A Project Report

on

Digital Judiciary Conduct

Submitted in partial fulfilment of the

requirement for the award of the degree of

Bachelor of Technology in Computer Science and Engineering

Under The Supervision of
Mr. Sreenarayanan NM

Department of Computer Science and Engineering

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SCHOOL OF COMPUTING SCIENCE AND ENGINEERING

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SCHOOL OF COMPUTING SCIENCE AND ENGINEERING
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CANDIDATE'S DECLARATION

I/We hereby certify that the work which is being presented in the project, entitled "**Digital Judiciary conduct** " in partial fulfillment of the requirements for the award of the **BACHELOR OF TECHNOLOGY IN COMPUTER SCIENCE AND ENGINEERING** submitted in the School of Computing Science and Engineering of Galgotias University, Greater Noida, is an original work carried out during the period of **JULY-2021 to DECEMBER-2021**, under the supervision of Mr, Sreenarayanan NM , Department of Computer Science and Engineering of School of Computing Science and Engineering , Galgotias University, Greater Noida

The matter presented in the project has not been submitted by me/us for the award of any other degree of this or any other places.

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This is to certify that the above statement made by the candidates is correct to the best of my knowledge.

Supervisor

(Mr.Sreenarayanan NM)

CERTIFICATE

The Final Thesis/Project/ Dissertation Viva-Voce examination of 18SCSE1010137 – SHUBHAM KUMAR, 18SCSE1010272 – SHUBHAM SINGH has been held on _____ and his/her work is recommended for the award of **BACHELAR OF TECHNOLOY IN COMPUTER SCIENCE AND ENGINEERING**

Signature of Examiner(s) **Signature of Supervisor(s)**

Signature of Project Coordinator **Signature of Dean**

Date:

Place:

Abstract

Bringing the courts online can make the judicial system of the country more robust. Normal court proceedings are not that agile because the court proceedings get halted often times due to unforeseen circumstances. The court proceedings require many forms of documentations which often cause delay in the process if halted because of unseen reasons. These processes can be done easily online and can help save a lot of time and resources. The large number of pending cases also hinder a trial by putting it in waiting list and thus delaying justice. In some cases, the physical movement of convicts is restricted because of reasons such as security, distance and frail health. This type of situation can be easily managed via an online courtroom. Records management is the key success factor in judicial system. Systematic, efficient and organised records management system provides comprehensive information for courts to guarantee unbiased decision. Transparent information system and good records management indirectly hinder the misuse of power or corruption, case postponement and delayed decision. It also reflects the good image of judiciary system and upholds the rights of individual and society at large.This paper unfolds the implementation of electronic records management systems (ERMS) in Indian courts. It discusses the literature review, background in Malaysian judiciary system and e-Court as well as E-Shariah implementation, research design and methods, preliminary findings, issues and challenges as well as conclusion and recommendations

This application aims to make an online court room, which can be a platform that makes the judiciary system more agile. This application is developed on java platform and is supported by a SQL database. There are different user profiles for different officials and users. Data sharing is also supported on the platform. Communication via audio and visual method is allowed and there is also a chat box for input based communication

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Acronyms

ECCMS	Electronic Court Case Management System
ICT	Information And Communication Technology
CRM	Customer Relationship Management
DAR	Digital Audio Recording
DBMS	Database Management System
GB	Giga Byte
UML	Unified Modeling Language
ER	Entity Relationship
KNN	K nearest Neighbor
PHP	Hypertext Preprocessor
HTML	Hyper Text Markup Language
CSS	Cascading Style Sheets

Introduction

The Judiciary is the system of courts of justice in a country, the arm of government charged withthe responsibility to administer justice.The advancements of the 21st century have led to an emergence of many disciplines with great potential to solve existing problems. One such potential field is Technology, which has over theyears been increasingly adopted in many processes to avert the problems of ineffective andinefficient service delivery.One of the key areas of interest is automation ofthe judicial processes. Many challenges have been faced in the process of attaining justiceincluding delays due to misplacement of the case files at the registry when reference is ought to bemade. As legal practice has become more technologically advanced, pressure mounts on the courtsis to join the flow of technological progress in other to provide a good service delivery. In addition,to emphasis on government transparency, to build public trust and confidence in judicialinstitutions.Recently, Prosecuting Attorney's current case management system is a desktop base application where cases that are registered are printed out and pasted on the notice board to enhance public access. The courts print out the cases that will be held in thatparticular week and keeps the outdated cases that have already been held in excel onthe desktop. Due to this clients need to come back to the court to confirm the day itscase will be held and sometimes leads to frustrations. This project seek is to controland allow complete registration of all cases related to court activities to enhancereduction of time and eliminating manual works. The System delivers corefunctionality that is to provide meaningful ancillary benefits to the courts, such asmore efficient data entry, more effective data retrieval, better tools and enhanced barand public access, thus the public can have access to it anytime and anywhere.

Well developed and implemented Electronic Court Case Management System (eCCMS) make it possible for a court to stick more closely to a published standard schedule and timetable, which the court can track cases better, and controls the use of resources and notify and inform all on what has been decided and what is to be expected.

Case management : Case management is one of the main management activities in use within courts. The other main management effort is court management. Whilecase management is connected to the primary processes in courts, which includes

court administration and other processes that are directly related to case processing,the court management is connected to the secondary processes in courts and involves activities like strategy making, human resource management, research and development, Technology, finance, and maintenance of the build environment.

Component of case management : Electronic case management systems provide support and automation in case management. In order to support or automate case management, it is necessary to understand the components of case management as a management support. A typical process in court consists: (a) receive documents; (b) administrative preparation; (c) content preparation; (d) court decision-making; (e) content elaboration; (f) administrative completion; (g) send and archive.

Statement of the Problem : Recently, Prosecuting Attorney's current casemanagement system is a desktop base application where cases that are registered are printed out and pasted on the notice board to enhance public access. The courts print out the cases that will be held in that particular week and keeps the outdated cases thathave already been held in excel on the desktop. Due to this clients need to come back to the court to confirm the day its case will be held and sometimes leads to frustrations. This project seek is to control and allow complete registration of all cases related to court activities to enhance reduction of time and eliminating manual works. The System delivers core functionality that is to provide meaningful ancillary benefits to the courts, such as more efficient data entry, more effective data retrieval, better tools and enhanced bar and public access, thus the public can have access to itanytime and anywhere. Well developed and implemented Electronic Court Case Management System (eCCMS) make it possible for a court to stick more closely to a published standard schedule and timetable, which the court can track cases better, and controls the use of resources and notify and inform all on what has been decided and what is to be expected.

Purpose of the study : To study the influence of the Electronic Case Management System (eCCMS) on implementation and effectiveness of court service delivery in the Law Court Complex, Judicial Service of India.

Project Aims & Objectives

The aim of this project is to develop and implement an Electronic Court Case Management System (eCCMS) to control and allow complete registration of all court case which are related to the court by the domain user thus registrar, who can register, update, delete, and search case and create report. The flow of information provides communication and notification between the courts and public.

The following are the Objectives of the Project :

- To implement an Electronic Court Case Management System (eCCMS) for case
- registration which are related to courts, and creation, modification and updating through user interface.
- The software will allow information to be entered by users, control information in the system and tracking of current case status to enhance public access.
- The system "Event" and "Scheduling" is to determine new case arrivals, session
- appointments, case deadline, reservation of courtroom and the judge who will head the case.
- To develop friendly user interfaces combined with intuitive layouts.
- To create a database to store, manage and backup case records.
- To create an administrator page that will show statistical analysis

Significance of the study

When this project is completed, it will benefit the following stakeholders: the industry (Judicial service), the society and the academia.

Promote Judicial Transparency and Independence : As outlined in the beginning, the electronic case management not only supports the judiciary in simplifying its performance from the technical point of view, but also serves as the guarantee for the transparency and independence of the judiciary. Switching to transparent electronic management is envisaged by the so called Association Agreement signed between Georgia and the EU. Electronic case management software has become the factor supporting the independence of the judiciary and will play the dominant role in the development of the transparent justice in the future. Integrated services will strengthen the electronic case management of the judiciary and "make" the other institutions become transparent and independent similar to judicial authorities. An

important role of the electronic case management software was once again outlined by the end of 2012, when judicial authorities decided to stop using the software of the prosecutor's office, since it was considered to be the interference in the independence of judiciary. Working of the judge in the software of other institution (prosecutor's office) and keeping documents on its server can be compared to working in the building of that institution and keeping documents in its archives. In addition, several judges had reasonable doubts, that some documents disappeared from the software. Therefore full independence of the judiciary also means independence of its software as well.

Internal Transparency : Electronic case management envisages the support of the full transparency in the judicial system. As mentioned above, the users (judges, assistants and etc.) can enter the software depending upon their competences. Therefore mixing of the competences can not take place. The competence of the judge(for example: announcing the decision and etc.) can not be fulfilled by the assistant and will not be visible in the assistant's management panel. Therefore judge has the feeling of safety. He/she is the key participant of the procedure and the mistake in this regard can not be made. Besides, the judge has the possibility to fully control the activities of the assistant and the session secretary. The case related documents are visible in the panel of the assistant or the session secretary, in addition the judge can search any case related document without the support of the assistant. The main factor supporting the internal transparency is that the judges can view the cases of other judges. They can review the decisions, judgments of other judges on the issues of their interest and use them to reason their own decisions. The decision and case search module included in the software is very helpful in this regard, since the decisions can be searched according to the articles, categories and other parameters. As a result, the full internal transparency "makes" the judge willing to raise qualification in respect to the needed issues and provide better reasoning of the rendered decisions. From the transparency perspective, it should be outlined, that the software has the capacity to save any activities (so called "logs") undertaken by the user. It makes it possible to search and identify an illegal intervention of the user at any time.

The industry (Judicial Service) : The system will be used by the registrar for case registration and data processing (data storage and data retrieval) which involves

creation, modification and updating information through user interface. The Chief registrar as well will be able to know the activities that is going on in various courts such as the name of registrars and the judge in each court, the time the registrar spent after login and also show the total number of a case type in each court such as trespassing, defrauding, robbery, data breach etc.

The society : The system will enable client or individuals to get access to a case details anywhere and anytime by going online to visit the webpage, which shows the details of a case such as the sitting date, the suit number, the name of the judge who will handle the case, the courtroom which the case will be held, the names of both plaintiff and defendant, etc.

Academia : This project will illustrate how open source tools can be used for the development of web-based applications thereby making the academia aware of the benefits of using cheaper tools. This project in future will allow other students to review the application and to think of new ways in which some components of the application will be improved or think of ways of adding new components to meet more needs.

Literature Review

In the last two decades there has been a widespread use of ICT around the world due to the expected benefits that have been achieved by the governments andorganizations that have embraced it. ICT is a technology like computers, software, peripherals, and Internet connections infrastructure required to support information processing in order to execute and delivery of services.According to Larsson (2002) atthe organizational level, ICT is widely accepted, though not fully appreciated. Its integration in organizational functions is necessary for increased efficiency, costeffectiveness, and competitiveness. Some institutions are increasingly providing information and public services to the public by use of internet and this process motivates the society to use information and telecommunication technologies in order to take advantage of the public platforms both government and individual formations. It is alleged that in order to minimize the risks and costs of regulatory and legal non- compliance, litigation, discovery, business inefficiency and failure, organizations needto remove the human element by automating records management via technology. This transformation means enforcing electronic record creation, creation andpreservation of meta-data, minimizing duplicate records by creating a central information repository which will also facilitate knowledge and content management, systematically archiving and tracking records and amendments. The major issues in implementing electronic records in organizations are regarding access, security and interoperability.Interoperability refers to the ability of different IT systems and software applications to communicate to exchange data among them accurately, effectively and especially to use the information that has been exchanged.Finally, the influence of technology changes traditional ways of court case operations such as casefiling, case fees, cause list etc. Legal information processed through technology tools becomes more and more important in comparison to traditional source.

