ANDROID BASED MEDICAL APPLICATION

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ABSTRACT

Medicapp is an application which is designed with the intention to reduce the task of safe keeping prescriptions or maintaining files of records. Medicapp is designed to avoid the hassle caused when a prescription is lost or misplaced. The users under the registration of patients on signing up are provided with a user ID which they use to create and access their account. The doctors on the other hand are provided an ID only after the admin has verified that the doctor is genuine.

The doctors can view and edit their profiles too. But in the profile, the name, qualification, specialization is not editable to maintain authenticity of data. The patient can view his own profile, edit his profile, view all the different diagnosis and prescriptions; he can also upload the reports of different tests. A patient is not allowed to access or view any other account.

Keywords:- Android studio, WAMP server, JetBrains PHP storm,Webhosting, Domain, MySQL.

I.   INTRODUCTION

In today's world maintaining good health is very challenging. With the changing lifestyles, food habits, living environments, the probability of diseases and sickness is on the rise. Along with development in science and technology, technology in the medical field too has witnessed advancement which has helped the human kind drastically. These developments help the patients and doctors to reach conclusions and start treatment more efficiently.

In a household of four, on an average at least two people fall sick in a month, be it something as common as cough and cold or something as chronic as cancer. Along with dealing with sickness and uneasiness caused by the illness, there is an added headache of maintaining prescriptions to keep a check on the medicines prescribed and the suggestions given by doctors for better health.

Medicapp is an application which is designed with the intention to reduce the task of safe keeping prescriptions or maintaining files of records. Medicapp is designed to avoid the hassle caused when a prescription is lost or misplaced. With the help of this application a person when travelling will not need to carry his prescriptions with him/her or call his/her family members to enquire about which medicine was prescribed by which doctor when, or when to consume which pill.

Medicapp is an android application which has been designed to store and access medical records and prescription Medicapp has provision for two types of users-

- Patients
- Doctors

The users under the registration of patients on signing up are provided with a user ID which they use to create and access their account. The doctors on the other hand are provided an ID only after the admin has verified that the doctor is genuine.

The doctors can view a patient's medical history- profile, prescriptions, diagnosis and reports- by typing in the patient's username. He can then write his own diagnosis and prescribe medication. The doctors can view and edit their profiles too. But in the profile, the name, Qualification, specialization is not editable to maintain authenticity of data.

The patient can view his own profile, edit his profile, view all the different diagnosis and prescriptions; he can also upload the reports of different tests. A patient is not allowed to access or view any other account.

Through Medicapp we want people to take a step towards better health care by not having to worry about their file of medical records. We are trying to reduce the hassle caused by loss or misplacement of reports. One can simply create an account in Medicapp and be tension free and roam around hands free with their entire medical history just a click away in their android phones.

II.   LITERATURE REVIEW

Smartphone's are used every day by millions of people. There is an increasing interest in research community to explore the capabilities of smart phones for development of application and systems which would reduce the human effort and the stress of doing all the things. Research is being done in different domain. One such domain is Medical domain, in this domain many applications are being developed which tries to minimize the effort like find a doctor in unknown city, get medicine from the pharmacy, stores the reports and prescription and so on. During our research we have gone through some research papers which are as follows-

Electronic personal health record systems (PHRs) support patient centered healthcare by making medical records and other relevant information accessible to patients, thus assisting patients in health self-management. We reviewed the literature on Personal health record systems including design, functionality, implementation, applications, outcomes, and benefits. We found that, because primary care physicians play a key role in patient health, Personal health record systems are likely to be linked to physician electronic medical record systems, so Personal health record adoption is dependent on growth in electronic medical record adoption. Many Personal health record systems are physician-oriented, and do not include patient-oriented functionalities. These must be provided to support self-management and disease prevention if improvements in health outcomes are to be expected. Differences in patient motivation to use Personal health record systems exist, but an overall low adoption rate is to be expected, except for the disabled, chronically ill, or caregivers for the elderly. Finally, trials of Personal health record effectiveness and sustainability for patient self-management are needed.

This paper presents the Android mobile phone application developed in order to extended data communication range of our wireless health monitoring device. The main scope is to monitor people at risk in real time even if they are outside of their home and wireless home gateway is out of range. Because real-time data acquisition and alerting functions are important goals in this project, the above mentioned Android mobile phone application is capable to met internet based data transfer, tracking and alerting requirements. In the first part of this paper presents health monitoring device interacting with mobile phone using Bluetooth connectivity and state of the art in Android mobile phone development and GPS location sensors and technologies. The second section presents how we developed the software for proper estimate the user real location. In the third section experimental results are described involving two different Android mobile phones,

equipped with different hardware and software resources. Mobile phones are compared in GPS accuracy, test were made indoor, outdoor, and at different floor levels. Real-time tracking experiments were made simulating real situations when the patient went for shopping to the supermarkets or visited his family. The last section is about conclusions regarding to the introduced mobile phone based data transfer, tracking and alerting functions, their benefits, implementing costs and applicability.

