

Vehicle Service Management System Using Web Application

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Abstract — According the latest surveys on the population of human. the population of humans on earth are increasing. Mostly all of us have their own vehicle. So, there is a need of vehicle service centre and the vehicle centre mostly will be busy especially during festive seasons. in older version of this system, they used manual report making which leads to error in collection of vehicle owner details t. Staffs in their service station will not have enough needs to handle many customers at the same time. Thus, with the existing of Vehicle Service Management System Using web application. the vehicle service centre management can be made easily. The objectives of this system are to design and develop a new system which can help to manage task in more organized manner using web application This is the way, by which the task can be handled according to priority of booking time. It is also included a system where the staffs who handle the repair task and distribute the task accordingly. The web application system will assign the repair task to the staff and it also allocate the doorstep pick up of your service. This web application system is used to distribute job task and job schedule .this system is implemented using php with the help of xamp server where enough dataset is stored for implementation of this project.

Keywords: Php, Web Deveolpment, Xamp Server & Manging Task, Scheduling, Allocation of Door Step Pickup Service to the Staff

I. INTRODUCTION

According to the emerging large production of vehicles in day today life and no of people using vehicle also increase so there is an need of good and cost efficient service centre A vehicles services station has to have facilities to service the vehicles, such as equipment facilitating, wheel alignment so in this project the managing of service for vehicles is done by implementation of web application.in this web application system we have introduced some modules which efficiently deals with the overall task performed in this web application each module deals with specific task which includes admin side, client side during peak time of vehicle service the availability of service centre is comples so in order to overcome this problem our project is implemented using web application where the booking of service made easy this project comes with benefit of doorstep pickup for service of vehicles this system is designed with certain modules which is assigned for performing some task allocated by the service centre. The old version of this project is done by noting the service manually but this project comes with the modern version of booking an slot for the vehicle service an in this project we provide access to the machinic to track their salary when their task is finished

II. RELATED WORKS

A. *Shivang shah, AbrahamSudharson Ponraj, Parimal, Abhishek, Deep Shrivastava- Vehicle Service Management and Live Monitoring with Predictive Maintenance System.*

This paper has an efficient vehicle service management system is presented which can automatically manage complete servicing process and at the same time monitor the changes and operations done on the vehicle. Regular vehicle service is required to keep a check on various parts of the vehicle to ensure proper functioning and efficient working of the vehicle. Vehicle service management and monitoring system constantly checks the state of the vehicle after frequent intervals. It warns through android application about any improper values received and suggests that servicing is now required. When the vehicle is at any of the service centre, previous details of vehicle service can be shared with garage on authentication by the customer using the same android application. IoT technology is used to update various sensors data in the application in real time. Sensor interfaced with raspberry pi constantly monitors different subsystems of the vehicle. It also provides customers with live streaming of garage when their vehicle is in service Centre. This paper also talks about predictive vehicle maintenance. It predicts the time after which vehicle's, components may need service

B. *Web based Vehicle Service Management System for Trinco Automobile T. Matthean BIT Registration Number – R092191 Index Number – 0921912 Name of the supervisor Mr. K. Venugoban.*

Nowadays the most of the peoples are get the services through online in their daily life. The Trinco Automobile is one of the major leading Vehicle service Centre's in northern and eastern province. Now they are giving online facilities to customers. Through this facilities customer can booking for their vehicle service and also make the payment through online. Through these facilities customers don't waste their time for the waiting

C. *Development of web map application for maximizing emergency vehicle service area for elderly people Kampanart Piyathamrongchai, Wijitra Nakdang, Suwanan Sukjareon and Saowalak Thainsom Naresuan University, Thailand.*

Purposes of this study were 1) to study and analyze accessibility level of emergency medical service and 2) to develop a web application to locate EMS vehicle parking place in order to cover emergency medical service for elderly people. The web map application was developed using open-source spatial analysis JavaScript library i.e. Leaflet and Open Route Service. The aging population dataset of Thailand collected from Humanitarian Data Exchange was used to analyze 8- minutes-coverage of emergency medical service. The web application allows EMS planners to interactively locate desired standby points for emergency

vehicles which can access to elderly people within 8- minutes service areas. The number of elderly populations within service areas that correspond to any standby emergency vehicle parking spots would be calculated.

D. WEB-BASED VEHICLE SYSTEM Conference ID: CFP/904/2018 Author: Emmanuel Musonda School of Engineering Information and Communications University, Lusaka, Zambia.

