**DESIGN AND IMPLEMENTATION OF COMPUTER-BASED VEHICLE PLATE NUMBER REGISTRATION AND LICENSING SYSTEM USING PHOTO IDENTIFICATION**

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**ABSTRACT**

Computer-based vehicle plate number registration and licensing system using photo identification is a research work that helps build vehicle registration portal in our country Nigeria. It also helps to build an effective information management for car owners and road users. It is aimed at developing a system for making checking of particulars and documents easier among security agents even detection of stolen vehicle to be recovered easily using vehicle owner’s pictures. The design software served as a more reliable and effective means of detecting and recovering of stolen vehicles in our society, remove all forms of delay, stress, insecurity as well as enable you understand the procedure involved as well as how to use mobile phones without queuing or imposing delay on drivers and also pave way for effective renewal of particulars and document. The software was developed to effectively achieve the aims of this research. The implementation of the computer-based system was carried out using Object Oriented Analysis and Design Methodology (OOADM) and Hypertext preprocessor (PHP) programming language and Access for the database and at the same time made the software online. In conclusion, the work met all the objectives intended. It is however, recommended for use.

**Keywords: Computer-Based, plate number, vehicle, photo identification, licensing.**

**INTRODUCTION**

Registration system is one of the most paramount things the society can have as a guard to our daily activities. Registration is the act of [registering](https://www.merriam-webster.com/dictionary/registering) or [enrollment](https://www.merriam-webster.com/dictionary/enrollment), an entry in a [register](https://www.merriam-webster.com/dictionary/register) the number of individuals [registered](https://www.merriam-webster.com/dictionary/registered) (Merriam Webster dictionary (2021 edition). Registration is the act of making an official record of something or somebody (oxford dictionary (2021 edition). Registration is a status granted to individuals, typically, members of the military, hospital, students of higher institutions in Nigeria, National Youth Service Corps and employees of governments and their contractors, allowing them access to classified information. The term registration is also sometimes used in private organization that has a formal process to vet employees and access to sensitive information. A registration by itself is normally not sufficient to gain access, the organization must determine that the registered individual has a “need to know” The information, No one is supposed to be granted access to classified information solely because of rank or position, but once a registration is obtained, access to information or gain of freedom will be granted. As many government organizations have choosing to pursue the dynamic documentation options available online, the advantages of E-registration are many. As people of all ages and backgrounds become increasingly relying on the internet for information, Computer Based Vehicle number plate registration/ licensing system become more convenient and efficient with photo identification. The skills needed to access and comprehend information online are becoming easy, and the flexibility of wireless computing means that any coffee shop, airport or bedroom can become a registration centre. The changing internet landscape now includes computer-based registration system, traditional registration system and other applications; however, documentation is still the most popular thing every sector needs to safeguard information. Licensing office is one of the government sectors in Nigeria. It was introduced in 1992 and revised in 2011, located almost in all states in Nigeria. The term license implies to allow by grant of authority. Therefore, a licensing agreement is a contract between two parties - namely the licensor and the licensee Lydia Steck (2021). The government of Nigeria reached an understanding with agreement to set up sector that will be in charge of vehicle licensing and plate number registration as to reduce stealing of cars or vehicles from owners and having full identification of all road users. Before, this sector was using manual or traditional way or method of registering vehicles and plate number which has been a difficult issue for our security agents and other assigned organization to trace a stolen vehicle. In licensing office, there is a need for automated method of keeping data, with this, World Bank and development report (2019) shows evidence that the new industries and jobs in the technology sector outweigh the economic effects of workers being displaced by automation. This would go a long way in alleviating the various problems and stress involved in the manual method of registration and detecting stolen vehicles. Moreover, the issue of delayed recovering stolen vehicle and fake identification of ownership as a result of inability to access data or information within the security sector would be curtailed. The significance of computer based vehicle plate number registration system with photo-identification is evident in acquiring a subject matter and basic knowledge needed to get by in our everyday life, Collins dictionary (2021 edition) view photo identification as a piece of personal identification that contains a photograph. Computer-based training and knowledge is one of the most important investments a country should provide to its people and the future as it unlocks a country’s potentials for economic growth. In this 21st century, people became more literate especially with the use of computers. Technologies emerged to introduce variety of advancement. In the new era of advanced technology, it helps boost work speed, reduces mistakes and promotes the generation of accurate results, and so having manual registration system became a misfortune. Fortunately, the introduction of computers greatly improves the speed and efficiency of registration process especially in vehicle licensing. Results could be attained even right at every moment, reducing the time to a mere fraction compared to the time it takes if the registration and checking is done manually. It also increases the level of the online experience because of multimedia enhancements, Pavitra (2018) view multimedia as a field concern with the computer controlled integration of text, graphics and moving of images (video) animation, audio and any other media information stored. Online and computer based vehicle plate number registration system using photo identification is a system that facilitates the detection of stolen vehicle among road users in our society. This system has been developed to simplify the process of organizing vehicle information and make it convenient for security agencies (police) to detect any stolen vehicle remotely from their checking point and patrol using any device, e.g. computers or cell-phone while taking result into consideration. The concept of this system was somehow adopted from the Direct-recording electronic registration machine. A Direct-recording electronic (DRE) registration machine records information by means of a documents display provided with mechanical or electro-optical components that can be activated by the licensing office such as phone buttons or touchscreen that processes data with computer software; and that records information, data and vehicle owner images in the computer memory. After the registration, it produces a tabulation of the registered data stored in a removable memory component and as printed copy. These systems use a precinct count method that tabulates information at any security check point. They typically tabulate information as they are registered and print the result in case of stolen vehicle alert. As for the photo identification system, it will provide online displaying of picture of the owner and centralized online tallying of document with one vehicle owner poses in which the data will be stored in a database for results. In this study, the researcher tried to cover the problems confronted by security agencies at check point, licensing office and road safety corps during registration to suggest a system that would ensure the security from car snatchers on road and to facilitate a safe and rapid recovering afterwards. The license plates are generally white and the number itself is imprinted in blue. In the upper left-hand corner they carry the [Flag of Nigeria](https://en.wikipedia.org/wiki/Flag_of_Nigeria) or the [national coat of arms](https://en.wikipedia.org/wiki/Coat_of_Arms_of_Nigeria). The [state name](https://en.wikipedia.org/wiki/States_of_Nigeria) and [slogan](https://en.wikipedia.org/wiki/List_of_Nigerian_state_nicknames) is displayed at the top centre of the plate, and the "Federal Republic of Nigeria" is written at the bottom. The unique plate combination itself is in the format ABC-123DE. The first three letters indicate the [Local Government Area](https://en.wikipedia.org/wiki/Local_Government_Areas_of_Nigeria) in which the vehicle was registered, which are followed by three digits and two letters. The background consists of an outline of a map of Nigeria. Before 2011, the three letters indicating the Local Government Area were at the end, in the format AB123-CDE. Other types of license plates are also in use. Commercial vehicles are written in red rather than blue, and government plates are in green. Diplomatic plates are purple and green with white lettering. The first two/three digits represent the country the owner of the car represents, followed by two letters and numbers. Instead of the name of the state, they read CORPS DIPLOMATIQUE. Cars of the consular corps have instead the letters CC or CORPS

