



SECV 1223: Web Programming

Project Report

Covid-19 Vaccination Booking System
(CVBS)

School of Computing, Faculty of Engineering

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1. Project Overview

Covid-19 Vaccination Booking System (CVBS) is a website that provides the services that are related to Covid-19 such as tracking hotspots and booking Covid-19 vaccination.

There are 3 actors involved in the CVBS website, which are users, admin, and guests. Admin will take the responsibility to manage booking vaccination forms that have been submitted by users, and update the details of the number of cases of Covid-19 by states everyday. Besides that, users are able to book the vaccination via the CVBS website and track the Covid-19 hotspot. As a guest, tracking for hotspots and the information of services provided in the website is only allowed to be used and viewed in the CVBS website.

The objectives of this project are to smooth the process of users in applying for the vaccination and tracking for the Covid-19 area. The goal of this project is to provide fast and efficient services regarding covid-19 to different users.

2. Tools & Technology Usage

Tools & Technology Used	Description
HTML	HTML is a hypertext markup language for web pages. It will display what we want to display on the website.
CSS	CSS is a language used to decorate and beautify web pages. It will describe the design of the web page.
JavaScript	JavaScript is a client-side programming language used to create interactive websites. It will enable the user to interact with the website.

PHP	PHP is a Hypertext Preprocessor, which is a server scripting language. It will be used to connect the website with the database so that to store the data entered by users and display the retrieved data.
MySQL	MySQL is a database for us to store the information.
LucidChart	LucidChart is a diagram application for us to draw the entity relationship diagram.

3. System Module

a. Admin

- manage the user and handle their request in the system.
- update Covid-19 cases for tracking hotspot
- manage the feedback from the public.
- insert new clinics that provided vaccination services.

b. User

- enjoy the services provided by the system such as tracking hotspot and book vaccination.
- contact the admin if facing any problem.

c. Public (Guest)

- enjoy the general services provided by the system, tracking hotspot.
- access the Covid-19 and vaccine information in the home page.
- provide feedback to the system if any.

4. Module Functionality

Modules	Functions
Admin	<p>a. Login</p> <p>i. Admin can login to the system by using admin email and password to manage the users, feedback, hotspot tracking, vaccination and clinics.</p>
	<p>b. Manage Users</p> <p>i. The information of users such as name, email, phone number, IC number, address and gender will be displayed.</p> <p>ii. Admin is able to delete the user account.</p>
	<p>c. Manage Feedback</p> <p>i. Feedback form which contains the issues faced by users will be displayed.</p> <p>ii. Admin is able to submit the action whether the issues have been solved or not.</p>
	<p>d. Update Covid-19 Cases by State</p> <p>i. Admin is able to update the number of cases everyday according to the state in Malaysia.</p>
	<p>e. Manage Vaccination</p> <p>i. The information of users who have applied the vaccination will be displayed.</p> <p>ii. Admin is able to assign the clinic to the user who had applied.</p> <p>iii. Admin is able to update the status such as approve users to get the vaccination, reject users to get the vaccination, the vaccination process is done or the vaccination process is pending.</p>

	<p>f. Manage Clinic</p> <ul style="list-style-type: none"> i. Admin is able to search the clinic based on the state. ii. The information of the clinic such as name, address, and contact number will be displayed. iii. Admin is able to insert the new clinic that has provided vaccination services.
	<p>g. Reset Password</p> <ul style="list-style-type: none"> i. Admin can reset password by providing the admin's email and new password as well as confirm new password if the admin forgets the password for login.
User	<p>a. Register</p> <ul style="list-style-type: none"> i. Users can register a new account to login to the system for making vaccination appointments.
	<p>b. Login</p> <ul style="list-style-type: none"> i. Users can login to the system by using the email and password set during registration. Vaccination appointments only can be made after login.
	<p>c. Update Profile</p> <ul style="list-style-type: none"> i. Update personal information such as name, gender, address, phone number, ic number and email address.
	<p>d. Vaccination Appointment</p> <ul style="list-style-type: none"> i. Users can make an appointment for vaccination for selected date and time, and number of doses. Users also need to fill in the personal information including the name, email and phone number, state and address.

	<ul style="list-style-type: none"> ii. User vaccination appointment history will be shown below the appointment form.
	<ul style="list-style-type: none"> e. Manage Vaccination Appointment <ul style="list-style-type: none"> i. Users can change the appointment date/ time if the appointment status is “pending”. ii. Users can cancel the appointment if the status is “pending”. iii. Users can cancel the appointment if the status is “approved” but need to be confirmed by the admin.
	<ul style="list-style-type: none"> f. Hotspot Tracking <ul style="list-style-type: none"> i. Users can track the number of cases in the selected state.
	<ul style="list-style-type: none"> g. Contact Us <ul style="list-style-type: none"> i. Users can send feedback or issues here.
	<ul style="list-style-type: none"> h. Change Password <ul style="list-style-type: none"> i. User can change password
Public (Guest)	<ul style="list-style-type: none"> a. Hotspot Tracking <ul style="list-style-type: none"> i. Guests can track the number of cases in the selected state.
	<ul style="list-style-type: none"> b. Contact Us <ul style="list-style-type: none"> i. Guests can send feedback or issues here.

5. Database design

5.1. Entity Relationship Diagram (ERD)/use case/activity diagram

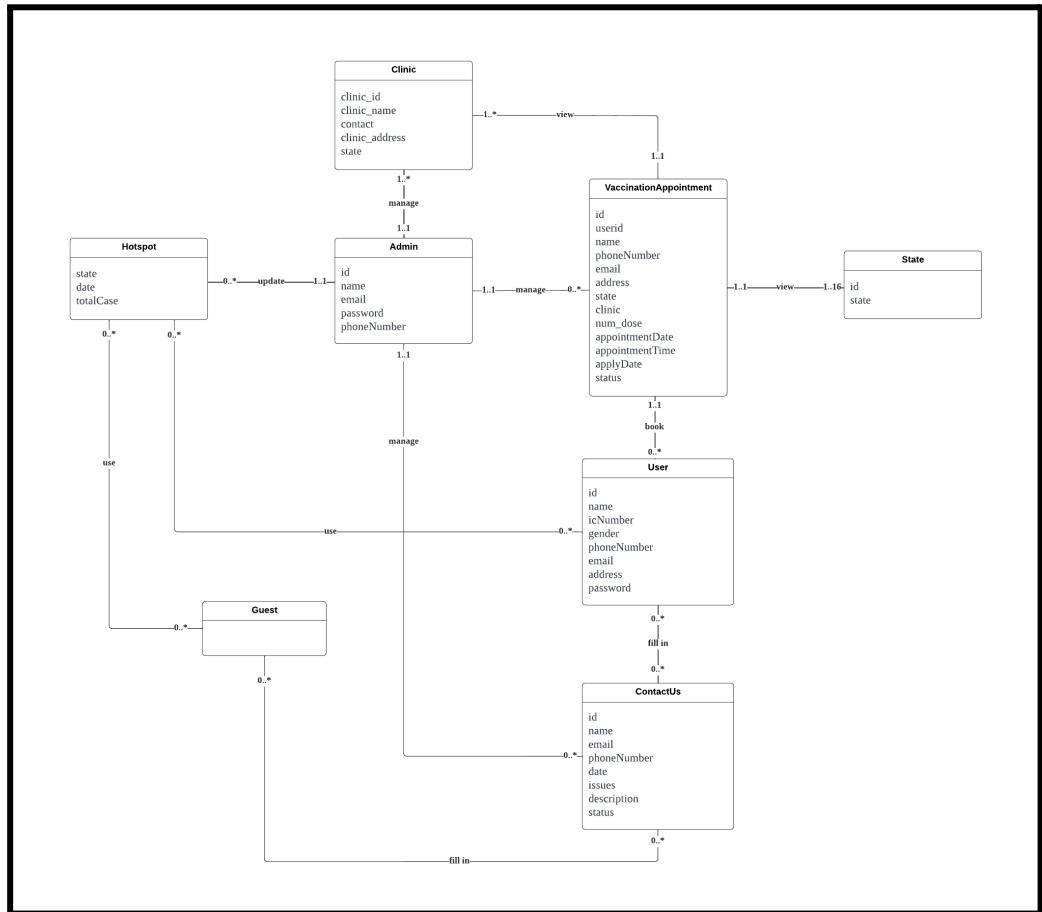


Figure 1: Entity Relationship Diagram of CVBS

5.2. User login and password for your system access

User	Email	Password
Admin	admin@gmail.com	admin@123
User	james@gmail.com	james@123
	ali@gmail.com	ali@123
	rachel@gmail.com	rachel@123

6. SQL File Text

6.1. Admin

6.1.1. Create Table for Admin

```
CREATE TABLE `admin` (
| `id` int(120) NOT NULL,
| `name` varchar(120) NOT NULL,
| `email` varchar(120) NOT NULL,
| `password` varchar(120) NOT NULL,
| `phoneNumber` varchar(120) NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;
```

6.1.2. Insert New Admin Account

```
INSERT INTO `admin` (`id`, `name`, `email`, `password`, `phoneNumber`) VALUES
(1, 'admin', 'admin@gmail.com', 'e6e061838856bf47e1de730719fb2609 ', '011-123456789');
```

6.1.3. Create Table for ContactUs

```
CREATE TABLE `contactus` (
| `id` int(120) NOT NULL,
| `name` varchar(120) NOT NULL,
| `email` varchar(120) NOT NULL,
| `phoneNumber` varchar(120) NOT NULL,
| `date` timestamp NOT NULL DEFAULT current_timestamp() ON UPDATE current_timestamp(),
| `issues` varchar(120) NOT NULL,
| `description` varchar(120) NOT NULL,
| `status` varchar(120) DEFAULT NULL
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;
```

6.1.4. Update Status in ContactUs Table

- 6.1.4.1. If admin solve the issues, then the admin will update the status to solve with the contactus id as 1

“update contactus set status = ‘solve’ where id = ‘1’”

- 6.1.4.2. If admin have not solve the issues, then the admin will update the status to pending with the contactus id as 2

“update contactus set status = ‘pending’ where id = ‘2’”

```
"update contactus set status = '$status' where id ='$eid'");
```

6.1.5. Create Table for Hotspot

```
CREATE TABLE `hotspot` (
    `state` varchar(120) NOT NULL,
    `date` varchar(120) NOT NULL,
    `totalCase` varchar(120) NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;
```

6.1.6. Insert New Covid-19 Cases

6.1.6.1. If admin wish to update the new cases

“*INSERT INTO `hotspot` (`state`, `date`, `totalCase`) VALUES ('Johor', '2022-06-30', '120')*”

```
"INSERT INTO hotspot (state, date, totalCase) VALUES ('$state', '$date', '$case');
```

6.1.7. Delete User from Account

6.1.7.1. If admin wish to delete user with id as 1

“*delete from user where id = '1'*”

```
"DELETE FROM user WHERE id = '' . $_GET['id'] . '')";
```

6.1.8. Create Table for VaccinationAppointment Table

```
CREATE TABLE `vaccinationappointment` (
    `id` int(120) NOT NULL,
    `userid` int(120) NOT NULL,
    `name` varchar(120) NOT NULL,
    `phoneNumber` varchar(120) NOT NULL,
    `email` varchar(120) NOT NULL,
    `address` varchar(120) NOT NULL,
    `state` varchar(120) NOT NULL,
    `clinic` varchar(120) DEFAULT NULL,
    `num_dose` int(120) NOT NULL,
    `appointmentDate` varchar(120) DEFAULT NULL,
    `appointmentTime` varchar(120) DEFAULT NULL,
    `applyDate` varchar(120) DEFAULT current_timestamp(),
    `status` varchar(120) DEFAULT NULL,
    `message` text NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;
```

6.1.9. Update Status and Clinic in VaccinationAppointment Table

- 6.1.9.1. If admin wish to approve the vaccination appointment made by users, then the admin will update the status to approved and assign the clinic with the id as 1

"update vaccinationappointment set status = 'approved', clinic = "Klinik Dr Koh" where id = '1'"

- 6.1.9.2. If admin wish to reject the vaccination appointment made by users, then will update the status to rejected with the id as 2

"update vaccinationappointment set status = 'rejected', clinic = "Klinik Mukmin" where id = '2'"

- 6.1.9.3. If the vaccination process is done, then admin will update the status to done with the id as 3

"update vaccinationappointment set status = 'done', clinic = "Klinik Lee" where id = '3'"

- 6.1.9.4. If the vaccination process is still pending, then admin will update the status to done with the id as 4

"update vaccinationappointment set status = 'pending', clinic = "Klinik Yong" where id = '4'"

```
"UPDATE vaccinationappointment SET status = '$status', clinic = '$clinic' WHERE id = '$eid"';
```

6.1.10. Create Table for Clinic

```
CREATE TABLE `clinic` (
  `id` int(120) NOT NULL,
  `clinic_name` varchar(120) NOT NULL,
  `contact` varchar(120) NOT NULL,
  `clinic_address` varchar(120) NOT NULL,
  `state` varchar(120) NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;
```

6.1.11. Insert Clinic

6.1.11.1. If admin wish to insert the new clinic

“INSERT INTO clinic (clinic_name, contact, clinic_address, state) VALUES ('Klinik Mukmin', '07-3340988', 'Jalan Mukmin, Taman Pahang', ‘Pahang’)”

```
"INSERT INTO clinic (clinic_name, contact, clinic_address, state)
VALUES ('$clinicName', '$contact', '$clinicAddress', '$state');
```

6.1.12. Search Clinic

6.1.12.1. If admin wish to search clinic by state

*“select * from clinic where state = ‘Melaka’”*

```
$sqlState = mysqli_query($con, "select * from clinic");
$cnt = 1;
while ($rowState = mysqli_fetch_array($sqlState)) {
    if ($rowState['state'] == $state) {
```

6.2. User

6.2.1. Create Table for User

```
CREATE TABLE `user` (
  `id` int(120) NOT NULL,
  `name` varchar(120) NOT NULL,
  `icNumber` varchar(120) NOT NULL,
  `gender` varchar(120) NOT NULL,
  `phoneNumber` varchar(120) NOT NULL,
  `email` varchar(120) NOT NULL,
  `address` varchar(120) NOT NULL,
  `password` varchar(120) NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;
```

6.2.2. Insert New User Account

```
INSERT INTO user` (`id`, `name`, `icNumber`, `gender`, `phoneNumber`, `email`, `address`, `password`) VALUES
(1, 'James', '971009-04-5233', 'Male', '019-6334456', 'james@gmail.com', 'No 1, Jalan Mangga 2, Taman Pokok, Melaka', '7cd2fc39f1b866d314bd17348e554ec2'),
(2, 'Ali', '850715-05-0023', 'Male', '016-5678123', 'ali@gmail.com', 'No 20, Jalan Durian, Taman Durian, 53000 Kuala Lumpur', '85a5ec72b32d4e61a2fc1bd45f6de14'),
(3, 'Rachel', '981103-07-0023', 'Female', '014-3359907', 'rachel@hcsd.com', 'No 69, Jalan Kembangan 5, Taman Kembang, 10300 Pulau Pinang', 'c1bfde18d17ced97203b5ab2f454bf');
```

6.2.3. Add Feedback to ContactUs Table

6.2.3.1. User selects an issue followed by the description on the issue (message), then clicks ‘submit’. The default user’s name, the default user’s email, the default user’s phone number, issue and message will be inserted into the ‘contactus’ table.

“INSERT INTO contactus (name, email, phoneNumber, date, issues, description, status) VALUES ('Kelly', 'kelly@gmail.com', '013-6889765', '2022-07-02 14:27:46', 'Cannot booking vaccine', 'Unable to submit the vaccination form', 'pending')”

```
"insert into contactus(name, email, phoneNumber,issues,description, status)
| values('$name', '$email', '$phonenumber', '$issues', '$message', 'pending'))";
```

6.2.4. Search Covid-19 Cases in Hotspot Table

- 6.2.4.1. User select a state and specify the date they wish to track on the Covid-19 cases, then click ‘submit’. The relevant information from the ‘hotspot’ table will be displayed.

*“select * from hotspot where state = ‘Melaka’ && date = ‘2022-06-24’”*

```
"SELECT * FROM hotspot where state = '$state' && date = '$date';"
```

6.2.5. Add New Vaccination Appointment to VaccinationAppointment Table

- 6.2.5.1. User select the appointment date, appointment time, number of dose, current state and input the current address, then click ‘Make an appointment’. The default user’s name, the default user’s email, the default user’s phone number, the appointment date, the appointment time, the number of doses, the user’s current state and the user’s address will be inserted into the ‘vaccinationappointment’ table.

*“INSERT INTO vaccinationappointment (id, userid, name, phoneNumber, email, address, state, clinic, num_dose, appointmentDate, appointmentTime, applyDate, status)
VALUES (1, 2, ‘Ali’, ‘011-2236754’, ‘ali@gmail.com’, ‘No 20,
Jalan Durian, Taman Durian, 53000 Kuala Lumpur’, ‘Kuala
Lumpur’, ‘Twin Towers Medical Centre’, 2, ‘2022-06-30’,
‘12:30:00’, ‘2022-06-24 13:15:13’, ‘approved’)”*

```
"INSERT INTO vaccinationappointment(userid, name, phoneNumber, email, address, state, num_dose, appointmentDate, appointmentTime, applyDate, status)  
VALUES ('$userid', '$name', '$phoneNumber', '$email', '$address', '$state', '$num_dose', '$appointmentDate', '$appointmentTime', '$applyDate', 'Pending');"
```

- 6.2.5.2. User can view the information of the appointment made including the clinic assigned by the admin with userid as 3.

“select vaccinationappointment., clinic.clinic_address from vaccinationappointment left join clinic on*

*vaccinationappointment.clinic = clinic.clinic_name where
vaccinationappointment.userid = '3'"*

```
"SELECT vaccinationappointment.*, clinic.clinic_address  
FROM vaccinationappointment  
LEFT JOIN clinic ON vaccinationappointment.clinic = clinic.clinic_name  
where vaccinationappointment.userid=$login_id";
```

6.2.5.3. User who have appointments in pending or TBC status cannot make a new appointment.

*"select * from vaccinationappointment where name = 'Ali' and
(status = 'Pending' or status = 'TBC')"*

```
"SELECT * FROM vaccinationappointment  
WHERE name='$name' AND (status='Pending' OR status='TBC')"
```

6.2.6. Manage the Vaccination Appointment

6.2.6.1. User can view the information of the appointment made including the clinic assigned by the admin and manage the vaccination appointments made with userid as 1.

"select vaccinationappointment., clinic.clinic_address from vaccinationappointment left join clinic on vaccinationappointment.clinic = clinic.clinic_name where vaccinationappointment.userid = '1'"*

```
"SELECT vaccinationappointment.*, clinic.clinic_address  
FROM vaccinationappointment  
LEFT JOIN clinic ON vaccinationappointment.clinic = clinic.clinic_name  
where vaccinationappointment.userid= '$login_id';"
```

6.2.6.2. If the status of the appointment is pending, User can edit the appointment date and appointment time with id as 1.

"update vaccinationappointment set appointmentDate = '2022-07-06', appointmentTime = '10:30:00' where id = '1'"

```
"UPDATE vaccinationappointment SET appointmentDate='$appointmentDate',  
appointmentTime='$appointmentTime' WHERE id='$valid'";"
```

6.2.6.3. If the status of the appointment is pending, User can directly cancel the appointment without approval from the admin with id as 1.

“update vaccinationappointment set status = ‘Cancel’ where id = ‘1’”

```
"UPDATE vaccinationappointment SET status='Cancel' WHERE id='$valid'"
```

6.2.6.4. If the status of the appointment is approved, User can cancel the appointment but require approval from the admin. The cancellation status of the appointment will become “To be Confirmed (TBC)” with id as 3.

“update vaccinationappointment set status = ‘TBC’ where id = ‘3’”

```
"UPDATE vaccinationappointment SET status='TBC' WHERE id='$valid'"
```

7. User Manual

7.1. All Actors (Guest, User, Admin)

7.1.1. Visit CVBS Website

7.1.1.1. Flow Chart

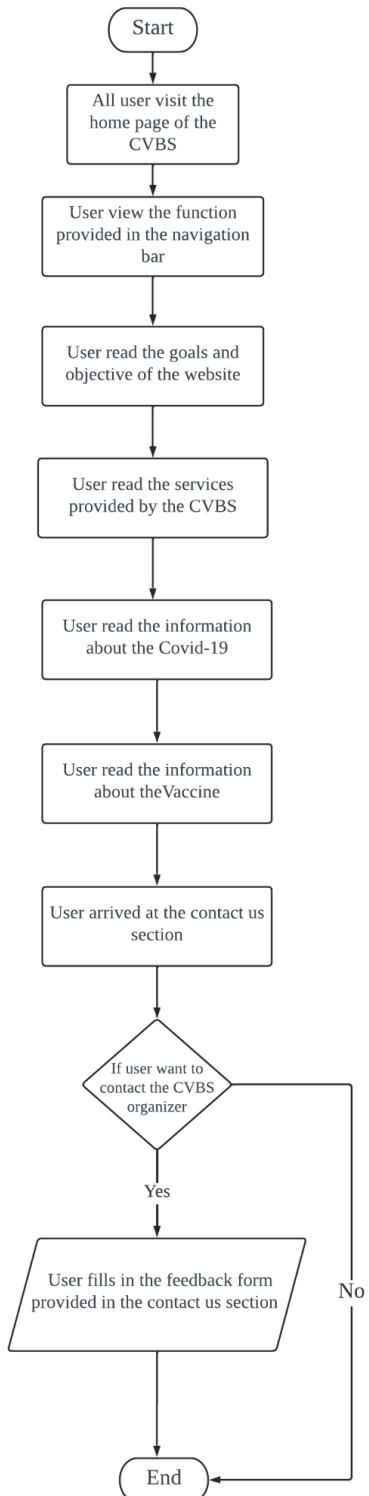


Figure 2: Visit CVBS Website Flowchart

7.1.1.2. Interface Explanation

In the main page of the CVBS system, users will first see the CVBS logo and the function provided in the navigation bar. Users can select the navigation bar to travel to the main page or scroll down to visit the website.

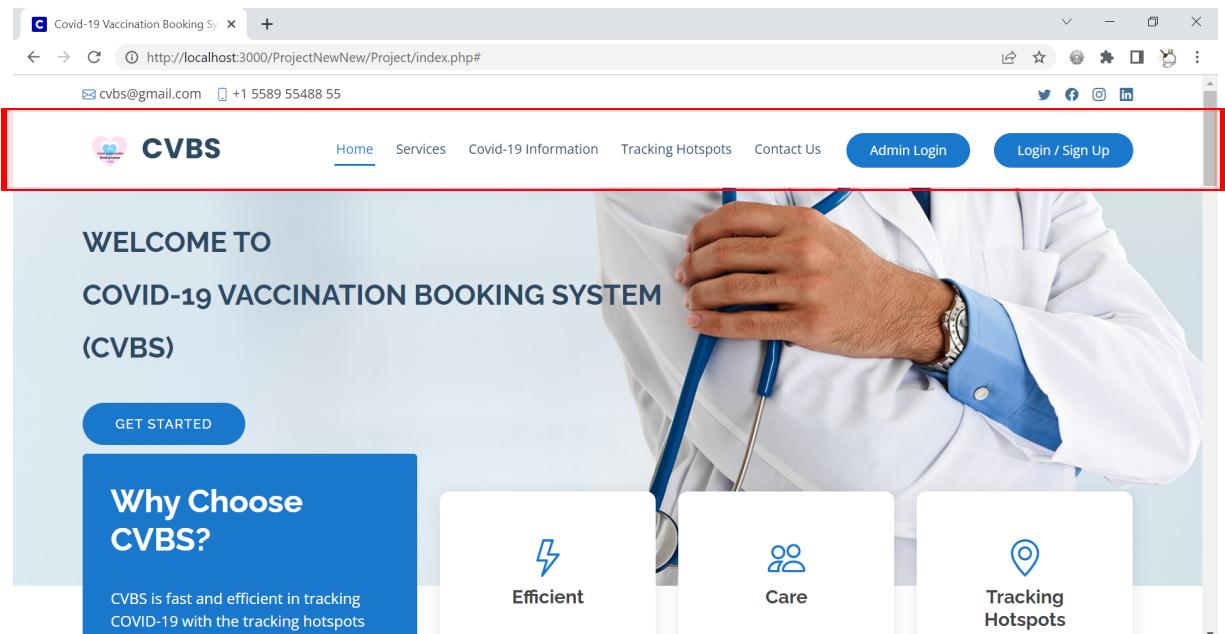


Figure 3: Navigation bar of the main page

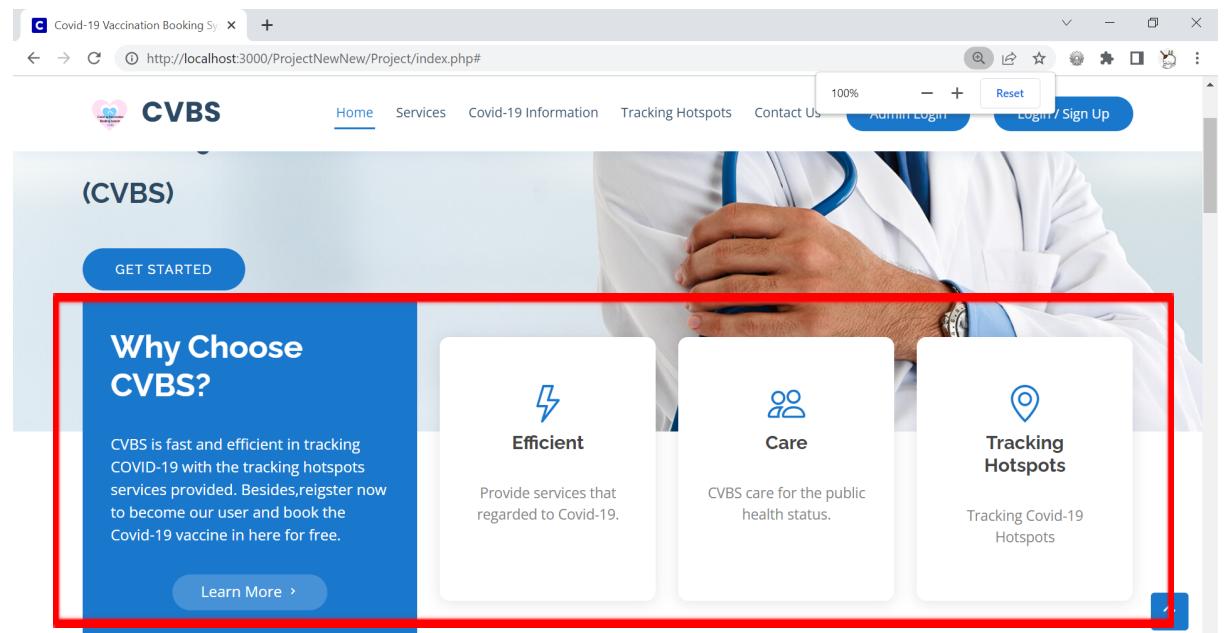


Figure 4: Goals and objectives of the CVBS website

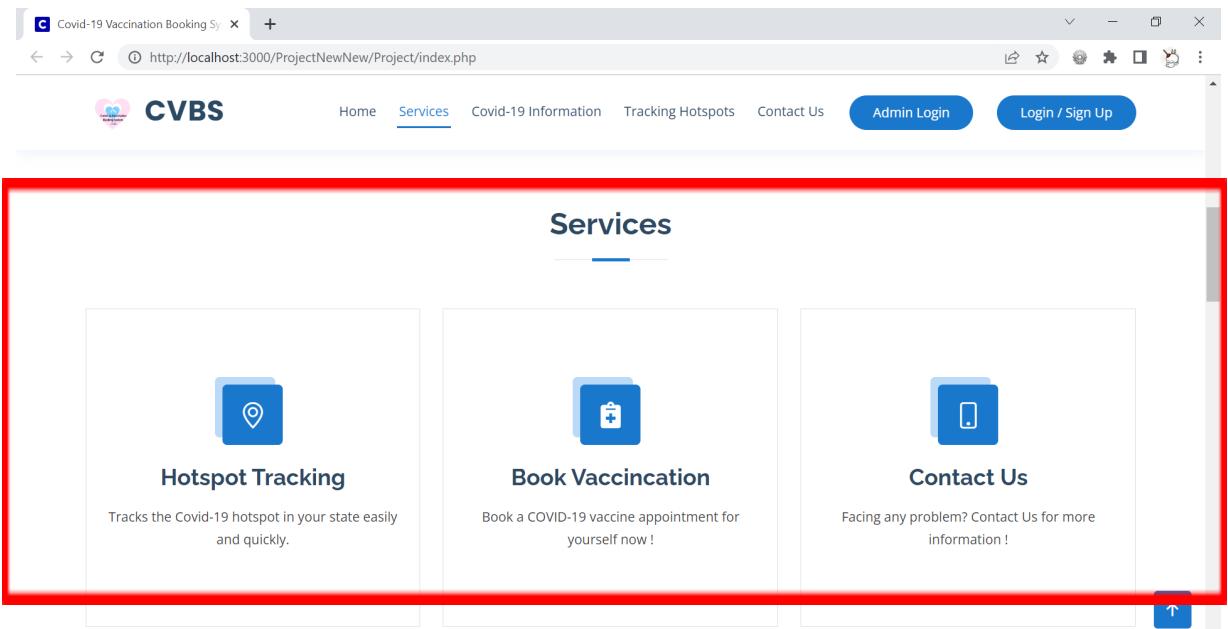


Figure 5: Services section that list the services provided by the CVBS website

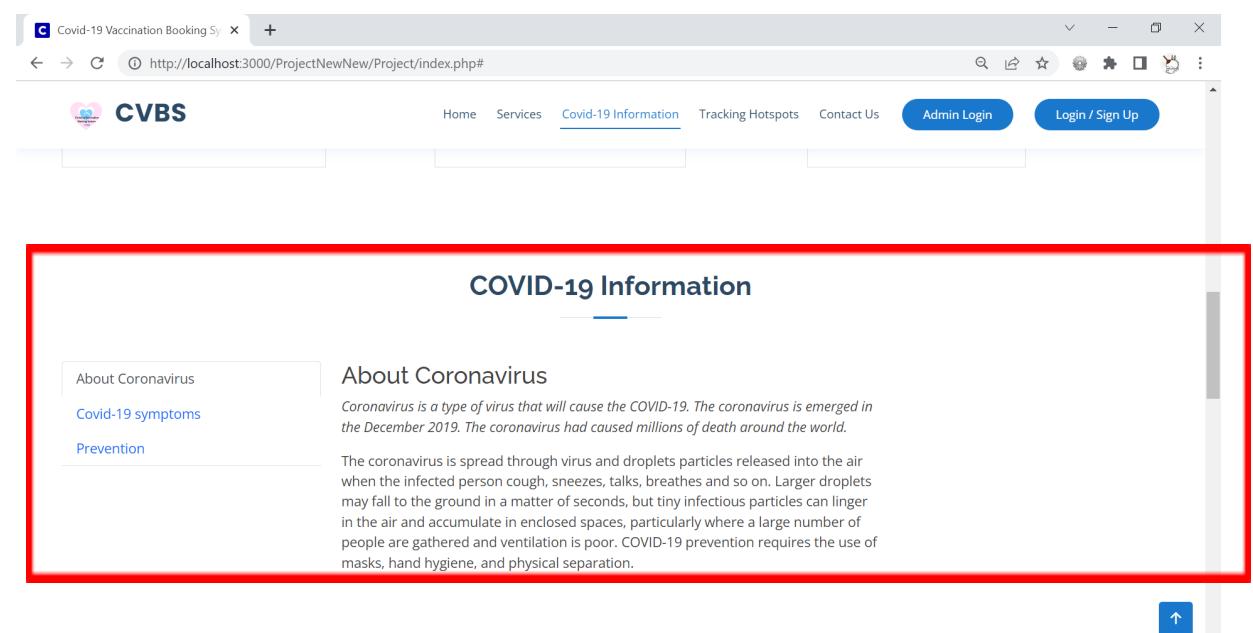


Figure 6: Covid-19 Information section that provided the information about the Covid-19

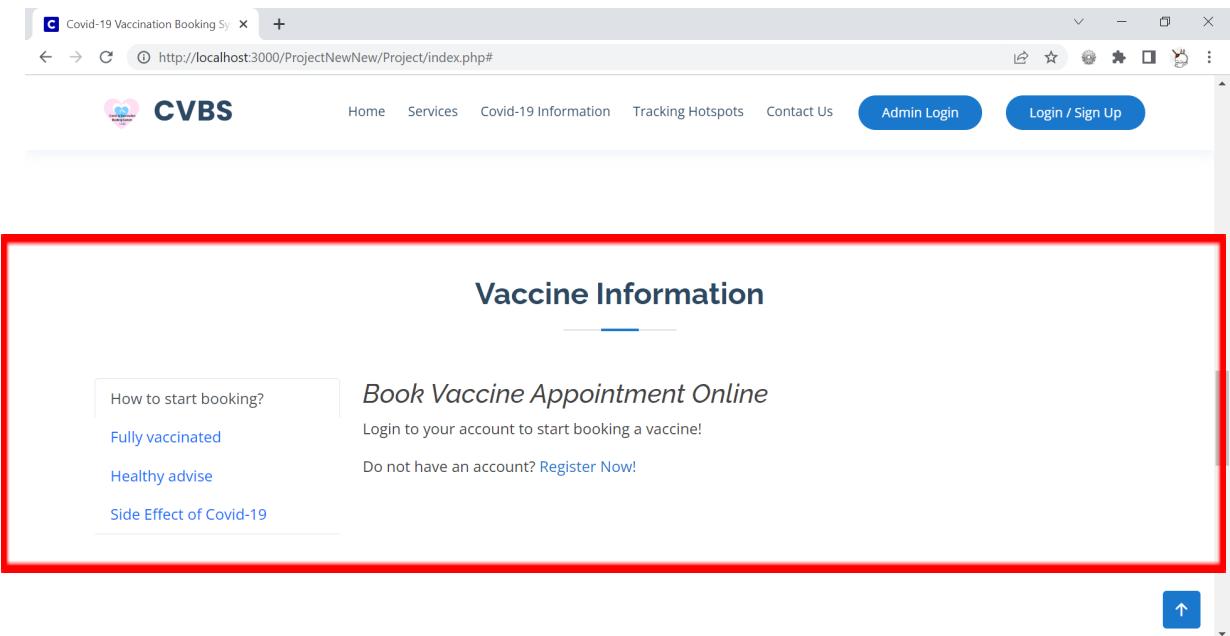


Figure 7: Vaccine Information section that provided the information about vaccines.

