



Design and Implementation of Face Recognition Technology in Court Management System.: A Case Study of Nigerian Court system.

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ABSTRACT

The problem of inadequate identification of criminal suspects before court case hearing has been a great challenge in recent time. It is the duty of the legal system of any country, to ensure that people are not deprived of the fundamental human right in the society but in some cases these rights are denied for the common man. The above challenge prompt the researchers to propose this research work. This work depicts the implementation of innovative technology of face recognition in court management system for Nigeria court. The face recognition technology will be used for identification and verification of plaintiff or defendant, especial when there is susceptible criminal case predicament in the court. The identification will be done by facial matching of the client's picture with the information in central database. The methodology used in the system is Object Oriented Approach Design (OOAD) and top down decomposition analysis. The finding of this study presents analysis design implementation of innovation technology of face recognition (FR) in court management system. The proposed system will bring efficiency, effectiveness and also promote security in judiciary system management of the country, Nigeria.

Keyword: Technology, Face Recognition (FR), Innovative Technology.

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1. INTRODUCTION

Change is a time factor, in last few decades Nigeria and the world at large have experienced great change in technology and any nation that refuses to move with time remains undeveloped and at the risk of being isolated from globalization, [1]. The emerging technology of this era has touched every work of life and Nigeria judiciary system is not exceptional. The impact of advancement in technology (innovative technology) in court is immeasurable, which includes the use of computers, internet, e-filing, e-news, e-payment, video conference, e-court system applications e.tc. This has leads to greater efficiency in handling the courts documents, electronic backup of cases, improvement of case processes and increasing in security of case records, hence assist the court in meeting current demands for information dissemination, by making access to case and court data more effective and efficient, [2,3,4].



Technology is not a new concept. It is as old as human being itself but the enhancement on skills, methods, and techniques of doing a particular thing, gave birth to modern or innovative technology. The introduction of modern information technology (IT) in the justice sector actually started in late 70's [5], when computerization judiciary was actualized. Case management systems were introduced in 80's for the civil and criminal case. From 1998 till date the following technology was introduced in court management system, CMS for all cases, registrar's support systems, and transition to web based CMS, and digital library systems, the expansion and enhancement stage, integrated justice system, video witness hearing system, electronic case filing system and smart work system were introduced in the case management system, [5]. Considering these developments, the question is what will be the next step of technology in court case management system.

This rapid development in court management system creates a need for Nigeria court information management system to change in line with this era of increasing technology. The Nigeria court of today is faced with so many challenges which include cases of missing files due to corruption or insecurity of the files, poor infrastructures, delays of case hearing, lack of access to legal information, inadequate records due to poor personal, difficulties in identification and verification of criminal especially when there is investigating and suspecting crimes. These and more are the challenges of court system in Nigeria. According to Osibaja cited in [6], Nigeria justice system is not only dysfunctional, it is also outdated and absolutely not fit for the purpose, it has thus become increasingly hard to reach closure of any kind in many case. Out dated sentencing procedures, lack of access to legal presentation and lack of properly trained prosecutors are also problems faced in Nigeria judiciary system [6].

The above challenges prompted the researchers to propose for this research work, the implementation of innovative technology of face recognition in court management system. It analyzed innovative court management system development, embedded with face recognition for Nigeria court system. It explains the ways of actualization of modern court management system embedded with face recognition (FR) for identification of imposers in law court. The uniqueness of this system is the introduction of face recognition technology for identification of real plaintiff, defendant or the witness in the law court. This system will work well were central database captures entire citizen of the country.

Face recognition (FR) technology is biometrics programmed software that uses digital pictures of a person to match or verify identity using face recognition algorithm. It is important to know that this works very well where there is already existing database, like in developed countries. It is a subfield in a larger field of patter recognition research and technology. Pattern recognition technology uses statistical techniques to detect and extract patterns from data in order to match it with pattern stored in a database. This technology has helped different enforcement agencies in recent time in criminal security problems hence there has been a great need to this technology to be introduced in the courtroom as aim for better judiciary management system, [7]. According to Ali Imminent courtroom application facial recognition evidence has clear courtroom applications most significantly; the evidence could be introduced to provide positive identifications of criminal suspects.

Why do we choose face recognition technology for identification of clients? It is because of the following reasons: it solves the problem of verification ("Am I the identity I claim to be?"), identification ("who am I or what is my identity") and timepiece list ("is this one of the suspects we are looking for"). Other reasons are: It is easy to use; It does not require human suggestion for the identification; It accuracy is 87%, in recent_development; It is convenient and inexpensive technique of identification. This technology of FR works with algorithm which depicts the process involved in identification or verification of suspects. Algorithm of face recognition simply means step by step process involves in face recognition.



There are some algorithms used in identification and verification of face recognition, it includes the following:

- Eigen face algorithm
- Combination principal components analysis (PCA)
- Linear discriminate analysis, (LDA) algorithm.

For implementation analysis of this system, the researches prefers to use Eigen face algorithm because of its advantage over other approaches' which includes its' simplicity and speed.

The Benefits of the proposed system includes the following:

- (a) It will solve the problem of criminal case suspects identification predicament in court. The major input of this research work is the embedment of face recognition technology in the modern court management system which help to answer the following questions: verification ("Am I the identity I claim to be?"), identification ("who am I or what is my identity") and timepiece list ("is this one of the suspects we are looking for"). It identifies the impostors or criminal by the use of face recognition matching base on the information on central database before any court hearing.
- (b) Security of court documents. The documents used in the court will be secured and end the story of misplacement, lost/missing file which is the order of the day in the country's management court system. Again only the people that are involved will be enabling to access the case file online.
- (c) Transparency: in this system both the legal practitioner and people involved public (general public to an extent) will be able to access the information any time and where, accept the once made for plaintiffs, defendant, judge or the lawyer only.
- (d) Resources management: the cost of files, folders, cabinets etc. will be reduced.
- (e) Faster and easier access to the information: easy management of information and document, which reduces the delay of case processes by lawyers.
- (f) Archival documentation: The proposed system will update information weekly, stored all case and information on the site, there by promoting history thus help in future trace of information on like the old system that dumps folders and files in the warehouse and after some years will be burned and that is the end of it.
- (g) Solution to corruption in judiciary sector.

