A Smartphone Based Medication Management System with Real Time Monitoring and Reporting

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ABSTRACT: For medication therapy to be efficacious, it is critical that the patient take their medicine on an efficacious schedule. Taking their medicine correctly is medication adherence and is vital for the medicine to engender its maximal benefit. However, from a patient's perspective, many times erroneous, and possibly, erroneous information drug prevails, engendering negative atmosphere for medication adherence. Prescription Viewer App is a facile to utilize medication management app which avails you to monitor and keep track of your medication. It is an android app which avails you to view your medication anytime, anywhere through your phone. A website is engendered for the medico to enter the prescription details. The prescription is then sent to the Prescription Viewer App, installed in the patient's phone, utilizing Google cloud messaging (GCM). The app stores the prescription and exhibits it in the patient's phone. The patient's phone registers with the GCM accommodation by sending the sender id to the GCM server. The server registers the phone and sends back the registration id. The website stores the registration id, electronic mail address and name in a separate table. After entering the prescription. Then the prescription details are sent via the GCM server to the patient's phone. The application in the phone exhibits the prescription details.

KEYWORDS: medication; prescription;Google Cloud Messaging(GCM);contrivance;android.

I. INTRODUCTION

In recent times health care concepts of people have undergone a tremendous change which has led to higher prospects and an incremented demand for high quality medical care and facilities. Prescription Viewer app provides an efficient method for storing the prescription details of the patient. It avails the patient to view their medication anytime, anywhere through their phone. In our project, the receptionist enters the patient details into the site and are stored in a Database for retrieval. During the consultation, the medico enters the prescription details into the database engendered above. Then the prescription details are send to the prescription viewer app utilizing Google Cloud Messaging (GCM).The prescription viewer app then exhibits the prescription which includes the medicine name and dosage.

II. RELATED WORK

A website has been developed for entering the prescription details which is sent to the Prescription Viewer App present in the patient's phone utilizing Google Cloud Messaging. Three people have access to the website – Admin, Medico and Receptionist. They can access the website by logging in utilizing their respective username and password. The admin controls the website. Incipient Medico accounts are engendered by the admin. The receptionist enters the details of the patients into the website when the patients visit the hospital for the first time. A patient is registered under a particular medico. The medico can view the details of his patients. The medico enters the prescription details into the website and it is sent to the patient's phone. The patient's phone registers with the GCM accommodation by sending the sender id to the GCM server. The server registers the phone and sends back the registration id. Then the phone sends the registration id along with the patient's name and electronic mail address to the website. The website stores the registration id, electronic mail address and name in a separate table. After entering the prescription details the medico clicks the send button. The electronic mail address of the patient is compared with the electronic mail ids stored in the

incipient table and the corresponding registration ids are ascertained. Then the prescription details are sent via the GCM server to the patient's phone. The application in the phone exhibits the prescription details.

III. PROPOSE SYSTEM

OBJECTIVE: This project aims for efficacious a more facile way to view a prescription by the patient with very less utilizer involution. It has the following advantages:

- Very reliable (can receive messages even if the app is not on).
- Ease of viewing the prescription.
- Time and cost efficacious.
- Records prescription notes.

