VEHICLE PARKING MANAGEMENT SYSTEM

MINI PROJECT REPORT

Submitted to

Visvesvaraya Technological University

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by

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in partial fulfillment of the requirements for the award of the degree of

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CERTIFICATE

Certified that the Mini Project Work titled "**Vehicle Parking Management System"** is carried out by **Mr. Charana H U**, **USN: 4SU17IS008,** a bonafied student of SDM Institute of Technology, Ujire, in partial fulfillment for requirement for V semester **DBMS Laboratory with Mini Project** in Information Science and Engineering of Visvesvaraya Technological University, Belagavi during the year 2019-2020. It is certified that all the corrections/ suggestions indicated for Internal Assessment have been incorporated in the report deposited in the departmental library. The report has been approved as it satisfies the academic requirements in respect of mini project work prescribed for the said Laboratory.

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Acknowledgement

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Abstract

The purpose of Parking System is to automate the existing manual system by the help of computerized equipment and full-fledged computer software, fulfilling their requirements, so that their valuable data/information can be stored for a longer period with easy accessing and manipulation of the same. The required software and hardware are easily available and easy to work with. Parking System, as described above, can lead to error free, secure, reliable and fast management system. It can assist the user to concentrate on their other activities rather to concentrate on the record keeping. Thus, it will help organization in better utilization of resources. The organization can maintain computerized records without redundant entries. That means that one need not be distracted by information that is not relevant, while being able to reach the information. The aim is to automate its existing manual system by the help of computerized equipment and full-fledged computer software, fulfilling their requirements, so that their valuable data/information can be stored for a longer period with easy accessing and manipulation of the same. Basically, the project describes how to manage for good performance and better services for the clients.

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Chapter 1

INTRODUCTION

The "Parking System" has been developed to override the problems prevailing in the practicing manual system. This software is supported to eliminate, and in some cases reduce the hardships faced by this existing system. Moreover, this system is designed for the particular need of the company to carry out operations in a smooth and effective manner.

The application is reduced as much as possible to avoid errors while entering the data. It also provides error message while entering invalid data. No formal knowledge is needed for the user to use this system. Thus, by this all it proves it is user-friendly Parking System, as described above, can lead to error free, secure, reliable and fast management system. It can assist the user to concentrate on their other activities rather to concentrate on the record keeping. Thus, it will help organization in better utilization of resources.

Every organization, whether big or small, has challenges to overcome and managing the information of Vehicles, Parking Slots, Duration, Customers, Types. Every Parking System has different Parking Slots needs therefore we design exclusive employee management systems that are adapted to your managerial requirements. This is designed to assist in strategic planning, and will help you ensure that your organization is equipped with the right level of information and details for your future goals. Also, for those who busy executive who are always on the go, our systems come with remote access features, which will allow you to manage your workforce anytime, at all times These systems will ultimately allow you to better manage resources.

1.1 Problem statement and solution:

Manual Checks: Parking managers perform manually intensive work of counting permit and non-permit cars. There is manual checking of vehicle status and details and handwritten tickets. Such a manual procedure leads to 5% entry errors, further resulting in huge losses to the bottom line.

Paper Records: It is difficult to sieve through the large volumes of information. For accomplishing this task, the parking lot managers have to spend hours searching files for the exact information. So, these paper records create a lot of problems.

High Labour Costs: Reading, writing and entering data is labour-intensive and time consuming. Unnecessary capital expenditure is increased due to the money spent on labour that performs repetitive manual tasks.

Waiting Customers: The outdated mode of management troubles the customers and makes them wait in long queues when they need to enter and exit the parking lot. Due to this, precious time of the clients is wasted, and their sustainability gets shaken.

Unauthorized Access: The parking manager in-charge issue handwritten paper tickets that can be duplicated easily. No security alerts are raised to the authorized personnel if any unauthorized vehicle enters the parking lot.

1.2 Applications:

- User Registration facility
- Admin Login
- View the In and Out Vehicles
- Search the In and Out Vehicle
- View the vehicle details
- View the list of vehicles of present day, yesterday and total vehicles
- Report of vehicles
- Print the vehicle details

Chapter 2

LITERATURE SURVEY

According to Cegielski (2010), customers in many parking places come and then book for parking of their vehicles, sometime congestion cause confusion and locating a vacant parking space can be a big issue. Online vehicle parking reservation system will help solve this problem since the user will have priory located and paid for the parking service. This will give the people time to settle down into the main activities of the day within the shortest time possible.