2. REVIEW OF RELATED WORK.

In this section the researchers looked into the problem of judiciary system in Nigeria, Impact and challenges hiding the successful implementation of innovative technology in Nigeria court system. The researcher also reviewed the related work by other researchers and their contribution to the implementation of innovative technology in the court management system.

2.1. The Problem of Judiciary System in Nigeria.

In Nigeria policy on adoption of information communication technology was initiated in 1999, when the civilian government came to power, [8]. The hard truth is that, information communication technology has come to stay. It adoption has made several impact in some many sectors and Nigeria legal system practice should not be exceptional for instance in developed country, it has enhances their judiciary system in many ways like: the use of e-handbook, e-record documentation, creation of a national network, video conferencing, telecommunication of certain court hearing and other legally oriented meeting without all the practitioner assembling in one physical location, [8]. Information and communication technology(ICT) made it possible for the creation of Bar association face book group, where layers ask and discussion some relevant questions on legal matters and receiving good research responses from their



experienced member. Is so unfortunate that Nigeria court management is still paper based, cabinet paper filing of documentation etc, [9]. Resultant of this is, missing files, case delay, high cost to obtain justice and many more. Nigeria justice system is not only dysfunctional; it is also outdated and absolutely not fit for the purpose, [6]. The earlier Nigeria, adopt this great opportunity the better, because information communication technology stands to be vital in helping a country not only in legal system but its economy at large.

2.2. Impact of Innovative Technology in Court System.

The impact of innovative technology is immeasurable. It is the key elements to significantly improve of justice administration [10,4]. Information communication technology can be used to enhance efficiency, access timeliness, transparency and accountability, helping the judiciaries to provide adequate services [11]. Improving in public access to information and service [3]. According to Pathak cited in [12], it provides customer focused, cost effective, and easy to use services for citizens. It is enabling tool to increase efficiency, enhance transparency, collect more revenue and facilitate public sector reform [12]. The successful implement of the technology will job pressure on the part of the lawyer on the daily activities because most of the process included in handling of case will be taken over by the computer. In as there is a great advantage associated with introduction of modern technology into court system, they are also disadvantages of this system, and this includes increase in unemployment due to mechanization in the sector, job loss, and competency problems and so on.

The modern technology in judiciary system case started as early as 1970's, [5] and its enhancement have touch every works of life including security, which should be more suffocated as the environment changes, today the challenges face with the system of case system have rise alarming that is negotiable, some researcher has debate whether the security technology of face recognition should be introduced in the court of law or not. Introduction of face recognition is the next stage of modern court system according; the evidence could be introduced to provide positive identifications of criminal suspects and hence improve the efficiency of forensic work performance by various law enforcement in Nigeria.

2.3. Challenges of Successful Implementation Innovative Technology in Nigeria Court System.

Efficiency implementation of this innovative in court is dependable of so many factors this includes the finances, the working personal, technological knowhow of the staff, leadership, level of corruption and lastly law of the nation. According to Maya this researcher's categories the challenges faces with efficiently implementation of modern technology into three which includes the workflow related issued, people issue and administrative issue. These issues posed the major hindrances or obstacles in way of completing the process efficiently. Other scholar were of the opinion that willingness to reform, level of the country's development, the level technological infrastructure, were some of hindrance to the implementation of this system [12]. Information communication information communication technology infrastructure, human resources, legal framework, internet access, the digital divide and connectivity are among the most common themes on the challenge to the successful implementation of the system, [13, 14]. Lastly in a situation where there is bad government the implementation of modern technology will be difficult because they will like to continue with the old method of practices.

Lastly, the related works by other researchers are reviewed in the division. [15,16] discussed the need for electronic court and suggested a practical approach to adopt in the implementation of the system for better case flow management. [4], used six e-justice system examples to illustrate and elaborate upon the system design and design management principle in a manner intended to assist an interdisciplinary legal audience to better understand how these principles might impact upon a system's ability to improve access to justice: the includes three European examples (Italian trial online; English and welsh money claim online; the trans-border European union e-CODEX) and three Canadian examples (ontario's integrated justice project IJP), Ontario's court information management system (CMS),



and British Columbia's e-court project. [17], suggested strategic modern technology innovation approaches on the uses of ICT within the courts and for judicial data interchange will bring efficiency in justice sector. [18], examined courtroom technology implementation and develop a framework for legally compliant electronic court management. [19], introduced the term differentiated electronic case management systems used by the court. [20,21], applied service-oriented architecture and web services into the planning design, implantation and integration of digital court application and services, to make digital court system to flexible and more accessible. [9], looked into the effect information communication technology has had on judicial administration using Nigeria judicial administration as case study.

He concluded that information communication technology stands to be vital in helping a country such as Nigeria develop not only its legal system but its economy. [22], the explained the need of information communication technology in court of law of Nigeria and suggested some possible ideals for the implementation of modern technology in the sector. Southern African Legal Information institute examines the law on information and communications technology in Nigeria and the institutional regulatory framework for enforcing the relevant laws. The researcher suggests regulatory benchmarks for the purpose of repositioning the information communication technology sector and approaches to strengthening the regulation of information communication technology in Nigeria [23]. [24], focused on developing a new vision for the use of technology to enhance access to justice and the upcoming second session will focus on developing a plan for implementing that vision. [25], discussed the evaluation of (MAGS), (Maryland Automated Guidelines System), implementation, highlighting the value of technology and monitoring as a means to enhance judicial administration.