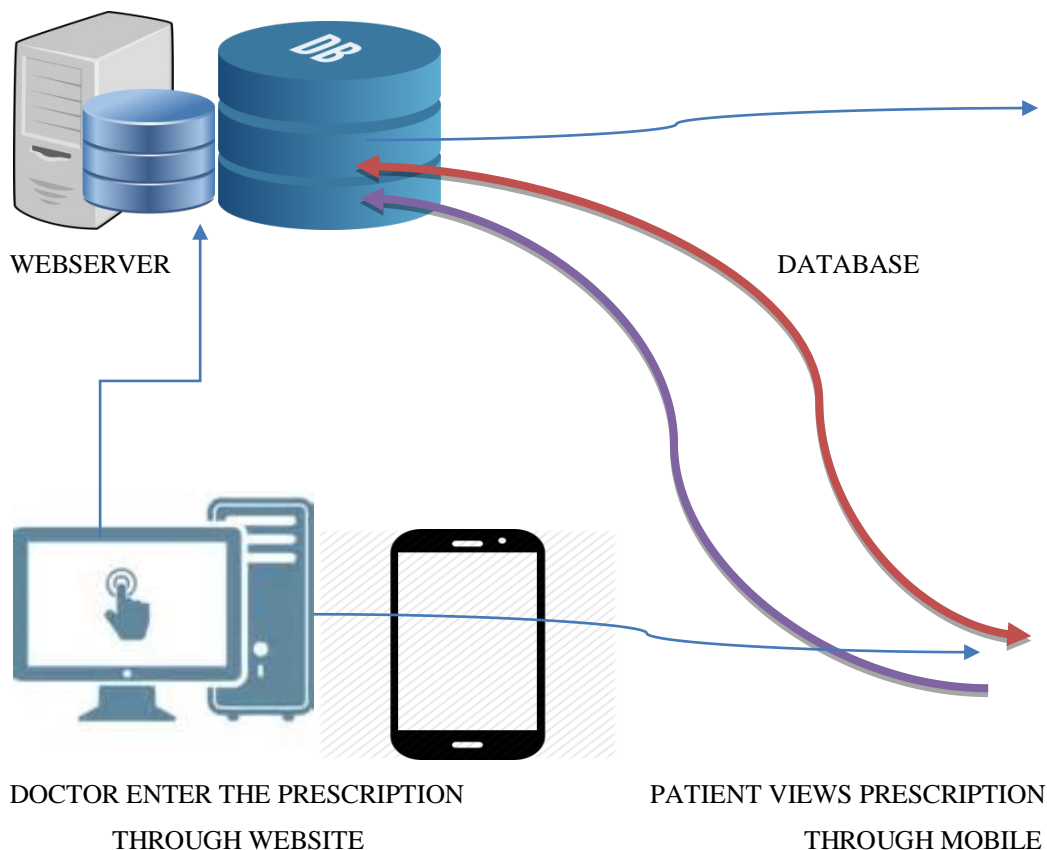**SCOPE:** To take medication felicitously and efficaciously in order to engender a maximal benefit.

WEBSERVER   DATABASE

DOCTOR ENTER THE PRESCRIPTION   PATIENT VIEWS PRESCRIPTION

THROUGH WEBSITE   THROUGH MOBILE

Fig.1: Architecture Diagram

- This betokens that the android contrivance first sends the sender id and application id to the GCM server for registration, upon receiving a prosperous registration GCM issues registration id to the android contrivance.
- The registration id is send to our server to store it in the database for later utilization.
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IV. **METHODOLOGY AND DISCUSSION**

In our project, we have 3 modules where Administration module is accessed only by the admin who enters the medico details and is stored in the database. The second module is receptionist's in which patient details are stored to the database. Determinately medico module in which medico views his patients details and makes prescription. This prescription is send to the patients android contrivance which is registered in our server through GCM.

The messages are sent to the android application via a GCM server.

COMPONENTS	
Mobile Device	The contrivance that is running an Android application that utilizes GCM. This must be a 2.2 Android contrivance that has Google Play Store installed, and it must have at least one authenticated in Google account if the contrivance is running a version lower than Android 4.0.4. Alternatively, for testing you can utilize an emulator running Android 2.2 with Google APIs.
3rd-party Application Server	An application server that developers set up as a component of implementing GCM in their applications. The 3rd-party application server sends data to an Android application on the contrivance via the GCM server.
GCM Servers	The Google servers involved in taking messages from the 3rd-party application server and sending them to the contrivance.
CREDENTIALS	
Sender ID	A project number you acquire from the API console, as described in Getting Commenced. The sender ID is utilized in the registration process to identify an Android application that is sanctioned to send messages to the contrivance.
Application ID	The Android application that is registering to receive messages. The Android application is identified by the package name from the manifest. This ascertains that the messages are targeted to the correct Android application.
Registration ID	An ID issued by the GCM servers to the Android application that sanctions it to receive messages. Once the Android application has the registration ID, it sends it to the 3rd-party application server, which utilizes it to identify each contrivance that has registered to receive messages for a given Android application. In other words, a registration ID is tied to a particular Android application running on a particular contrivance.
Google User Account	For GCM to work, the mobile contrivance must include at least one Google account if the contrivance is running a version lower than Android 4.0.4.
Sender Authentication Token	An API key that is preserved on the 3rd-party application server that gives the application server sanctioned access to Google accommodations. The API key is included in the header of POST requests that send messages.