Factors influencing effective judicial service delivery :

- **Cost of eCCMS :** The two positive consequences of the use of information and communication technologies (ICT) are emphasized on transparency and effectiveness. Technology has enhanced and expanded the possibilities to access information and judicial decisions. The implementation of ICT in the judiciary has enable the judiciary to carry out its judicial functions in a timely and efficient

ways. The use of ICT in judiciary helps to identify the long-term goal of reducing repetitive tasks and the duplication of efforts. It also save resources in the sense that there will be no need for judicial service to employ workers to gather all case files at archives and put them in an electronic format for future use and reference. For instance, as the court has an automated system of recording case information, a clerk enters certain data into the computer system let say the details of the parties to the case. This entry of data into the computer system enables storage, retrieval and reuse of the information for many purposes. The tracking of the case information, generating reports and the compilation become easier in other to save resources, not hiring an external contractors to get things done. Provides enhanced case statistics, evaluation and monitoring. For instance a reports generated by a case information system can tell the most frequent crimes andeven connect the people who are involved but not yet caught. The judiciary is able to conduct sophisticated case monitoring, compilation of reports and statistical analysis. The judges use this analysis to improve their performance and address their lapses.

- **Employee job satisfaction using eCCMS :** Using new technologies such as Case Management System, a Court Records Management System (CRMS) and Digital Audio Recording (DAR) and the Internet can give companies, organizations or government entities an edge. New technologies can result in employees "working smarter" as well as providing high-quality products and more efficient services to customers. For job satisfaction employees need to know what is expected of them and receive timely, regular feedback on how they are doing. At all levels of an organization, employees want to be kept informed and recognized for their accomplishments. For employees to be satisfied, they need to know that the work they do is important and their tasks contribute meaningfully to the common purpose. They are also motivated to do well if they are given the appropriate freedom and authority to carry out their work in the best way possible. Employees become more satisfied when they supported and encouraged to grow and develop their abilities on the job Companies that have realized the greatest gains from new technology have human resource management practices that support the use of technology to create what is known as high performance work

systems. Work, training, programs and reward systems often need to be reconfigured to support employees' use of new technology.

- **Security of court data in eCCMS :** Court data security is very crucial since data entering the system influences the integrity of the process of determining a dispute. Implementation of such systems ensures that users of the system are assigned specific rights of accessing it. The system is designed which limit userto register new case and update the status of that particular case which falls in the divisions He/she is working. An executive officer on the other hand can be able toview more cases from all the divisions of the high court and also generate daily, weekly, monthly or even annual reports. The system also tracks the details of all completed tasks by case and user so at any time you can audit the workflow history of the case. This means that any manipulation of the data can be.

- **Fraud/Corruption :** Fraud and corruption are a great impediment to the administration of justice in any jurisdiction. Public sector bribery, fraud, and corruption have become leading concerns for legislators around the globe, as the diversion of public funds undermines parliamentary control of the public purse.

Overview of Databases : The application that will be developed has aspects of managing and storing data of the cases which are brought to the court, there is a need to deploy a database that will be of immerse benefit, to store their records.

Database technology has a major impact on the growing use of computer. A database is a collection of related data organized in a way that the stored data can be easily accessed, managed and updated. For example, the storage of case records such as date, suit number, plaintiff, defendant, name of court, name of judge who holds case etc. on the application.

A Database Management System (DBMS) is a software that allows creation, definition and manipulation of database. The DBMS has a number of advantages as compared to traditional computer file processing approach. The database administrator must keep in mind the benefits or capabilities of DBMS during designing databases, coordinating and monitoring the DBMS. Some of these benefits are as follows:

1) **Controlling Data Redundancy:** In the traditional way of managing records, books were used to store record changes and updates of cases. This may cause the duplication of copies of the same data but in the proposed system all the data will be integrated into a single database. The data is recorded at only one place in thedatabase and it is not duplicated.

2) **Data Consistency:** By controlling the data redundancy, the data consistency is obtained. If a data item appears only once, any update to its value will be done only once and that updated value will be available to authorized users.

3) **Data Sharing:** In DBMS, data can be shared by authorized users of the clinic. The database administrator manages the data and gives rights to users to access the data. Many users can be authorized to access the same set of information simultaneously. The remote users can also share same data. Similarly, the data of same database canbe shared between different application programs.

The role of current eCCMS : The system plays a major role in judiciary system. This is mainly because it takes care of most of the functions in Legal Department. The uniqueness of the eCCMS is that it simplifies most of the communication aspects within the Legal sector to both the court and public.

User : The system will be used for case registration and data processing (data storage and data retrieval) it involves creation, modification and updating information through user interface. The user will be required credentials that is needed to control the access of the application in terms of security.

Public access : The eCCMS will show new case arrivals, session appointments, case date of start, Reservation of courtrooms and the judge who will take the case, which the public can view the details on the web and search for a case.

System Modeling

This chapter tackles the approaches that were used to achieve the objective of the project. It also demonstrates mainly the techniques to be used to capture user requirements and specification.

Research Design : It describes a research design as “a plan that describes how, when and where data are to be collected and analyzed”. This study focuses on the plaintiff and defendant who are involved in the case, the date which the case will be held, the judge who will be taking the case and the court which the case will be held.

Development Methodology : Methodologies in System development are principles or rules from which specific methods or procedures may be derived to solve different problems within the scope of a particular discipline. It can also be said to be a framework, since is used to structure, plan and control the development of an information system. Typically, it encompasses concepts such as theoretical model, phases and quantitative or qualitative techniques. In system development selecting right methodology approach and following through to deliver the intended system can be a bane for system developers. The agile development methodology was deployedin the development of the system. Agile method proposes incremental and iterative approach to software design rather that waterfall model where development of the software flows sequentially from start point to end point. This model enables the customer to have early and frequent opportunities to look at the product and make decision and changes to the project.

Why agile development methodology : The agile methodology gives the need to develop a system based on the requirements of the users, and enable to add up various units of the system pertaining the various feedbacks received from the users. It provides face-to-face conversation between the developer and the client. Active participation with clients improve communication and helps client to be aware of every details and steps of the way. The agile process promotes and requires that functionalities with higher business value which are ought to be done first and to deliver the features that provides the most business value. It provides a breakdown of project into manageable units, where the team can focus on high-quality development,

testing, and collaboration. By help of time-boxed, news features are delivered quickly and frequently, with a high level of predictability, which provides the opportunity to release the software earlier then planed if there is sufficient business value .

Fact finding techniques : Fact finding techniques aid in collecting information about system problems requirements and preference. It is the process of collecting data and in formation based on techniques which contains sampling of existing documents, research, observation, questionnaires, interviews, prototyping and joint requirements planning. (Essays, 2015). In this project, research, interview and observation are the fact finding techniques that were deployed.

Research : Information such as background information, technical materials andnews about the Judicial Service trends and development which were gathered topublish this topic were obtained in sources like newspapers, journals and internet.

Interviews : Interview is the most commonly used techniques to collect information from the face-to-face interviews and also one of the key research tools for finding out new accurate data. I had the opportunity to move to the Law Courts Complex, Supreme Court and schedule interview sessions with both the clients and registrars in some courts in order to gather vital information about their daily activities and problems they face. This information will helps me in the development of the systemto solve problems which are incurred in their daily activities such as follow up cases after registration, paper works etc. The system will be solely for the Judicial Service thus The Law Court Complex. The information gathered gave me the guidelines as to how to go about the system and what to do.

Observation : The observation is another fact finding techniques that was adopted, which I paid close attention to the day to day activities which provided another perspective and better understanding of procedures.

Requirement Specification : A requirement is a formal definition for thefunctionality of a system. It contains conditions about the performance and functionality of the entire system.

Software Requirements

- Windows XP,Windows 7 or Windows 10(ultimate,enterprise)
- Sql 2008 or above
- Visual Studio

Hardware Requirements

- Intel core processor - i3 or above
- Hard Disk - 6GB
- Memory - 2GB RAM

Functional Requirements : The functional requirement describe how the system will work in terms of its inputs, the behavior, and outputs. The functional requirements of the system for users are:

Login Module: This shall be developed to have a centralized rights and authentication facility to ensure only authorized users have access to the systemproviding a security standard to protect vital information.

Adding and Removing Cases: This will provide the registrar the authority to add new cases and to terminate cases if they pass away.

A Database Facility: This shall be developed to store, record, information about users, (date, suit number, plaintiff, defendant, judge etc.)

Edit or Update Module: This shall be developed to ensure easy corrections ofmistakes. Only registrar can access this feature.

Reporting Facility: At the end of every day's activities a report will be printed out. So as to keep track of events.

Backup: This shall be develop to backup data periodically.

Non-Functional Requirements : Non-functional requirement describe how a system should behave and what limits there are on its functionality.

Performance: The system shall allow several case registration at the same timewithout downgrading performance.

Availability: The system shall be available to all court and can be access anywhere.

Usability: The system shall be easy to learn and use by all users including registrar and administrator.

Reliability: The system have low system failure occurrence and low risk. And will not take much time to resolve it.

Accuracy: The system shall work accurately without high failure or error.

Security: each user is required to login. The system shall allow people with assigned user names and passwords. The system shall be designed to make it impossible for unauthorized people to logon without valid usernames or password.

System model is a conceptual model that show the representation and describes a system. A system comprises multiple views such as planning, requirement, design, implementation, deployment, structure, behavior, input data and output data. To fully develop the systems, conceptual models and structures such as these were used:

- Class Diagram
- Use Case Diagram
- Entity Relationship Diagram
- Activity Diagram
- Architectural Diagram

System Modelling using Unified Modeling Language : Unified Modeling Language (UML) is a language used for visualizing, specifying, constructing and documenting an artifacts of a software intensive development project. UML is a graphical language where graphical notation is used to express the ideas rather than using in a textual notation for modeling system. There are three types of UML namely Structural Modeling, Behavioral Modeling and Architectural Modeling. Unified Modeling Language (UML) is a language used for visualizing, specifying, constructing and documenting an artifacts of a software intensive development project.