[26], presented the usage pattern for judges and court officials of current information communication technology in court and he also depicts benefits and risks in using in new information communication technology system. [27], discussed in-depth study alternative approaches to the development of a judicial management system and depicts the conflicting forces at play in effecting an efficient, comprehensive and statewide solution. [28], developed real time crime record management stems for the police force. International Records management trust in August (2011), reviewed the manner in which the court is handling court records management in the electronic environment [29]. [30], proposed a frame work to increase security needs of database system for unauthorized user for court information management. [31], identified and examined some of the main issues in managing electronic evidence in an international court environment and suggested a possible solution to improvement in the sector. [32] Presented the results of a case study of computer-supported cooperative work system, in the criminal court and how their implementation change work practices.

[33], discussed four area of law which have adapted and continue to adapt, to embrace workplace change occasioned by the technology specifically: (a) wage and hour compliance (b) liability issues in discrimination and harassment cases; (c) lawful scope of employer policies restricting social media communion, these will enhance the legal sector. [34], presented result of a survey of case management operations and practices in Kenya. [35], determined how judicial records are organized and preserved in relation to their accessibility and effective utilization by judicial officers. The findings of the study showed that there are different types of judicial records, which include case file, registers and case books. [36], contended that legal reforms have omitted detailed consideration of type and quality of citizen participation in newly digitized court processes which have fundamental implications for the legitimacy and substantive outcomes of court-based processes; and for enhancing democratic procedure through improved access to justice. It also argued that digital court tools and systems offer great promise for enhancing efficiency, participation and accessibility; they simultaneously have the potential to amplify the scope for injustice, and to attenuate central principal of the legal system, including somewhat paradoxically, access to justice. [37], revealed a result of case study conducted in Malaysian court environment after the adoption of E-court project, an integrated electronic court project implemented throughout the country. [38], examined civil case processing and information handling in the Netherlands, a continental



European civil law judicial system. He also described how various types of information technology can enhance compliance with the requirement of fair hearing and reasonable delay in the human rights conventions. [38], divulged a result of a case study conducted in Malaysian court environment which adopts an integrated electronic court management system named E-court. This qualitative case study focuses on the four main types of application within E-court project, namely the electronic filing system (EFS), the case management system (CMS), the court recording and transcribing (CRT), and the court in the country.

The result demonstrates a significant improvement in terms of court workflow management court operational and people issues arise out of this electronic court implementation. [39], proposed a framework and methodology for information management policy formulation with courts, it is designed to enable court policy makers to embrace the opportunities presented by networked society while accommodating the emerging risks. [49], presented the e-codex cross-border services which provide access for citizens and legal professionals to legal processes in European and also discussed the Greek e-code pilot of European payment order which is now operational in this major e-justice project. E-codex means (e-justice communication via online data exchange). [41], discussed the important role technology plays in legal education and practice in the 21st century. His focus was on how much technology has impacted legal education and practice in Nigeria.

Having reviewed the works of other scholars, there is a great need for the technology of face recognition to be implemented in the modern court management system. It will bring justice to a common man, especially in case of a criminal suspect predicament. The government, the judges, lawyers, and other practitioners should not take this ideal light, because it will bring enhancement to administration sector of the legal system and information technology will improve the economy of the country at large.

3. METHODOLOGY AND ARCHITECTURE

In this section the following were discussed: the methodology, system architecture.

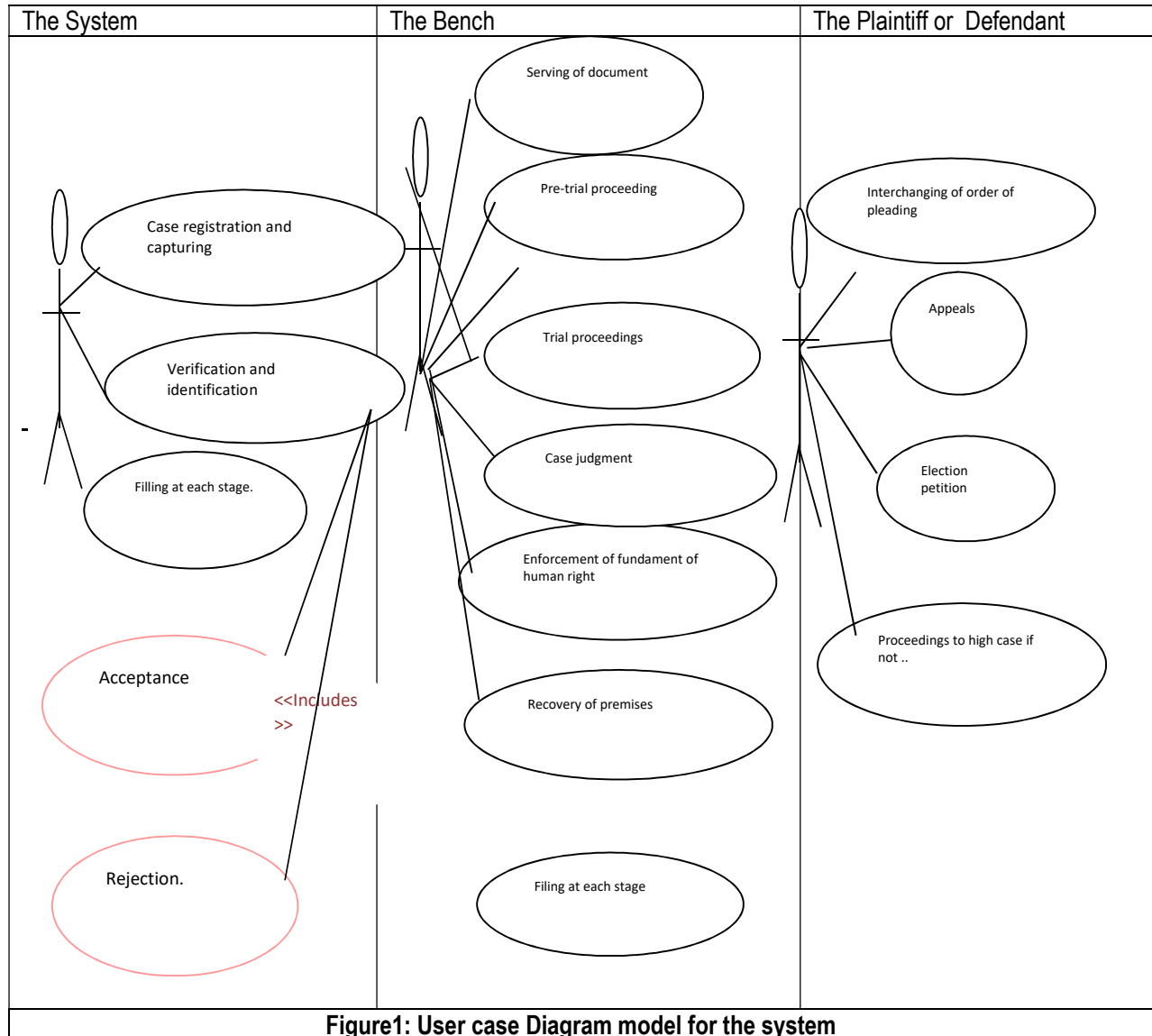
Object-oriented analysis and design methodology (OOAD) which is adopted in this research work is a technical method of analyzing and designing an application based on that systems object models. It uses a formal methodical approach to the analysis and design of information system. Object-oriented design (OOD) elaborates the analysis models to produce implementation specifications. The main objective of this method is to build a distinct, globally accepted standard procedure for object-oriented system software. The unified modeling language (UML) is international standard languages used for object oriented modeling.

