

FIST

Trimester 2 2021/2022

TWT2231 - WEB TECHNIQUES AND APPLICATIONS

Assignment Title: An Application Development for COVID-19 Epidemic

Tutor: Assoc. Prof. Dr. Md Shohel Sayeed

Student Name: Theng Yuan Yuan

Student ID: 1191100477

Course: ST

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1. Introduction

The product to develop in this project is a web-based system that tracks the Covid19 cases in Malaysia. It shows viewers the latest COVID-19 cases in the form of charts. The system is written as a dynamic website, which is consists of HTML, CSS, JavaScript, MySQL, and PHP.

The system provides a home page with charts that shows overall information about the current COVID-19 cases in Malaysia. Aside from home page, there are a navigation bar located at the top of the page that allows users to choose to look at the further division of the major categories. The data shown in the chart is retrieved according to the date in server side which is the data that are one day before current date. The charts in the page are bar charts that show according to the states, and the pie chart that show the ratio of the further division.

The four major categories are new cases, active cases, recovered cases and death cases. New cases are further divided into two sub-categories, local cases and imported cases. For active cases, the sub-categories are divided according to the action taken towards the COVID-19 positive cases, which are home quarantine, PKRC, hospitalised, and intensive care unit (ICU). PKRC is the shortform for COVID-19 Quarantine and Low Risk Treatment Centre, which is originally from Malay Language, Pusat Kuarantin dan Rawatan COVID-19.

Furthermore, the system provides a form page to collect everyday data of COVID-19 cases categorised by every state in Malaysia. The form page will auto-generate the current date that limit users to only update today's record. The page allows users to enter the data of COVID-19 cases by providing a combo box with selection of states and input fields for entering data. The data can be entered are the number of local cases, imported cases, home quarantine, PKRC, hospitalised, ICU, recovered cases, and death cases. The total amount of new cases and active cases will automatically be calculated and shown in the corresponding field once the data is entered into the input field. The total of new cases is calculated as the sum of local cases and imported cases, and the total active cases is the sum cases of home quarantine, PKRC hospitalised and ICU. Once users submit the data into the system, the data will be saved into the database. After added the data into the database, system will show a success message to users and provide a hyperlink to navigate to home page that shows the charts.

2. Objectives

The aim of the project is to create a website that can track the daily cases of COVID-19 cases. With the website published, the outcome is expected to raise awareness of Malaysian towards the severity of COVID-19 pandemic and the trend of the everyday cases. The website should be a platform for user to clearly compare the data between the subcategories of cases, and the number of cases in the states in Malaysia. Malaysia citizen should be able to recognize the seriousness of the pandemic in their states, by receiving the information from the charts provided on the website. Further, when it comes to some interstate activities, they can make better decision whether to follow the original plan, change the destination to another state, or stay in the current state. For example, the interstate activities like business trips, or simply family vacation trip.

The goal of this project is to program the website that will meet the aim of system mentioned above. To make sure it raises awareness among Malaysian, it should be able to attract users for checking everyday status of the COVID-19 epidemic. Thus, it should provide a good and clear design for viewers to make them keep an eye on the delivered information. On the other hand, it should also be capable of minimizing the possibility of the users to be weary of interacting with the system, and to extend persistence of users' use of the website. It should provide user-friendly and comfortable design for them who will be responsible to report everyday data. Therefore, one of the objectives of the project is to optimize the use of CSS, to make the good, user-friendly, and comfortable designs.

Furthermore, the website should be well-structured and secured. For example, the project should produce a dynamic website that will update the data daily, as long as there are data insert by the admin user every day. Therefore, it should include the database the supported the website at the back end. Other than that, the system should be also well-structured in back end. The database supporting the data should be written wisely and securely accessed. Therefore, the program to insert data into database should be written in secure way, to prevent SQL injection, that will corrupt the data in the database. Nevertheless, the website should have a minimum of bug in the codes. Hence, the written program in HTML, CSS, JavaScript, MySQL and PHP should be in proper syntax.

3. Scope

3.1 Potential users and specific requirements

The potential users of the websites are the citizens of whole Malaysia with the internet access. The target users are the teenagers and adults. Teenagers are mostly students in secondary schools that always interact with people in schools. Therefore, it is important to raise the awareness of COVID-19 epidemic among teenagers. Plus, they are at the age which most parents will start to buy them mobile phones. Thus, they have internet to access the website. Same goes for adults, they are mostly workers in workforce and having access to the internet. They also face the public many times, hence it is also necessary for them to be concern about COVID-19 cases daily.

The specific requirement of this project is the numbers of COVID-19 cases should be show clearly in the chart, provide a clear contrast in data between states. The website is requiring the admin users to enter a login code before inserting the COVID-19 cases. The website should have error handling to prevent admin user entered unusable data.

3.2 Required hardware and software platform

The hardware requirement for users is the device with internet connection. The users should have a device that has the access to the internet whether connecting to Wi-Fi or having usage of mobile data. To have a better view of the charts, the preferable devices are the device with bigger screen, such as laptop or desktop.

The software requirement are the browsers. Users can choose to use any of the browser that understand HTML and can be installed into their device. For example, the most popular browsers are Google Chrome, Firefox, and Safari.

3.3 Delivery Platform

The delivery platform would be on the browsers. The website is running on the network, which means the admin users access to the webpage and can enter the covid-19 data into the database. No matter from where users entered the data, it will be stored into the database in server side.

4. Contribution

My contribution in the project includes database implementation, initial interface design, program implementation, interface improvement, testing, documentation, and demonstration video.

The database is implemented in phpMyAdmin using MySQL. It is consisting of a table named "record". The table "record" contains the attributes "state", "date", "local_cases", "imported_cases", "new_cases", "home_quarantine", "pkrc", "hospitalised", "icu", "active_cases", "recovered_cases" and "death_cases". The primary key is "id", a column stores a string that contributes the state and date.

The initial interface design is the simple, basic interface of the HTML and PHP that test the usage of the database. The purpose is to design a simple website interface that can make sure the database can run wisely with the operation.

The program implementation is done according to the initial design. It is implemented in HTML, CSS, JavaScript, MySQL and PHP.

Interface improvement is basically started after some of the implementation is done, I design the website by changing the structure in HTML and the attributes such as backgrounds, padding, margin, alignment and etc in CSS. I spend times to find a perfect match of the design pattern and the colors.

Throughout the implementation and interface improvement, I constantly do tests to the system to check the operation, interface design and eliminate any bugs found.

When the implementation is almost done, I started to prepare the documentation. The demonstration video is about the demonstration of the website.

Lastly the video is prepared simultaneously with the documentation. The video will show how the website looks like, what is the contents, how is the navigation, how the admin users add the data and some error handling. The demonstration video is uploaded in the YouTube. Link: https://youtu.be/bOs-aRk5pho.