III. METHODOLOGY

3.1 Android Operating System
Android is a mobile operating system (OS) currently developed by Google, based on the Linux kernel and designed primarily for touchscreen mobile devices such as smartphones and tablets. Android's user interface is mainly based on direct manipulation, using touch gestures that loosely correspond to real-world actions, such as swiping, tapping and pinching, to manipulate on-screen objects, along with a virtual keyboard for text input. In addition to touchscreen devices, Google has further developed Android TV for televisions, Android Auto for cars and Android Wear for wrist watches, each with a specialized user interface. Variants of Android are also used on notebooks, game consoles, digital cameras, and other electronics.

3.1.1 Interface
Android's default user interface is mainly based on direct manipulation, using touch inputs that loosely correspond to real-world actions, like swiping, tapping, pinching, and reverse pinching to manipulate on-screen objects, along with a virtual keyboard. Game controllers and full-size physical keyboards are supported via Bluetooth or USB. The response to user input is designed to be immediate and provides a fluid touch interface, often using the vibration capabilities of the device to provide haptic feedback to the user. Internal hardware, such as accelerometers, gyroscopes and proximity sensors are used by some applications to respond to additional user actions, for example adjusting the screen from

portrait to landscape depending on how the device is oriented, or allowing the user to steer a vehicle in a racing game by rotating the device, simulating control of a steering wheel.

3.2 WAMPServer

WAMP is an archetypal model of web service solution stacks, named as an acronym of the names of its original four open-source components: the Linux operating system, the Apache HTTP Server, the MySQL relational database management system (RDBMS), and the PHP programming language. The WAMP components are largely interchangeable and not limited to the original selection. As a solution stack, WAMP is suitable for building dynamic web sites and web applications.

Since its creation, the WAMP model has been adapted to other componentry, though typically consisting of free and open-source software. For example, an equivalent installation on the Linux family of operating systems is known as LAMP.

3.2.1 Web Server Architecture

Apache is developed and maintained by an open community of developers under the auspices of the Apache Software Foundation. Released under the Apache License, Apache is open-source software. A wide variety of features are supported, and many of them are implemented as compiled modules which extend the core functionality of Apache. These can range from server-side programming language support to authentication schemes.
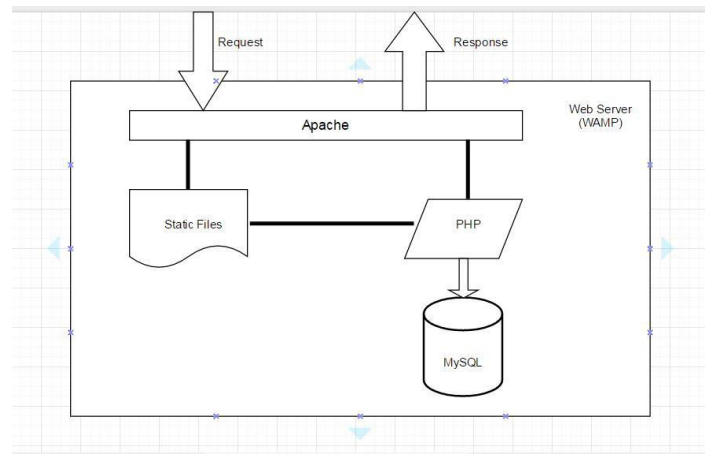
Fig. 3.2 – Web Server Architecture

IV.   DATABASE DESIGN

4.1 Database:

Database of this app consist four tables   as it works on two module that is Doctor and patient the tables are as follows:

1. Doctor

2. Patient

3. Login

4. Patient History table

For storing the data we used WAMP server for database.