2.1 HTML

Hypertext Mark-up Language (HTML) is the standard mark-up language for creating web pages and web applications. With Cascading Style Sheets (CSS) and JavaScript, it forms a triad of cornerstone technologies for the World Wide Web. Web browsers receive HTML documents from a web server or from local storage and render the documents into multimedia web pages. HTML describes the structure of a web page semantically and originally included cues for the appearance of the document. HTML elements are the building blocks of HTML pages.

With HTML constructs, images and other objects such as interactive forms may be embedded into the rendered page HTML provides a means to create structured documents by denoting structural semantics for text such as headings, paragraphs, lists, links, quotes and other items. HTML elements are delineated by tags, written using angle brackets. Tags such as <img> and <input> directly introduce content into the page. Other tags such as cp surround and provide information about document text and may include other tags as sub-elements. Browsers do not display the HTML tags, but use them to interpret the content of the page. HTML an embed programs written in a scripting language such as JavaScript, which affects the behaviour and content of web pages. Inclusion of CSs defines the look and layout of content. The World Wide Web Consortium (W3C), maintainer of both the HTML and the CSS standards. has encouraged the use of CSS over explicit presentational HTML since 1997.

2.2 PHP

PHP: Hypertext Pre-processor (or simply PHP) is a server-side scripting language designed for Web development, but also used as a general-purpose programming language. It was originally created by Rasmus Lerdorf in 1994 the PHP reference implementation is now produced by The PHP Group. PHP originally stood for Personal Home Page, but it now stands for the recursive acronym PHP: Hypertext Pre-processor. PHP code may be embedded into HTML code, or it can be used in combination with various web template systems, web content management systems, and web frameworks PHP code is usually processed by a PHP interpreter implemented as a module in the web server or as a common Gateway Interface (CGI) executable. The web server combines the results of the interpreted and executed PHP code, which may be any type of data, including images, with the generated web page.

PHP code may also be executed with a command-line interface (CLI) and can be used to implement standalone graphical applications. The standard PHP interpreter, powered by the Zend Engine, is free software released under the PHP License. PHP has been widely ported and can be deployed on most web servers on almost every operating system and platform, free of charge. The PHP language evolved without a written formal specification or standard until 2014, with the original implementation acting as the de facto standard which other implementations aimed to follow. Since 2014 work has gone on to create a formal PHP specification. During the 2010s there have been increased efforts towards standardization and code sharing in PHP applications by projects such as PHP-FIG in the form of PSR initiatives as well as the Composer dependency manager and associated Pack gist repository. PHP hosts a diverse array of web frameworks requiring framework-specific knowledge, with Larval recently emerging as a popular option by incorporating ideas made popular from other competing non-PHP web frameworks, like Ruby on Rails.

2.3 XAMPP SERVER

XAMPP is quite a well-known term among Website Hosting Services industry. XAMPP is acronym for the combination of Windows, Apache, MySQL and PHP/Python/Perl. In this combination the first three are constant ones and for the fourth

one it varies among PHP, Python and Perl. There may be a few occasions in which Python and Perl can be used together. The reason behind the popularity of XAMPP is because it provides four important elements Operating System, Database Web Server and scripting application which are required for a web hosting server. When all these four elements are used as combined then such a usage is called as 'Server Stack'. In this (XAMPP) server stack you use Microsoft Windows as an operating system, Apache' as a Web Server, MySQL to work as a Database and you can choose one from PHP, Python and Perl to be used as scripting language XAMPP it is totally related with Windows Web Hosting Servers and has nothing to do with Linux Hosting Servers. For Linux Hosting Users there is LAMP' which substitutes XAMPP to adopt XAMPP one needs to download XAMPP Server which is an open-source Windows web development environment It comes with a service manager as a tray icon. This enables an easy management of the server and easy installation of multiple releases of Apache, MySQL and PHP as add-ons. With XAMPP Server the installation process is automated and you can secure your settings file while making any changes over your web servers. You can experience a great flexibility with ' XAMPP Server is enabling and disabling services of XAMPP Server is just a matter of clicks. In this particular project, we need to implement mainly the two mentioned concepts such as

(1) Stored procedure
(2) Triggers

2.4 Stored Procedures:

A stored procedure is a set of Structured Query Language (SQL) statements with an assigned name, which are stored in a relational database management system as a group, so it can be reused and shared by multiple programs. Stored procedure can access or modify data in a database, but it is not tied to a specific database or object, which offers a number of advantages.

