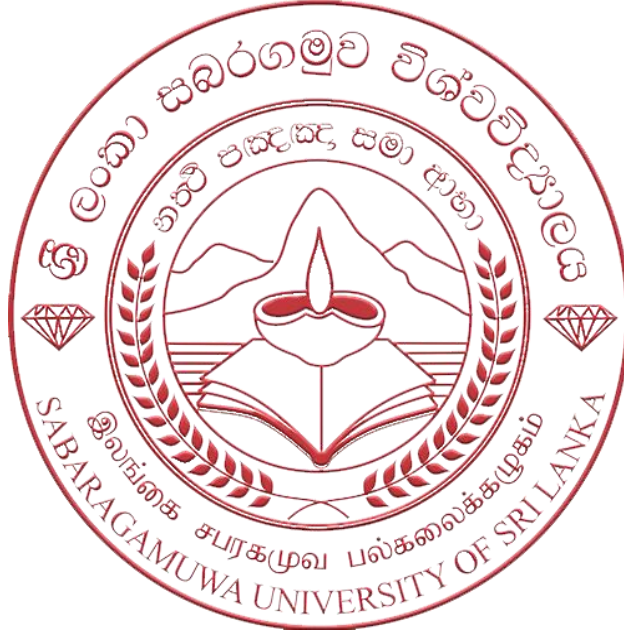


# IS2106 - System Analysis & Design



## TransferEase – Vehicle Ownership Transfer System GROUP 12

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# **1. Introduction**

## **1.1. Purpose**

The purpose of this Software Requirement Specification is to present, detailed description of the website. This will explain the purpose and features of the system, all the functions, specifications, design constraints, requirements (functional and non-functional) and other factors that need to provide for a completely comprehensive description of the proposed Website. This document is intended for both the stakeholders and the developers of the system.

## **1.2. Product Scope**

Motor Traffic Department of Sri Lanka is the department that responsible for registering new vehicles and ownership transferring. Still now, transferring ownership of vehicles is happening via a manual process. By filling the forms called MTA 2, MTA 6 and submitting them to the Motor Traffic Department and wait for minimum time duration about 6 months is kind of very long process.

By the website we are going to facilitate owner, buyer and Motor Traffic Department to do the transferring process in three interfaces and make the process easy and secure without letting owner and buyer go to the Motor Traffic Department or it's branches.

# **2. Overall Description**

## **2.1 Product Perspective**

This website which will be developed through this project will assist in preventing long manual processes by implementing an online process to transfer ownership of vehicles. First the buyer has to make an account on this website using the National Identity Card(NIC) number by making an username and a password for the account. After logging into the account, the buyer has to give the relevant vehicle register number to the website and fill the relevant online documents(MTA6 form) with required authentication and online payments. By the database running in the background, the vehicle register number can automatically send a request to the owner of the vehicle after the buyer requests the vehicle by submitting his/her documents. From that request sent by the buyer, the owner has to look for the details and confirm that request. Then they officially like to transfer their vehicle among them. After accepting this request the Department of Motor Traffic also can verify

these filled forms and then after DMT can approve this vehicle owner transfer officially. After that, the number plate will be changed if the owner and the buyer of the vehicle are from two provinces.

Behalf of all these processes, everyone who has an account can see the details of their own

registered vehicles, on that website. Also, if someone is having trouble with using this website they can use the user guide manual we provided in the website's help desk. (For more details - 2.6 User Documentation)

## 2.2. Product Functions

- When the vehicle transfer is processing the D.M.T. can confirm that
- Record vehicle details
- Facilitate transfer of ownership between parties
- Generate and store ownership transfer documents
- Notify involved parties of successful ownership transfer
- Update vehicle registration records

## 2.3 User Classes and Characteristics

### User

- Can access the system with limited privileges
- Can initiate the ownership transfer process
- Receives notifications regarding the status of ownership transfer
- Users can login to their account and see their own registered vehicles

### Administrator

- Has administrative access to the system dashboard
- Can oversee and manage ownership transfer processes
- Can verify and authenticate user information

## 2.4 Operating Environment

### Hardware Requirements:

- Computer
- Internet Connection
- Mobile device

### Software Requirements:

- Web Browser (Chrome, Firefox, Safari, etc.)
- GitHub (Github Pages)
- Firebase

## 2.5 Design and Implementation

Access Control: Only authorized users and administrators, have access to specific functionalities within the system.

