Web-Based Management System with SMS and E-mail Notification for Binan Tricycle Franchising and Regulatory Board

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Abstract: Binan Tricycle Franchising and Regulatory Board (BTFRB) is an agency of the City Government of Binan under the City Community Affairs Office which is responsible for circulating, overseeing, executing and managing compliance of policies, laws, and regulations of tricycle services. The office is situated at POSO office, BC3 Building, Brgy. Zapote, Binan City, Laguna. The management is under the supervision of Mr. Ronaldo Roscain. There are 4,450 registered tricycle franchises which are members of 45 TODA and with an average client of 30 tricycle operators and drivers in a day. The most frequent violation that is being violated for the past five years were Invalid or No Franchise and Illegal Parking at Poblacion and San Antonio respectively.

Keywords: Process management; Integrity checking; Information systems applications

1. INTRODUCTION

Since tricycle operations are often the source of income for many of the locals, the BTFRB is doing their best to accommodate all the transactions in their department, but despite their hard work, there are still factors that need to be improved. BTFRB still uses a manual process in recording their transactions thru a logbook. For a renewal of a franchise, all approved franchises were filed on the Franchising Logbook, and all approved application for Dropping the Franchise were recorded on the Dropping Logbook. With this kind of record keeping, the Franchising Manager has difficulty in monitoring the status of all the registered tricycle franchise such as: expired, renewed, canceled and transferred franchises. For the list of violations, all tickets that were issued on that day will be recorded on the Violation logbook including the monitoring of payment.

The Violation manager has difficulty in monitoring records especially in checking the status of the payment thus sometimes resulted to the processing and approval of the renewal of a tricycle franchise even if the applicant has a pending violation that needs to be settled. BTFRB staff also experienced unreadable data, and some of the pages were already deteriorated due to a long period of being used. This manual process resulted in long queuing due to the retrieval of records. Renewal of franchise is time-consuming for the applicants since they need at least two working days for the processing for the renewal of their tricycle franchise because it requires actual inspection of the tricycle. The first day is the submission and checking of the requirements and the second day is the inspection of the tricycle. With these problems, the proponents would like to help the BTFRB to serve the citizens of Biñan by developing a system which will be beneficial both for the BTFRB staff and the tricycle operators and drivers in our project titled "Web-Based Management System with SMS and e-mail Notification for Biñan Tricycle Franchising and Regulatory Board".

1.1 Existing BTFRB transaction process

Figure 1. Shows the current process flow of BTFRB. All transactions are manual and recording and keeping of record is thru logbook only.
Fig. 1. Existing BTFRB Process

Fig 2. Franchising Logbook

Fig 3. Dropping Logbook
Fig 2. Is used in recording the approved tricycle Franchise. It includes the name of the franchise, TODA membership, date of approval, assigned body number of the tricycle and ticket number. Once the certificate is issued, it will be received by the tricycle operator.

The Dropping Logbook is used in recording the approved dropping such as transfer of TODA, Change from Hire to Private, Change of Ownership and transfer.

Fig 4. Violation Logbook

Fig 4. Is where all the violations are recorded. Payment is also recorded in this logbook.

2. DESIGN OF THE STUDY

Fig 5. Shows the different components of the Web-Based Management System for BTFRB. There will be users like the Administrator, who administer users account, can access all the module in the system. Franchising Manager who handles the application, renewal, and updating of a franchise and print the certificate once an application is approved. Requirement Checker who checks the requirements submitted and manage the sending of e-mail or SMS once all the requirement is correct and complete. Violation manager who administers the updating of violations and payment. The Enforcer Module handles violators that are apprehended. Client Module, it handles client applications and inquiries.

Fig 6. Network Design Infrastructure

Fig 6. Shows the network design infrastructure of Web-Based Management System for Biñan Tricycle and Franchising Regulatory Board. There is only one server that caters all the system of the BTFRB. The server provides the proposed system in which the client will be using for tricycle franchise and the violations monitoring. Most of the borrower is using Google Chrome and Mozilla Firefox as their internet browser running in Windows 10. Most of the hardware components used are i3 models.
2. LITERATURE AND STUDIES

Web-Based Management Systems

According to Thomas (2015) Strategies, frameworks and articles of fabricating of making an electronic spreadsheet utilizing an online spreadsheet application. A web-server facilitating an electronic spreadsheet site involves at least one computer(s) having somewhere around one PC processor, memory, information stockpiling and a system specialized gadget (e.g. a system connector). The web-server is designed to transmit a spreadsheet web application to a client figuring gadget (e.g. a PC, cell phone, and so on.) having an internet browser through the web. The spreadsheet web application is arranged to program the internet browser of the registering gadget to show and execute a spreadsheet web application having different highlights and usefulness, including at least one of a different structure segment and review board, a test information include, line by line working of a spreadsheet without a beginning framework of lines and segments, an installed spreadsheet include, an implanted worksheet show inside a line highlight, or any blend of these highlights.

