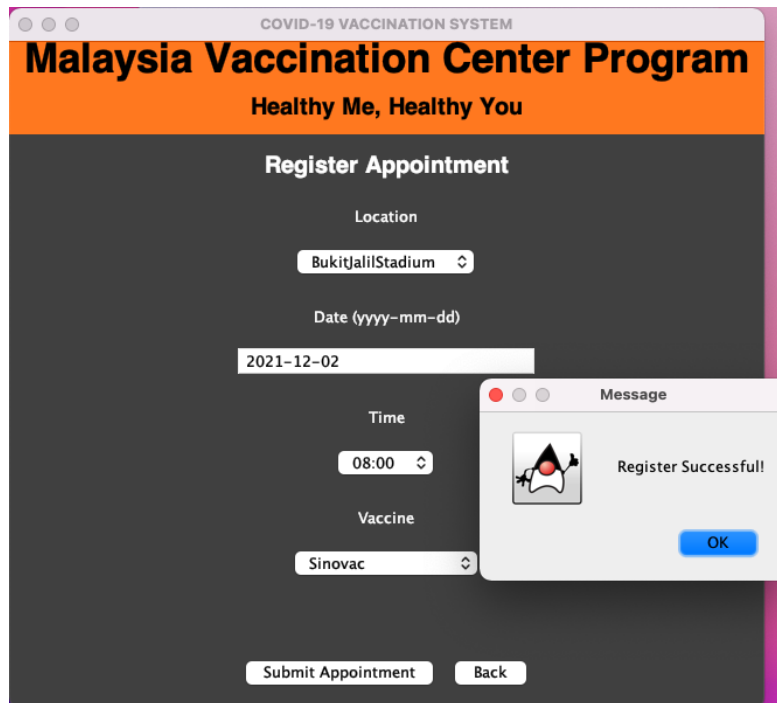


Figure 3.1.4.5.1 Citizen – Appointment Register GUI

Then the appointment will be shown in the Appointment page

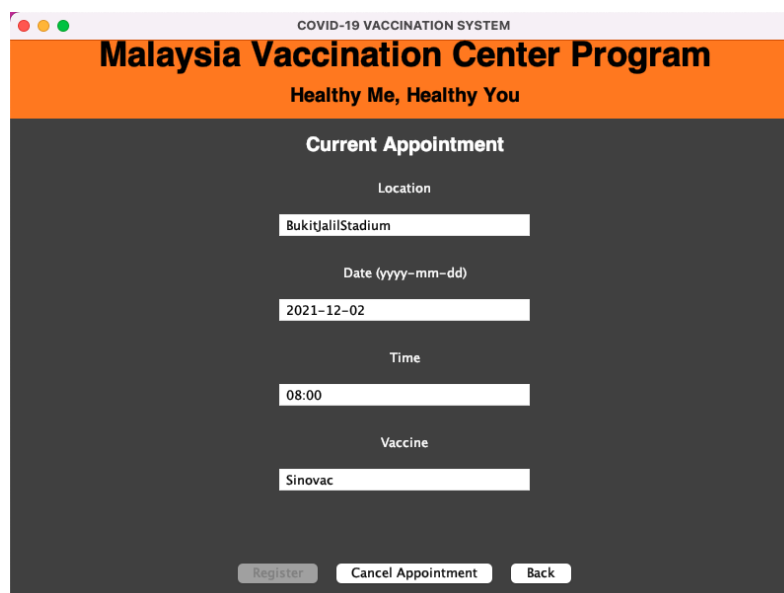


Figure 3.1.4.5.2 Citizen – View Appointment GUI

3.1.4.5 Citizen – Cancel Appointment

Citizen can cancel their appointment data by clicking the "Cancel Appointment" button on the Appointment page.

