Module	Portfolio	Assessment Type
Collaborative Development (5CS024)	1	Individual Report

[Traffic Management System – Developer]

Student Id : 2228049

Student Name : Sagar Budhathoki

Section : L5CG1

Group : L5CG1 Group B

Role : Developer

Instructor : Sujan Kharel

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Acknowledgment

To begin with, I want to convey my sincere gratitude to Mr. Biraj Dulal, the module leader and lecturer, for giving me this opportunity**.**. Also, a great thank you to my tutor, Mr. Sujan Kharel, who was a huge help to me with this assignment. Throughout the course of my endeavor, I also want to thank my parents and my coworkers for their insightful advice, encouragement, and support.

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Self-appraisal form

Student number	2228049	Name	Sagar Budhathoki
Project	Traffic Management System	Date	
Role	Software Developer	Team	L5CG1 (group B)
Sprint (1 or 2)	1		

Personal objectives – performance measurement

Objectives	**Evidence provided**	**Evaluation** *Student / tutor*	
Choosing for the relevant technologies	Choosing relevant and right technologies for the project is one of the important steps to make a project better and successful. As I have some previous working experience in HTML, CSS & JS, I had chosen these tools for frontend developing & designing. And Similarly, for backend development, I had chosen the PHP language believing that it integrates well with the above frontend languages. For the code editor, I had chosen VS code technology which is a very popular and versatile code editor. Appendix A	**9**	
Tutor feedback:			

Implementing functional requirements	While implementing functional requirements it will directly relate to all users and their satisfaction. Based on our project's goals and user needs, our system contains a search, payment functionality where users can search their challans and pay through online medium. Also, there is a specific feature to add, update and delete for admin in the system. Appendix A	9	
Tutor feedback:			
		/20	/20

Collaboration Document

Evidence of good collaboration

Good communication and file sharing

Throughout my project development, I used different communication tools like basecamp, social media, etc. In basecamp, I used to inform my teammates about my day-to-day progress as well as I used to share screenshots of my activity with all my teammates. I used google spaces to communicate with members. Likewise, there were other social media like messenger to communicate with all.

Appendix B

Continuing Personal Development (CPD)

While working on my project I did research on different articles and also a literature review related to the Traffic Management System. During my project tenure, I learned time management and completed my tasks before the due time. Good networking and effective communication with my team members were built. I used to spend & engaged most of my time on learning languages chosen for our project to try to retrieve such ideas and implement them on the project through different websites and mostly from youtube videos.

Appendix B

Issue tracking

While working on the project my teammates tracked issue over the code and its functionality and I have solved it at a time in a very good manner. I have also tracked issues on my teammates work and they have also solved them at a time.

Appendix B

Appendix A

Choosing the relevant technologies:

There are various technologies and tools that are used for web development. Choosing a relevant technology is a very crucial part while undertaking any project. Depending upon the user's specific needs and goals, I have researched the project's requirements first. Once the requirements of the project were identified the relevant technologies for the projects were chosen which were HTML, CSS, JS, and jQuery which is a JavaScript library for frontend development, and PHP for backend development. As a role of developer, I contributed to both frontend and backend development (Ashutec, 2021).

As we all know that HTML is a hypertext markup language that is widely used for making the structure and contents of our webpage. It basically helps to make a skeleton of the website. It defines our web contents such as headings, body, navigation bar, topbar, footer, etc. CSS is also known as Cascading Style Sheets. It is used for making all HTML content's appearance amazing such as their color, size, width, margin padding, position, and style of images are controlled by the CSS and make the website beautiful. It also helps in making the website or any content of the website responsive. CSS can be included in an HTML document in three different ways i.e external, internal, and inline. Similarly, JavaScript language is also used to make a webpage more interactive and dynamic. Client-side validation can be done by javascript which is very important. It is mainly executed on the client side which means it is run by the user's web browser. Jquery is a JS library that is also used in making our webpage more efficient. It helps in selecting and manipulating HTML elements and also helps in event handling, and making animated pages. Ajax method is also used in the webpage which

sends and retrieves data asynchronously without the page reloading. In overall evaluation and research, I found these technologies as better to use and as well as it is easy to learn (Ubah, 2021).

As I already said that I contribute to the backend too. I choose PHP as a backend which is a server-side language. Because of the basic concept of backend PHP previously, it makes me a bit easier to learn it in less time and work on the backend database management and connection. PHP can handle server-side data submitted through an HTML form on a webpage such as validating user input and interacting with databases. It makes a webpage dynamic and helps to build a large number of web applications. DBMS also known as Database Management System is also used which helps us in managing a large amount of data in a secure way. It provides a tool for backup and restoring data which is very important when there is a case of system failure or any problems. We have also used a database named `tms` (GeeksforGreeks, n.d.).

For coding many code editors software are available. But for my easiness and comfort, I use VS code editor. VS code is a very popular, flexible, versatile, free, and open-source code editor developed by Microsoft (visualstudio, n.d.).

Implementing Functional Requirements.

Codes & It's Explanation

```
<div class="col-md-6 right">
    <div class="input-box">
        <header>Log In</header>
        <!-- login form -->
        <form action="php/login.php" method="post" autocomplete="off">
            <div class="input-field">
                <input type="text" class="input" id="userName" name="Username" required>
                <label for="userName">Username or Email</label>
            </div>
            <div class="input-field">
                <input type="password" class="input" id="password" name="Password" required>
                <label for="password">Password</label>
            </div>
            <div class="input-field">
                <input type="submit" class="submit" value="Login" onclick="Homepage">
        </form>
    </div>
    <div class="signin">
        <span>Don't have an account? <a href="Register.html">Register</a></span>
    </div>
</div>
```