Fox and Tye (2016), said that Web-based are accessible to one or more clients using the internet. For instance, client frameworks may utilize an internet browser to get to at least one electronic applications that are running on a server framework. The Connection between the program and an electronic application might be viewed as a session, for example, a hypertext exchange convention (HTTP) session. Data about the session, which can be alluded to as session state data, might be put away at the server framework. Every application on the server framework with which the program communicates might be related with its own unmistakable session (i.e., between that application and the program) with its very own session state data. A first web application with which the program is associating and for which a session is set up may exchange control of the program communication to a second web application. This exchange may happen for any number of reasons. Notwithstanding, it might be troublesome or
unimaginable for the primary web application to share the session state data with the second web application.

Fong, Ng and et.al (2017) said that present creation gives a framework that encourages intelligence and web-based access. Amid activity, the framework executes a content which naturally gets to at least one site. While executing the content, the framework recovers client particular information related with a client. The framework at that point utilizes the client particular information to get to an objective site. While getting to the objective site, the framework gets an intelligence in which the framework presents to the client. The framework at that point gets a reaction to the intuitiveness for the client, and advances the reaction to the site.

According to c (2018) web-based information gives a lot of benefits to technology. Since we can use broadband connections anywhere we can access the computer everywhere. This is one of the advantages that people can receive information in their most convenient way. The main objective is to maintain and publish data by using HTTP.

**Short Message Service (SMS)**

According to Clarke et. All (2014) one especially helpful way in sending a message of e-mail is through short message (SMS) messages. SMS is a framework that is utilized for sending short instant messages (i.e., 160 characters or less) over remote systems. Numerous cell gadgets and cell organize bearers supports SMS. However, such providers normally charge clients for SMS messages. In addition, such, SMS warning messages may not be shown by remote specialized gadgets like a customary SMS instant message, since the gadget naturally responds to such messages (i.e., surveys for the new email messages) without including the client. Clients might be especially disappointed with being charged for SMS messages they didn't know they were accepting.

Barker (2015) said that 31 years ago since text message has been part of the modern age. E-mail has a big role on how SMS evolved. The first text message was sent by a PC on 1992 and later SMS enabled phone was introduced by Nokia. 9000i Communicator a phone with a full keyboard was produced by Finnish company on 1997. On 1999 exchanging of SMS across networks become possible.

Middleton (2016), said that today, SMS is the most widely-used data application in the world, with 81% of mobile phone subscribers using it. Moreover, SMS has become more than just a way to text with friends — it also lets us receive updates and alerts, keep track of our finances, send email, and much more. Sierra Middleton, (Feb.17, 2016)

According to Osman and et.al (2018), A Web-based System with SMS notifications was developed to inform information of their reservations to the customer. The purpose of developing an SMS notification is to reduce the cost and time consumed, which is beneficial for the client and their customer.

Lee (2018) said that the present innovation identifies with a framework for recognizing interruption ahead of time by utilizing an SMS notification which will be beneficial in transmitting information during emergency situations and sending the rescue signal.

According to Fendelman (2018), Short text messages allows a message to be sent from one cellphone to another or from the internet to a cell phone. Sending text messages does not require a lot of money however if you don’t have a cell service you cannot send a message. There is no notification if the text messages being sent was received or read. There is also a limitation on the characters about 70 to 160.

**Electronic Mail**

Carson (2014) said that in 1993 the human’s way of communicating has been changed because of the email. The traditional way of sending letters is through postal carriers but the introduction of email give as the fastest way of sending letters by just clicking the send button. As time passed the email innovates fast and most of the phones that people use have access on the internet which has an email on it and was called smartphones. Because smartphones is capable of receiving and sending email wherever we are.

According to Asghar (2014), there are an average of 109 billion business-related emails last 2014 and this 2018 there are 140 billion emails. He mentioned that many professionals have no time in reading their email, therefore, the email should be short and key points should be put on the top.

Starr et.al (2015), sending questionnaire through email is more efficient compared to sending it through postal because the reply on their survey is faster and at a low cost.

