Technical Manual

Sharthak Raj Rai, 143134886

Table of Contents:

Q1: config.php | index.php | logout.php 3

1.1 Login.php 4

1.2 Home.php 5

1.3 changepassword.php 6

Q2: search.php (people db) | Q3:vehicle.php 8

Q4: Insert.php 9

Q5. Incident.php 10

5.1 edit.php 11

5.2 Editcode.php 11

References 13

Getting Started:

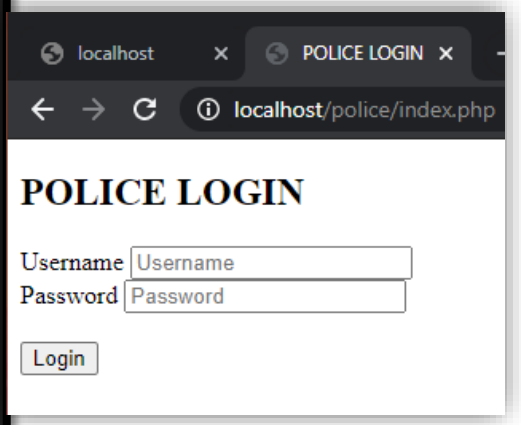
1. Download the provided zip file containing several .php files, database, and instruction text files.
2. If Mersey extract the zip file to public_html directory.
3. Laysrr_CW2_cover.txt has the hostname, username, password and database information required to alter config.php to connect the database to the server.
4. Then navigate to http://mersey.cs.nott.ac.uk/~laysrr/login.php to start the website.
5. If XAMPP then select Apache, phpMyAdmin, MySQL, php when installing the latest version at https://www.apachefriends.org/index.html
6. Extract the zip files to C:\xampp\htdocs and navigate to C:\xampp\htdocs to view database.
7. Navigate to http://localhost/police/login.php to start the website.
8. To view source code, use your chose IDE e.g., VSCode to open the .php files in the folder extracted.

Q1: Connecting the database (config.php[1])

```php
<?php
// PHP script in order to connect to the MySQL database server

$sname= "localhost";
$uname= "root";
$password = "";
$db = "dis_cw2";

// Attempt to connect to MySQL database
$conn = mysqli_connect($sname, $uname, $password, $db);

// Check connection
if (!$conn) {
    echo "Connection failed!";
}
```

Frontend (html) for the Police login website design (backend is on the next page). CSS not implemented to achieve a minimalistic look.

```php
<!DOCTYPE html>
<html>
<head>
    <title>POLICE LOGIN</title>

</head>
<body>
    <form action="login.php" method="post">
        <h2>POLICE LOGIN</h2>
        <?php if (isset($_GET['error'])) { ?>
            <p class="error"><?php echo $_GET['error']; ?></p>
        <?php } ?>
        <label>Username</label>
        <input type="text" name="uname" placeholder="Username"><br>

        <label>Password</label>
        <input type="password" name="password" placeholder="Password"><br>

        <br><button type="submit">Login</button></br>
    </form>
</body>
</html>
```



Logout backend (comments explain the php code)

```php
<?php
// Initialise the session
session_start();

// Unset all of the session variables
session_unset();
// Destroy the session.
session_destroy();

// Redirect user
header("Location: index.php");
```

Session variables stores user information to be used across multiple web pages. **session.start()** creates a session or resumes the current one based on session identifier passed via POST requests (more info further down the manual)[6].