**STATEMENT OF THE PROBLEM.**

Some of the problems are as follows:

1. Inability to identify and access original document since any one can forge particulars from road side computer centre.

2. Mutilation of document by roadside computer users.

3. Forgery of document by drivers and road/car users.

4. Fight between security agents and drivers.

5. Unlawful delay of drivers by security agents.

6. Lack of central control portal for licensing.

7. Lack of centralized database system.

8. Difficulties in identifying real owners of vehicle without assumption.

9. Low experience or knowledge of chases or engine number by security personnel.

**OBJECTIVES OF THE STUDY.**

The aim is to design and implement computer based registration system in licensing using owners of vehicle image (picture), phone number to easily detect when it is stolen or snatch from the owner by thieves.

The objectives are as follows:

1. To develop software that will give instant and automatic result whenever the security agents are checking by using a device to check or access original document.

2. To develop software that will not give room to security or individual to manipulate documents hence there is room for online system, hard copy is no longer needed.

3. To develop a software for vehicle plate number registration and licensing by creating online form.

4. To develop a software for quick retrieval of records and information of car/vehicle owners.

5. To develop software that will not make checking of document or registration to affect road users or cause traffic since checking is online and fast.

6. To develop software that will be users friendly and will not confused security agents and car owners since is on central database.

7. To develop software that ensures workable database system in licensing office all over the country.

8. To develop software that will fast the checking of documents on road by security agents.

9. To develop software that will increase the level of car security experience.

**SIGNIFICANCE OF THE STUDY.**

Some of the advantages are listed below.