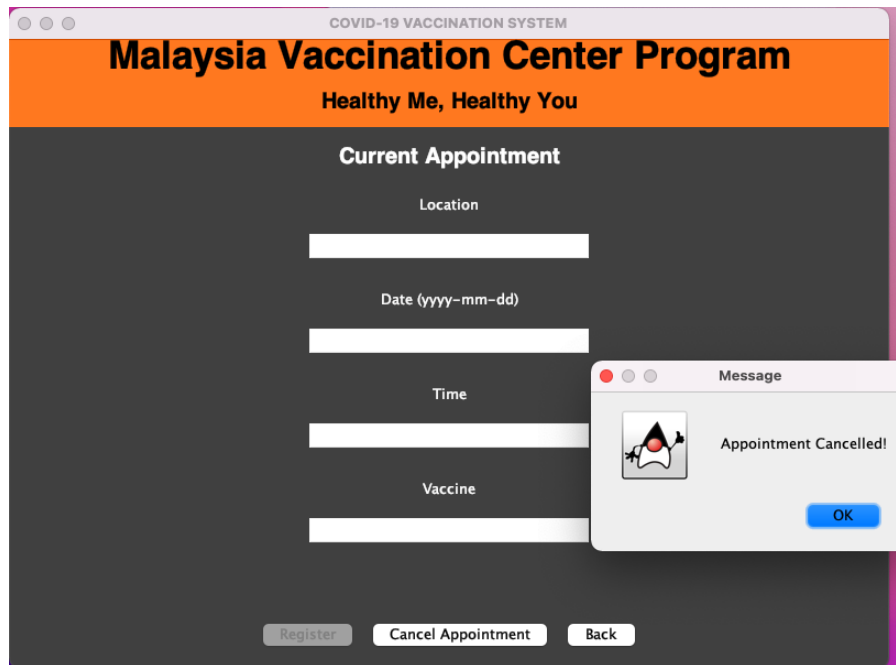
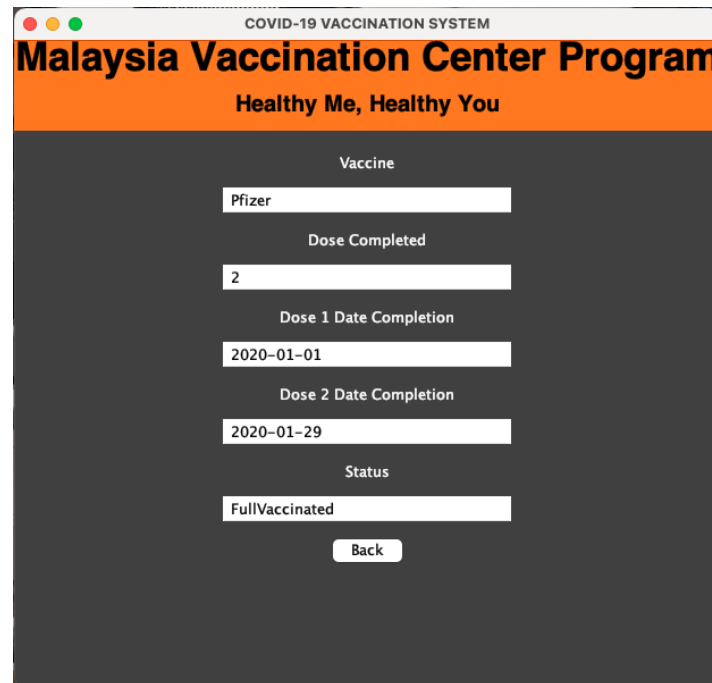


Figure 3.1.4.5.1 Citizen – Cancel Appointment GUI

3.1.4.5 Citizen – Vaccination Status

Citizen can see their vaccination status by clicking the "Vaccination Status" button on the Citizen Hub.



The screenshot shows a web application window titled "COVID-19 VACCINATION SYSTEM" with a subtitle "Malaysia Vaccination Center Program" and the slogan "Healthy Me, Healthy You". The main content area displays the following information:

- Vaccine:** Pfizer
- Dose Completed:** 2
- Dose 1 Date Completion:** 2020-01-01
- Dose 2 Date Completion:** 2020-01-29
- Status:** FullVaccinated

A "Back" button is located at the bottom of the form.