1.1 Login.php[1]

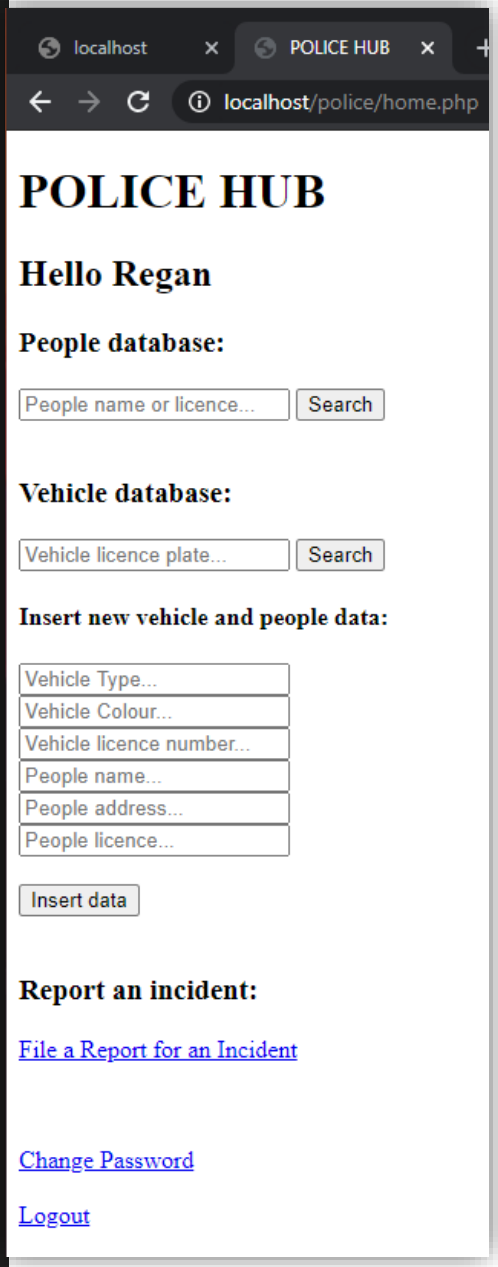
login.php > ...

```php
<?php
session_start();
include "config.php";   // Include config file

// Validate form data when form is entered
if (isset($_POST['uname']) && isset($_POST['password'])) {

    // Validate credentials
    function validate($data){
       $data = trim($data);                 //whitespace removed
       $data = stripslashes($data);         //backslash removed
       $data = htmlspecialchars($data);     //convert special chars to HTML entities
       return $data;
    }
    $uname = validate($_POST['uname']);
    $pass = validate($_POST['password']);

    // Check if username or password is empty
    if (empty($uname)) {
        header("Location: index.php?error=Username is required!");
        exit();
    }else if(empty($pass)){
        header("Location: index.php?error=Password is required!");
        exit();
    }else{

        // police database select statement for username and password
        $sql = "SELECT * FROM police WHERE username='$uname' AND password='$pass'";

        $result = mysqli_query($conn, $sql);

        // Check if username exists, if yes then verify password
        if (mysqli_num_rows($result) === 1) {
            $row = mysqli_fetch_assoc($result);
            if ($row['username'] === $uname && $row['password'] === $pass) {
                $_SESSION['username'] = $row['username'];
                $_SESSION['id'] = $row['id'];
                header("Location: home.php");
                exit();
            }else{
                // Incorrect username or password, the user will see this
                header("Location: index.php?error=Incorrect username or password please t
                exit();
            }
        }else{
            // Incorrect username or password, the user will see this
            header("Location: index.php?error=Incorrect username or password please try a
            exit();
        }
    }

}else{
    // Redirect user
    header("Location: index.php");
    exit();
}
```