4.1 Schedule

| | Week 6 7/2 - 13/2 | Week 7 14/2 - 20/2 | Week 8 21/2 - 27/2 | Week 9 28/2 - 6/3 | Week 10 7/3 - 13/3 | Week 11 14/3 - 20/3 | Week 12 21/3 - 27/3 |
|--------------------------|----------------------|-----------------------|-----------------------|----------------------|-----------------------|------------------------|------------------------|
| Database implementation | | | | | | | |
| Initial interface design | | | | | | | |
| Program implementation | | | | | | | |
| Interface improvement | | | | | | | |
| Testing | | | | | | | |
| Documentation | | | | | | | |
| Demonstration VIdeo | | | | | | | |

5. Conclusion

In a nutshell, the outcome website met the requirement of this project. The final website has the function to show the chart clearly. The charts showed is classified in subcategories and states. Furthermore, the system provides functionalities that differentiate admin users and other users. Therefore, users cannot enter the data except the users with login code. It allows the admin users to add data into the system databases. Plus, the website has a good and user-friendly interface design that able to maximize users' satisfaction when viewing or using this website. Other than that, the navigation is also clear and obvious, represent as the buttons and hyperlink. The navigation button and hyperlink will show changes in background colors when user hover on it. In addition, the website is secure because it includes the PHP MySQL Prepared Statements and Bound Parameters to prevent MySQL injection. It has the error handlings to prevent mistakes made by users. Therefore, I would estimate that the project outcome has meets the aims and goals of the system. My expectation of the usage of this system is to effectively raise the awareness of public about COVID-19 in Malaysia. I believe with the daily update of cases, the system will definitely enhance the COVID-19 awareness among Malaysian.

6. Appendices:

6.1 Source code

6.1.1 index.html

```
box-sizing: border-box;
 font-family: Verdana, Geneva, Tahoma, sans-serif;
body {
  background-image: url(/mycovid/covid19draw.jpeg);
  background-repeat: no-repeat;
 background-attachment: fixed;
 background-size: cover;
.banner {
 overflow: hidden;
 background-color: #333;
 position: fixed;
 top:0px;
 left: 0px;
 right: 0px;
.banner a {
 float: right;
 color: #f2f2f2;
 text-align: center;
 padding: 14px 16px;
 text-decoration: none;
 font-size: 17px;
.banner a:hover {
 background-color: #ddd;
  color: black;
.banner a.active {
 background-color: steelblue;
 color: white;
.banner a.logo {
 float: left;
 font-weight: 700;
  color:steelblue;
```

```
.banner a.logo:hover {
  background: rgb(0, 0, 0);
.container{
  background-color: rgb(255,255,255, 0.8);
 margin-top: 80px;
  margin-left: 5%;
 margin-right: 5%;
  padding: 40px;
 display: flex;
  flex-direction: column;
 height: auto;
 justify-content: center;
.container div canvas{
 width: max-content;
.container h1 {
 margin-left:auto;
 margin-right:auto;
.inputdata {
 margin-left: auto;
 margin-right: auto;
  font-size:large;
.inputdata tr th {
  font-weight: 500;
  text-align: right;
.inputdata tr td input, .inputdata tr td select {
  margin-left: 10%;
 border-radius: 10px;
  padding-left: 8px;
  padding-top: 3px;
  padding-bottom: 3px;
  border-width: 2px;
  font-family: 'Courier New', Courier, monospace;
  font-weight: 600;
  font-size: large;
@media only screen and (max-width:600px) {
  .inputdata tr td input, .inputdata tr td select {
```

```
font-size:small;
    font-weight:bold;
input[type=submit],[type=reset]{
  cursor: pointer;
  border: none;
  border-radius: 10px;
  padding-top: 5px;
  padding-bottom: 5px;
  padding-left: 10px;
  padding-right: 10px;
  font-size: x-large;
input[type=submit]{
  background: steelblue;
 color:white;
  box-shadow: 0 3px #999;
input[type=reset]{
  color:steelblue;
 background: none;
input[type=submit]:hover{
  background: rgb(100, 165, 218);
  color:white;
input[type=reset]:hover{
  background-color: rgba(255, 255, 255, 0.9);
input[type=submit]:active{
 box-shadow: 0 1px #666;
  transform:translateY(2px);
input[type=reset]:active{
 background-color: rgb(201, 201, 201);
```

```
<!DOCTYPE html>
<html lang="en">
   <head><title>Login</title>
     <meta charset="UTF-8" />
     <meta name="viewport" content="width=device-width, initial-scale=1.0" />
     <link rel="stylesheet" href="/mycovid/style.css" />
      <script src="script.js"></script>
   <div class="banner">
     <a class="logo" href="/mycovid/status/index.php">MYCOVID</a>
   <div class="container">
   <h1>LOGIN TO ADD RECORDS</h1><br>
           <label for="logincode"> Enter login code: </label>
           <input type=text id=logincode name=logincode size="15"
required>
         <br>
         <input type="submit" id="btn_login" value="LOGIN"</pre>
onclick="checklogincode()"></input>
   </div>
   <script>
      document.getElementById("logincode").addEventListener("keyup",
function(event){
        if(event.keyCode===13){
           event.preventDefault();
           document.getElementById("btn_login").click();
     });
      function checklogincode(){
          if(document.getElementById("logincode").value=="adminaddrecord"){
               alert("Login successful. Welcome, admin.");
               window.location.replace("/mycovid/add/addrecord.html");
          }else{
              alert("The login code is invalid.");
   </script>
     <br>
     <br>
     <br>
   </body>
```

```
<!DOCTYPE html>
<html lang="en">
  <head><title>Add Record</title>
     <meta charset="UTF-8" />
     <meta name="viewport" content="width=device-width, initial-scale=1.0" />
     <link rel="stylesheet" href="/mycovid/style.css" />
     <script src="script.js"></script>
  </head>
 <body onload="getTodayDate()">
  <div class="banner">
     <a class="logo" href="/mycovid/status/index.php">MYCOVID</a>
     </div>
  <div class="container">
  <h1>ADD TODAY's COVID-19 RECORDS</h1><br>
  <form method=post action=process.php>
     <label for="date">Today's Date </label>
           <input type="date" id="date" name=date readonly> 
        <label for="state">Select State </label>
             <select name="state" >
                <option value="JHR">Johor</option>
                <option value="KDH">Kedah</option>
                <option value="KTN">Kelantan</option>
                <option value="MLK">Melaka</option>
                <option value="NSN">Negeri Sembilan</option>
                <option value="PHG">Pahang</option>
                <option value="PRK">Perak</option>
                <option value="PLS">Perlis</option>
                <option value="PNG">Pinang</option>
                <option value="SBH">Sabah</option>
                <option value="SWK">Sarawak</option>
                <option value="SGR">Selangor</option>
                <option value="TRG">Terengganu</option>
                <option value="KUL">W.P. Kuala Lumpur</option>
                <option value="LBN">W.P. Labuan
                <option value="PJY">W.P. Putrajaya</option>
             </select>
           </ta>
```

```
<label for="local_cases">Local Cases </label>
        <input type=number min="0" id=local cases name=local cases
<label for="imported cases">Imported Cases </label>
        <input type=number min="0" id=imported cases
<label for="new_cases">Total New Cases </label>
        <input type=number min="0" id=new cases name=new cases
onclick="calc_newCases()" readonly size="15" required style="background-color:
lightgrey;">
      <label for="home_quarantine">Home Quarantine </label>
        <input type=number min="0" id=home_quarantine
>
        <label for="pkrc">PKRC </label>
        <input type=number min="0" id=pkrc name=pkrc
oninput="calc_activeCases()" size="15" required>
      <label for="hospitalised">Hospitalised </label>
        <input type=number min="0" id=hospitalised name=hospitalised
oninput="calc_activeCases()" size="15" required>
      <label for="icu">ICU </label>
        <input type=number min="0" id=icu name=icu
oninput="calc_activeCases()" size="15" required>
      <label for="active cases">Total Active Cases</label>
        <input type=number min="0" id=active_cases name=active_cases
onclick="calc_activeCases()" size="15" readonly required style="background-
color: lightgrey;" >
      <label for="recovered_cases">Recovered Cases</label>
        <input type=number min="0" name=recovered_cases size="15"
required><br>
```

```
<label for="death cases">Death Cases</label>
        <input type=number min="0" name=death_cases size="15"
required><br>
      *The data cannot be changed after the
submission. Please make sure the data is correct before you submit.
      <input type=submit
value="Submit"><input type=reset value="Clear">
    </form>
  </div>
    <br>
    <br>
    <br>
  </body>
```

