Software Requirements Specification

PARKING MANAGEMENT SYSTEM

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Table of Contents

1.Introduction

1.1 Purpose

Parking management system for managing the records of the incoming and outgoing vehicles in an parking house

It's an easy for Admin to retrieve the data if the vehicle has been visited through number he can get that data **.**

Now days in many public places such as malls, multiplex system, hospitals, offices, market areas there is a crucial problem of vehicle parking. The vehicle parking area has many lanes/slots for car parking. So to park a vehicle one has to look for all the lanes. Moreover this involves a lot of manual labour and investment. Instead of vehicle caught in towing the vehicle can park on safe and security with low cost.

Parking control system has been generated in such a way that it is filled with many secure devices such as, parking control gates, toll gates, time and attendance machine, car counting system etc. These features are hereby very necessary nowadays to secure your car and also to evaluate the fee structure for every vehicles entry and exit

The objective of this project is to build a Vehicle Parking management system that enables

the time management and control of vehicles using number plate recognition. The system that will track the entry and exit of cars, maintain a listing of cars within the parking lot, and determine if the parking lot is full or not. It will determine the cost of per vehicle according to

their time consumption.

1.2 Intended Audience

This document is primarily intended for the:

- Developers of this software
- Software engineers who would work on further development of the project
- The professors who would review the document

1.3 Product Scope

In the modern age. Many people have vehicles. Vehicle is now a basic need. Every place is under the process of urbanization. There are many corporate offices and shopping centers etc. There are many recreational places where people used to go for refreshment. So, all these places need a parking space where people can park their vehicles safely and easily. Every parking area needs a system that records the detail of vehicles to give the facility. These systems might be computerized or non-computerized. With the help of computerized system we can deliver a good service to customer who wants to park their vehicle into the any organization's premises.

Vehicle parking management system is an automatic system which delivers data processing in very high speed in systematic manner. Parking is a growing need of the time. Development of this system is very useful in this area of field. We can sell this system to any organization. By using our system they can maintain records very easily. Our system covers the every area of parking management. In coming future there will be excessive need of Vehicle parking management system.

1.4 References

- Official documentations of used frameworks and languages

2. Overall Description

2.1 Product Perspective

Parking management system for managing the records of the incoming and outgoing vehicles in an parking house.It's an easy for Admin to retrieve the data if the vehicle has been visited through number he can get the data.

To facilitate security and privacy it requires login from each user who wants to use the software. A straightforward user interface will make it easier for the user to navigate the software

The goal of this project is to build a Vehicle Parking management system that enables the time management and control of vehicles using number plate recognition. The system that will track the entry and exit of cars, maintain a listing of cars within the parking lot, and determine if the parking lot is full or not. It will determine the cost of per vehicle according to their time consumption

It works on a system independent browser, one of its key characteristics is its independence from the type of Operating System that the computer it runs on. No programme installation is ever necessary for this software to function.

This software doesn't require both installation and host system modification

2.2 Product Functions

The major functionalities of the software will achieve:

- Book parking space.
- Cancellation.
- Receipt Print
- Feedback
- Recharge Amount

2.3 Users classes and Characteristics

This supports two types of user privileges:

- Admin
- User

The users that we expect the software to be used by are:

1.	Admin	Admin is the who has been entrusted with the management of parking system
2.	User	User is the one who uses this software to book parking slot

2.4 Operating Environment

Any version of Windows, Linux (kernel 2.7 and above), and Mac platforms will be able to use the software. The programme is entirely web-based and works with the widely used web browsers, including Firefox, Chrome, and Internet Explorer

2.5 Design and Implementation Constraints

We need a proper hardware for this with a proper computer with installed OS and require Visual studio 2015 or a latest version of this software and SQL Server (latest version)

2.6 Assumptions and Dependencies

The user is familiar with web-based applications.
The user is either running a latest version of Chrome or Mozilla Firefox or latest version of any web browser.

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3. External Interface Requirements

3.1 User Interfaces

The user interface is straightforward and easy to use. One may quickly book the required slot for parking from their web browser
If a user is new to the software then user can register for a new account to gain access to the website.
User can book any slot for parking their vehicle through software easily.