2.5 Triggers:

A database trigger is a procedural code that is automatically executed in response to certain events on a particular table or view in a database. The trigger is mostly used for maintaining the integrity of the information on the database.

Chapter 3

METHODOLOGY

3.1 Proposed System:

The aim of the proposed system is to develop a system with improved facilities. The proposed system can overcome all the limitation of the existing system, such as user information is maintained in the database, it gives more security to data, ensures data accuracy, reduces paper work and save time, it makes information flow efficient and paves way for case order report generation, reduce the space. Proposed system is cost effective.

3.2 Scope:

Our project has a big scope to do. Admin can look after the parking and process it. We can store information of all customers. Customers can view the parking details and cost. View facility enables to see parking place and time too. Any kind of information regarding the parking and the user can be retrieved with in less time.

3.3 Feasibility Study:

In feasibility analysis, we have to study the following:

3.3.1 Technical Feasibility:

Technical feasibility study compares the level of technology available in the software development firm and the level of technology required for development of the product. The level of technology consists of the programming language, the hardware resources, other software tools etc.,

3.3.2 Operational Feasibility:

Operational feasibility study tests the operational scope of the software to be developed. The proposed software must have high operational feasibility. The usability will be high.

3.3.3 Economic Feasibility:

It is the measure of cost effectiveness of the project. The economic feasibility is nothing but judging whether the possible benefit of solving the problems is worthwhile or not. At the feasibility study level, it is impossible to estimate the cost because member's requirements and alternative solutions have not been identified this stage. However, when the specific requirements and solutions have been identified, the analyst weighs the cost and benefits of all solutions, this is called "cost benefit analysis".

Chapter 4

REQUIREMENT SPECIFICATIONS

Requirement specification is a specification of software requirements and hardware requirements required to do the project.

4.1 Software Requirements Specification:

Software Requirements Are the software resources that are necessary in the project work. These resources are installed on a computer in order to provide functions, services, hardware accessing capabilities to do the project. Our project includes following software resources.

- Operating System: Windows 10
- Xampp Server3.0.11 tool
- Apache 2.4.2 web server
- MYSQL S.5.25database server
- PHP 5.3.5 for web page development
- phpMyAdmin for interfacing PHP and MySQL

4.2 Hardware Requirements Specification:

Hardware Requirements are the hardware resources that are necessary for the project work. These resources are computer resources which provide functions and services to complete the project. Hardware resources required for our project are shown below.

- Processor : Intel i3 core
- Clock speed : 2.00GHz
- Monitor : 1024*768 Resolution, Colour
- RAM : 1GB
- Hard disk : Minimum 10GB
- Keyboard : QWERTY
- Input output console for interaction

Chapter 5

SYSTEM DESIGN

Vehicle Parking Management System (VPMS) is a real-time application and requires continuous monitoring and tracking of vehicles inside the parking lot. The information gathered by the sensors need to be periodically updated, to give accurate on the spot report of available parking spaces in the lot, at all times. It is important to note that during peak hours, cars flood parking lots at an extremely rapid rate. Continuous monitoring and periodical update of the data enables users, to obtain handy information about available parking space. Parking garages in general are quite large extending to several floors of space, each spanning hundreds of feet long. On account of these large distances, the sensors are extensively deployed and remotely placed from the central monitoring station. There are two major concerns, resulting from these large distances. One being, the data acquisition from the sensor nodes as the wireless links are limited in range. Another major concern is power, as the amount of power required to transmit data over large distances is quite large.

5.1 E R Diagram

5.1.1 ER Modelling:

The schemas for the database application can be displayed by means of graphical notation known as Entity Relationship diagram. The E R model describes data as entities, relationships and attributes.

5.1.2 Entities and Attributes

An entity may be an object with a physical existence (for e.g. A particular person, car or employee) or it may be an object with a conceptual existence (for e.g. a company, a job, or a university course). Each entity has attributes i.e. the particular properties that describe it. The attribute values that describe each entity become a major part of the data store in the database.