6.1.5 /add/process.php

```
<!DOCTYPE html>
<html>
   <header>
     <meta charset="UTF-8" />
     <meta name="viewport" content="width=device-width, initial-scale=1.0" />
     <link rel="stylesheet" href="/mycovid/style.css" />
     <title>Data Updated!</title>
   </header>
   <body>
       <?php
       //create connection
       $conn = new mysqli("localhost","root","","mycovid");
       if ($conn->connect_error) {
           die("Connection failed: " . $conn->connect_error);
       extract($_POST);
       $date=date("Y-m-d");
```

```
$id=$state.$date;
        $stmt = $conn->prepare("INSERT INTO record
            (id, thedate, state,
            local cases,imported cases,new cases,
            home_quarantine,pkrc,hospitalised,icu,active_cases,
            recovered_cases,death_cases)
            VALUES(?,?,?,?,?,?,?,?,?,?,?)");
        $stmt->bind_param("sssiiiiiiiii",//s-string i-integer
            $id,$date,$state,
            $local_cases,$imported_cases,$new_cases,
            $home_quarantine,$pkrc,$hospitalised,$icu,$active_cases,
            $recovered_cases,$death_cases);
        $stmt->execute();
        $stmt->close();
        $conn->close();
        <div class="container">
        <h1>Data Updated!</h1>
        <input type="submit" id="btn_view" value="View Covid-19 Status"</pre>
onclick="viewstatus()"></input>
        </div>
        <script>
            function viewstatus(){
                window.location.replace("/mycovid/");
        </script>
    </body>
```

```
function getTodayDate(){
    var today=new Date();
    var d=("0" + today.getDate()).slice(-2);
    var m=("0" + (today.getMonth() + 1)).slice(-2);
    var y=today.getFullYear();
    var result=y+"-"+m+"-"+d;
    document.getElementById("date").value = result;
function calc_newCases(){
    var x=parseInt(document.getElementById("local_cases").value)
    var y=parseInt(document.getElementById("imported_cases").value)
    var total=x+y
    document.getElementById("new_cases").value = total
function calc_activeCases(){
    var a=parseInt(document.getElementById("home_quarantine").value)
    var b=parseInt(document.getElementById("pkrc").value)
    var c=parseInt(document.getElementById("hospitalised").value)
    var d=parseInt(document.getElementById("icu").value)
    var total=a+b+c+d
    document.getElementById("active_cases").value = total
```

```
<?php
 // connect the MySQL server
 if(!($connection = mysqli_connect("localhost", "root", "")))
 die( "Could not connect to database </body></html>" );
 // access the database
 if ( !mysqli_select_db($connection, "mycovid") )
   die( "Could not open company database </body></html>" );
 //variables for data
 $state='';
 $new_cases='';
 $active_cases='';
 $recovered cases='';
 $death cases='';
 $sum new ='';
 $sum_active ='';
 $sum recovered ='';
 $sum death ='';
 //query to insert data into record table
 $query = "SELECT * FROM record
 WHERE thedate = CURRENT DATE-1
 ORDER BY active_cases DESC";
 //execute the query
 if ( !( $result = mysqli_query($connection, $query) ) ) {
   echo "Could not execute query!" ;
    die(mysqli_error($connection) . "</body></html>" );
 //loop through the returned data
 while($row = mysqli_fetch_array($result)){
   $state = $state.'"'.$row['state'].'",';
   $new_cases = $new_cases.'"'.$row['new_cases'].'",';
   $active_cases = $active_cases.'"'.$row['active_cases'].'",';
   $recovered_cases = $recovered_cases.'"'.$row['recovered_cases'].'",';
   $death_cases = $death_cases.'"'.$row['death_cases'].'",';
 $state = trim($state,",");
 $new_cases = trim($new_cases,",");
 $active_cases = trim($active_cases,",");
 $recovered_cases = trim($recovered_cases,",");
 $death_cases = trim($death_cases ,",");
```

```
//query to insert data into record table
  $query = "SELECT SUM(new cases), SUM(active cases),
        SUM(recovered cases), SUM(death cases)
  FROM record
 WHERE thedate = CURRENT DATE-1";
 //execute the query
 if ( !( $result = mysqli_query($connection, $query) ) ) {
   echo "Could not execute query!" ;
    die(mysqli_error($connection) . "</body></html>" );
 //loop through the returned data
 while($row = mysqli_fetch_array($result)){
    $sum_new = $sum_new.'"'.$row['SUM(new_cases)'].'",';
    $sum_active = $sum_active.'"'.$row['SUM(active_cases)'].'",';
   $sum recovered = $sum recovered.'"'.$row['SUM(recovered cases)'].'",';
    $sum_death = $sum_death.'"'.$row['SUM(death_cases)'].'",';
 $sum new = trim($sum new,",");
 $sum_active = trim($sum_active,",");
 $sum_recovered = trim($sum_recovered,",");
 $sum_death = trim($sum_death ,",");
 // disconnect from the server
 mysqli_close( $connection);
<!DOCTYPE html>
<html lang="en">
 <head>
    <meta charset="UTF-8" />
    <meta name="viewport" content="width=device-width, initial-scale=1.0" />
   <link rel="stylesheet" href="/mycovid/style.css" />
    <script
src="https://cdnjs.cloudflare.com/ajax/libs/Chart.js/2.9.4/Chart.js"></script>
    <title>Covid19 Status</title>
 </head>
 <body>
   <div class="banner">
    <a class="logo" href="/mycovid/status/index.php">MYCOVID</a>
    <a href="/mycovid/status/deathcases.php">Death</a>
    <a href="/mycovid/status/recoveredcases.php">Recovered</a>
    <a href="/mycovid/status/activecases.php">Active</a>
    <a href="/mycovid/status/newcases.php">New</a>
    <a class="active" href="/mycovid/status/index.php">Home</a>
    </div>
   <div class="container">
```

```
<h1>Current Status of Covid-19 Cases in Malaysia</h1>
      <h3 align="right">Data for: <?php echo date('d M Y', time() - 60 * 60 *</pre>
24); ?></h3><br><br>
      <div><canvas id="chart overall"></canvas></div><br><br>
      <div><canvas id="chart all"></canvas></div><br><br>
      <script>
        var chart_overall =
document.getElementById("chart_overall").getContext('2d');
    var chart_all = document.getElementById("chart_all").getContext('2d');
        //global options
        Chart.defaults.global.defaultFontFamily = 'Lato';
        Chart.defaults.global.defaultFontSize = 18;
        Chart.defaults.global.defaultFontColor = '#777';
        let chart1 = new Chart(chart_overall, {
            type:'horizontalBar', //bar, horizontalBar, pie, line, doughnut,
radar, polarArea
                labels:['New Cases','Active Cases','Recovered Cases','Death
Cases'],
                datasets:[{
                    label: 'Cases',
                    data: [<?php echo $sum_new ?>,<?php echo</pre>
$sum_active ?>,<?php echo $sum_recovered ?>,<?php echo $sum_death ?>],
                    backgroundColor:
['indianred','darkkhaki','steelblue','mediumseagreen'],
                    borderWidth:0,
                    borderColor: '#777',
                    hoverBorderWidth:3,
                    hoverBorderColor: '#000'
                }]
            },
            options:{
                title:{
                    display:true,
                    text: 'Overall Covid19 Status in Malaysia',
                    fontSize:25
                },
                legend:{
                    display:false,
                    position: 'right',
                    labels:{
                        fontColor: '#000'
                },
                tooltips:{
```

```
enabled:true
        })
        let chart2 = new Chart(chart all, {
            type:'bar', //bar, horizontalBar, pie, line, doughnut, radar,
polarArea
            data:{
                labels:[<?php echo $state; ?>],
                datasets:[{
                    label: 'New Cases',
                    data: [<?php echo $new cases; ?>],
                    backgroundColor:'indianred',
                    borderWidth:0,
                    borderColor:'#777',
                    hoverBorderWidth:3,
                    hoverBorderColor: '#000'
                },{
                    label: 'Active Cases',
                    data: [<?php echo $active_cases; ?>],
                    backgroundColor:'darkkhaki',
                    borderWidth:0,
                    borderColor:'#777',
                    hoverBorderWidth:3,
                    hoverBorderColor: '#000'
                },{
                    label: 'Recovered Cases',
                    data: [<?php echo $recovered_cases; ?>],
                    backgroundColor:'steelblue',
                    borderWidth:0,
                    borderColor:'#777',
                    hoverBorderWidth:3,
                    hoverBorderColor: '#000'
                },{
                    label: 'Death Cases',
                    data: [<?php echo $death_cases; ?>],
                    backgroundColor:'mediumseagreen',
                    borderWidth:0,
                    borderColor:'#777',
                    hoverBorderWidth:3,
                    hoverBorderColor: '#000'
                }]
            },
            options:{
                title:{
                    display:true,
                    text: 'Overall Covid19 Status in Every State',
                    fontSize:25
```

```
},
                legend:{
                    display:true,
                    position:'right',
                    labels:{
                        fontColor: '#000'
                },
                tooltips:{
                    enabled:true
        })
      </script>
    <br>
    Click <a href="/mycovid/add/adminlogin.html">here</a> to add today's
record.
    </div>
 </body>
</html>
```

