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Automatic Email Reminder for Various Renewal Dates of Fleet Vehicles

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ABSTRACT: This paper presents a solution for managing some of the fleet operations across the organisation. Each vehicle owner is liable to pay amounts such as insurance amount, emission dues etc. The task of keeping an update over the renewal and due dates manually is hectic. This paper mainly emphasises on automatic email reminders sent to the organisation for renewal dues. Along with this, drivers and vehicles can be managed efficiently. This solution can help the organisation to cut cost - cost of maintaining operations manually and cost incurred in terms of fine due to late payments.

KEYWORDS: Fleet management, Automatic notification, Driver management, Vehicle management.

I. INTRODUCTION

Fleet refers to a group of vehicles under same ownership. Fleet management is composed of several different tasks to keep vehicles and operations running smoothly and efficiently. It is a pain to keep up with the end and renewal dates of every vehicle's registration, insurances whether to manage a larger or small fleet. If something is missed, it can be costly and cut the profits of organization. For example, we must have insurance on each vehicle in the fleet. This can be difficult to manage across all fleet vehicles as it needs to be renewed monthly, semi-annually or annually. Vehicle insurance fines and penalties can be staggering. Driving a vehicle without insurance can result in fine. If the driver is pulled over for a safety check or minor violation and is found without up-to-date insurance, penalties can be as simple as a traffic fine up to a suspended driver's license, suspended vehicle registration, substantial fines to have registration and insurance reinstated as well as increased insurance premiums.

II. RELATED WORK

[1] The Intelligent Fleet Management was one of the concepts in which they have discussed an automation technique that can be applied at bus centric level for removal of corruption. Through engineering techniques, easy drive and friendly environment can be ensured. Controllers and sensors are used for automation. Their main idea is to develop a system for fair dealing and better management. It will also be locally maintainable. They actually designed something which can halt the spurious activity and thus boost the economy in one of the many sectors of our country. They introduce a technology which will not only save money and time but also will prove to be beneficial and effective for the economy.



[2] Vehicular Data Acquisition System for Fleet Management Automation. This paper proposes an efficient fleet management system which exploits the Global Positioning System (GPS), Wi-Fi, Onboard Diagnostic system (OBD), Radio Frequency Identification (RFID), and a web-based fleet management software.

[3] Design and Implementation of a Fleet Management System Using Novel GPS/GLONASS Tracker and Web-Based Software. In this paper, a novel approach for control and monitoring of a fleet management system using three elements including GPS/GLONASS-based automatic vehicle locator (called Rad100), GPRS/SMS GSM cellular network and web-based software (called PayaRadyab) is proposed to show exact place of the desired vehicle on different maps and take detailed reports of the mission, travelled path, fuel consumption rate, speed limits, and other necessary information according to the customers' requests. The most significant features of the proposed system are its global covering, high accuracy of positioning, easy operation by the user at any place, and easy energy management.

[4] Automatic Fleet Tracking and Scheduling Management. With increasing numbers of fleets on roads, budget & time constraints, scheduling of fleets, security concern about driver over speeding of fleet, private use of fleet by drivers for their own benefits has led to devise of fleet management software solution system for vehicles owners. This helps fleet front office employees and administrator (owner) in effectively and efficiently controlling the fleets by integrating vehicle unit which consists of sensors, GPS receivers, GSM technology, small screen monitors & on-board equipment with reservation & scheduling management and central server. Fleet Management system allows transportation companies to eliminate or minimize the risks associated with vehicle, improving productivity, scheduling and reducing their overall transportation costs.

III. METHODOLOGY

3.1 Modules

We have different modules in this web application. They are:

- 1) ADMIN: He is the one who manages all the activities. Admin can insert the vehicle data, driver data, emission data, insurance data into the database and even track the vehicle which is assigned to a particular driver.
- 2) MANAGER: Manager can view the vehicle and driver details by retrieving the data from the database. He can even assign the vehicles to drivers.
- 3) NOTIFICATION: Whenever the particular due date is approaching the backend process performed over the tables in the database will allow the web-application to send an automated-email to the admin 5 days prior mentioning about the due date and the email till the due date until and unless the admin update the new insurance details or emission details or so on.
- 4) INSURANCE: The main module admin can insert the insurance details into the database and even view those details.
- 5) EMISSION: Similar to insurance the admin can insert and retrieve the emission details into the database.