Individual User Authentication: Each user is required to have a unique user name, password and NIC number for accessing the system, ensuring security and privacy.

## 2.6 User Documentation

A user manual will be given in the help desk section of this website as a pdf that thoroughly describes all functionalities of the website, how users have to fill their forms and how to do the online payments. Additionally, it includes email addresses and telephone numbers for contact in case of a problem.

## 3. System Features

### 3.1 Depth of analysis

The system analysis for the TransferEase - vehicle ownership transfer system was conducted by using different variety of techniques and tools for the identification of some system features. This analysis is targeted for the system's purpose. This includes a wide examination of the system's requirements, design constraints and functionalities.

### 3.2 Analysis tools and techniques

This analysis used several tools and techniques like Use Cases and Entity Relationship (ER) diagrams. For the system's structure and understanding of the relationship between different components, these tools were essential.

### 3.2.1 Use case

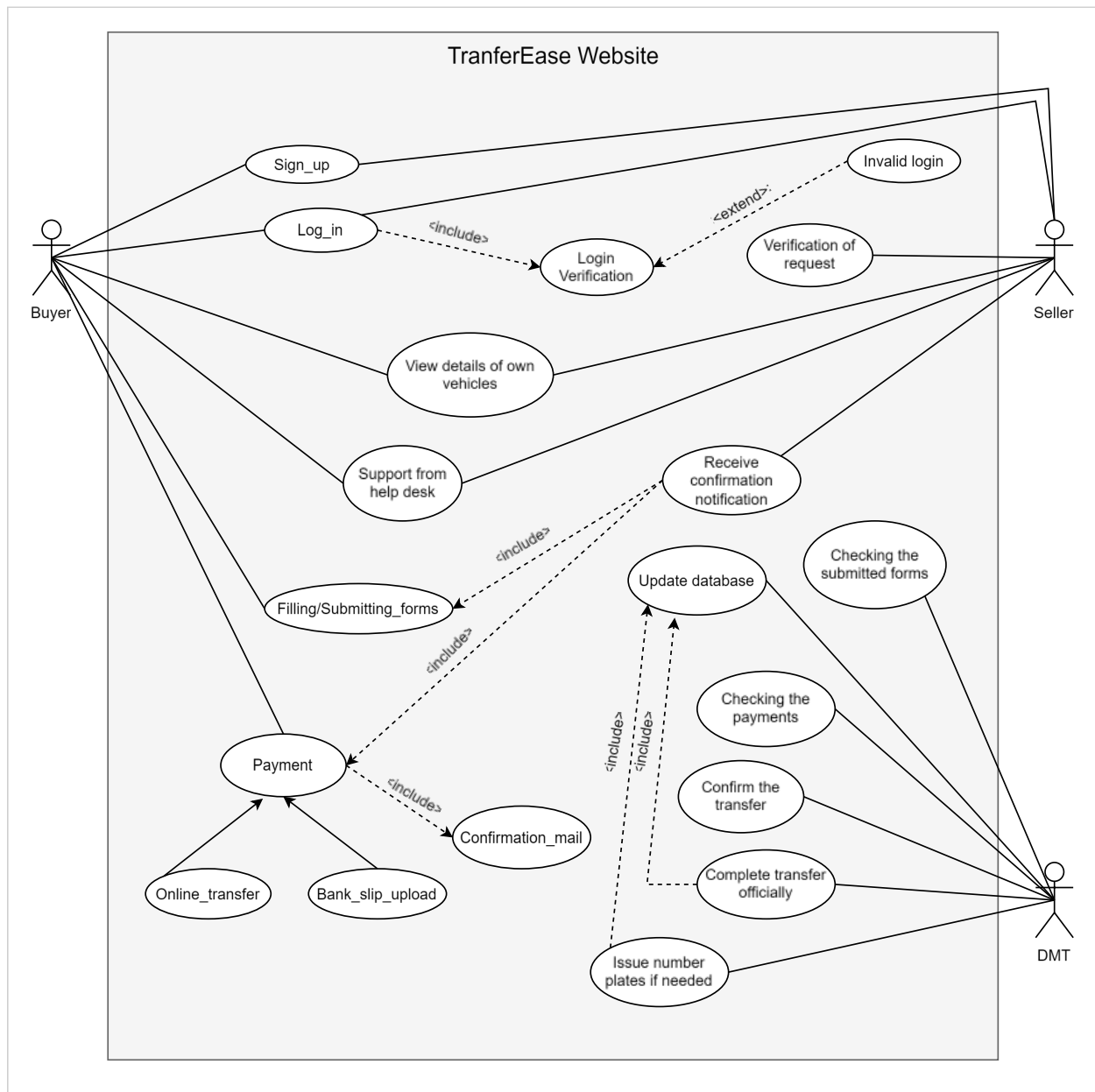


Figure 3.1 – Use case diagram

### 3.2.2 ER Diagram

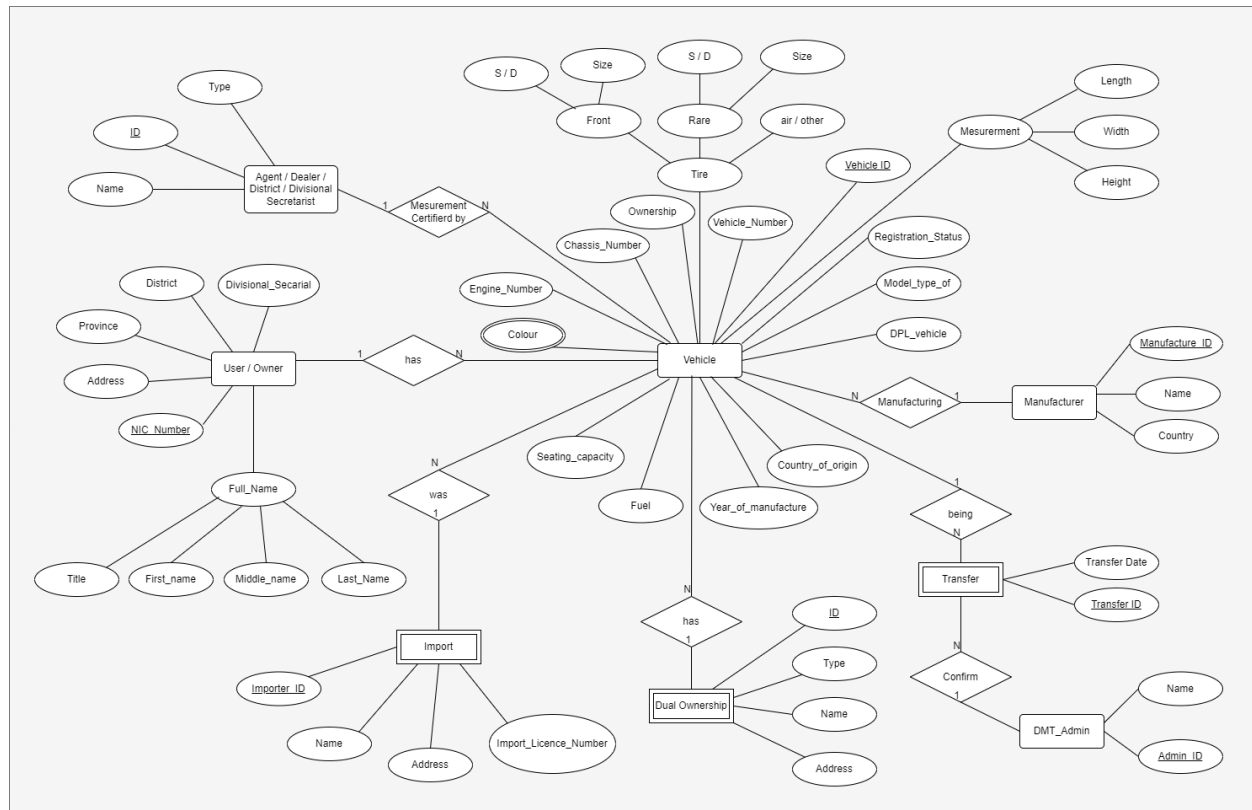


Figure 3.2 – Entity relationship diagram

## 3.3 System Features

### 3.3.1 Functional Requirements

| Requirement ID | Requirement  |
|----------------|--|
| R01            | Sign-up to an account  |
| R01.1          | Users have to sign-up to the account on website by using their National Identity Card (NIC) number and an username |
| R01.2          | During registration, the system has to validate uniqueness of NIC number and username                              |
