

Medpoint-Medical Health Application

¹Ravishankar H, ²Jayanth Kumar C, ³Niranjan G, ⁴Praveen Kumar Reddy G,
⁵Suresh G V

^{1,2,3,4,5}Department of Computing and Information Technology, REVA University, Bengaluru, India

Article Info

Volume 83

Page Number: 5221-5223

Publication Issue:

May-June 2020

Article History

Article Received: 19 November 2019

Revised: 27 January 2020

Accepted: 24 February 2020

Publication: 16 May 2020

Abstract

Medpoint is an application which would help to computerize the Front Desk Management of a Hospital, along with digitalization of various other manual services. This application would mainly focus on reducing the time taken by the patient to book an appointment, digitalization of medical records and an easy online consultation with their doctor. This application is being developed to simplify the existing process and make them more efficient.

Keywords: appointments, prescription, medical records, digitalization

1. Introduction

Technology has made enormous steps towards human development. Mobile applications now provide many advantages and lifestyle changes because of increase in smart phone technology. Now with the help of a smartphone and an internet connection loads of work could be accomplished. The same applies to health care now. The basic working of various hospitals in India is still on paper as opposed to the computerized management. The traditional method of booking appointments, taking OP tokens are time consuming and inefficient in case of emergencies. Database response can be speed up by using Sql Server database and to reduce the time complexity by using multi-user environment.

Digitalization of health care system is not only helpful in time management it also helps in several other aspects like for example, refilling and reminders of drug prescription and 24/7 availability of medical records. One can say these are life saving features in times of an emergencies. Thus, in today's digital era where everything is at fingertip, this application will bring healthcare to one's fingertip.

2. Literature Survey

Md. Abdul Majid et.al. (2017) [1] have proposed an article that Smart Doctors Appointment and Prescription Systems an application that provides services to the Doctors and Patients. With the advent of science and technology, by using android applications, patient can use online appointment to save time and money. The developed system is efficient, effective and interface is very user friendly. Involvement of third-party applications for the

purpose of survey data and informatics may, to some extent, deter the performance of the system.

Sharmila S et.al (2017) [2] have proposed an article named Hospital Queuing-Recommendation that a process named Patient Treatment Time Prediction (PTTP) is proposed that calculates the waiting time of the patient for each of the treatments. Using PTTP, a Hospital Queuing Recommendation (HQR) system is developed to minimize the patient waiting time delays. This paper mainly focuses on helping the patients to complete all of their treatments in a predictable amount of time, thereby aiding the hospitals to schedule the treatment queues and ultimately help the hospitals to overcome the problems of patient overcrowding and ineffective management of patient queues.

Cristian Cola et.al. (2015) [3] have proposed an article named E-Health Appointment Solution that how a video appointment solution can be added to the existing online Healthcare Management Systems. Based on automated questions using forward chaining algorithm and with the help of WebRTC and XMPP technology, the system automatically can choose if the patient should make an office consult or they could have a video conference. One major limitation of the WebRTC technology is that no browser supports WebRTC technology.

Digvijay H. Gadhar et.al (2016) [4] have proposed paper how to computerize the Front Office Management of Hospitals to ensure user friendly simple and fast system for both Doctors and Patients. Using DBMS, Significant improvement can be observed in terms of operational control and thus streamline operations. Major limitation is that communication gap exists between employees and management, as seniors don't share the necessary

information and problems associated with subordinates.

3. Proposed Work

This application provides an easy UI for patients and doctors alike and store the data securely in database. This will ease the process of booking appointments with their preferred specialists. This will get you a personalised prescription by the doctors according to their analysis. This helps you create an online exercise program to keep in shape and conducts a more convenient doctor patient communication. It keeps precise online medical records accessible 24/7 and mobilize the data. This also reminds and refills the drug prescription when needed. This allows you to check the analysis results from the lab on your device.

The implementation of this application would start off with creating a basic dataflow diagram of the application. Fig 1 represents the flow chart of the application, depicting the work flow and the diagrammatic representation of the algorithm.

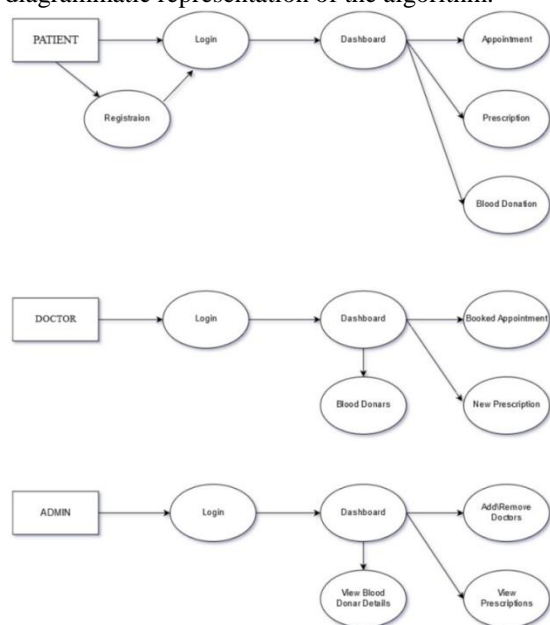


Figure 1: Flow chart

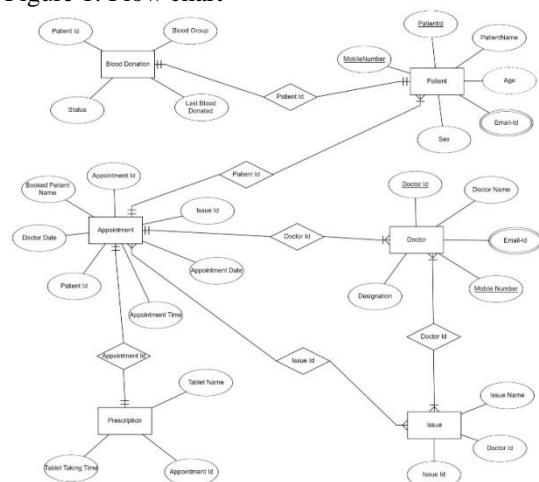


Figure 2: ER diagram

Fig 2 represents an entity relationship model of the application. The representation of the application or the UI which is everything that a user can see and interact with that would be in 3 modules. They are:

1) Admin Module: Admin can add patients, doctors, physician and also modify the application. Full access is given to the admin. Admin can also assign doctors to patients.