Vdovin (2017) said that email is commonly used as a way of communication in the workplace. The advantages of email are it is free and no additional payment is required in sending and receiving a message. Sending email is simple and quick. You can archive your email for reference, it is also paperless. You can access files and information and can access it anywhere. However, for the disadvantage, email has no personal touch. It can cause misunderstanding and may contain viruses. Some emails might be disregard and it needs maintenance because more messages will enter your mailbox.

Tshabitscher (2018), said that electronic mail is one of the modern ways of communication. It replaced telephone calls in offices and other agencies. It is a digital message and instead of using a pen a paper you used your computer or phone in composing your message.
3. THE BTFRB WEBSITE

Fig 8. Home Page of the System

The figure above shows the home page of the system once access in the internet.

Fig 9. Log-in Page

The figure above shows the log-in page of the member.

Fig 10. Sign-up Page

The figure above shows the Sign-up Page for those who doesn’t have existing account. Here the e-mail address will be verified.

Fig 11. E-mail verification

The figure above shows that e-mail should be verified upon registration on the system.

The second objective of the study is to design a module that will manage franchise such as.

a) Application for new, renewal and updating of franchise.

Fig 12. Application for New Franchise

The figure above shows the application form for new registration of franchise. Once submitted, this will be automatically sent to the Requirements Checker for verification.

Fig 13. Application for Renewal or Updating of franchise

The figure above shows the application form for the renewal and updating of franchise. Once submitted, this will be automatically sent to the Requirements Checker for verification.
b) Approval of Applied Franchise

The figure above shows wherein all pending for approval is listed. Requirement Checker can verify the application, by clicking on the items.

The third objective of the study is to design a module that can Manage Violations such as.

a. Can add, update and delete violations and violators.

Fig 14. Approval of Applied Franchise

Fig 15. Manage Penalties

The figure above shows wherein all violators is listed and the status of their violations.

Fig 16. Add Penalties

The figure above shows wherein the Violation Manager can input the penalties occurred by referring to the issued ticket of the enforcer.

Fig 17. Delete, Update Payment and Update Penalty

The figure above shows wherein the Violation Manager delete the violators, update payment by in-putting the amount paid by referring on the OR as proof of payment, and can also update the penalty.

Fig 18. Add Violations

The figure above shows wherein the Violation Manager add violations.

Fig 19. Delete and Update Violations

The figure above shows wherein the Violation Manager delete violations if no longer existing and can update violation for any changes in coverage or in penalty fee.
b. Check Violations

The figure above shows wherein the operators can view their committed violation including the penalties that they need to pay.

The fourth objective of the study is to design a module that will not allow tricycle operators to renew or update their franchise if they have existing violation.

Fig 20. Check Violations

b. E-mail Notification

The figure above shows the auto e-mail notification received by the client. It informs the schedule for inspections.

The fifth objective of the study is to design a module that will automatically send SMS and e-mail notification once the request is approved.

a. SMS Notification

The figure above shows that it can generate List of Issued Tickets.

Fig 23. Penalty Reference

4. SUMMARY AND CONCLUSIONS

Summary

Web-Based Management System with SMS and e-mail notification for Biñan Tricycle Franchising and Regulatory Board is a website that gives tricycle operators of Biñan a convenience in renewing and updating their franchise. It also helps them to know the amount of violation they incurred. For the management side, it will help them to efficiently manage and monitor the applications and the breaches of the tricycle operators.
Based on the survey conducted, the website is the best way to help the BTFRB on the problems they are encountering. The website provides services such as: management page and a client page which allows them to manage the daily transactions of this government agency efficiently.

Conclusion

Based on the aims of the study and the results of the evaluation of the following outcomes were drawn:

1) Web-Based Management System with SMS and e-mail Notification of Biñan Tricycle Franchising and Regulatory Board is now accessible using the internet browser, both for the BTFRB and its clients.

2) The website allows their clients to apply for the renewal and updating of their franchise. The implementation of this website allows their clients to save time during the application of their franchise.

3) The system helps the management to monitor the violators easily; thus it will help them to save time and process the application quickly.

4) The system helps the management to check those with unsettled violations easily and will not be allowed to renew their franchise.

5) The system automatically sends SMS and e-mail notification to the applicant once their application is approved.

6) Generating reports with the help of internet browsers is convenient and flexible for printing Violations, Certificates, Audit Trail and other related reports.

REFERENCES