1. Timely competition, it saves a lot of time.
2. It ensures maximum security.
3. It is very convenient to use any where even in the bedroom.
4. Information processing is very fast and delay is avoided.
5. Accuracy: the study enhances the accuracy of all valid registered vehicles.
6. Authentication: the authentication of cars and owners will be possible as the system administrator registers the owner’s information.
7. Data integrity: it brings about data integrity.
8. Graphical user interface.

**SCOPE OF THE STUDY.**

This study encompasses only the design and implementation of Computer based vehicle registration/licensing system using photo identification.

**METHODOLOGY:**

Methodology is the underlying principles and rules that govern a system method. On the other hand, it is a systematic procedure for a set of activities. Thus from this definition, a methodology encompasses the method used within the study.

The methodology used is Object Oriented Analysis and Design Methodology (OOADM) and Hypertext preprocessor (PHP) for implementation and Access for the database.

**ANALYSIS OF THE EXISTING SYSTEM.**

Analysis involved a detailed study of the current system, leading to specifications of a new system. The existing system of vehicle registration in Nigeria is highly manual and partial online, the licensing office has a laid out data information form that is used to register vehicle owners information in their area or state. A registration is set to start as at when a vehicle is bought and renew on yearly basis; this has been made known or announced to the public using various mass communication means including radios and newspaper publications. During such periods, vehicle owners are expected to report to the licensing office to be registered to enable them have registration number as bonafide citizens of the federal republic of Nigeria. Every potential car owners fills a form with details such as names, local government and state of origin, home address, date of birth among others also individuals must be verified or confirm if the information given is real or fake.

The I.C.T department will collects the filled data forms from vehicle owners at the end of the registration process to be taken to the unit where data entry clerks are then employed to input entries in to the central database from which a vehicle registration number is produced.

**JUSTIFICATION FOR THE NEW SYSTEM**

The new system will help to solve all the problems inherent in the existing system. The justification for the new system includes:

1. Direct capture of vehicle owner’s photo and biometrics
2. Error free processing of data
3. Early display of information as at when due
4. Mobile checking
5. Detects double registration
6. It ensure security of life and property
7. Transparency
8. Accuracy of result
9. Reduce all form of stress

**DISCUSSION OF RESULT.**

Computer based vehicle plate number registration system using photo identification has reduce the work load of the licensing office staff and security agents during checking as a result of information kept in the database which automatically help the computer to know who is eligible to apply the road and identify vehicle owners by virtue of registration and chassis number, plate number and owners picture, with this the police can conveniently check any vehicle on the public road anywhere as at when slated for checking of that particular road, after which the security can as well check or detect if any alert of stolen vehicle, which the result can be achieved without waiting for any explanation from the person found on steering.

**High level Model of the proposed system**

**DESGNED WEB PAGE**

Welcome to Nigeria Vehicle Registration Portal

Home

Registration

Update

Authenticate

Info

Contact us

Enter Chassis No

OK

Owner’s Name

Patrick Isibor

Owner’s Picture

Vehicle Picture

Registration Number

Plate Number

Engine Number

Chassis Number

Registration State

Owner’s Phone No

Owner’s Address

LGA of Origin

State of Origin

Nationality

Date of Birth

Marital Status

Occupation

Married

Teaching

22 – 10 - 2980

Nigerian

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Enugu State

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Ika South

Delta State

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**CONCLUSION AND RECOMMENDATIONS.**

This system would avail the licensing office and security agents the opportunity of information and detection of stolen vehicle using the most convenient medium among the electronic devices. The adoption of the

Integrated system increased the level of participation in the society because of the ease of information generation and its tendency to eliminate fake documents, fraud and insecurity on public roads. I, therefore, recommend that the federal government should put the computer based registration using photo identification technology at practice to phase out the traditional and manual registration system. More rudiments to be focused on biometric technology to capture the real identity of vehicle owners and broaden the security requirements.

The research work carried out is limited to computer based vehicle registration only. It will be better if Nigeria government make use of the system to effectively implement information management technology in our society. When this is done the following modules are recommended to be included in the portal.

1. Developing an online national identification system to enable full tracking of citizens records.
2. Automation of car owner’s record to enable the licensing management have access to general informations.
3. Maintaining a central database for accessing all information relating to all road users.

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