2) Doctor Module: In the module, the doctor will check his schedule and meet the patients as well. The doctor can also save data related to patient illness, history of the patient. The doctor can also get lab reports.

3) Patient module: The patient module will have the option to view the patient history, details of illness, any diagnostics ordered. The report will also consist of medication prescribed. This module will be accessible to doctor and admin.

Fig3 represents the login and sign up pages used by the patient to create an account.

Fig4 represents the appointment scheduling feature in the application.

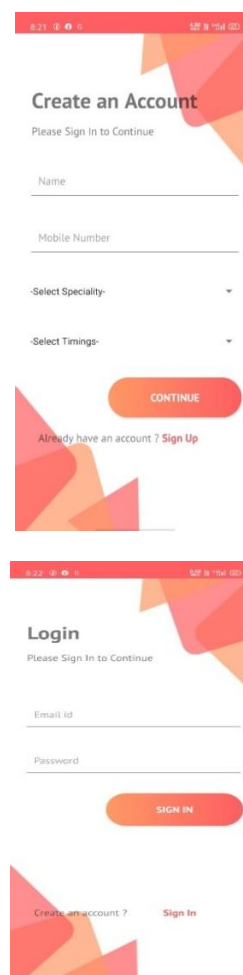


Figure 3: Login and sign up pages

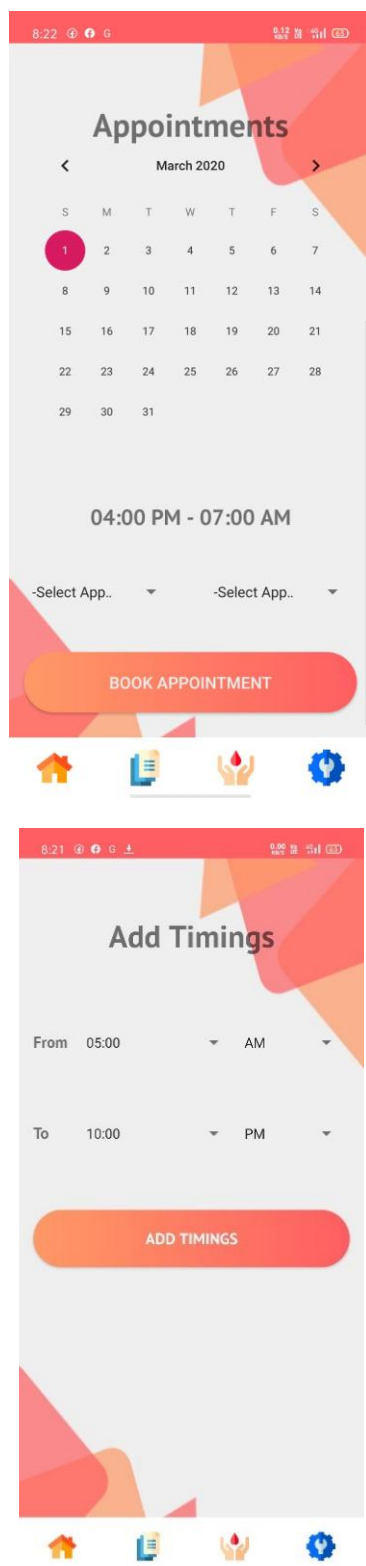


Figure 4: Appointment and timing pages

Fluid is used to build a connection between the customer and the application. An API named BOX which is an easy to use service that allows you to securely manage your files will be used. This service can be integrated. BOX offers an api as well as web and mobile SDK's so it can be used with wide number of languages like JAVA, NET, PYTHON etc.

For storage of the application data which includes doctor patient data an application server is used named as open shift. The free web application True push would be used as an application for push notification services. Since, a healthcare application deal's with wide range of data, data integration with other applications web pages would be helpful and make it easier.

4. Conclusion

The Medpoint application which would help in the digitalization of hospital procedures and to create an online interface between the patient and doctor where all the essentials could be shared and updated from the comfort of one's home. This would bring medical facilities to one's doorstep. Digitalization makes the health care procedures more systematic and ensures timely updates and care.

References

- [1] Md. Abdul Majid, Mohammad Jahangir Alam, Md. Nurul Mustafa, "Smart Doctors Appointment and Prescription System". Southern University Bangladesh, Chittagong, Bangladesh. Published in Nov.-Dec. 2017
- [2] Sharmila S Savanth, Dr. K. N. Rama Mohan Babu, "Hospital Queuing-Recommendation System Based on Patient Treatment Time" Dayananda Sagar College of Engineering, Bangalore, India. ICICCS 2017
- [3] Cristian Cola, Honoriu Velea, "E-Health Appointment Solution, A Web based approach" University of Cluj Napoca. 5th IEEE conference on EHB 2015
- [4] Digvijay H. Gadhari, Yadnyesh P. Kadam, Prof. Parineeta Suman "HOSPITAL MANAGEMENT" Saraswati College of Engineering, Maharashtra, India. Published in Feb 2016,