6.1.8 /status/newcases.php

```
<?php
  // connect the MySQL server
 if(!($connection = mysqli_connect("localhost", "root", "")))
 die( "Could not connect to database </body></html>" );
 // access the database
 if ( !mysqli_select_db($connection, "mycovid") )
   die( "Could not open company database </body></html>" );
 //variables for data
 $state='';
 $local_cases='';
 $imported_cases='';
 $new_cases='';
 $sum_local ='';
 $sum_imported ='';
 $sum_new ='';
 //query to insert data into record table
 $query = "SELECT * FROM record
 WHERE thedate = CURRENT_DATE-1
 ORDER BY new_cases DESC";
```

```
//execute the query
 if ( !( $result = mysqli query($connection, $query) ) ) {
   echo "Could not execute query!" ;
   die(mysqli error($connection) . "</body></html>" );
 //loop through the returned data
 while($row = mysqli_fetch_array($result)){
   $state = $state.'"'.$row['state'].'",';
   $local_cases = $local_cases.'"'.$row['local_cases'].'",';
   $imported_cases = $imported_cases.'"'.$row['imported_cases'].'",';
   $new_cases = $new_cases.'"'.$row['new_cases'].'",';
 $state = trim($state,",");
 $local cases = trim($local cases,",");
 $imported cases = trim($imported cases,",");
 $new_cases = trim($new_cases,",");
 //query to insert data into record table
 $query = "SELECT SUM(local_cases), SUM(imported_cases), SUM(new_cases)
 FROM record
 WHERE thedate = CURRENT DATE-1;";
 //execute the query
 if ( !( $result = mysqli_query($connection, $query) ) ) {
   echo "Could not execute query!" ;
   die(mysqli_error($connection) . "</body></html>" );
 //loop through the returned data
 while($row = mysqli_fetch_array($result)){
   $sum_local = $sum_local.'"'.$row['SUM(local_cases)'].'",';
   $sum_imported = $sum_imported.'"'.$row['SUM(imported_cases)'].'",';
   $sum_new = $sum_new.'"'.$row['SUM(new_cases)'].'",';
 $sum_local = trim($sum_local,",");
 $sum_imported = trim($sum_imported,",");
 $sum_new = trim($sum_new,",");
 // disconnect from the server
 mysqli_close( $connection);
<!DOCTYPE html>
<html lang="en">
 <head>
   <meta charset="UTF-8" />
   <meta name="viewport" content="width=device-width, initial-scale=1.0" />
```

```
<link rel="stylesheet" href="/mycovid/style.css" />
    <script
src="https://cdnjs.cloudflare.com/ajax/libs/Chart.js/2.9.4/Chart.js"></script>
    <title>Covid19 New Cases</title>
  <body>
    <div class="banner">
    <a class="logo" href="/mycovid/status/index.php">MYCOVID</a>
    <a href="/mycovid/status/deathcases.php">Death</a>
    <a href="/mycovid/status/recoveredcases.php">Recovered</a>
    <a href="/mycovid/status/activecases.php">Active</a>
    <a class="active" href="/mycovid/status/newcases.php">New</a>
    <a href="/mycovid/status/index.php">Home</a>
    </div>
    <div class="container">
      <h1>New Covid-19 Cases in Malaysia</h1>
      <h3 align="right">Data for: <?php echo date('d M Y', time() - 60 * 60 *</pre>
24); ?></h3><br><br>
      <div><canvas id="chart newCases"></canvas></div><br><br>
      <div><canvas id="chart_newCases2"></canvas></div><br><br>
      <script>
        var chart_newCases =
document.getElementById("chart_newCases").getContext('2d');
        var chart newCases2 =
document.getElementById("chart_newCases2").getContext('2d');
        //global options
        Chart.defaults.global.defaultFontFamily = 'Lato';
        Chart.defaults.global.defaultFontSize = 18;
        Chart.defaults.global.defaultFontColor = '#777';
        let chart1 = new Chart(chart_newCases, {
            type:'pie', //bar, horizontalBar, pie, line, doughnut, radar,
polarArea
            data:{
                labels:['Local Cases','Imported Cases'],
                datasets:[{
                    label: 'New Added Cases',
                    data: [<?php echo $sum_local; ?>, <?php echo</pre>
$sum_imported; ?>],
                    backgroundColor:['indianred','steelblue'],
                    borderWidth:0,
                    borderColor:'#777',
                    hoverBorderWidth:3,
                    hoverBorderColor:'#000'
```

```
}]
            },
            options:{
                title:{
                    display:true,
                    text: 'New Cases (Local Cases + Imported Cases)',
                    fontSize:25
                },
                legend:{
                    display:true,
                    position:'right',
                    labels:{
                        fontColor:'#000'
                },
                tooltips:{
                    enabled:true
        })
        let chart2 = new Chart(chart_newCases2, {
            type:'bar', //bar, horizontalBar, pie, line, doughnut, radar,
polarArea
            data:{
                labels:[<?php echo $state; ?>],
                datasets:[{
                    label: 'New Added Cases',
                    data: [<?php echo $new_cases; ?>],
                    backgroundColor:['indianred','darkkhaki','steelblue','medi
umseagreen','lightsalmon','orange','khaki','mediumpurple','lightseagreen','sla
teblue','violet','springgreen','darkseagreen','deepskyblue','rosybrown','choco
late'],
                    borderWidth:0,
                    borderColor:'#777',
                    hoverBorderWidth:3,
                    hoverBorderColor: '#000'
                }]
            },
            options:{
                title:{
                    display:true,
                    text: 'New Cases in Every State',
                    fontSize:25
                },
                legend:{
                    display:false,
                    position:'bottom',
                    labels:{
```

```
<?php
 // connect the MySQL server
 if(!($connection = mysqli_connect("localhost", "root", "")))
 die( "Could not connect to database </body></html>" );
 // access the database
 if ( !mysqli_select_db($connection, "mycovid") )
   die( "Could not open company database </body></html>" );
 $state='';
 $home_quarantine='';
 $pkrc='';
 $hospitalised='';
 $icu='';
 $active_cases='';
 $sum_home ='';
 $sum_pkrc ='';
 $sum_hospitalised = '';
 $sum icu ='';
 $sum_active ='';
 //query to insert data into record table
 $query = "SELECT * FROM record
 WHERE thedate = CURRENT_DATE-1
 ORDER BY active_cases DESC";
 //execute the query
 if ( !( $result = mysqli_query($connection, $query) ) ) {
   echo "Could not execute query!" ;
   die(mysqli_error($connection) . "</body></html>" );
 //loop through the returned data
 while($row = mysqli_fetch_array($result)){
   $state = $state.'"'.$row['state'].'",';
    $home_quarantine = $home_quarantine.'"'.$row['home_quarantine'].'",';
   $pkrc = $pkrc.'"'.$row['pkrc'].'",';
   $hospitalised = $hospitalised.'"'.$row['hospitalised'].'",';
   $icu = $icu.'"'.$row['icu'].'",';
   $active_cases = $active_cases.'"'.$row['active_cases'].'",';
 $state = trim($state,",");
 $home_quarantine = trim($home_quarantine,",");
 $pkrc = trim($pkrc,",");
```

```
$hospitalised = trim($hospitalised,",");
 $icu = trim($icu,",");
 $active cases = trim($active cases,",");
 //query to insert data into record table
 $query = "SELECT SUM(home quarantine), SUM(pkrc), SUM(hospitalised),
SUM(icu), SUM(active_cases)
 FROM record
 WHERE thedate = CURRENT DATE-1";
 //execute the query
 if ( !( $result = mysqli query($connection, $query) ) ) {
   echo "Could not execute query!" ;
    die(mysqli_error($connection) . "</body></html>" );
 //loop through the returned data
 while($row = mysqli_fetch_array($result)){
    $sum_home = $sum_home.'"'.$row['SUM(home_quarantine)'].'",';
    $sum_pkrc = $sum_pkrc.'"'.$row['SUM(pkrc)'].'",';
   $sum hospitalised = $sum hospitalised.'"'.$row['SUM(hospitalised)'].'",';
    $sum_icu = $sum_icu.'"'.$row['SUM(icu)'].'",';
   $sum active = $sum active.'"'.$row['SUM(active cases)'].'",';
 $sum_home = trim($sum_home,",");
 $sum_pkrc = trim($sum_pkrc,",");
 $sum_hospitalised = trim($sum_hospitalised,",");
 $sum_icu = trim($sum_icu,",");
 $sum_active = trim($sum_active,",");
 // disconnect from the server
 mysqli_close( $connection);
<!DOCTYPE html>
<html lang="en">
 <head>
   <meta charset="UTF-8" />
    <meta name="viewport" content="width=device-width, initial-scale=1.0" />
    <link rel="stylesheet" href="/mycovid/style.css" />
    <script
src="https://cdnjs.cloudflare.com/ajax/libs/Chart.js/2.9.4/Chart.js"></script>