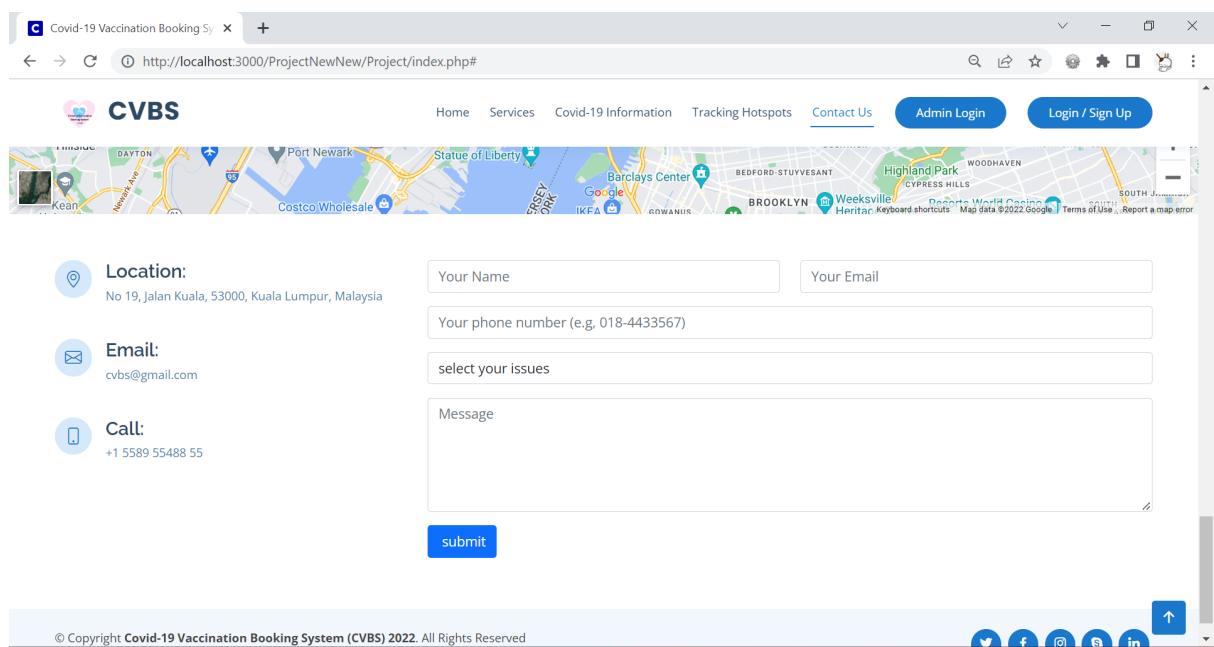


Figure 8: Contact us section that provided the feedback form for all users or guests.

7.1.2. Submit Feedback Form

7.1.2.1. Flow Chart

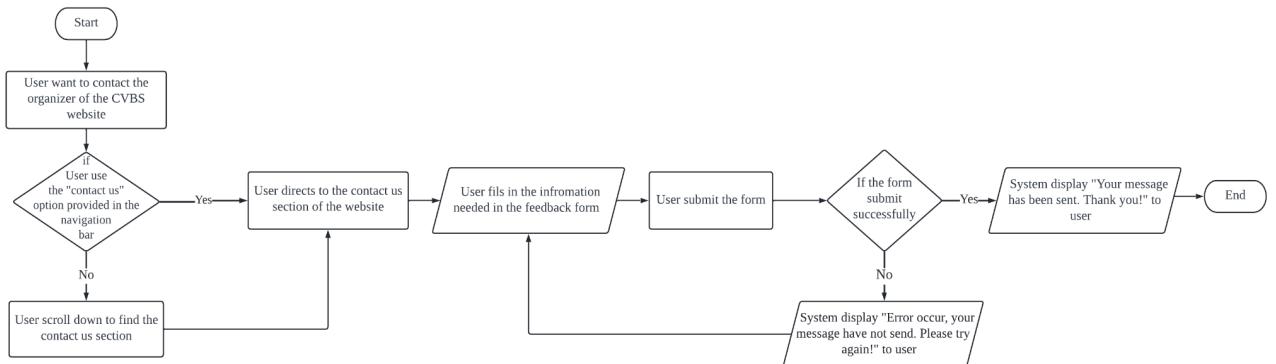


Figure 9: Submit Feedback Form Flowchart

7.1.2.2. Interface Explanation

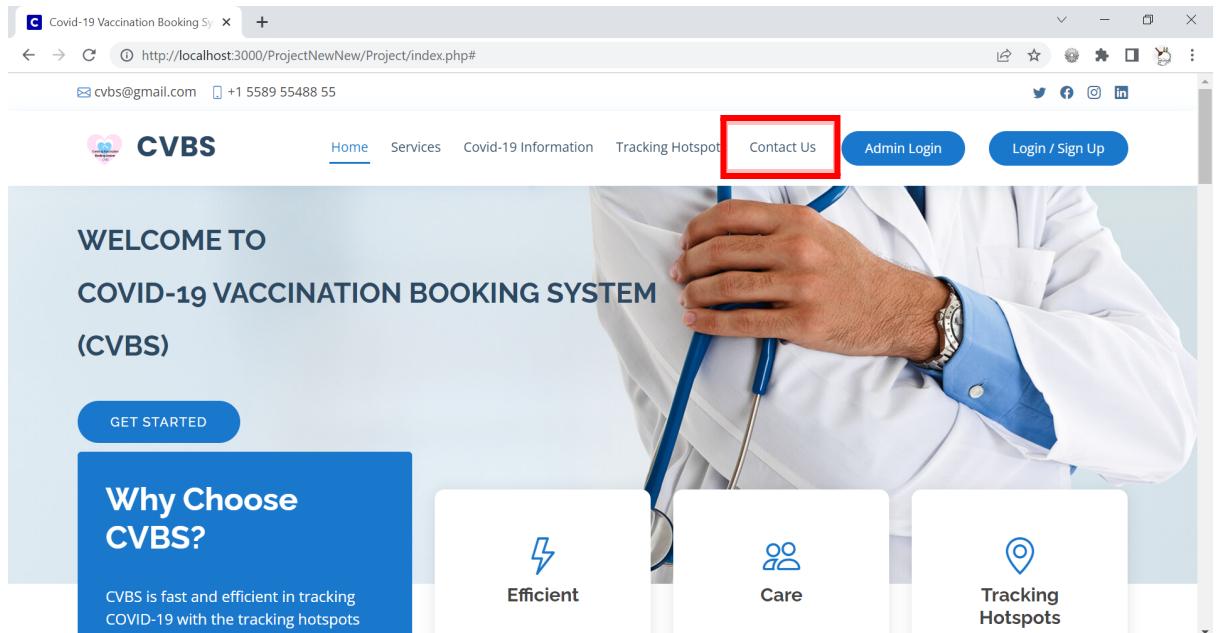


Figure 10: General interface of CVBS website

Users can select the contact us section to access it or just scroll down to the end of the webpage.

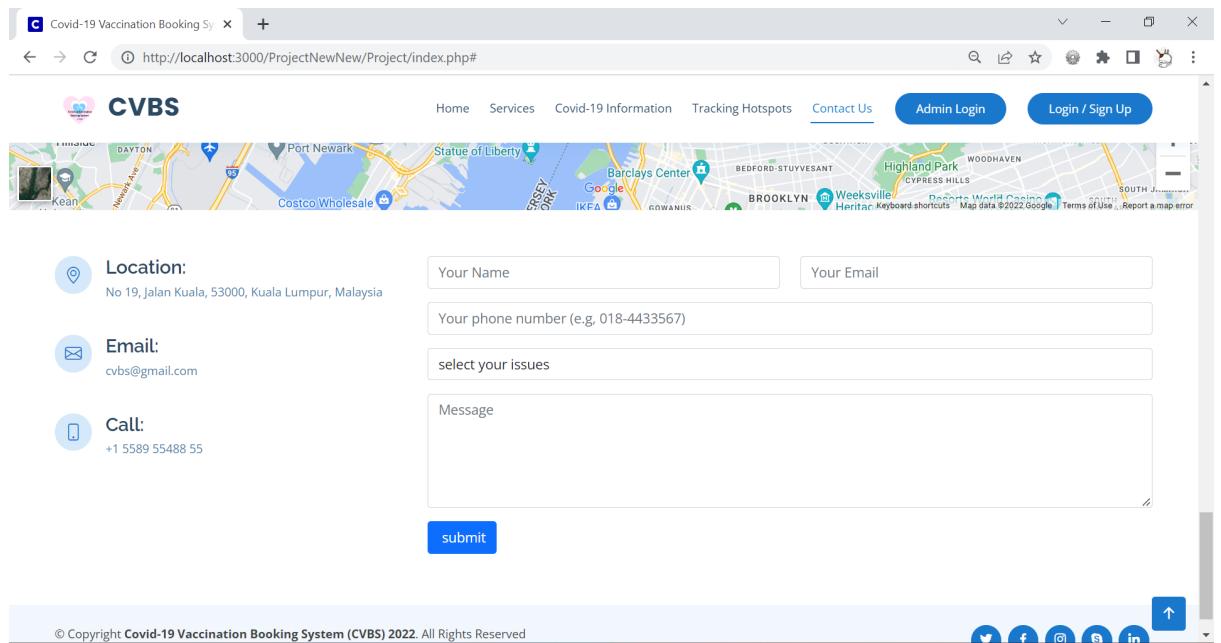


Figure 11: Contact us section in general interface

User can fill in the feedback form in the contact us section.

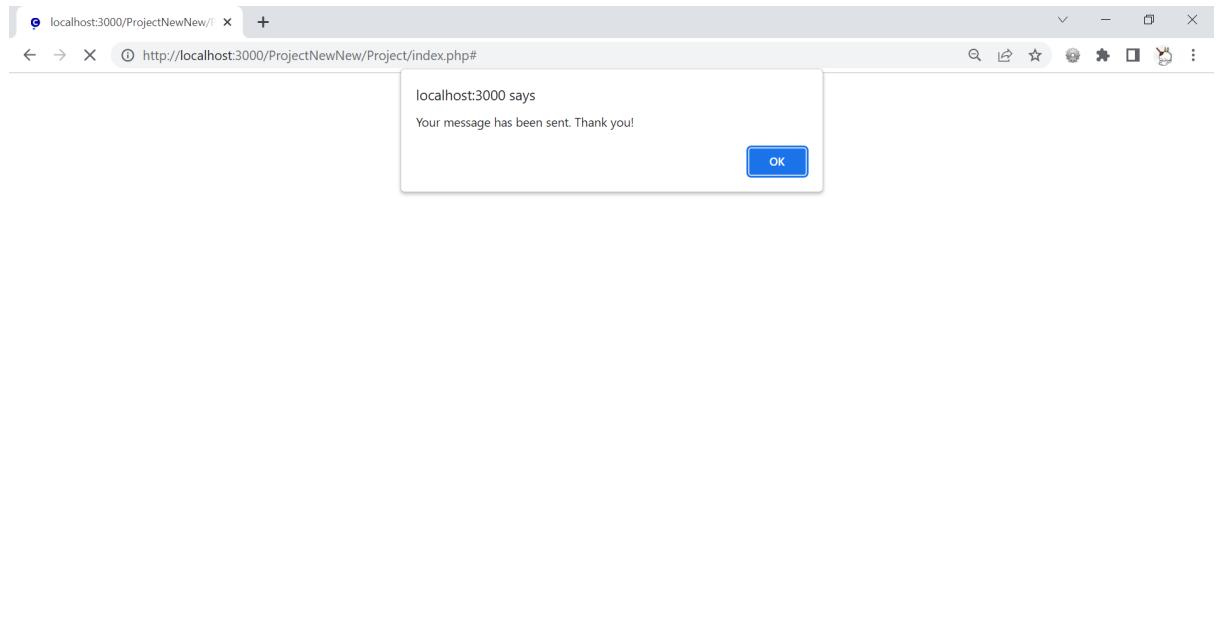


Figure 12: System display successful message

Thank you message will pop out when the form is submitted successfully.

7.1.3. Tracking Hotspot of Covid-19

7.1.3.1. Flow Chart

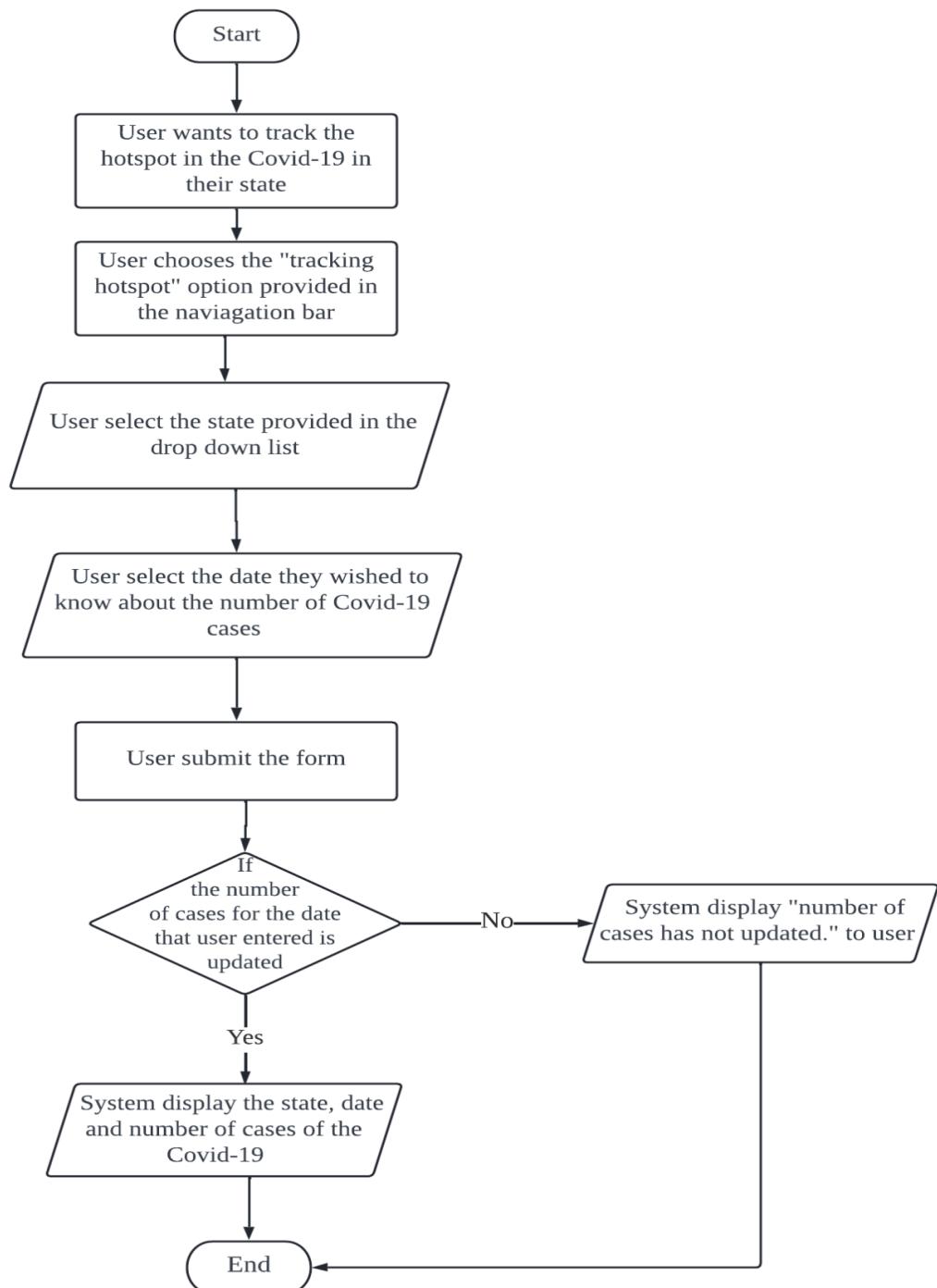


Figure 13: Tracking Hotspot of Covid-19 Flowchart

7.1.3.2. Interface Explanation

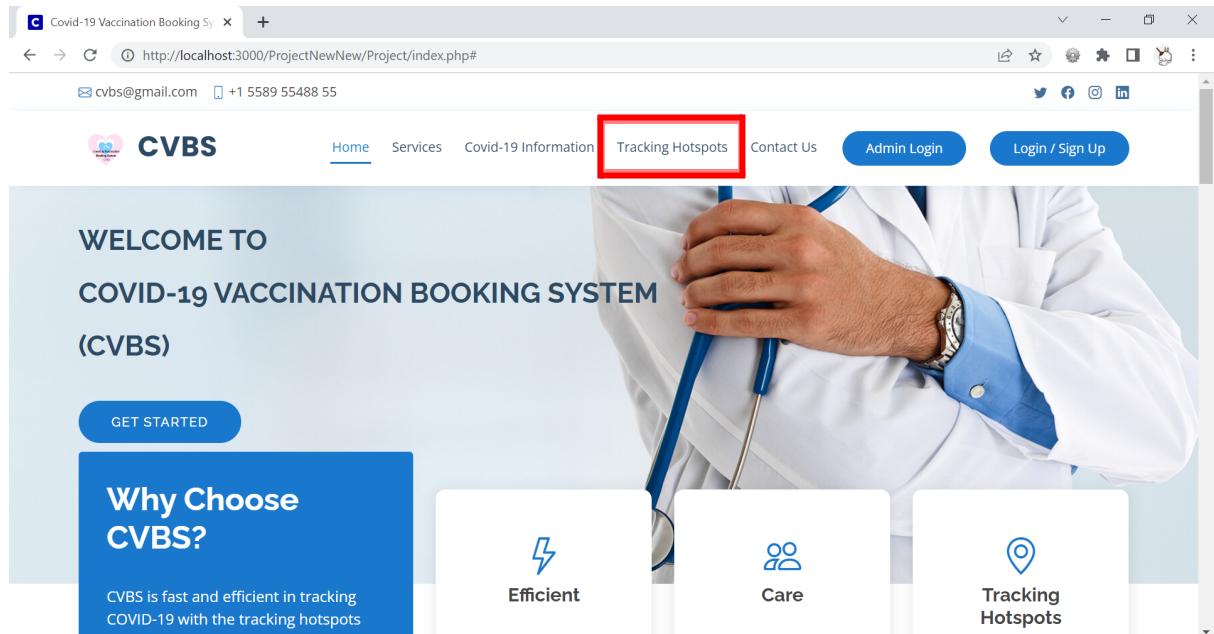


Figure 14: General interface of CVBS website

User can select the tracking hotspot section to access the tracking hotspot interface.

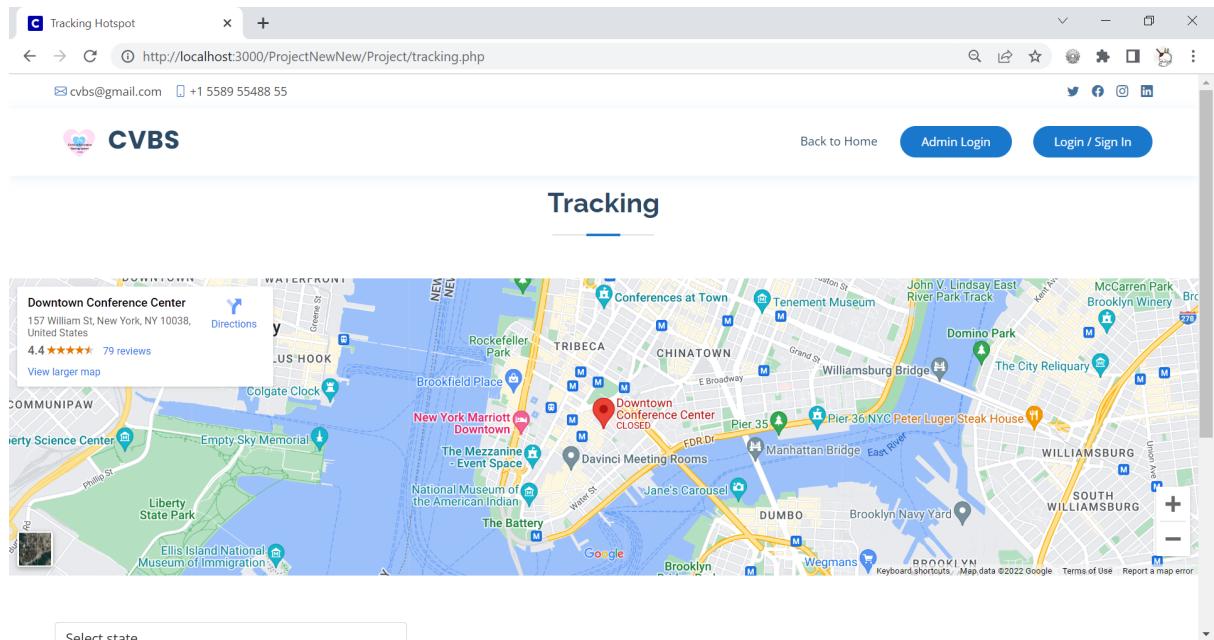


Figure 15: Tracking hotspot interface

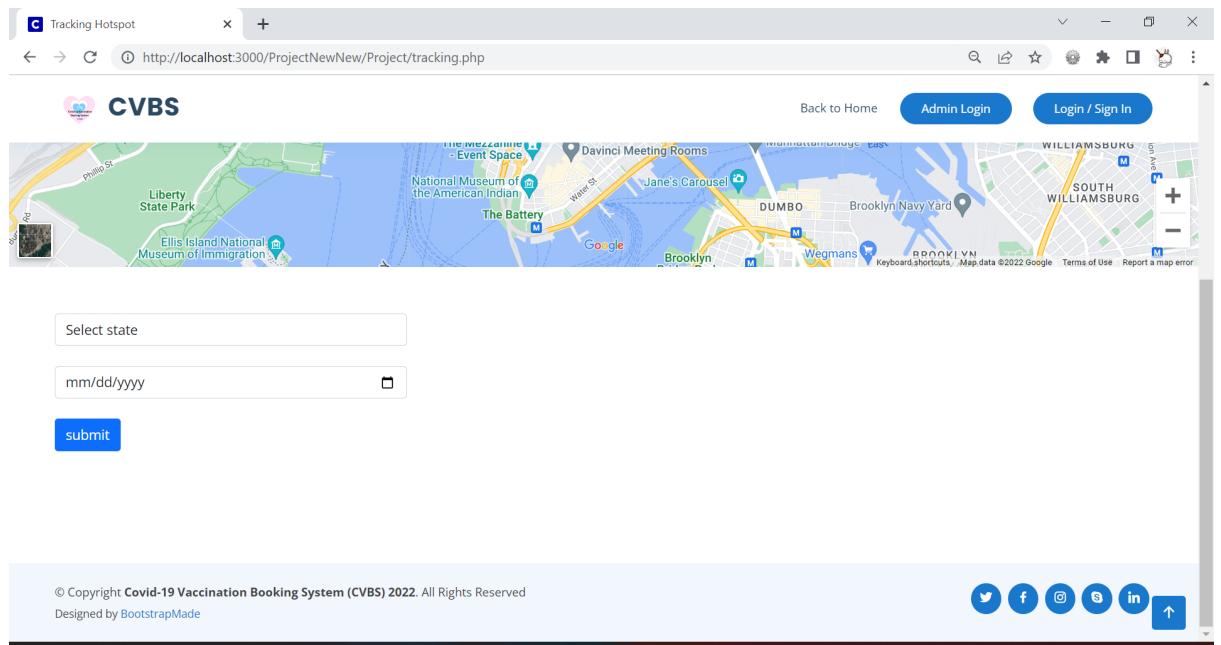


Figure 16: Tracking hotspot interface

User can select the state and date they want to get the number of cases of Covid-19 in their state.

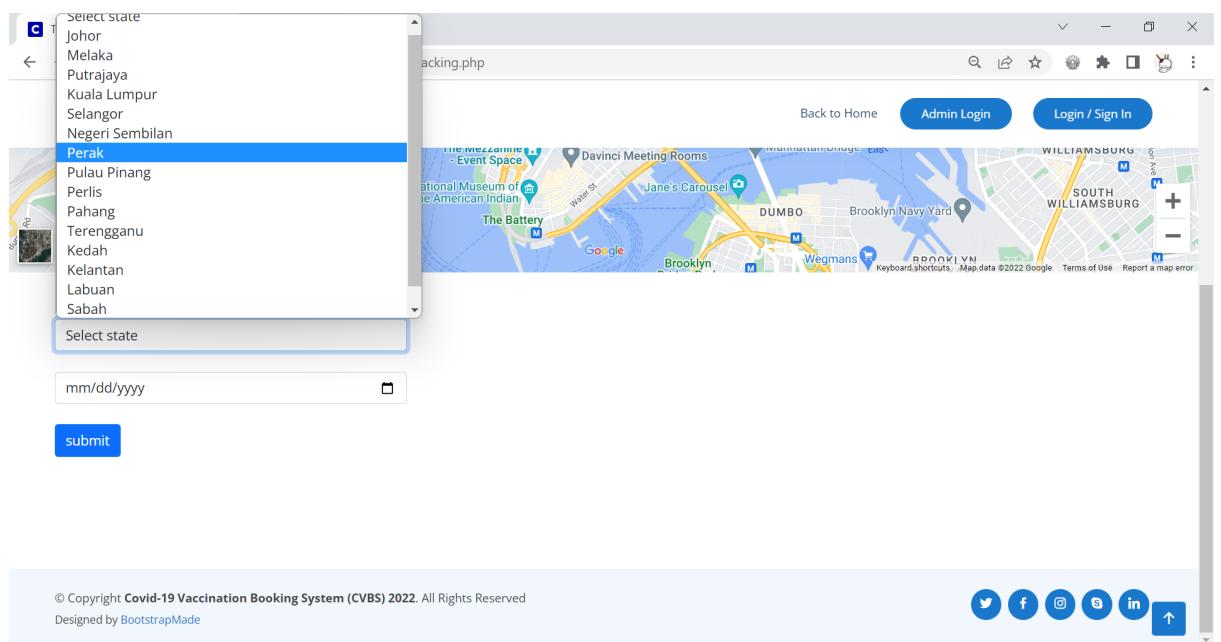


Figure 17: Tracking hotspot interface

A dropdown list will be provided for the user to select the state.

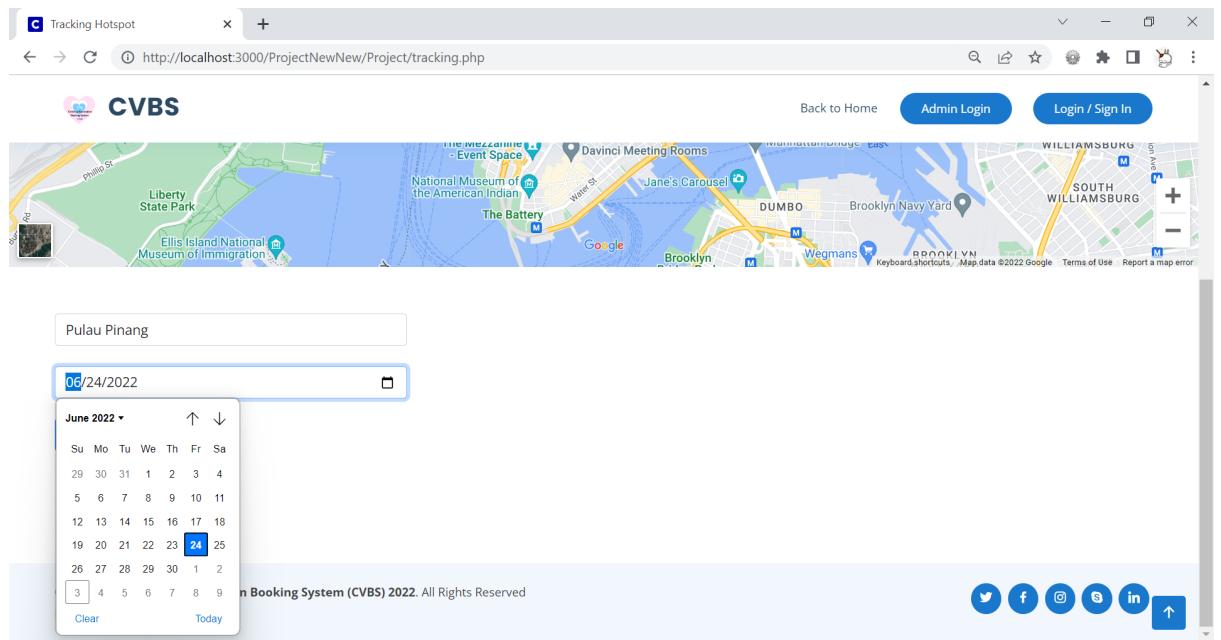


Figure 18: Tracking hotspot interface

A calendar is provided for the user to select the date.