Figure 1: HTMl code of Login Page frontend

The above HTML code is about front end design of the login form. There are two input fields i.e `Username` and `Password`. The highlighted code name=" Username " & name=" Password " is a variable name that contains the values entered by the user in the login form. The form is set to submit to a PHP file called "login.php". When the user clicks on submit button the data will be sent to the "login.php" file. But if a user doesn't have an account then it will click on Register.html" to signup there.

```
<h1 class="form-title">TMS | Registration</h1>
<!-- Registration form for User -->
<form action="php/register.php" method="post" autocomplete="off">
  <div class="main-user-info">
    <div class="user-input-box">
      <label for="name">Name</label>
      <input type="text" id="name" name="name" placeholder="Enter Full Name" />
    </div>
    <div class="user-input-box">
      <label for="email">Email</label>
      <input type="text" id="email" name="email" placeholder="Enter Email" />
    </div>
    <div class="user-input-box">
      <label for="mobileNumber">Mobile Number</label>
      <input type="number" id="mobileNumber" name="mobileNumber" placeholder="Enter Mobile Number" />
    </div>
    <div class="user-input-box">
      <label for="address">Address</label>
      <input type="text" id="address" name="address" placeholder="Enter Address" />
    </div>
    <div class="user-input-box">
      <label for="password">Password</label>
      <input type="password" id="password" name="password" placeholder="Enter Password" />
    </div>
```

Figure 2: HTMl code of register page front-end

```
    <div class="user-input-box">
      <label for="confirmPassword">Confirm Password</label>
      <input type="password" id="confirmPassword" name="confirmPassword" placeholder="Confirm Password" />
    </div>
  </div>
  <div class="gender-details-box">
    <span class="gender-title">Gender</span>
    <div class="gender-category">
      <input type="radio" name="gender" id="male" value="male" />
      <label for="male">Male</label>
      <input type="radio" name="gender" id="female" value="female" />
      <label for="female">Female</label>
      <input type="radio" name="gender" id="other" value="other" />
      <label for="other">Other</label>
    </div>
  </div>
  <div class="form-submit-btn">
    <input type="submit" value="Register">
  </div>
  <div class="signin">
    <span>Already have an account? <a href="Login.html">login</a></span>
  </div>
 </form>
</div>
```

Figure 3: HTML code of register page front-end

This code is a front-end design of a user's registration page. Same as in the login page here variable names are highlighted and the form is connected to the PHP file of the register page. Overall it is same like as the login page.

register.php ...

```php
<?php
$conn = mysqli_connect('localhost', 'root', '', 'tms');
extract($_POST);

$sql = "INSERT INTO `user`(`Name`, `MobileNumber`, `Address`, `Email`, `Gender`, `Password`) VALUES ('{$name}','{$mobileNumber}','{$address
$res = mysqli_query($conn, $sql);
$response = [];
if($res):
    // Query Execution Success
    $response[] = "Success";
    header("Location:../Login.html");
else:
    // Query Execution Error
    $response[] = "Failed";
endif;
echo json_encode($response);
```

Figure 4: PHP file of register page

This is the PHP code of the register page. After the user fill out the form and submit it, then this file helps to insert all those data into the variable name of the inputs and save data in the database.

```php
login.php > ...
<?php
$conn = mysqli_connect('localhost', 'root', '', 'tms');
extract($_POST);

$sql = "SELECT `Id` FROM `user` WHERE `Name` = '{$Username}' AND `Password` = '{$Password}' ";
$res = mysqli_query($conn, $sql);
$response = [];
if(mysqli_num_rows($res) != 0):
    // Query Execution Success
    $got = mysqli_fetch_assoc($res);
    $response[] = "Success";
    $_SESSION["userID"] = $got['Id'];
    header("Location: ../Admin/AdminDashboard.html");
else:
    // Query Execution Error
    $response[] = "Failed";
    echo json_encode($response);
endif;
```

Figure 5: PHP file of Login Page

This is a PHP file of the login page. This code establishes a database connection with given parameters. It includes the values of the username and password from the user table .

```php
connect.php > ...
<?php

$servername = "localhost";
$username = "root";
$password = "";
$dbname = "tms";

// Create connection
$conn = new mysqli($servername, $username, $password, $dbname);

// Check connection
if ($conn->connect_error) {
  die("Connection failed: " . $conn->connect_error);
}
?>
```

Figure 6: Connection to MySQL

This above php code initializes four variables and establishes a connection to a Mysql server. Later, it is used to create a new instance of the `mysqli` class and establish a connection.

```
<!-- Side Nav Bar -->
<div class="navigation">
    <div class="logo">
        <img src="../images/HamroTrafficLogo.png" alt="" width="40" height="40">
    </div>
    <ul>
        <li>
            <a href="#">
                <span class="icon"></ion-icon></ion-icon></span>
                <span class="title">Hamro Traffic</span>
            </a>
        </li>
        <li>
            <a href="#" class="active">
                <span class="icon"><ion-icon name="home-outline"></ion-icon></span>
                <span class="title">Dashboard</span>
            </a>
        </li>
        <li>
            <a href="../traffic/Trafficpolis.php">
                <span class="icon"><ion-icon name="man-outline"></ion-icon></span>
                <span class="title">Traffic Police</span>
            </a>
        </li>
        <li>
            <a href="../offender/offender.php">
                <span class="icon"><ion-icon name="storefront-outline"></ion-icon></span>
                <span class="title">Offender</span>
            </a>
```

Figure 7: Nav Bar design code

This above HTML code is to design a side navigation bar of the admin dashboard where there are different items like the dashboard, traffic police, vehicles, offender, and challan log.

```
<!-- main -->
<div class="main">
    <!-- Top bar Start -->
    <div class="topbar">
        <div class="toogle">
            <ion-icon name="menu-outline"></ion-icon>
        </div>
        <!-- Search  -->
        <div class="search">
            <label>
                <input type="text" placeholder="Search here">
                <ion-icon name="search-outline"></ion-icon>
            </label>
        </div>

        <div class="profile" onclick="MenuToggle();">
            <img src="../images/profile.png" alt="">
        </div>
        <div class="menu">
            <ul>
                <li><img src=""><a href="#">My profile</a></li>
                <li><img src=""><a href="#">Edit profile</a></li>
                <li><img src=""><a href="#">logout</a></li>
            </ul>
        </div>
```

