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| Proposed Title | | Web-based Motor Vehicle Registration and Renewal System for LTO |
| Area of Investigation | | In many countries, registering a car with the proper authorities is one of the requirements for acquiring ownership of a vehicle. It usually serves as proof of ownership and grants permission to operate the car on public highways from the owner's standpoint. The registration system serves various purposes for state authorities, including earning income, sending traffic infraction enforcement notifications, and ensuring that cars operated on public roads fulfill the needed safety requirements.  On the other hand, the car registration system can aid in the prevention and detection of vehicle crime. For example, it allows authorities to validate the ownership of a car and its driver during a regular traffic stop, leading to the detection of a stolen vehicle. By making it challenging to re-register a stolen car, the vehicle registration system can also be structured to restrict the prospects for benefitting from vehicle theft.  In the United Kingdom, changes to the vehicle registration system have long been identified as a means of reducing vehicle crime. Indeed, the Metropolitan Police in London recognized the potential for lowering vehicle crime by upgrading the then-fragmented vehicle registration system, which allowed stolen vehicles to be re-registered in another local authority area as early as 1920.  The Land Transportation Office (LTO) is in charge of registering all types of land transportation in the Philippines. Clients must register their car or motorcycle with the LTO to use it for personal or professional purposes. The motor vehicle registration will act as a certification for all motor vehicles in the Philippines.  New Registration and Renewal of Registration are the two types of registration processes offered by the LTO. New registration is required for those who purchase brand new vehicles, and it is a process that must be completed after a car is bought. At the same time, after a vehicle's registration has lapsed, it must be renewed annually.  New registration is processed thru the liaisons of each car dealer. Liaisons of each car dealer need to go to LTO Offices to submit the initial requirements for each Motor Vehicle/Motorcycle:  Clients Steps:   1. Submits Requirements 2. Sales Reporting (Will Be Done By The Liason Officers) 3. Evaluates The Documents 4. Generate Transaction Id 5. Proceed To Cashier For Payment 6. Issue Official Receipt 7. Prints The Certificate Of Registration 8. Releasing Of Plates, Rfid Stickers & Or/Cr   Renewal of Registration will be processed by the registered owner of Motor Vehicle/Motorcycle, and They can go to any LTO District Offices near them to process the renewal of their registration:  Clients Steps:   1. Submits Requirements 2. Evaluates The Documents 3. Generate Transaction Id 4. Proceed To Cashier For Payment 5. Issue Official Receipt   Vehicle registration benefits the government since the money collected for registration goes toward road and infrastructure repairs. Registration is complex in the Philippines, especially during a pandemic, so the researchers devised a technique to make it easier.  The technology we're proposing can be deployed at any LTO Office with a registration function. The public, car dealers, and LTO staff will help all gain from it. This system can make car registration more convenient and secure, especially at this time of the pandemic.  The Land Transportation Office is an agency of the [Philippine government](https://en.wikipedia.org/wiki/Philippine_government) under the [Department of Transportation](https://en.wikipedia.org/wiki/Department_of_Transportation_(Philippines)) responsible for all [land transportation in the Philippines](https://en.wikipedia.org/wiki/Land_transportation_in_the_Philippines). Functions of the LTO include the inspection and registration of [motor vehicles](https://en.wikipedia.org/wiki/Motor_vehicle).  The LTO is responsible for the registration of motor vehicles and renewals. It can register brand new cars, including locally manufactured vehicles, imported vehicles, light electric vehicles, low-speed vehicles, three-wheeled vehicles, and [tax-exempt](https://en.wikipedia.org/wiki/Tax_exemption) vehicles. Each category has an obligatory set of requirements and procedures to follow to be fully registered. Renewals are also obligated to submit the requirements and to follow guidelines to be fully renewed. The LTO also oversees miscellaneous transactions, specifically transactions requiring a change of registration certificate and transactions that do not require the modification of the registration certificate.  LTO was composed of only thirteen (13) regions. As time went on, additional areas were created, namely: CAR, CARAGA, and MIMAROPA. These LTO Offices serve thousands of people/the public based on the available services at their office. |