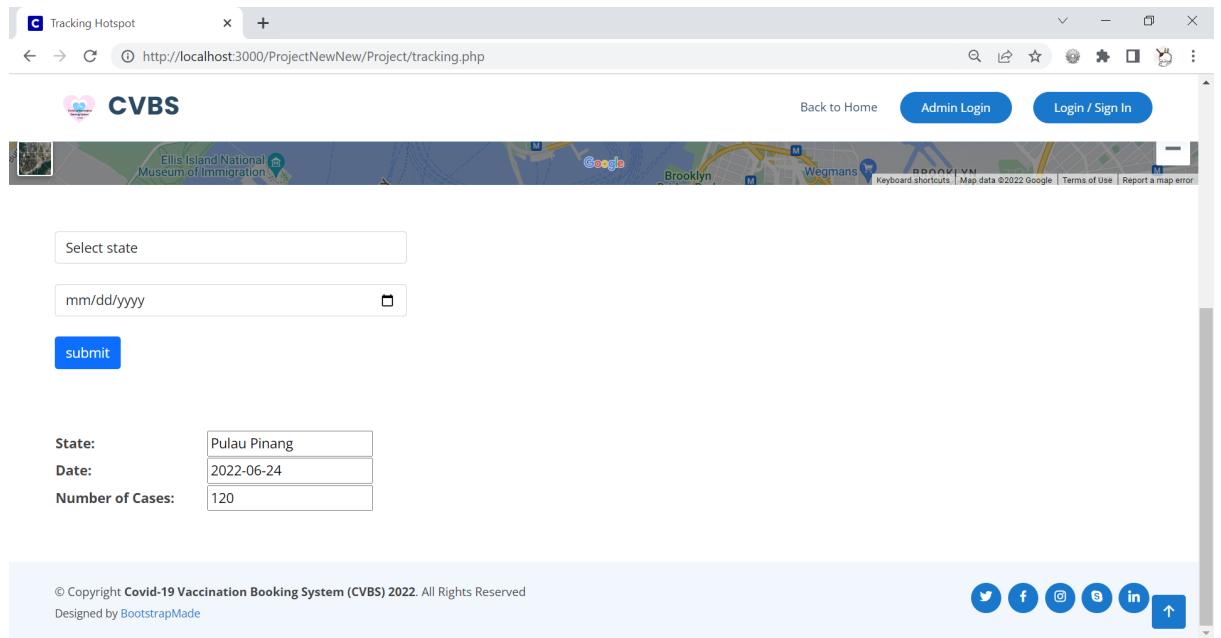


Figure 19: Tracking hotspot interface

The state, date and number of cases will be displayed to the user.

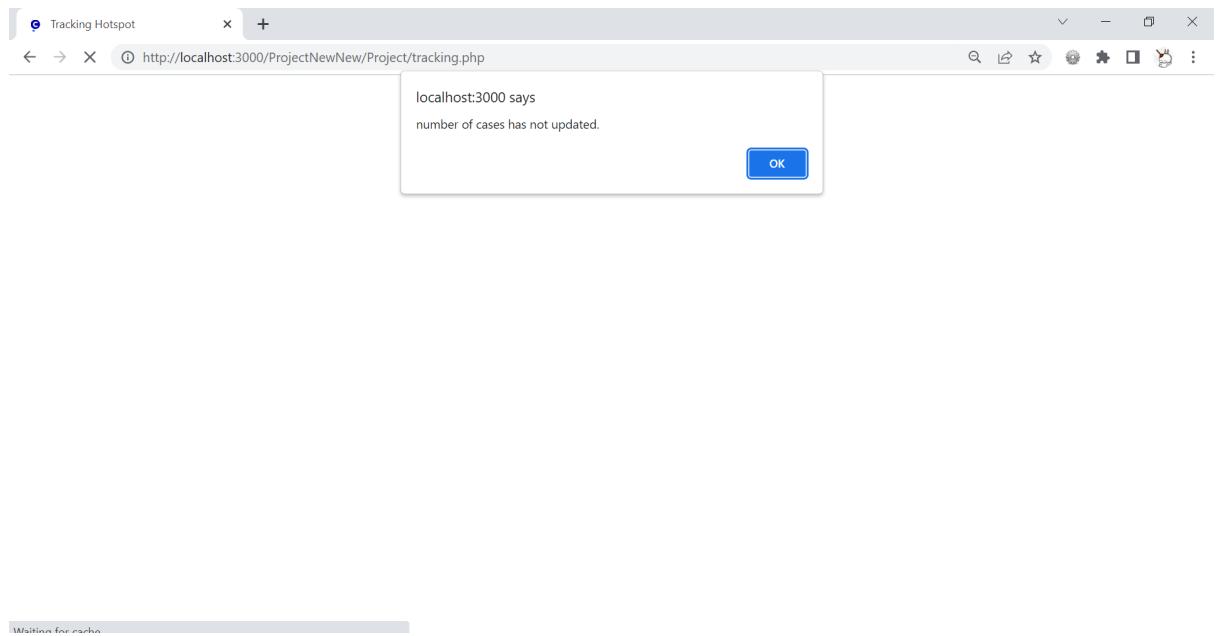


Figure 20: System display inform message

If the number of cases for that particular state and date entered by the user have not been updated, a message will pop out to inform the user.

7.2. Admin

7.2.1. Log In

7.2.1.1. Flow Chart

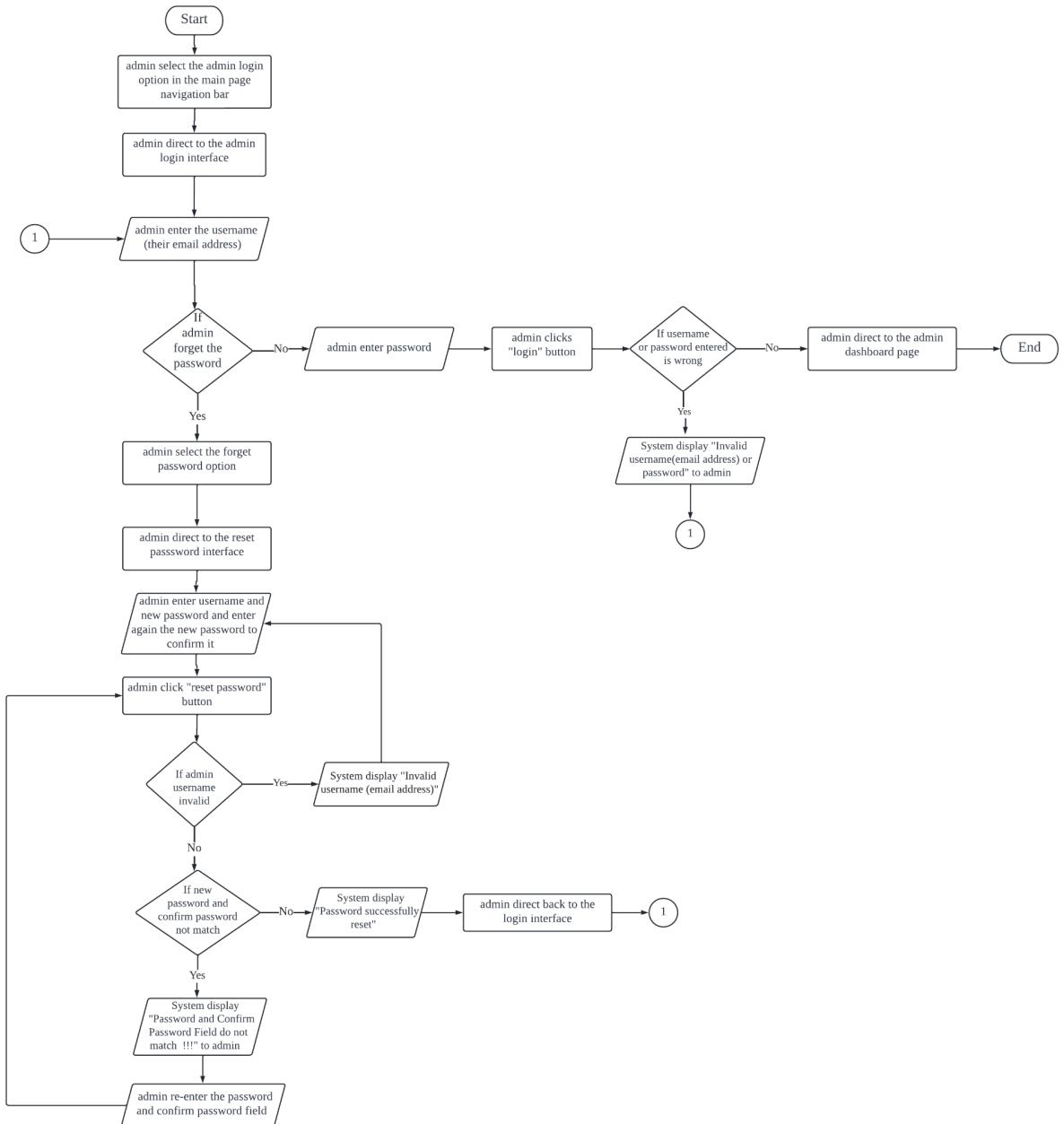


Figure 21: Admin Login Flowchart

7.2.1.2. Interface Explanation

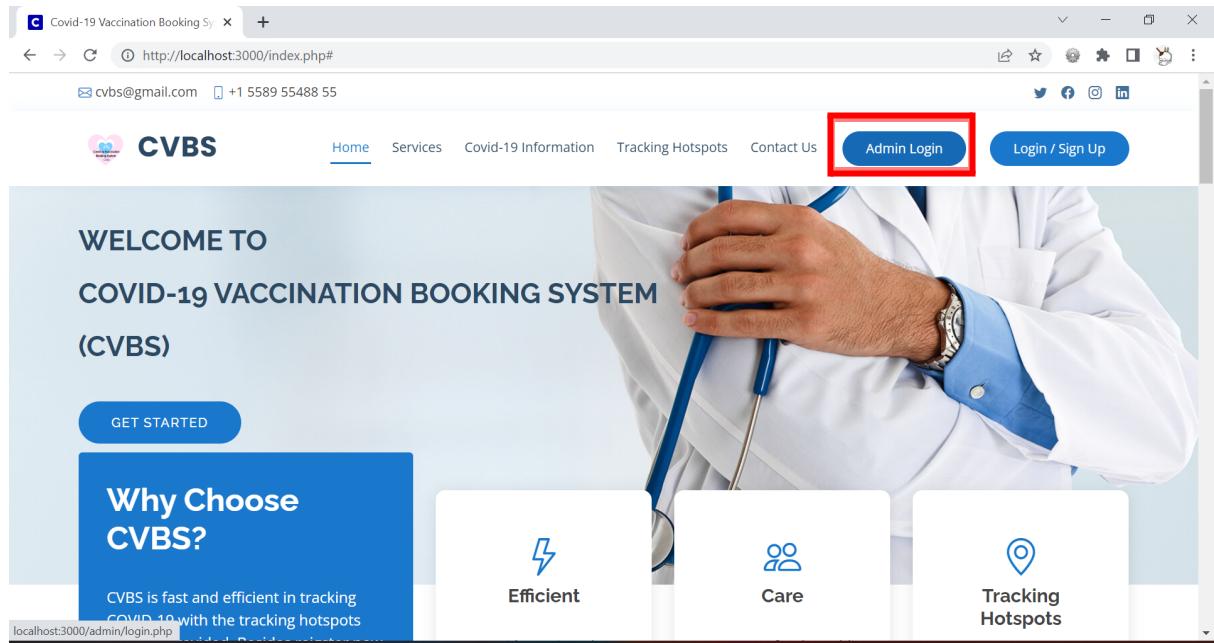


Figure 22: General interface of CVBS website

Admin select the admin login option to access the login interface.

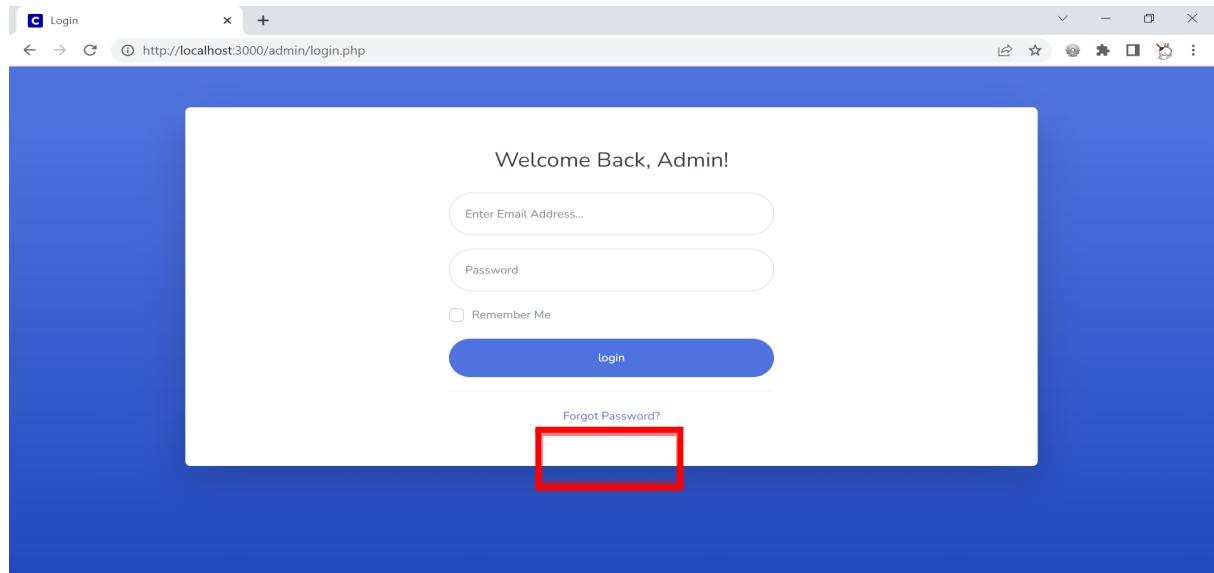


Figure 23: Admin's login interface

If the admin forgets the password, admin can select the forget password option below the login button.

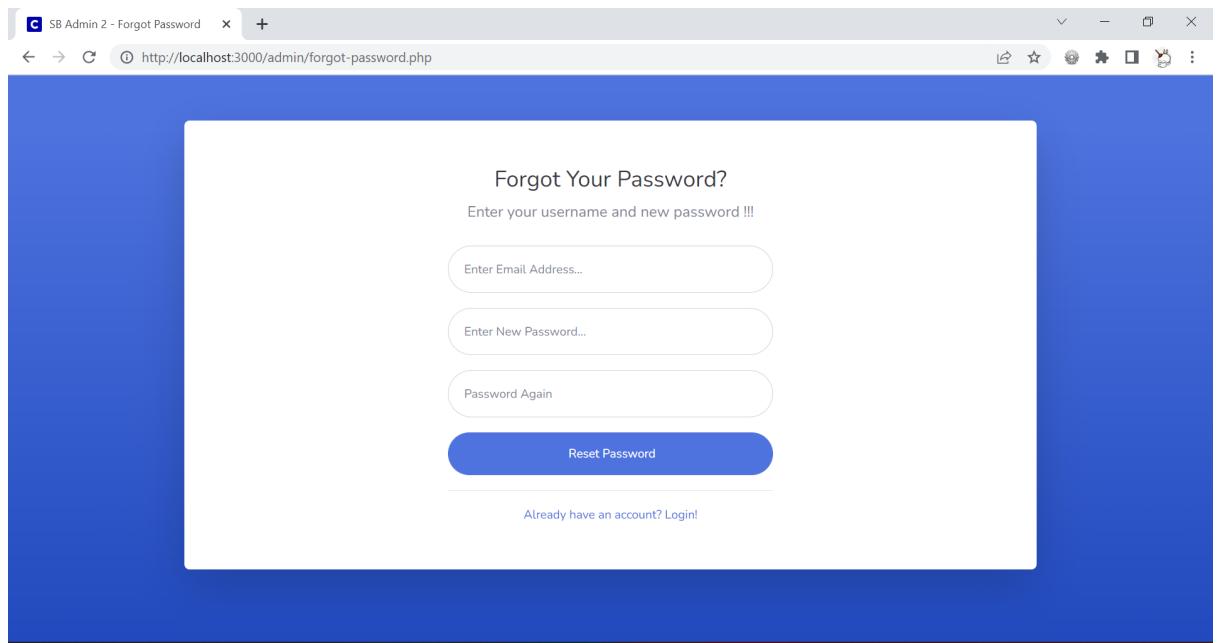


Figure 24: Reset password interface

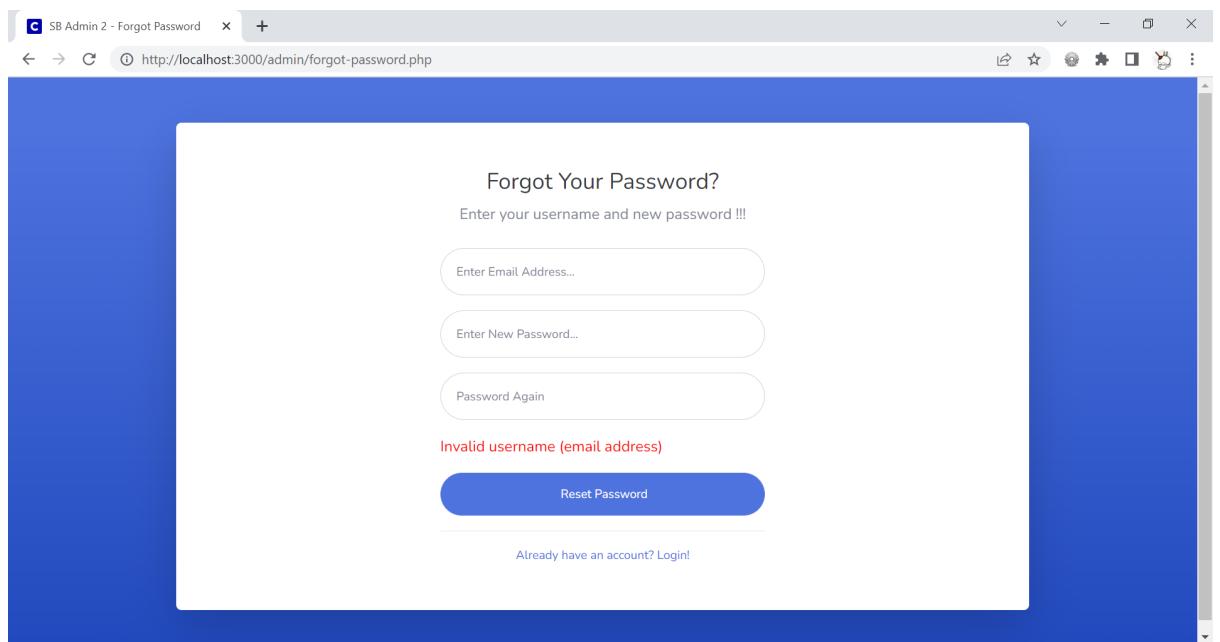


Figure 25: Reset password interface display invalid message

If the username entered is invalid for the reset password, the system will display invalid username (email address).

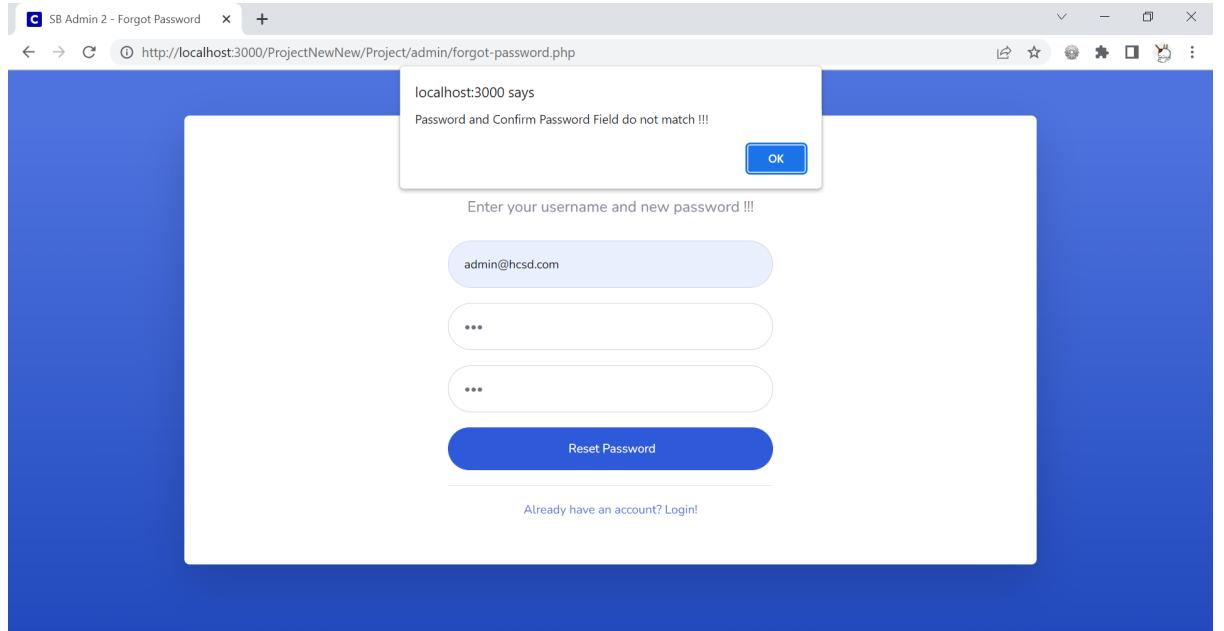


Figure 26: Reset password interface

If the password and confirm password field do not match, the system will display the Password and Confirm Password Field do not match !!!

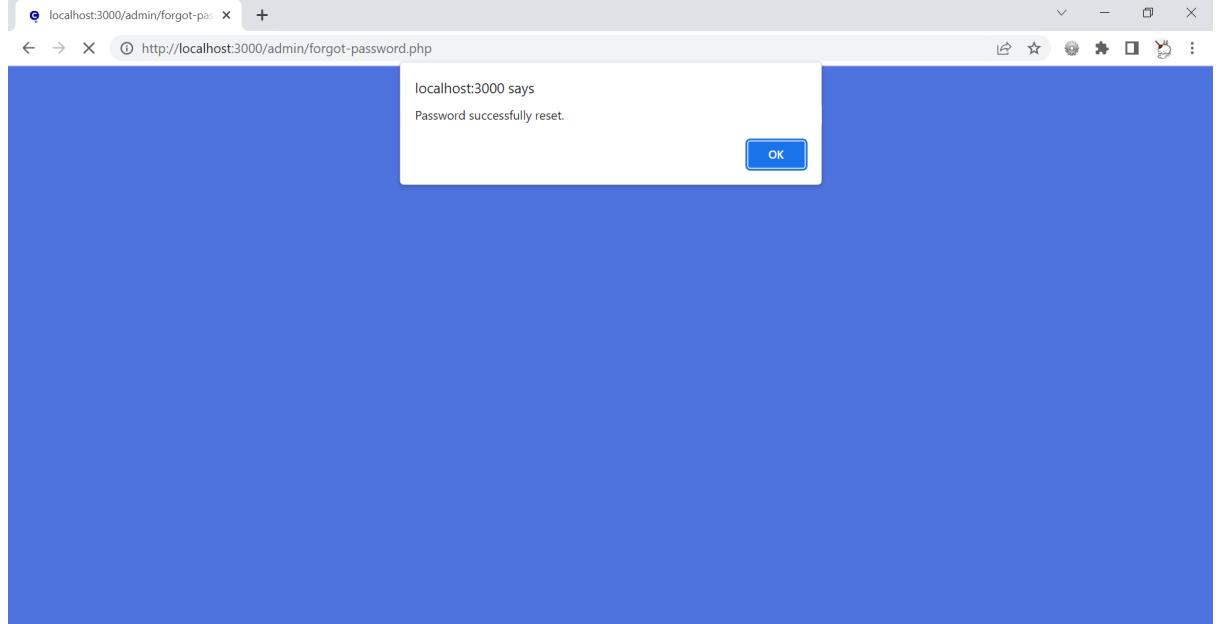


Figure 27: System display reset password successful message

If the admin reset the password successfully, the system will display the Password successfully reset.

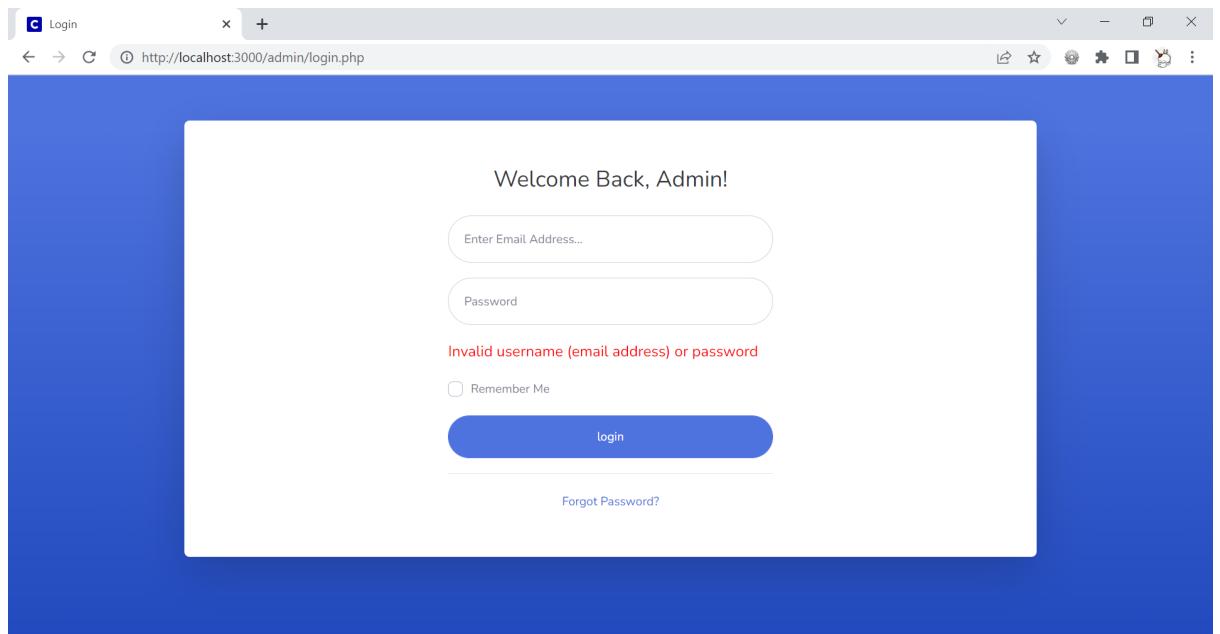


Figure 28: Admin's login interface

In the login interface, if the admin entered the wrong username or password, the system will display Invalid username (email address) or password.

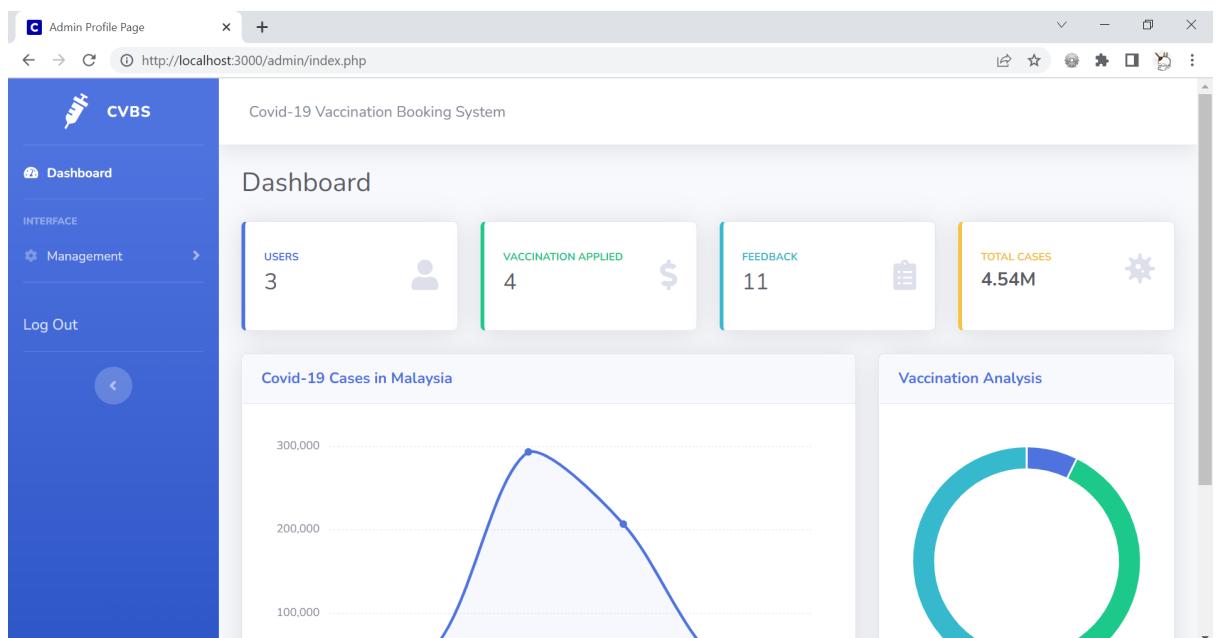


Figure 29: Admin dashboard

If the admin successfully login, admin will be directed to the admin dashboard.