1.2 Home.php

home.php > ...

```php
<?php
session_start();
// Validate user is logged in
if (isset($_SESSION['id']) && isset($_SESSION['username'])) {

 ?>
<!DOCTYPE html>
<html>
<head>
    <title>POLICE HUB</title>
</head>
<body>
    <h1>POLICE HUB </h1>
    <h2>Hello <?php echo $_SESSION['username']; ?></h2>
    <h3> People database: </h3>

    <form method="post" action="search.php">

            <input type="text" name="keywords" placeholder="People name or licence...">
            <input type="submit" name="submit" value="Search">
            <br></br>
        </form>

    <h3> Vehicle database: </h3>

    <form method="post" action="vehicle.php">

        <input type="text" name="keywords" placeholder="Vehicle licence plate...">
        <input type="submit" name="submit" value="Search">

        </form>

    <h4> Insert new vehicle and people data:</h4>

    <form method="post" action="insert.php">

        <input type="text" name="type" placeholder="Vehicle Type..."> <br>
        <input type="text" name="colour" placeholder="Vehicle Colour..."> <br>
        <input type="text" name="licence" placeholder="Vehicle licence number..."> <br>
        <input type="text" name="people" placeholder="People name..."> <br>
        <input type="text" name="address" placeholder="People address..."> <br>
        <input type="text" name="peoplelicence" placeholder="People licence..."> <br>

        <br> <input type="submit" name="submit" value="Insert data">

        </form>

    <nav class="incident-nav">

        <br> <h3> Report an incident: </h3>

        <a href="incident.php">File a Report for an Incident</a></br>

    </nav>

    <nav class="home-nav">

        <br><br><br><a href="changePass.php">Change Password</a></br>
        <br><a href="logout.php">Logout</a></br>

    </nav>
</body>
</html>

<?php
}else{
    // redirect user
    header("Location: index.php");
    exit();
```



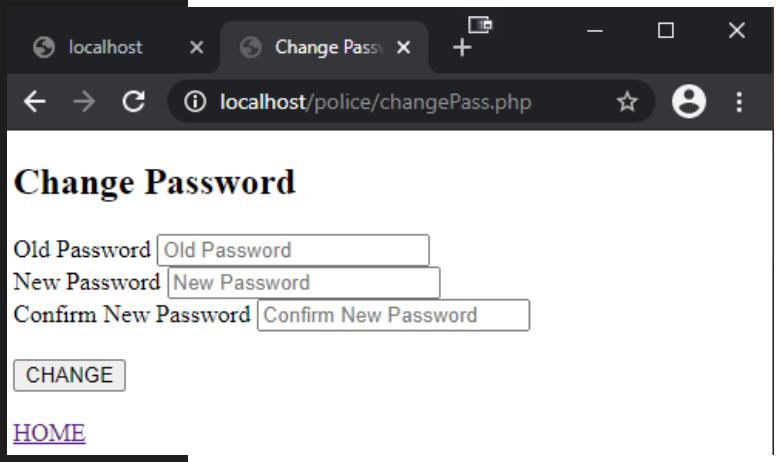
1.3 changepassword.php[1]

changePass.php > ...

```php
<?php
session_start();

// Validate form data when form is entered
if (isset($_SESSION['id']) && isset($_SESSION['username'])) {

 ?>
<!DOCTYPE html>
<html>
<head>
    <title>Change Password</title>

</head>
<body>
    <form action="changePw.php" method="post">
        <h2>Change Password</h2>
        <?php if (isset($_GET['error'])) { ?>
            <p class="error"><?php echo $_GET['error']; ?></p>
        <?php } ?>

        <?php if (isset($_GET['success'])) { ?>
            <p class="success"><?php echo $_GET['success']; ?></p>
        <?php } ?>

        <label>Old Password</label>
        <input type="password"
               name="op"
               placeholder="Old Password">
               <br>

        <label>New Password</label>
        <input type="password"
               name="np"
               placeholder="New Password">
               <br>

        <label>Confirm New Password</label>
        <input type="password"
               name="c_np"
               placeholder="Confirm New Password">
               <br>

        <br><button type="submit">CHANGE</button></br>
          <br><a href="home.php" class="ca">HOME</a></br>
    </form>
</body>
</html>

<?php
}else{
    exit();
}
 ?>
```

