**1. INTRODUCTION**

**1.1 Purpose**

The purpose of this software design document is to describe the implementation, architecture and system design of the car rental website presented in the IEE Software Requirements Specifications document. This website is designed to perform car rental services, such that customers can log in and book their favorite available vehicle, while the administrator can manage the database, add vehicles and confirm rental requests.

Audiences generally vary, however, the targeted audience consists of people in need of transportation, tourists, out-of-towners, car enthusiasts or people that want to test a car before purchasing it.

**1.2 Scope**

This document describes the implementation details of the car rental website. The scope of the website is not only limited to attracting and encouraging people in need of transportation and car enthusiasts to consider using the rental services, but also aims to provide relevant information and various options, keeping in mind that the person visiting this website wants a full knowledge of the availability and facilities of the vehicle to be rented. This website aims to provide a user-friendly set of web pages that are easy to navigate and at the same time provides sufficient depth and information about car rentals.

Objectives relevant to this website include helping the customer with a friendly interface so that they can easily rent a vehicle, assuring the security and discretion of every user, and also making sure the administrator has full control of the database in order to make sure that the website functions without problems and that the customers are satisfied.

Additionally, the benefits of the website are related to how easy it is for a customer to rent a vehicle, customer support, and other quality-of-life features that might be more complicated through other services. The interface makes sure everyone has a clear view of all of their options. Any car can be rented in a small amount of time. Confirmation can be checked at any time on the user’s profile. This certainly makes a car rental website beneficial to the customer, compared to other methods of renting a car.

Finally, the goal of website is to encourage more people to choose rental services, eventually increasing the profit of the company, improvement of the services, and most importantly helping people with their business. Maintaining a simple and friendly site is deemed of highest importance in order to hold customer attention and guide the viewer to information that will lead to a decision to rent the best vehicle available.

**1.3 Overview**.

This document contains several representations of software components, interfaces and data necessary for implementation phase. It will show how the software system will be structured to satisfy the requirements. The IEEE Recommended Practice for Software Design Descriptions have been reduced in order to simplify this assignment while still retaining the main components and providing a general idea of a project definition report.

The Software Design Document is divided into 8 sections with various subsections. The organization for this document is:

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**1.4 Reference Material**

https://www.draw.io/

https://www.toptal.com/freelance/why-design-documents-matter

https://en.wikipedia.org/wiki/Software\_design\_description

**1.5 Definitions and Acronyms**

**XAMPP** - a free and open-source cross-platform web server solution stack package developed by Apache Friends consisting mainly of the Apache HTTP Server, MariaDB database, and interpreters for scripts written in the PHP and Perl programming languages.

**PHP** - a popular general-purpose scripting language that is especially suited to web development.

**MySQL** - an open-source relational database management system.

**HTML**- Hypertext Markup Language is the standard markup language for documents designed to be displayed in a web browser.

**CSS**- Cascading Style Sheets is a style sheet language used for describing the presentation of a document written in a markup language like HTML.

**MariaDB** - a community-developed, commercially supported fork of the MySQL relational database management system

**2. SYSTEM OVERVIEW**

Car rental services have faced many challenges and shortcomings in managing the capabilities, quality and status of their vehicles. The car rental website will utilize a database and with the help of customer feedback it will efficiently keep track of all vehicles which will standardize and improve the efficiency of the car rental company’s management capabilities.

The car rental website is designed to be compatible with services and infrastructure existing in the car rental company. Additionally, car rental website is compliant with all network security protocols as well as regulatory policies.

The car rental website is also compatible with XAMPP, phpMyAdmin and MariaDB to include SQL database files, as well as functional PHP components. The admin panel contained within the car rental website will provide various user interfaces which will allow data entry, updates, tracking, and report generation.

The car rental website will provide the following capabilities:

• User account management, which shows a detailed view of the user’s bookings, testimonies, booking status and other options.

• Integration of all maintenance data which allows for real-time car booking availability and simplifies management of all maintenance activities.

• Enhanced and additional user interfaces which provide users with much simpler data entry, updates, queries, and other capabilities.

• Feedback capabilities which allow users to report to the admin various suggestions, which will be listen in the admin panel. Users can also subscribe to newsletter to receive updates from the administrator.