Fig 4.1(a) - Doctor tables with its attributes:

Fig 4.1 (b) - Patient table with its attributes

Fig 4.1 (c) - Login table with its Attributes

Fig 4.1 (d) - Patient History table with its

Attributes

4.2 Functional Dependencies:

Primary

Table 4.2(a) - Attributes of doctor table

Compo-
site key

Table 4.2(b) - Attributes of login table.
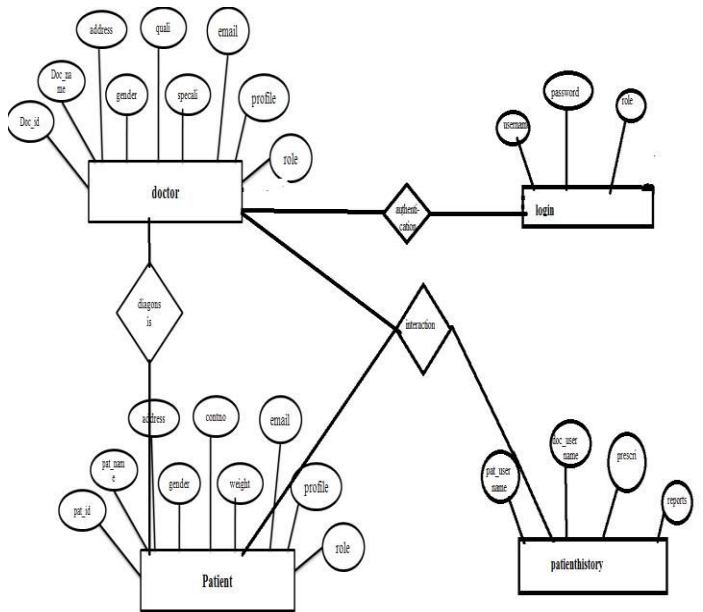
4.3 Entity Relationship Diagram

Fig 4.3(a) - Enitity-Realtionship Diagram of Medicapp database

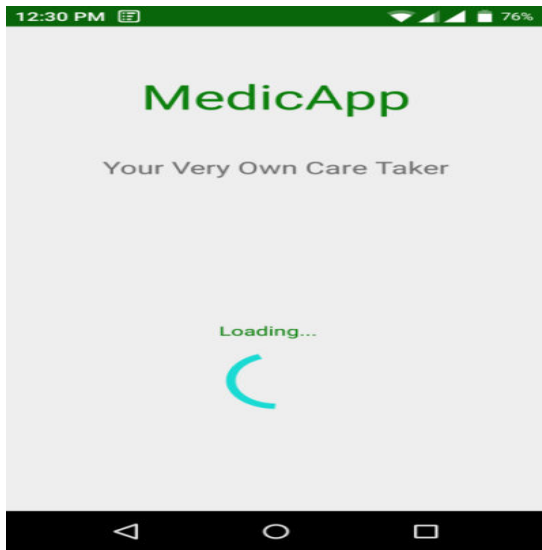## V.   EXPERIMENTS AND RESULTS

Fig   5.1(a)–SplashScreen
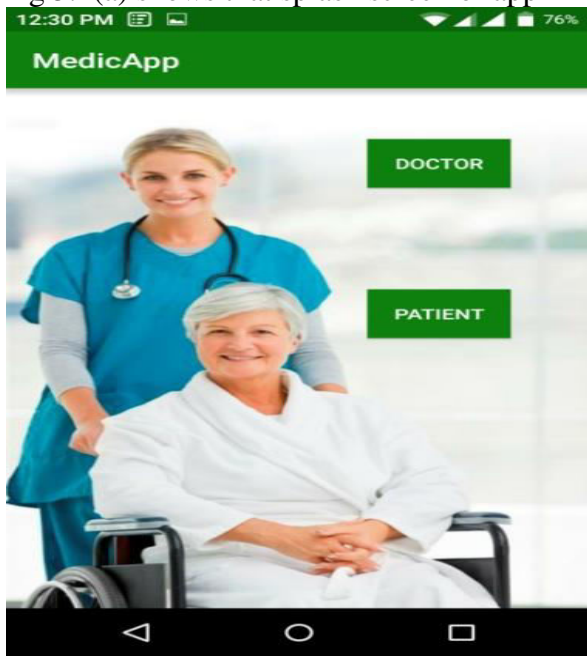Fig 5.1(a) shows that splash screen of app

Fig 5.1(b) Start   Screen
Fig 5.1(b) shows Homepage which consist logins i.e., doctors login and patient login.
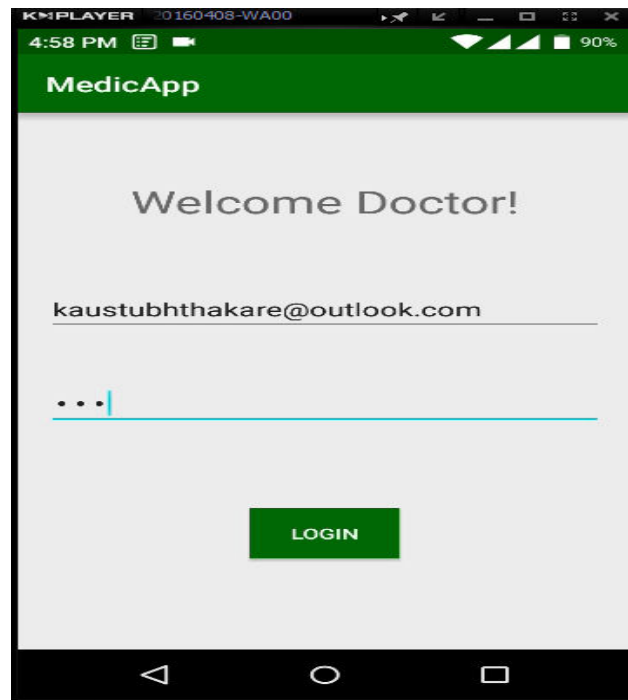

