Design and Implementation of a Simple Online Court Case Management System Based on the Android Platform

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Abstract— **The main purpose of this research is to create a new application in Android Operating System for a complainant who cannot visit his/her lawyer regularly or unable to go out due to fear of his/her life. Thanks to this research, a new application was established to make a bridge between a complainant and his/her lawyer. Everything is done automatically after necessary data entered into the application. So, costs are reduced and wasting of the time is diminished.**

Keywords— *lawyer user, system, court, application*

I. INTRODUCTION

In the judicial system, the scope of work with text documents is very important, and the decision-making process must always be fair and transparent. Manually processing a large volume of information is very difficult. In addition, people must go to a lawyer to open a case in a court because of lack of their knowledge of policy. Therefore, tools for the intellectual analysis of the information to predict potential judicial decisions and facilitate the routine work of lawyers [1].

This study identifies large legal documents with the help of tech-savvy lawyers. Why is it that corporate lawyers are always ready to make technological innovations [2]? Phone calls are popular topic these days. Millions of people around the world have become mobile phone owners. Interestingly, according to some studies, some European countries now have more mobile phones than people.

However, in some developing countries the technology enables the poor people to access health and legal services using Internet services.

The great thing about the popularity of mobile phones is the availability of bill-pay or pay-as-you-go services at a phone or online store. This project aims to create an online Android application that provides a means of communication for lawyers and their clients.

As the popularity of Android increases with the use of Android smartphones and tablets, there is a need for applications that make our lives easier. That is why this application gives people an easy way to stay in contact with their lawyers [3].

The processes and workflow of the case management system are unique to each court. The workflow feature allows administrators to design case files based on court rules and procedures. The editing confirmation feature may be related to the steps involved in case management, usually clients visit lawyers at their office, where the lawyers check on the client's case and give a solution to the problem. This type of client can benefit from this app by contacting their lawyer by text chat or phone, and the lawyer can give their proposed solution or give the client advice through the app. In this application, the lawyer and client must be registered to see the information and communication. In this application, the user can find and contact a lawyer through the internet.

The user can see the lawyer by using online chat and phone numbers. Additionally, the process without using this application takes a lot of time and costs a lot of money for the user and the court, that effect of the lawyer and the user's information delivery between them (Fig. 1) [4].

II. THE ADVANTAGES OF USING THIS SYSTEM

Almost all modern case management software has online functionality. This means that you can access your customers' data at any time and from anywhere with secure connectivity. This feature means you can now work from home or another location. This is a great advantage if you travel frequently, as you can stay productive and do your work anywhere (not just from your office).

A task management program collects a list of contacts, a desktop calendar, lists of appointments and cases, time tracking systems, and document files and packs them into one package. The system helps the user to identify a good lawyer easily, and the user saves a lot of time and money. This system makes it easier for both the lawyer and the client to be in contact with each other.

In this system, a lawyer can quite easily organize and be aware of their schedules; it is also a useful reminder for the user's trial date [5].

With File Manager, it is not hard to save and retrieve your clients' files. All customer-specific information is saved in one

area. Then, the software lets you enter every customer's details You can make documents clear by using things like case description, deadlines, case numbers, and more. Since all the information is stored in one area, the program will ensure that you have easy access to this information [6].

III. THE DISADVANTAGES OF USING THIS SYSTEM

There might be times when the connection to the internet is lost; this, in turn, leads to a failure in the system. The system might be prone to hacking, which could cause the system to stop functioning. It could be prone to system crashes. An administrator is needed to check and accept the lawyers' registration continually.

The main purpose of this research is to create a new application in Android Operating System for a complainant who cannot visit his/her lawyer regularly or unable to go out due to fear of his/her life. Thanks to this research, a new application was established to make a bridge between a complainant and his/her lawyer. Everything is done automatically after necessary data entered into the application. So, costs are reduced and wasting of the time is diminished. System development methodology in software engineering is a framework that is used to structure, plan, and control the process of developing an information system.

Types of methodology:
A. Agile (software development)
B. Crystal Methods
C. Dynamic Systems Development Model (DSDM)
D. Extreme Programming (XP)
E. Feature Driven Development (FDD)
F. Joint Application Development (RAD)
G. Rational Unified Process (RUP)
H. Scrum
I. Spiral
J. Systems Development Life Cycle (SDLC)
K. Waterfall (a.k.a. Traditional)

IV. INCREMENTAL MODELING

The best model for our application is the incremental model because it is a process of building a complete model in small steps like the building blocks of models. That is, you break the large system into convenient subsystems. Then you choose, based on some criteria, one of the subsystems (SS1) and build its model.

Once this first subsystem model is completed and validated by the user, and then another subsystem (SS2) is selected, using the same or similar criteria. This is also modeled and validated.