Output a message and terminate the current script

exit(int $status): void



changePw.php > ...

```php
<?php
//session store information (in variables) to be used across multiple pages.
session_start();

if (isset($_SESSION['id']) && isset($_SESSION['username'])) {

    include "config.php";

if (isset($_POST['op']) && isset($_POST['np'])
    && isset($_POST['c_np'])) {

    function validate($data){
       $data = trim($data);                 //whitespace removed
       $data = stripslashes($data);         //backslash removed
       $data = htmlspecialchars($data);     //convert special chars to HTML entities
       return $data;
    }
    // collect form data after submitting an HTML form with method="post" refer to changePass.php
    $op = validate($_POST['op']);
    $np = validate($_POST['np']);
    $c_np = validate($_POST['c_np']);

    if(empty($op)){     // if this field is empty
      header("Location: changePass.php?error=Old Password is required");
      exit();
    }else if(empty($np)){   // if this field is empty
      header("Location: changePass.php?error=New Password is required");
      exit();
    }else if($np !== $c_np){ // if new password does not match new password confirmation
      header("Location: changePass.php?error=The new passwords does not match");
      exit();
    }else {
        $id = $_SESSION['id'];

        // police database select query for username and password
        $sql = "SELECT password FROM police WHERE id='$id' AND password='$op'";
        $result = mysqli_query($conn, $sql);
        if(mysqli_num_rows($result) === 1){

            // police database UPDATE query for  password
            $sql_2 = "UPDATE police SET password='$np' WHERE id='$id'";
            mysqli_query($conn, $sql_2);
            header("Location: changePass.php?success=Your password has been changed successfully");
            exit();

        }else {  // if password is incorrect
            header("Location: changePass.php?error=Incorrect password");
            exit();
        }
    }
}else{  // redirect user to changePass.php
    header("Location: changePass.php");
    exit();
}
}else{  // redirect user to index.php
     header("Location: index.php");
     exit();
}
```

Change Password

Old Password is required

Old Password [Old Password]
New Password [New Password]
Confirm New Password [Confirm New Password]

CHANGE

HOME

Change Password

The new passwords does not match

Old Password [Old Password]
New Password [New Password]
Confirm New Password [Confirm New Password]

CHANGE

HOME

Change Password

Your password has been changed successfully

Old Password [Old Password]
New Password [New Password]
Confirm New Password [Confirm New Password]

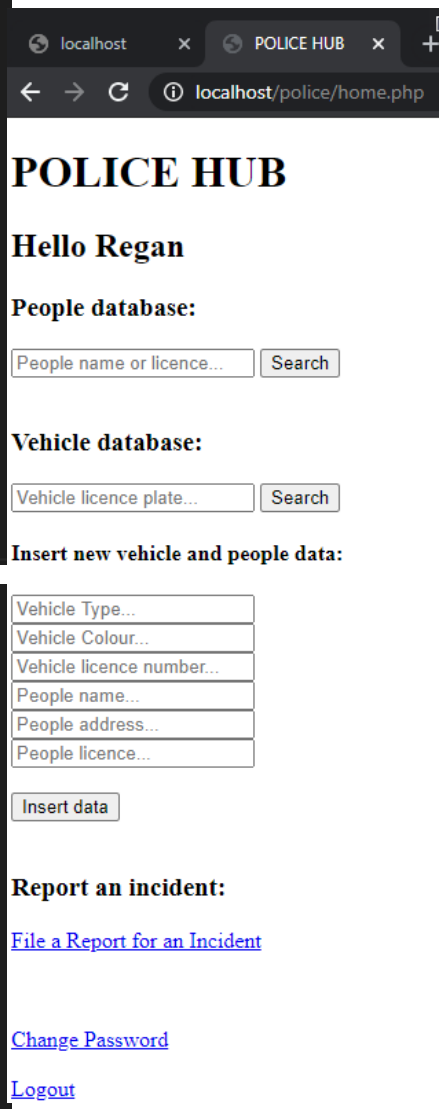
CHANGE

HOME

Q2: search.php[2] (looks up people in the database) | Q3:vehicle.php[2,3]