7.2.2. View & Delete User

7.2.2.1. Flow Chart

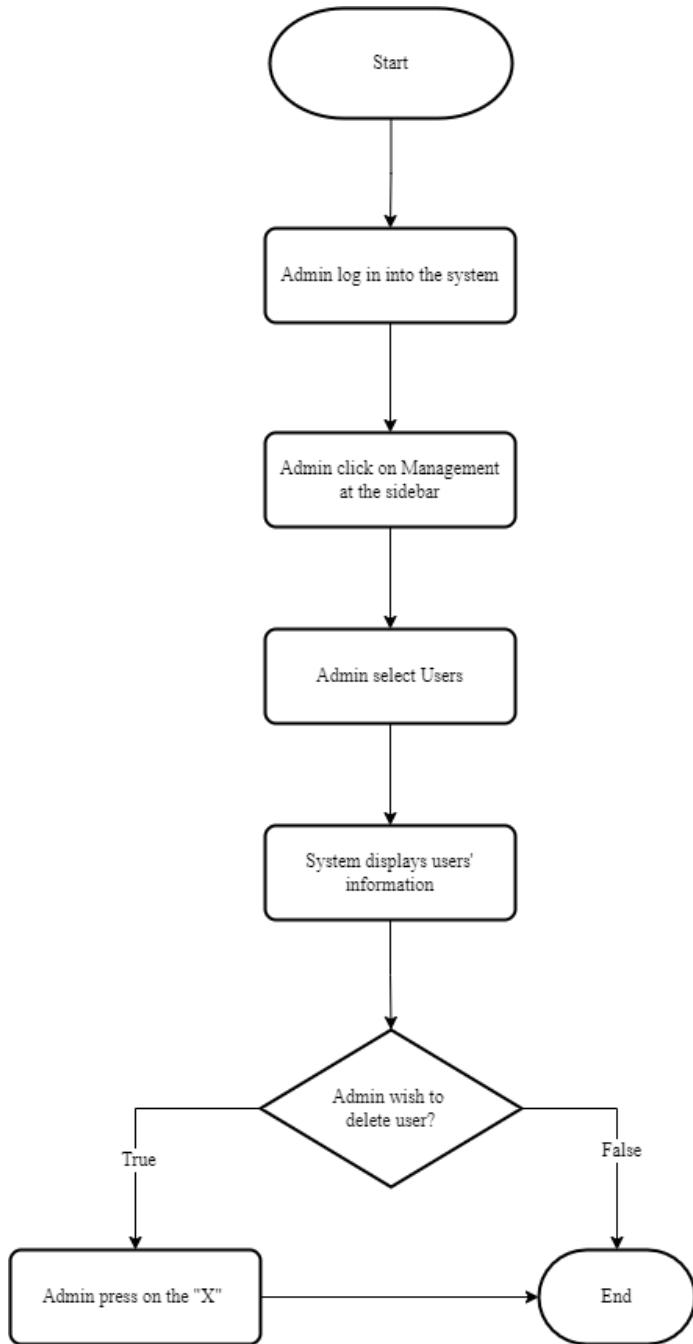


Figure 30: View and Delete User Flowchart

7.2.2.2. Interface Explanation

After login, the admin will be directed to the dashboard page. There will show the number of users, number of vaccination applied, number of feedback received and the total cases of Covid-19 at the top of the page. Below are the line chart and circle

chart showing the statistics of Covid-19 Cases in Malaysia and Vaccination Analysis respectively.

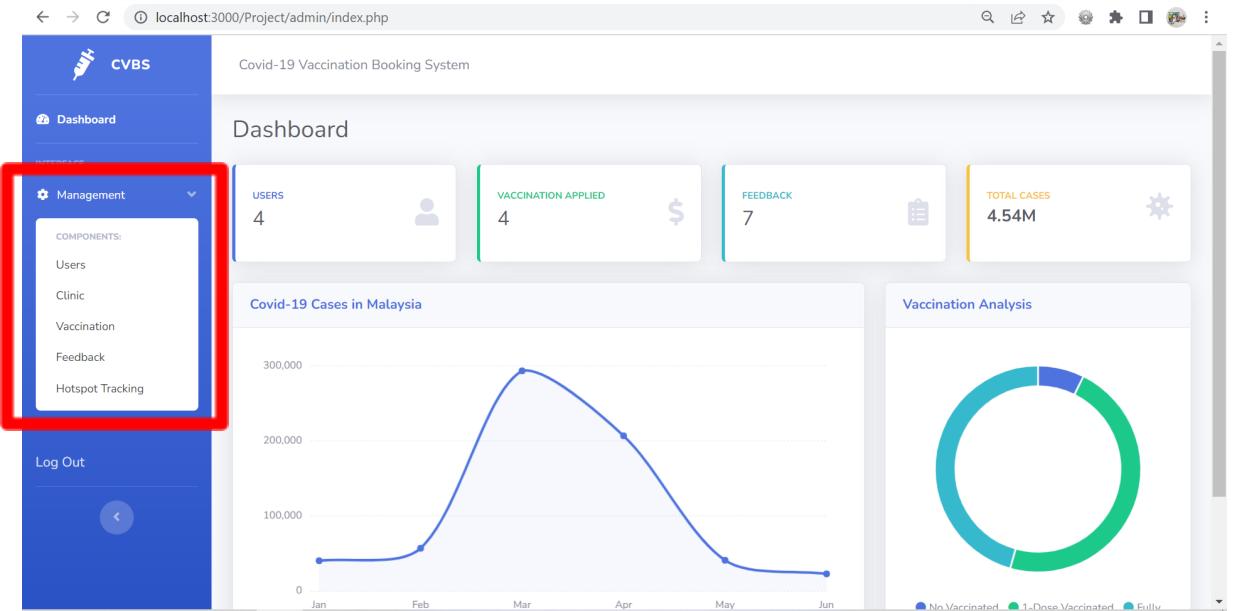


Figure 31: Admin dashboard

On the admin dashboard page, click on Management and select Users.

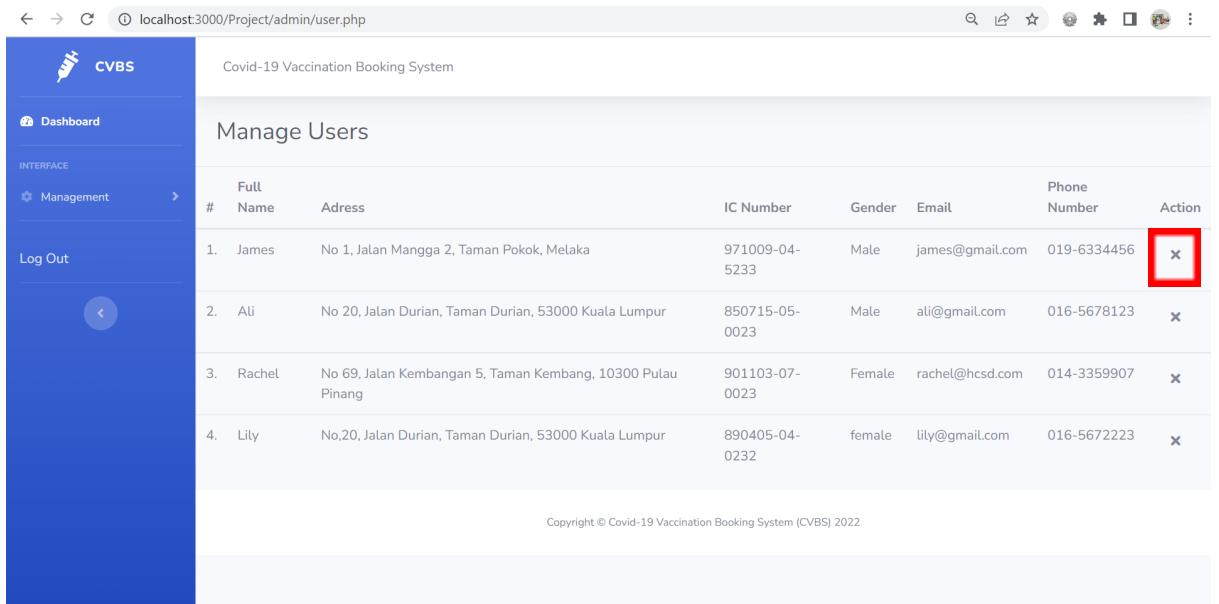


Figure 32: Manage users interface

The information of users will be displayed. If the admin wishes to delete the user's account, the admin can click on the "X" button.

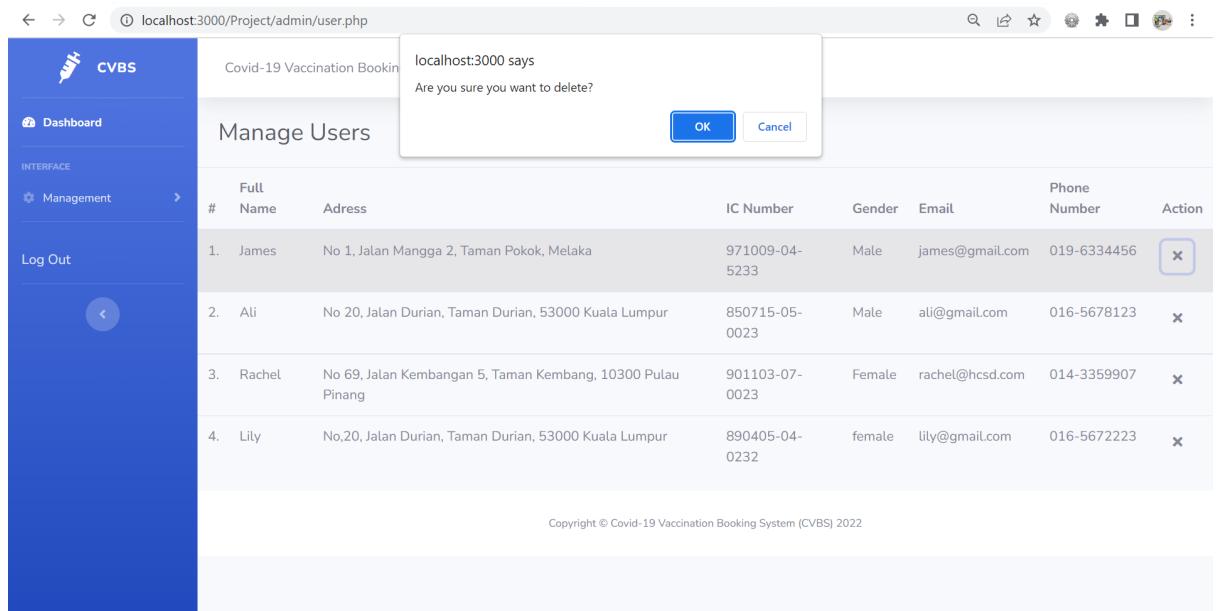


Figure 33: Manage users interface

A window box will pop out. If the admin is sure to delete the user, then the admin can click on the “OK” button.

7.2.3. Search & Insert Clinic

7.2.3.1. Flow Chart

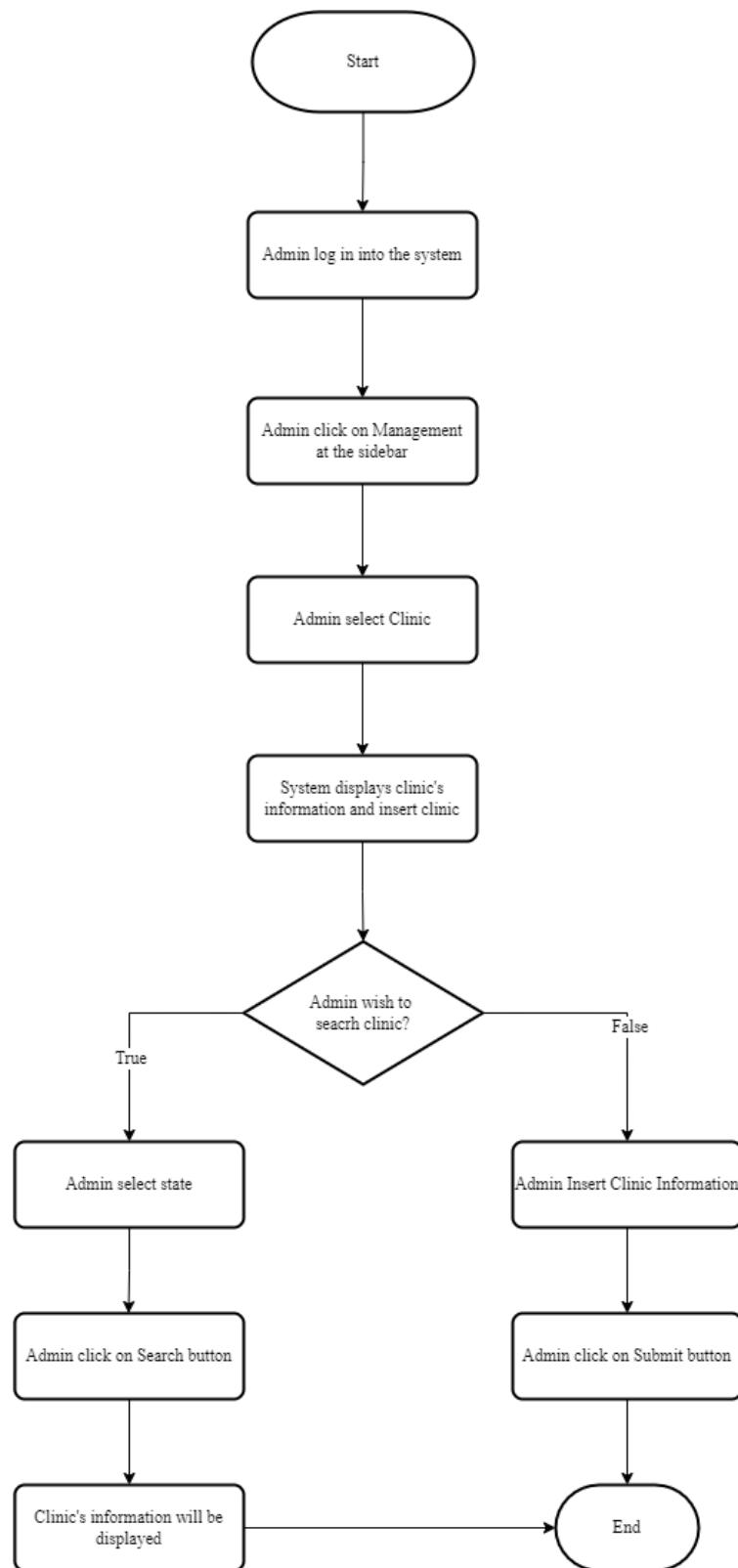


Figure 34: Search and Insert Clinic Flowchart

7.2.3.2. Interface Explanation

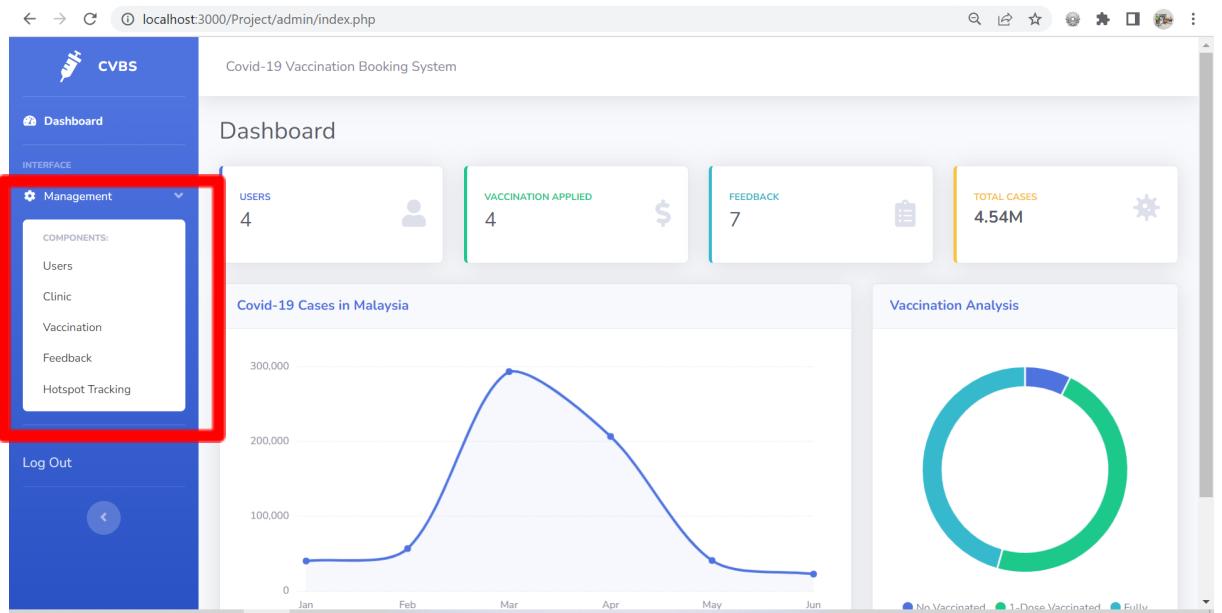


Figure 35: Admin dashboard

On the admin dashboard page, click on Management and select Clinic.

The screenshot shows the 'Manage clinic' interface. The sidebar on the left has a red box around the 'Management' section, specifically the 'Select State' dropdown menu. The dropdown menu lists states: Johor, Melaka, Putrajaya, Kuala Lumpur, Selangor, Negeri Sembilan, Perak, Pulau Pinang, Perlis, Pahang, Terengganu, Kedah, Kelantan, Labuan, Sabah, and Sarawak. To the right of the dropdown are fields for 'Clinic Address' and 'Clinic Phone Number', both currently empty. A 'Search' button is located next to the dropdown. At the bottom is a 'Submit' button. The footer of the page includes a copyright notice: 'Copyright ©Covid-19 Vaccination Booking System (CVBS) 2022'.

Figure 36: Manage clinic interface

If the admin wishes to search the clinic, admin can select one of the states and click on the Search button.

The screenshot shows the 'Covid-19 Vaccination Booking System' (CVBS) admin interface. On the left, a sidebar has 'Dashboard' and 'Management' under 'INTERFACE'. Below that is a 'Log Out' button. The main area has a header 'Covid-19 Vaccination Booking System'. A search bar at the top contains a dropdown set to 'Johor' and a blue 'Search' button. A red box highlights this search area. Below the search bar is a table titled 'Clinic Information' with two rows of data. The table has columns: 'Clinic', 'Clinic Address', and 'Clinic Phone Number'. The first row is 'Klinik Dr Ko' with address '165, Jalan Harimau, Taman Century, 80250 Johor Bahru, Johor' and phone '07-3335555'. The second row is 'Klinik Fatimah' with address '113, Jalan Trus, Bandar Johor Bahru, 80000 Johor Bahru, Johor' and phone '07-2072707'. At the bottom, there's a section titled 'Insert Clinic' with four input fields: 'Select State' (dropdown), 'Clinic Name' (text input), 'Clinic Contact' (text input), and 'Clinic Address' (text input). A vertical scroll bar is on the right side of the page.

Figure 37: Manage clinic interface

Let said Johor had been chosen, then the information of clinics that are in Johor will be displayed.

This screenshot is similar to Figure 37 but focuses on the 'Insert Clinic' form. The search bar now shows 'Johor' and has a red box around it. The table below shows the same two clinics from Figure 37. The 'Insert Clinic' form is highlighted with a large red box. It contains four input fields: 'Select State' (dropdown), 'Clinic Name' (text input), 'Clinic Contact' (text input), and 'Clinic Address' (text input). Below these is a blue 'Submit' button. The copyright notice 'Copyright ©Covid-19 Vaccination Booking System (CVBS) 2022' is at the bottom.

Figure 38: Manage clinic interface

If the admin wishes to insert a new clinic, then the admin must fill in the details of the clinic such as state, clinic name, contact number and clinic address. Then, the admin clicks on the Submit button.

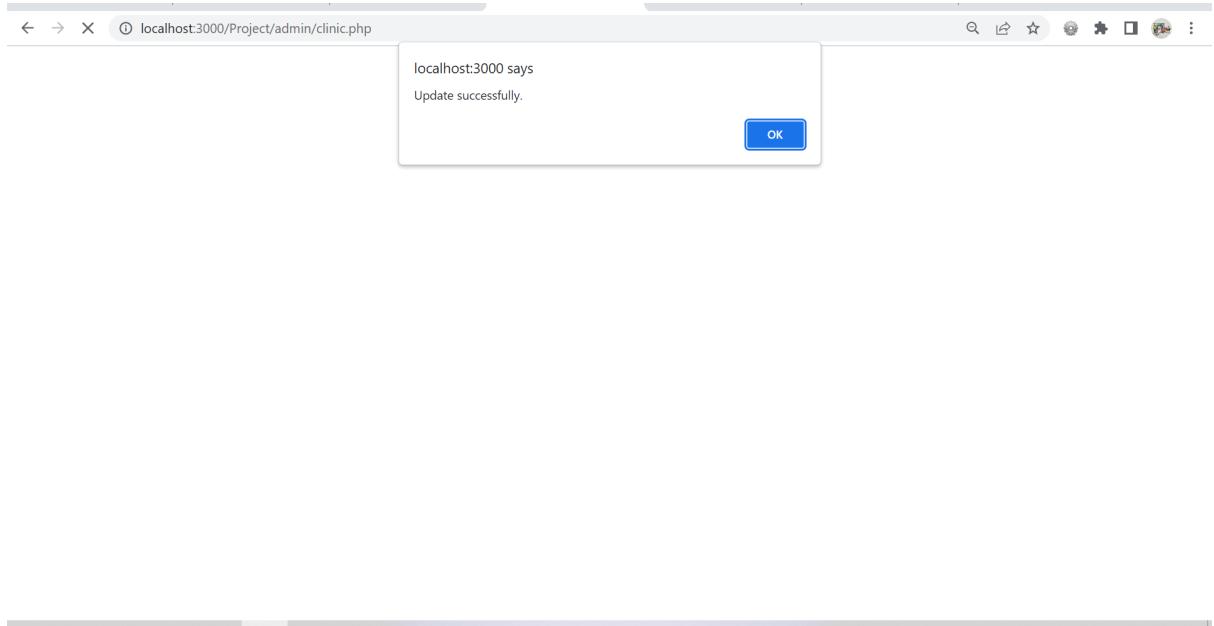


Figure 39: System display successful message

A window will pop out and show updates successfully.

7.2.4. View & Update Vaccination Status

7.2.4.1. Flow Chart

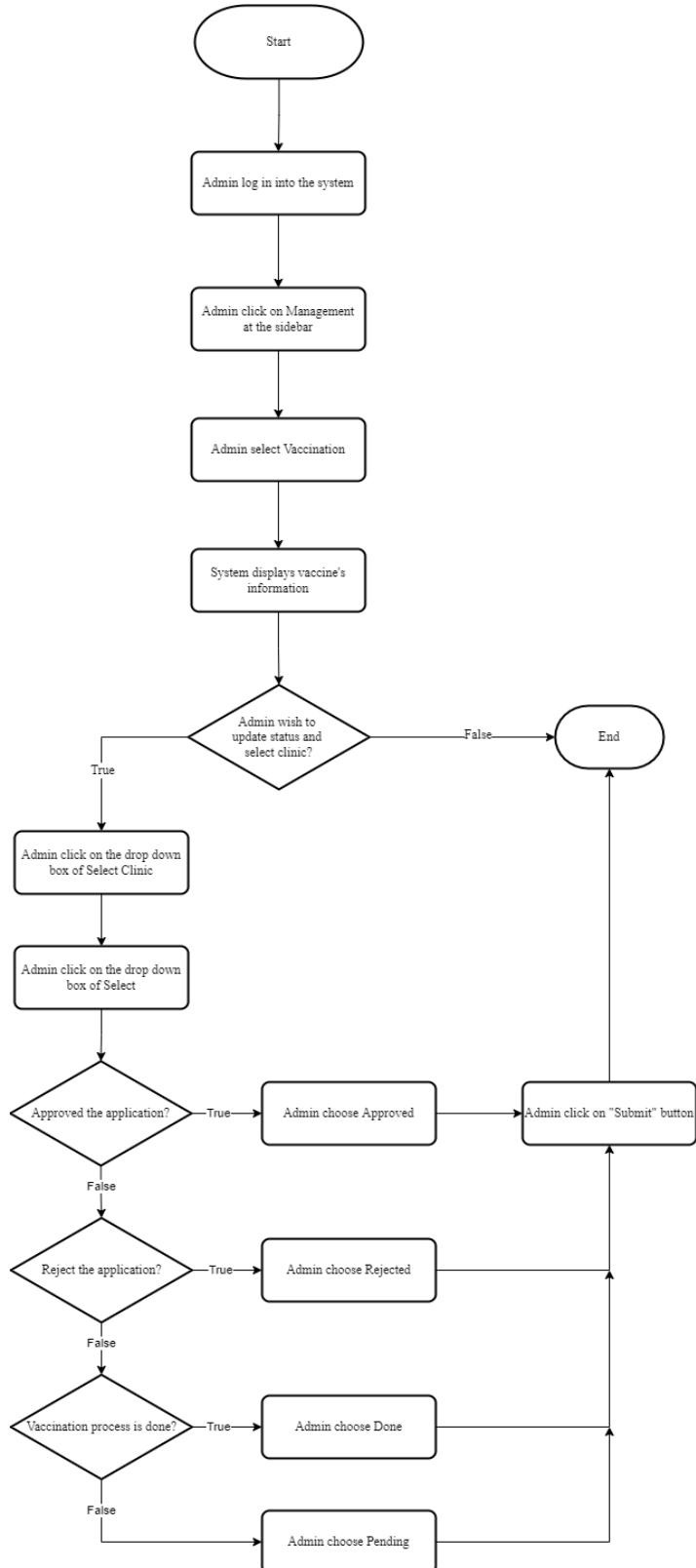


Figure 40: View and Update Vaccination Status Flowchart

7.2.4.2. Interface Explanation

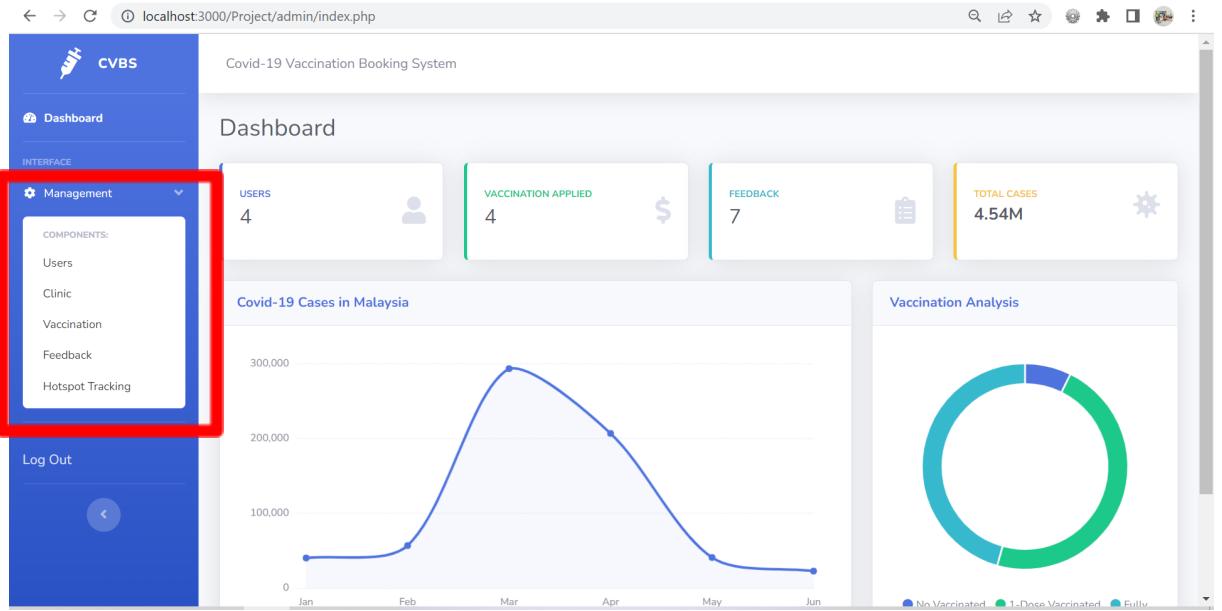


Figure 41: Admin dashboard

On the admin dashboard page, click on Management and select Vaccination.

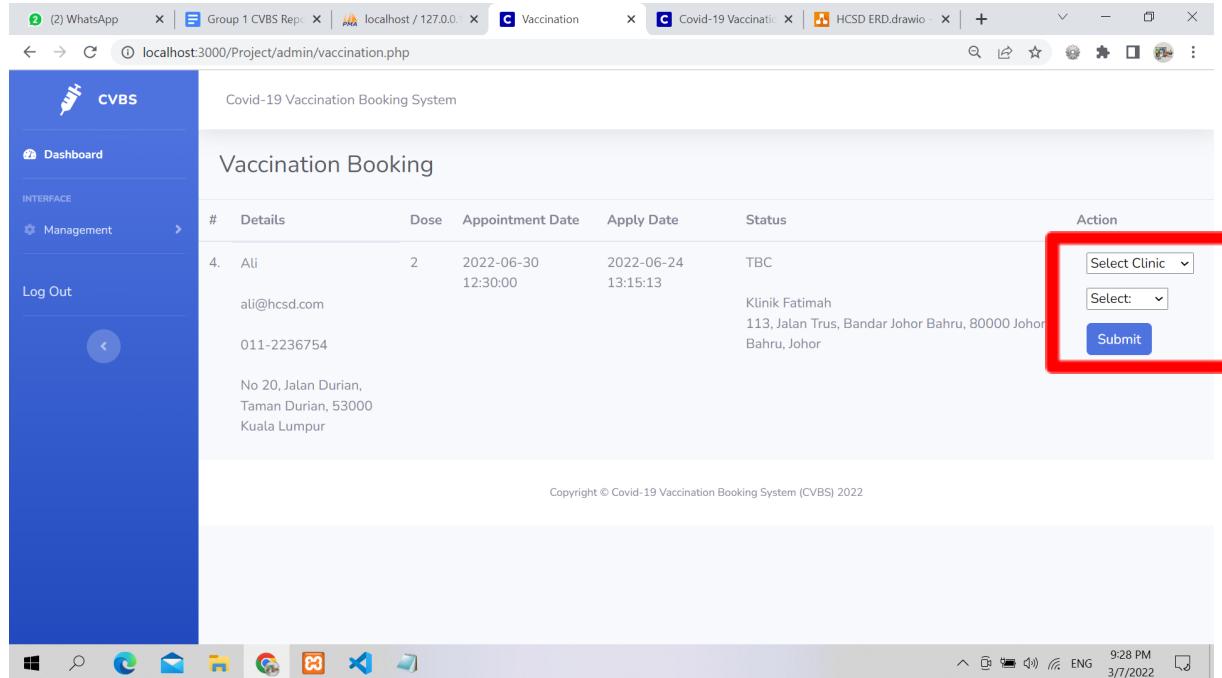


Figure 42: Manage vaccination appointment interface

The information of vaccination that users had submitted will be displayed on the vaccination page. The red box shows the clinic needs to assign to the user and the status of the user during the vaccination process.

This screenshot shows the 'Vaccination Booking' interface of the CVBS system. On the left is a sidebar with a logo, 'CVBS', 'Dashboard', 'Management' (which is currently selected), and 'Log Out'. The main area displays a table of vaccination details. One row for user 'Ali' is shown with columns: '#', 'Details', 'Dose', 'Appointment Date', 'Apply Date', 'Status', and 'Action'. The 'Action' column contains a dropdown menu with options: 'Select Clinic', 'Select Clinic' (highlighted in blue), 'Klinik Dr Ko', 'Klinik Fatimah', and 'Submit'. A red box highlights this dropdown menu. At the bottom of the page is a copyright notice: 'Copyright © Covid-19 Vaccination Booking System (CVBS) 2022'.

Figure 43: Manage vaccination appointment interface

The admin is able to assign the clinic to the users.

This screenshot shows the same 'Vaccination Booking' interface as Figure 43. The 'Management' option in the sidebar is still selected. The table shows the same user record for 'Ali'. The 'Action' column now contains a dropdown menu with options: 'Select Clinic', 'Select' (highlighted in blue), 'Approved', 'Rejected', 'Done', and 'Pending'. A red box highlights this dropdown menu. The copyright notice at the bottom remains the same: 'Copyright © Covid-19 Vaccination Booking System (CVBS) 2022'.

Figure 44: Manage vaccination appointment interface

After clicking on the “Select: “ the options, Approved (the booking is approved), Rejected (the booking is rejected), Done (the vaccination process is done) and Pending (the vaccination process is pending) will be shown. The admin can choose either one. Then, the admin clicks on the “Submit” button and the status will be updated.