Once this is done, you integrate these two subsystems (SS1+SS2) and validate it with a customer or user. You proceed this way for all remaining subsystems, one by one, integrating each new subsystem model with the last joint system model and validating the new joint system.

Fig. 1. Problem statement

Requirements
➢ Software
o Operating system (Android)
o Programing language (Java)
o Markup language (xml)
o Scripting language (php)
o Database (sql)
➢ Hardware
o Mobile (have Android operating system)
o Computer for database

Design

Design is an important step in implementing a system and it is helpful to understand how to implement a system. We used various types of design to establish the product of this research:

A. Rich Picture (Fig. 2)
B. Screen Design (Fig. 3)
C. Entity-relationship (ER) Diagram (Fig 4)
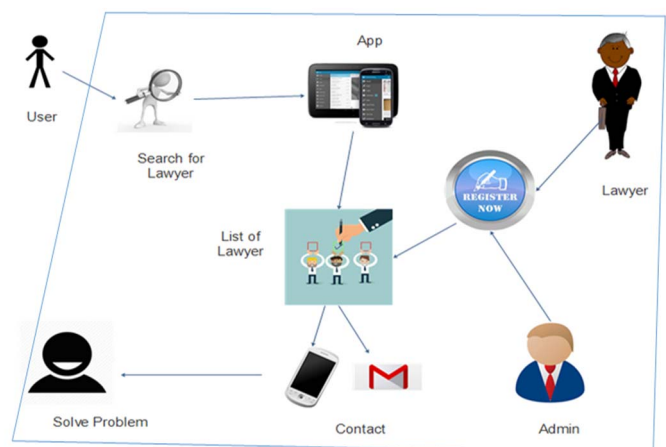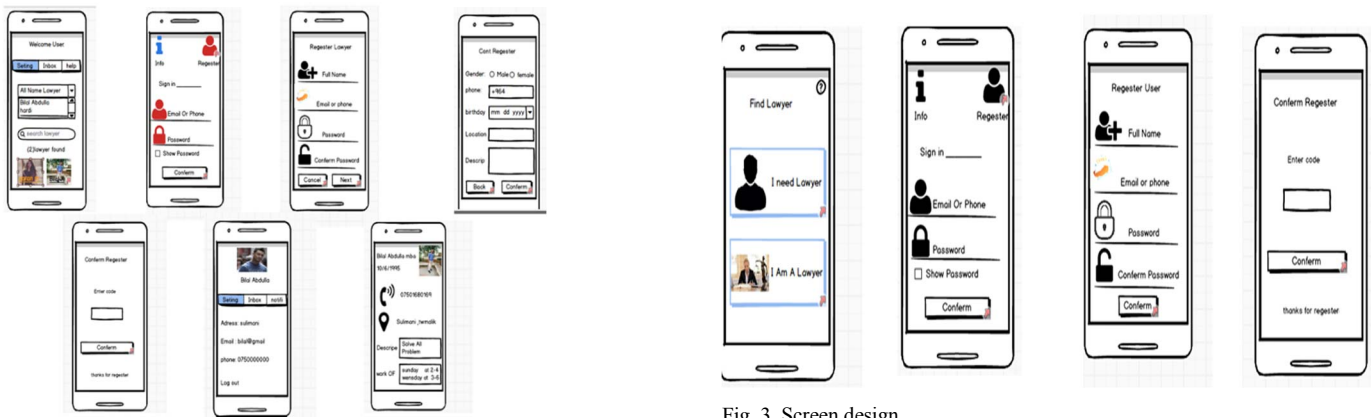D. Use case diagram (Fig. 5, Fig. 6)