UML (Structural Modeling) : Show the things in a system being modeled. In a more technical term, they show different objects in a system. The structures which were used are:

- Class Diagram

Class Diagram : A class diagram is a type of static structure model (diagram) that describes the structure of a system by showing the system's classes, their attributes, methods, and the relationships between the 26 classes. Attributes identifies the

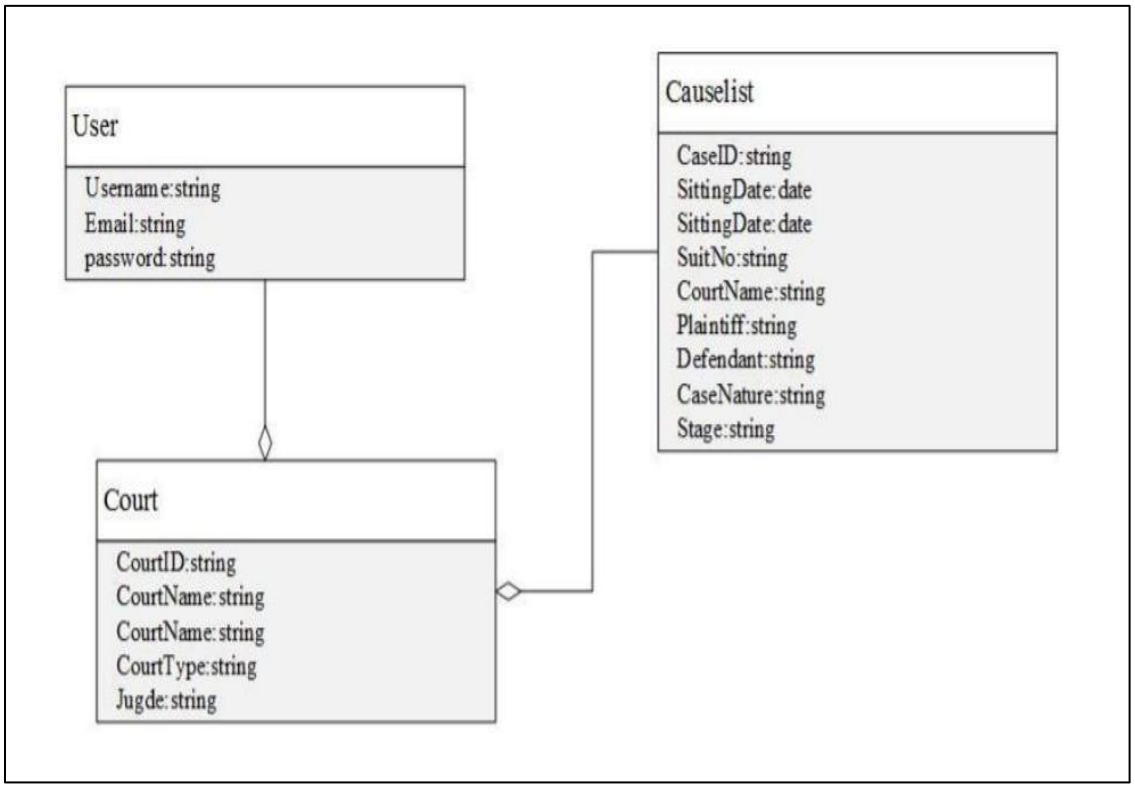
characteristics of a class while methods identify the behavior of it. Relationships are the logical links between classes and can be in different flavors. Attributes identifies the characteristics of a class while methods identify the behavior of it. Relationships are the logical links between classes and can be in different flavors.

Class diagram is a static diagram. ... The class diagrams are widely used in the modeling of objectoriented systems because they are the only UML diagrams, which can be mapped directly with object-oriented languages. Class diagram shows a collection of classes, interfaces, associations, collaborations, and constraints.

UML diagrams like activity diagram, sequence diagram can only give the sequence flow of the application, however class diagram is a bit different. It is the most popular UML diagram in the coder community. The purpose of the class diagram can be summarized as :

- Analysis and design of the static view of an application.
- Describe responsibilities of a system.
- Base for component and deployment diagrams.
- Forward and reverse engineering.

Fig 1 . Class diagram



UML: Behavioral Modeling : Shows what should happen in a system. They describe how the objects interact with each other to create a functioning system. The structures which were used are:

- Use Case Diagram
- Entity Relationship Diagram
- Activity Diagram

Use Case Diagram : A use case diagram includes a set of use cases (including cases, actors and their relationships) where each use case is a description of the functionality of the system from the user's perspective. Use case diagrams are used to show the functionality that the system will provide and to show which users will communicate with the system in some ways to use that functionality. Use case diagrams are a set of use cases, actors and their relationships. They represent the use case view of a system. The use diagram would specify and show the following:

- Chief Registrar
- Registrar
- Client

Fig 2. Use-Case for client and registrar

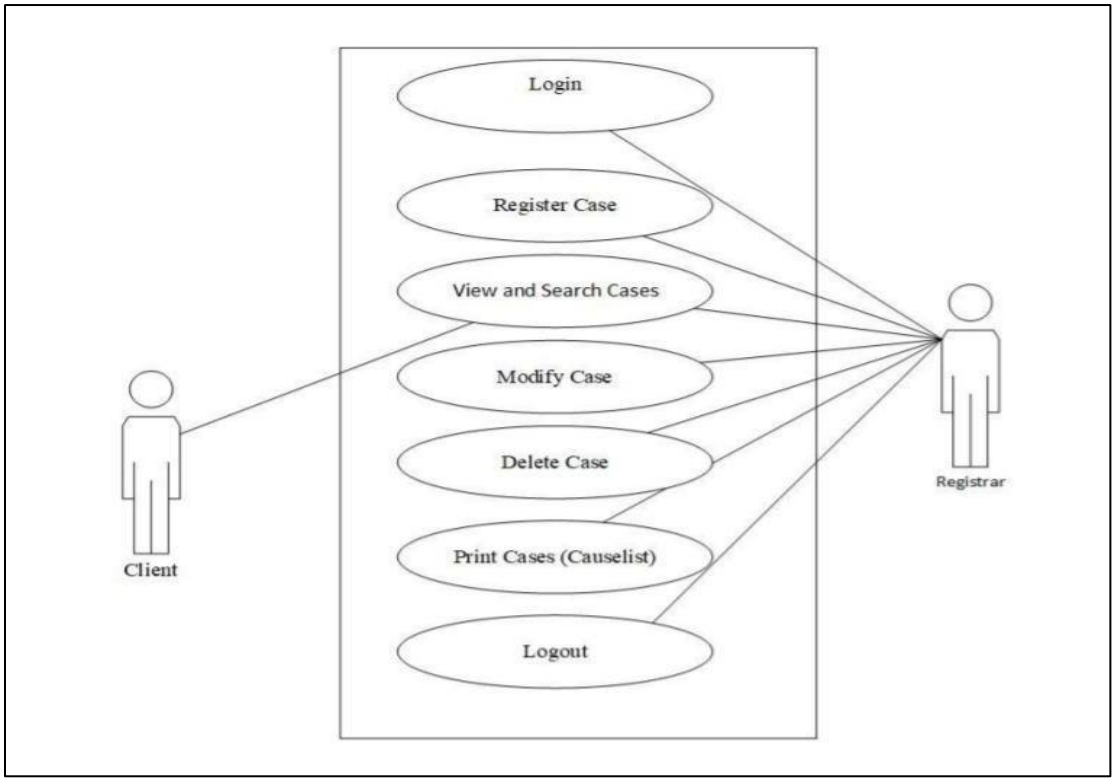
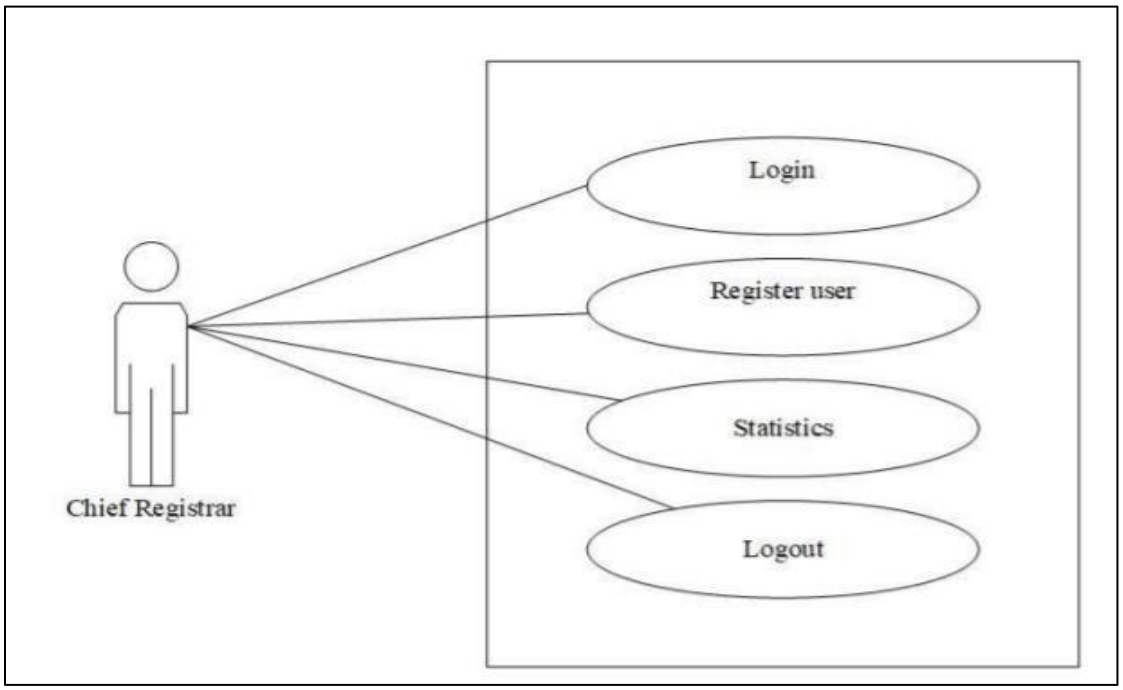
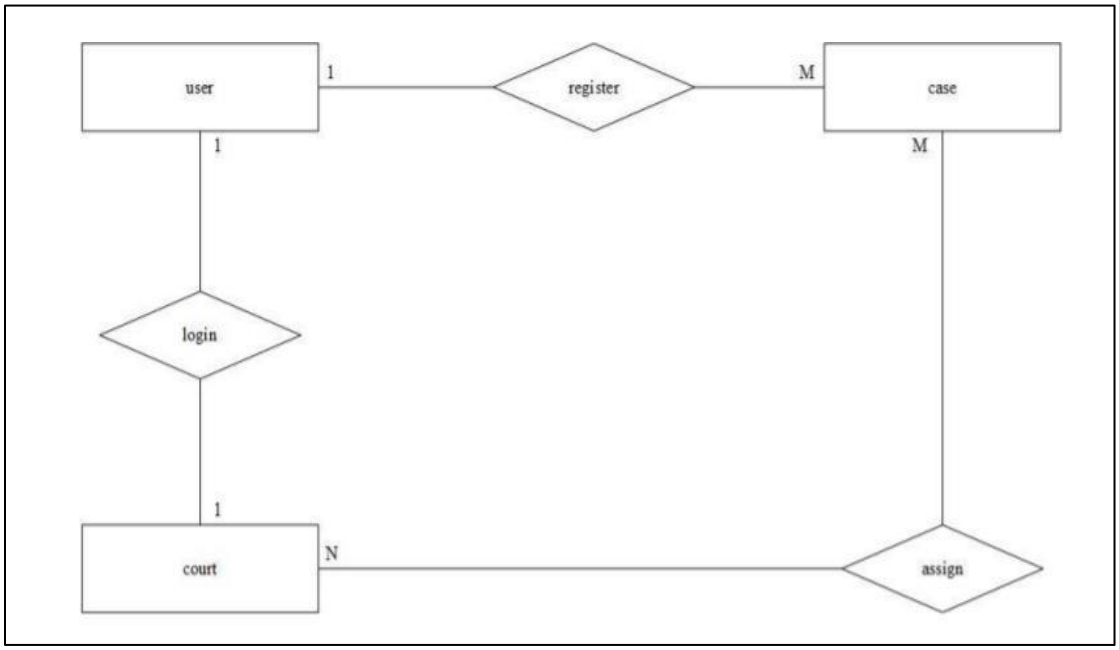