Figure 3.1.4.5.2 Citizen – Vaccination Status GUI

3.1.4.5 Citizen – Logout

Citizen can log out from the vaccination center program by clicking the "log out" button on the Citizen Hub.



The screenshot shows a web application window titled "COVID-19 VACCINATION SYSTEM" with a subtitle "Malaysia Vaccination Center Program" and the slogan "Healthy Me, Healthy You". The main content area displays the following information:

- Username:** [Input field]
- Password:** [Input field]

At the bottom, there are five buttons: "Register", "Login", "Forgot Password?", "Admin Login", and "Exit".

Figure 3.1.4.5.1 Citizen – Logged Out GUI

3.2 Applied Object-Oriented Concept

3.2.1 Inheritance

```
package oodj.apu;

public class Admin {
    private String username;
    private String password;

    public Admin(String username, String password) {
        this.username = username;
        this.password = password;
    }
}
```

Figure 3.2.1.1 Inheritance Code - Parent Class

```
public class Citizen extends Admin{
    private String firstName;
    private String lastName;
    private int age;
    private VaccinationStatus vaccinationStatus;
    private String email;
    private String phoneNumber;
    private String gender;
    private ArrayList<Appointment> appointment = new ArrayList<>();

    public Citizen(String username, String password, String firstName, String lastName,
        int age, VaccinationStatus vaccinationStatus, String email,
        String phoneNumber, String gender) {
        super(username, password);
        this.firstName = firstName;
        this.lastName = lastName;
        this.age = age;
        this.vaccinationStatus = vaccinationStatus;
        this.email = email;
        this.phoneNumber = phoneNumber;
        this.gender = gender;
    }
}
```

Figure 3.2.1.2 Inheritance Code - Child Class

The first object-oriented concept in that is used in the program is inheritance. So, the inheritance concept in java is used to inherit the property of the other class such as the attributes and methods. A parent class is the class that inherited its own attributes and methods, while a child class is a class that inherit the attributes and methods from the parent class. The word "extends" is used to inherit the class. As we can see from the (*Figure 4.2.1.2 Inheritance Code - Child Class*) above, the class "Citizen" extends "Admin", which means that class "Admin" is the parent class while class "Citizen" is the child class. Because of that, class "Citizen" will inherit all the attributes and method from class "Admin" such as the username and password. By using this concept, it will result in a good code reusing instead of creating the new one.

3.2.2 Encapsulation

```
public class Admin {  
    private String username;  
    private String password;  
  
    public Admin(String username, String password) {  
        this.username = username;  
        this.password = password;  
    }  
  
    public Admin() {  
    }  
  
    public String getUsername() {  
        return username;  
    }  
  
    public void setUsername(String username) {  
        this.username = username;  
    }  
  
    public String getPassword() {  
        return password;  
    }  
  
    public void setPassword(String password) { this.password = password; }  
}
```

Figure 3.2.2.1 Encapsulation Code

Encapsulation is the second object-oriented concept that is used in this system. The concept name itself encapsulation come from word "encapsulate" which means to enclose in. So, encapsulation is the process to protect the data and code of the class within itself. By doing this, the private details of the class can be hidden from the outside world and only can be exposed when the object is called. It can be seen from the (*Figure 4.2.2.1 Encapsulation Code*) above that "private" function is used to create field in java and it's method such as get() and set() is created. Since the data is encapsulated, the user can use the method in the class by calling the object name such as "Admin".

3.2.3 Modularity

```
public static void statusUpdater(){
    for(Citizen c : allCitizen){
        if(c.getVaccinationStatus().getStatus().equals(Status.PartialVaccinated)){
            if(checkVaccine(c.getVaccinationStatus().getVaccineName()).getDoseRequired() == c.getVaccinationStatus().getDose()) {
                int a = checkVaccine(c.getVaccinationStatus().getVaccineName()).getDayRequired();
                LocalDate b;
                if(checkVaccine(c.getVaccinationStatus().getVaccineName()).getDoseRequired() == 1){
                    b = c.getVaccinationStatus().getDateCompletionDose1();
                }
                else{
                    b = c.getVaccinationStatus().getDateCompletionDose2();
                }
                if (b.plusDays(a).compareTo(LocalDate.now()) < 0) {
                    System.out.println("UPGRADED");
                    c.getVaccinationStatus().setStatus(Status.FullVaccinated);
                    DataIO.write();
                }
            }
        }
    }
}
```