Unified modeling language is a graphical language for object oriented analysis design that gives a standard way to write a program. It also helps to visualize, specify, and shows structural relationship in designing a complex system.

Among other functionality of UML is a design modeling language that helps to develop and build computer applications.

The following UML were used in this work to illustrate behavior activities of the proposed system.

- i. Use case diagram model.
- ii. Sequence diagram model.
- iii. State chart diagram model.



Use Case Diagram Model.

Use case diagram is one of the standard UML diagrams that depict the functionality of each unit in the system. It helps developer to visualize the functionality requirement expectation of every “ACTOR” in the system. Actor in this case means the personality in the developing system that is expected to do a particular function in the unit. In the below use case diagram the actors include the Registrar of the court, the bench, the plaintiffs or the defendant. Looking at the diagram, work activities of each actor is clearly stated in the circle shape picture. It is important to note that the actor can be an individual or group of people example the bench used in the diagram includes the members of the judiciary like Magistrates, Judges, and Justices etc. Looking at the below diagram you can easily identified the functionality of every element in the system.



State Chart Diagram.

The state chart diagram depict the control flow of an object from one state to another, so its specification is to show the state of a components “state” at any given point, which changes depends on the activities. Brief description of the below state diagram: Rectangle labeled with content represents the different event the event in the below diagram shows the activities of the court register, the plaintiff or the bench at a particular time in the system. The arrows represent the transition show the flow of the event; it depicts what event leads to other. The initial starting point is presented with black round point. In the below diagram every rectangle shows that action has taken place or will take place and this may trigger the next action to take place.