Fig 3 . Use-Case for client chief registrar



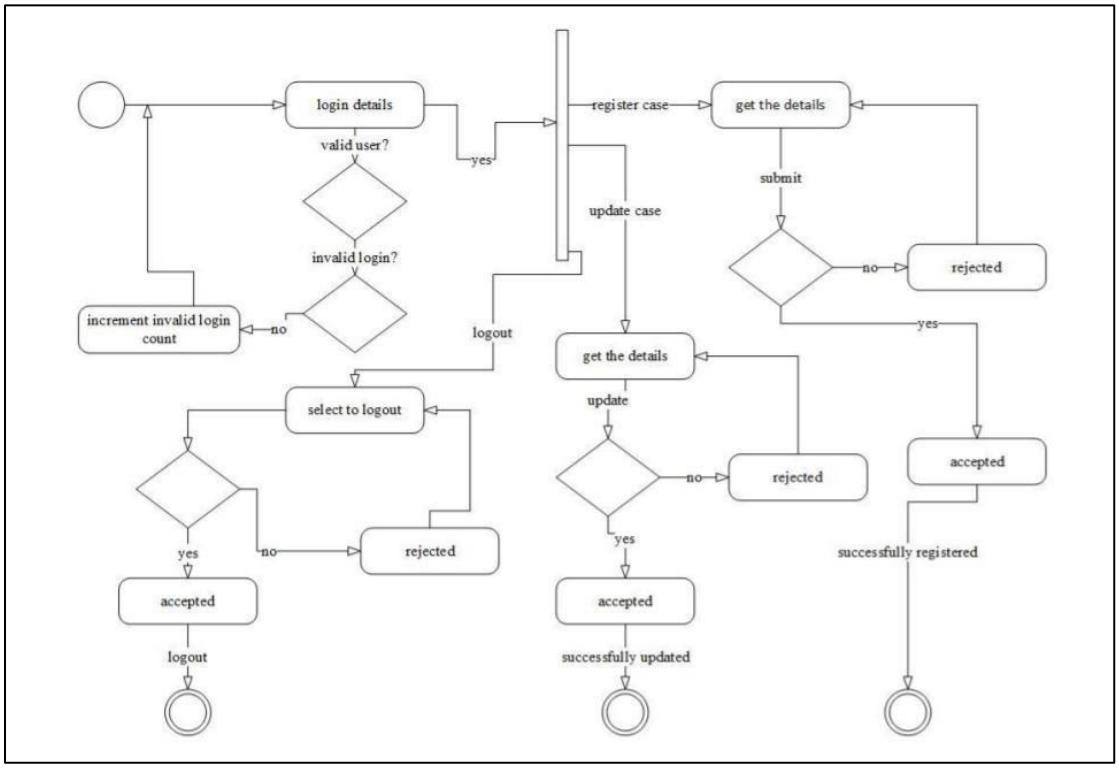
Entity Relationship Diagram : An entity relationship model, also called an entity-relationship (ER) diagram, is a graphical representation of entities and their relationships to each other, typically used in computing in regard to the organizationof data within databases or information systems. An entity is a piece of data-an object or concept about which data is stored.

Fig 4 . ER Diagram



Activity Diagram : An activity diagram is a behavioral diagram i.e. it depicts the behavior of a system. An activity diagram portrays the control flow from a start point to a finish point showing the various decision paths that exist while the activity is being executed..Activity diagram is basically a flowchart to represent the flow from one activity to another activity. The activity can be described as an operation of the system. The control flow is drawn from one operation to another.Activity diagrams are graphical representations of workflows of stepwise activities and actions with support for choice, iteration and concurrency.The Student Guide to Object-Oriented Development defines an activity as a sequence of activities that make up a process. It captures the dynamic behavior of the system.

Fig 5 . Activity Diagram



UML: Architectural Modeling : Architectural diagram represents the overall framework of the system.The Unified Modeling Language is a general-purpose, developmental, modeling language in the field of software engineering that is intended to provide a standard way to visualize the design of a system. It containsboth structural and behavioral elements of the system. Architectural model can be defined as the blueprint of the entire system. The structure which were used is:

- Architectural Diagram

Advantages

- The proceedings are conducted online via chat so no need for the people to visit the court.
- It happens when people or judge are situated far away from one another, then this system is very useful for carrying out hearings.
- Hearings involving different countries can also be conducted without actually visiting.
- Online notepad offers the advantage of recording the decisions made.
- It saves time and cost.

Disadvantages

- It cannot be used in places where there is lack of internet connection.

Future Scope

K Nearest Neighbor (KNN): It is intuitive to understand and an easy to implement the algorithm. Beginners can master this algorithm even in the early phases of their Machine Learning studies. This KNN article is to:

- Understand K Nearest Neighbor (KNN) algorithm representation and prediction.
- Understand how to choose K value and distance metric.
- Required data preparation methods and Pros and cons of the KNN algorithm. ·
- Pseudocode and Python implementation.

K Nearest Neighbor algorithm falls under the Supervised Learning category and is used for classification (most commonly) and regression. It is a versatile algorithm alsoused for imputing missing values and resampling datasets. As the name (K Nearest Neighbor) suggests it considers K Nearest Neighbors (Data points) to predict the class or continuous value for the new Datapoint.

The algorithm's learning is:

1. Instance-based learning: Here we do not learn weights from training data to predict output (as in model-based algorithms) but use entire training instances to predict output for unseen data.

2. Lazy Learning: Model is not learned using training data prior and the learning process is postponed to a time when prediction is requested on the new instance.

3. Non -Parametric: In KNN, there is no predefined form of the mapping function.

Linear regression : It is an attractive model because the representation is so simple. The representation is a linear equation that combines a specific set of input values (x) the solution to which is the predicted output for that set of input values (y). As such, both the input values (x) and the output value are numeric.

The linear equation assigns one scale factor to each input value or column, called a coefficient and represented by the capital Greek letter Beta (B). One additional coefficient is also added, giving the line an additional degree of freedom (e.g. moving up and down on a two-dimensional plot) and is often called the intercept or the bias coefficient. For example, in a simple regression problem (a single x and a single y), the form of the model would be: y = B0 + B1*x In higher dimensions when we have more than one input (x), the line is called a plane or a hyper-plane. The representation therefore is the form of the equation and the specific values used for the coefficients

(e.g. B0 and B1 in the above example). It is common to talk about the complexity of a regression model like linear regression. This refers to the number of coefficients used in the model. When a coefficient becomes zero, it effectively removes the influence of the input variable on the model and therefore from the prediction made from the model (0 * x = 0). This becomes relevant if you look at regularization methods that change the learning algorithm to reduce the complexity of regression models by putting pressure on the absolute size of the coefficients, driving some to zero. Nowthat we understand the representation used for a linear regression model, let's review some ways that we can learn this representation from data.

Linear regression is a linear model, e.g. a model that assumes a linear relationship between the input variables (x) and the single output variable (y). More specifically, that y can be calculated from a linear combination of the input variables (x). When there is a single input variable (x), the method is referred to as simple linear regression. When there are multiple input variables, literature from statistics often refers to the method as multiple linear regression. Different techniques can be used to prepare or train the linear regression equation from data, the most common of whichis called Ordinary Least Squares. It is common to therefore refer to a model prepared this way as Ordinary Least Squares Linear Regression or just Least Squares Regression.

System Implementation

This chapter focuses on the implementation of the developed web court case system which shows the causelist to the clients thus the date the case will be held, the plaintiff and defendant, the Judge who the case is assigned to and the courtroom the case will take place on the web. At this stage (System Implementation), major components of the web based application would be tested to know each unit functions and the emerging of the total system functionality.

Development tools: The development tools are programs which were used in combination with other tools to accomplish this project. This tools helps in the creation, debugging, testing and maintenance of the program. The following tools are used in the development of the project :

XAMMP : stands for Cross-Platform (X), Apache (A), MariaDB (M), PHP (P) and Perl (P). It is a lightweight Apache distribution that makes it extremely easy for developers to create a local sever for testing and deployment purposes. It includes server application (Apache), database (MariaDB), and server scripting language (PHP).

MariaDB Server : is a database server. MariaDB is used because is fast, scalable and robust, with rich ecosystem of storage engines, and plugins which can be connected to other database server. It's serves as a backup server in this project.

MySQL : is a relational database management system (RDBMS). MySQL was used because of its consistent fast performance, high reliability and ease of use.

MySQL Workbench : is visual tools for creating, executing, and optimizing SQL queries. The SQL Editor provides color syntax highlighting, auto-complete, reuse of SQL snippets, and execution history of SQL. The Database Connections Panel enables developers to easily manage standard database connections to database server and web server.

PHP : means Hypertext Preprocessor, is a web server scripting language which are executed on the server and the result is returned to the browser as a plain HTML. The

PHP 34 is a backend program which handles data between the server and the web application such as insertion, deletion, data manipulations etc.

PHPSTORM : is a platform IDE for PHP. It provides a great editor for PHP, HTML and JavaScript and also provides codes analysis, error prevention and automated restructuring for PHP and JavaScript.

SUBLIME : It is also a text editor for PHP, HTML, JavaScript, Pearl, Java etc.

HTML & CSS : The HyperText Markup Language, or HTML is the standard markup language for documents designed to be displayed in a web browser. It can be assisted by technologies such as Cascading Style Sheets and scripting languages such as JavaScript**.** stands for Hyper Text Mark-up Language (HTML), it's the language used in creating the webpages and its contents with the help of Cascading Style Sheets (CSS). CSS is a language for describing the presentation of the webpages, including colors, layout, and fonts.

BROWSERS : is a computer program with a graphical user interface for displaying HTML and PHP files. The following browser Google Chrome, Mozilla Firefox, Opera, Safari and explorer were used to test the server GUI and web application.A web browser (commonly referred to as a browser) is application software for accessing the World Wide Web. When a user requests a web page from a particular website, the web browser retrieves the necessary content from a web server and then displays the page on the user's device.

User Interfaces : User interface is a visual platform for users which support them, and also enabling them to interact with the system. The interface is the crucial aspect which needs more attention.At the most basic level, the user interface (UI) is the series of screens, pages, and visual elements—like buttons and icons—that enable a person to interact with a product or service. Some of the system functionalities of the project are shown below with the user interfaces.

Login pages : The login page is the page were users enter their credentials for the system to authenticate and ensure only authorized users to access the system

providing a security standard to protect vital information. The system has two login pages one for the Chief Registrar unknown as the administrator and the other for the court Registrar, they are the users.