Figure 3.2.3.1 Modularity Code

The next object-oriented concept is modularity which is a concept that is linked with the previous concept, encapsulation. “Modularity is the property of a system that has been decomposed into a set of cohesive and loosely coupled modules.” (Gábor, 2017) So modularity refers to creating all the important code and modules first, then combine and link it to build a complete system. The method are created using the encapsulation concept just like from the previous example. From the (Figure 4.2.3.1 Modularity Code) above, we can see that the method are called and visualised. Modularity gives us the ability to re-use the method which will lead to a better code due to less code duplication.

3.2.4 Abstraction

```
public class DataIO {  
    public static ArrayList<Citizen> allCitizen =  
        new ArrayList<Citizen>();  
    public static ArrayList<Admin> allAdmin =  
        new ArrayList<>();  
    public static ArrayList<Vaccine> allVaccine =  
        new ArrayList<>();  
    public static ArrayList<Appointment> allAppointment =  
        new ArrayList<>();  
    public static String[] allVaccineName;  
    public static String[] allTime = new String[Time.values().length];  
    public static Location[] allLocation = Location.values();  
    public static Status[] allStatus = Status.values();  
}
```

Figure 3.2.4.1 Abstraction - Data IO Code

```
public class Citizen extends Admin{  
    private String firstName;  
    private String lastName;  
    private int age;  
    private VaccinationStatus vaccinationStatus;  
    private String email;  
    private String phoneNumber;  
    private String gender;  
    private ArrayList<Appointment> appointment = new ArrayList<>();  
  
    public Citizen(String username, String password, String firstName, String lastName,  
        int age, VaccinationStatus vaccinationStatus, String email,  
        String phoneNumber, String gender) {  
        super(username, password);  
        this.firstName = firstName;  
        this.lastName = lastName;  
        this.age = age;  
        this.vaccinationStatus = vaccinationStatus;  
        this.email = email;  
        this.phoneNumber = phoneNumber;  
        this.gender = gender;  
    }  
}
```

Figure 3.2.4.2 Abstraction - Citizen Code

Another object-oriented concept that is used in this system is abstraction. Abstraction is the concept of object-oriented programming that “shows” only essential attributes and “hides” unnecessary information. (Hartman, 2021) So the purpose of abstraction is to reduce the complexity of the program to provide a cleaner system. So from the (Figure 4.2.4.2 Abstraction - Citizen Code) above we can see that all the data are recorded in the ArrayList of DataIO. But with the help of abstraction, the program can recognised the user login and display only the necessary data of the user. Thus, this will increase the simplistic of the program.

3.2.5 Polymorphism

```
public Citizen(String username, String password, String firstName, String lastName, int age, VaccinationStatus vaccinationStatus, String email, String phoneNumber, String gender) {
    super(username, password);
    this.firstName = firstName;
    this.lastName = lastName;
    this.age = age;
    this.vaccinationStatus = vaccinationStatus;
    this.email = email;
    this.phoneNumber = phoneNumber;
    this.gender = gender;
}

public Citizen(String username, String password, String firstName, int age, VaccinationStatus vaccinationStatus, String email, String phoneNumber, String gender) {
    super(username, password);
    this.firstName = firstName;
    this.age = age;
    this.vaccinationStatus = vaccinationStatus;
    this.email = email;
    this.phoneNumber = phoneNumber;
    this.gender = gender;
}

public Citizen(String username, String password, String firstName, String lastName, int age, String email, String phoneNumber, String gender) {
    super(username, password);
    this.firstName = firstName;
    if(lastName.isEmpty()){
        this.lastName = "";
    }
    else{
        this.lastName = lastName;
    }
    this.age = age;
    this.vaccinationStatus = newAccount;
    this.email = email;
    this.phoneNumber = phoneNumber;
    this.gender = gender;
}
```

Figure 3.2.5.1 Polymorphism – Citizen Code

Polymorphism refers to the ability of an object to take many forms. This means that in Java, a single task can be performed in different ways. (Great Learning Team, 2021) In this example, Polymorphism is reached by overloading the Citizen constructor, which means there are a couple of ways to initialize a new Citizen object by calling the appropriate constructor, based on the circumstances.