Table I : App Design Description

V. EXPERIMENTAL RESULTS

In this online prescription website ,the admin , the receptionist and the doctor are the actors.
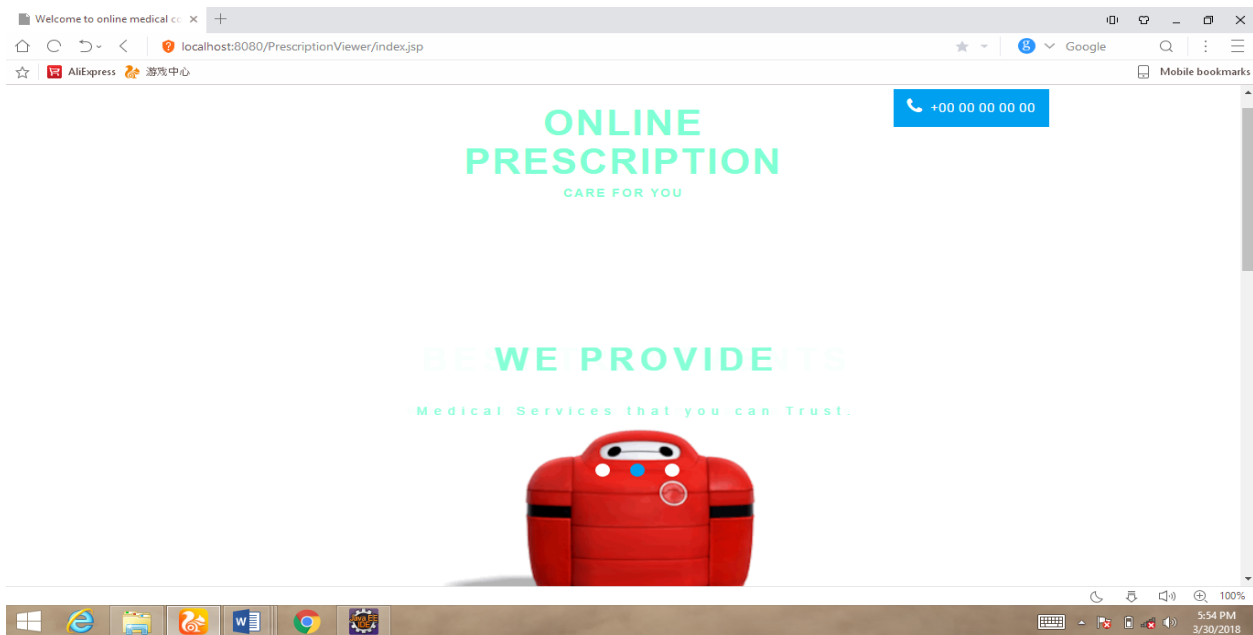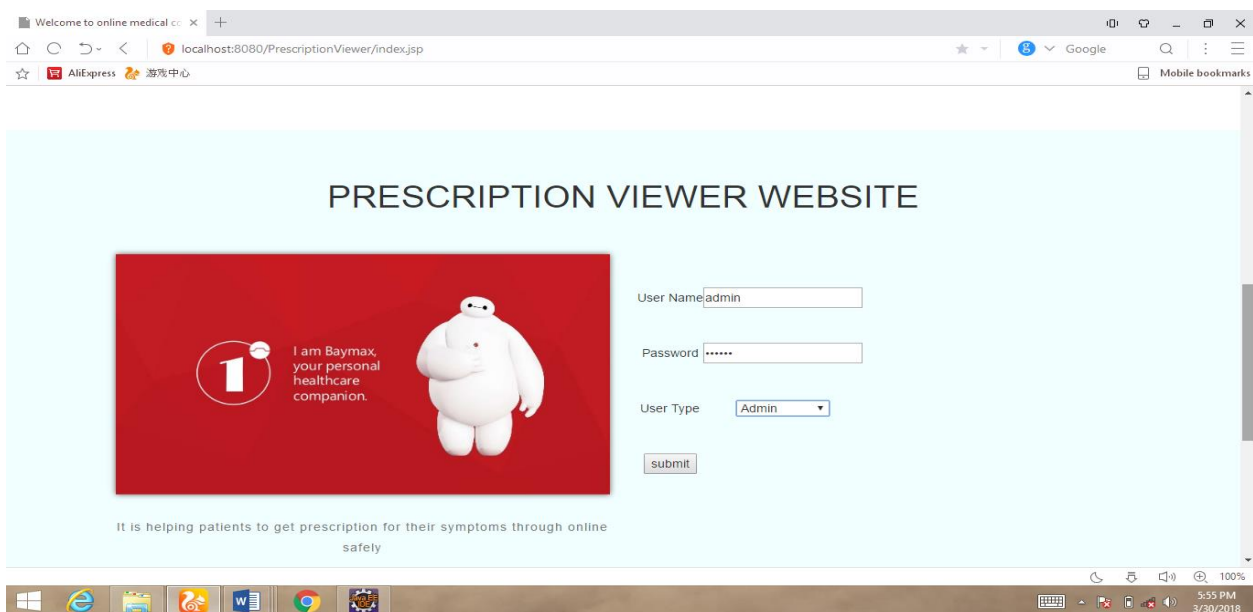