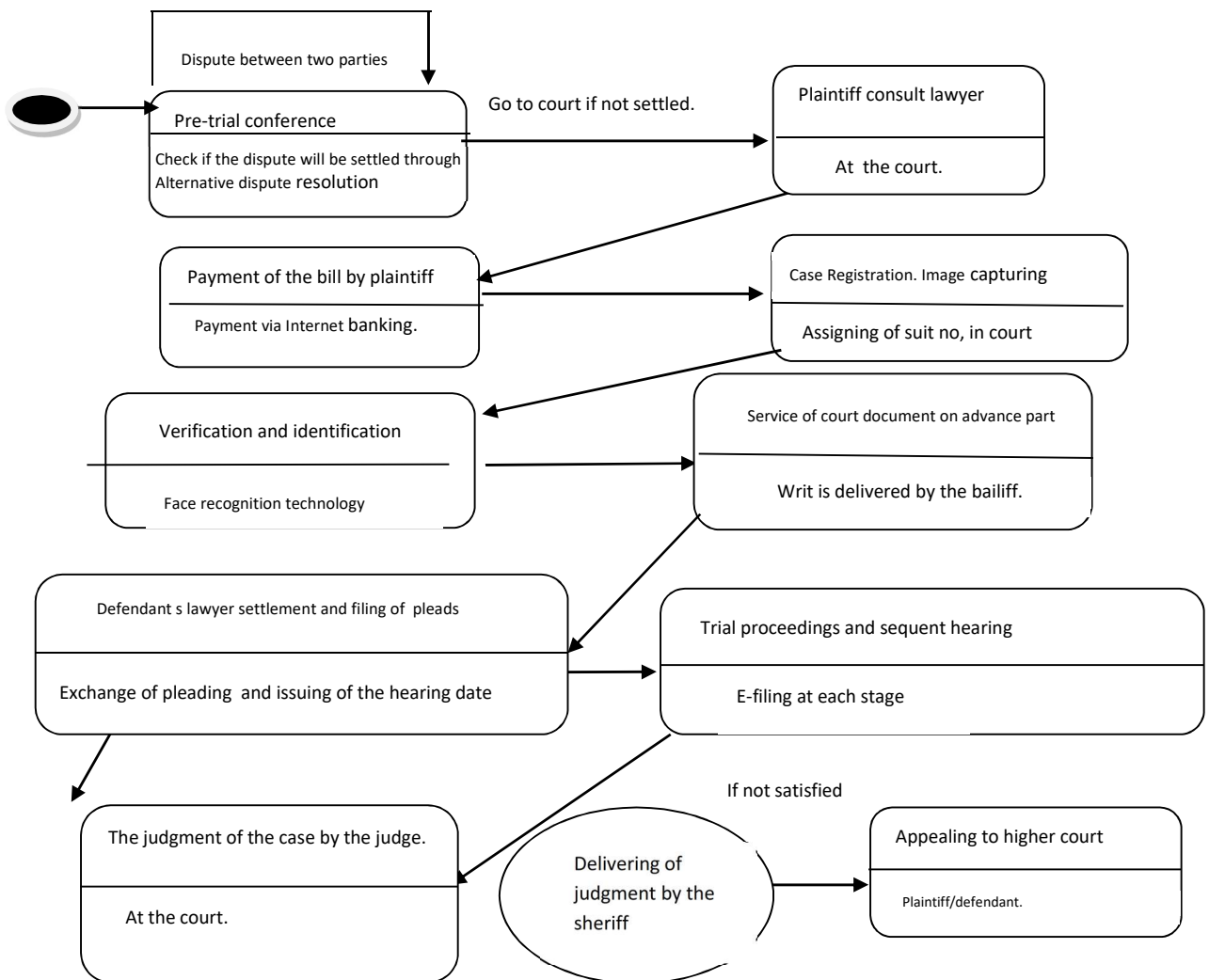


Figure 2: State diagram



Sequence Diagram

Sequence diagram illustrate in depth the systems flow of an even. It is a construction of a message sequence chart. A sequence diagram has two dimensions: the vertical dimension show the sequence of the activity order that they occur. In the below diagram order of activities are carefully labeled according to the order of its performance example: 1.1, 1.2 etc. The horizontal dimension shows the object instances to which the activity as they are performance in this analysis includes Plaintiff/ defendant, Registrar of the court, the bench etc. Across the top of the diagram the researcher identify the instance (Object) by putting each class instance inside box as in below. The second sequence diagram, the labeled sequence diagram for query is used to illustrate how data are retrieved from the user interface to the database and from the database to the user requiring for the data.

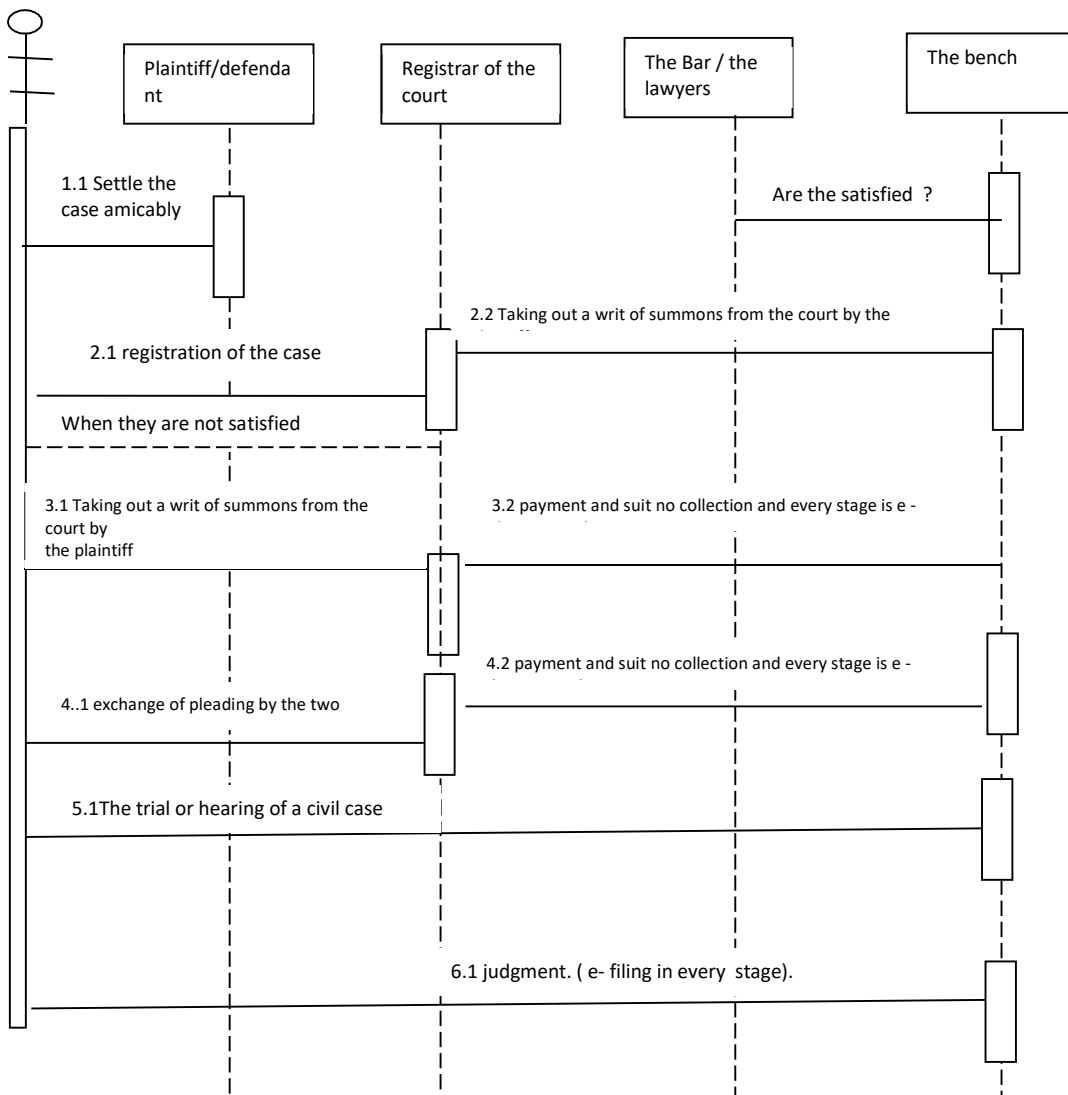


Figure 3 :Sequence diagram court case process in Nigeria high court.