7.2.5. View & Update Feedback Status

7.2.5.1. Flow Chart

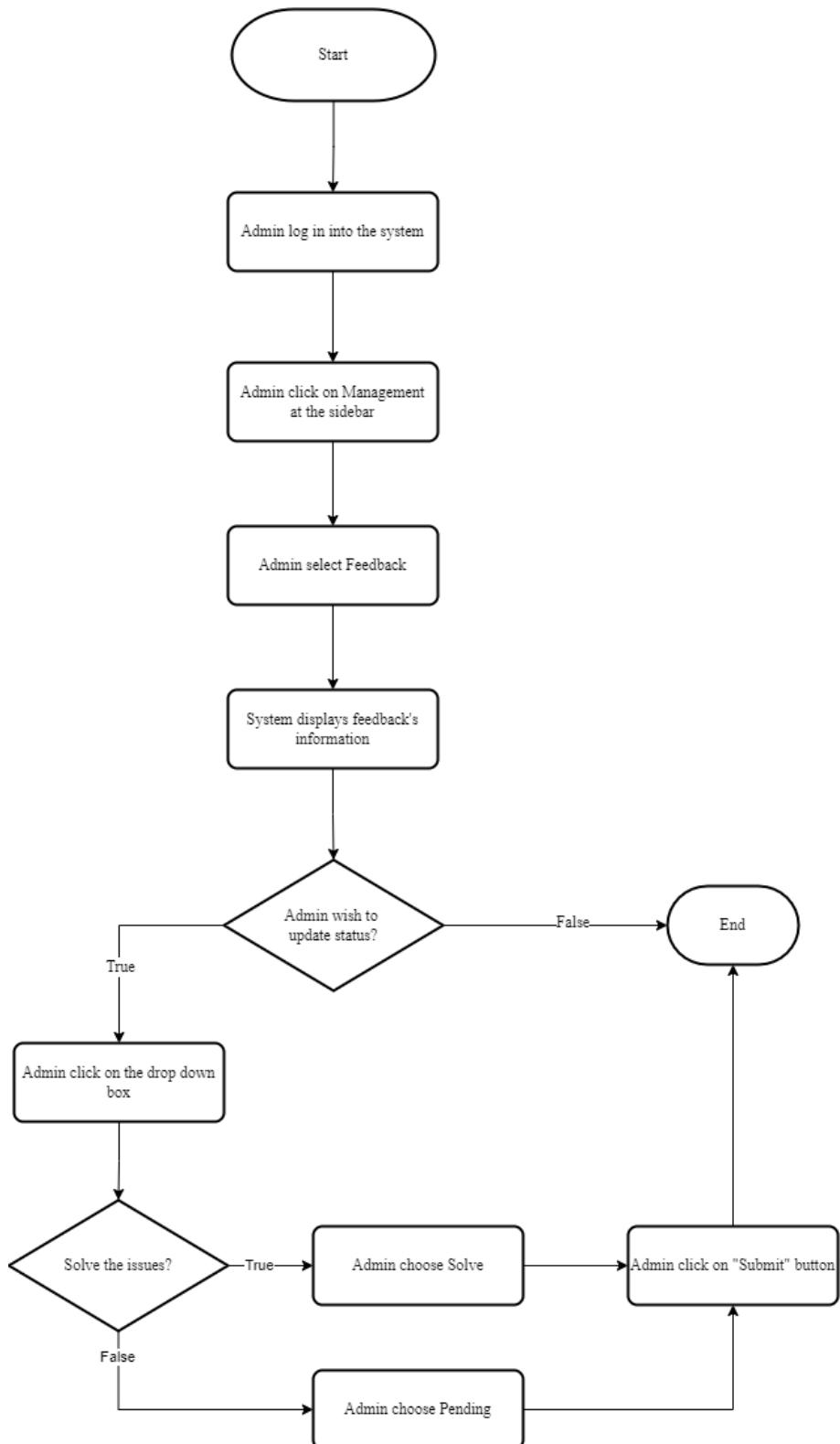


Figure 45: View and Update Feedback Status Flowchart

7.2.5.2. Interface Explanation

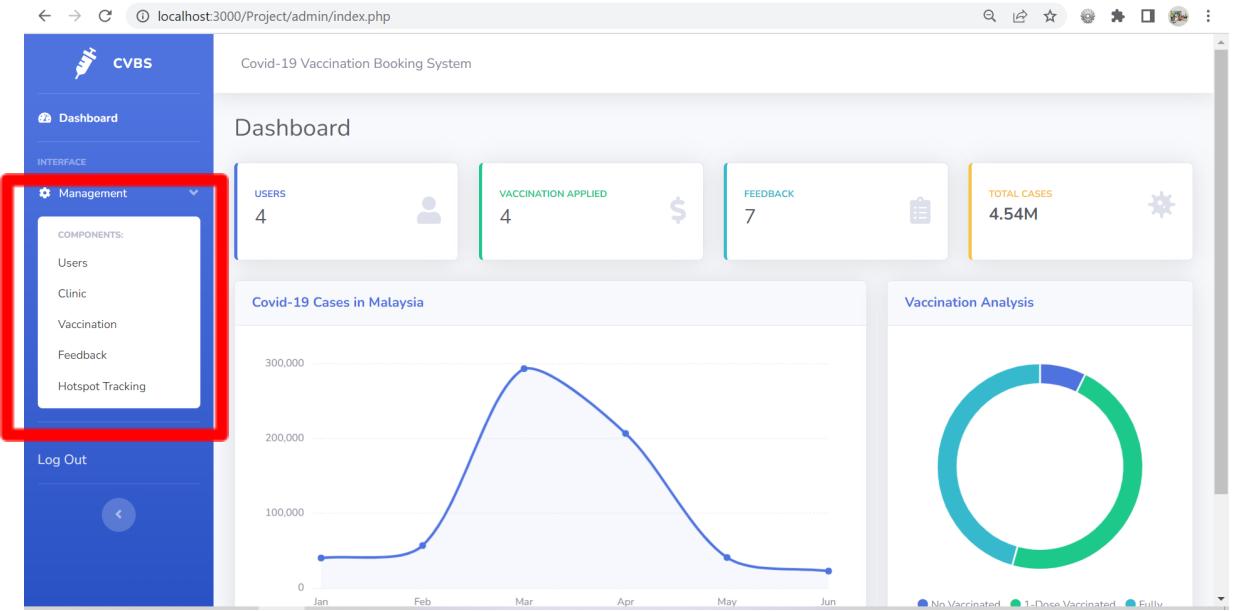


Figure 46: Admin dashboard

On the admin dashboard page, click on Management and select Feedback.

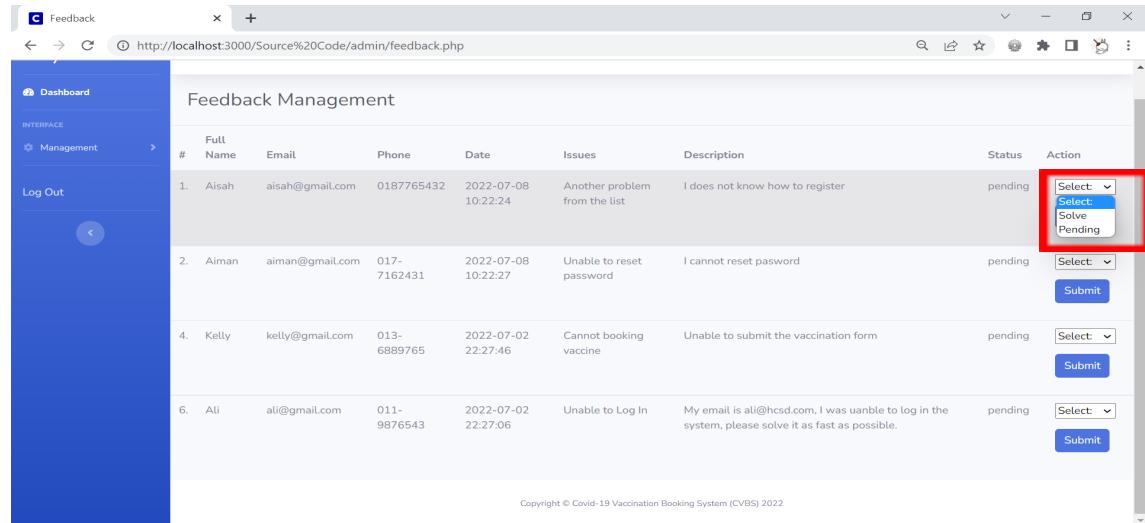
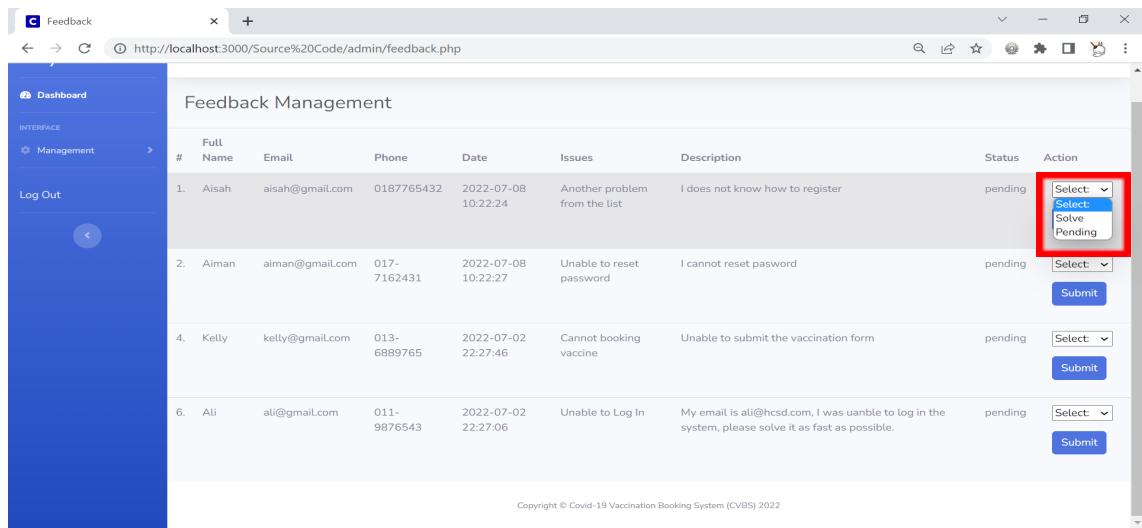


Figure 47: Manage feedback interface

The information of feedback that users had submitted will be displayed on the feedback page. The red box shows the action that the admin can take whether the issue has been solved or not.



The screenshot shows a web-based feedback management system. On the left, there's a sidebar with 'Dashboard' and 'Management' options, and a 'Log Out' button. The main area is titled 'Feedback Management' and contains a table of feedback entries. Each entry includes columns for 'Full Name', 'Email', 'Phone', 'Date', 'Issues', 'Description', 'Status' (set to 'pending'), and an 'Action' column with a dropdown menu. The dropdown menu is highlighted with a red box and contains the options: 'Select', 'Select', 'Solve', and 'Pending'. The table has 6 rows of data.

#	Full Name	Email	Phone	Date	Issues	Description	Status	Action
1.	Aisah	aisah@gmail.com	0187765432	2022-07-08 10:22:24	Another problem from the list	I do not know how to register	pending	Select: <input type="button" value="Select"/> <input type="button" value="Solve"/> <input type="button" value="Pending"/>
2.	Aiman	aiman@gmail.com	017-7162431	2022-07-08 10:22:27	Unable to reset password	I cannot reset password	pending	Select: <input type="button" value="Select"/> <input type="button" value="Submit"/>
4.	Kelly	kelly@gmail.com	013-6889765	2022-07-02 22:27:46	Cannot booking vaccine	Unable to submit the vaccination form	pending	Select: <input type="button" value="Select"/> <input type="button" value="Submit"/>
6.	Ali	ali@gmail.com	011-9876543	2022-07-02 22:27:06	Unable to Log In	My email is ali@hcsd.com, I was unable to log in the system, please solve it as fast as possible.	pending	Select: <input type="button" value="Select"/> <input type="button" value="Submit"/>

Copyright © Covid-19 Vaccination Booking System (CVBS) 2022

Figure 48: Manage feedback interface

After clicking on the “Select: “ the options, Solve and Pending will be shown. The admin can choose either one. Then, the admin clicks on the “Submit” button and the status will be updated.

7.2.6. Update Covid-19 Case by States

7.2.6.1. Flow Chart

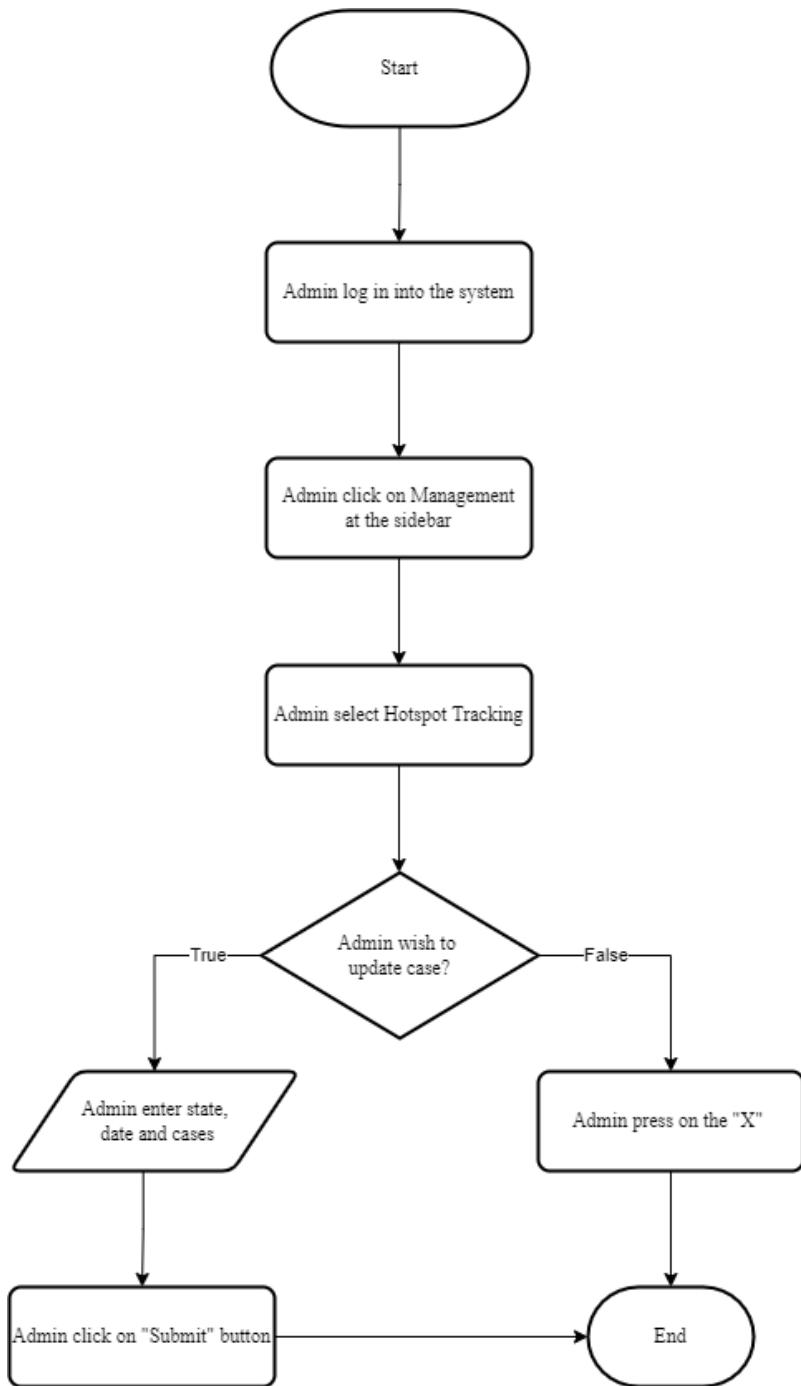


Figure 49: Update Covid-19 Cases by States Flowchart

7.2.6.2. Interface Explanation

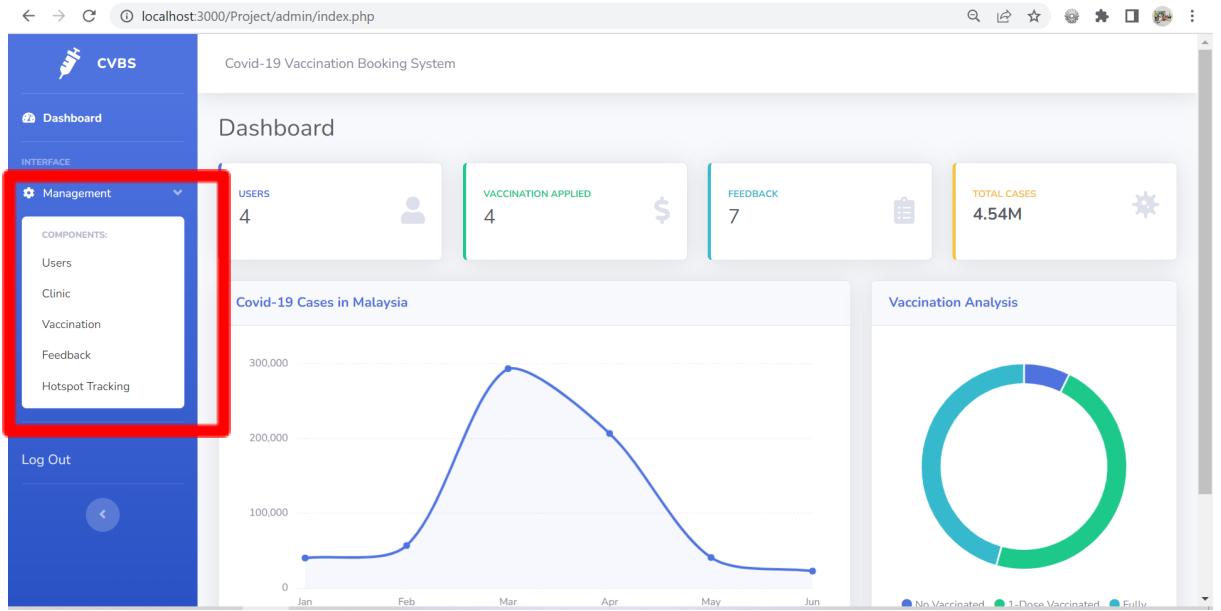


Figure 50: Admin dashboard

On the admin dashboard page, click on Services and select Hotspot Tracking.

The screenshot shows the 'Update Covid-19 cases for Tracking Hotspot Purpose' form. It includes fields for 'Select state', 'dd/mm/yyyy', 'cases of Covid-19', and a 'Submit' button. Below the form is a table listing Covid-19 cases:

#	State	Date	Total Cases	Action
1.	Johor	2022-06-30	120	X
2.	Kedah	2022-06-24	6	X
3.	Kelantan	2022-06-24	4	X
4.	Kuala Lumpur	2022-06-24	9	X

Figure 51: Update Covid-19 cases interface

The form to update the Covid-19 cases is displayed. Admin need to fill in the State, Date and Cases of Covid-19. Then, the admin clicks on the “Submit” button.

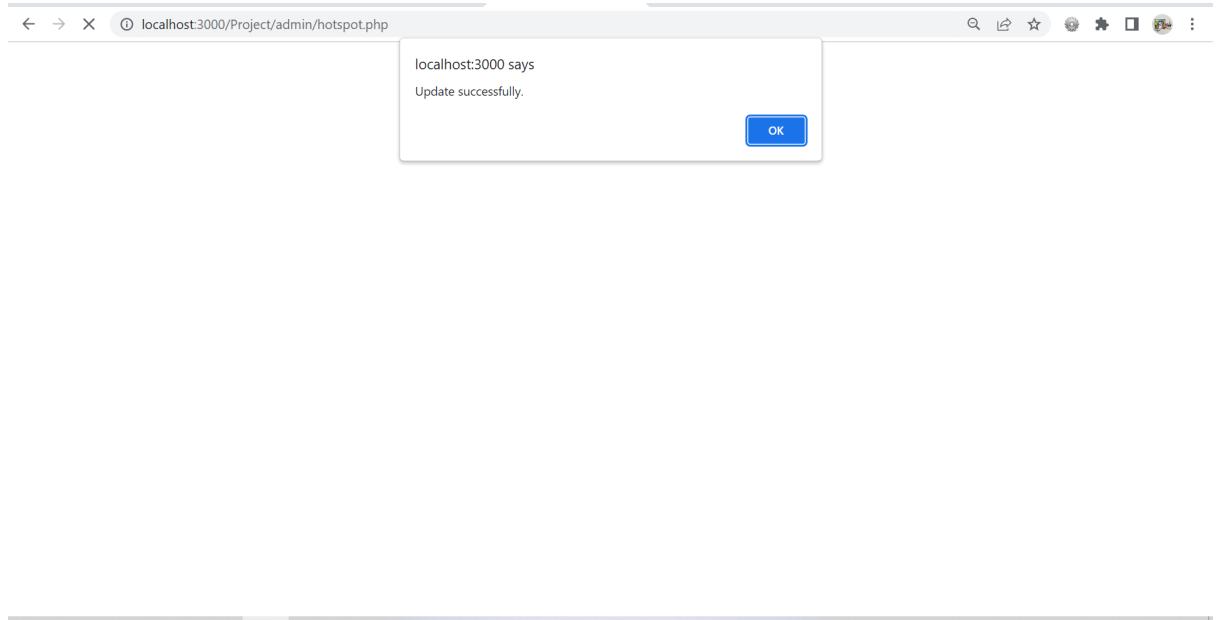


Figure 52: System display successful message

After submitting, a box will pop out and display the message “Update successfully”.

#	State	Date	Total Cases	Action
1.	Johor	2022-06-30	120	
2.	Kedah	2022-06-24	6	
3.	Kelantan	2022-06-24	4	
4.	Kuala Lumpur	2022-06-24	9	
5.	Labuan	2022-06-24	11	
6.	Melaka	2022-06-24	5	
7.	Negeri Sembilan	2022-06-24	8	
8.	Pahang	2022-06-24	5	
9.	Perak	2022-06-24	3	
10.	Terengganu	2022-06-24	4	

Figure 53: Update Covid-19 cases interface

If the admin wishes to delete the hotspot that has been entered, the admin can press the “X” button.

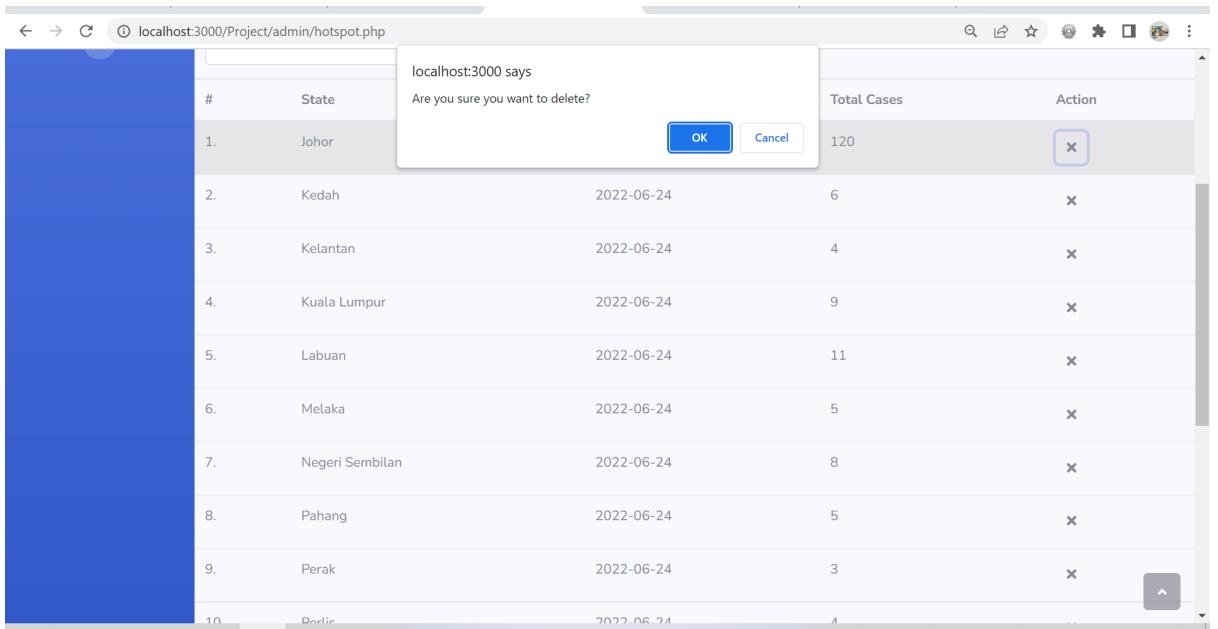


Figure 54: Update Covid-19 cases interface

A window will pop out. If the admin is sure to delete, then the admin can click on the “OK” button.

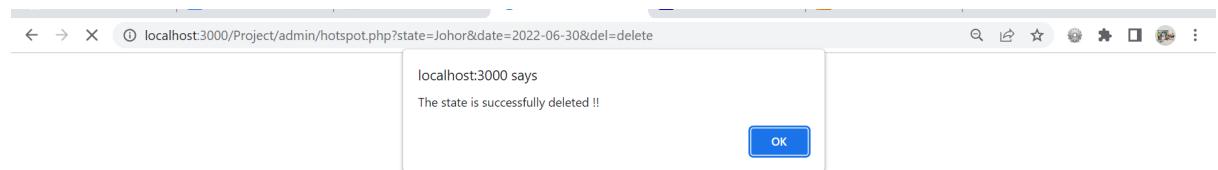


Figure 55: System display successful message

Then, a window will pop out that shows that the state has been successfully deleted.

7.3. User

7.3.1. Login/Sign Up

7.3.1.1. Flow Chart

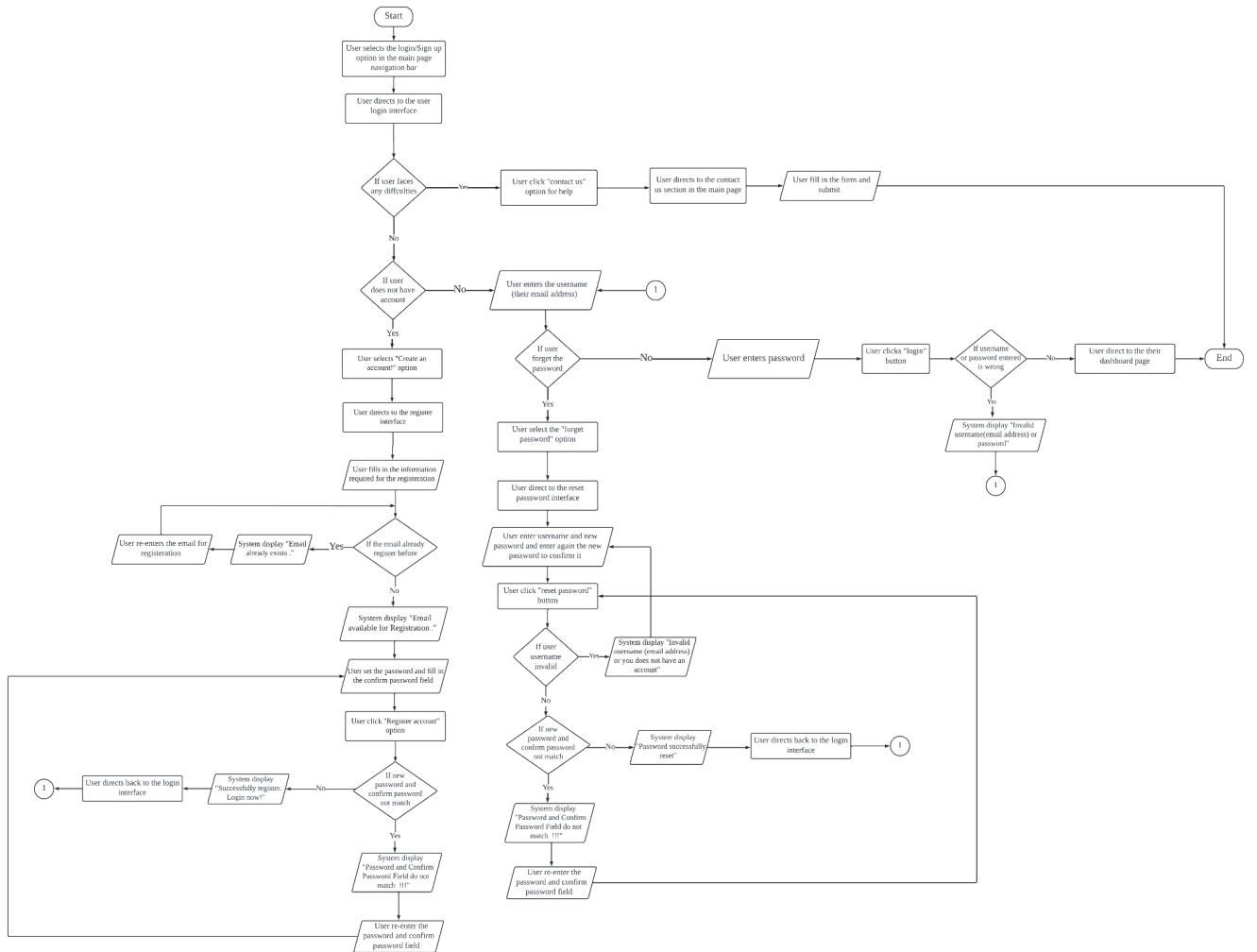


Figure 56: User Login Flowchart

7.3.1.2. Interface Explanation

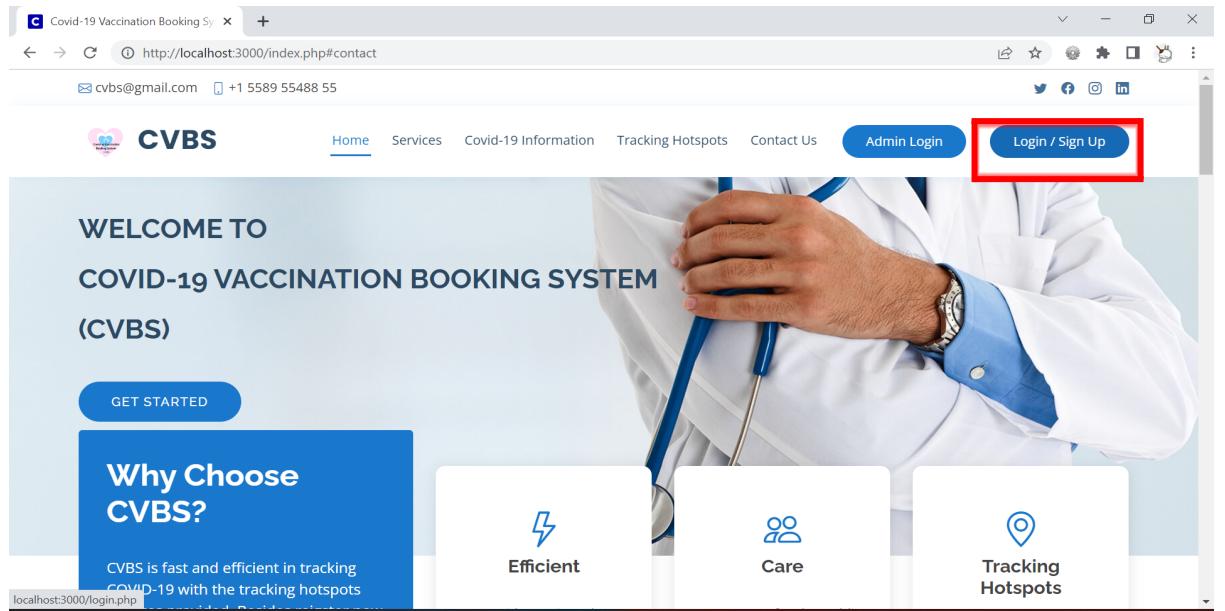


Figure 57: General interface of CVBS website

User selects the Login/Sign Up option in the main page navigation bar.