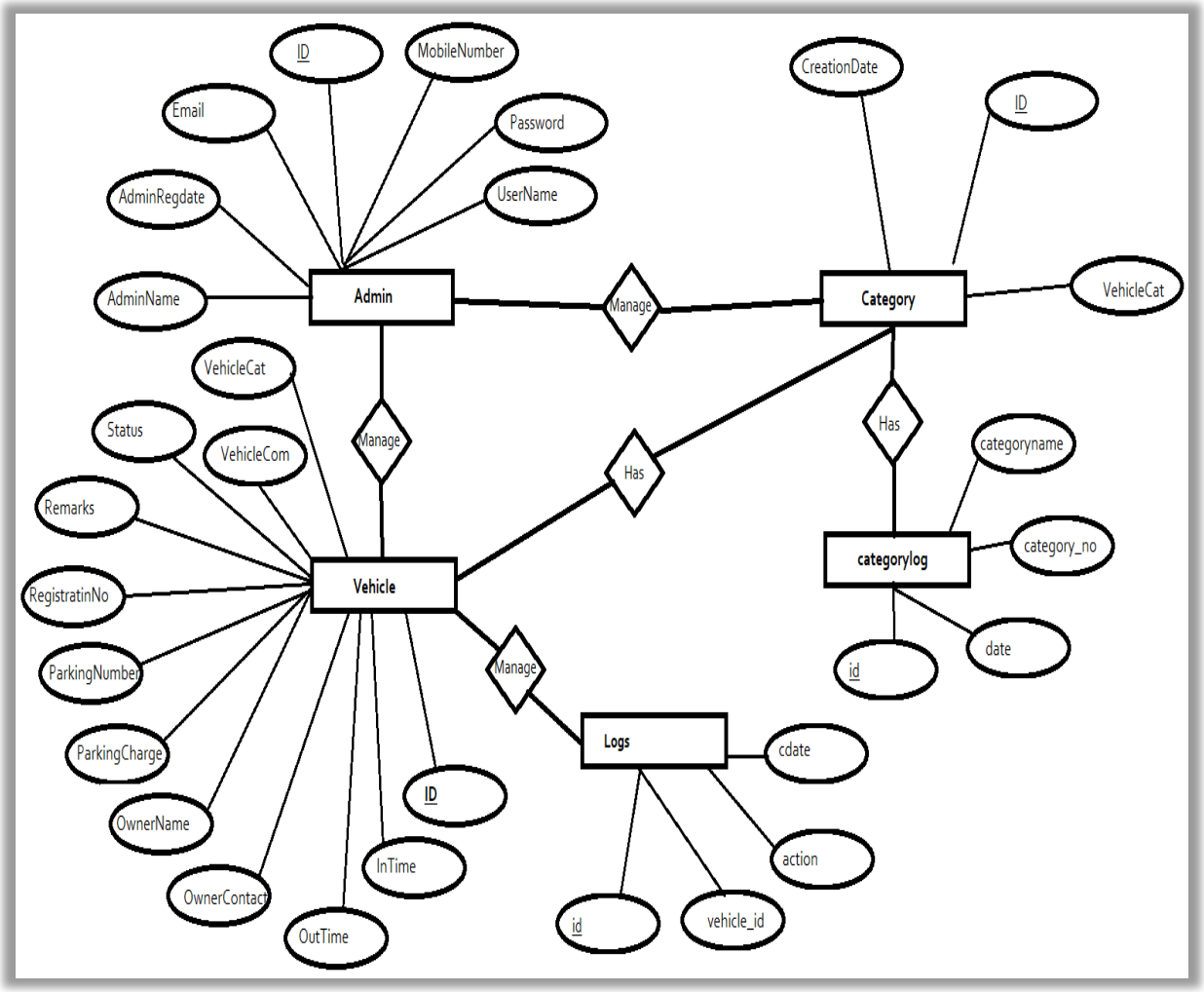

Fig 5.1 E-R Diagram

5.2 Schema Diagram

Admin Table

ID	AdminName	UserName	MobileNumber	Email	Password	AdminRegdate

Category

ID	VehicleCat	CreationDate

Vehicle

ID	Parking Number	VehicleCategory	VehicleCompanyname	Registration Number	Owner Name	OwnerContact Number	InTime	Out Time	Parking Charge	Remark	Status

Logs

id	Vehicle_id	action	date

Categorylog

id	Category_no	Categoryname	date

Chapter 6

IMPLEMENTATION

Implementation is a process of development of an application. Once the system design is completed then actual development of system will start. The development of application using system design is called the implementation phase. In this phase, largest system is divided into small modules. For each module, algorithms are developed and each algorithm is coded using programming languages. Implementation of proposed system includes the following phases or modules.