search.php > ...

```php
<?php
include "config.php";

// Validate form data when form is entered
if (isset($_POST['keywords'])) {

    $keywords = $conn->escape_string($_POST['keywords']);

    // construct the SELECT query
    $query = $conn->query("SELECT * FROM people WHERE People_name LIKE '%$keywords%'
    OR People_licence LIKE '$keywords%'");


    if($query->num_rows) {
        while($r = $query->fetch_object()) {

            // output people_name, people_address, people_licence
            echo "<tr><td>". $r->People_name . "</td><td> <br>" .
            $r->People_address  . "</td><td> <br> " .
            $r->People_licence  . "</td><td> <br><br>";
        }
    } else // if query result is empty
    {
        echo "Database is empty";
    }

    mysqli_close($conn);
}
```



vehicle.php > ...

```php
<?php
include "config.php";

// Validate form data when form is entered
if (isset($_POST['keywords'])) {

    $keywords = $conn->escape_string($_POST['keywords']);

    // construct the SELECT query by joining tables through ownership
    $query = "SELECT ownership.People_ID, ownership.Vehicle_ID,
    people.People_name, people.People_licence,
    vehicle.Vehicle_type, vehicle.Vehicle_colour, vehicle.Vehicle_licence
    FROM ownership JOIN people ON ownership.People_ID = people.People_ID
    JOIN vehicle ON ownership.Vehicle_ID = vehicle.Vehicle_ID
    WHERE Vehicle_licence LIKE '%$keywords%'";

    $result = $conn->query($query);

    if($result->num_rows) {
        while($r = $result->fetch_object()) {

            // output Vehicle type, colour and licence, people_name, people_licence
            echo "<tr><td>". $r->People_name . "</td><td> <br>" .
            $r->People_licence  . "</td><td> <br>" .
            "<tr><td>". "Vehicle Type: " . $r->Vehicle_type .
            "</td><td> <br>". "Vehicle Colour: " . $r->Vehicle_colour  .
            "</td><td> <br> ". "Vehicle Licence: " . $r->Vehicle_licence  . "</td><td>
        }
    } else // if query result is empty
    {
        echo "Database is empty";
    }
    mysqli_close($conn);
}
```

Check User manual provided for further information on features.

Q4: Insert.php[3]

insert.php > ...

```php
<?php
include "config.php";

$type = $_POST['type'];
$colour = $_POST['colour'];
$licence = $_POST['licence'];
$people = $_POST['people'];
$address = $_POST['address'];
$peoplelicence = $_POST['peoplelicence'];

//Insert new data into two different tables
$sql = "INSERT INTO vehicle (Vehicle_type, Vehicle_colour, Vehicle_licence)
VALUES ('$type', '$colour', '$licence') ;
INSERT INTO people (People_name, People_address, People_licence)
    VALUES ('$people', '$address', '$peoplelicence') ";

mysqli_multi_query($conn, $sql);

header("Location: home.php?Insertion=success!");
```

$_POST is a PHP super global variable used to collect form data after clicking the submit button on an HTML form with method="post". $_POST is also widely used to pass variables.

The query statement joins multiple tables by matching the People_ID and Vehicle_ID through the ownership table in the “Dis_cw2” database.

report.php > ...

```php
<?php
include "config.php";

$report = $_POST['report'];
$time = $_POST['time'];
$description = $_POST['description'];

$type = $_POST['type'];
$colour = $_POST['colour'];
$licence = $_POST['licence'];
$people = $_POST['people'];
$address = $_POST['address'];
$peoplelicence = $_POST['peoplelicence'];

$sql = "INSERT INTO incident (Incident_Report, Incident_Date)
VALUES ('$report', '$time') ;
INSERT INTO offence (Offence_description)
VALUES ('$description') ;
INSERT INTO vehicle (Vehicle_type, Vehicle_colour, Vehicle_licence)
VALUES ('$type', '$colour', '$licence') ;
INSERT INTO people (People_name, People_address, People_licence)
    VALUES ('$people', '$address', '$peoplelicence');
";

mysqli_multi_query($conn, $sql);

header("Location: incident.php?Insertion=success!");

?>
```