Fig 6 . Login Page

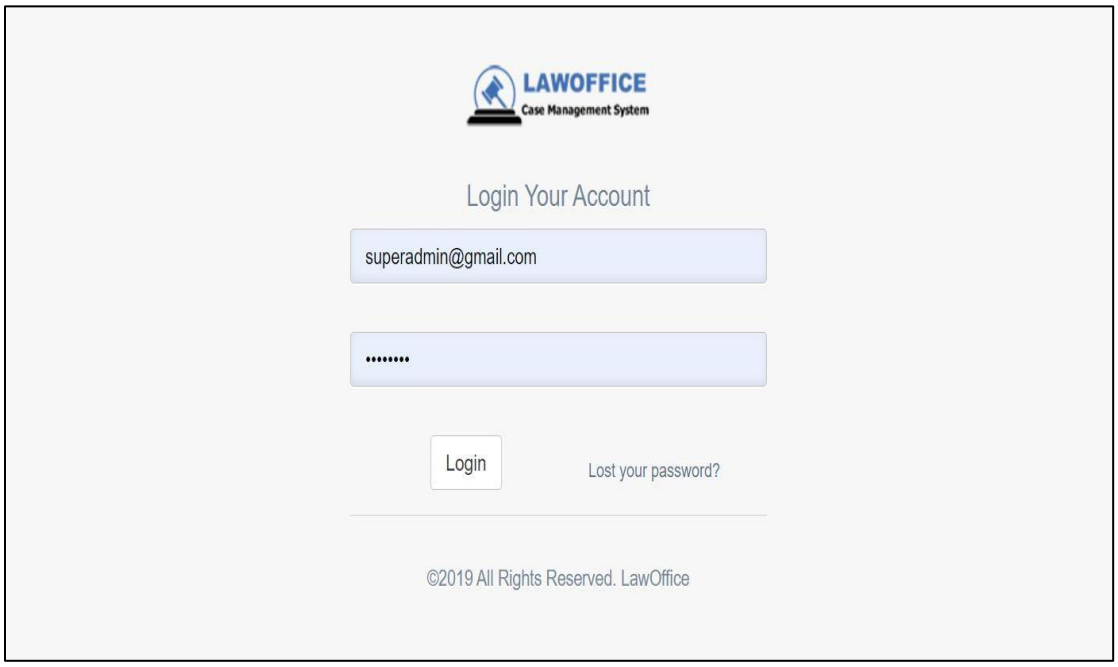
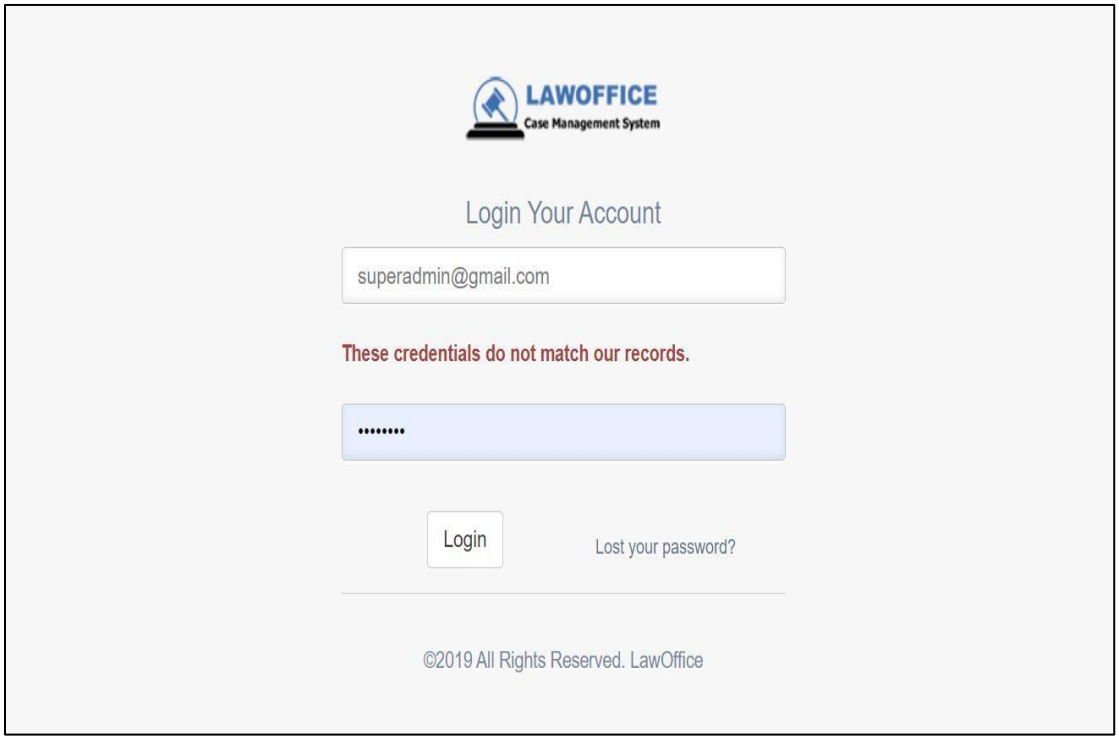


Fig 7 . Login failed Security Failure



Home Page : After a successful login by the registrar the home page of the application shows up, were the registrar clicks on the button labelled Click here to proceed. From there the registrar can have access to view cases, register cases, updates cases, print cases and delete cases.A home page (or homepage) is the main web page of a website. The term also refers to one or more pages always shown in a web browser when the application starts up. In this case, it is also known as the start page.

Fig 8 . Home Page

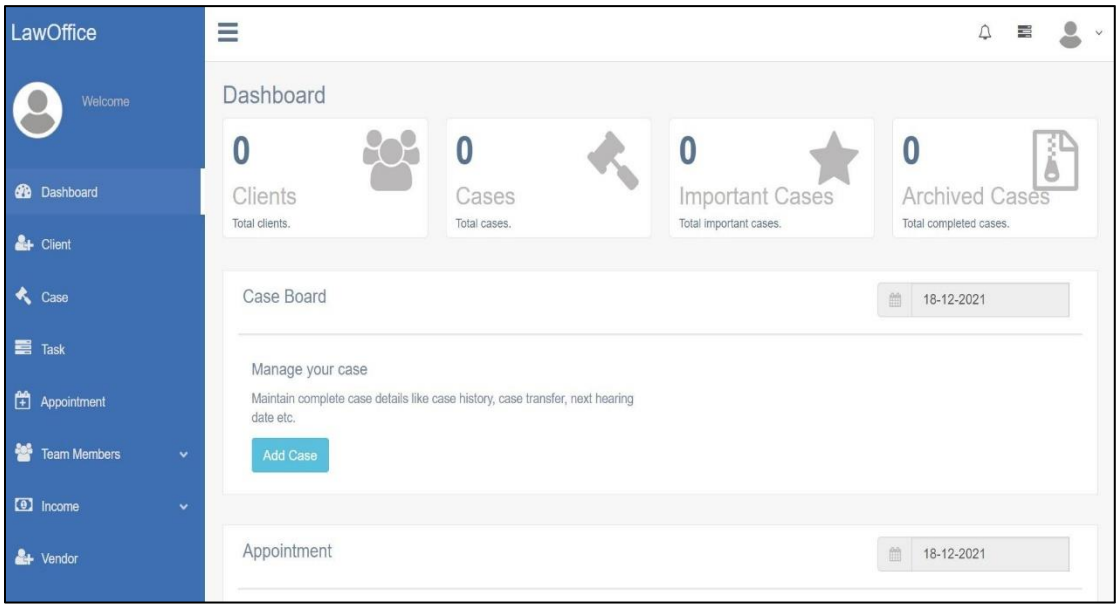
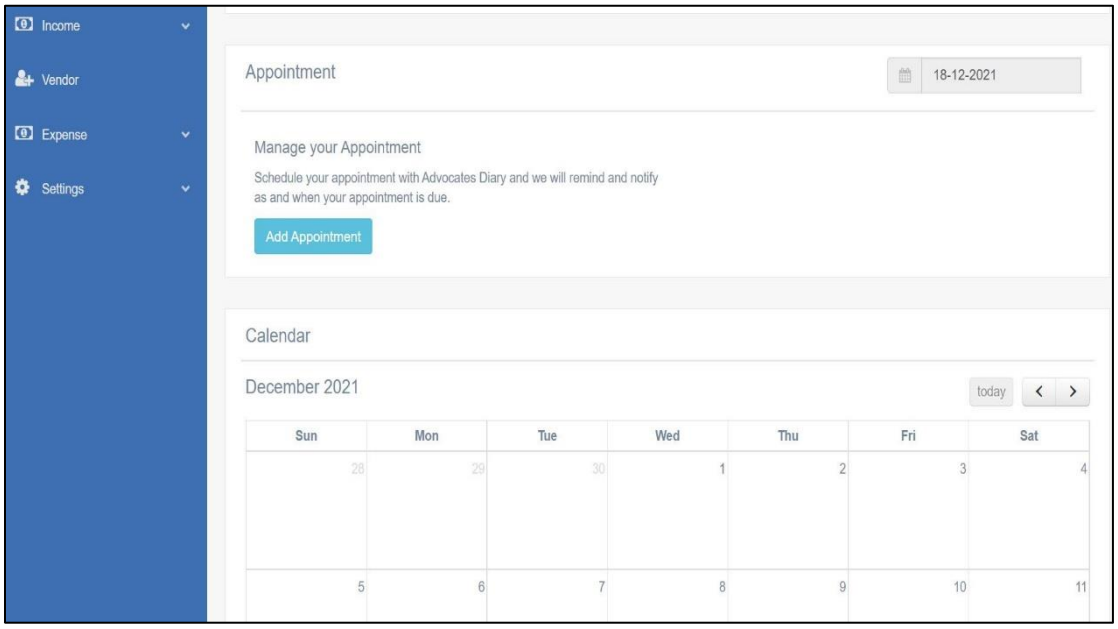


Fig 9 . Home Page



Registering a case : The application has a feature that makes it possible for new case to be registered. After a successful registration a case is added to the case list also called the causelist.