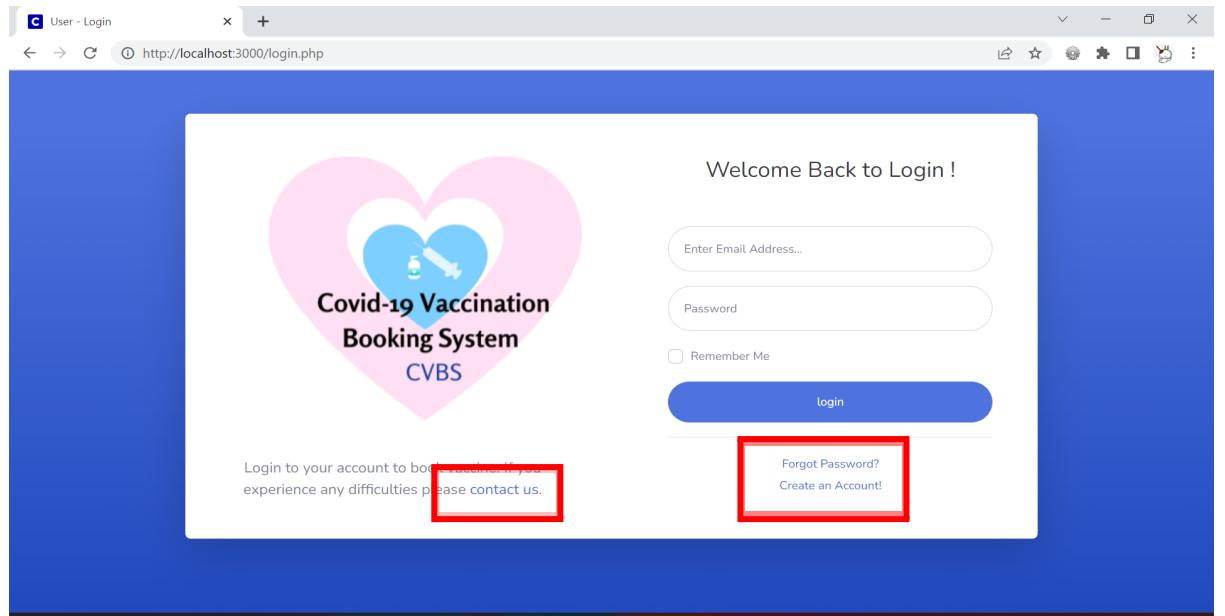


Figure 58: User login interface

Login interface of the user. If a user needs help, the user can select the contact us to ask for help. If the user forgets the password, can select the “forget password”

option. If the user does not have an account, they can select the “Create an account” option.

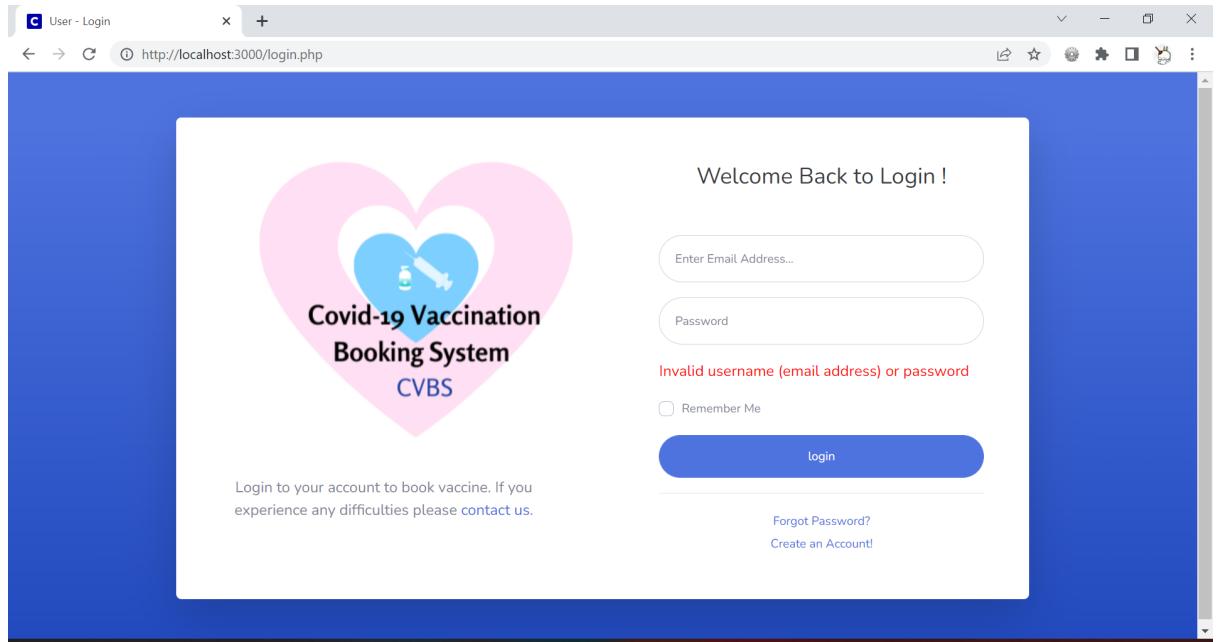


Figure 59: User login interface

If a user enters invalid username or password, the system will display “Invalid username (email address) or password to the user.

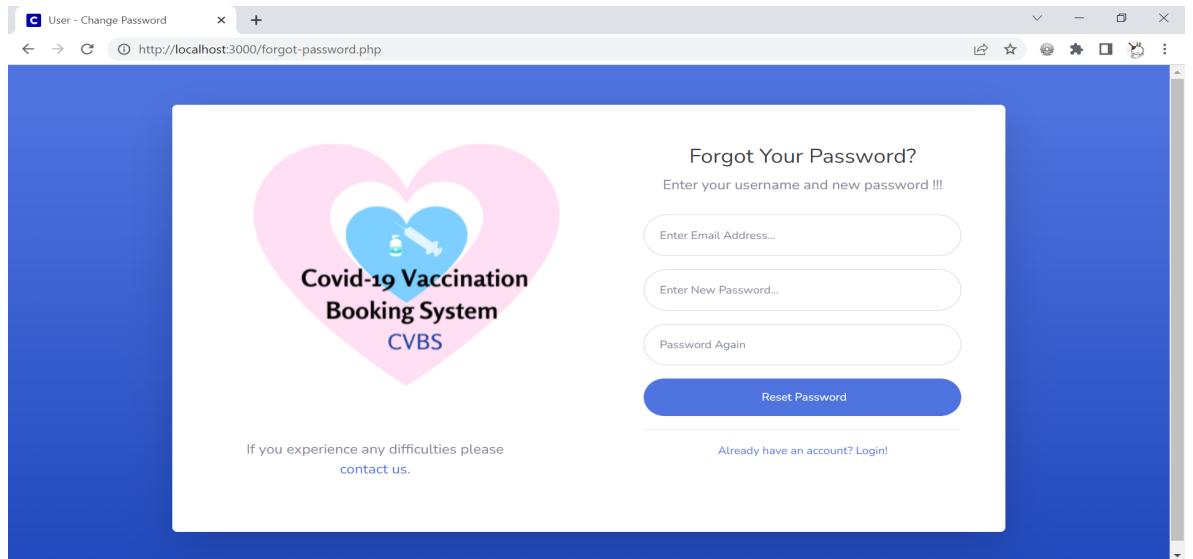


Figure 60: Forget password interface

User enters the username (email address) and sets a new password.

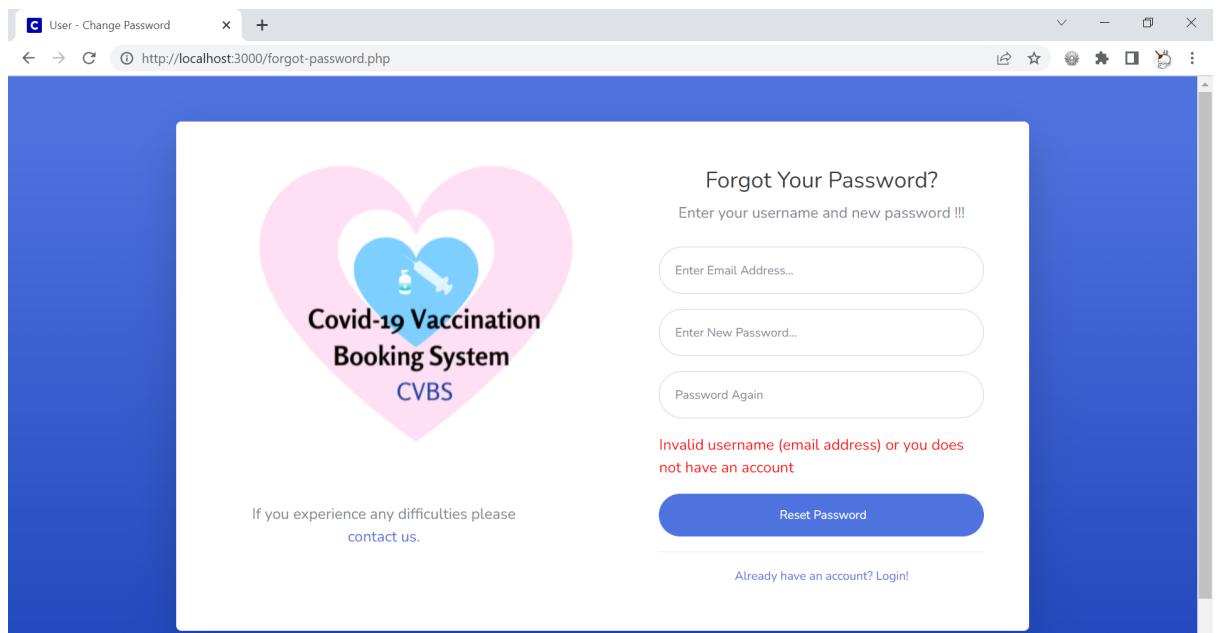


Figure 61: Forget password interface

System displays “Invalid username (email address) or you does not have an account” when the username entered is invalid.

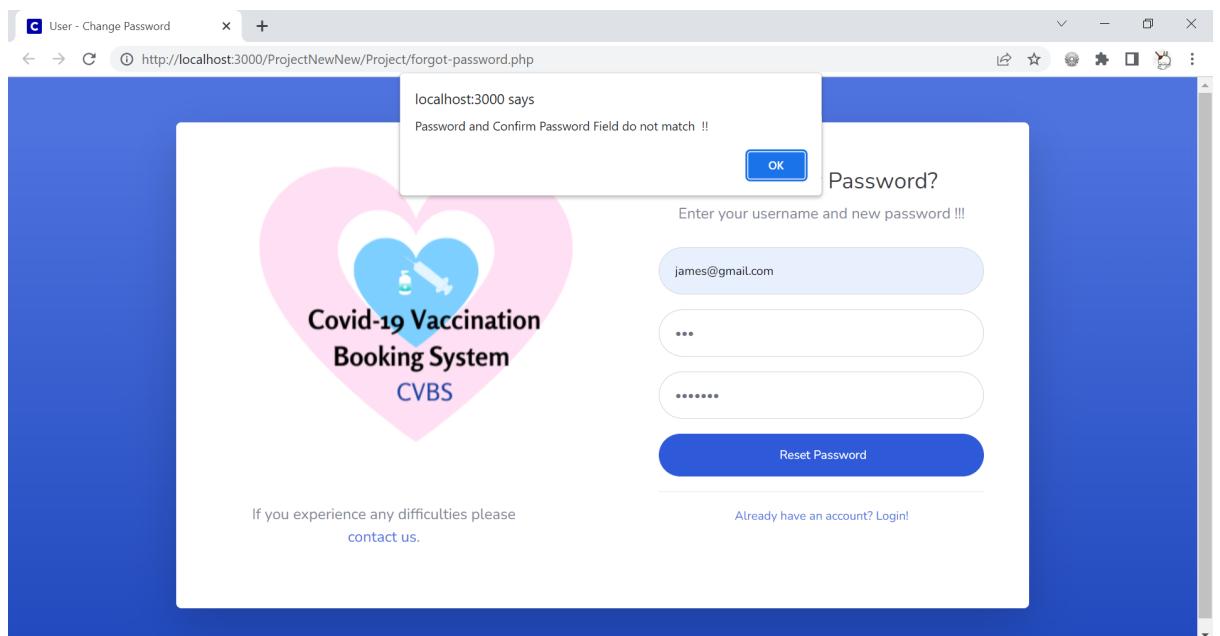


Figure 62: Forget password interface

System displays “Password and Confirm Password Field do not match it” when the password entered does not match with the confirm password.

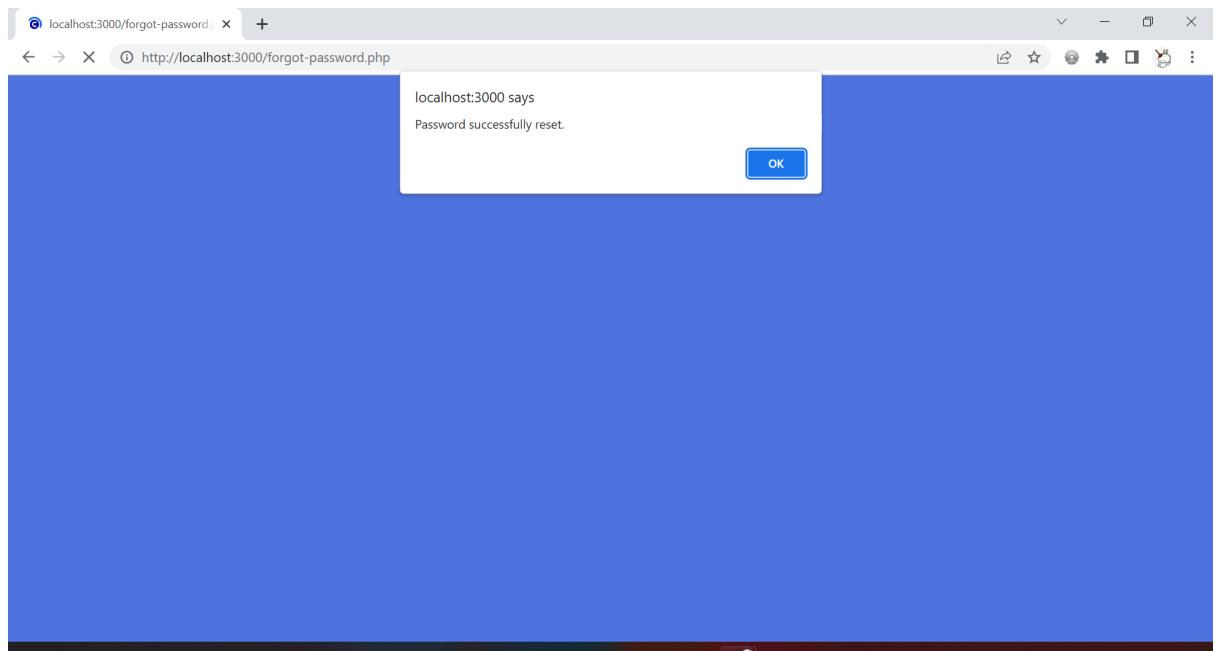


Figure 63: System display successful message

System displays “Password successfully reset” when the password is successfully reset.

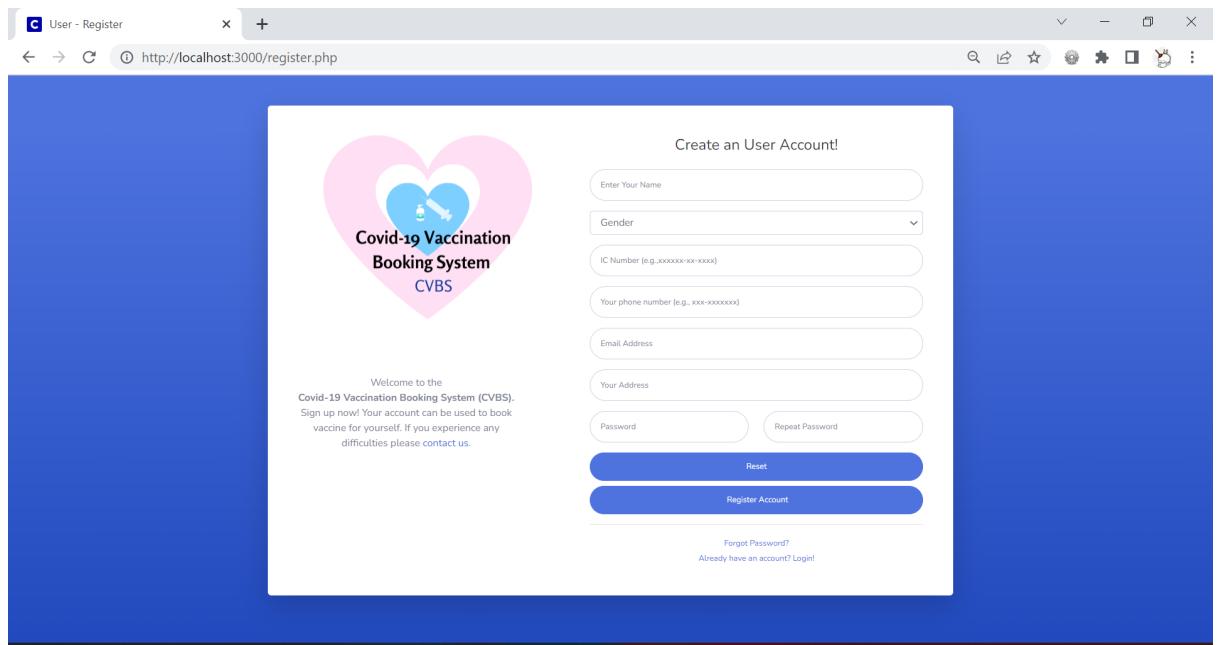


Figure 64: User register interface

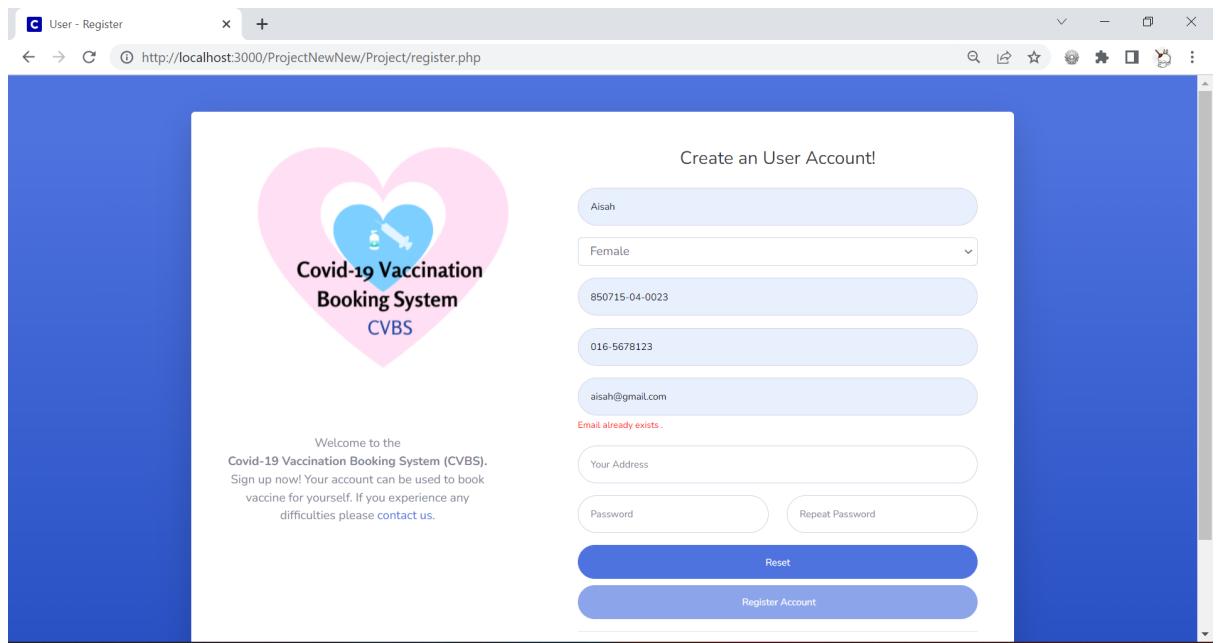


Figure 65: User register interface

System displays “Email already exists” when the username entered already exists in the system. User cannot register an account when they use an email that already exists in the system to register.

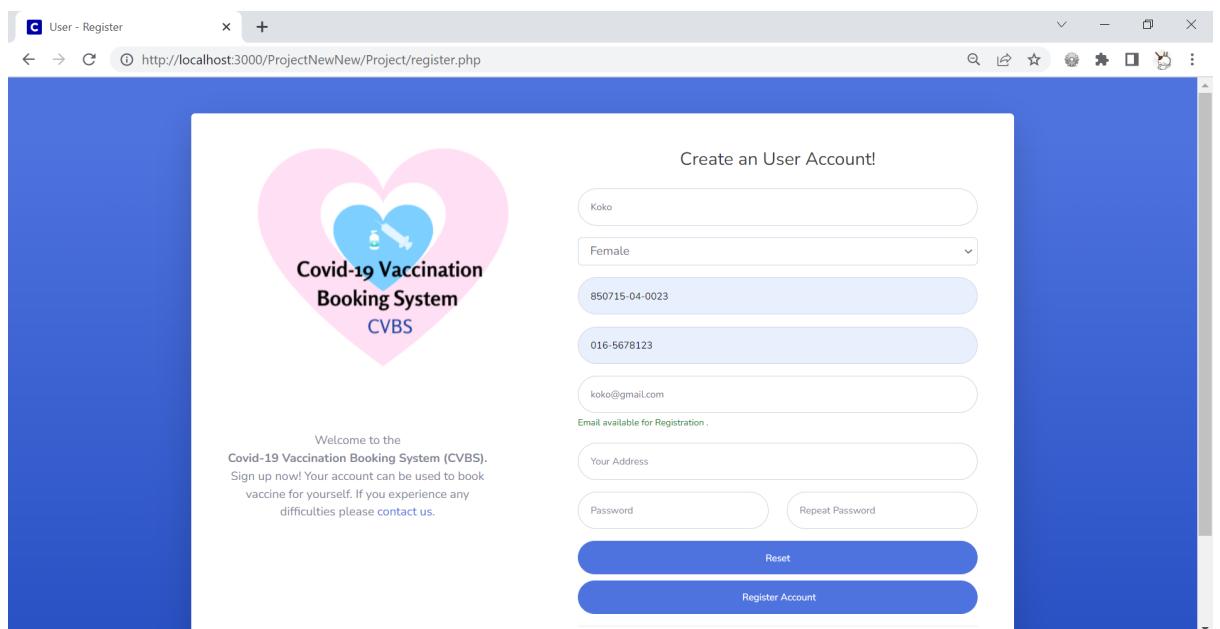


Figure 66: User register interface

System displays “Email available for Registration” when the username does not register before in the system.

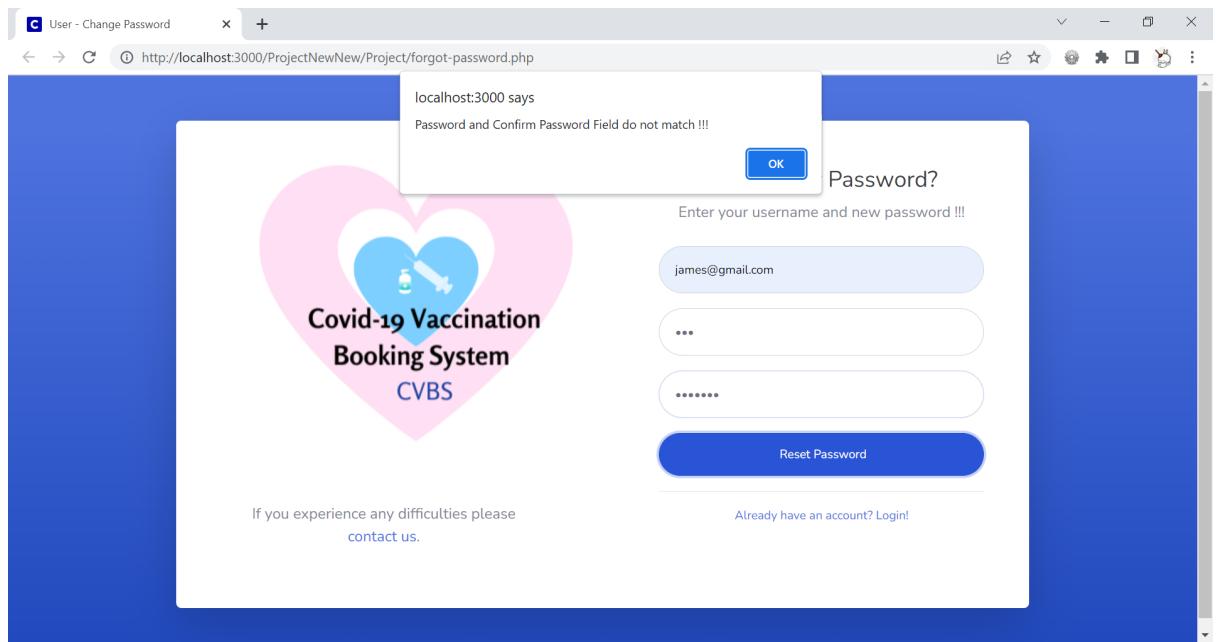


Figure 67: User register interface

System displays “Password and Confirm Password Field do not match !!!” when the password and the confirmed password entered by the user does not match.

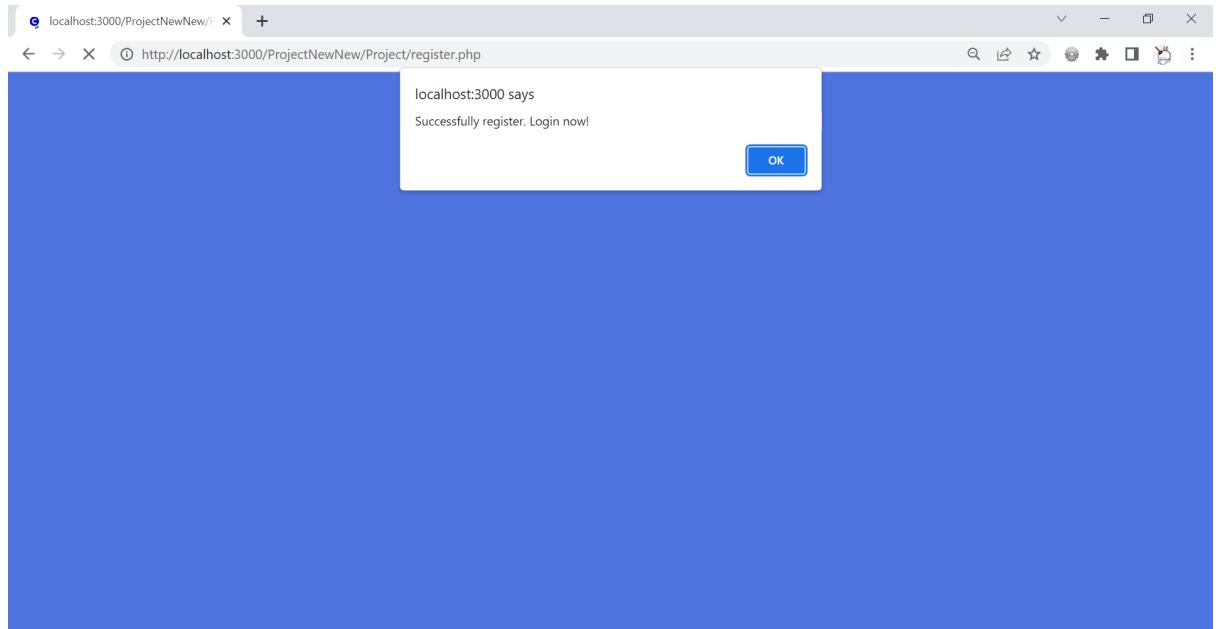


Figure 68: System display successful message

System displays “Successfully register. Login now” when the user successfully registers in the system.

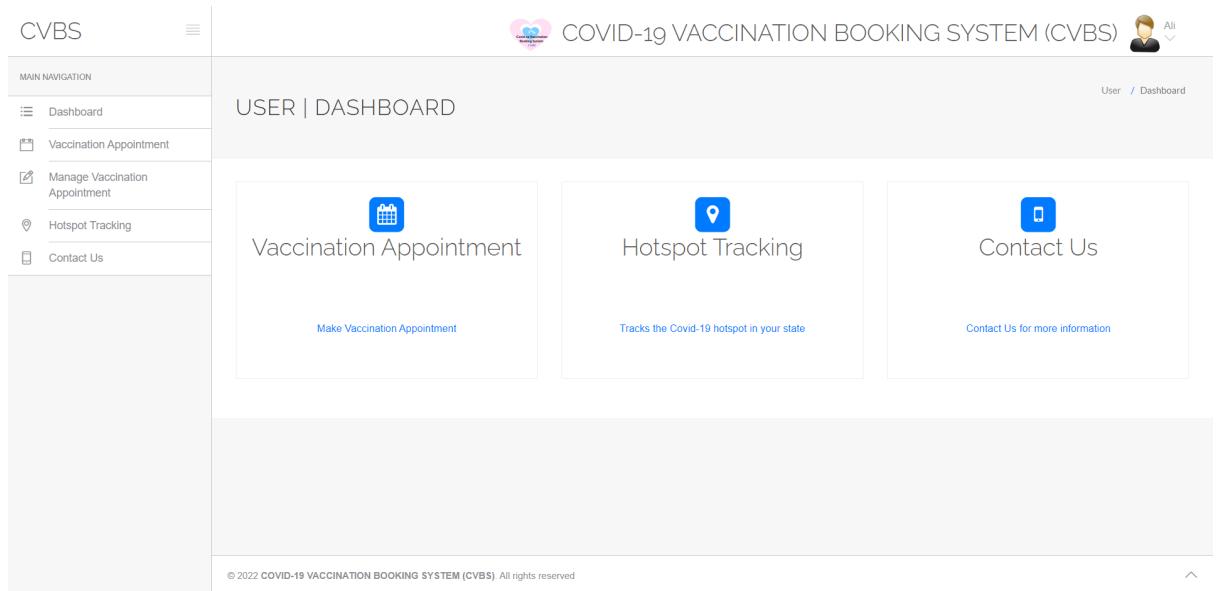


Figure 69: User dashboard

User will be directed to their dashboard when successfully login to the system.