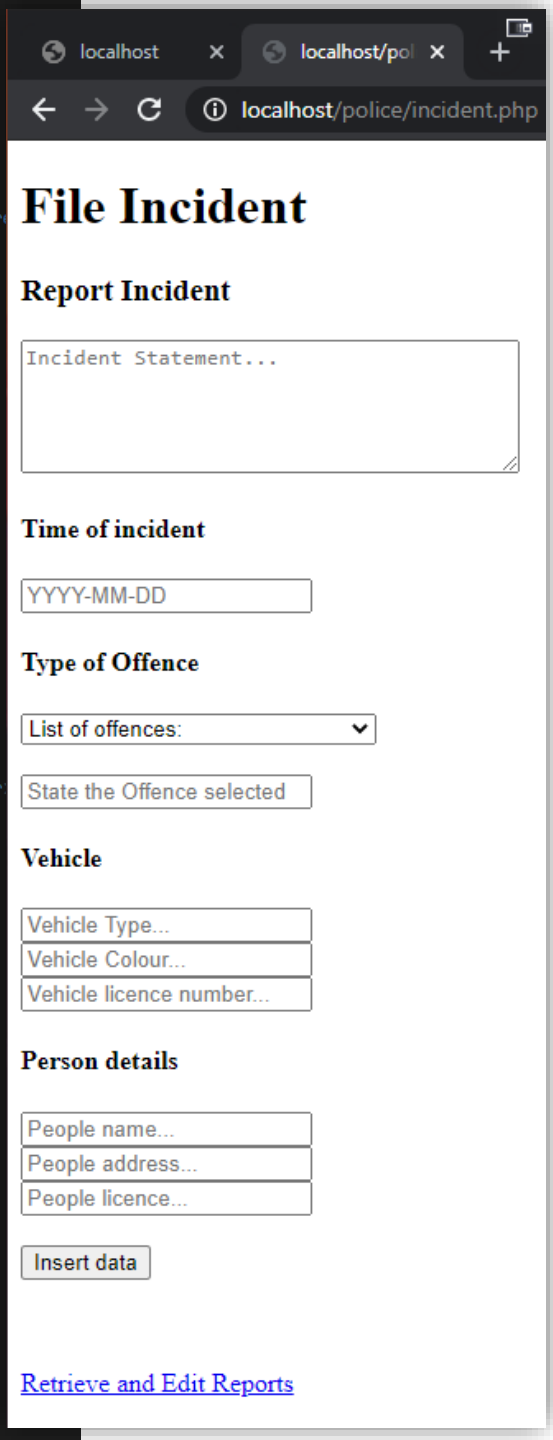
mysqi_multi_query can perform on multiple queries with the same variable assigned (queries separated with semi colons) on the database.

successfully inserting new data changes the link for the user to visually confirm the change.