3.3 Additional Features

3.3.1 Auto Status Updater

To make sure that all citizens will be update if they have fulfilled all required conditions to be categorized as Fully vaccinated (2 dose and 14 days after second dose for 2 dosed vaccines/1 Dose and 28 days after the dose for 1 dosed vaccines). The system has an integrated status updater so the citizen's completed dose will be checked, and if the required days has been fulfilled, the citizen's status will be automatically updated into Fully Vaccinated.

```
public static void statusUpdater(){
    for(Citizen c : allCitizen){
        if(c.getVaccinationStatus().getStatus().equals(Status.PartialVaccinated)){
            if(checkVaccine(c.getVaccinationStatus().getVaccineName()).getDoseRequired() == c.getVaccinationStatus().getDose()){
                int a = checkVaccine(c.getVaccinationStatus().getVaccineName()).getDayRequired();
                LocalDate b;
                if(checkVaccine(c.getVaccinationStatus().getVaccineName()).getDoseRequired() == 1){
                    b = c.getVaccinationStatus().getDateCompletionDose1();
                }
                else{
                    b = c.getVaccinationStatus().getDateCompletionDose2();
                }
                if (b.plusDays(a).compareTo(LocalDate.now()) < 0) {
                    c.getVaccinationStatus().setStatus(Status.FullVaccinated);
                    DataIO.write();
                }
            }
        }
    }
}
```

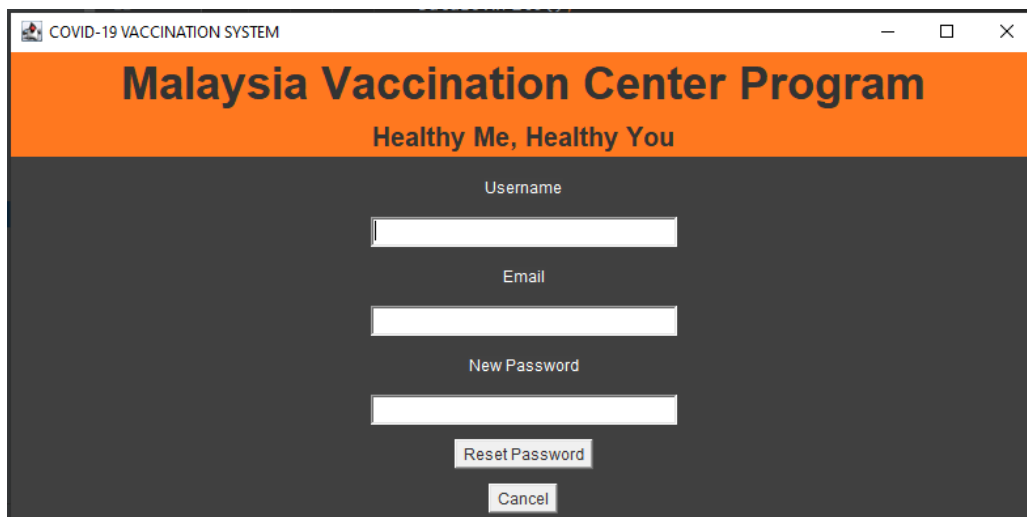
Figure 3.3.1.1 Auto Status Update Sample Code