Fig 5.1(c) - Doctors login
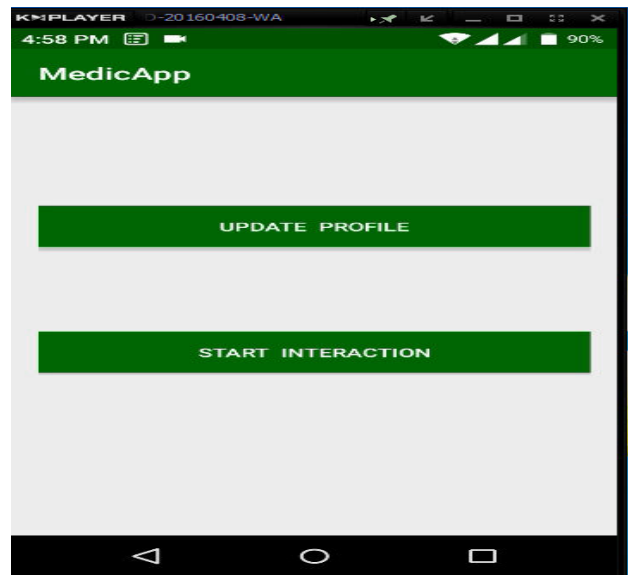Fig 5.1(c) shows   doctors login   by entering username and password

Fig 5.1(d) - Doctors login
Fig 5.1(d) shows option after doctor login update profile and start interaction
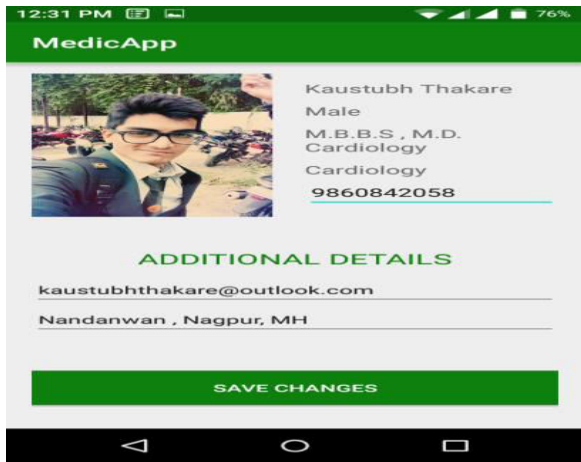
Fig 5.1(e) - Doctor profile

Fig 5.1(e) shows doctor profile after updating personal information and profile picture
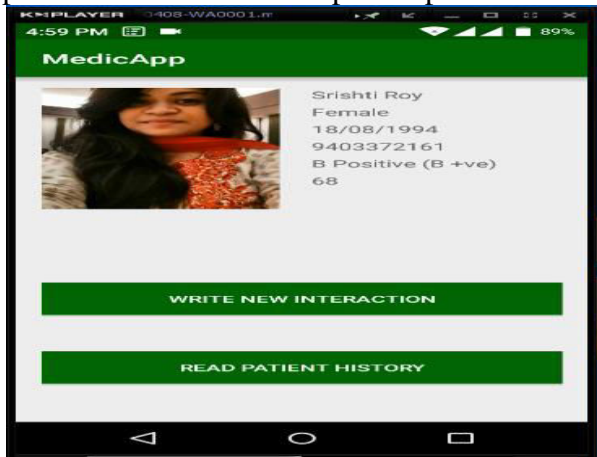