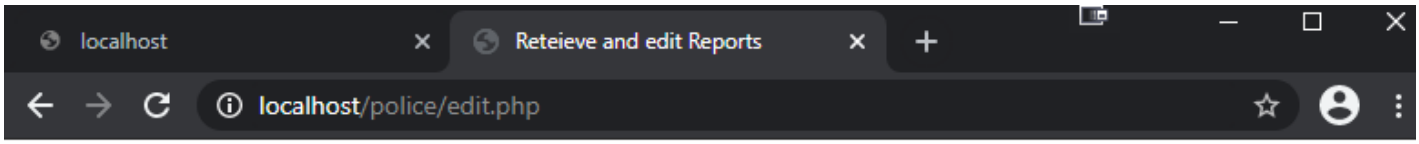
Q5. Incident.php

incident.php > ...

```
<!DOCTYPE html>
<html>
<body>

<h1>File Incident</h1>

<form method="post" action="report.php">

    <h3> Report Incident </h3>
    <textarea cols="40" rows="5" name="report" placeholder="Incident Statement..."></textar
    <h4> Time of incident </h4>
    <input type="text" name="time" placeholder="YYYY-MM-DD"> <br>

    <h4> Type of Offence </h4>
    <select name ="Offence">
        <option value = "">List of offences:</option>
        <option value = "1">Speeding</option>
        <option value = "2">Speeding on a motorway</option>
        <option value = "3">Seatbelt offence</option>
        <option value = "4">Illegal parking</option>
        <option value = "5">Drink driving</option>
        <option value = "6">Driving without a licence</option>
        <option value = "7">Driving without a licence</option>
        <option value = "8">Traffic light offences</option>
        <option value = "9">Cycling on pavement</option>
        <option value = "10">Failure to have control of vehicle</option>
        <option value = "11">Dangerous driving</option>
        <option value = "12">Careless driving</option>
        <option value = "12">Dangerous cycling</option>
    </select> <br>

    <br><input type="text" name="description" placeholder="State the Offence selected"> <br

    <h4> Vehicle </h4>
    <input type="text" name="type" placeholder="Vehicle Type..."> <br>
    <input type="text" name="colour" placeholder="Vehicle Colour..."> <br>
    <input type="text" name="licence" placeholder="Vehicle licence number..."> <br>


    <h4> Person details </h4>
    <input type="text" name="people" placeholder="People name..."> <br>
    <input type="text" name="address" placeholder="People address..."> <br>
    <input type="text" name="peoplelicence" placeholder="People licence..."> <br>


    <br> <input type="submit" name="submit" value="Insert data">

    </form>


    <nav class="home-nav">

    <br><br><br><a href="edit.php">Retrieve and Edit Reports</a></br>

    </nav>

</body>
</html>
```



5.1 edit.php[4]



List of Incidents

Incident_ID	Vehicle ID	People ID	Date of incident	Report statement	Offence ID	Edit
4	14	2	2017-08-22	Failure to stop at a red light - travelling 25mph	8	Edit
3	13	4	2017-09-17	110mph on motorway	1	Edit
5	13	4	2017-10-17	Not wearing a seatbelt on the M1	3	Edit
2	20	8	2017-11-01	Double parked	4	Edit
1	15	4	2017-12-01	40mph in a 30 limit	1	Edit

5.2

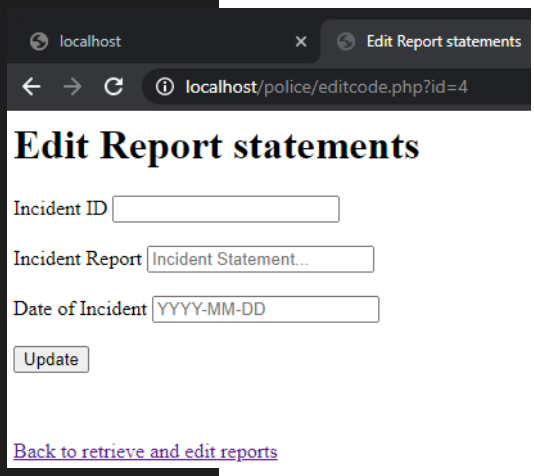
edit.php > ...

```
<!DOCTYPE html>
<html>
<head>
  <title>Reteieve and edit Reports</title>
</head>
<body>

<h2>List of Incidents</h2>

<table border="1">
  <tr>
    <td>Incident_ID</td>
    <td>Vehicle ID</td>
    <td>People ID</td>
    <td>Date of incident</td>
    <td>Report statement</td>
    <td>Offence ID</td>
    <td>Edit</td>

  </tr>

<?php

include "config.php"; // Using database connection file here

$records = mysqli_query($conn,"SELECT * FROM incident ORDER BY Incident_Date"); // fetch data from database

while($data = mysqli_fetch_array($records))
{
?>
  <tr>
    <td><?php echo $data['Incident_ID']; ?></td>
    <td><?php echo $data['Vehicle_ID']; ?></td>
    <td><?php echo $data['People_ID']; ?></td>
    <td><?php echo $data['Incident_Date']; ?></td>
    <td><?php echo $data['Incident_Report']; ?></td>
    <td><?php echo $data['Offence_ID']; ?></td>
    <td><a href="editcode.php?id=<?php echo $data['Incident_ID']; ?>">Edit</a></td>
  </tr>
<?php
}
?>
</table>
</body>
</html>
```