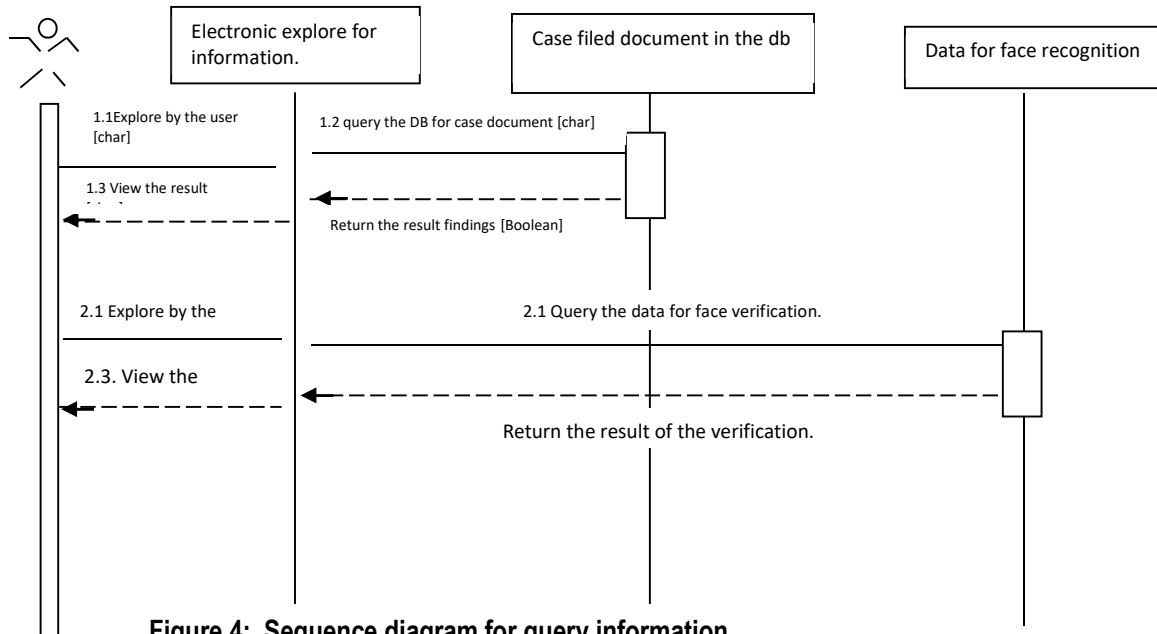


Figure 4: Sequence diagram for query information

3.1. The Architecture Framework of the Proposed System.

3.2.



Figure 5: 3 tier architecture frameworks of the proposed system.

The above diagram depicts that the system should be interactive and flexible. To ensure this, the above architecture is made up of the following: the user application interface, application logic and database tier.

- a) The user interface tier: - This is the physical interface use by the clients or the lawyers / judges. This is the interface where input and output data takes place through the use of web browser software which includes internet explorer, fire fox, chrome etc. The web browser sends and receives message from and to application server via http and html in internet protocols.
- b) Application logic tier: - this is also called application server, this tier houses the application server and the programs that communicates with the database. The proposed system makes use of apache servers, Java programming language with the database tier via MySQL.
- c) Database tier: - this tier stores information needed for the system operation and for optimizing the data access.



4. RESULT ACTUALIZATION.

Here the researcher discussed in details, the analysis design for the innovation of technology face recognition in court management system. The block diagrams are divided into five modules and it is used in this analysis to depict the major innovative technology find in the court case management system. It represents the basic requirement in the system design hence makes the design process easier. This is what should be followed to achieve the desired goal of this research work.

The modules of the system:

- (a). Client registration and face recognition modules.
- (b). E-filing of court case modules
- (c). Payment modules.
- (d). User guide and Nigeria constitution modules.
- (e). New media modules