Fig 10 . Registering a case

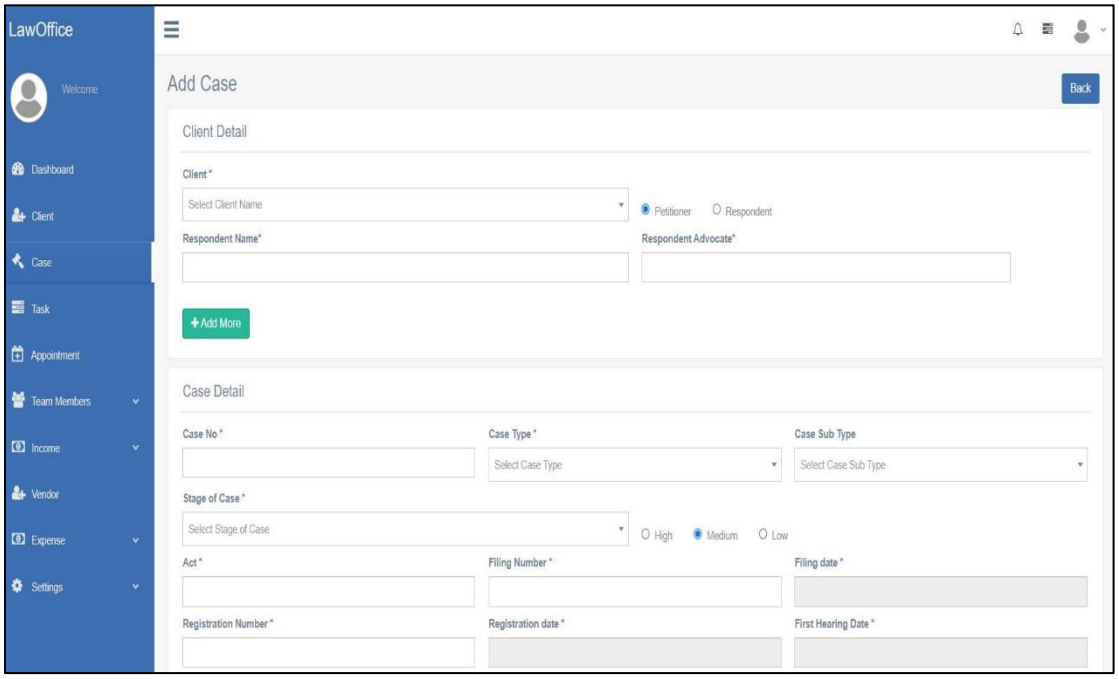
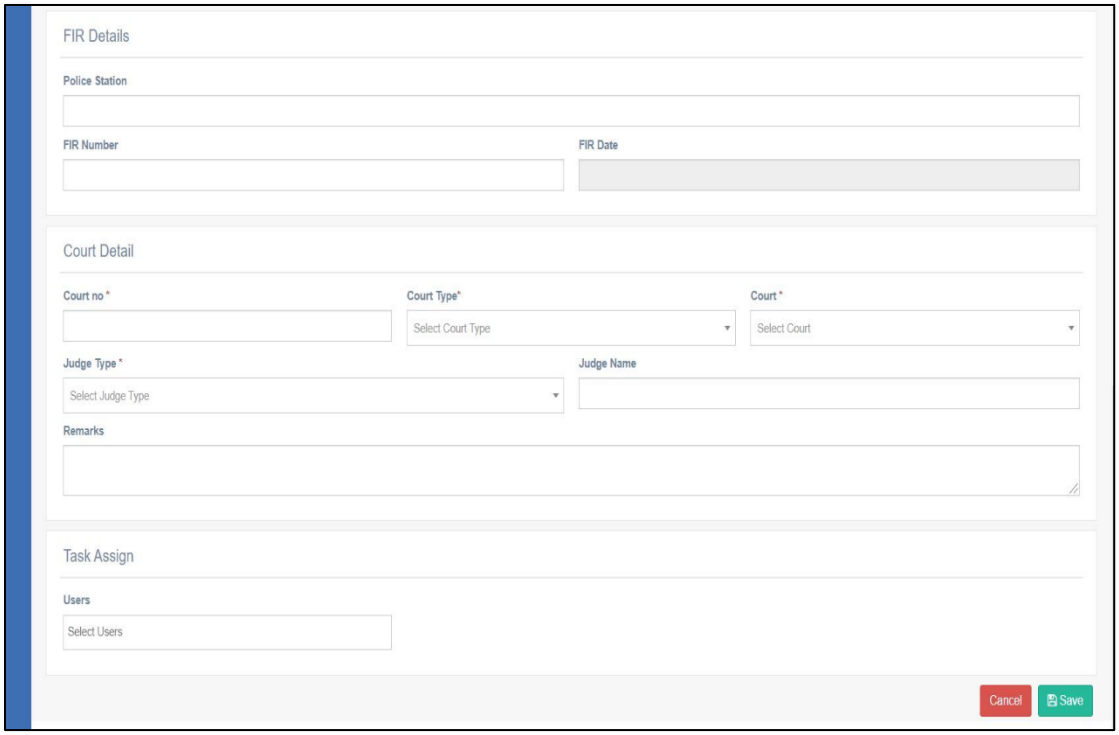
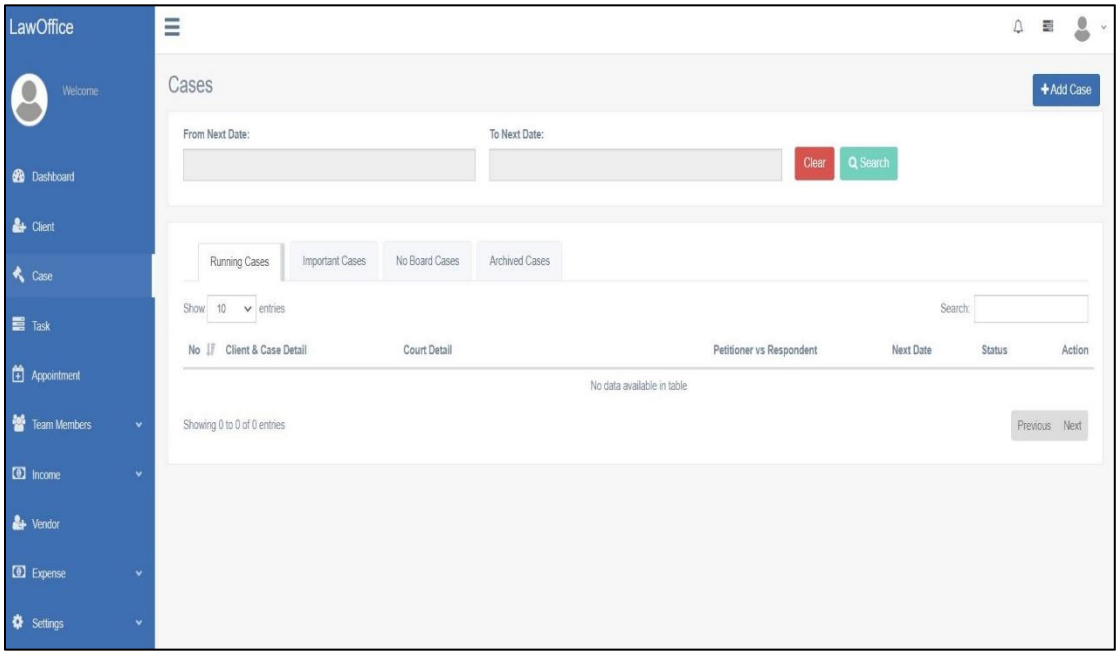


Fig 11 . Registering a case



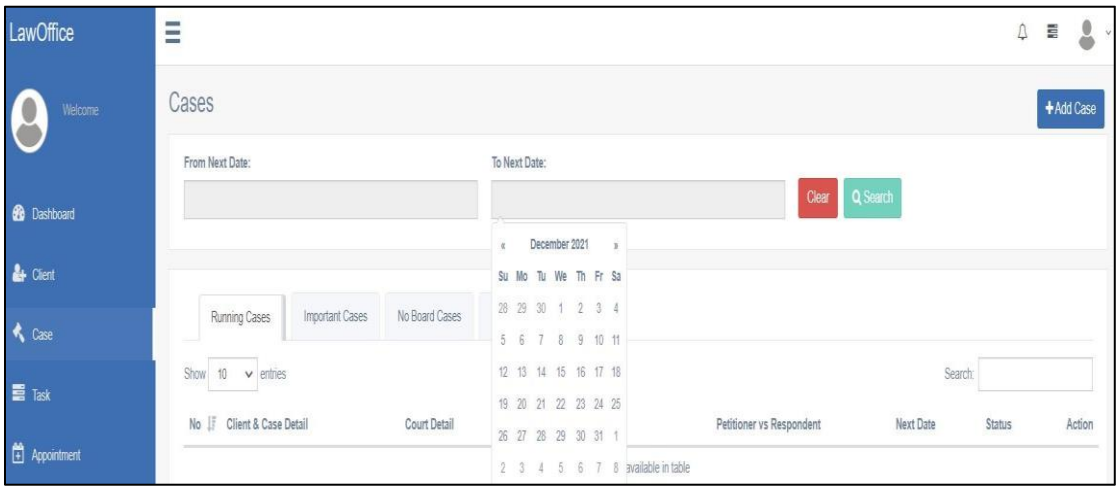
View Cases : The application also has a feature that makes it possible for registrar to view the cases which enable them to search, update and delete a case after registering a case.

Fig 12 . Viewing Cases



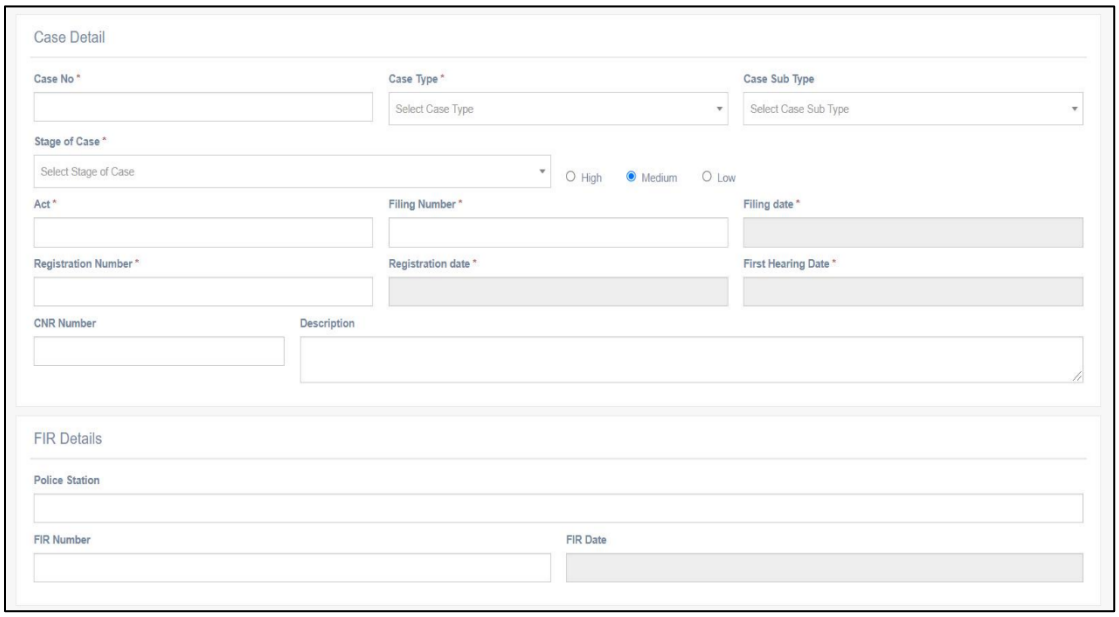
Search Function : It gives the registrar the ease of looking for a case in the system. Since the database has stored the record of cases. It makes their work easier and faster than going through the whole list of registered cases, since they get the results displayed immediately. In the figure below, a search for a case with the key word “tres”, which list are words containing “tres”.

Fig 13 . Searching cases



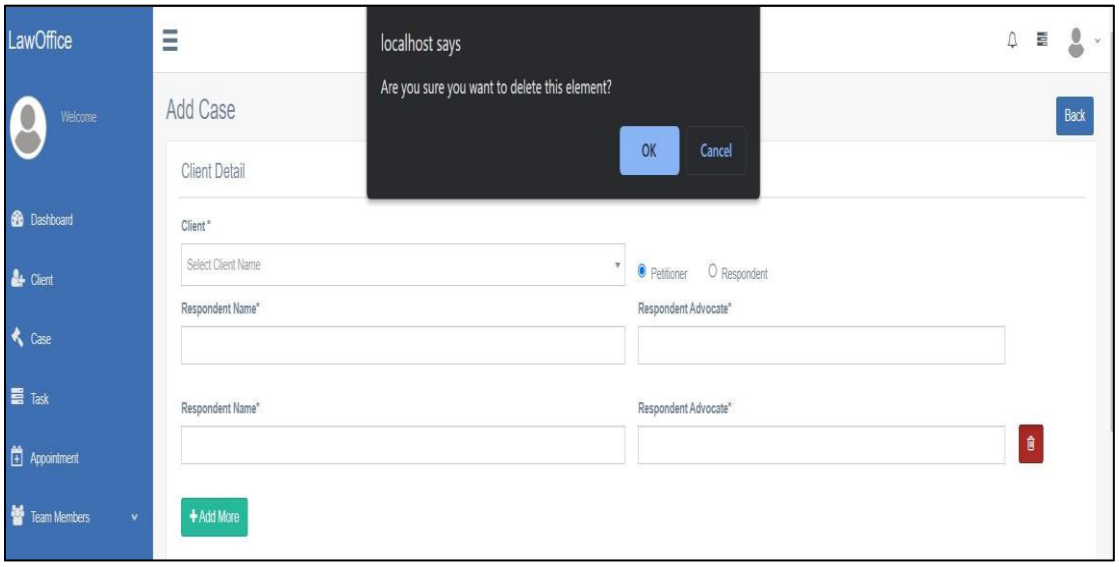
The update function : This function enable the registrar to update a case after registering a case. Some of the things that can lead to updating a case are wrong sitting, suit number, the name of the plaintiff and defendant, nature of the case andalso the stage of the case.

Fig 14 . Updating cases



Deleting a Case : The application enables registrar to delete a case. Some cases are deleted when they have already been held and given verdict or when it has been postpone. Before a registrar delete a case, he's being prompt whether he's sure he wants to delete that particular case.