6.1 Implementation of HTML Page:

```
<!DOCTYPE html>
<html>
<head>
<title Title of the page</title>
<style>I/CSS code to be written here</style>
<script>//JavaScript code to be written here</script>
</head>
</body>//html code to be written here</body>
</html>
```

The above code represents skeleton of HTML implementation. The title is within title tag. The HTML code is written within body tag. Formatting of contents of HTML is done by CSS which is written within the script tag. Whole HTML code is enclosed within html tag.

6.2 Implementation of PHP Page:

PHP code can be embedded within an html file. PHP file will usually have the extension php. The code below represents PHP code for user registration. The values inserted are stored in database.

```
<?php
session_start();
error_reporting(0);
include('includes/dbconnection.php');


if(isset($_POST['login'])){
$adminuser=$_POST['username'];
$password=md5($_POST['password']);
$query=mysqli_query($con,"select ID from tbladmin where
UserName='$adminuser' && Password='$password' ");
$ret=mysqli_fetch_array($query);
if($ret>0){
$_SESSION['vpmsaid']=$ret['ID'];
header('location:dashboard.php');
}
else{
$msg="Invalid Details.";
}
}
?>
```

6.3 Implementation of CSS:

CSS is used to define the presentation of HTML documents. With CSS, we can assign font properties, colours, size, borders, background images, and even position elements on the page. CSS uses a special tag called <style>inside which CSS elements are written.

```
<style>
#weatherWidget .currentDesc {
color: #ffffff!important;
}
.traffic-chart {
min-height: 335px;
}
#flotPie1  {
height: 150px;
}
#flotPie1 td {
padding:3px;
}
#flotPie1 table {
top: 20px!important;
right: -10px!important;
}
.chart-container {
display: table;
```

```
min-width: 270px ;
text-align: left;
padding-top: 10px;
padding-bottom: 10px;
}
#flotLine5  {
height: 105px;
}

#flotBarChart {
height: 150px;
}
#cellPaiChart{
height: 160px;
}

</style>
```

6.4 Implementation of Query:

Media Query is CSS technique introduced in CSS3. It uses @media rule to include a block of CSS properties only if certain condition is true. It is used to achieve Responsive Web Design. The code below represents one of media queries used in the implementation of webpage.

```
        //Dashboard
if(isset($_POST['submit']))
{
$parkingnumber=mt_rand(100000000, 999999999);
$catename=$_POST['catename'];
$vehcomp=$_POST['vehcomp'];
$vehreno=$_POST['vehreno'];
$ownername=$_POST['ownername'];
$ownercontno=$_POST['ownercontno'];
$enteringtime=$_POST['enteringtime'];
        //Change Password
if(isset($_POST['submit']))
{
$adminid=$_SESSION['vpmsaid'];
$cpassword=md5($_POST['currentpassword']);
$newpassword=md5($_POST['newpassword']);
$query=mysqli_query($con,"select ID from tbladmin where ID='$adminid'
and   Password='$cpassword'");
$row=mysqli_fetch_array($query);
if($row>0){
```

```
$ret=mysqli_query($con,"update tbladmin set Password='$newpassword'
where ID='$adminid'");

$msg= "Your password successully changed";

} else {

$msg="Your current password is wrong";

}
```

Chapter 7

RESULTS

Results basically refer to any particular output that comes as a result of the completion of the activities that have been performed as part of the project or a particular project component.