    <title>Covid19 Status</title>
 </head>
 <body>
   <div class="banner">
    <a class="logo" href="/mycovid/status/index.php">MYCOVID</a>
    <a href="/mycovid/status/deathcases.php">Death</a>
    <a href="/mycovid/status/recoveredcases.php">Recovered</a>
```

```
<a class="active" href="/mycovid/status/activecases.php">Active</a>
    <a href="/mycovid/status/newcases.php">New</a>
    <a href="/mycovid/status/index.php">Home</a>
    </div>
    <div class="container">
      <h1>Active Covid-19 Cases in Malaysia</h1>
      <h3 align="right">Data for: <?php echo date('d M Y', time() - 60 * 60 *</pre>
24); ?></h3><br><br>
     <h2</h2>
      <div><canvas id="chart_activeCases"></canvas></div><br>
      <div><canvas id="chart activeCases2"></canvas></div><br>
      <script>
        var chart activeCases =
document.getElementById("chart_activeCases").getContext('2d');
        var chart activeCases2 =
document.getElementById("chart activeCases2").getContext('2d');
        //global options
        Chart.defaults.global.defaultFontFamily = 'Lato';
        Chart.defaults.global.defaultFontSize = 18;
        Chart.defaults.global.defaultFontColor = '#777';
        let chart1 = new Chart(chart_activeCases, {
            type:'pie', //bar, horizontalBar, pie, line, doughnut, radar,
polarArea
            data:{
                labels:['Home Quarantine','PKRC','Hospitalised','ICU'],
                datasets:[{
                    label: 'Active Cases',
                    data: [<?php echo $sum_home; ?>,<?php echo</pre>
$sum_pkrc; ?>,<?php echo $sum_hospitalised; ?>,<?php echo $sum_icu; ?>],
                    backgroundColor:['indianred','darkkhaki','steelblue','medi
umseagreen'],
                    borderWidth:0,
                    borderColor:'#777',
                    hoverBorderWidth:3,
                    hoverBorderColor: '#000'
                }]
            },
            options:{
                title:{
                    display:true,
                    text: 'Active Cases (Home Quarantine + PKRC + Hospitalised
+ ICU)',
                    fontSize:25
```

```
legend:{
                    display:true,
                    position: 'right',
                    labels:{
                        fontColor: '#000'
                },
                tooltips:{
                    enabled:true
        })
        let chart2 = new Chart(chart_activeCases2, {
            type:'bar', //bar, horizontalBar, pie, line, doughnut, radar,
polarArea
            data:{
                labels:[<?php echo $state; ?>],
                datasets:[{
                    label: 'Active Cases',
                    data: [<?php echo $active_cases; ?>],
                    backgroundColor:['indianred','darkkhaki','steelblue','medi
umseagreen','lightsalmon','orange','khaki','mediumpurple','lightseagreen','sla
teblue','violet','springgreen','darkseagreen','deepskyblue','rosybrown','choco
late'],
                    borderWidth:0,
                    borderColor:'#777',
                    hoverBorderWidth:3,
                    hoverBorderColor: '#000'
                }]
            },
            options:{
                title:{
                    display:true,
                    text: 'Active Cases in Every State',
                    fontSize:25
                },
                legend:{
                    display:false,
                    position:'bottom',
                    labels:{
                        fontColor:'#000'
                },
                tooltips:{
                    enabled:true
```

```
<?php
 // connect the MySQL server
 if(!($connection = mysqli_connect("localhost", "root", "")))
 die( "Could not connect to database </body></html>" );
 // access the database
 if ( !mysqli_select_db($connection, "mycovid") )
   die( "Could not open company database </body></html>" );
 //variables for data
 $state='';
 $recovered cases='';
 //query to insert data into record table
 $query = "SELECT state, recovered cases FROM record
 WHERE thedate = CURRENT DATE-1
 ORDER BY recovered_cases DESC";
 //execute the query
 if ( !( $result = mysqli_query($connection, $query) ) ) {
   echo "Could not execute query!" ;
    die(mysqli_error($connection) . "</body></html>" );
 //loop through the returned data
 while($row = mysqli_fetch_array($result)){
   $state = $state.'"'.$row['state'].'",';
   $recovered_cases = $recovered_cases.'"'.$row['recovered_cases'].'",';
 $state = trim($state,",");
 $recovered cases = trim($recovered cases,",");
 // disconnect from the server
 mysqli_close( $connection);
<!DOCTYPE html>
<html lang="en">
 <head>
   <meta charset="UTF-8" />
    <meta name="viewport" content="width=device-width, initial-scale=1.0" />
    <link rel="stylesheet" href="/mycovid/style.css" />
src="https://cdnjs.cloudflare.com/ajax/libs/Chart.js/2.9.4/Chart.js"></script>
    <title>Covid19 Status</title>
 </head>
```

```
<body>
    <div class="banner">
    <a class="logo" href="/mycovid/status/index.php">MYCOVID</a>
    <a href="/mycovid/status/deathcases.php">Death</a>
    <a class="active" href="/mycovid/status/recoveredcases.php">Recovered</a>
    <a href="/mycovid/status/activecases.php">Active</a>
    <a href="/mycovid/status/newcases.php">New</a>
    <a href="/mycovid/status/index.php">Home</a>
    </div>
    <div class="container">
      <h1>Recovered Covid-19 Cases in Malaysia</h1>
      <h3 align="right">Data for: <?php echo date('d M Y', time() - 60 * 60 *</pre>
24); ?></h3><br><br>
      <div><canvas id="chart recoveredCases"></canvas></div><br>
      <script>
        var chart recoveredCases =
document.getElementById("chart_recoveredCases").getContext('2d');
        //global options
        Chart.defaults.global.defaultFontFamily = 'Lato';
        Chart.defaults.global.defaultFontSize = 18;
        Chart.defaults.global.defaultFontColor = '#777';
        let chart1 = new Chart(chart_recoveredCases, {
            type:'bar', //bar, horizontalBar, pie, line, doughnut, radar,
polarArea
            data:{
                labels:[<?php echo $state; ?>],
                datasets:[{
                    label: 'Recovered Cases',
                    data: [<?php echo $recovered_cases; ?>],
                    backgroundColor:['indianred','darkkhaki','steelblue','medi
umseagreen', 'lightsalmon', 'orange', 'khaki', 'mediumpurple', 'lightseagreen', 'sla
teblue','violet','springgreen','darkseagreen','deepskyblue','rosybrown','choco
late'],
                    borderWidth:0,
                    borderColor: '#777',
                    hoverBorderWidth:3,
                    hoverBorderColor: '#000'
                }]
            },
            options:{
                title:{
                    display:true,
                    text: 'Recovered Cases in Every State',
```

```
fontSize:25
},
legend:{
    display:false,
    position:'bottom',
    labels:{
        fontColor:'#000'
    }
},
tooltips:{
    enabled:true
}
}
})

<p
```

```
<?php
 // connect the MySQL server
 if(!($connection = mysqli_connect("localhost", "root", "")))
 die( "Could not connect to database </body></html>" );
 // access the database
 if ( !mysqli_select_db($connection, "mycovid") )
   die( "Could not open company database </body></html>" );
 //variables for data
 $state='';
 $death cases='';
 //query to insert data into record table
 $query = "SELECT state, death cases FROM record
 WHERE thedate = CURRENT DATE-1
 ORDER BY death_cases DESC";
 //execute the query
 if ( !( $result = mysqli_query($connection, $query) ) ) {
   echo "Could not execute query!" ;
    die(mysqli_error($connection) . "</body></html>" );
 //loop through the returned data
 while($row = mysqli_fetch_array($result)){
   $state = $state.'"'.$row['state'].'",';
   $death_cases = $death_cases.'"'.$row['death_cases'].'",';
 $state = trim($state,",");
 $death_cases = trim($death_cases ,",");
 mysqli_close( $connection);
<!DOCTYPE html>
<html lang="en">
 <head>
   <meta charset="UTF-8" />
    <meta name="viewport" content="width=device-width, initial-scale=1.0" />
    <link rel="stylesheet" href="/mycovid/style.css" />
src="https://cdnjs.cloudflare.com/ajax/libs/Chart.js/2.9.4/Chart.js"></script>
    <title>Covid19 Status</title>
 </head>
```