Figure 8: Top-bar design code

This above HTML code is to design a top bar of the dashboard where there are functions of the search bar and user's settings.

```
<script>
    // MenuToggle
    let toggle = document.querySelector('.toggle');
    let navigation = document.querySelector('.navigation');
    let main = document.querySelector('.main');

    toggle.onclick = function () {
        navigation.classList.toggle('active');
    }
    // add hovered class in selected list item
    let list = document.querySelectorAll('.navigation li');
    function activeLink() {
        list.forEach((item) =>
            item.classList.remove('hovered'));
        this.classList.add('hovered');

    }
    list.forEach((item) =>
        item.addEventListener('mouseover', activeLink));
</script>
```

Figure 9: MenuToggle

This above code is mainly responsible for making an interactive to side navigation bar. When a user clicks on toggle then the menu will close or expand.

```
<!-- <Add Offender -->
<div class="modal fade" id="offenderAddModal" tabindex="-1" aria-labelledby="exampleModalLabel" aria-hidden="true">
    <div class="modal-dialog">
        <div class="modal-content">
            <div class="modal-header">
                <h5 class="modal-title" id="exampleModalLabel">Add Challan</h5>
                <button type="button" class="btn-close" data-bs-dismiss="modal" aria-label="Close"></button>
            </div>
            <form id="saveOffender" autocomplete="off">
                <div class="modal-body">

                    <div id="errorMessage" class="alert alert-warning d-none"></div>

                    <div class="mb-3">
                        <label for="">Offender Name</label>
                        <input type="text" name="name" class="form-control" />
                    </div>

                    <div class="dropdown">
                        <a class="btn btn-secondary dropdown-toggle dropDownTitle" role="button" data-bs-toggle="dropdown" aria-expanded="false" value="0">
                            Offense Type
                        </a>
                        <ul class="dropdown-menu putFromDatabase">
                        </ul>
                    </div>
                    <div class="dropdown">
                        <a class="btn btn-secondary dropdown-toggle dropDownPoliceTitle" role="button" data-bs-toggle="dropdown" aria-expanded="false" valu
                            Police Name
```

Figure 10: Add Offender

The above code is the HTML code of the modal add offender. It appears when the user clicks on add button. It contains a form with input fields for

offender name, offense type, police_name, and date. Here police name and offense type are in the dropdown menu.

```php
<?php
require 'connect.php';
// Fetch the offender data from the offender table
$query = "SELECT * FROM offense_record";
$query_run = mysqli_query($conn, $query);

if (mysqli_num_rows($query_run) > 0) {
    foreach ($query_run as $offense_record) {
        $fetchOffenseName = "SELECT `name` FROM `offense_type` WHERE `id` = '{$offense_record['Offense_Type_Id']}'";
        $resFetchOffenseName = mysqli_fetch_assoc(mysqli_query($conn, $fetchOffenseName));

        $fetchPolice = "SELECT * FROM `police` WHERE `id` = '{$offense_record['Police_Id']}'";
        $resFetchPolice = mysqli_fetch_assoc(mysqli_query($conn, $fetchPolice));
?>
        <tr>
            <td><?= $offense_record['Offender_Name']  ?></td>
            <td><?= $resFetchOffenseName['name'] ?></td>
            <td><?= $resFetchPolice['Location_Name'] ?></td>
            <td><?= $resFetchPolice['Name'] ?></td>
            <td><?= $offense_record['Date'] ?></td>
            <td>
                <!-- <button type="button" value=" -->
                <?php
                // $offense_record['Id']
                ?>
                <!-- " class="viewOffenseBtn btn btn-info btn-sm">View</button> -->
                <button type="button" value="<?= $offense_record['Id'] ?>" class="editOffenseBtn btn btn-success btn-sm">Edit</button>
                <button type="button" value="<?= $offense_record['Id'] ?>" class="deleteOffenseBtn btn btn-danger btn-sm">Delete</button>
            </td>
```

Figure 11: fetch offender data

The above code is used to retrives data from the database and display it in html table. It also fetches additional column data of other tables using a foreign key and displays it. It also has a button for updating and deletes of offenders.

```php
if(isset($_GET['offender_id']))
{
    $offence_record_id = mysqli_real_escape_string($conn, $_GET['offender_id']);

    $query = "SELECT * FROM `offense_record` WHERE `id` = '$offence_record_id'";
    $query_run = mysqli_query($conn, $query);

    if(mysqli_num_rows($query_run) == 1)
    {
        $offence_record = mysqli_fetch_assoc($query_run);

        $fetchPolice = "SELECT `Name` FROM `police` WHERE `id` = '{$offence_record["Police_Id"]}'";
        $resFetchPolice = mysqli_fetch_assoc(mysqli_query($conn, $fetchPolice));

        $fetchOffense = "SELECT `Name` FROM `offense_type` WHERE `id` = '{$offence_record["Offense_Type_Id"]}'";
        $resFetchOffense = mysqli_fetch_assoc(mysqli_query($conn, $fetchOffense));

        $offence_record["policeName"] = $resFetchPolice["Name"];
        $offence_record["offenseType"] = $resFetchOffense["Name"];

        $res = [
            'status' => 200,
            'message' => 'Offender Fetch Successfully by id',
            'data' => $offence_record
        ];
        echo json_encode($res);
```