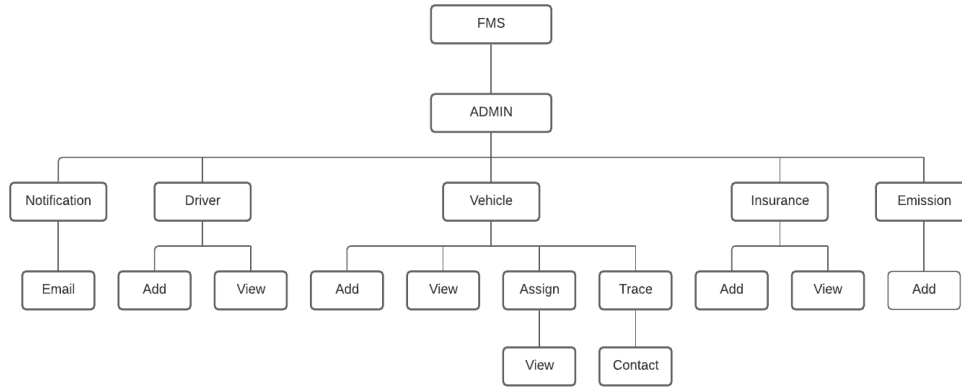


Figure1: Modular design

3.2 Pre-Requisites

1) HTML: HTML is a hypertext markup language which is, in reality, a spinal cord of any website. Any website can't be structured without the knowledge of HTML. If we make our web page only with the help of HTML, then we can't add many of the effective features in a web page, for making a web page more effective we use various platforms such as static and dynamics methods. And here we are using this language to make our web pages more effective as well as interactive for users to understand. And to make our web pages dynamic we are using JavaScript and CSS.

2) CSS: CSS stands for Cascading Style Sheet. Cascading style sheets are used to format the layout of Web pages. They can be used to define way of writing or style, size of various tables, and other aspects of Web pages that previously could only be defined in a static page's HTML. The main work of CSS is to separate content of a web document (written in any markup language) that is written using Cascading Style Sheets. There are lots of benefits that one can extract through this like improved content accessibility, better flexibility and gives a level of control over various presentation characteristics of the document. It also helps in reducing the problems and helps in saving access time. It gives the option of selecting various style schemes and rules according to the necessity.

3) PHP: PHP is a popular general-purpose scripting language that is especially suited to web development. 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 initialism PHP: Hypertext Preprocessor. PHP code is usually processed on a web server by a PHP interpreter implemented as a module, a daemon or as a Common Gateway Interface (CGI) executable. On a web server, the result of the interpreted and executed PHP code-this may be any type of data, such as generated HTML or binary image data would form the whole or part of a HTTP response.

3.3 Existing Methodology

Large amount of manual paper work is required to maintain the fleet in large organizations. It is difficult to manage large amount of data using the current system. Data integrity is a major problem in this existing method. For an organization with more than 20 vehicles, it is very difficult to manage the details of each vehicle. As an organization it is liable to pay following on each vehicle – Road tax, Permit fees, Insurance amounts, Pollution Under Control certificate fees, etc. Each of these are paid to respective authorities in some intervals of time and if it is not paid, then there will be fines and other legal consequences.

3.4 Proposed Methodology

The existing methodology has many disadvantages. The aim of the proposed system is to overcome these disadvantages and automate these processes. It helps in reducing data redundancy and maintaining data integrity. The



front-end is done using web technologies like HTML, CSS and Bootstrap. The back-end is based on PHP and the data will be stored on a central server using SQL queries. Therefore, it is easy to access information from a single source. The complete details of a vehicle can be recovered from the web interface.

3.4 Architecture

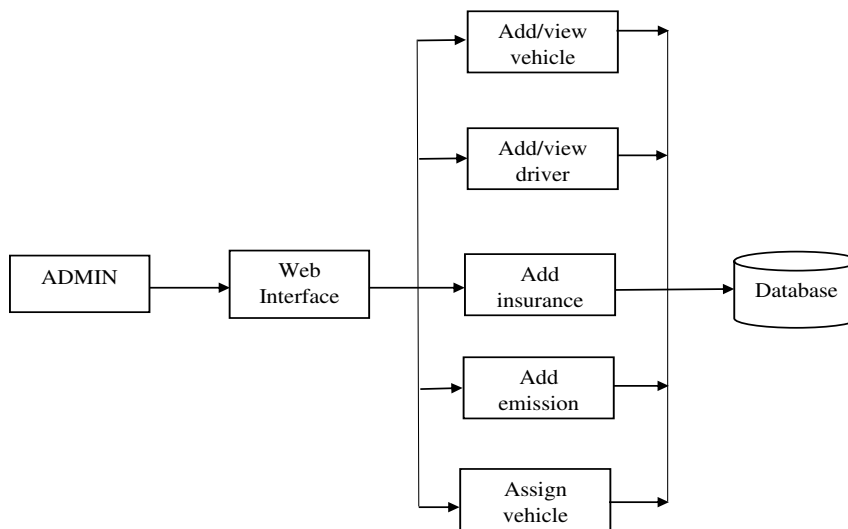


Figure1: Architectural Diagram

The admin adds the details into the database with help of the web interface. Admin can perform several functions, such as, adding vehicle and driver details, assigning vehicle to the driver, tracking the vehicle using the driver's mobile location. To track the driver and the vehicle APIs are used. These API's will send the location details to the admin.