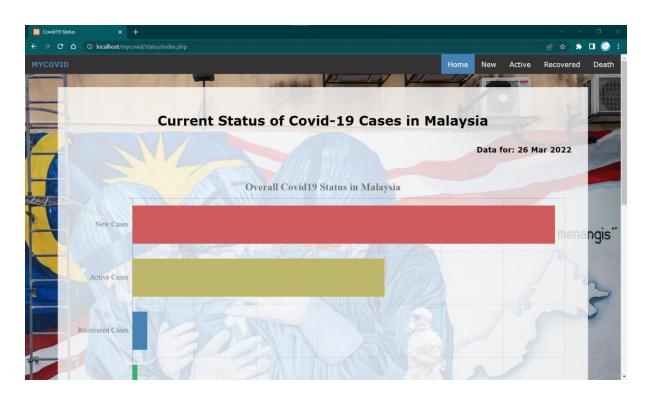
```
<body>
    <div class="banner">
    <a class="logo" href="/mycovid/status/index.php">MYCOVID</a>
    <a class="active" href="/mycovid/status/deathcases.php">Death</a>
    <a href="/mycovid/status/recoveredcases.php">Recovered</a>
    <a href="/mycovid/status/activecases.php">Active</a>
    <a href="/mycovid/status/newcases.php">New</a>
    <a href="/mycovid/status/index.php">Home</a>
    </div>
    <div class="container">
      <h1>Covid-19 Death Cases in Malaysia</h1>
      <h3 align="right">Data updated: <?php echo date('d M Y', time() - 60 *</pre>
60 * 24); ?></h3><br><br>
      <div><canvas id="chart deathCases"></canvas></div><br>
      <script>
        var chart deathCases =
document.getElementById("chart_deathCases").getContext('2d');
        //global options
        Chart.defaults.global.defaultFontFamily = 'Lato';
        Chart.defaults.global.defaultFontSize = 18;
        Chart.defaults.global.defaultFontColor = '#777';
        let chart8 = new Chart(chart_deathCases, {
            type:'bar', //bar, horizontalBar, pie, line, doughnut, radar,
polarArea
            data:{
                labels:[<?php echo $state; ?>],
                datasets:[{
                    label: 'Death Cases',
                    data: [<?php echo $death_cases; ?>],
                    backgroundColor:['indianred','darkkhaki','steelblue','medi
umseagreen', 'lightsalmon', 'orange', 'khaki', 'mediumpurple', 'lightseagreen', 'sla
teblue','violet','springgreen','darkseagreen','deepskyblue','rosybrown','choco
late'],
                    borderWidth:0,
                    borderColor: '#777',
                    hoverBorderWidth:3,
                    hoverBorderColor: '#000'
                }]
            },
            options:{
                title:{
                    display:true,
                    text: 'Death Cases in Every State',
```