Figure 12: Offender data

The highlighted lines of code fetch name of police and offense type associated with the offense record table. By this code, first, the SQL query runs and fetches the police and offense name and then it joins the tables based on their IDs. After that MySQL query will execute.

```php
<?php

require 'connect.php';

if(isset($_POST['save_offender']))
{
    $Offender_Name = mysqli_real_escape_string($conn, $_POST['name']);
    $Offense_type_Id = mysqli_real_escape_string($conn, $_POST['offense_type']);
    $Police_Id = mysqli_real_escape_string($conn, $_POST['police_id']);
    $Date = mysqli_real_escape_string($conn, $_POST['date']);

    if($Offender_Name == NULL || $Offense_type_Id == NULL || $Police_Id == NULL || $Date == NULL)
    {
        $res = [
            'status' => 422,
            'message' => 'All fields are mandatory'
        ];
        echo json_encode($res);
        return;
    }

    $query = "INSERT INTO `offense_record` (`Offender_Name`,`Offense_type_Id`,`Police_Id`,`Date`) VALUES ('$Offender_Name','$Offense_type_I
    $query_run = mysqli_query($conn, $query);
```

Figure 13: save offender

This is a php code of creating a new offender record in a database. First, it checks that all required fields are provided or not then it runs the mysqli_real_escape_string() method to escape any special characters to the input data to prevent the security vulnerability of SQL.

After that, if fields are not filled then it returns an error with a message that fields are mandatory. Then, it inserts data into the offense_record table in the database using the insert query. If data get stored then the popup of the `offender created successfully` will show. Otherwise, the message will be `offender was not created`.

```php
if(isset($_POST["getOffenseType"])):
    $sql = "SELECT * FROM `offense_type`";
    $res = mysqli_query($conn, $sql);
    if($res):
        // Query Execution Success
        $html = '<li value="0"><a class="dropdown-item">Offense Type</a></li>';
        while($got = mysqli_fetch_assoc($res)):
            $id = $got["Id"];
            $name = $got["Name"];
            $html .= '<li value="'.$id.'"><a class="dropdown-item">'.$name.'</a></li>' ;
        endwhile;
        echo $html;

    else:
        // Query Execution Error
    endif;

endif;
```

Figure 14: Retrieves offense data

This php code is to retrieve the offense types from a database. It first verifies that the HTTP POST request's "getOffenseType" parameter is filled. The "offense_type" table's entire contents are retrieved using a SQL SELECT query if the parameter is set. If the query is executed

successfully, a list of the retrieved offense categories is created as an HTML dropdown list, which is then sent as part of the HTTP response.

Use of Version Control

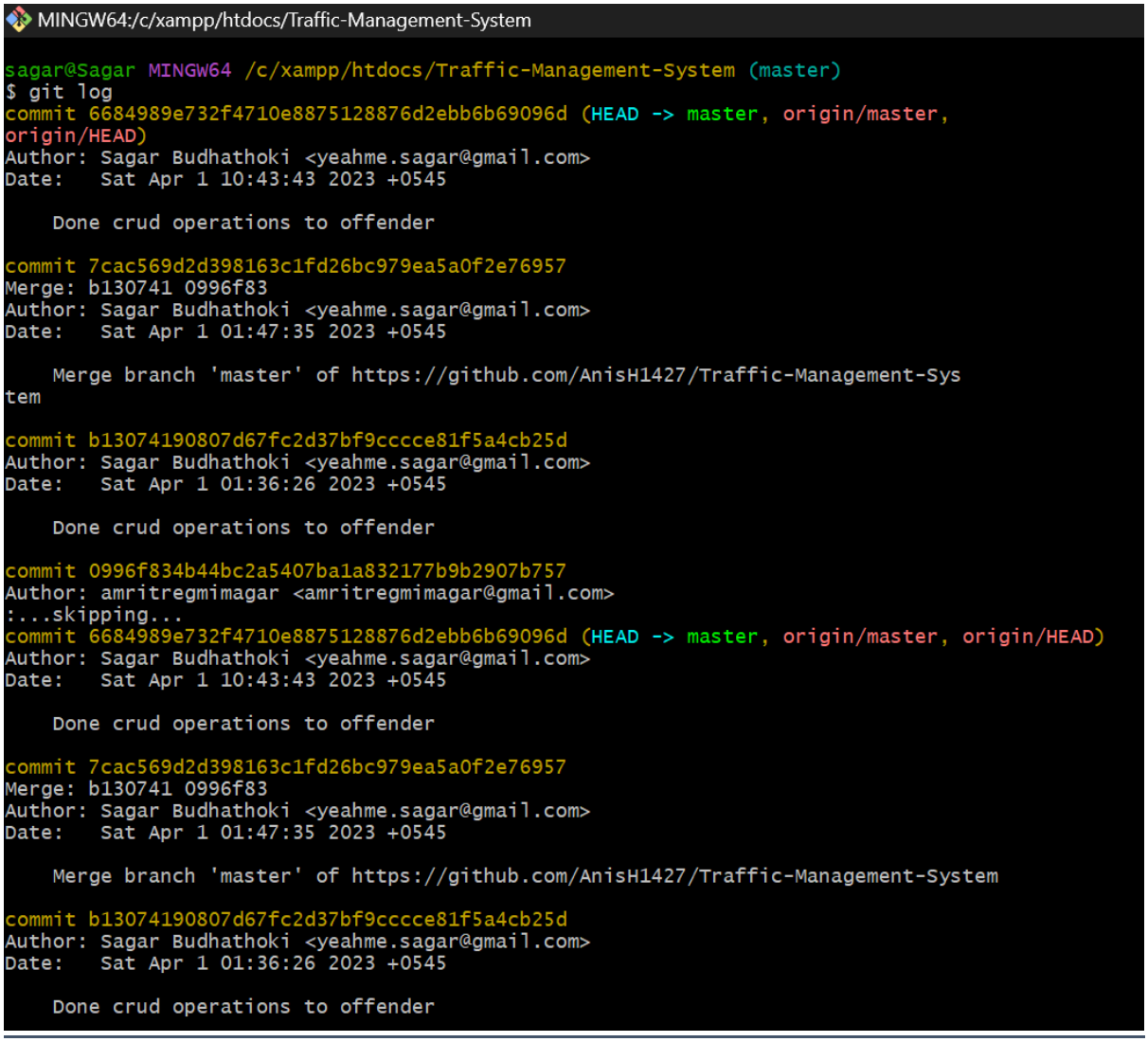

Figure 15: Commit Logs

In this screenshot I included my commit logs that were done during this projects. Different branch were also made and pushed code to that branch. And after that, it was merged with the master branch. So here are almost all the commits that I did while working.