7.3.2. Update Profile

7.3.2.1. Flow Chart

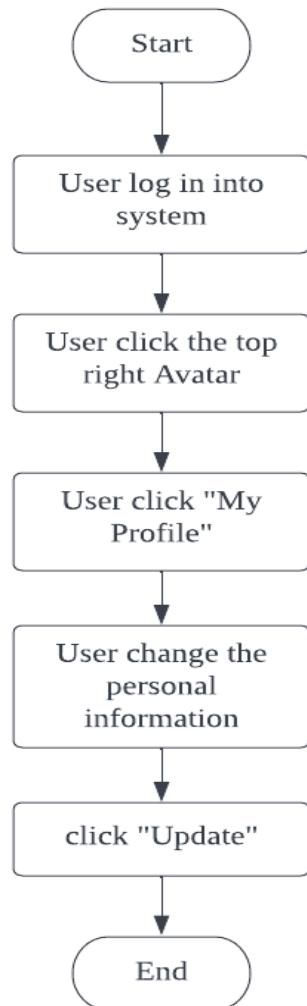


Figure 70: Update Profile Flowchart

7.3.2.2. Interface Explanation

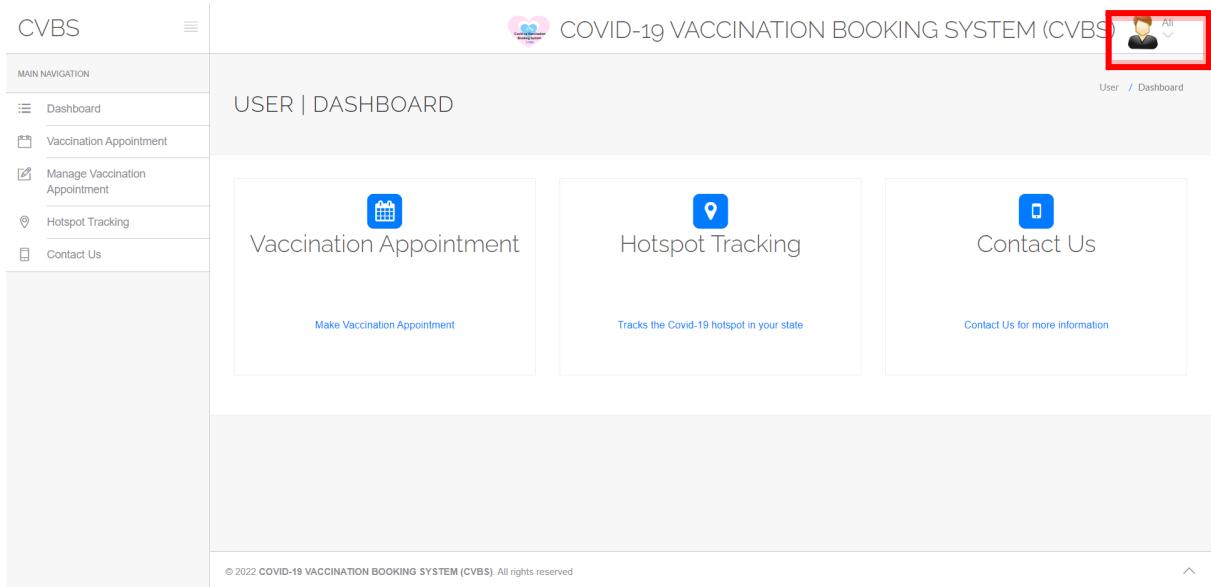


Figure 71: Click the top right Avatar

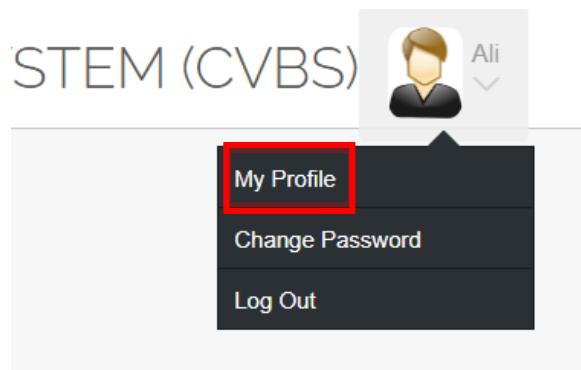


Figure 72: The drop-down menu



Figure 73: Update Profile Interface

To update profile, user click the avatar on the top right, then the drop-down menu will be displayed. Choose “My Profile” and the user will be directed to update the profile interface. User can change their personal information here.

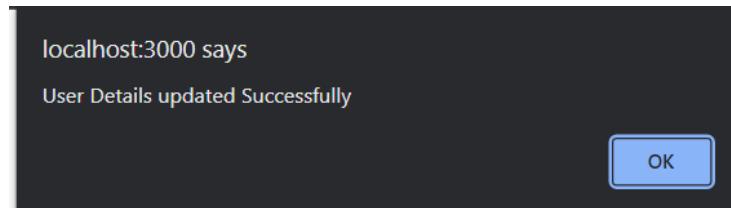


Figure 74: User Details Successfully Updated Message

If the update is successful, the box will pop up and display “User Details updated Successfully”.

7.3.3. Vaccination Appointment

7.3.3.1. Flow Chart

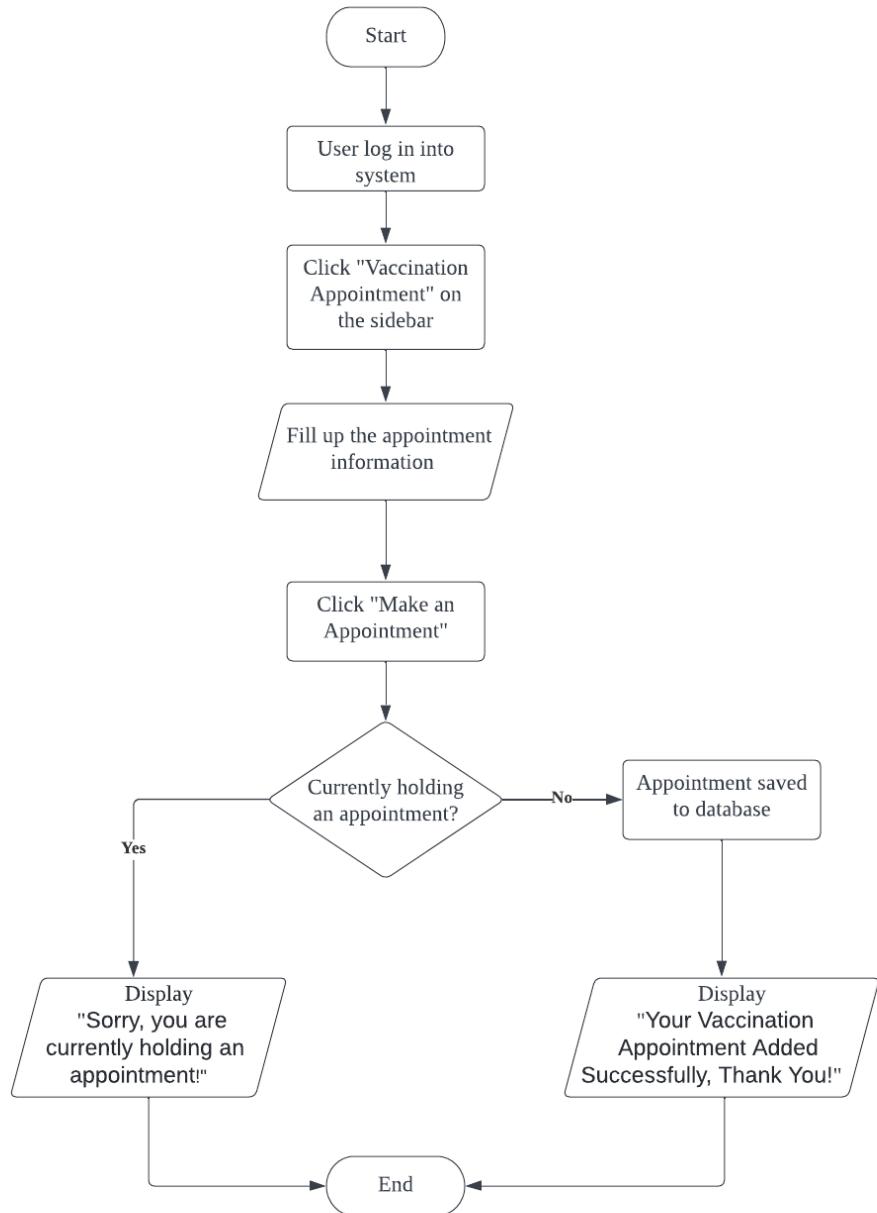


Figure 75: Vaccination Appointment Flowchart

7.3.3.2. Interface Explanation

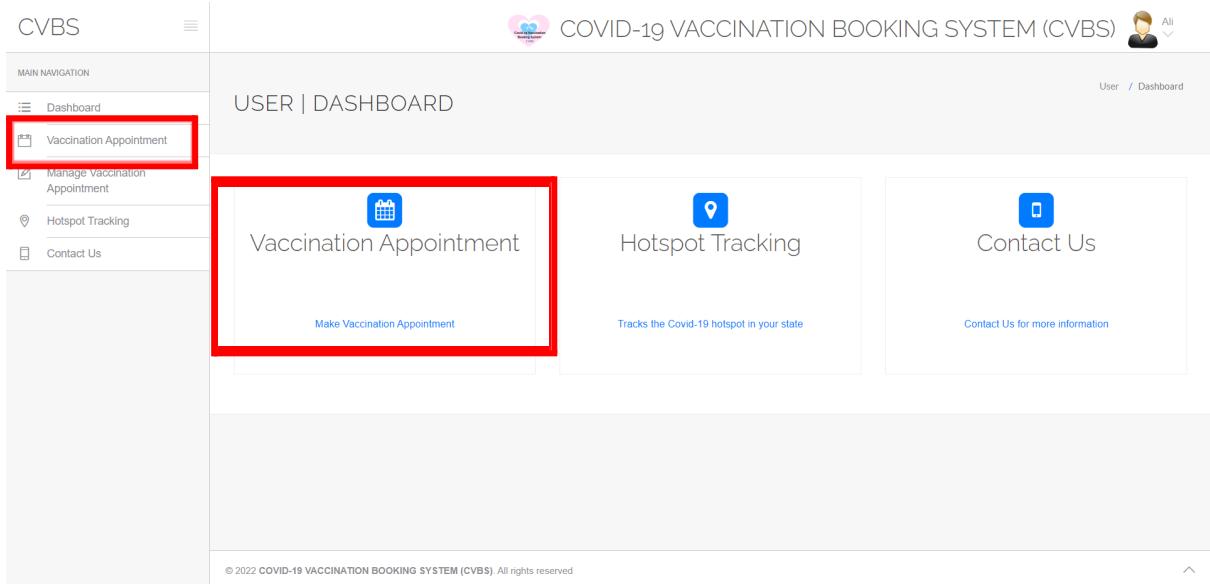


Figure 76: User Dashboard

User can direct to the vaccine appointment interface by clicking the “Vaccination Appointment” in the sidebar or the dashboard.

Name	Email	Phone Number
Ali	ali@gmail.com	016-5678123

Appointment Date	Appointment Time (9.00a.m. - 18.00p.m.)	No. of Dose
dd--yyyy	--:--	3

Your Current State	Your Current Address
Johor	No 20, Jalan Durian, Taman Durian, 53000 Kuala Lumpur

Figure 77: Vaccination Appointment Interface

User can only book vaccination for themselves, they can choose the date and time and the number of doses here. User need to select their state and address for the admin to assign a clinic to the user.

The user can make an appointment for 1st dose if he/ she did not make an appointment before. If the user has made an appointment, the status will become “Pending”, the user cannot make another appointment at this time as the user is holding an appointment. If the user had cancelled the appointment, he/ she can make an appointment for that dose again. The status is “Approved” if the appointment is approved by admin but haven’t done taking vaccination by user. User cannot make new appointments if status is “Approved”.

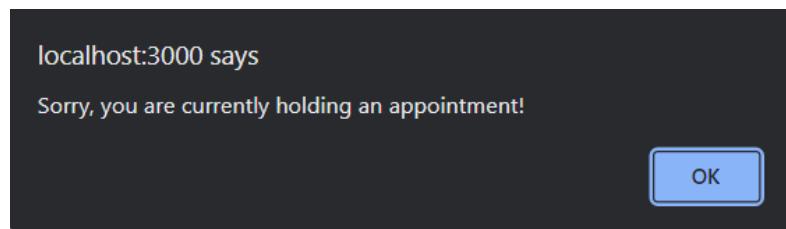


Figure 78: Appointment Failed Message

If the user has taken the vaccination, the status of that appointment will change to “Done” and the user can make an appointment for the next dose. If the appointment is successfully made, the system will alert a success message.

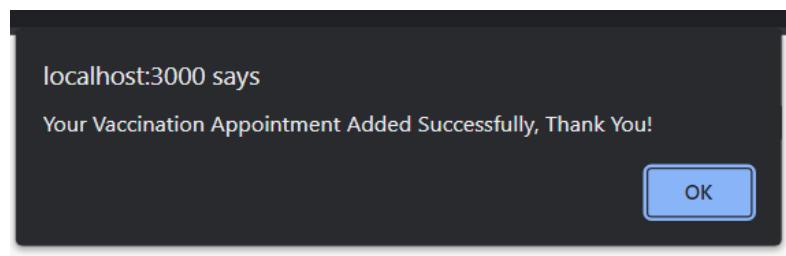


Figure 79: Appointment success message

Below the appointment form is the history part. The details of the appointment will be shown include the no. of doses, appointment date and time, apply date and time, current status and the clinic assigned.

The screenshot shows the CVBS interface. On the left is a sidebar with a navigation menu:

- Dashboard
- Vaccination Appointment
- Manage Vaccination Appointment
- Hotspot Tracking
- Contact Us

The main content area has a header with a heart icon, the title "COVID-19 VACCINATION BOOKING SYSTEM (CVBS)", and a user profile placeholder. A "Make an Appointment" button is also present.

Attention

- User can only make appointment for themselves.
- User can only make appointment if the previous appointment is done/ cancelled.
- Example: If dose 1 appointment is cancel, user can select again dose 1.
- Example: User can only select dose 2 if dose 1 is done, user can select dose 3 if dose 2 is done.
- After done the 3rd dose, user cannot make appointment again.

Vaccination Appointment History

#	No. of Dose	Appointment Date / Time	Apply Date	Current Status	Clinic
1	1	2022-03-02 10:30:00	2022-01-26 11:20:23	Done	Twin Towers Medical Centre KLCC, Lot LC-402-404, Level 4, Suria, Kuala Lumpur City Centre, 50088 Kuala Lumpur
2	2	2022-06-30 12:30:00	2022-06-24 13:15:13	Done	Twin Towers Medical Centre KLCC, Lot LC-402-404, Level 4, Suria, Kuala Lumpur City Centre, 50088 Kuala Lumpur
3	3	2022-07-15 10:15	2022-07-05 16:07:25	Cancel	

Status Description

- Done: Done taking the dose
- Cancel: Appointment has been cancelled
- Pending: Appointment pending approval
- Rejected: Appointment rejected by admin
- Approved: Appointment approved by admin
- TBC: Cancellation to be confirmed by admin
- TBC is when an appointment has been approved, but user cancel it

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Figure 80: Vaccination Appointment History

7.3.4. Manage Vaccination Appointment

7.3.4.1. Flow Chart

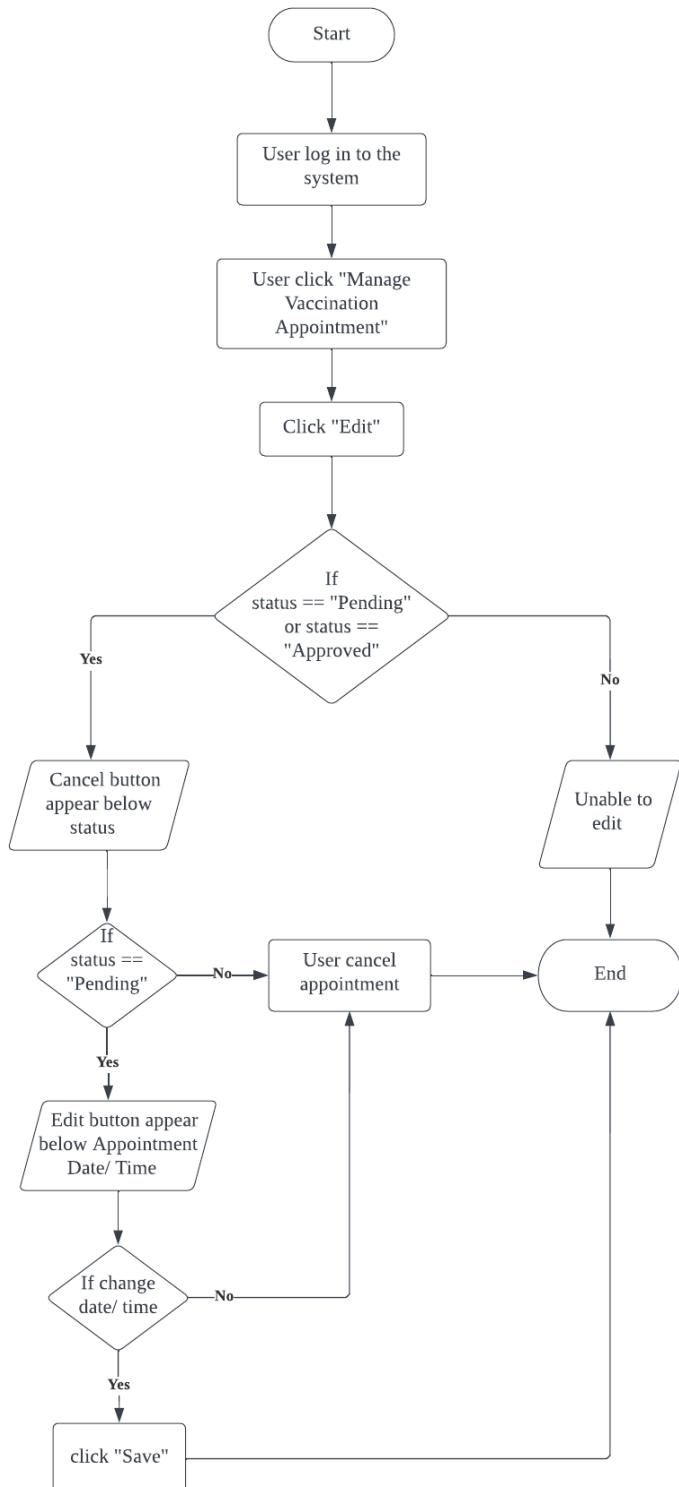


Figure 81: Manage Vaccination Appointment Flowchart

7.3.4.2. Interface Explanation

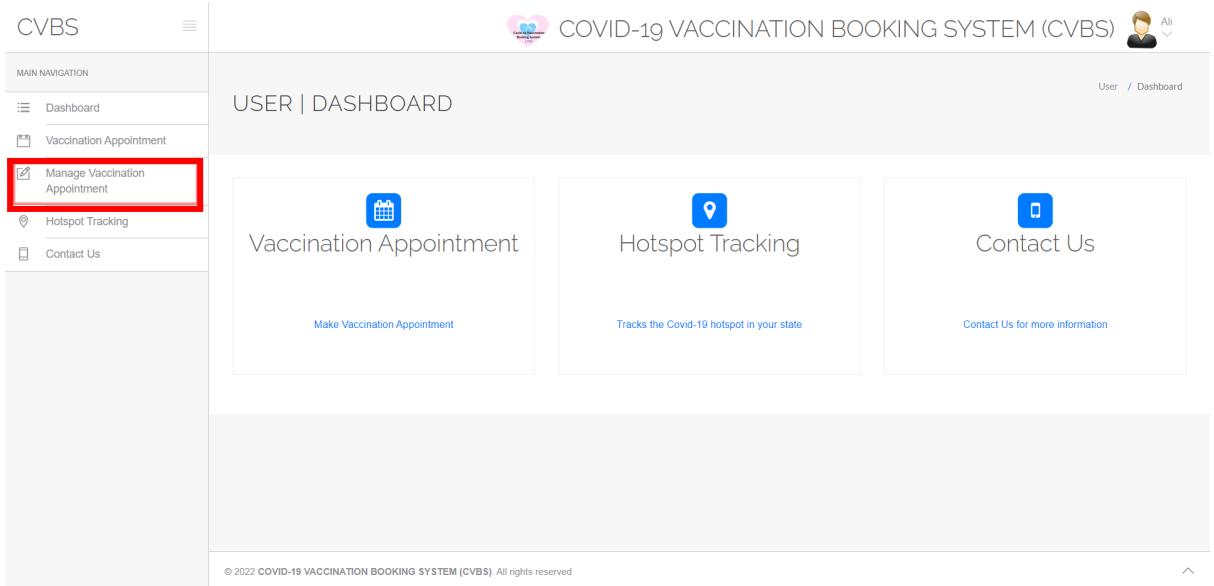


Figure 82: User Dashboard

User can direct to Manage Vaccination Appointment interface by choosing it in the sidebar.

#	No. of Dose	Appointment Date / Time	Apply Date	Current Status	Clinic
1	1	2022-03-02 10:30:00	2022-01-26 11:20:23	Done	Twin Towers Medical Centre KLCC, Lot LC-402-404, Level 4, Suria, Kuala Lumpur City Centre, 50088 Kuala Lumpur
2	2	2022-06-30 12:30:00	2022-06-24 13:15:13	Done	Twin Towers Medical Centre KLCC, Lot LC-402-404, Level 4, Suria, Kuala Lumpur City Centre, 50088 Kuala Lumpur
3	3	2022-07-15 10:15	2022-07-05 16:07:25	Pending	

Status Description

- Done: Done taking the dose
- Cancel: Appointment has been cancelled
- Pending: Appointment pending approval
- Rejected: Appointment rejected by admin
- TBC: Cancellation to be confirmed by admin
- Approved: Appointment approved by admin

Attention

- When status is Pending, user can directly cancel that appointment.
- User can change the date and time of appointment if the status is Pending.
- If the appointment is approved, user need to cancel appointment if need to change appointment date/ time.
- When user cancel the approved appointment, status will become TBC (to be confirmed by admin)

Figure 83: Manage Vaccination Appointment Interface

The screenshot shows the 'USER | MANAGE VACCINATION APPOINTMENT' page. On the left is a sidebar with 'MAIN NAVIGATION' containing links for Dashboard, Vaccination Appointment, Manage Vaccination Appointment, Hotspot Tracking, and Contact Us. The main area is titled 'Manage Vaccination Appointment'. It lists three appointments with columns for ID, Sequence, Appointment Date / Time, Apply Date, Current Status, and Clinic. The first appointment (ID 1, Sequence 1) has a status of 'Done' and a clinic location of 'Twin Towers Medical Centre, KLCC, Lot LC-402-404, Level 4, Suria, Kuala Lumpur City Centre, 50088 Kuala Lumpur'. The second appointment (ID 2, Sequence 2) also has a status of 'Done'. The third appointment (ID 3, Sequence 3) has a status of 'Pending' and a 'Cancel Request' button. An 'Edit' button is highlighted with a red box in the first row. Below the table is a 'Status Description' section with a bulleted list of appointment statuses. At the bottom is an 'Attention' section with a bulleted list of instructions. The footer contains the copyright notice '© 2022 COVID-19 VACCINATION BOOKING SYSTEM (CVBS). All rights reserved.'

Figure 84: Manage Vaccination Appointment Interface After Click “Edit”

In this page, User can change the appointment date and time by clicking the “Edit” button only when the appointment status is “Pending”.

User can cancel the appointment. If the status is “Pending”, User can directly cancel the appointment without confirmation by the admin. If the status is “Approved”, after cancellation the status will change to “TBC” which needs to be confirmed by the admin. Other than these two states, the cancel button will not be shown and the user unable to cancel appointments.

If the user cancels the appointment, the system will pop up a message “Your Appointment Cancelled Successful, Thank You!”.

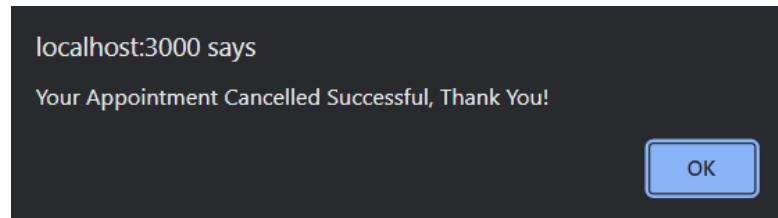


Figure 85: System display appointment cancelled successful message

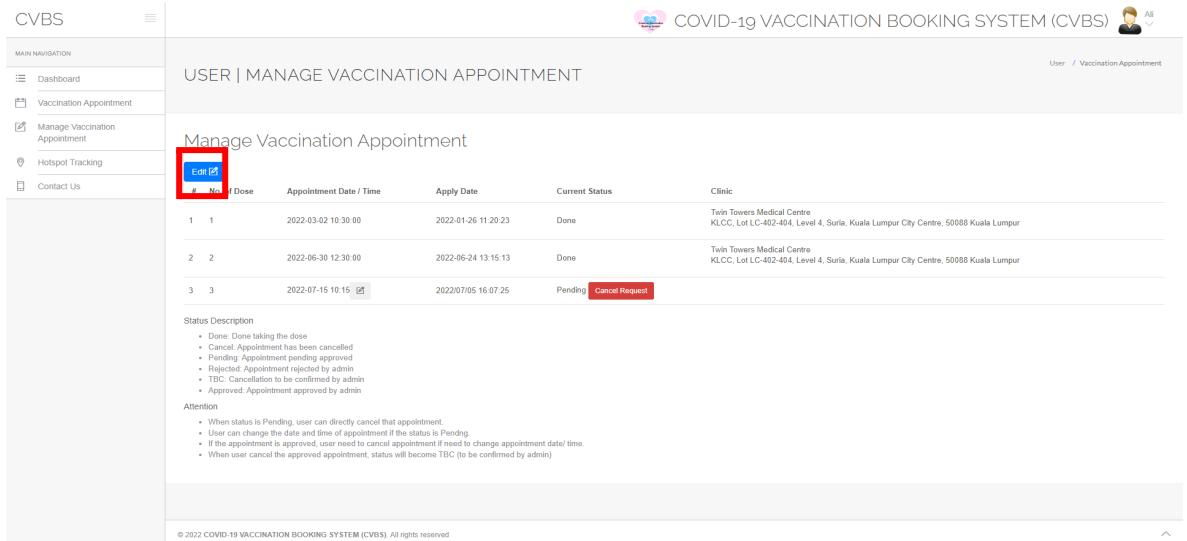


Figure 86: Edit button



Figure 87: Change appointment date and time

When the user clicks on the edit button beside the appointment date/time, the user can change their appointment date and time. After choosing the date and time, user need to click the “Save” button beside it. If it is successfully saved, the system will pop up “Your Appointment Time and Date Changed Successful, Thank You!”.

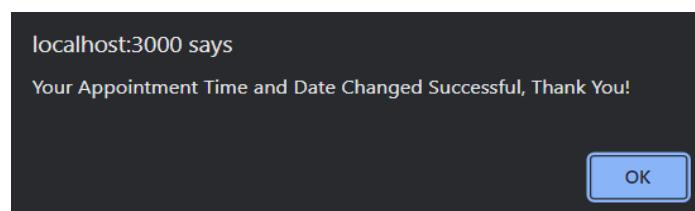


Figure 88: System display change date and time successful message

7.3.5. Hotspot Tracking

7.3.5.1. Flow Chart

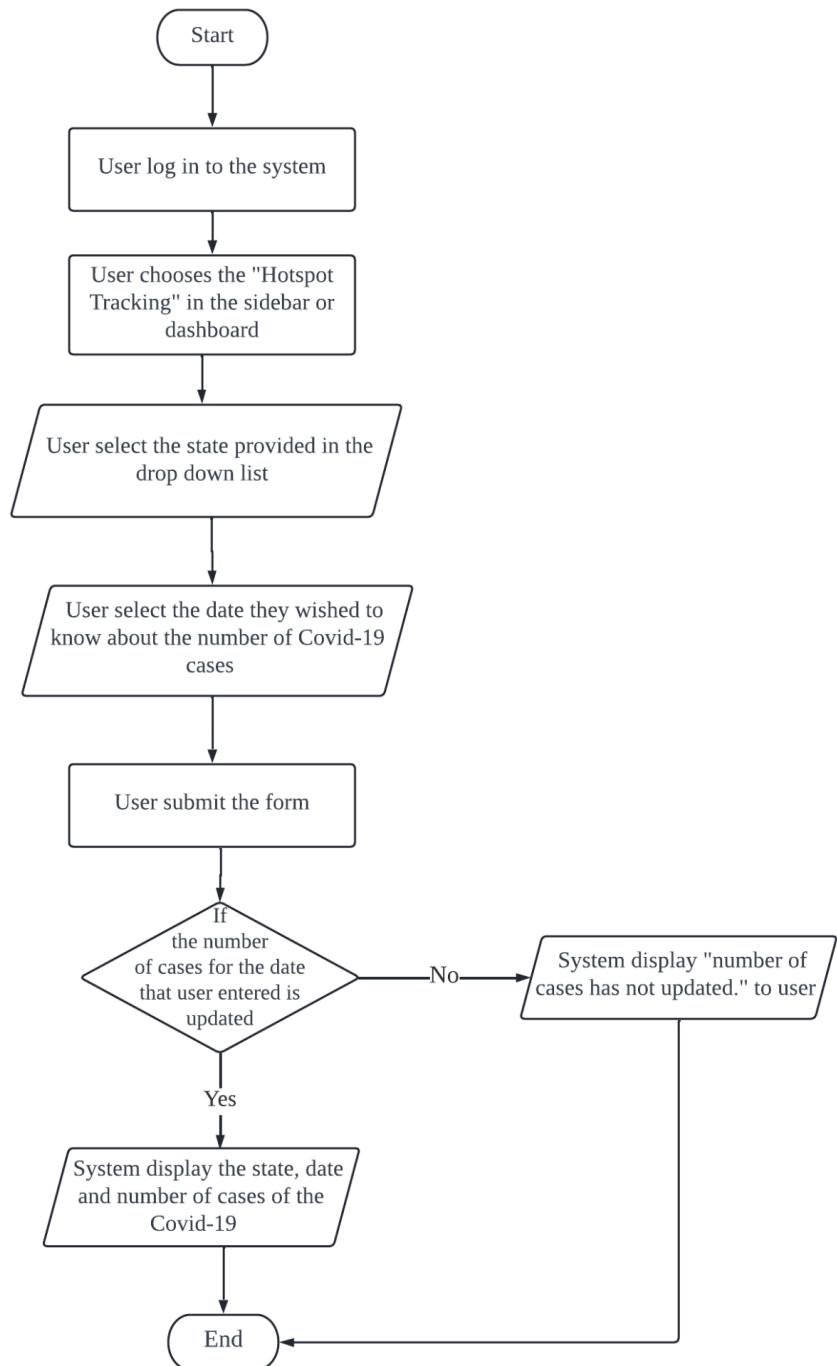


Figure 89: Hotspot Tracking Flowchart

7.3.5.2. Interface Explanation

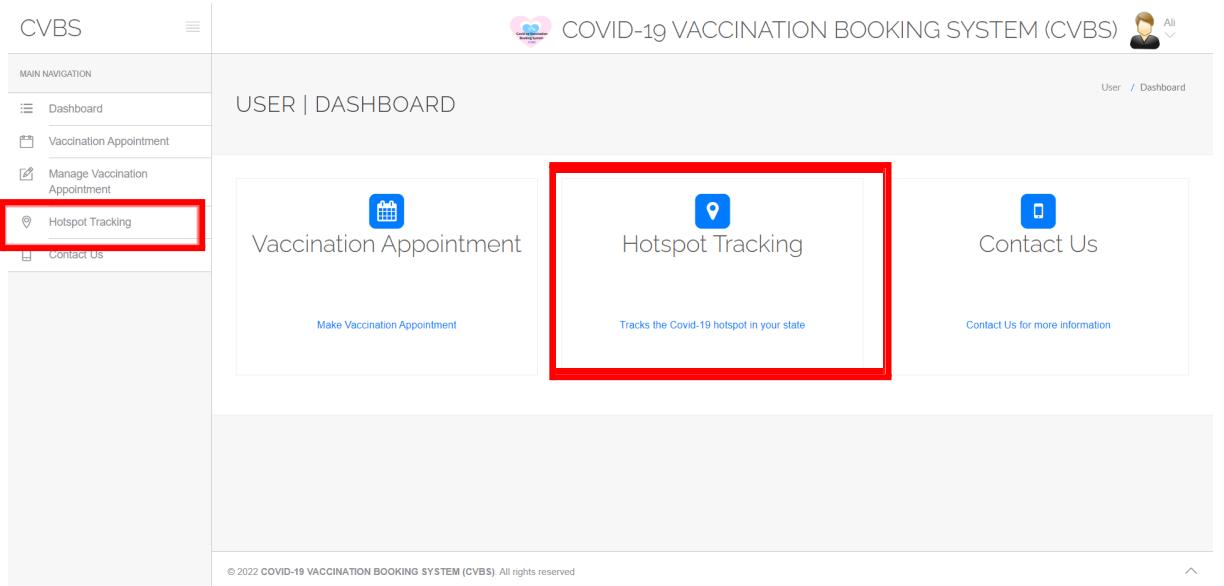


Figure 90: Dashboard Interface

User can direct to the hotspot tracking interface by clicking the “Hotspot Tracking” in the sidebar or dashboard.