3.3.2 Forgot Password

If any citizens forgot their password credential to login, the citizen could click “Forgot Password” button on the login page to recover their password. The program will ask the user for their username and email, if both credential matched, then the new password entered by the user will be activated.

```
else if(e.getSource() == resetpassword){
    String user = usernameField.getText();
    Citizen found = DataIO.checkCitizen(user);
    if(found != null){
        String email = emailField.getText();
        if(found.getEmail().equals(email)){
            found.setPassword(newPasswordField.getText());
            DataIO.write();
            JOptionPane.showMessageDialog(resetpassword, message: "Password Reset!");
            setVisible(false);
            Main.login.setVisible(true);
        }
        else{
            JOptionPane.showMessageDialog(resetpassword, message: "Wrong Email!");
            emailField.setText("");
        }
    }
    else{
        JOptionPane.showMessageDialog(resetpassword, message: "Username not found!");
        usernameField.setText("");
    }
}
```

Figure 3.3.2.1 Forgot Password Sample Code



The screenshot shows a Java Swing window titled "COVID-19 VACCINATION SYSTEM". The main content area has an orange header with the text "Malaysia Vaccination Center Program" and "Healthy Me, Healthy You". Below the header, on a dark gray background, are three white text input fields labeled "Username", "Email", and "New Password". At the bottom of the form are two buttons: "Reset Password" and "Cancel".

Figure 3.3.2.2 Forgot Password GUI

3.3.3 Verification Password

Before any modification by admin into any data is executed, the system will ask for the admin's password as a precaution before the data is modified. If the password does not match to the current logged in admin, the data will not be modified.

```
if(verificationField.getText().equals(Main.currentAdmin.getPassword())) {  
    Main.currentVaccine.setAmount(Integer.parseInt(amountField.getText()));  
    Main.currentVaccine.setDayRequired(Integer.parseInt(daysField.getText()));  
    Main.currentVaccine.setDoseRequired(Integer.parseInt(doseField.getText()));  
    DataIO.write();  
    JOptionPane.showMessageDialog(confirm, message: "Modify Successful!");  
    setVisible(false);  
    dispose();  
    Main.currentVaccine = null;  
    PageAdminVaccineHub adminSupplyHub = new PageAdminVaccineHub();  
    adminSupplyHub.setVisible(true);  
}  
else{  
    JOptionPane.showMessageDialog(confirm, message: "Wrong Verification Password!");  
    verificationField.setText("");  
}
```

Figure 3.3.3.1 Verification Password Sample Code

3.3.4 Combo Box

As there are couple of data that has fixed choices, the system is fitted with Combo Boxes in various functionalities to make sure the data entered to the system is correct and will not caused any errors/mismatched data down the line.

```
locationC = new JComboBox(DataIO.allLocation);  
vaccineC = new JComboBox(DataIO.allVaccineName);  
timeC = new JComboBox(DataIO.allTime);  
statusC = new JComboBox(statusArray);
```

Figure 3.3.4.1 Combo Box Sample Code

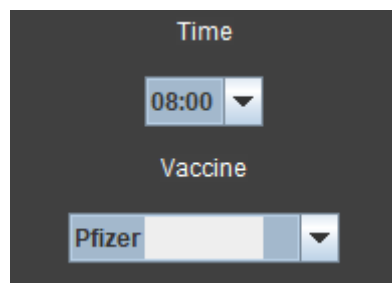


Figure 3.3.4.2 Combo Box in GUI

3.3.5 Password Hide

To protect the user from physical hacking/data intrusion, the system will censor the user's password using '*' character when entered to a text field, so no accidental password breach can be caused physically.

```
passwordField.setEchoChar('*');
```