Editcode.php[4]

editcode.php > ...

```
<html>
    <head>
        <title>Edit Report statements</title>
        <h1>Edit Report statements</h1>
    </head>
    <body>
        <?php
            if(isset($_POST['update'])) {

                include "config.php";

                $id = $_POST['Incident_ID'];
                $report = $_POST['Incident_Report'];
                $date = $_POST['Incident_Date'];

                $sql = mysqli_query($conn,"UPDATE incident SET Incident_Report = '$report',
                Incident_Date='$date' WHERE Incident_ID = $id");

                if(! $sql ) {
                    die('Could not update data: ' . mysqli_error($conn));
                }
                // redirect user
                header("Location: edit.php");

            }else {
                ?>
                    <form method = "post" action = "<?php $_PHP_SELF ?>">
                        <tr>
                            <td width = "100">Incident ID</td>
                            <td><input name = "Incident_ID" type = "text"
                                id = "Incident_ID"></td><br><br>
                        </tr>
                        <tr>
                            <td width = "100">Incident Report</td>
                            <td><input name = "Incident_Report" type = "text"
                                id = "Incident_Report" placeholder="Incident Statement..."></td><br><br>
                        </tr>
                        <tr>
                            <td width = "100">Date of Incident</td>
                            <td><input name = "Incident_Date" type = "text"
                                id = "Incident_Date" placeholder="YYYY-MM-DD"> </td><br><br>
                        </tr>
                            <td>
                                <input name = "update" type = "submit"
                                    id = "update" value = "Update">
                            </td><br><br><br>
                        </tr>
                    </form>
                    <a href="edit.php">Back to retrieve and edit reports</a></br>
                <?php
            }
        ?>
    </body>
</html>
```



References (Inspiration of code – modified to suit the needs of this coursework)

1. GitHub. 2020. *Codingwithelias/Login-System-PHP-And-MYSQL*. [online] Available at: <https://github.com/codingWithElias/Login-System-PHP-and-MYSQL>.
2. CodingPassiveIncome. 2021. *PHP Search Box Tutorial - Filter Data In HTML Table Using PHP & Mysql Database*. [online] Available at: <http://codingpassiveincome.com/php-search-box>
3. [duplicate], W. and Sense, Y., 2021. *Why Can't I Run Two Mysqli Queries? The Second One Fails*. [online] Stack Overflow. Available at: <https://stackoverflow.com/questions/10924127/why-cant-i-run-two-mysqli-queries-the-second-one-fails>
4. 11zon.com. 2021. *How To Edit Data In PHP Using Form?*. [online] Available at: <https://www.11zon.com/zon/php/how-to-edit-data-in-php-using-form.php>
5. Tutorialspoint.com. 2021. *Updating Data Into Mysql Database - Tutorialspoint*. [online] Available at: <https://www.tutorialspoint.com/php/mysql_update_php.htm>.
6. W3schools.com. 2021. *PHP Sessions*. [online] Available at: <https://www.w3schools.com/php/php_sessions.asp>
7. Php.net. 2021. *PHP: Getting Started - Manual*. [online] Available at: <https://www.php.net/manual/en/getting-started.php>