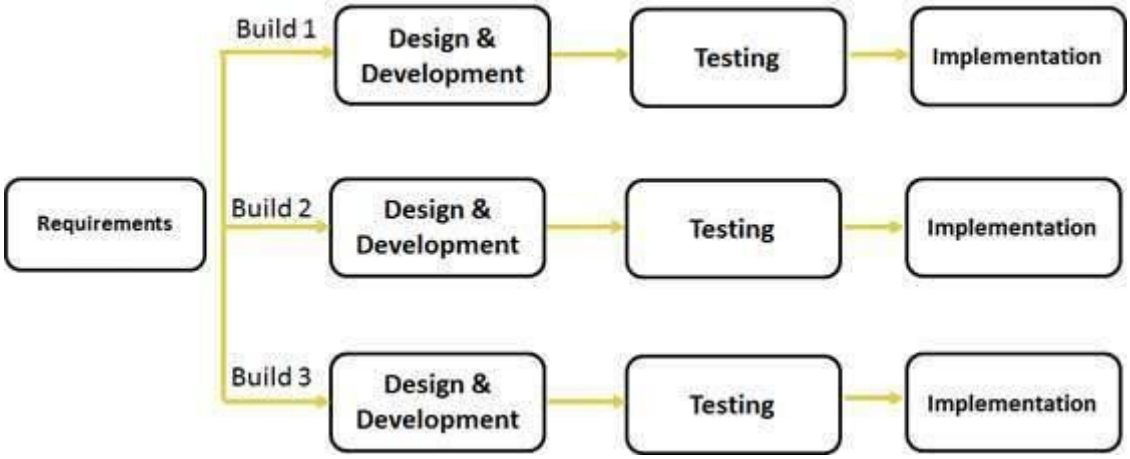
3.2. Software Interfaces

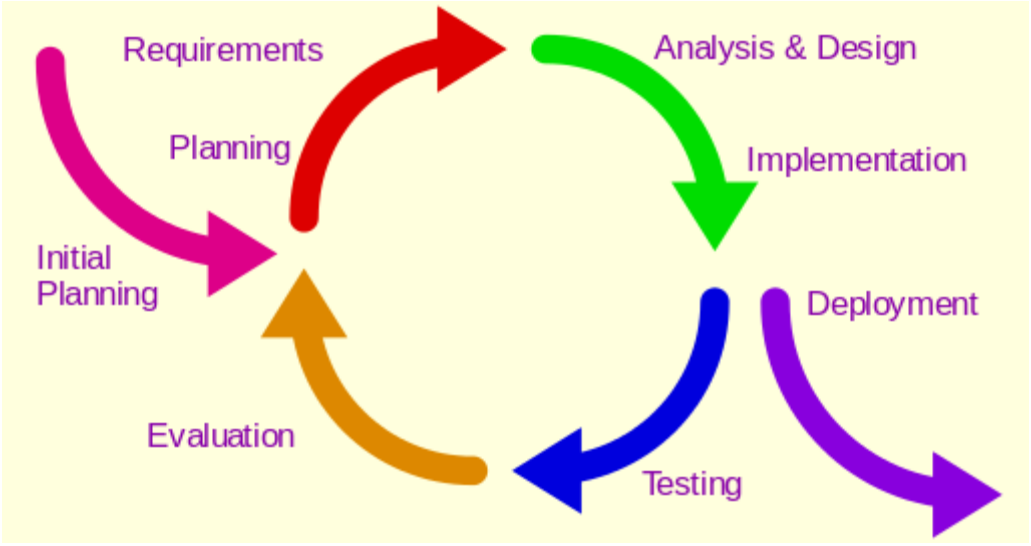
The software can run on any OS like Linux, Windows and Mac.