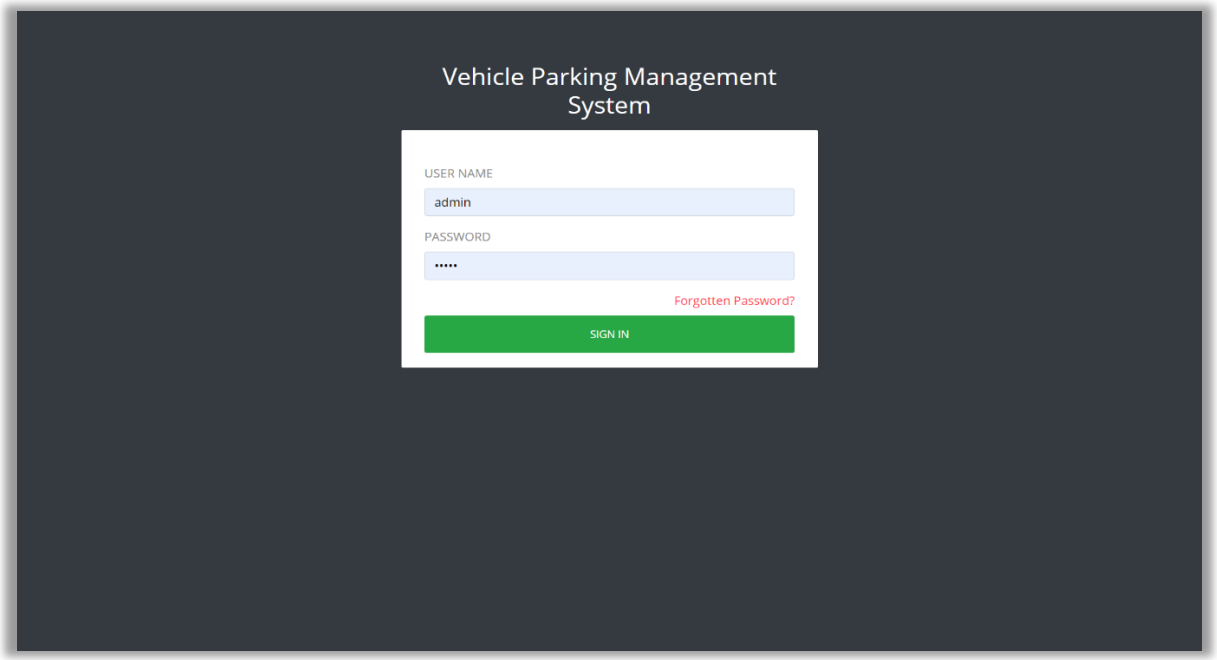

Fig 7.1 Admin Login

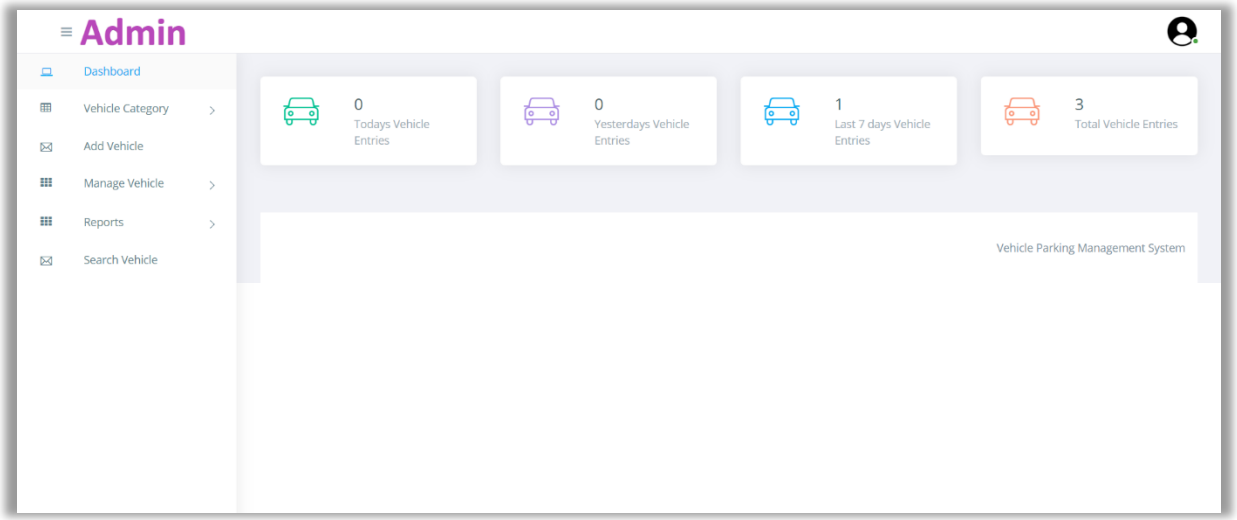