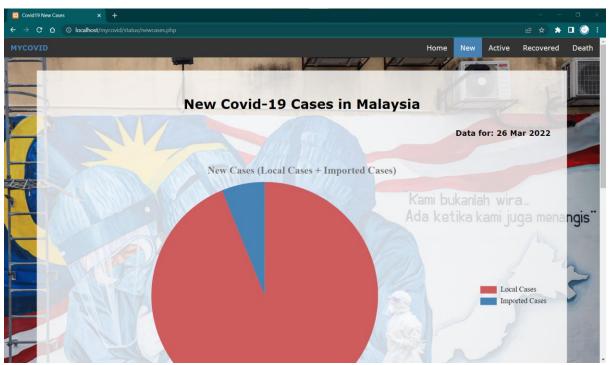
```
CREATE DATABASE mycovid;
USE mycovid;
CREATE TABLE record(
id VARCHAR (13) PRIMARY KEY,
thedate DATE,
state VARCHAR(20),
local cases INT(7),
imported_cases INT(7),
new cases INT(7),
home_quarantine INT(7),
pkrc INT(7),
hospitalised INT(7),
icu INT(7),
active cases INT(7),
recovered cases INT(7),
death cases INT(7)
);
--some sample data
--run to see chart
--Insert yesterday's data
INSERT INTO record(
    id, thedate, state,
    local cases, imported cases, new cases,
    home quarantine, pkrc, hospitalised, icu, active cases,
    recovered cases, death cases)
    VALUES
    ('JHR', CURRENT_DATE()-1,'JHR',
    949,37,949+37,
    11613,72,694,9+22,12410,
    2822,14),
    ('KDH', CURRENT DATE()-1, 'KDH',
    1231,21,1231+21,
    16269,86,389,12+17,16773,
    2328,9),
    ('KTN', CURRENT DATE()-1, 'KTN',
    407,29,407+29,
    6036, 135, 326, 11+14, 6522,
    946,2+2),
    ('MLK', CURRENT DATE()-1, 'MLK',
    565,29,565+29,
    8961,160,168,5+5,9299,
    1962,5+2),
    ('NSN', CURRENT DATE()-1, 'NSN',
    883,5,883+5,
    13615, 41, 279, 4+6, 13945,
    1927,4),
    ('PHG', CURRENT DATE()-1, 'PHG',
    590,41,590+41,
    9950,99,322,6+11,10388,
    1322,4),
```

```
('PRK', CURRENT DATE()-1, 'PRK',
1309, 15, 1309+15,
12003, 35, 513, 5+20, 12576,
1269,9+2),
('PLS', CURRENT_DATE()-1, 'PLS',
90,0,90,
1248,8,79,3+3,1341,
89,1),
('PNG',CURRENT_DATE()-1,'PNG',
1573, 4, 1573+4,
9945, 43, 252, 11+12, 10263,
2307,2),
('SBH', CURRENT_DATE()-1, 'SBH',
435,1,435+1,
19833,71,351,20+17,20292,
1248,3),
('SWK', CURRENT DATE()-1, 'SWK',
1394,6,1964+6,
12617, 164, 546, 9+13, 13349,
1368,6),
('SGR', CURRENT_DATE()-1, 'SGR',
11639,53,11639+53,
82197, 298, 1271, 23+28, 83817,
5311,8+3),
('TRG', CURRENT DATE()-1, 'TRG',
421,9,421+9,
5484,117,291,3+9,5904,
913,4);
```