This paper shows that Most of the companies are non-profit making organization; they focus on the service delivery to the people of the Republic of Zambia. Keeping the vehicles in a running condition will mean great production for the organizations and Zambia at large. The system will be a distributed system that will employ a three – tier Architecture. Access will be through a web service, the fronted technology that will be used is HTML and MYSQL server 5.1 will be used in the back-end technology for the database. The system will have different uses and users will have different access rights. The department users will have to login into the system and request the vehicle through the coordinator approval. Vehicles will be assigned by the transport Coordinator; the drivers will also be required to login to check if has been assigned any task by the supervisor.

E. Models of vehicle service system supply under information uncertainty Marianna Jayna a, Iouri Semenov b a Warsaw University of Technology Faculty of Transport, ul. Kuskokwim 75, Warsaw, Poland b West Pomeranian University of Technology, Faculty of Maritime Technology and Transport, al. Pasto 41, 71-899 Szczecin, Poland.

According to the traditional approach, the supply chain for newly manufactured cars begins at the place of their production and includes distributors, wholesalers and retailers and ends at cars recipients. Process improvement results primarily from improving the coordination of activities of individual participants in the supply chain and thus minimizing the risk of not completing a supply task During the vehicle lifetime, generally, two conditions are noted: usage and service. The state of use means using the vehicle for its intended purpose, i.e., the movement of people and loads in time and space. On the other hand, servicing is a set of organizational and technical activities aimed at restoring and maintaining the serviceability of a vehicle. At present, apart from technological and economic factors, an environmental factor is gaining significance in restoring vehicle parts to fitness (regeneration). The use of regenerated parts reduces negative impact of production processes on the environment.

F. Mobile Based Vehicle Service Stations Connecting Application A dissertation submitted for the Degree of Master of Information Technology M.W.M.R. Gunasinghe. University of Colombo School of Computing

Smart phones are very popular in the modern society. Therefore, people are rapidly engaging with the mobile application-based services because it is very reliable and easy to use without interrupting their day-to-day activities. Most of the vehicle service stations which have potential customer base but they do not have much idea about how to increase their customer base and provide better service to their

customers by using technology. So that, there is a gap between service stations and using of technology to enhance their business. Considering all those facts, peer to peer connecting mobile application-based service is much more suitable to fulfill the above-mentioned gaps and provide better service as well.

III. SYSTEM ARCHITECTURE

A. Proposed System

The working of the system starts with the collection of user's vehicle service data and send it to respective service station and in this project, we introduce doorstep service pickup to the customers i.e., coming to customer's location and taking their vehicle for service to their respective service station

B. Existing System:

In existing system, they service station use manual system to maintain their records in log book. The service station allocates their overall task into two level for managing services. They are administrator level, and user level management. The customers will book their service for vehicle through telephone and the manger and staff of the company manage their booking record in manually. Then they gave the final information about booking of vehicle service to their respective Branch manager.

C. System Architecture

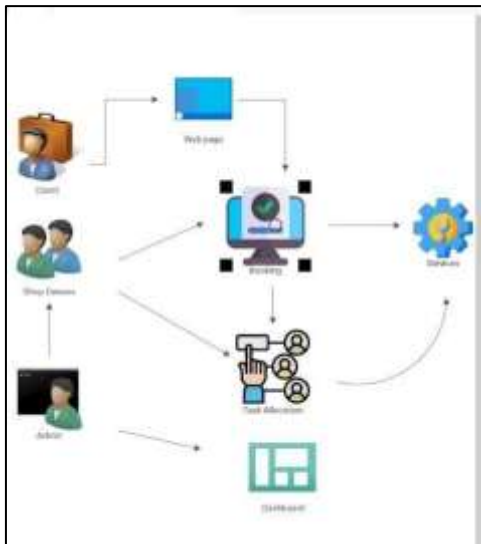
Dataset collection is collecting data which contains customer details registered through websites of respective service centre some modules are implemented in this project which perform overall process in system architecture admin module looks after the details given by the customer through web and the admin can assign a task to staff in the service station in client module customer can only enter service details and book their service slot trough web

Admin module:

- Secure Login/Logout
- Home Page
- Manage Mechanic List (CRUD)
- Manage Service Requests List (CRUD)
- Manage Vehicle Category List (CRUD)
- Manage Services List (CRUD)
- Generate a Date-wise and Printable Report
- Manage User List (CRUD)
- Manage Website Information
- Manage Account Credentials

Public Side:

- Home Page
- Display the list of vehicle types/categories that does the shops accommodates
- Display the services that do the shops provide.
- Submit Service Requests
- Display About Us Content