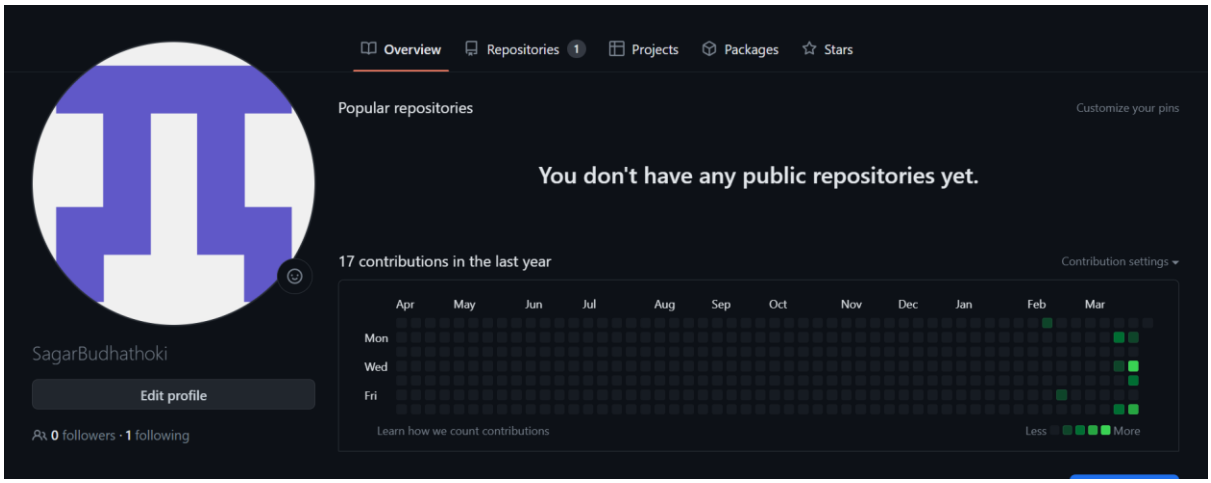

Figure 16: My Commit Graph

This screenshot is used to show my commit graphs over the project. It shows how much I contribute to the project. The light green box means I had committed multiple times in a day and the next dark box shows less.

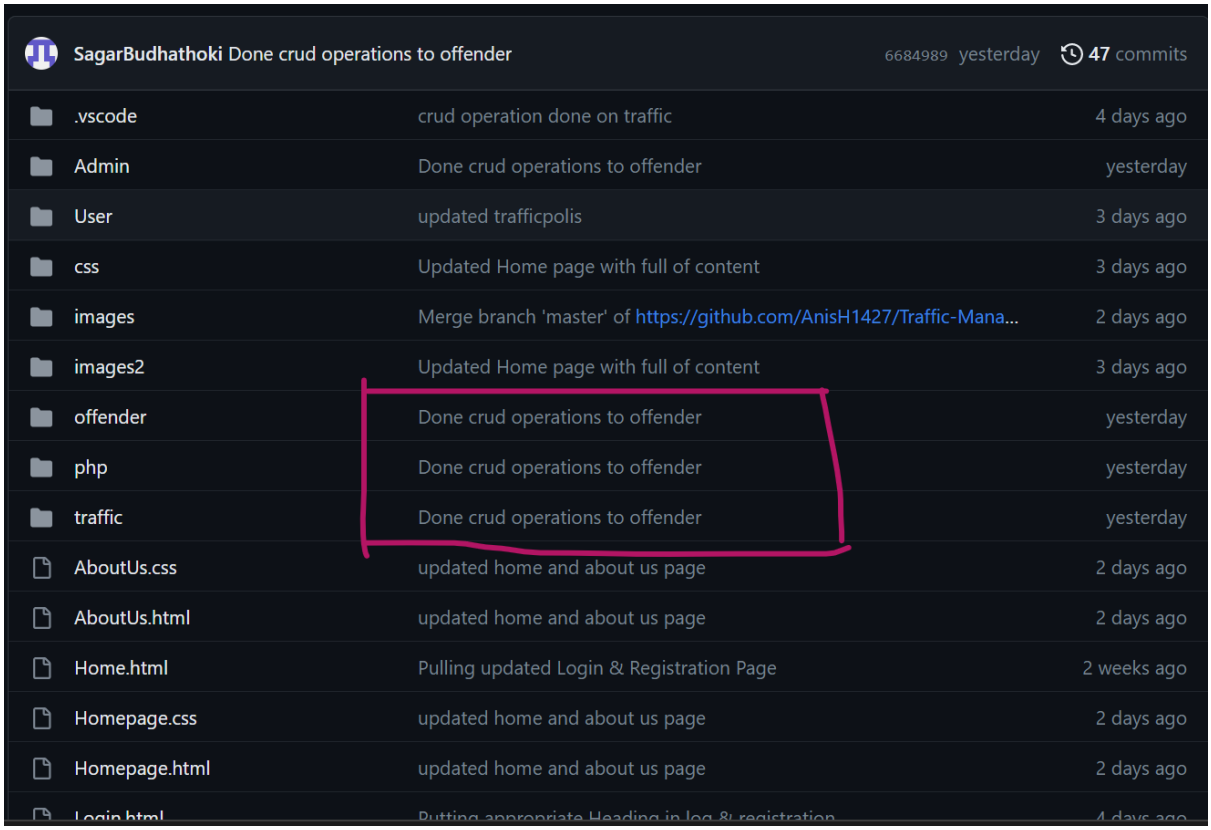

Figure 17: Github Commit Files

Here, we can see all the files after the commit. The highlighted part are those files which are made changes, added new files and pushed them with commit “Done crud operations to the offender”.