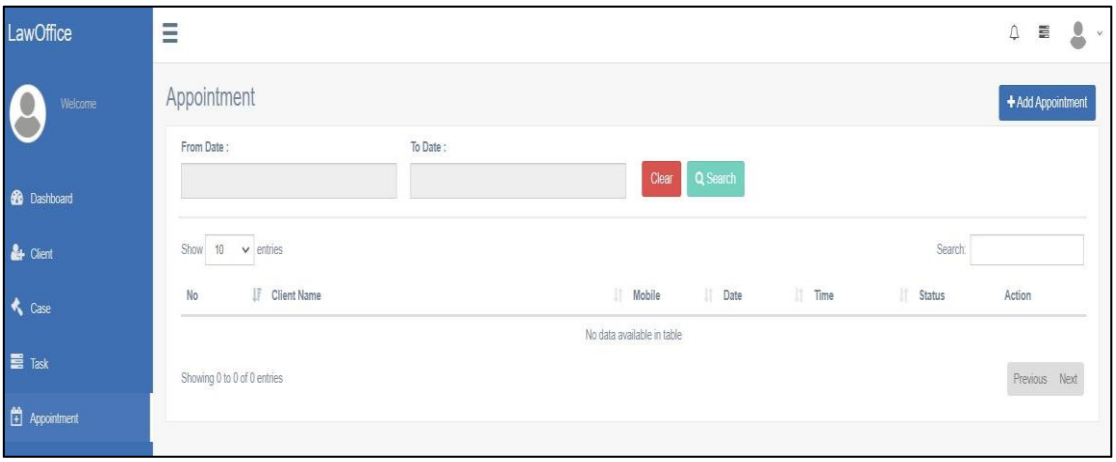
Fig 15 . Deleting a case



Report Creation : After a period of time in registering cases, the registrar creates a report, which contains the status or details of all cases that will be held in the upcoming days which is called the causelist.

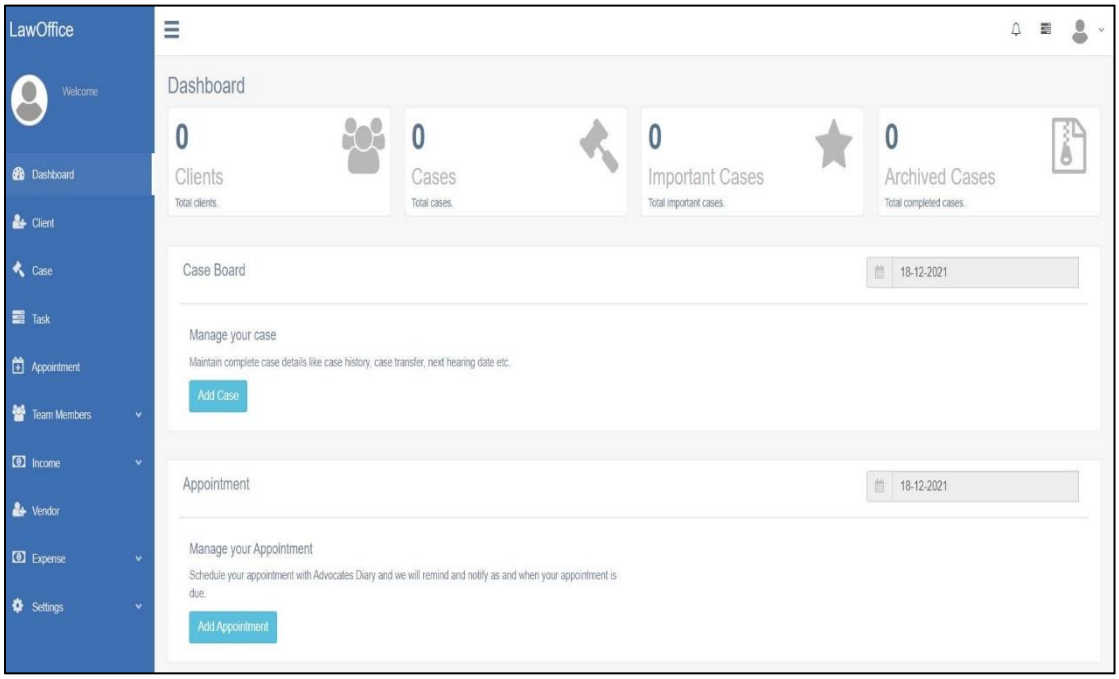
Fig 16 . Task

Fig 17 .Appointment



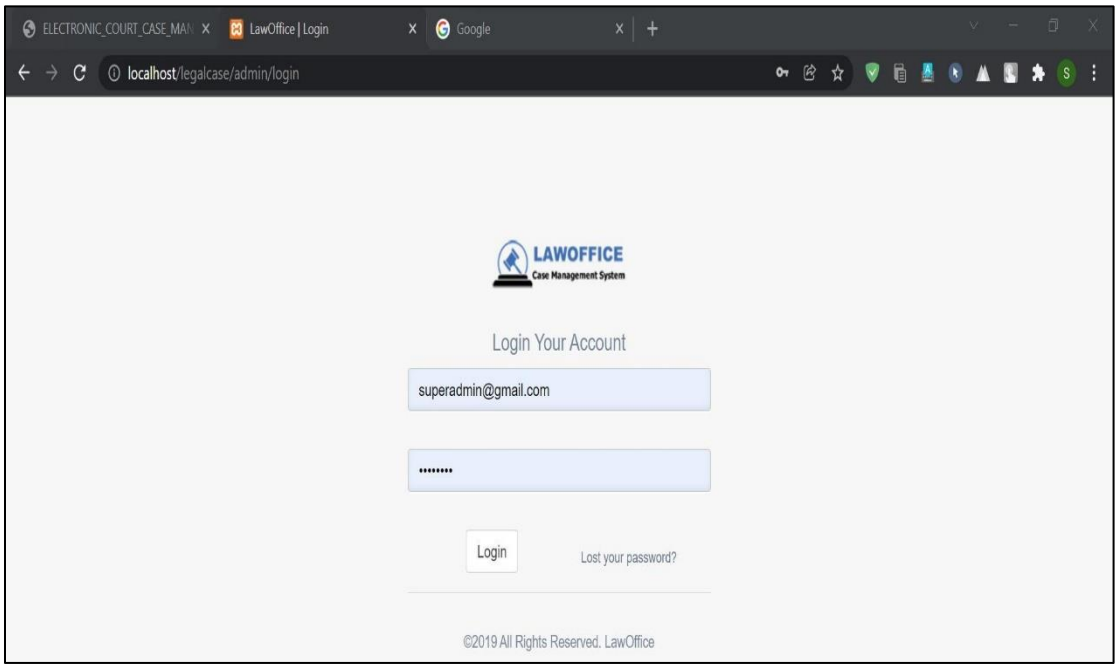
Chief registrar dashboard : After a successful login by the chief registrar the dashboard of the application shows up. From there the chief registrar can have access to the application to view the name of registrars and the judge in each court, the number of cases in each courts which have not yet been held, the time and date the registrar login and logout, and the time they spent.From there the chief registrar can have access to the application to view the name of registrars and the judge in each court, the number of cases in each courts which have not yet been held, the time and date the registrar login and logout, and the time they spent. The application also shows the total number of a case type in each court such as trespassing, defrauding, robbery, data breach etc.

Fig 18 . Chief registrar dashboard showing court activities



Online webpage for clients : The online webpage enable client to select a particular court and search for a case to find out the status or the details of that case such as the sitting date, the suit number, the name of the judge who will handle the case, the courtroom which the case will be held, the names of both plaintiff and defendant, etc.

Fig 19 . Online Webpage



Testing

Testing the application was expedient as it ensured that the intended system generated the required output given the necessary input. Also to determine if the system is able to complete actions in relation to its function and non-functional requirement. I actually execute the system to verify that it was free of errors and function as required. The thorough testing of the system before its release needs to be done via the various test cases and modules so that the software becomes devoid of bugs and uses minimum space requirements as well as a minimal time to perform, however software testing process begins when the application is developed, the documentation and related data structures are designed. During the software test and implementation, the software as a whole is tested to ensure that all its components work well together otherwise the application or the project cannot be said to be complete. If the test is successful, the software is then sent to the user to evaluate the software against their acceptance criteria. If the software satisfies these criteria, the application is put to use. Since I developed a web application I had to go through various web application testing methods.

Functionality Testing : This involves validating if an application conforms to its specifications and correctly performs all its required functions. This entails a series of tests which perform a feature by feature validation of behavior, using a wide range of normal and erroneous input data. This can involve testing of the product's user interface, database management, security, installation, networking; etc. Testing can be performed on an automated or manual basis using black box or white box methodologies.

Below are some of the checks that are performed:

- To verify there is no dead page or invalid redirects in the system.
- First check all the validations on each field.
- To check for Wrong inputs to perform negative testing.
- Verify the workflow of the system.
- Verify the data integrity.

Usability Testing : This involves verifying how the application is easy to use. This is a process by which human computer interactions characteristics of a system are measured, and weakness are identified for correction. Ease of learning, navigation,

subjective user satisfaction and general appearance were some of the factors considered when this system was subject to a usability testing.

- Test the navigation and controls.
- Content checking.
- Check for user intuition.

Compatibility Testing : Compatibility is nothing but the capability of existing or living together. In normal life, Oil is not compatible with water, but milk can be easily combined with water.Compatibility Testing is a type of Software testing to check whether your software is capable of running on different hardware, operating systems, applications, network environments or Mobile devices. This testing is done to ensure the compatibility of an application's operating system, and hardware platforms. Compatibility testing can be performed manually or can be driven by an automated functional or regression test suite. Compatibility testing is performed based on the context of the application.

- Browser compatibility.
- Operating system compatibility.
- Compatible to various devices like notebook, mobile, etc.

Performance Testing : This testing involves verifying the server response time and throughput under various load conditions.

Load testing - is the simplest form of testing conducted to understand the behavior of the system under a specific load. Load testing will result in measuring important business critical transactions and load on the database, application server, etc. are also monitored.

Stress testing - is performed to find the upper limit capacity of the system and also to determine how the system performs if the current load goes well above the expected maximum.

Soak testing - also known as endurance testing, is performed to determine the system parameters under continuous expected load. During soak tests the parameters such as memory utilization is monitored to detect memory leaks or other performance issues. The main aim is to discover the system's performance under sustained use.

Spike testing - is performed by increasing the number of users suddenly by a very large amount and measuring the performance of the system. The main aim is to determine whether the system will be able to sustain the work load.

Validation Testing : This testing runs the system in a live environment using real data. This will test for system performance (throughput and response time) peak work load performance, methods and procedures, backup and recovery.

Acceptance Testing : This testing is performed on the final system wherein users conduct verification, validation, and audit test. It uses real data over an extended time period.

Unit Testing : The primary goal of unit testing is to take the smallest piece of testable code or software in an application/system, isolate it from the remainder of the code and determine if it behaves as it should. The main modules of the system are at best complex and for them to work seamlessly, each would have to undergo rigorous repetitive logical, as well as semantic tests (data handling). This test was done at the development level so as to ensure each piece of the code that was written will work. It was most often tested independently of the other modules of the web based application.

Integrating Testing : Integration testing is a form of testing in which software components, hardware components or both are combines and tested to evaluate the interaction between them. This testing determines that applications involved are functioning well with each other. Integration testing including user interface testing and usability testing.

Effectiveness Testing : Effectiveness means whether a particular task can be done by users. After the test was finished, all participants accomplished task1 (Add new case) and task 3 (search for a registered case based its type). Three out of Five 60% completed task 5 . Only the 3rd and the 5th participant were able to accomplish all the tasks. Table 3 illustrates a ratio of completed tasks and the number of

accomplished tasks. Approximately, all of the tasks are achieved. Consequently, the web application of e-Court is effective.

Fig 20 . Shows result of Effectiveness analysis

Participant	Task 1	Task 2	Task 3	Task 4	Task 5	Finished tasks
1	√	√	-	√	√	4
2	√	√	√	√	-	4
3	√	√	√	√	√	5
4	√	√	√	√	-	4
5	√	√	√	√	√	5
Success	5	5	4	5	3	
Completion Rates	100%	100%	80%	100%	60%	

Efficiency Testing : The smart phone video recording software recorded the time when participants did the tasks. Some tasks were more difficult to complete than the others. The statistics in reveal the average time spent on tasks in minute. It can be clearly seen that the average time to complete the first task takes more time than the other tasks which is 9 minutes and 20 seconds. However, task 5 consumes the least time to achieve it which is 2 minutes and 27 seconds in average. The averagetime on task 2 and task 3 take nearly the same time to finish which is 2 minutes and a half. On the other hand, task 4 takes under 4 minutes to accomplish. Secondly, not much difference between the average time to accomplish task 2, 3, 4 and 5. Also, task 1 approximately needs time to achieve as much as the other tasks. To sum up, the library website is efficient enough due to it does not take a long time to conduct some routine tasks.