Fig 7.2 Dashboard

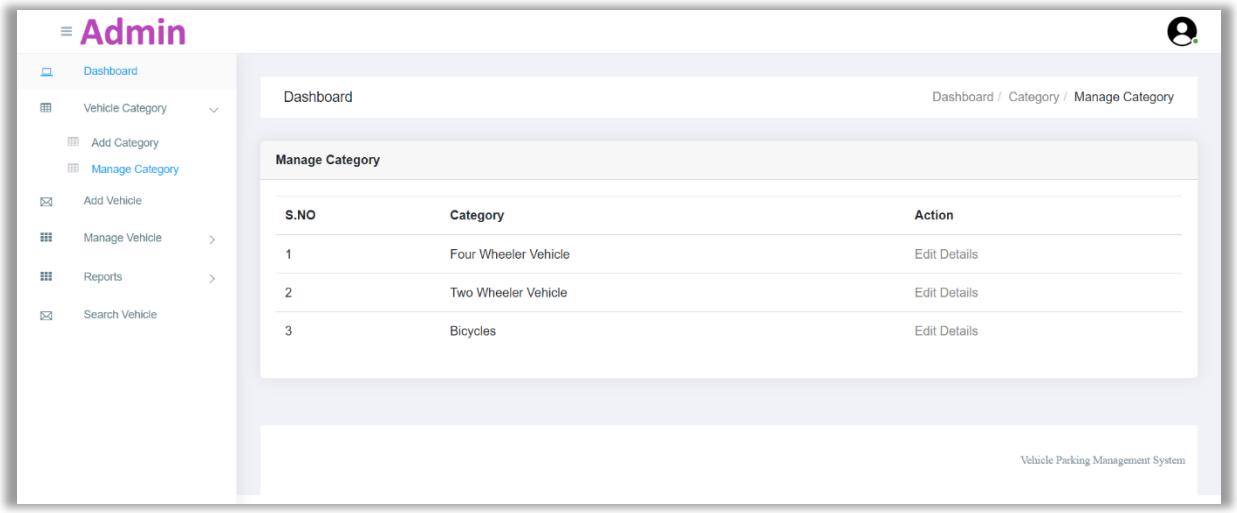

Fig 7.3 Vehicle Category (Manage Category)