In this web application, the admin is the main module. He is the one who manages all the activities. As we mentioned before, admin can add the vehicle details, driver details, emission details, insurance details, and even track the vehicle which is assigned to a particular driver. Whenever the particular due date is approaching the web-application will send an email to the admin 5 days prior mentioning about the due date and the email till the due date until and unless the admin updates the new insurance details or emission details or so on.



IV. RESULT

Home page: This is the first page of the website. This is the first thing that the customer will see. It consists of admin and manager login and register button.



Figure3: Home page

Login Form: The system starts with a login page where the registered user can enter username and password to be able to access.

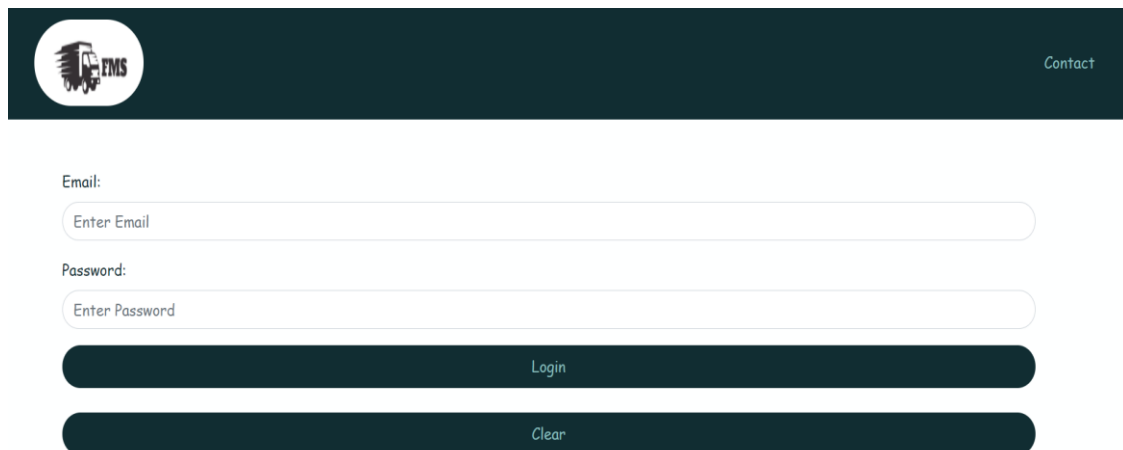
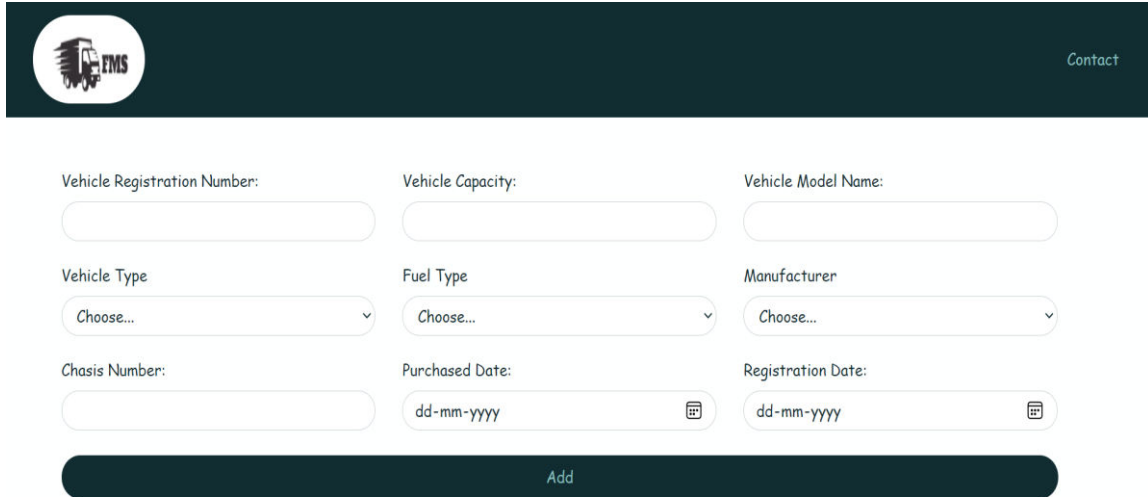


Figure4: Login Form

Add Vehicle: This is the page where the admin can insert the vehicle details into the database.



IV. CONCLUSION

We have implemented a web-application which will actually reduce the manual work done by the organization to maintain the details about the driver, vehicle. Even the automatic notification module helps the organization to save themselves from paying the taxes on not paying the amount on time.

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