Fig.2: Home Page

Only the authorized users can login into the site. Admin login using their user name and password, Doctors login using their unique id and password and Receptionist can login using their username and password. The login modules contains a specific id for each doctor and the patient visiting the hospital.
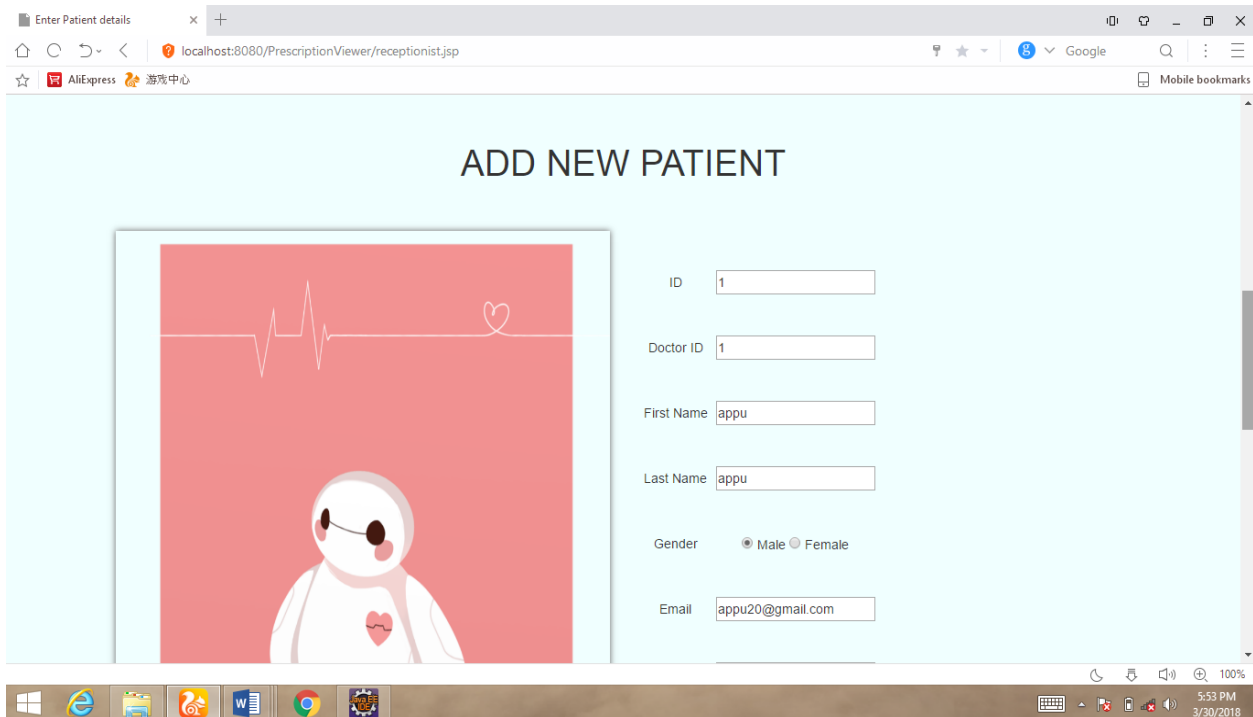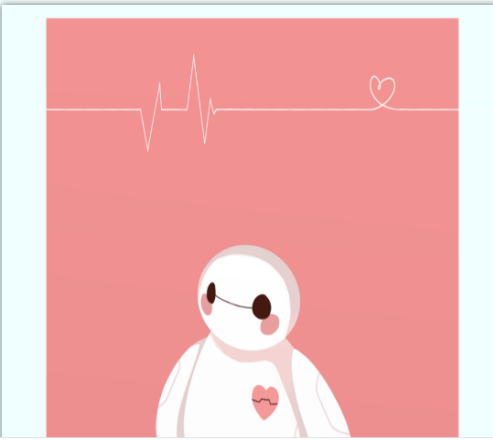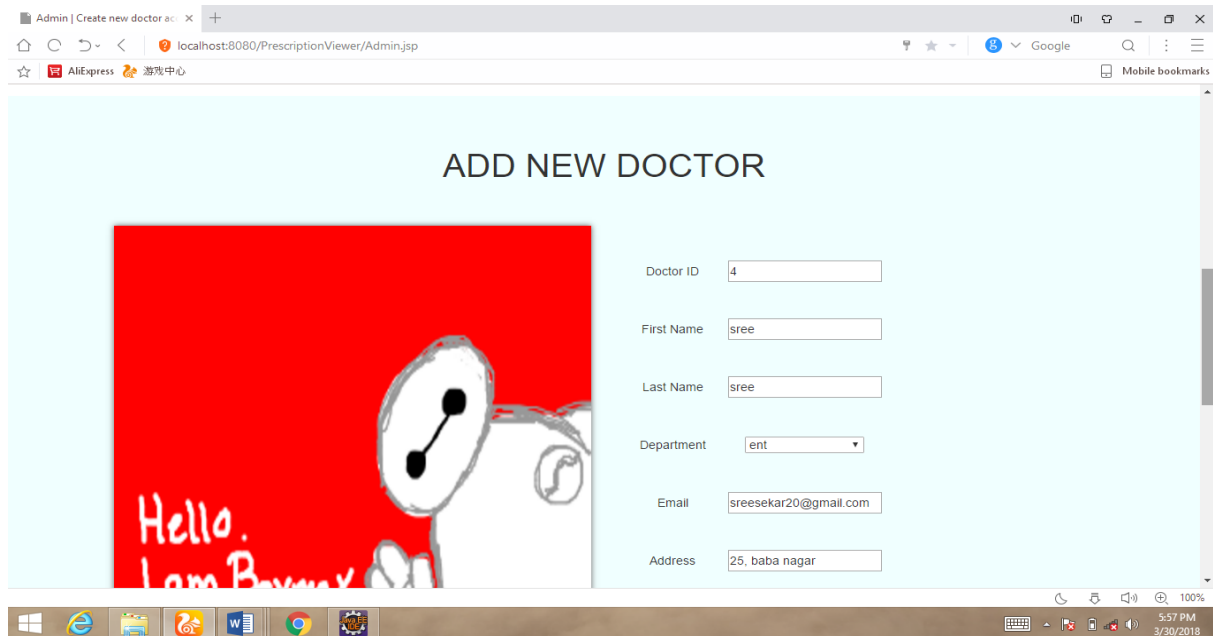
Fig.3: Administrator Modules