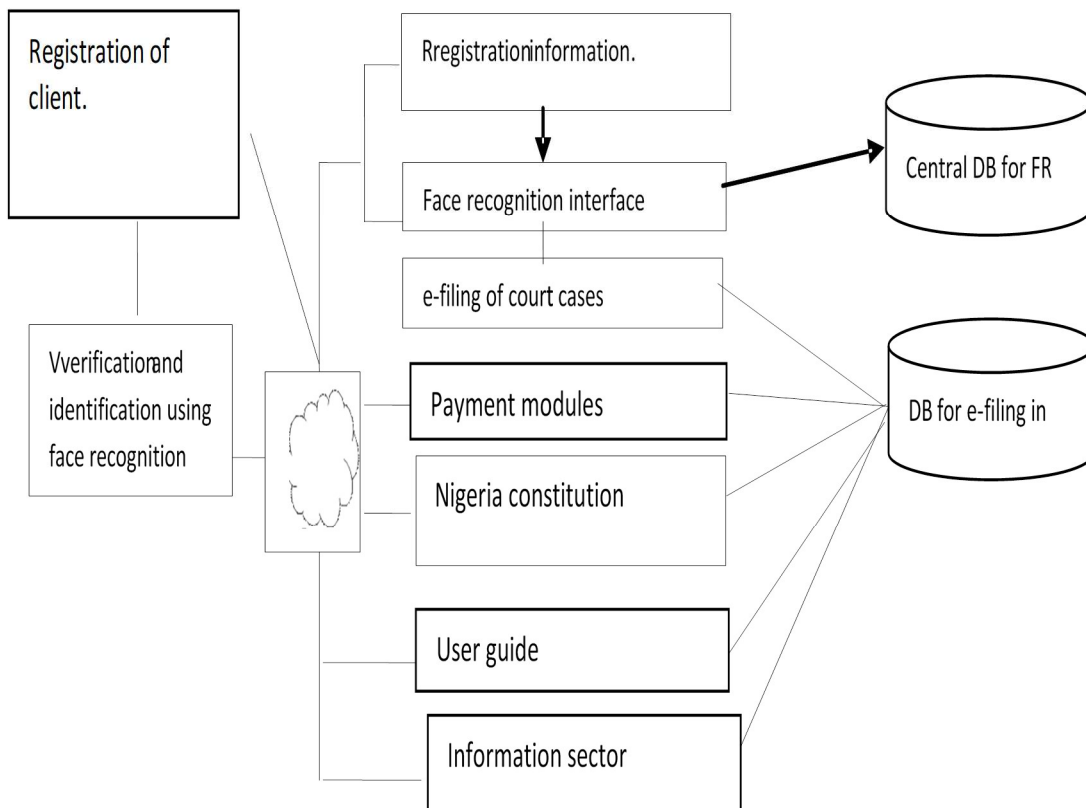


Figure 6: The Work Flow of the proposed system



A. The Clients Registration and Image Capturing Module.

This module is very important part. The registrations of clients take place in this unit. The information is saved in the system's database. Secondly, image capturing of clients also take place in this unit. This is use for verification and identification of clients before any court hearing by the use of face recognition technology. To achieve this, below are the system requirements.

hardware Required	Soft ware Required
Computer system Web cam with MJPEG interface.	Luxand faceSDk Netbeans IDE. Designed court case software. Windows with 64-bit Mac OS.

The Luxand faceSDK

Luxand faceSDK is platform face detection and recognition library that can be easily integrate into an existing application. Luxand faceSDK library are obtainable for 32-bit and 64-bit versions. It comes with API, (Application Programming Interface). The function is to detect, track faces and extract facial features on the image or video. It also tags recognized subject with the name and its recognized features. Luxand faceSDK library is compatible with web cameras with MJPEG interface.

To install Luxand faceSDK it requires the following:

- 1.6GHz processor
- 256MB RAM and free disk space of 50 MB
- Windows 2000/Xp/2003/vista.

The Download installation file luxand_facecropsdk_setup.exe can be saving to c:\ programming file in your system. The researchers choose Luxand faceSDK for the following reasons:

- The speed of its detection of subject is from 0.01 to 0.7 sec.
- Its parameters are easy configured and can work with web cam resolution of 15 degrees.
- It is a Robust anterior face detection.

<https://www.luxand.com/facesdk/documentation/overview.php>^[42]

In Luxand Face SDK, the performance and reliability of face detection is controlled by: **FSDK_SetFaceDetectionParameters** and **FSDK_SetFaceDetectionThreshold** functions. Example:

```
1: To detect faces from a webcam in real time, call:
FSDK_SetFaceDetectionParameters(false, false, 100);
```

The face is positioned by TFaceposition introduced by LuxandFaceSDK. This actually positions the face for measurement of the X and Y coordinates of the center of the face.

Java Syntax:

```
intFSDK.DetectFace(HImage Image, TFacePosition.ByReferenceFacePosition);
```



Parameters:

Image – handle of the image to detect the face in.

FacePosition – pointer to the TFacePosition structure to store information about the face position.

Return Value:

Returns FSDKE_OK if successful. If a face is not found, the function returns the FSDKE_FACE_NOT_FOUND code.

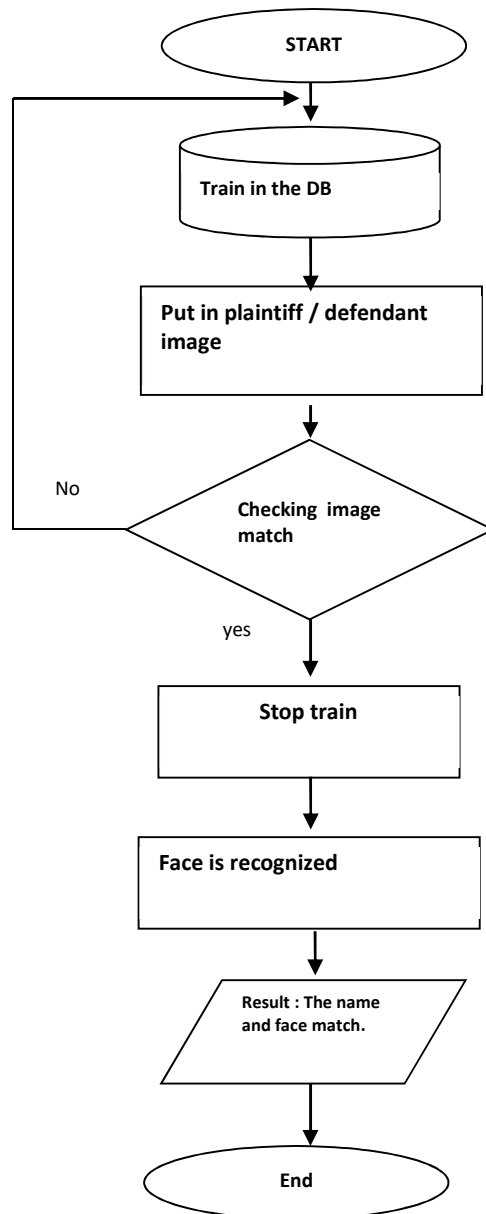


Figure 7: The Systems Flow Chart.