Figure 3.3.5.1 Password Hide Sample Code

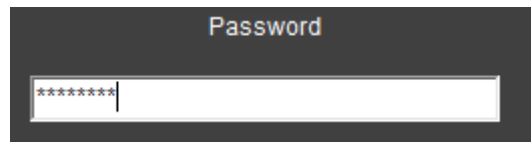


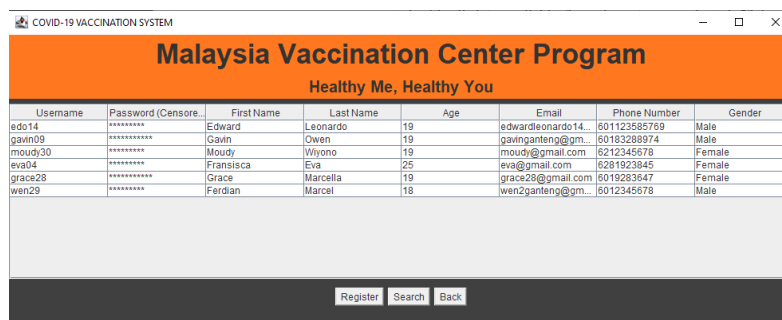
Figure 3.3.5.2 Password Hide GUI

3.3.6 Clickable Table

For Admin functionalities, to display all data effectively, a table will be generated with all data available from the category selected. If the admin wants to view a specified data only, the admin can click on the row of the specified data to view the data. Clicking on the data also reveal other functionalities that are related to the data.

```
table.getSelectionModel().addListSelectionListener(new ListSelectionListener() {  
    @Override  
    public void valueChanged(ListSelectionEvent e) {  
        if(!e.getValueIsAdjusting()){ //to only invoked the selection only once  
            String x = (table.getValueAt(table.getSelectedRow(), column: 0).toString());  
            Main.currentCitizen = DataIO.checkCitizen(x);  
            setVisible(false);  
            dispose();  
            PageAdminCitizenProfileView adminCitizenProfileView = new PageAdminCitizenProfileView();  
            adminCitizenProfileView.setVisible(true);  
        }  
    }  
});
```

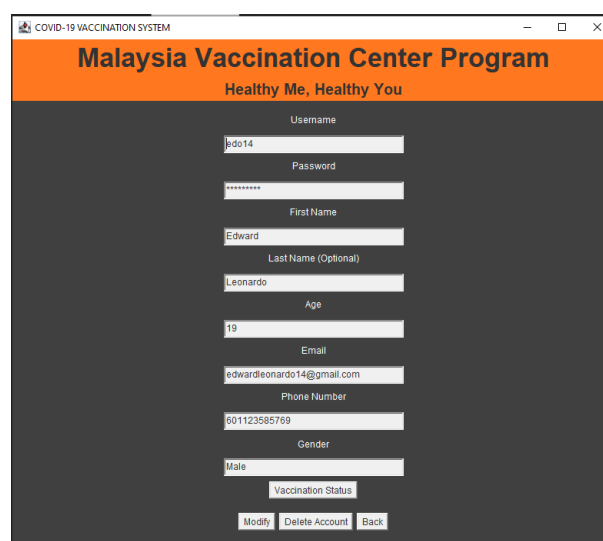
Figure 3.3.6.1 Clickable Table Sample Code



The screenshot shows a window titled "COVID-19 VACCINATION SYSTEM" with a header "Malaysia Vaccination Center Program" and "Healthy Me, Healthy You". Below the header is a table with columns: Username, Password (Censored), First Name, Last Name, Age, Email, Phone Number, and Gender. The table contains six rows of user data. At the bottom of the window are three buttons: Register, Search, and Back.

Username	Password (Censor)	First Name	Last Name	Age	Email	Phone Number	Gender
edo14	*****	Edward	Leonardo	19	edwardleonardo14...	601123585769	Male
gavin09	*****	Gavin	Owen	19	gavinganteng@gm...	60183288974	Male
moudy30	*****	Moudy	Wiyono	19	moudy@gmail.com	6212345678	Female
eva04	*****	Fransisca	Eva	25	eva@gmail.com	6281923845	Female
grace28	*****	Grace	Marcella	19	grace28@gmail.com	6019283647	Female
wen29	*****	Ferdian	Marcel	18	wen2ganteng@gm...	6012345678	Male

Figure 3.3.6.2 Clickable Table GUI



The screenshot shows the same window as Figure 3.3.6.2, but the table is replaced by a form for editing user information. The form fields are: Username (edo14), Password (*****), First Name (Edward), Last Name (Optional) (Leonardo), Age (19), Email (edwardleonardo14@gmail.com), Phone Number (601123585769), and Gender (Male). Below the form fields are three buttons: Modify, Delete Account, and Back.

Figure 3.3.6.1 Clickable Table (After Clicked) GUI

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