| Reasons for Choice of Project | | The study aims to develop a Web-based Motor Vehicle Registration and Renewal System for LTO to help the clients and LTO employees ease the process and those struggling to go in the main office, especially in the pandemic.  The researcher focuses on developing a Web-based Motor Vehicle Registration and Renewal System for LTO that will help the target users of the system.  Specifically, it aims to answer the following problems:   1. Longer process time   The current business process of LTO seems to show a much longer time process for the customer based on observations on the specific field.   1. Human errors   These errors are somehow unavoidable for some users, but the proposed project will drastically reduce human errors with the simplified steps of registering and renewal.   1. Unsecured FIles.   Files sent online are safely delivered, avoiding the possibility of losing essential files regarding registration and renewal.  General Statement of the Objectives  To feed the interest and specialization, the researcher would like to develop a Web-based Motor Vehicle Registration and Renewal System for LTO.  Specific Statement of the Objectives   1. To design, develop and implement a user-friendly interface where the user won't have a problem using the system. 2. To create a system with multiple users who can also upload information and input data, especially the car dealers. 3. Designing a database that can carry and protect all the information and data of the applicants in the system. 4. Securing an online payment transaction using Pay Maya will make the dealer's payments much more accessible than making a walk-in payment. 5. Implementing an admin module wherein the officials that can use the system can review and check the car dealers' inputted data. 6. To implement a safe and efficient way of sending/ completing all requirements for the registration and renewal. 7. To implement a safe and healthy registration and renewal process to avoid contacting the current virus and other transferable forms of diseases. 8. To develop a professional system that will be used for further innovations and modules. 9. To generate reports for the users of their current process on their registration or renewal. |
| Project Context | | The researchers want to create a Web-based Motor Vehicle Registration and Renewal System for LTO. All the records of a specific car dealer are encoded on one system, which helped them have more time for the other waiting clients that need to be entertained upon their request.  Login/Registration – This module will be used to create and open your account in the system.  Allow a user to register an account to make use of the system  Allow a user to login with their account to view the services of the system  New Registration Module – This module is used to register a new car in the system of LTO.  Allows the user to register their vehicle in the system for registration  Allows the user to submit their required documents for the registration process to be fulfilled online without the need to visit one of the branches  Allows the employees/staff to view and verify if all of the submitted requirements are correct and complete  Transaction Report – This module will be used to record all the transactions that the user made.  Allows the users to review their current and completed transactions in the system  Allows the employees/staff to organize and close completed transactions and manage ongoing transactions  Billing Module – The module will be used when the user needs to process a payment in the system.  - Allows the users to pay for their services online  - Allows the employees/staff to receive the payment from customers and note it down  Renewal Module – This module is used to renew a registration in the system of the LTO.  Allows the user to renew their vehicle in the system  Allows the user to submit their required documents for vehicle renewal  Allows the employees/staff to view and verify if all of the proposed requirements are correct and complete  Printing Module – This module is used to print receipts, certificates, and OR.  Allows the users to verify that their services are complete and correct and also be given proof of the completed transaction  Report Module – This module is accessed only by the admin, wherein the admin can generate all the transactions that have been created in the system.  Allow the admin to check all the transactions that are made in terms of monthly or yearly. |
| Importance of the Study | | Web-Based Motor Vehicle And Renewal System For Lto can give more benefits to society because it can save time by consolidating back-end applications into one point of access.  It can also increase the security of the company by the use of the system.  Also, the IT industry will benefit from the study by using the survey into a related system or by comparing the system's features by the other methods.  With the proposed project implemented, there will be fewer issues with LTO services like appointment date transfers, long lines and wait times, social distancing due to the pandemic, and transportation expenses. The proposed project will help just the LTO and pave the way for future uses of online services that will lessen the burden on the company or organization itself and make it easier for the clients/customers. |