Fig 5.1(f)-Patient Profile
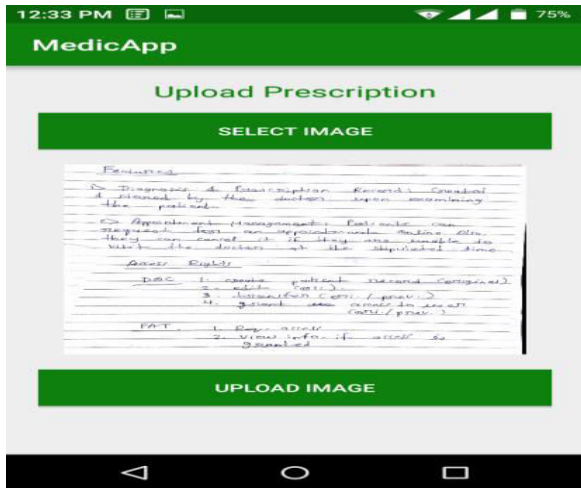
Fig 5.1(f) shows patient profile

Fig 5.1(f) - Uploading prescription

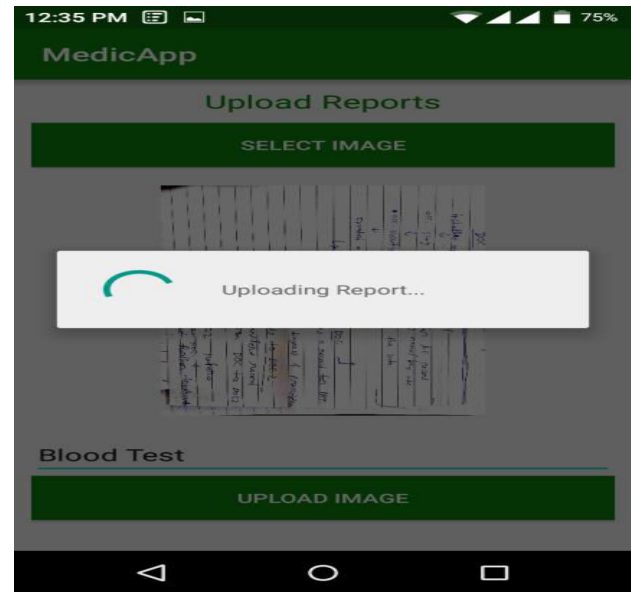Fig 5.1(f) shows uploading prescription given by doctors

Fig 5.1(g)-Reports updated

Fig 5.1(g) shows uploading prescription given by doctors

VI.   CONCLUSION & FUTURE SCOPE

In today's world maintaining good health is very challenging. With the changing lifestyles, food habits, living environments, the probability of diseases and sickness is on the rise. Along with dealing with sickness and uneasiness caused by the illness, there is an added headache of maintaining prescriptions. Medicapp is an android application which has been designed to store and access medical records and prescription. It provides the users their entire medical history on their palm top in one single application. All the records are stored in a centralized database which can be accessed as and when required. Through Medicapp we are trying to reduce the hassle caused by loss or misplacement of reports, maintaining files of records on paper. Medicapp will provide a centralized database for the users so it will reduce the hassle caused when a report is lost.

- Patients can take appointment to the respective doctors through this app.
- Patients can track doctor's clinic location using GPS tracker.
- Patients can set/schedule reminder for medicine doses intake.
- App can provide centralized generic medicines database.

VII. REFERENCES

1] N Archer, U Fevrier-Thomas, C Lokker, K A McKibbon, S E Straus. "Personal health records: a scoping review". First published online: 1 July 2011.

[2] P. Szakacs-Simon Transilvania University, Department of Automatics, Electronics and Computers, Brasov, Romania S. A. Moraru; L. Perniu,"Android application developed to extend health monitoring device range and real-time patient tracking", Computational Cybernetics (ICCC), 2013 IEEE 9th International Conference, 8-10 July 2013, Pages: 171 – 175, DOI:10.1109/ICCCyb.2013.6617624.[3]Need A Doctor –Link: https://play.google.com/store/apps/details?id=com.needadoctor&hl=en

[4] MediKlik- Link:

https://play.google.com/store/apps/details?id=com.theeris.mediklik&hl=en

[5] ITriage - Link:

https://play.google.com/store/apps/details?id=com.healthagen.iTriage&hl=en

[6] Practo – Link:

https://play.google.com/store/apps/details?id=com.practo.fabric&hl=en

[7] [Online]

http://developer.android.com/index.html

[8] [Online] https://github.com/square/picasso-

[9] [Online] http://www.tutorialspoint.com/android/android_tutorial.pdf

[10] [Online] https://www.google.com/design/spec/material-design/introduction.html#

[11] [Online] http://www.w3schools.com/php/php_file_upload.asp

[12][Online]

http://www.w3schools.com/css/default.asp

[13][Online]

http://www.w3schools.com/html/default.asp

[14][Online]

http://www.w3schools.com/css/default.asp

[15[Online]

http://www.w3schools.com/sql/default.asp