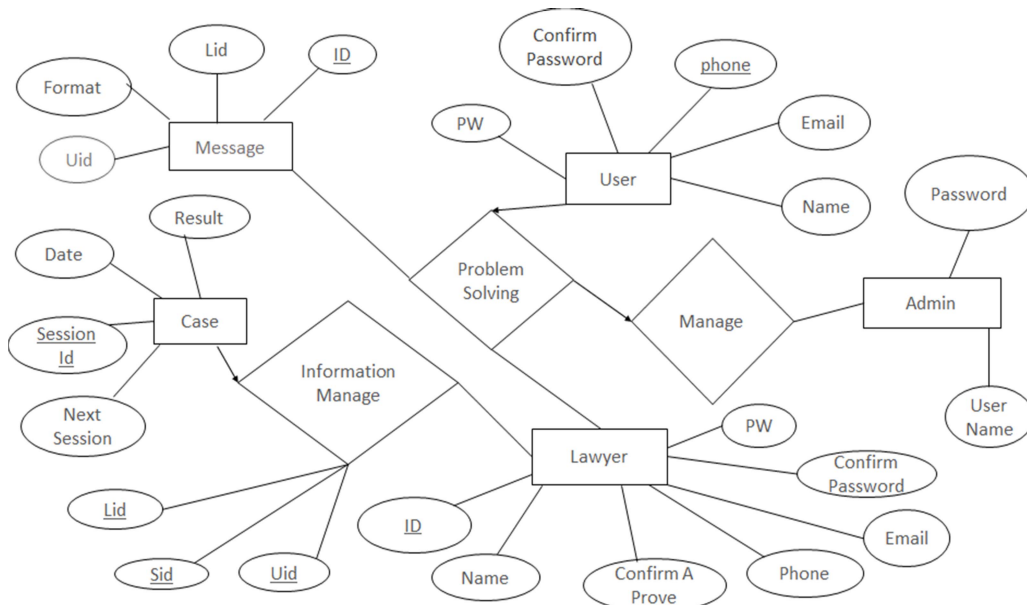Fig. 2. Rich picture

Fig. 3. Screen design

Fig. 4. ER diagram our established algorithm

The ER diagram helps the researcher to explain their work in the best way and explain the number of tables that they must create in the database (Fig. 4). The attributes and the relationships between tables in this case represent the name of the tables and the name of the attributes and the relationships between themes.
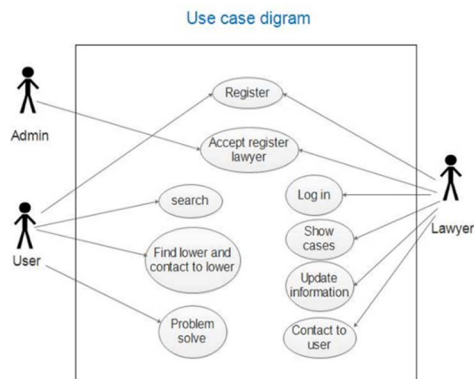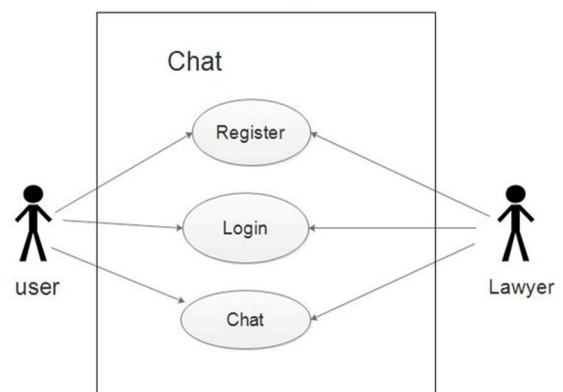

Fig. 5. Use case diagram

Fig. 6. Use case diagram for chat

V. WORKFLOW

In this system, we try to reduce the lawyer's work and wasted time and reduce the cost for the customer. The workflow for this system is as follows. The first time the user wants to use this application, they must download it from the Google Play Store. Then, they must introduce themselves; if he/she is a lawyer, he/she must select the "I am a lawyer" button. If he/she is a customer and needs a lawyer, he/she must choose the "I need a lawyer" button.

If the user chooses the "I need a lawyer" button, the system will go to a new window that contains a register (info, sign in, email or phone, password, show password, confirm) button. If this is the first time this user is using this application, he/she must choose the register button that contains spaces for their full name, email or phone, password, confirm password, and then the confirm button. Then they will get a code, and after confirming this code, they will be a member of this application.

If the customer is already a member, he/she can sign in and then see the list of lawyers or search for a specific lawyer that their name recorded in the application. After selecting a lawyer, the customer can see any information that the lawyer recorded, for example, their name, certification, mobile number, and address [7].

If the user is a lawyer, he/she must click on the "I am a lawyer" button, and the system will go to a new window that contains a (register, info, sign in, email or phone, password, show password, confirm) button. If the lawyer has an account, he/she can sign in, but if the user is a new lawyer, then he/she must register. There is also a "cancel" button to return and a "next" button to continue. If the user chooses "next", then they must enter the following information: gender, phone number, birthday, location, description. Then, the user can push the "back" button to return or "confirm" to continue. The user will get a code to confirm so they can be registered as a lawyer in the application. They will have an account that contains three buttons: the first one is "setting," which contains their information, the second one is "Inbox" for conversations with customers, and the last one is "notify" for presenting new things to the lawyer. This is how this system works, and behind these applications, there is an admin that confirms the lawyers' registration by their names and codes that the governorate gave to them.

VI. CONCLUSION AND FUTURE WORK

The world of technology is growing day by day, and humans try to make almost everything smart by mixing it with technology because it will be easier and safer. The aim of developing this application is to reduce the lawyer's and customer's work, reduce cost and time needed. By using this application, the lawyer and the customer can exchange their information safely without any risk.

The future work for this application is to make it more secure and add some features to make it more efficient. We will try to create another part and produce automatic lawyers for helping users and answering their questions quickly and reliably at any time.

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