| R01.3          | For the account security, system has to enforce strong password policies   |

| Requirement ID | Requirement  |
|----------------|--|
| R02            | Transfer process   |
| R02.1          | Buyer must able to input the relevant vehicle registration number to continue transferring process |
| R02.2          | System should facilitate filling and submitting of online documents                                |
| R02.3          | For any associated fees, system have to facilitate online payments                                 |

| Requirement ID | Requirement   |
|----------------|---|
| R03            | Verification by seller  |
| R03.1          | Through the seller's dashboard, sellers should be able to confirm or reject the request |
| R03.2          | Sellers should verify their identity before confirming the request                      |

| Requirement ID | Requirement  |
|----------------|--|
| R04            | Verification by Department of Motor Traffic (DMT)  |
| R04.1          | DMT admin and officials should have the access to the submitted forms by the buyer   |
| R04.2          | Officials of DMT have to review and approve the ownership transfer of that vehicle by ensuring associated payments and documents |



|       |  |
|-------|--|
| R04.3 | DMT should have to update the vehicle ownership registration records officially and issue a new registration certificate |
|-------|--|

| Requirement ID | Requirements   |
|----------------|--|
| R05            | Cross-Provincial ownership transfer  |
| R05.1          | System should facilitate the process that updating number plate of the vehicle if the buyer and seller of the vehicle are from two provinces |

| Requirement ID | Requirements  |
|----------------|---|
| R06            | User dashboard  |
| R06.1          | Users should have the access to a dashboard that display details of their own registered vehicles and ongoing process of ownership transfer |
| R06.2          | Users should able to update their information and vehicle details in the system   |

| Requirement ID | Requirements   |
|----------------|--|
| R07            | User guide   |
| R07.1          | Website have to give a user guide accessible from help desk section that provides step by step guidance for each steps of ownership transfer |

## **4. Non Functional Requirements**

### **4.1 Performance requirements**

Response time – Performance speed of this website is depending on several factors like

- Speed of user's internet connection
- Data extracting time of database

### **4.2 Security requirements**

Security requirements for this website are very essential to protect user data and integrity of the ownership transfer process. This includes implementing strong password policies to protect sensitive data and administrative functions. By protecting security, this website can give a trustful and safe ownership transfer process for the users.

### **4.3 Software quality attributes**

- Reliability – This website will perform accurate and reliably to complete ownership transfer processes are completed without errors or interruptions.
- Usability – This website will be allow users to navigate through the ownership transfer process with ease by making this website user friendly and intuitive.
- Maintainability – The codebase of this website will be well structured, modular, and documented to give easy maintenance and future developments.
- Compatibility – This website will be compatible with different devices, browsers, and operating systems.