3.3. Communications Interfaces

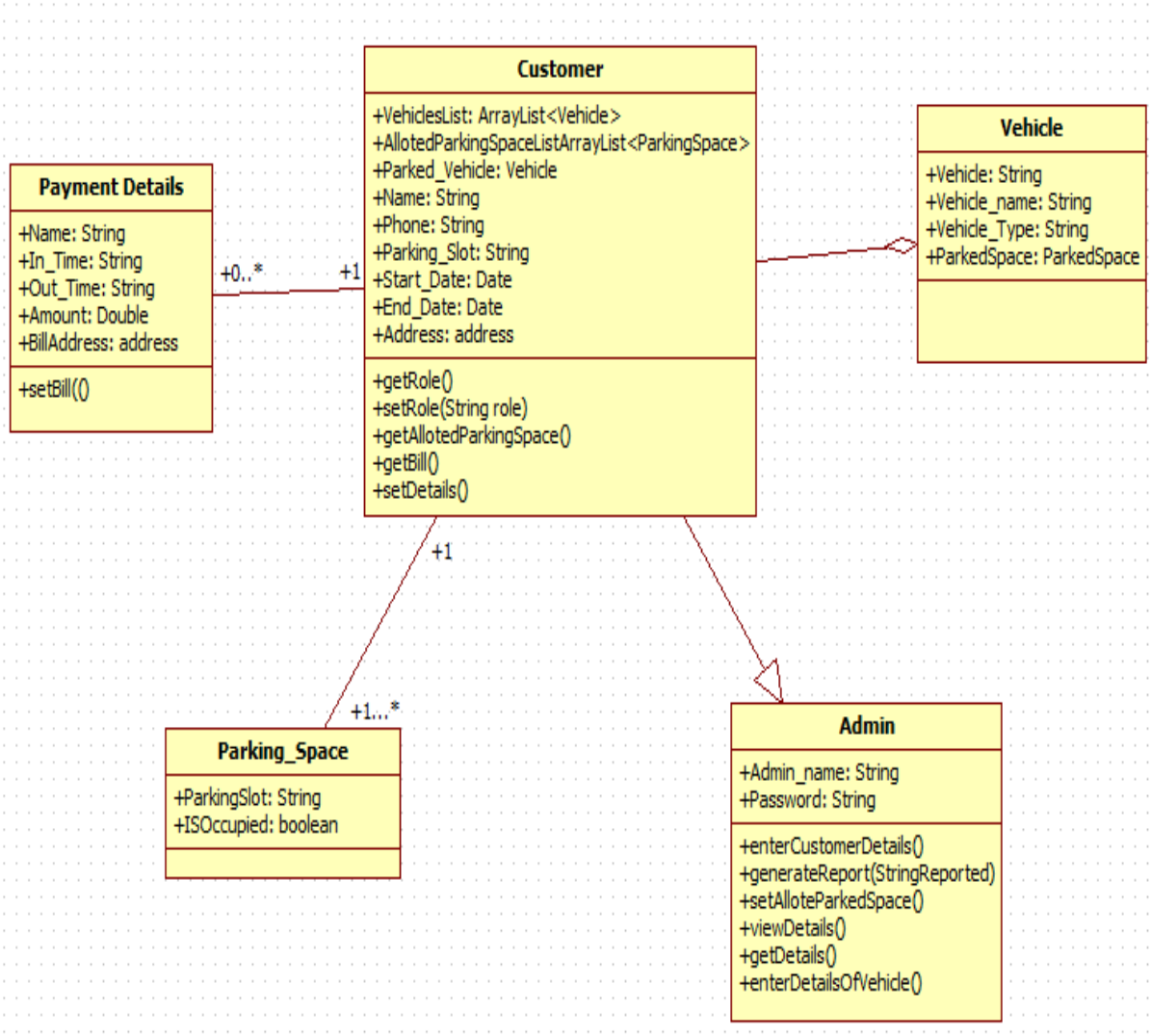
The software cannot be accessed without a web browser