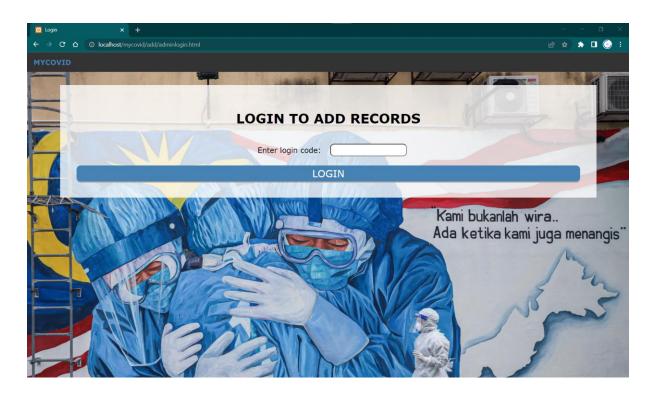
6.2 Sample interface screen

6.2.1 Main page (charts)

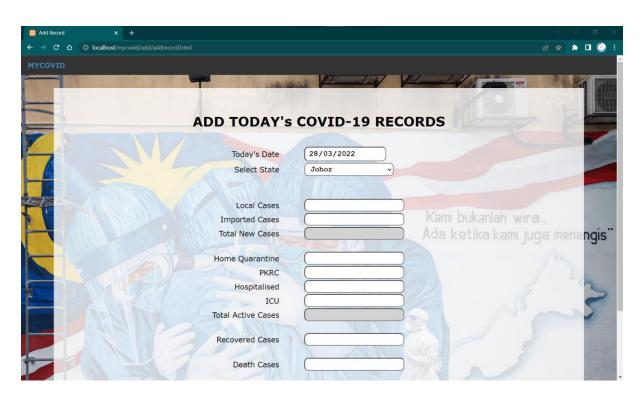


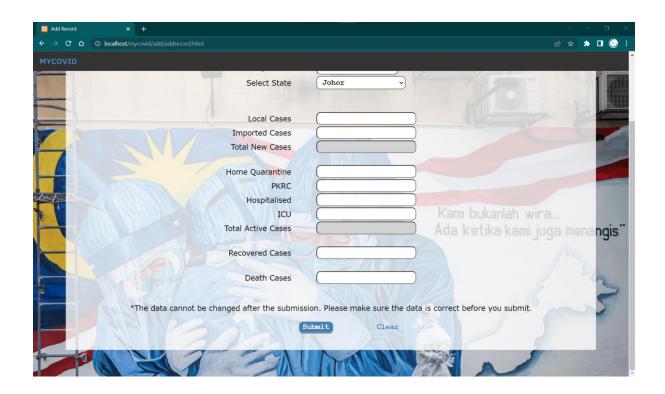


6.2.2 Admin login page

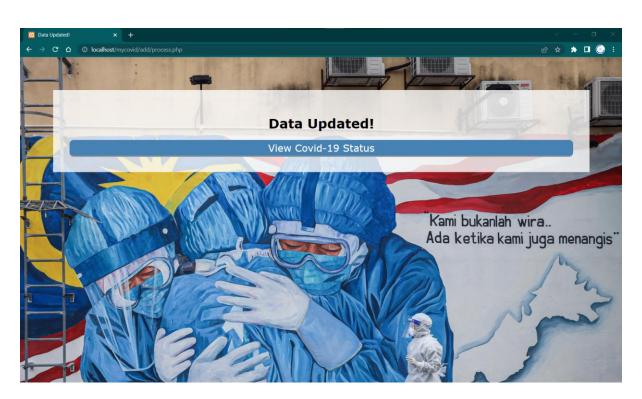


6.2.3 Add record page



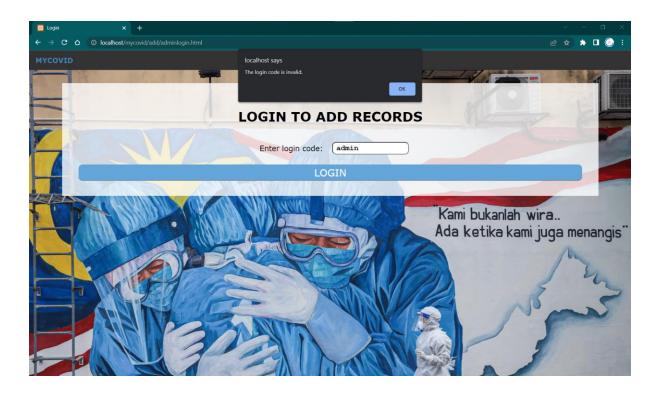


6.2.4 Data updated page

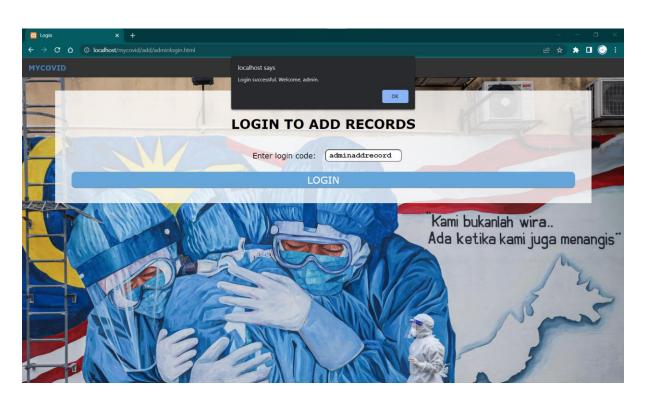


6.3 Sample input /output screens

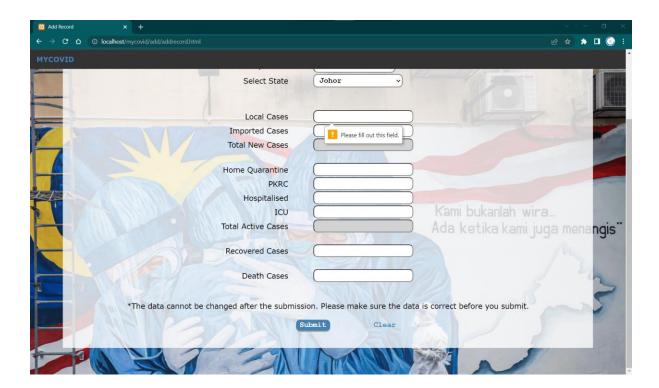
6.3.1 Invalid login code



6.3.2 Valid login code



6.3.3 Submit empty data



6.3.4 Submit invalid data (negative numbers)