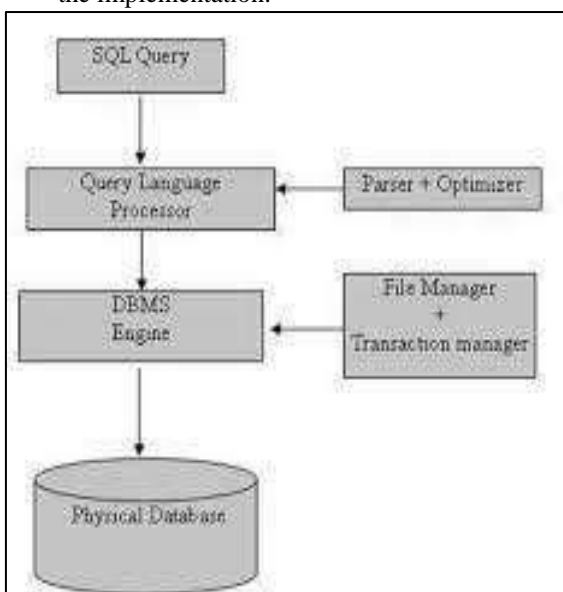


IV. METHODOLOGY

Structural Query Language (SQL) is used for accessing, manipulating, and communicating with the database. Almost every function such as retrieving data from the database, creating a new database, manipulating data and databases such as insertion, deletion adaptations can be performed using SQL. It is a user-friendly and domain-specific language.

The SQL standard defines three kinds of data types

- predefined data types
- constructed types
- user-defined types.
 - Constructed types are one of ARRAY, MULTISSET, or ROW.
 - User-defined types are comparable to classes in object-oriented language with their own constructors, observers, mutators, methods, inheritance, overloading, overwriting, interfaces, and so on
 - . Predefined data types are intrinsically supported by the implementation.



Working Principle of my sql database

A. Advantages:

1) Faster Query Processing –

Large amount of data is retrieved quickly and efficiently. Operations like Insertion, deletion, manipulation of data is also done in almost no time.

2) No Coding Skills –

For data retrieval, large number of lines of code is not required. All basic keywords such as SELECT, INSERT INTO, UPDATE, etc. are used and also the syntactical rules are not complex in SQL, which makes it a user-friendly language.

3) Standardized Language –

Due to documentation and long establishment over years, it provides a uniform platform worldwide to all its users.

4) Portable –

It can be used in programs in PCs, server, laptops independent of any platform (Operating System, etc). Also, it can be embedded with other applications as per need/requirement/use.

5) Interactive Language –

Easy to learn and understand, answers to complex queries can be received in seconds.

B. PHP

php is a general-purpose scripting language geared toward web development and released in 1995. 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 – which may be any type of data, such as generated HTML or binary image data – would form the whole or part of an HTTP response. Various web template systems, web content management systems, and web frameworks exist which can be employed to orchestrate or facilitate the generation of that response. Additionally, PHP can be used for many programming tasks outside the web context, such as standalone graphical applications[14] and robotic drone control.[15] PHP code can also be directly executed from the command line

Advantages

- 1) The most important advantage of PHP is that it's open-source and free from cost. It can be
- 2) downloaded anywhere and is readily available to use for events or web applications.
- 3) It is platform-independent. PHP-based applications can run on any OS like UNIX, Linux, Windows, etc.
- 4) Applications can easily be loaded which are based on PHP and connected to the database. It's mainly used due to its faster rate of loading over slow internet speed than other programming language.
- 5) It has less learning curve because it is simple and straightforward to use. Someone familiar with C programming can easily work on PHP. It is more stable for a few years with the assistance of providing continuous support to various versions.
- 6) It helps in reusing an equivalent code and not got have to write lengthy code and sophisticated structure for events of web applications.
- 7) It helps in managing code easily

C. Python Django:

Django is an MVT web framework that is used to build web applications. The huge Django web-framework comes with so many “batteries included” that developers often get amazed as to how everything manages to work together.

The principle behind adding so many batteries is to have common web functionalities in the framework itself instead of adding latter as a separate library.

Advantages:

- implemented in Python. ...
- . Better CDN connectivity and Content Management. ...
- . Batteries Included Framework. ...
- . Fast Processing. ...
- . Offers Rapid-development. ...
- . Scalable. ...
- . Security.

D. DATABASE DESIGN:

In this subsection, you can describe the design of the database that will be used to store all the data related to the vehicle service management system. This includes the creation of tables and their relationships, as well as the data types and constraints used.

