
SOFTWARE REQUIREMENTS SPECIFICATION for E-Vehicle Tracking

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1 Introduction

1.1 Purpose

It is very tough to determine the exact location of the nearby E-Vehicles in the campus. This makes it difficult for the person to estimate the waiting time. Our E-Vehicle Tracking(EVT) Web Application lets users know the current location of all the E-Vehicles in the campus.

1.2 Intended Audience and Reading Suggestions

This SRS is intended for use by developers, project managers, users and testers. The SRS will contain all functional and non-functional information about the EVT Website.

1.3 Project Scope

The EVT Website will create a space for the residents of IIT-Indore, and visitors to IIT-Indore, to access information about the current locations of E-vehicles on the campus.

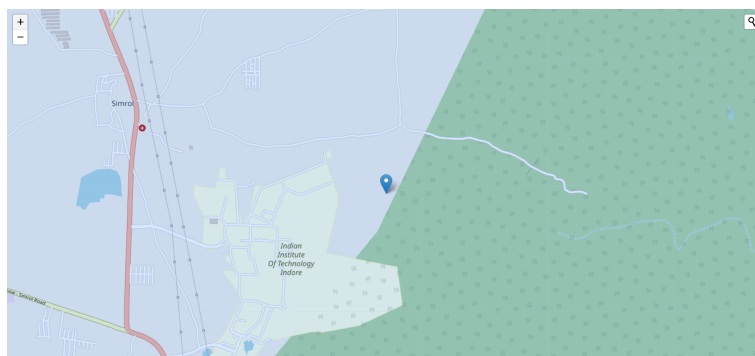


Figure 1.1: map interface on prototype

2 Overall Description

2.1 Product Perspective

Using our website users will be able to see the current location of all E-Vehicles on the map layer in the website, i.e, the main goal of our website is to continuously track the current location of all existing and operational EVs.

2.2 User Classes and Characteristics

The "E-Vehicle Tracking Website" has 2 types of users.

- Students/ Staff/ Visitors
- Drivers

2.3 Product Functions

The EVT Website will show the current location of all the E-Vehicles that are currently operating in the campus. It also lets users get in contact with the drivers via their contact numbers, which will be shown on the websites. This will make it easier for the passengers to communicate with the driver. Users need not login, or download software to use the website.

The drivers are required to register and enter details about themselves and the Vehicles, and give access to their location on the device they are logging in, i.e,

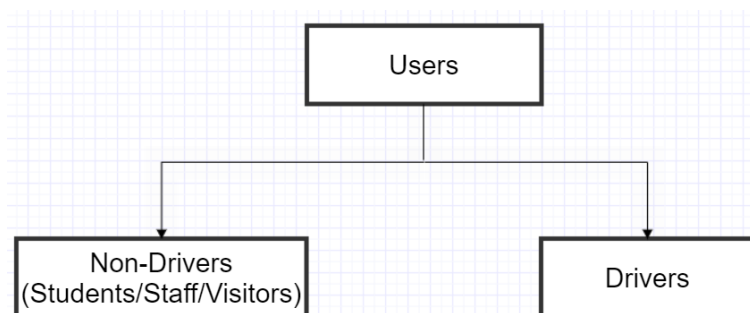


Figure 2.1: type of users

their mobile phones. Only then their location will be shown on website. Once the driver logs off, the location marker corresponding to the driver's E-Vehicle will not be shown on the Map. If the drivers don't give access to their location their current location will not be shown on the map.

The location of currently existing E-Vehicle stops must be shown on the map, with appropriate legends.

Existing E-vehicle routes can be shown on the map.

2.4 Operating Environment

The website ought to operate in any standard browser e.g- Chrome, Firefox, Microsoft Edge, etc.

2.5 Design

Students/ staff/ visitors

- Do not need to log-in or register
- Can contact drivers
- Can view locations of EVs

It is not necessary for students to register/sign up on Website to use the website. The contact number of registered drivers will be displayed so that the user can contact the driver if necessary.

Driver activities involve -

- Registration
- When on duty, log in and provide location access

The Drivers are required to fill in some basic details about themselves.

These include-

- Name
- Contact Number

Since it may turn out that a driver is assigned a different vehicle every day, it would be best to assign the E-vehicle number at the time of location-access request.

3 System Features

The EVT Website is a location tracking web software. So the ultimate purpose of this product is to fetch and show the live location of E-Vehicles to users .

3.1 Functional Requirements and Description

- The EVT Website will let drivers register and enter the required details.
- Once registered or logged in the website will ask the access to driver's location.
- If the driver accepts to give the access of their location. This location will be shown on the website using legends.
- Students/staff/visitors will be able to access the basic details like contact-number of the driver, vehicle-number, etc.
- The location of EV stops will be marked on the map with some legend.
- If the Driver logs out from the website, the legend corresponding to their location will be removed from the map meaning it the vehicle has stopped operating.

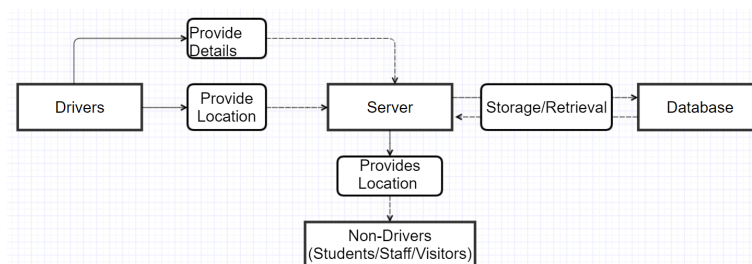


Figure 3.1: Flow Chart of Project Components

4 Other Nonfunctional Requirements

4.1 Software Quality Attributes

The website must be:

- Efficient
- Secure
- Usable
- Maintainable

Database, logical and UI tests are required to ensure everything was integrated properly.

4.2 Performance Requirements

The EVT Website will be used for tracking the current location of EVs. Updation of the location should be done once every 30 seconds that the driver is logged in, to provide an optimal trade-off between the lightness of the website and accurate location.

4.3 Security Requirements

Drivers will be issued set passwords. This will ensure that other users cannot misuse the website by logging in as drivers, and that non-drivers' location is kept private.

4.4 Usability Requirements

The EVT Website should be accessible with any device with a modern browser and an internet connection. Considering that the drivers and visitors will be using the webpage, a clean and easy to use user interface is a must.

4.5 Maintainability Requirements

The EVT Website will need maintenance and refactoring in the future as the number of EVs/ EV routes/ EV stops/ drivers increases with the development of the institute.

5 Other Requirements

The working of the website will depend heavily on the Geolocation Web API and the device used by the driver to fetch location (mostly mobile). This may need to be replaced with an alternative in the future, if support stops or better methods are created.