The administration can add new doctors as well as change the password of the receptionist. The admin monitor all the data stored in the database and the entry of the doctor and the receptionist. The administrator has the only authority to view all the activities of the receptionist and the doctor. The admin is mainly responsible for all the updates in the change in dosage of medicine.
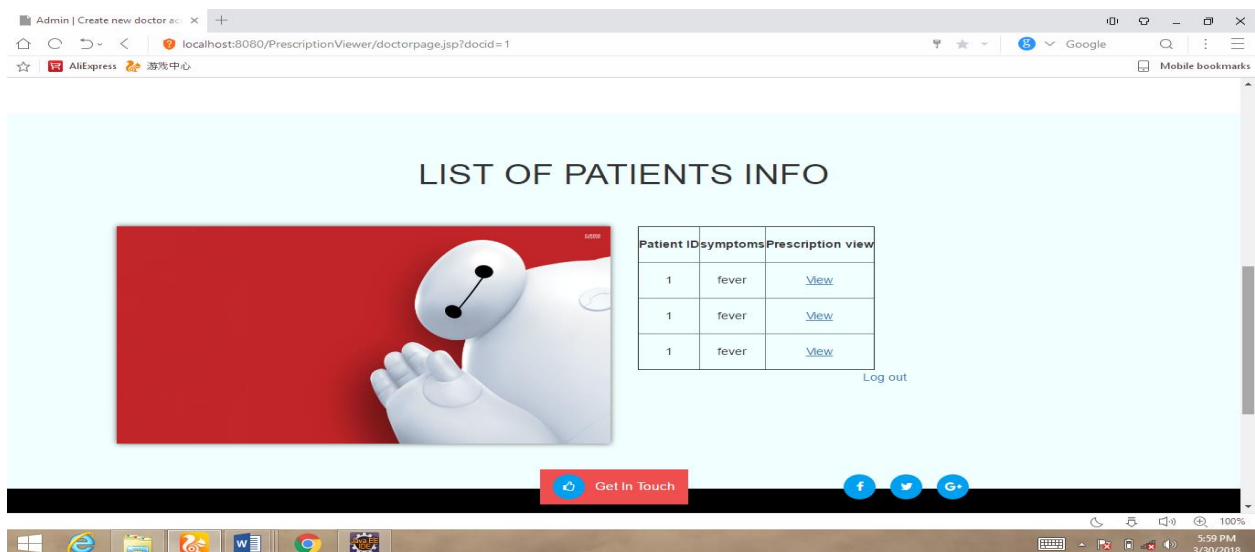
Fig.4: Receptionist Modules
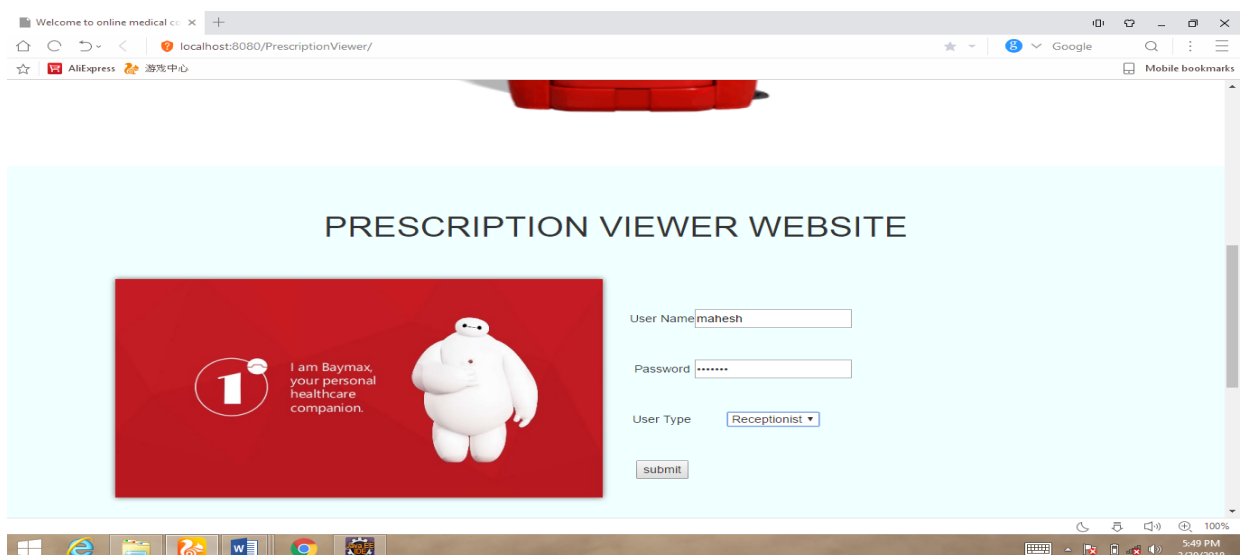
The receptionist can add the patient details with new patient ID, First name, last name, gender, email, address, mobile number and particular disease which the person is currently suffering from. Those data will be added to the database and the receptionist allots the particular doctor for the current patient for their disease. Next the allotted doctor will view that patient details and call for the consultation.

Fig.5: Doctor module

Once the patient has been allotted. The doctor will view the details of the patient and login with their ID and password and then goes to the prescription page. The prescription page consists of the patient name, number of days, dosage, medicine name. the prescription details are sent to the receptionist by the doctor which the is stored in database

by doctor and the patient can view this prescription via Prescription Viewer App installed in the patient's phone using GCM.

VI. CONCLUSION AND FUTURE WORK

This project will engender an efficient method for storing the prescription details. It avails the patients to view their medications anytime, anywhere through your phone. This project provides a facile and efficacious mechanism to keep track of our medication. The prescription viewer application is a simple yet puissant application.

- An alarm can be set in the app as a reminder for the patient to view the prescription.
- Nearest pharmacy from where the required medicine is available can be incorporated into the app.
- The app can additionally be acclimated to fine-tune next appointment with the medico for the patient.

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