

## MediBloom

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**Abstract** - Saving the lives of people is the most important thing in today's world. Generally, vital time is wasted because of the inefficiency to find a hospital or any medical avail viz most opportune for a patient. Although it's quite simple to find the nearest hospital and medical stores using these days technologies, despite this it's very difficult to say for certain that the resources required are available there in the hospital or medical store. Also, we can't say how long the patient has to wait to use these resources.

So, we propose an approach which consists of a web application that can assist people as their personal medical assistant. With the help of this application, the user can check and order his medicine, and will be able to read doctor's prescriptions without any hassles. The user can also book appointments with the doctor or directly to the hospitals without going there physically. The user can easily locate and access the information regarding the availability of medicine stocks in the nearby medical stores. The application will notify users to maintain stock of their regular medicines which may go out of stock soon.

**Key Words:** Web Application, Medical Assistant, Neural Network, Machine Learning, NLP, Google Vision, Google Cloud Platform, Application Programming Interface, etc

### 1. INTRODUCTION

Computer advancement in technology has resulted in progress in all fields. This has been beneficial to human beings in many ways. One of the major fields of success is the medical sector. Different equipment and devices have been designed to treat diseases. The modern-day healthcare needs and delivery are complex compared to before.

The major challenge faced nowadays is that these resources are not available immediately when required. Right information at the right time can save many lives. The reason behind this is that many people do not have the proper information about where these resources are available. With the rapid development of hand-held devices such as mobile phones, people prefer to access information through these devices in a more flexible manner.

Considering the different scenarios, we propose a complete medical assistant that provides information about chemist shops, book appointments with doctors, checks hospital beds availability, finding the supplement of the prescription if original medicine is not available during natural disasters or pandemic like COVID-19, influenza, etc. These objectives can be achieved with the help of Neural

Networks, NLP (Natural Language Processing) and a few other Machine Learning concepts along with some other basic algorithms. A user can call an ambulance and can track it as well using GPS. This will be achieved by providing a separate GPS module to the ambulance. With the help of this application, we can ease the life of senior citizens who live alone, so that they can now be independent at least as concerned with their medical support.

### 2. Literature Review

The different functionalities of our project may exist independently as separate sites or apps. But here, we have tried to combine all these features so that people can easily use a single site for various purposes like taking doctor appointments, medicine reminders, etc.

In 2017, Kin Chi Chan [14] offered a shopping application on smartphones that will help in searching nearby shops with appropriate products. To ease the process application allows searching with multiple approaches like text, voice also there is autocomplete feature for voice to stretch the experience of searching. Then an informative display of all the shops along with the products provided by the shop is presented to the user, along with a map to locate the shop using the best path to the store.

In 2017, Suyoto Suyoto [2] has determined the best path to nearby medical help. Here the best path is figured out by using "Dijkstra's algorithm" and "the Floyd-Warshall algorithm" both of them together.

In 2018, Dr. E. Kamalanabhan [1] has trained a model to understand the writing on the prescription and extract the information about the medicine and the medication of the patient using a "deep ML approach with TensorFlow".

In 2018, Ruchi Dumbre [5] has proposed a system to manage all the tasks of a hospital, and it also has a feature to search nearby hospital with a user specific speciality, the use case he used of a blood banks to search nearest blood bank.

In 2017, Shih-Hsin Chen [15] has proposed a solution for the analysis of context of picture such as its' shade, time, text written over it, its' shape, and many more information using "Google Cloud Vision API" and "WordNet".

In 2016, António J. R. Neves [16] has done a practical study about the Google Vision API where he used Google Vision API to understand the content of an image.

### 3. Proposed System

In today’s world, we are occupied by our work which is quite important to sustain in the world, but due to this we almost forget the other most important thing of our life rather than to earn and live, i.e., taking care of our health. Today, we are completely dependent on medicines to live healthy.