Appendix B

Evidence of Good Collaboration (Basecamp)

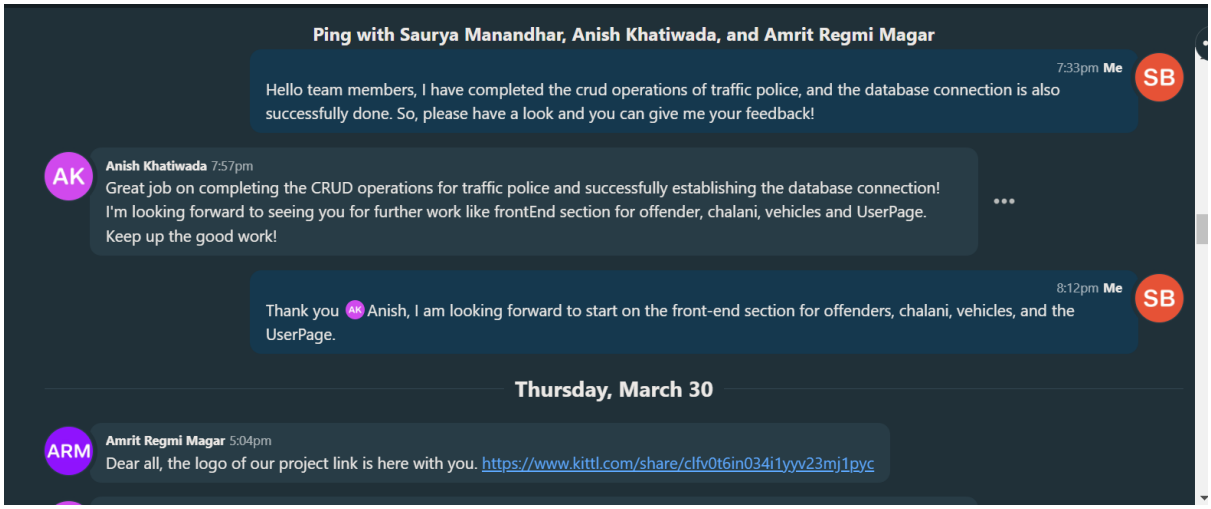

Figure 18: Communication1

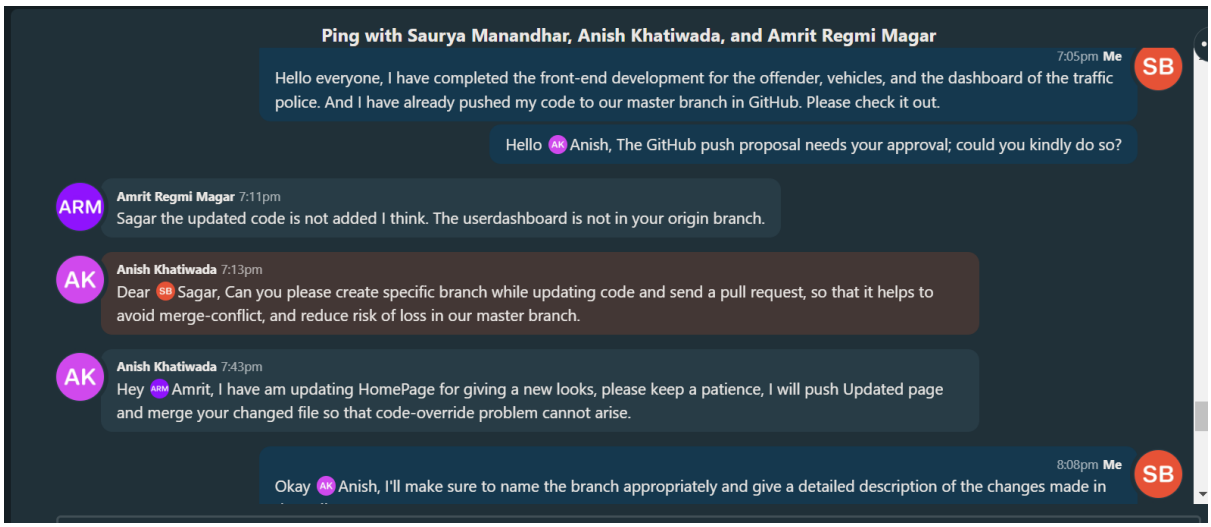

Figure 19: Communication evidence 2

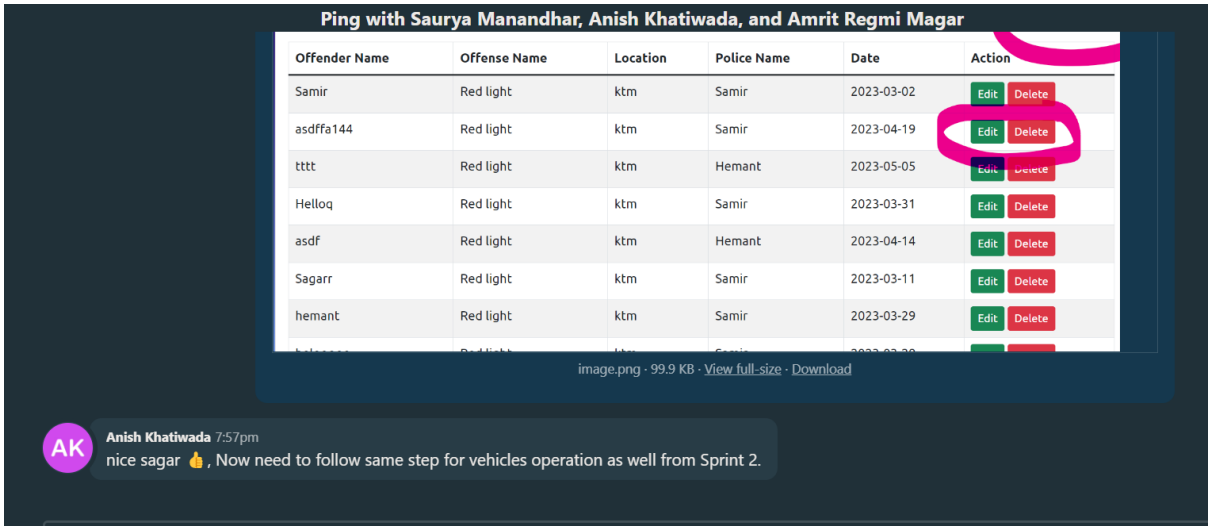

Figure 20: Communication evidence 3

Evidences of continuing personal development

While working on this project I had done a lots of research, reads different journal books, took a literature review and watched lots of youtube videos. As my work was to develop a code I had to learn different programming languages and built a good concept over my project.

While starting my project, I set several plans and goals such as learning, and improving my past experience over the required technologies which ensures personal development and growth. I do research on the project topic and related fields to gain more information and insights. I watched a video on youtube and completed the design of the login page and registration page taking good references. To make a better design of the dashboard, and navbar I watched many videos on youtube and took help from them. Some youtube videos links are given below:

I used to collaborate with my team colleagues, share my knowledge and also try to learn from them. I used to reflect on my work and try to identify what worked well and what things can be improved to make a project better.I learned through different websites about ajax technique that helps a web page to update its content without reloading the page (w3schools, n.d.). The website through which I learned about ajax technique is shown below.

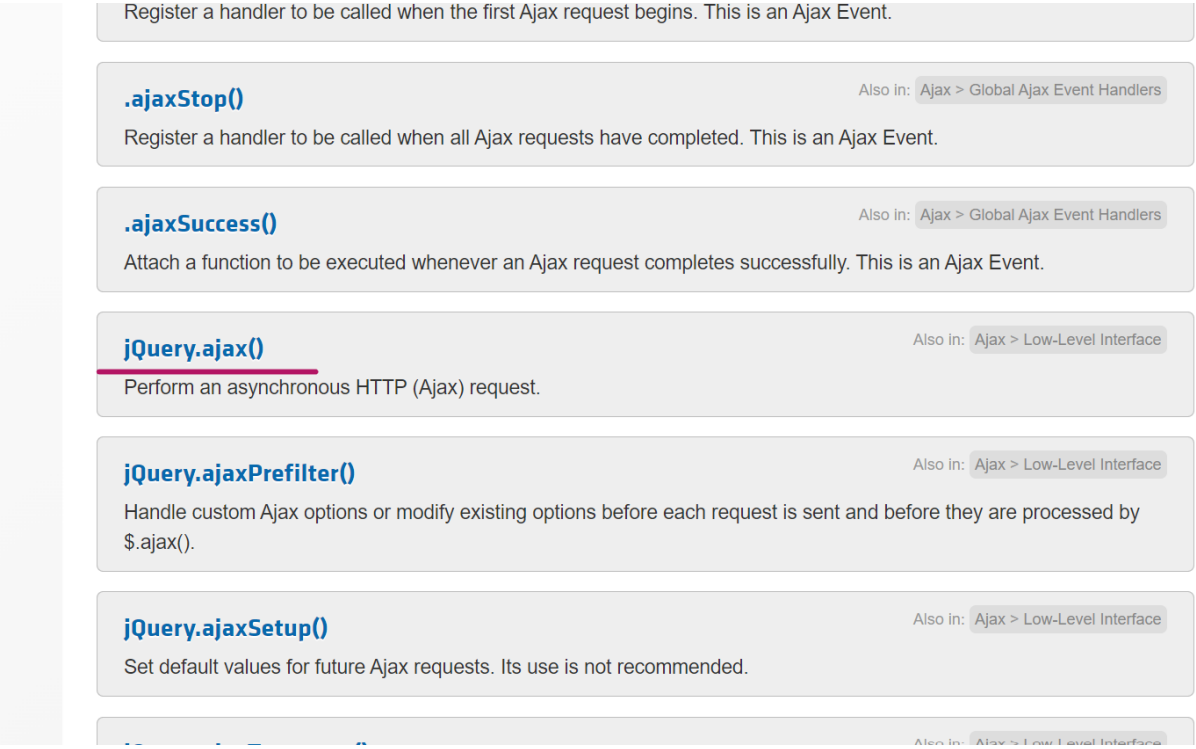

Figure 21: Ajax documentationz

I discovered that Ajax is a web development method that enables a web page to update specific portions of its content without needing a complete page reload after perusing the Ajax documentation. By using JavaScript to send an asynchronous request to the server, it is able to accomplish this while allowing the page to operate normally. The JavaScript code processes the XML or JSON data returned by the

server before updating the appropriate areas of the website. Ajax is frequently used in contemporary web apps to develop responsive and dynamic user interfaces, like auto-complete search boxes and real-time updates.