Fig 21 . Average time on tasks

Tasks	P1	P2	P3	P4	P5	Avg time on tasks
Task 1	10.2	9.0	8.8	9.0	9.0	9.2
Task 2	3.0	2.3	2.0	2.3	1.5	2.2
Task 3	3.0	2.2	2.2	2.1	1.4	2.2
Task 4	6.0	5.3	1.6	2.0	2.5	3.5
Task 5	3.0	2.0	1.5	1.5	1.4	2.3
Sum of time	25.0	20.8	16.0	16.8	15.8	Avg of sum=18.88

Satisfaction Testing : Simply, all participants vote by rate to determine the level of satisfaction. Generally, satisfaction can be defined as to what extent it is enjoyable or pleasant . The ratio in illustrates the participants vote on each task. According to the vote rate and the above statistical equation, the average of the rate shows that all participants were satisfied with the web application of the e-Court.

Fig 22 . Shows the satisfaction rate. Average bar = summation of avg / 5 = 97.52%

Participants	Task 1	Task 2	Task 3	Task 4	Task 5
P1	95%	98%	95%	98%	95%
P2	100%	100%	95%	100%	95%
P3	100%	100%	96%	100%	96%
P4	100%	100%	96%	100%	92%
P5	100%	100%	94%	100%	93%
Avg. rate	99%	99.6%	95.2%	99.6%	94.2%

Staff Training : Staff training is undertaken simultaneously during the testing mode. Staff training is one of the difficult stages of the software introduction. Regardless of the availability of the user guides (manuals), in most cases it is necessary to train certain judges, assistants, and session secretaries. On the initial stage, many judges, or assistants faced problems while using the new software. Therefore, the software support team is operating in the judicial system and it provides consultancy to the users when needed. It should be mentioned, that the user is always afraid of novelty. Itis uncomfortable for him/her to switch to the new system. But this is a natural process when introducing a novelty. The only solution is to persuade the user that the softwarewill be beneficial for him/her and have positive impact on the judiciary in general. By the end of 90s, when they purchased computers for the courts, the judges were against switching from the typing machines to computes and were still giving the typists the handwritten texts.The only solution is to persuade the user that the software will be beneficial for him/her and have positive impact on the judiciary in general. Later when the position of the typist was abolished in the courts, many judges were paying their own money for the typing services. This seems funny from today's perspective, since it's difficult to imagine typing a decision without computer. The same fears are

present in respect to the introduction of the electronic case management software as well. It is a natural process, however, today everyone clearly realizes the need for electronic case management in the judiciary, its positive outcomes and benefits for the judicial system.

CONCLUSION

We have developed a web-based based application to control and allow complete registration of all court case which are related to the court by the domain user thus registrar, who can register, update, delete, and search case and create report. The flow of information provides communication and notification between the courts and public, in which the client or public can access status of a case online.

We did my best so that this project meets the stated aim and looking back at the aim it can be seen that the project has been completed given that it has met the aim.

Lesson Learnt : This project has helped me learn how to work effectively as a team. This project has made me learn about the real life implementation of what I have studied.

Source Code for Registrar

```
<?php

 include("connection.php");
 session_start();
 if(!isset($_SESSION["user"])){
 header("location:admin.php");
}
 ?>
<!DOCTYPE html>
 <html lang="en">
 <head>
 <title>causelist</title>
 <link rel="stylesheet" type="text/css" href="css/main.css" />
 <link rel="stylesheet" type="text/css" href="css/min.css" />
 </head>
 <body>
 <ul style="text-align:right">
 <li><a href="admin.php">Register case</a></li>
 <li><a href="view.php">View cases</a></li>
 <li><a href="logout.php">logout</a></li>
 </ul>
 <div id="pic"><center><img src="image/logo.jpg"></center></div>
 <nav id="admin_page">
<p style="float: right">Registrar: <i><strong><?php
 $user_message=" {$_SESSION['user']}";
 echo "$user_message";
?></i></strong></p><h6 style="color: white;font-family: verdana;font-size:
13px;margin-left:
20px;margin-top:15px;">
View CauseList</h6>
 </nav>
 <!--Main section of the page -->
 <div id="view_container">
```

```
 <center><h2>Causelist</h2></center><hr></hr>
 <div id="print">
 <input name="search" class="printbtn" type="submit" value="Print Causelist"
onclick="printContent('div1')">
 </div>
<!--search-->
 <form action="search.php" method="POST">
 <div id="search">
 <input name="valueToSearch" class="searchtxt" type="text"
placeholder="Search..." required>
 <input name="search" class="searchbtn" type="submit" value="Search">
 </div></form>
 <br>
 <!--end search-->
 <div id="div1">
 <table>
 <tr>
 <th>SITTING DATE</th>
 <th>SUIT NO</th>
 <th>PLAINTIFF</th>
 <th>VS</th>
 <th>DEFENDANT</th>
 <th>NATURE OF CASE</th>
 <th>STAGE</th>
 </div> <th>COURT</th>
 <th>UPDATE</th>
 <th>DELETE</th>

 </tr>
 <tr>
 <?php
 include ("connection.php");
 if($user=$_SESSION["user"]){
```

```
$i = "select c.sdate,c.suitno,c.plaintiff,c.defendant,c.casenature,c.stage,c.cname from causelist
c,users u WHERE c.cname=u.cname AND username='".$user."' order by c.sdate";
}
$h = mysqli_query($ecms,$i);
while($tr=mysqli_fetch_array($h))
{
?>
<tr>
<td><?php echo $tr[0]; ?></td>
<td><?php echo $tr[1]; ?></td>
<td><?php echo $tr[2]; ?></td>
<td><?php echo "VS" ?></td>
<td><?php echo $tr[3]; ?></td>
<td><?php echo $tr[4]; ?></td>
<td><?php echo $tr[5]; ?></td>
<td><?php echo $tr[6]; ?></td>

<td style="padding-left: 20px"><a href="update.php?suitno=<?php echo $tr["suitno"];
?>"><i class="fa"></i></a></td>
<td style="padding-left: 20px"><a href="delete.php?suitno=<?php echo $tr["suitno"];
?>"onclick="return confirm('You are about to DELETE this record, Are you sure?');"><i
class="da"></i></a></td>
</tr>

<?php
}
?>
</table>
</div>
</body>
```

```
</html>
```

Source Code for Chief Registrar

```
<?php

 include("connection.php");
 session_start();
 if(!isset($_SESSION["admin"])){
 header("location:login.php");
 }
 if($admin=$_SESSION["admin"]){
 $i = "SELECT (SELECT COUNT(*) FROM `causelist` WHERE
`casenature`='TRESPASSING' and cname='".$_GET['cname']."') AS 'num',
(SELECT COUNT(*) FROM `causelist` WHERE `casenature`='ROBBERY' and
cname='".$_GET['cname']."') AS 'numb', (SELECT COUNT(*) FROM `causelist`
WHERE
`casenature`='DEFRAUDING' and cname='".$_GET['cname']."') AS 'n',
(SELECT COUNT(*) FROM `causelist` WHERE `casenature`='DATA BREACH'
and
cname='".$_GET['cname']."') AS
'nu',c.sdate,c.suitno,c.plaintiff,c.defendant,c.casenature,c.stage,c.cname,u.judge,s.user
name from
causelist c,court u,users s WHERE c.cname=u.cname and u.cname=s.cname AND
c.cname='".$_GET['cname']."' group by casenature;";
}
 $h = mysqli_query($ecms,$i);
 $tr=mysqli_fetch_array($h);

 ?>
<!DOCTYPE html>
<html lang="en">
 <head>
<title>Dashboard</title>
<!--css reference links-->
```

```
<link rel="stylesheet" type="text/css" href="css/main.css" />
<link rel="stylesheet" type="text/css" href="css/min.css" />
<!--jquery link for datepicker
<script src="https://code.jquery.com/jquery-1.12.4.js"></script>
 <script src="https://code.jquery.com/ui/1.12.1/jquery-ui.js"></script>
 <script>
 $( function() {
 $( "#datepicker" ).datepicker();
 } );
 </script>
end of script-->
</head>
<body>
<!--menu list-->
<ul style="text-align:right">
 <li><a href="logout.php">logout</a></li>
 </ul>
<!--page logo-->
 <div id="pic"><center><img src="image/logo.jpg"></center></div>
<nav id="admin_page">
<p style="float: right">Registrar: <i><strong><?php
 $user_message=" {$_SESSION['admin']}";
 echo "$user_message";
?></i></strong></p><h6 style="color: white;font-family: verdana;font-size:
13px;margin-left:
20px;margin-top:15px;">
Chief Registrar Dashboard</h6>
</nav>
 <!--Main section of the page -->
 <div id="dash_container">
 <div id="dash">
 <center><h2>Electronic Court Case Management
System</h2></center><hr></hr>
 <div id="dashdiv">
```

```
 <center><h2> COURT: <?php echo $tr['cname']; ?></h2></center>
 <div class="thedetail"><img src="image/1.ico" height="30px">
 <h2 style="margin-top: -30px;padding-left: 40px">Registrar: <?php echo
$tr['username']; ?></h2>
 </div>
 <div class="thedetail"><img src="image/2.png" height="30px">
 <h2 style="margin-top:-30px;padding-left: 40px">Judge: <?php echo $tr['judge'];
?></h2>
 </div>
 <div class="thedash"><img src="image/3.png" height="30px">
 <h2 style="margin-top: -25px;text-align: center;padding-
right:25px">TRESPASSING
<br><br><?php echo $tr['numb']; ?></h2>
 </div>
 <div class="thedash"><img src="image/4.png" height="30px">
 <h2 style="margin-top: -25px;text-align: center;padding-right:55px">ROBBERY
<br><br><?php echo $tr['num']; ?></h2>
 </div>
 <div class="thedash"><img src="image/5.png" height="30px">
 <h2 style="margin-top: -25px;text-align:
center;paddingright:25px">DEFRAUDING<br><br><?php echo $tr['n']; ?></h2>
 </div>
 <div class="thedash"><img src="image/6.jpg" height="30px">
 <h2 style="margin-top: -25px;text-align: center;padding-right:5px">DATA
BREACH<br><br><?php echo $tr['nu']; ?></h2>
 </div>
 </div>
 </div>
 </div>
</body>
</html>
 <?php
 mysqli_close($ecms);
```

?>

Kernel Source code

```
<?php

namespace App\Console;


use Illuminate\Console\Scheduling\Schedule;
use Illuminate\Foundation\Console\Kernel as ConsoleKernel;

class Kernel extends ConsoleKernel
{
    /**
     * The Artisan commands provided by your application.
     *
     * @var array
     */
    protected $commands = [
        Commands\ResetDatabase::class
    ];

    /**
     * Define the application's command schedule.
     *
     * @param  \Illuminate\Console\Scheduling\Schedule  $schedule
     * @return void
     */
    protected function schedule(Schedule $schedule)
    {
        // $schedule->command('inspire')
        //          ->hourly();
        $schedule->command('reset:database')
            ->daily();
    }
```

```
    /**
     * Register the commands for the application.
     *
     * @return void
     */
    protected function commands()
    {
        $this->load(__DIR__.'/Commands');

        require base_path('routes/console.php');
    }
}
```

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