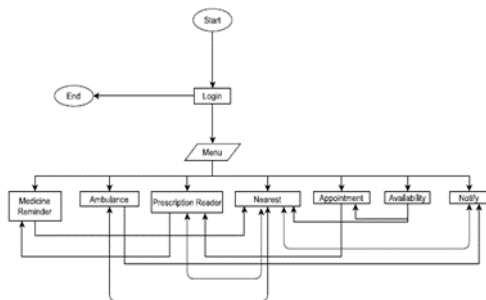


Fig -1: Application Flowchart

Here, we suggest an application to make people’s life a little bit easier than it is now, which handles all of their medicine just like an assistant. It will help them to search their medicine right from their mobile phone along with booking hospital appointments and managing their medication stocks whether it’s available in the nearby medical store or not and if the user wants then he/she can order their medicine at home or they can just go to the right shop where medicines are available according to their need.

They can even ask the shop to pack their medicines while they are coming to the shop so that they can just take the medicine and go, which will save their time and avoid long queues.

### 4. Result

To develop this application, we have used React Native, Expo, and Google Cloud Platform API.

**Start-up Page:** Here, we have used little bit of animation to make the start page of the application bit attractive. We have used SASS, and JSX to design this page, once the user taps on “Welcome to MediBloom” he/she will be presented a login form.

**Login and sign-up page:** Once, the user taps on “Welcome to MediBloom” he/she shall be presented to a login form where they are supposed to provide their Email-ID & Password and tap to “Sign in”, in order to login to their account. If user do not have any account they need to tap on “Sign up”. This page is also designed using SASS and JSX, and uses Firebase API to store data of the user.



Fig -2: Start up Page

Here, we have used SHA-256 algorithm to encrypt the user password the password of the user is stored in the firebase, while sign in the application makes an API call to the firebase, once authenticated from the firebase the application switches to Map view.

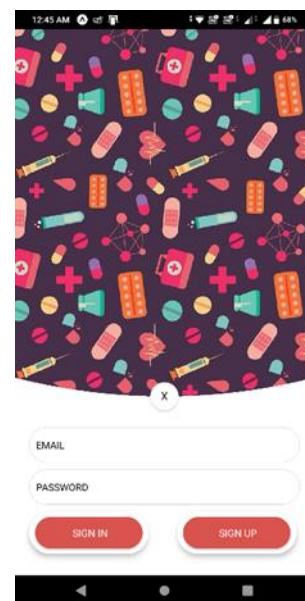


Fig -3: Login and sign-up Page

**Map view:** Here, we have used Google Map API from Google Cloud Platform. This is the primary screen of our application where the user will get to see all the nearest medical stores and hospitals, then once user selected his medical store, they will be able to see the store’s contact number.

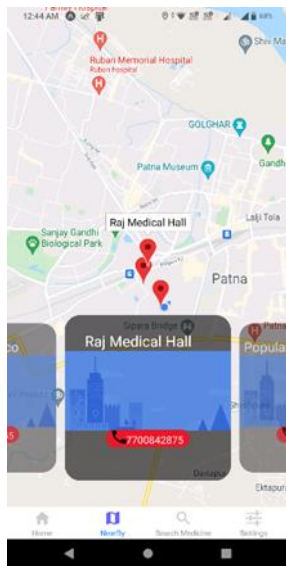


Fig -4: Map View Page

**Search Medicine:** Here, user gets proper information about which medicine and how much are there in the store they have selected.

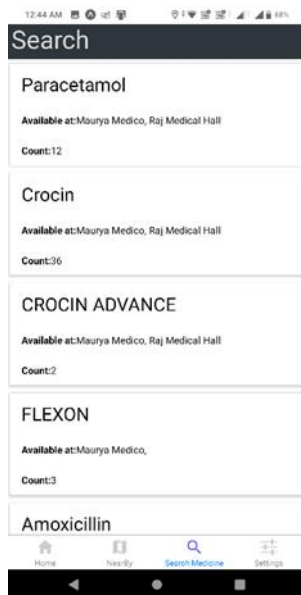


Fig -5: Search Page

## 5. CONCLUSIONS

After reading various research papers, it can be concluded that the different functionalities of our project may exist independently as separate sites or apps.

Therefore, we propose a system which consists of a web application that can assist people as their personal medical assistant. These functionalities will be achieved with the help of NLP and few other Machine Learning concepts and algorithms.

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