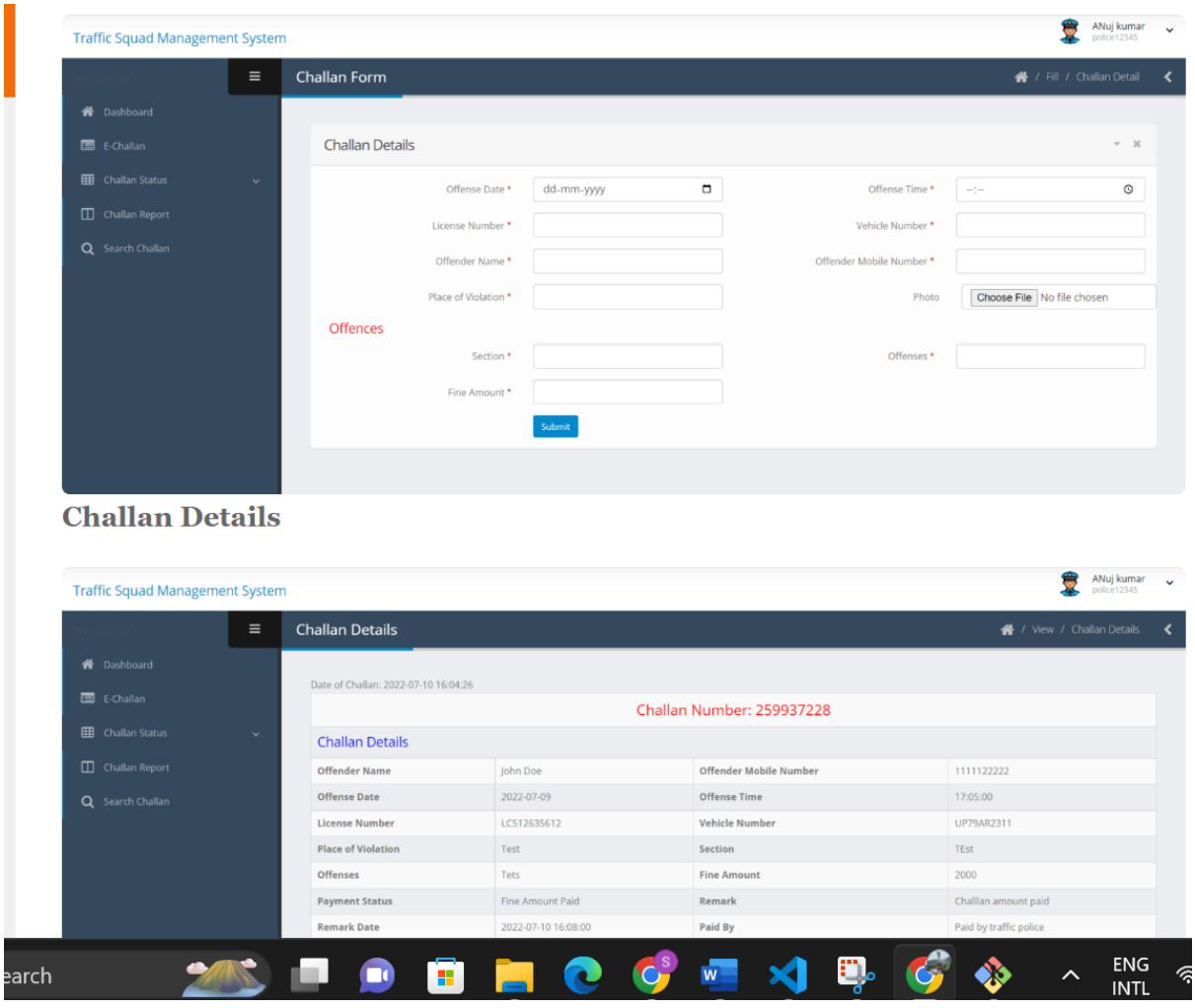

Figure 22: Reference of Admin Dashboard

This documentation page is about creating the dashboard of admin where it performs crud operations to traffic, users, vechiles and can add challan to users. So, from this documentation site I learned and got the

idea about creating an admin dashboard and adding multiple features to the admin dashboard. From this, I got the idea of making the dashboard responsive as well (KUMAR, 2023).

Evidences of Issues Tracking

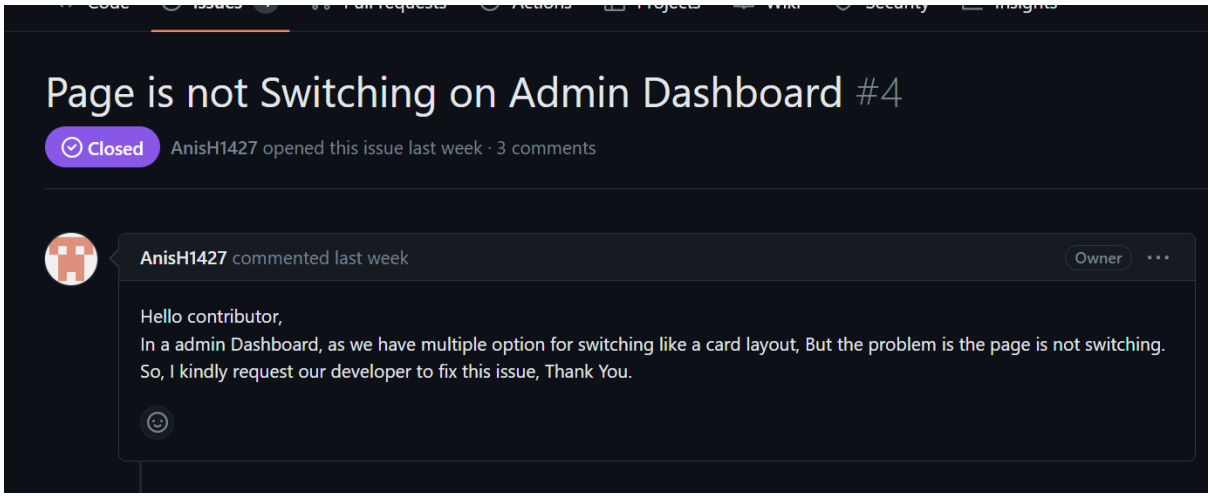

Figure 23: Issues create in GitHub

While making the admin dashboard page there were multiple features that we discussed to add upon it. But after some time we filtererd and put only required and important features only. So this issue was created by not providing me a proper information about adding respective features. Due to this, the link between different features was unavailable for a certain period of time. Later, I worked on this problem and solved issues at a time.

Figure 24: Issues solved in GitHub

When I found this issue by the business analyst, I worked on it and after some period of time the issue was solved on due time.

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