4. Analysis Models

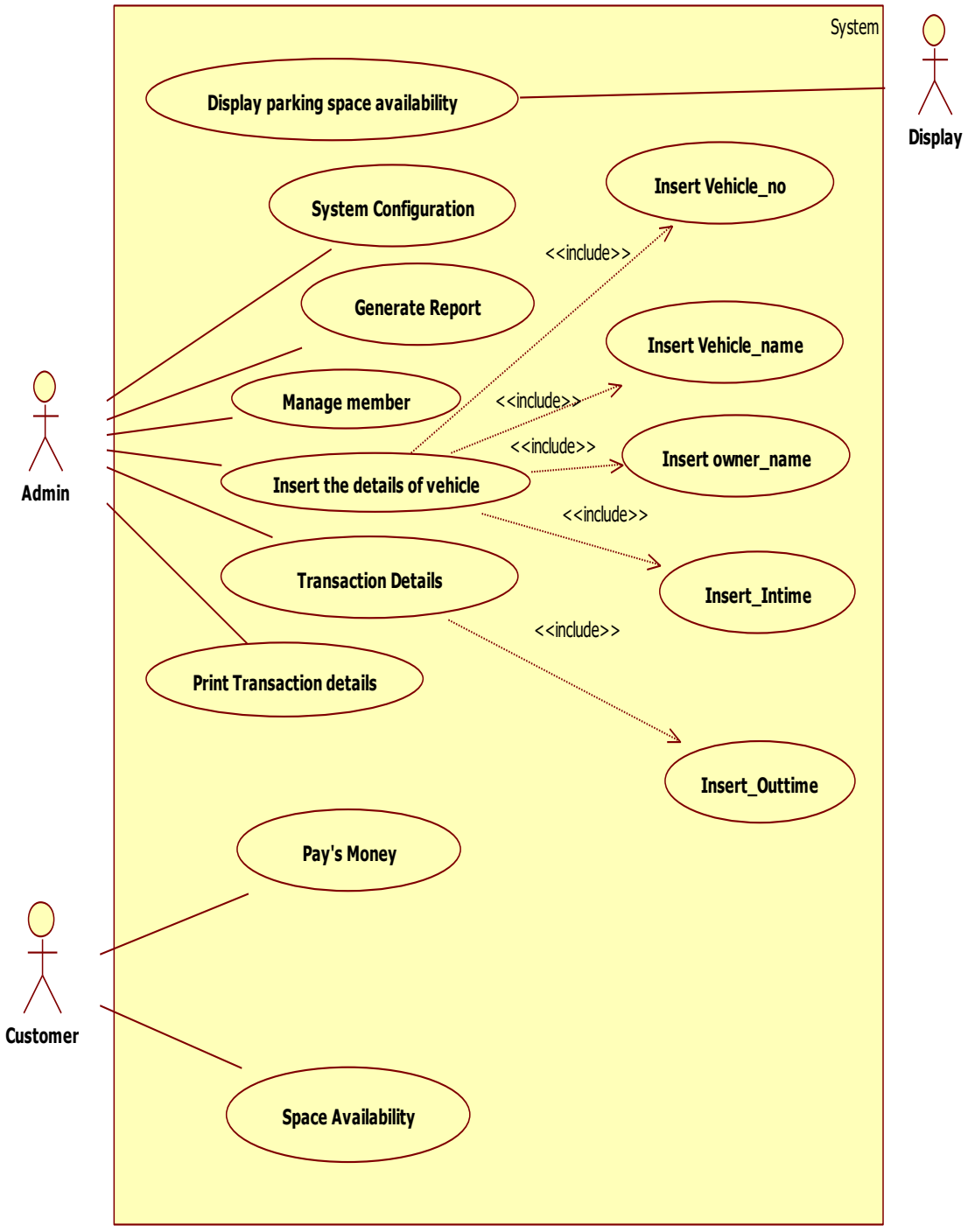




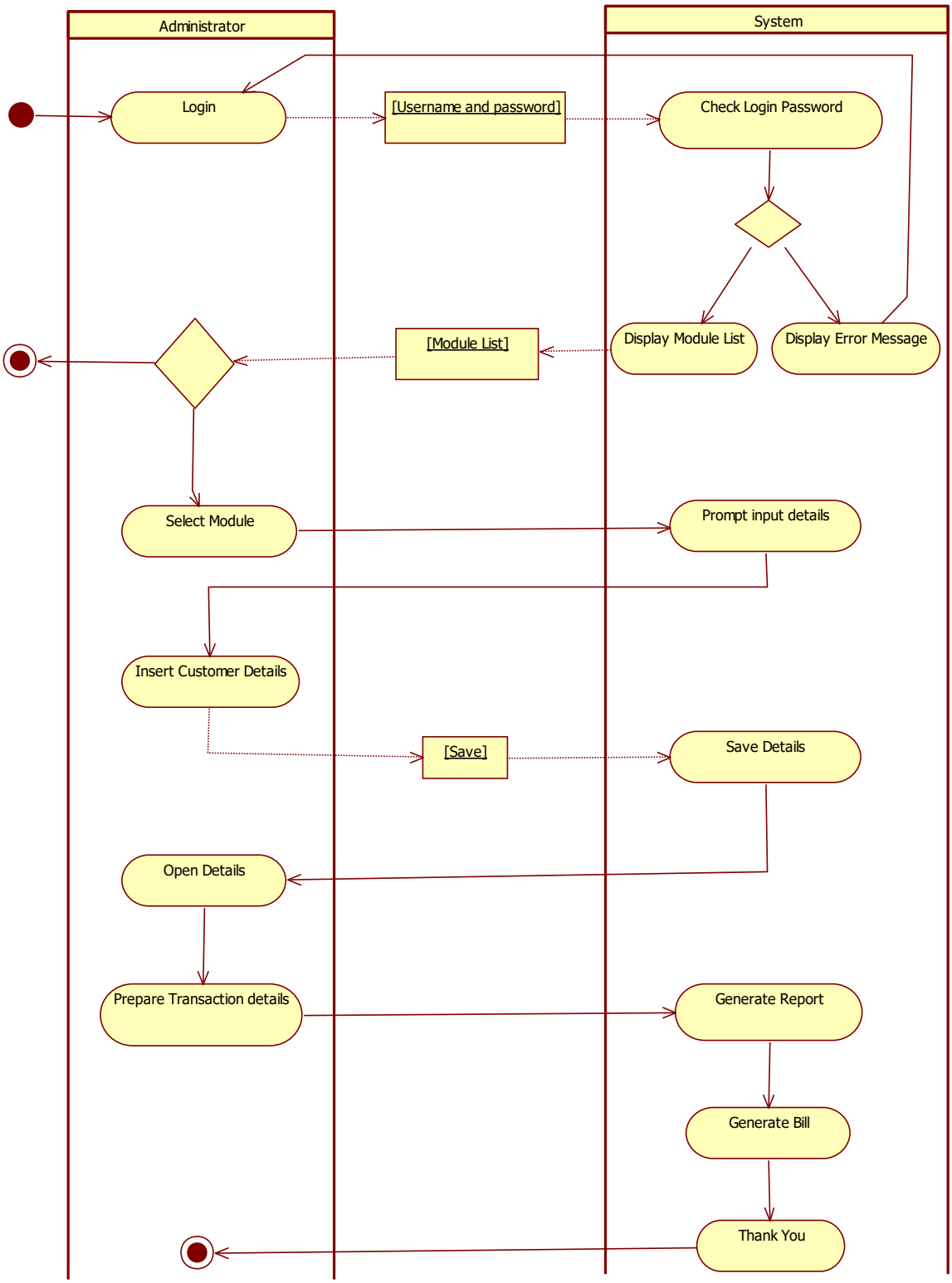
CLASS DIAGRAM



USE CASE DIAGRAM



ACTIVITY DIAGRAM



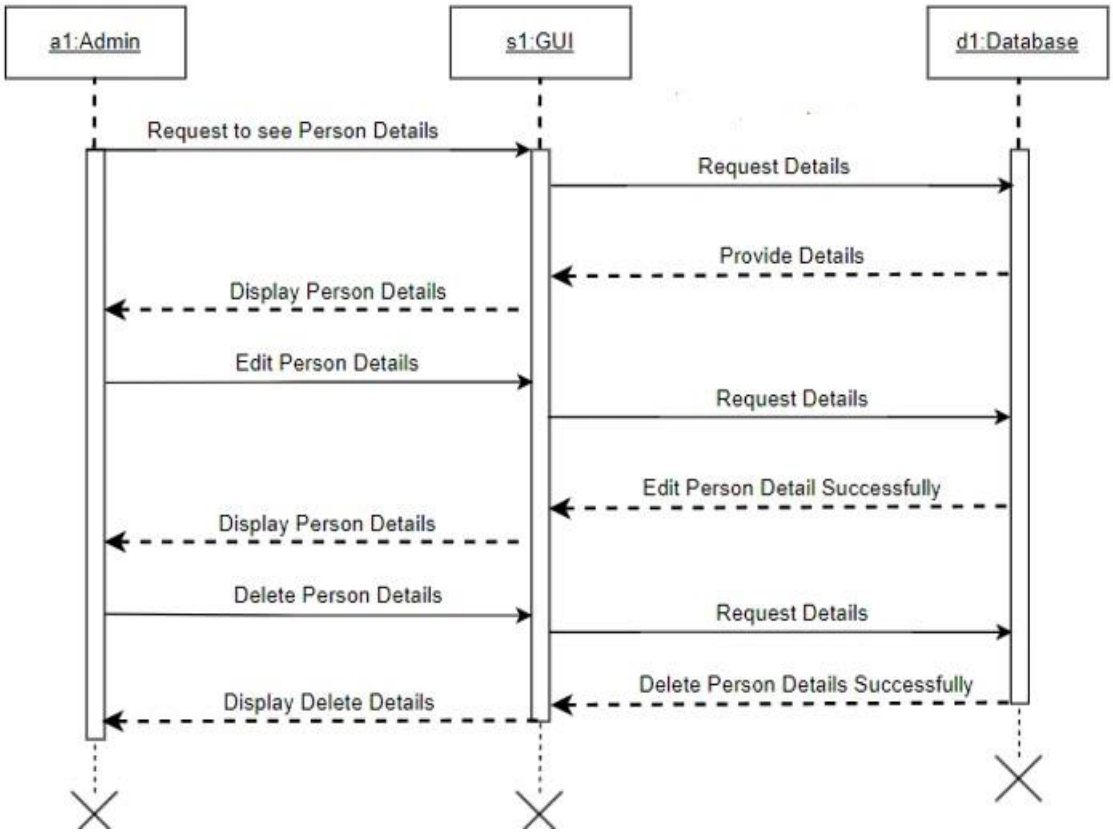
5. System Features

5.1.

5.1.1 Description and Priority

A parking management system automates a parking system. It optimizes parking space and makes the entire process efficient. It provides real-time car parking information such as available slots display, vehicle & slot counts, reserved parking, easy payments, reports, pay-and-park options, and a host of other features.

5.1.2 Stimulus/Response Sequences



5.1.3 Functional Requirements

- Admin need to enter all details for registration
- Admin need to insert all details about customer and vehicle.
- Admin need to save all the details of customer and vehicle.
- Admin can retrieve the details of customer.
- Admin must generate a report for payment.

6. Other Non-functional Requirements

6.1. Performance Requirements

- These website has appropriate user interface and adequate information to guide the user in order to use the website
- Multiple users are supported.

6.2. Safety Requirements

- The data and activity of transactions in server must be maintained for better crash recovery and security.

6.3. Security Requirements

- This website provide user authentication so that only the legitimate user are allowed to use the website