- 1) **User Interface Design:** Here, you can explain how the user interface will be designed to provide a seamless experience to the end-users. This includes the layout of the screens, the placement of buttons and icons, and the color scheme used
- 2) **SECURITY MEASURES:** Here, you can explain the security measures that will be implemented to ensure that the system is secure and protected against any unauthorized access. This includes the use of encryption and access controls to protect sensitive data.
- 3) **SYSTEM DESIGN:** System Design is the process of designing the architecture, components, and interfaces for a system so that it meets the end-user requirements. It is important for defining the product and its architecture. It is necessary for the interfaces, design, data, and modules to satisfy the system requirements
- 4) **Performance and Scalability:** In this subsection, you can describe how the system will be designed to ensure that it can handle a large volume of requests and users. This includes the use of load balancing and other performance optimization techniques to ensure that the system is fast and responsive even under heavy load.

V. SYSTEM REQUIREMENTS:

A. Hardware Requirements:

The following are the minimum hardware requirements to run the proposed system:

- Processor: Intel Core i3 or higher
- RAM - 4 GB (or) above
- System type - 32 bit OS, x64- based processor
- Storage: 10 GB or more

B. SOFTWARE REQUIREMENTS

- Python 3.7.6 or higher
- Django 3.0.5 or higher
- Django-widget-tweak

VI. IMPLEMENTATION AND ANALYSIS:

The implementation of this project consists of some specific module which deals with overall task to be performed by the service station



Fig. A: Home page

The above fig shows the home page of this projects and there are some menus specified in it this page provides necessary details to the user for booking their service

It consists of:

- 1) Home
- 2) Customer login
- 3) Mechanic login
- 4) Admin login
- 5) About us
- 6) Contact us



Fig. B: admin dashboard

The above fig shows the admin dashboard where the service registered details are collected and the service are taken as per the user’s request the admin allocate task to mechanic and enquiry registered by customers is also notified through admin dashboard



Fig. C: mechanic dashboard

The above fig shows the mechanic dashboard where the mechanic can login and notice the task allocated to him after completion of task the mechanic should report finished to the admin and the mechanic can track his salary after completion of service

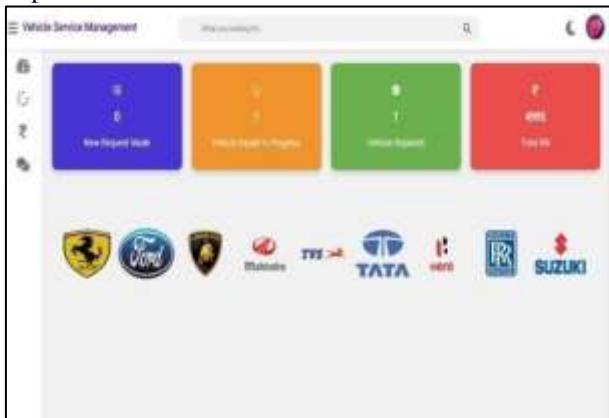


Fig. D: customer dashboard

The above fig shows customer dashboard where the customer can check whether their service completed or not and he can also get his total service bill in his dash board and he can track his service status in his dashboard

VII. CONCLUSION:

The proposed system provides an efficient and effective way to manage and store medical records. The system addresses the issues faced by health care organizations in maintaining paper-based records and reduces the risk of errors and data loss. The use of technology in healthcare has become increasingly important in recent times, and this system offers an innovative solution that can be adopted by healthcare providers worldwide. The implementation of the system has demonstrated its feasibility and potential to improve healthcare services. The system has shown to be easy to use and user-friendly, reducing the learning curve for healthcare professionals. It has also reduced the time and effort required to manage medical records, freeing up valuable resources for patient care. As with any technology, there is always room for improvement. In the future, the system can be further enhanced by integrating more advanced features such as data analytics, machine learning, and artificial intelligence. These features can help in the early detection of diseases and improve the accuracy of diagnosis, leading to better patient outcomes.

VIII. FUTURE ENHANCEMENT

While the proposed system is a significant improvement over existing inventory management systems, there is always room for improvement. In the future, we plan to explore the following enhancements: Integration with other retail systems such as point of sale and customer relationship management to provide a more comprehensive solution. Expansion of the system's capabilities to include predictive analytics, allowing retailers to anticipate inventory needs and make more informed purchasing decisions. Implementation of a mobile app, enabling employees to access inventory data on the go and allowing for greater flexibility in managing inventory. Integration with blockchain technology to provide

greater security and transparency in the supply chain. By implementing these enhancements, we believe the proposed system can provide even greater value to retailers and help them stay ahead in an increasingly competitive industry.

ACKNOWLEDGEMENT

This work was supported by Department of computer science and Engineering in P.S.R Engineering College, Sivakasi, Tamil Nadu, India.

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