| Target Users/Beneficiary | | Car dealers and LTO will benefit from the study because, in this system, the car dealers can easily input and upload some details of the cars that need to be registered in the LTO by creating an account in the application. LTO will benefit from the study because it can easily access all the information inputted and uploaded by the car dealers and clients. And also, it will lessen the human resources needed, especially during a pandemic.  The table below are the end-users who will benefit from the system:   |  |  |  | | --- | --- | --- | | Department Name | Function & Responsibility | Benefits | | Car dealers & Individual | Modules to be used:   * Account Registration * Uploading Documents * Editing Inputs of Data * Submission of Requirements * Online Payment Transaction (Paymaya) | A portal for car dealers will be more efficient and less time-consuming because of the application's features. Uploading documents and data to the database of the website will make the process less hassle. Also, payment transactions using PayMaya will help the car dealers to have more secure transactions and lessen the hassle for the car dealers. | | LTO Employees | * Dashboard of the car dealers * List of the pending transactions * List of payment transactions * List of the uploaded documents and data | By using the system, the LTO employees will have easy access to the data that the car dealers have submitted. Also, the LTO employees can review and track down all the transactions created in the system. | | Evaluator | * List of New Registration * List of Renewal | Using the system, the Evaluator will have easy access to all the data that needs to evaluate because the system will sort data. | | Input Clerk | * List of Evaluated New Registration * List of Evaluated Renewal | Using the system, the Input Clerk can Input all the evaluated Renewal and New Registration data without a hassle. | | Approving Office | * List of Evaluated New Registration * List of Evaluated Renewal | By using the system, the data that has been evaluated will be quickly sorted and listed down so that the approving office won't have a hard time checking all the data. | | Cashier | * Billing Module | By using the system, the cashier can view all the payment transaction that happens in the system. Also, the cashier can print an Official Receipt. | | CR Printing Staff | * Printing Module | The system can automatically generate a Certification of Registration and be ready for printing by using the system. | |
| Similarity with any Previous Study/Project | According to Zolkifly, Baharom, and Yusof (2017), in their study "Promotional Methods Used by Car Dealers: An Investigation of Traditional Marketing and Online Media in a National Car Showroom." Many shops have used conventional and online media to improve the consumer experience and increase sales in this digital age. In the context of automotive sales, automobile dealers worldwide have long used traditional marketing strategies such as brochures, posters, leaflets, banners, and other physical displays in conjunction with personal selling since the methods have been proven to work. However, a new generation of clients is turning to the internet for knowledge and, as a result, influencing their purchasing decisions.  The similarities that are stated in the previous study from Zolkify, Baharom, and Yusof (2017), that is entitled "Promotional Methods Used by Car Dealers: An Investigation of Traditional Marketing and Online Media in a National Car Showroom." the findings of the previous study can assist car marketers in learning the potential of current promotion practice and the future strategies. This finding can be helpful in the survey of understanding what is a much efficient strategy for the system when it comes to assisting a motor or car dealer.  Singh and Rao (2016) published research named "A Study Of Web Portal Features As A Knowledge Management System In School Education." The evolution of the internet has impacted various parts of our lives, including communication, knowledge sharing, job searching, social activities, etc. The web portal serves as a beginning point for users connecting to the internet via the World Wide Web. A web portal provides a rich place for users to share and search information and communication services such as free email and content distribution as a knowledge management system.  The similarities stated in the previous study from Singh and Rao (2016), entitled " A Study of Web Portal Features As A Knowledge Management System In School Education." The study was also created in a platform similar to the researchers study, which is appropriate because it can guide the development of the system. Also, the features are more likely the same as the proposed research of the researcher.  