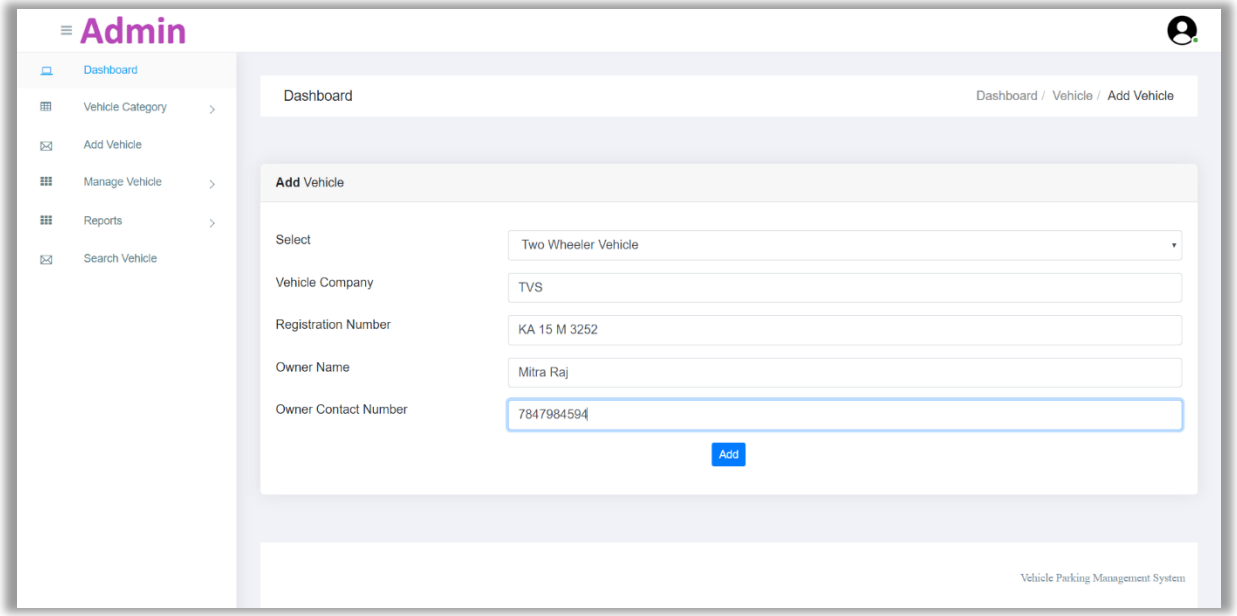

Fig 7.4 Add Vehicle

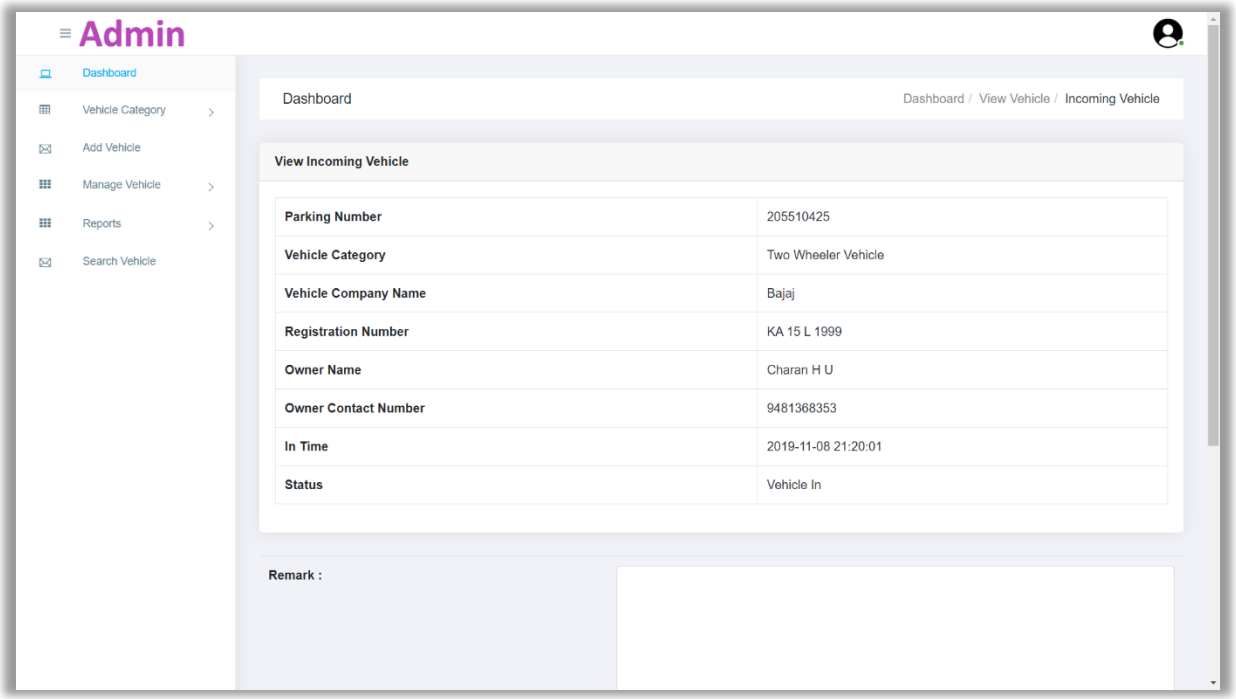

Fig 7.5 Vehicles Details

Chapter 8

CONCLUSION AND FUTURE WORK

The introduction, problem definition of the project has been completed successfully on Vehicle Parking Management System by maintaining the user details and product details in an efficient manner. Thus, the user-friendly website for vehicles parking is been created which saves time and is advanced.

Results are uploaded directly from net so that no errors exist in reserving parking place. Complete automation is possible in this sector, which is against the main disadvantage namely time consuming. Online payment can be made possible via cards.

Chapter 9

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Prof. Shwetha S. V. received the B.E. degree in Information Science & Engineering from G.M. Institute of Technology, Davanagere in the year 2008, and M.Tech. in Computer Science & Engineering from NMAMIT, Nitte in 2013.

Her areas of research include Image Processing, Wireless Sensor Networks, Databases and Data Mining. And organized several state and national FDPs and International Conference.

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