

American International University- Bangladesh

CSC 4261: Advanced Programming in Web Technology

CO1 Evaluation

Project Report

Spring 22-23

Project Title: Traffic Operation and Surveillance System (TOSS)

Project Domain: Real Time Problem Solution

Group Number: 2

Section: B

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**Introduction**

Everyone nowadays wants to make things easier. This is the era of digitalization. The modern world is all about technology. This digitalization also can be seen in the field of Traffic Violation Control. Nowadays, there are a lot of vehicles running on the roads. It is a necessary thing for everyone to move from one place to another. It saves time and energy, too. But managing these things is a bigger challenge now. There are lots of traffic rules established worldwide. But the problem appears when we are not very much willing to maintain the proper protocols to obey the traffic rules. To make this thing more flexible we are introducing a software.

**Problem Analysis**

Now a days we can see there are a lot of vehicles continuously running on the road. The proportion of Traffic Police and Vehicle is 100:1. In this condition it is really almost impossible for a traffic police to penalize and make a surveillance of all the vehicles. With a view to solve the problem more reliably and flexibly we are introducing Traffic Operation and Surveillance System (TOSS) to improve the system. Moreover, its simplicity and attractive user interface will make sure to provide most accurate results and operations in a less time-consuming way. In this system, there will be 4 users: Admin is the superior of the system. Admin has the access to perform all the administrative works. Most significantly, he/she has the access to insert an Officer to the system. Payment, done by the Owner will be received by the Officer of the system. He/she can withdraw the payment from the bank. Moreover, delete any COPS, insert vehicle license information etc. are some of the major works for the Officer. All the cases will be handled by the COPS of the system including case delete, view cases, accused name etc. The owner needs to input the information of the vehicle he owns. He/she can pay the bills to the penalized amount for violating the traffic rules. Again he/she can deposit or withdraw from his/her account.

Till date there are no such software r systems are available which can be considered to be similar with TOSS. Moreover, there are some systems which can only detect the vehicle or number plate and so on, but they are limited only in detection. On the other hand TOSS is going to give a totally new experience to the user in the long run.

**Feature Analysis:**

1. User Category:

There are 4-types of Users here. They are:

* Admin
* Owner
* COPS
* Officer

1. Feature List:

In this project the “**Admin**” has the following features:

* Log In
* Log Out
* View Profile
* Edit Profile
* Change profile picture
* Change password
* View COPS by Uname
* Delete COPS
* Ban Cops
* Insert Officer
* Edit Officer
* View Officer by Uname
* Delete Officer
* Ban Officer
* View Owner by Uname
* Delete Owner
* Ban Owner
* View reports
* View all Bank and Transactions
* View all Cases

In this project the “**Officer**” has the following features:

* Log In
* Log Out
* View Profile
* Edit Profile
* Delete Profile
* Change profile picture
* Change password
* Check Username
* Create cops
* Edit cops
* Delete cops by ID
* Ban cops
* Create VLI
* Edit VLI
* View all VLI
* Delete VLI by ID
* View all Transactions
* Search transactions by bank account no
* Withdraw
* View cases by Uname

In this project the “**COPS**” has the following features:

* Log In
* Log Out
* View Profile
* Edit Profile
* Delete Profile
* Change profile picture
* Change password
* View all Cops
* View all Owner
* View all Officer
* View Case by Accused
* View Case by Cops
* Create Cases
* Edit Cases
* View case by ID
* View all Cases
* Delete case by ID
* View all Owner
* View all VLI
* View VLI by VLI\_ID or Owner Name

In this project the “**Owner**” has the following features:

* Log In
* Log Out
* View Profile
* Edit Profile
* Delete Profile
* Change profile picture
* Change password
* View all Cops
* View all Owner
* View all Officer
* View Cops by Uname
* View Officer by Uname
* View Owner by Uname
* Deposit Amount
* Withdraw Amount
* Payment
* View Bank and Transactions
* Apply for License
* View Previous Cases
* View Pending Cases
* Report problem

**Design:**

Draw a Use Case diagram of your project here.

Fig: Use Case Diagram

Draw an ER diagram of your project here.

Fig: ER Diagram

**Tools Used:**

To develop this project, we have used the following:

* NODEJS (NPM)
* POSTMAN (Http Client)
* VS CODE (Editor)
* PGADMIN (PostgressSQL)

**System Images against the Specification:**

**Figure:** TOSS Homepage

**Figure:** TOSS Log In

**Figure:** TOSS Report Section

**Figure:** TOSS Owner Sign Up

**Figure:** TOSS Admin Profile

**Figure:** TOSS Officer Profile

**Figure:** TOSS COPS Profile

**Figure:** TOSS Owner Profile

**Impact of this Project:**

This project will solve the problem of traffic rule violation system management and as a result, we can ensure that, in the long run it can be a major system in the field of traffic system. Moreover, the system is designed in such a way so that every people from every category can use the system smoothly. Most precisely the security of the project is the main key point we have ensured. Every transaction through the system will be designed in such a way so that we can make the system more practically secured.

**Limitations and Possible Future Improvements:**

There are still no limitations has been found by us as we haven’t faced them yet. But there are some possible future improvements. The case register system of the system is not automated still in TOSS. In the long run we can make more automation to this project so that the cases will be automatically registered in the system. Secondly, in this system, the number of users can be increased. As an example, the COPS can be maintained by some other higher-level officers. Again, COPS’s and Officer’s functionalities can be increased more. If we can make these improvements, we hope this project TOSS can compete and can become the most usable Traffic Operation and Surveillance System.

*[Note: Make sure that your report is maximum 10 pages (including cover page). Print (Colored) the report and submit it with spiral bind.]*

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| CO1 Evaluation: Project Report Evaluation | | | |
| Problem  Analysis  (5) | Use Case  Diagram  (5) | Class  Diagram  (5) | Total (15) |
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