Porumbescu (2016) found that "linking public sector social media and e-government website use to trust in government" in his study. His research looks at how individuals' use of e-government websites and public-sector social media profiles affects their happiness and trustworthiness of the government. Findings show that increased use of e-government websites is inversely connected to residents' satisfaction and perceptions of public sector trustworthiness, based on data from a 2012 sample of 1100 Seoul citizens. The use of public sector social media profiles, on the other hand, is positively associated with satisfaction and trustworthiness judgments of the public sector. These findings are interpreted to suggest that forms of e-government that facilitate the transmission of less detailed information may be more effective at improving relationships between citizens and their government than forms of e-government that are more commonly used to transmit the detailed report, based on the concept of psychological distance.  The similarities stated in the previous study from Porumbescu (2016), entitled " linking public sector social media and e-government website use to trust in government. "The earlier research shows the impact of a website when it comes to government-related companies or organization. By using this study, the researcher can use this as a positive impact on the development of the proposed system, which will defend the purpose.  According to the "How Technology Is Changing Work and Organizations" report by Cascio and Montealegre (2016). Given the rapid advancements and greater reliance on technology, students of organizational psychology and organizational behavior (OP/OB) are particularly interested in transforming work and employment. This article seeks to interpret the present research on the effects of technology on work and organizations in terms of its progress, direction, and purpose. We analyze the disruptive implications of developing information and communication technologies after reviewing essential accomplishments in the evolution of technology.  The similarities stated in the previous study from Cascio and Montealegre (2016), entitled " How Technology Is Changing Work and Organizations "In the previous research shows how technology can improve work or an organization. Also, just like the earlier studies indicated, this study will help defend why a system is needed in an organization such as the LTO.  COVID-19 has governments at all levels operating in an environment of radical ambiguity, according to Dupre, Chartym Kornprobst, and Michalun (2020) in their paper "The territorial impact of COVID-19: Managing the crisis across levels of government" The COVID-19 issue has had a wide range of regional and local effects, with substantial implications for crisis management and policy responses. This article examines the COVID-19 crisis's territorial consequences in all of its dimensions: health, economics, social, and fiscal. It includes instances of national and subnational government measures to help alleviate the crisis' territorial implications, as well as ten critical takeaways for managing COVID-19's territorial impact. Finally, the study provides a forward-looking view on the crisis's implications for multi-level governance and policy considerations for policymakers as they work to develop more resilient regions.  The similarities stated in the previous study from Dupre, Chartym Kornprobst, and Michalun (2020), entitled " The territorial impact of COVID-19: Managing the crisis across levels of government " In the previous study, it shows what are the effects of the COVID-19 or a pandemic when it comes to our government because not only the businesses are affected to the pandemic but also the government facilities. The information about this previous study is essential for the proposed research because it can give more details on developing the system. | |
| Project Time Table (Gantt Chart) | **Work Plan**  (Number of hrs/week = sum of number of hrs per week).  Researcher (Weekdays): 4 hrs / week  Researcher (Weekend) : 2hrs/week  Total: 24 hrs/ week  Number of weeks/months needed for each activity, including report writing. | |

**Gantt Chart of the system documentation and development (**This is just an example.)

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| **Activity** | **AUG 2021** | **SEPT 2021** | **OCT 2021** | **NOV 2021** | **DEC 2021** | **JAN 2022** | **FEB 2022** |
| Data Gathering: Interview/Survey |  |  |  |  |  |  |  |
| Construction of Chapters 1-2 |  |  |  |  |  |  |  |
| System Analysis Construction of Chapter 3 |  |  |  |  |  |  |  |
| System Development |  |  |  |  |  |  |  |
| Testing and Simulation |  |  |  |  |  |  |  |
| Results, Conclusion and Recommnedations |  |  |  |  |  |  |  |
| Paper Presentation Final Defense |  |  |  |  |  |  |  |

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| Recommending Approval | Name | Signature |
| Research Professor | PROF. REX GILLES |  |
| Panel Member | PROF. MARIDEL LIWANAG |  |
| Panel Member | PROF. ERVIN MORAN |  |
| Dean | Ms. Mary A. Soriano |  |
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