Detail Analysis of how the Face Recognition Technology Works in this System.

- Picture Capturing: the picture of the client will be captured during registration in court at the e-registration section, with the use of computer web cam or video data of the client into the system.
- The API of Luxand faceSDK on receiving the image will match the face by calculating its center's X, Y coordinates, using the algorithm. (Extraction of distinctive features of the image). The sample features will be used to create template and stored in the database
- The sample template will be used to compare with the images in already existing central database. As earlier mentioned the system will work well in developed environment where there is already existing centralized database that captured all the citizens of the country.
- The designed software decides if the person's image in the database matches with captured plaintiff or defendant. The researchers preferred java programming language for the integration of the system

B. Second module: e-filing of court case.

E-filing of court case is the process of converting court case document into paperless or soft copy which is saved electronically by the designed system. In order to comprehend the work of the researchers in this section following requirement were consideration:

- (a) Functional requirement.
 - (b) Performance requirement.
 - (c) Electronic document record requirement.
 - (d) Security requirement.
- a. **Functional requirement:** for modern court case efficiency the following order should be maintained to hence work flow in the court environment:
 - Examination of quality of document: the administrative department should check the quality of the document submitted to ensure the best is obtained and insist on receiving only review and formatted document.
 - Virus checking: the administrative staff should scan document submitted to avoid unexpected deserter on the stored document of the designed system.
 - Authentication on electronic filed document: the administrative will acknowledge and confirm the received document.
 - Availability of internet: Web base e-filing needs un-interrupted internet access for the court staff and public.
 - Providing routine training to lawyers and staff on the use of e-filing procedures.
 - b. **Performance Requirement:** a timely and accurate information system for the court will attain to finest goal, the following should be considered.
 - The availability of e-filing system: The system will be very ready and accessible to the court staff at all time.
 - General arrangement of the e-filing document: Information for e-filing case system would be able to distinguish the following. i) Pending case and reasons for pending the case. ii) Proceeding case. iii) Judgment of the case with the name of the judge.



c. Electronic Document Record requirement: This section discussed electronic requirement of records management for the e-filing of the court. The listed factor should be strictly followed.

- Arrangement of submission: the administrative staff responsible for collecting document should adhere to the standard order for the submission of the document.
- Document Retention: this requires that electronic information like news etc. should be available at all time.
- Allocation of suit no: all document collected will be stored with appropriate suit no and case title for easy identification in the e-filing system.
- Digital pictures and probe image should be save with the same format along with suit no and case title.

d. Security Requirement: In this section the researchers discussed security requirement of the web based system. The choice to determine who upload the information, updating method, and the best time for the uploading should be considered. Other factor that would be consider in this section is user authentication, confidentiality and to what extent.

C. The third module

Payment. This is another important part of the system that deals with payment of court charges. How much do you have to pay? The court of Nigeria filing fees are fixing by the law. There are two main payment in the court .a) filing fees and b) service fees. The filing of a case requires the payment of filing fee, which is an amount of money paid for processing the papers filed in the court. b) The service fees are the amount of money paid to the court for court services.

- **The Internet Banking Module.** The researcher proposed this web base system to manage all payment by generating pay slip through the site. This will help to monitor generated money for the court.

C. **The Fourth module:** User guide and constitution. This part of the design is very import to the public in order to guide them on what to do.

The information includes the following.

- The Nigeria court procedure.
- What to do if you decide to go to court in Nigeria.
- What are you required to bring to the court on the day of court case hearing.
- What to do when you are not satisfied with the court judgment. Etc.

D. **The fifth module:** the news and media section, this is where all the important news and information is post to the legal practitioners and general public at large.

5. DISCUSSION

The result is analyzed on the following modules: Client registration and face recognition modules, the e-filing of court case modules, payment modules, user guide and Nigeria constitution modules and lastly news media modules. These are used to show a typical structure of how a modern court management system should be organized. Under the first module, the researcher used Luxand faceSDK platform to analyze face detection and recognition which is integrates an existing application of a modern court system. The function of this is to detect, track face and extract facial features on image on the database or video during registration section. The e-filing of court case module is used to show case the basic requirements needed for a modern court case filling management. These include functional requirement, performance requirement, electronic document record requirement and security requirement.



The internet banking module, the researchers proposed a web based system that will be used to monitor all payment made for case process. Lastly the Nigeria constitution and news modules will be used for guardian of the general public on their fundamental rights and awareness on court process. This system when implemented in the country will help to bring justice to the common man. Again the looters of Nigeria resources will be judged and punished accordingly. This will improve not only the sector but the economy of the nation at large.

6. CONCLUSION

In this research work the researchers' presented the design and implementation of innovative technology of face recognition in court case management system. The impacts of introducing innovative technology in Nigeria judiciary system cannot be over emphasizes due to it benefit, transparency, resources management, availability of information, cost saving, security of court document, quick dispensation of justices. However according to the findings, the successful implementation of this innovative technology in Nigeria court management system can be so challenging due to the following: network dysfunction, electricity power supply problem in the country, lack of adequate tools, inadequate file record management and a lot more. It is important for the legal practitioner of Nigeria to forge ahead in overcoming these challenges as application is not only the worldwide trend but also the way forward. Although Nigeria is a developing country and as such is not yet advanced in information communication technology innovations, but this should not be a reason, not to adoption the innovative technology in justice's delivery.

The enhancement of judiciary system Nigeria is adoption of the innovative technology in the sector. To bring justices to common man, face recognition technology will be used for identification and verification of plaintiff or defendant, especial when there is susceptible criminal case predicament in the court, as mentioned before will work better in a country where there is already existing central data base for all the citizen. The government, the judges, lawyers, and other practitioners should not take this ideal light, because it will bring enhancement to administration sector of the legal system and information technology will improve the economy of the country at large.

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