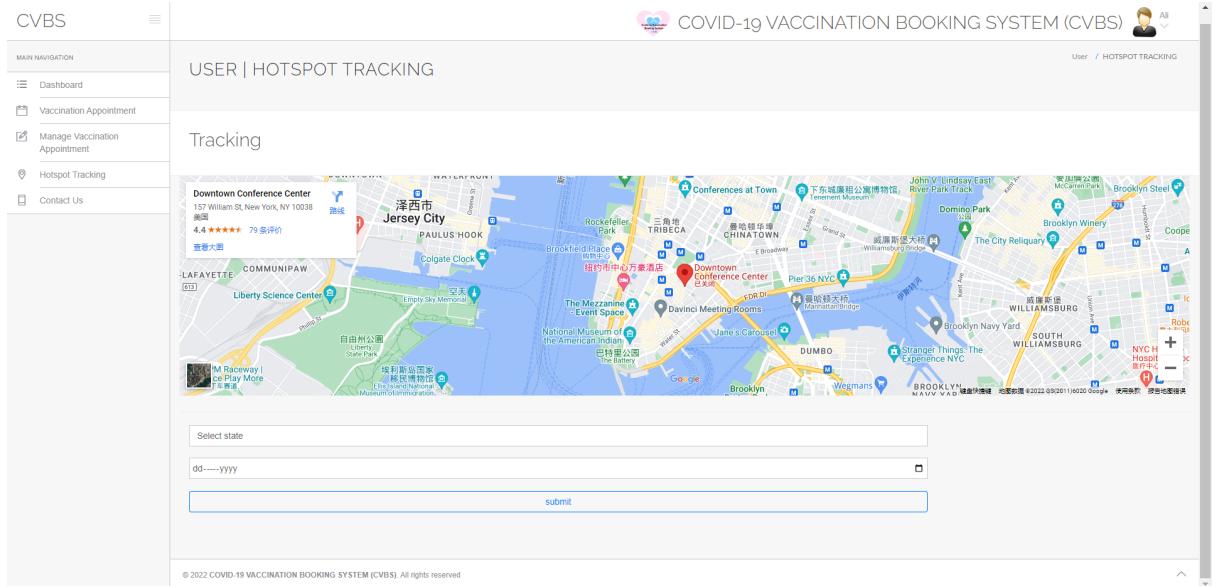


Figure 91: Hotspot Tracking Interface

User can select the state and date they want to get the number of cases of Covid-19 in their state.

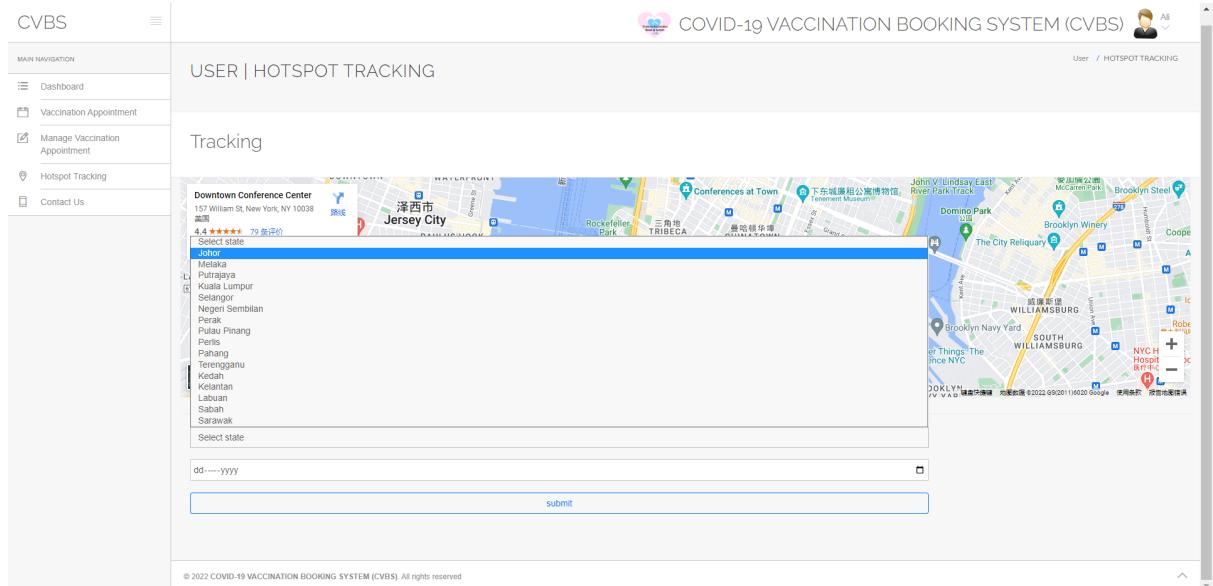


Figure 92: Tracking hotspot interface

A dropdown list will be provided for the user to select the state.

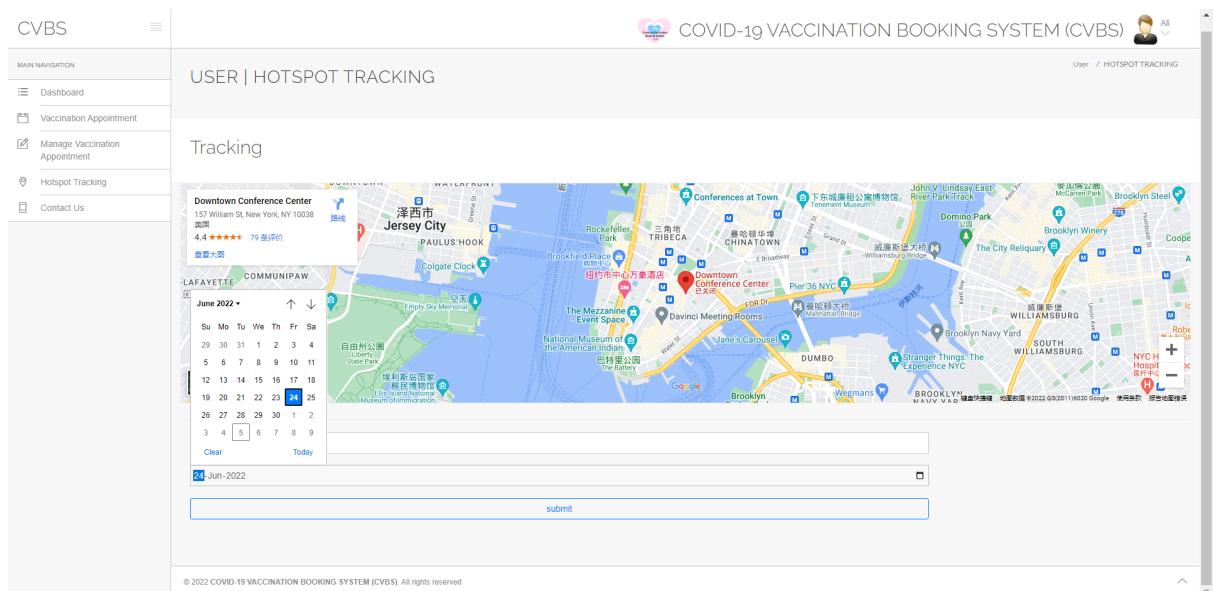


Figure 93: Tracking hotspot interface

A calendar is provided for the user to select the date.

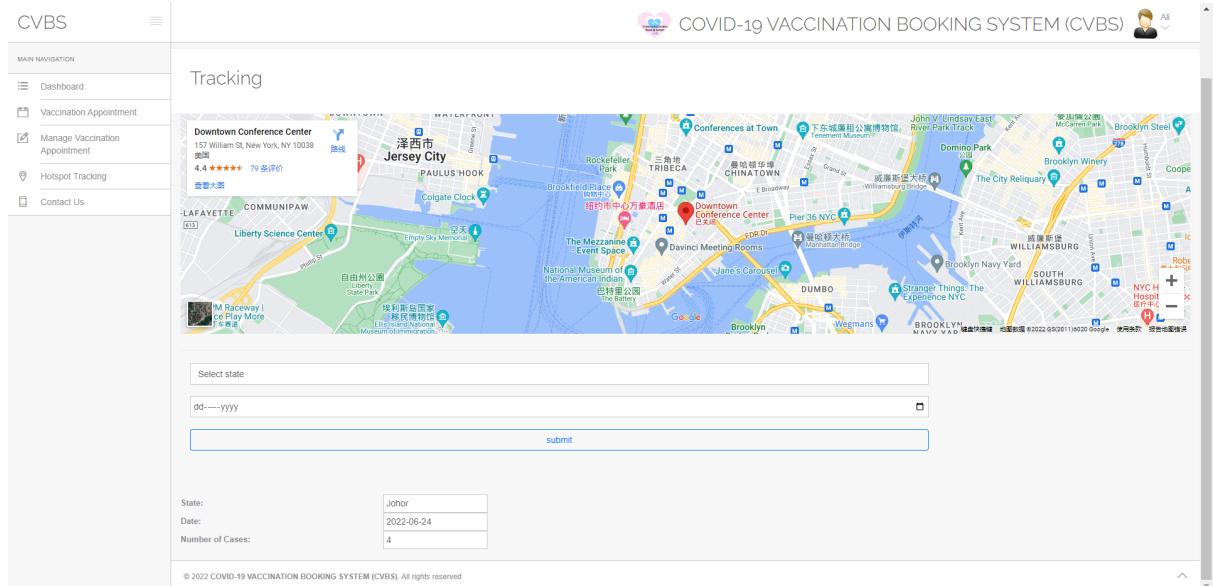


Figure 94: Tracking hotspot interface

The state, date and number of cases will be displayed to the user.

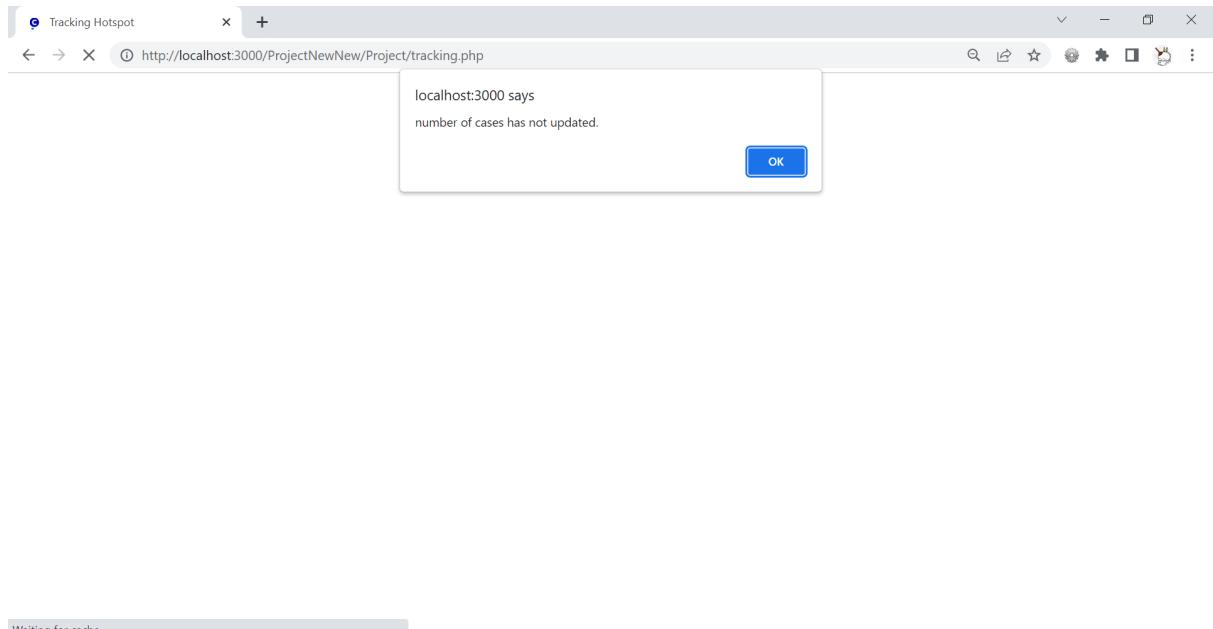


Figure 95: System display inform message

If the number of cases for that particular state and date entered by the user have not been updated, a message will pop out to inform the user.

7.3.6. Contact Us

7.3.6.1. Flow Chart

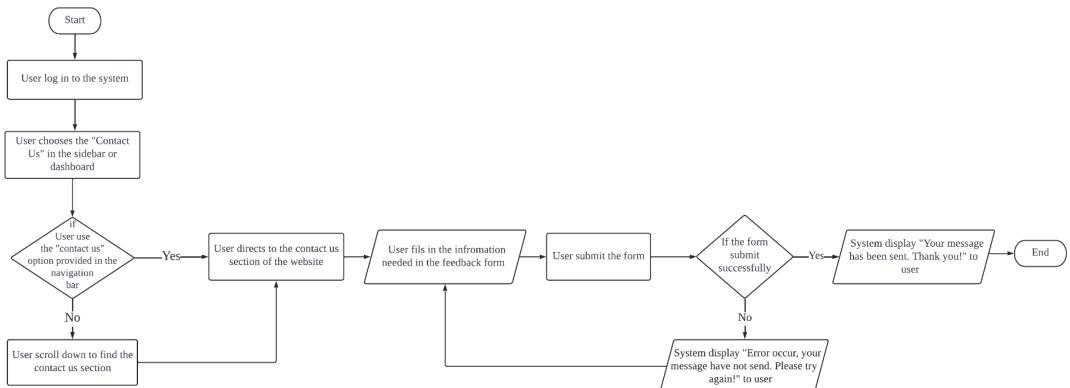


Figure 96: Submit Feedback Form Flowchart

7.3.6.2. Interface Explanation

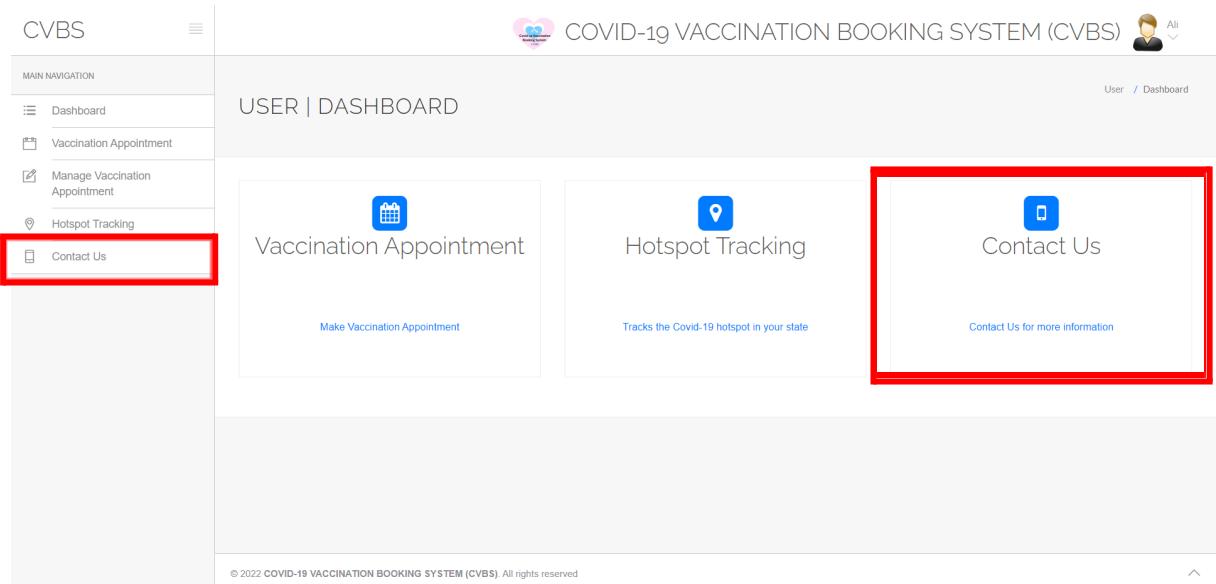


Figure 97: Dashboard Interface

User can select the “contact us” in the sidebar or dashboard to access it.

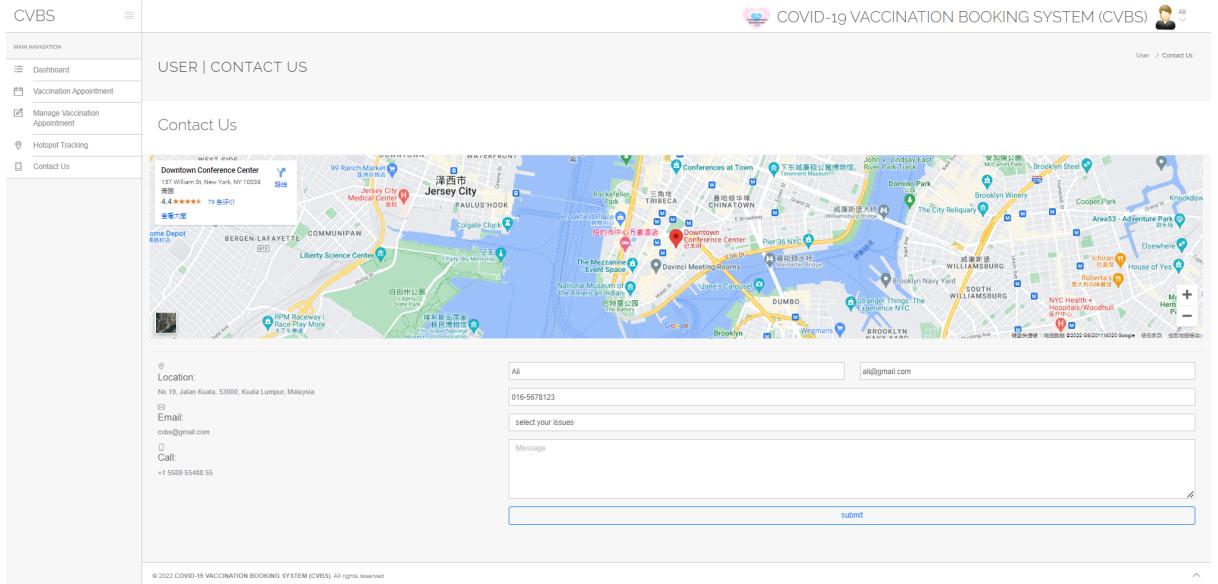


Figure 98: Contact Us Interface

User can fill in the feedback form in the contact us interface.

Thank you message will pop out when the form is submitted successfully.

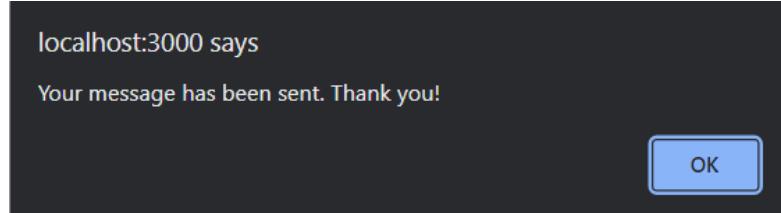


Figure 99: System display successful message

7.3.7. Change Password

7.3.7.1. Flow Chart

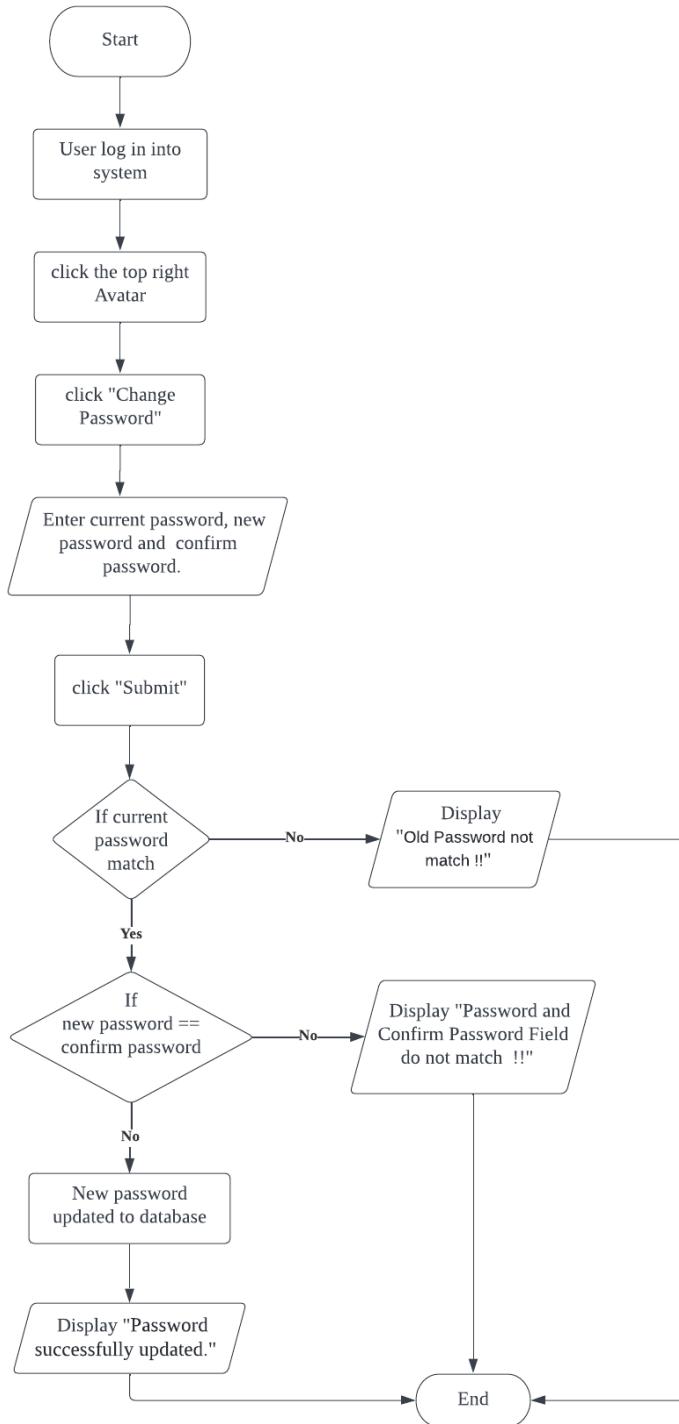


Figure 100: Change password flowchart

7.3.7.2. Interface Explanation

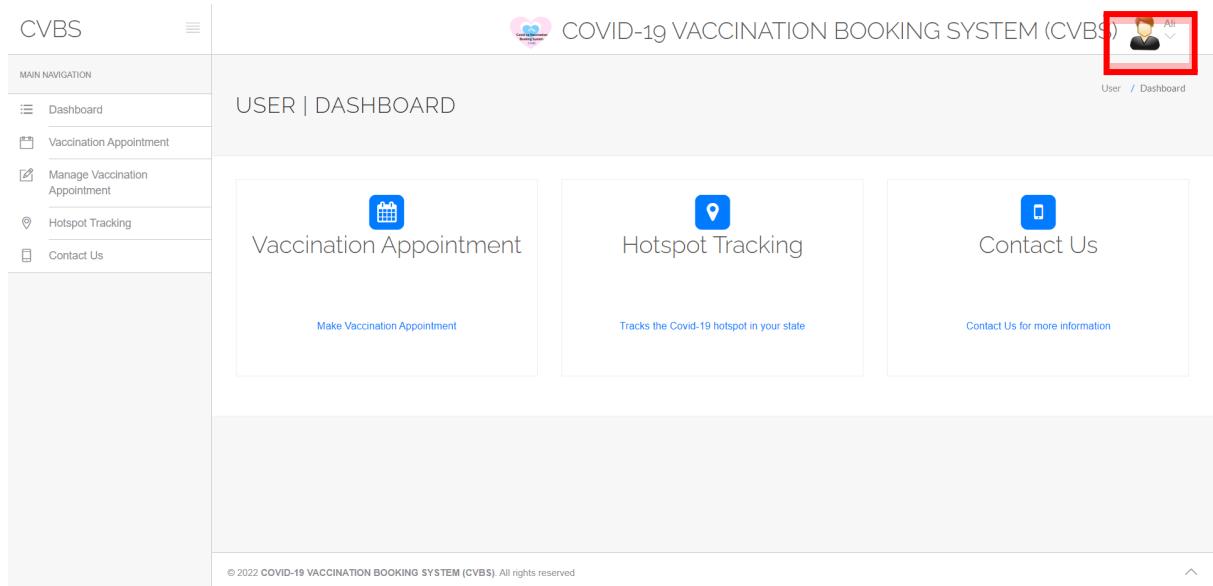


Figure 101: User click the avatar on the top right

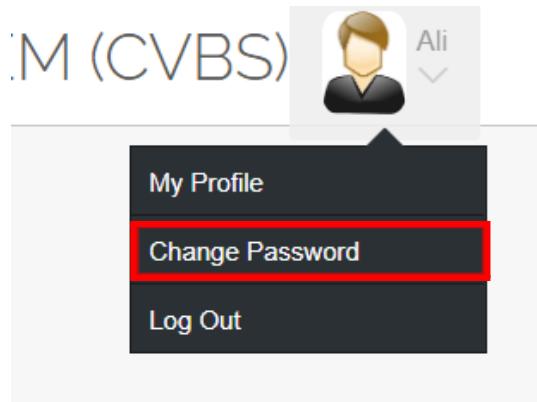


Figure 102: Drop-down menu

User click the avatar at the top right of the webpage, then click “Change Password” at the drop-down menu. Then, user will be directed to the change password interface.

Figure 103: Change Password Interface

At the change password interface, user can enter old password, new password and the confirm password. Then, click the submit button. If the old password does not match, a pop up box will display “Old Password not match !!”. If the new password and confirm password do not match, a pop up box will display “New Password and Confirm Password no match!!”. If any field is empty, it will display “Current Password Field is Empty!!”, “New Password Field is Empty!!” and “Confirm Password Field is Empty!!”.

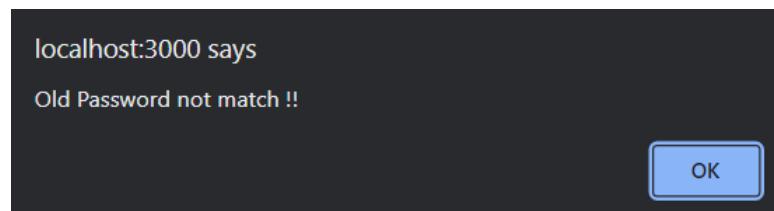


Figure 104: Old Password Not Match Message

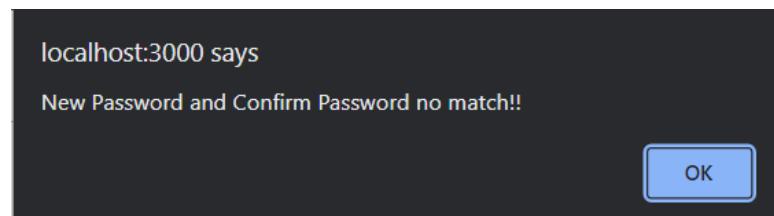


Figure 105: New and Confirm Password Not Match Message

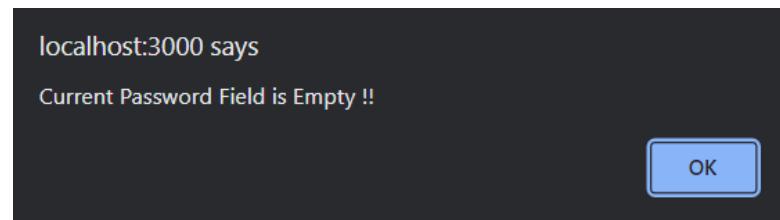


Figure 106: Current Password Empty Message

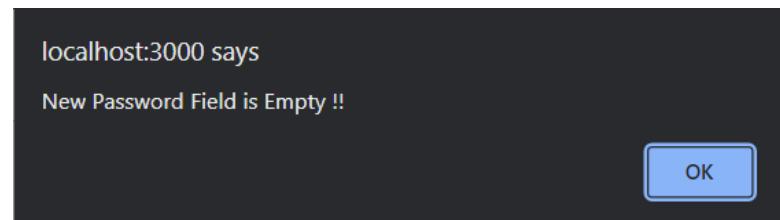


Figure 107: New Password Empty Message

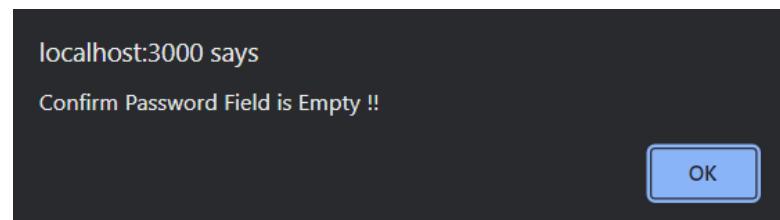


Figure 108: Confirm Password Empty Message

If password update is successful, a pop up box will display “Password successfully updated”.

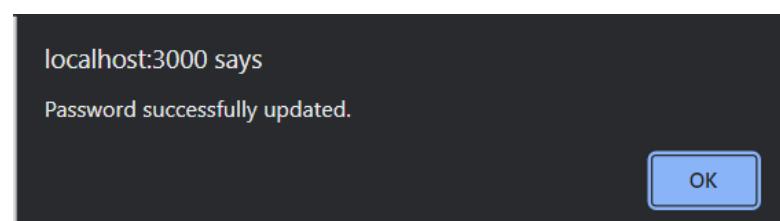


Figure 109: Password Successfully Updated Message