6.4. Software Quality Attributes

- **Portability:** The website is portable as it is online website running across the net
- **Flexibility:** Its flexible to use in different OS and can be modified easily to
  accommodate in diffrent OS
- **Maintainability:** These website is capable to secure the data and easily retrieve the data.
- **Scalability**: These system can further modified in future.

7. Other Requirements

7.1. User Requirements

- Need for an application that makes communicating easy and comfortable.
- An application that enables user to park a vehicle with safe and secure.
- Need for an application that is easy to use and widely available and hence a web application
- Handling all functions done with organization in a computerized manner.
- Allowing the user to park the vehicle directly.

7.2. Feasibility Requirements

7.2.1. Economic feasibility

Economic feasibility attempts to weigh the cost of developing and implementing a new system, against the benefits that would accurate from having the new system in place. This feasibility study gives the top management the economic justification for the new system

7.2.2. Schedule feasibility

Schedule Feasibility means that the project can be completed on time The project does not have a deadline but according to the proposed system the development process is on schedule. Therefore it is feasible.

7.2.3. Operational feasibility

Proposed project is beneficial only if it can be turned into information systems that will meet the organization operating requirements. Simply stated, this test of feasibility asks if the system will work when it is developed and installed. What are major barriers to implementation? Here are questions that will help test the operational feasibility of a project

7.2.4. Technical feasibility

Technical feasibility centers on the existing computer system(hardware, software, etc.) and to what extent it can support the proposed addition. For example, if the current computer is operating at 80% capacity-an arbitrary ceiling-then running another application could overload the system or require additional hardware. This involves financial considerations to accommodate technical enhancements. If the budget is a serious constraint, then the project is judged but not feasible.

7.3. Technology Requirements

- **Front End:**
  HTML, CSS, JS,

- **Back End:**

  Node Js,
  SQL

7.4. Hardware and Software Requirements

PROCESSOR TYPE	Pentium IV or above for optimum performance.
SYSTEM RAM	1.00GB and Above
INPUT DEVICE	BASIC KEYBOARD AND TOUCH PAD
OUTPUT DEVICE	STANDARD COLOR MONITOR
OPERATING SYSTEM	UBUNTU, WINDOWS 7 AND ABOVE

FRONT END	HTML, CSS, JS
BACK END	Node Js, SQL server