International Journal of Scientific Research in Engineering and Management (IJSREM)
Volume: 05 Issue: 07 | July - 2021 ISSN: 2582-3930

A SYSTEM TO KEEP TRACK OF COVID-19 HOSPITALS IN TAMIL NADU

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Abstract: From past few months, every person in the planet is fighting with one common enemy named CORONAVIRUS which is also known as Covid-19. Due to this almost every person is affected either Financially or Medically. If a person is tested as positive in the covid test. He/She must undergo quarantine so that it will not spread to other persons who live near by them. But only by isolating themselves won't cure them. So they need to take a admission in a hospital where they can be taken care properly with all the necessary precautions.

But finding the appropriate hospital is also a difficult task, because the person may not know full details about that hospitals i.e., how many beds available in that hospital, how many ventilators available in that hospital these information became a critical.Since , we all know that the person who is tested positive for covid-19 may encounter respiratory problem if that person's situation becomes serious. Suppose in that situation if a person joined in a hospital where there is not ventilators available then that person's life is in danger, sometimes the person can also lose their life.

What if all these information available in an android application that can tell the users how many hospitals are available in a particular district along with how many beds ventilators and icu beds count .This can save a persons life. In order to make it easier we are building an android application which will solve the above mentioned problem.

1.INTRODUCTION

The main aim of this project is to manage the hospitals and the quarantine centers for COVID-19. In this project, the application will provide the details of the hospitals and the quarantine centers for COVID-19. The users will login and can view the equipments in detail which are available in the hospitals and the location of those hospitals and quarantine centers.

2.SYSTEM ANALYSIS

2.1 EXISTING SYSTEM

In the existing system, the users are not able to know the details and the availability of beds, ventilators, beds with or without o2. The patient should register and get appointment from the doctor and then requested to be quarantined. In the lack of knowledge about the availability of beds and ventilators in the hospitals, the patients are not available to admit in the hospitals for their treatment in correct time.

Currently there are no apps which provide the information about Covid19 treating hospitals. Even if we search in google it doesn't provide the list of

hospitals that are treating covid patients.

2.2 PROPOSED SYSTEM

In the proposed system, the application will provide all the details about the hospitals and the quarantine centers for COVID-19. The user will register with their details. The admin will login and verify the details of user, thus by authenticating them. The admin will login and edit the details of the doctors. The admin can also edit the details of the COVID-19 beds, ICU beds, Ventilators, beds with and without O2. The users or the patients can view the details of the equipments available in the hospitals and the quarantine centers. The details include the availability of ICU beds, Ventilators, beds with and without O2. Along with the details of the hospitals it also shows two links.

The two links are as follows

i) Phone number link

ii) Navigation link

i) By the name itself we can understand that this link contains the phone number of the Hospital/Quarantine center. When it is clicked the phone number will be popped up in the user's call dialog.

ii) The second link is navigation link, when clicked it will be redirected to google maps app with source as user's location and destination as Hospital/Quarantine Centre's location.

3. MODULES AND DESCRIPTION

- **Android Deployment**
- **Server**
- **User Authentication**
- **Admin Processes**
- **COVID-19 Hospitals**
- **Quarantine Centers**

Android Deployment

An Android mobile client is an application that access a service made available by a server. The server is often (but not always) on another computer, in which case the client accesses the service by way of a network. The term was first applied to devices that were not capable of running their own stand-alone programs, but could interact with remote computers via a network. To send the request to the server, the users have to be a registered person in the server. The user have to submit their user name password and another details to the server during the registration phase. All this information is stored in the database via server for future purpose.

Server

A server is a computer program running to serve the requests of other programs, the "clients". Thus, the "server" performs some computational task onbehalf of "clients". The clients either run on the same computer or connect through the network. Here the Server acts as the main resource for the client. Server is responsible for maintaining all the client information. The servercontains the database of all the data that will be requested by the user. So the server will process the user's request and get the concerned data from the database.

User Authentication

In the first module, the user will register with their details. The admin will login and verify the details of user, thus by authenticating them. After completion of registration the user can now login using the phone number and password as login credentials. If that credentials are correct the then user will be redirected into the application.

Admin Processes

In this module, the admin will login and edit the

details of the doctors. The admin can also edit the details of the COVID-19 Treating hospitals data like No.of ICU beds, Ventilators, beds with and without O2 available in a particular hospital. And also admin can delete a hospital. Along with the hospitals admin can also update/delete Quarantine centers details.

COVID-19 Hospitals

In this module, the users or the patients can view the details of the equipments available in the hospitals. The details include the availability of ICU beds, Ventilators, beds with and without O2. It includes a link for mobile number. It also includes a link for navigation.

Quarantine Centers

In the final module, the users or the patients can view the details of the equipments available in the quarantine centers. The details include the availability of ICU beds, Ventilators, beds with and without O_2. It includes a link for mobile number. It also includes a link for navigation.

4. Architecture

Diagram

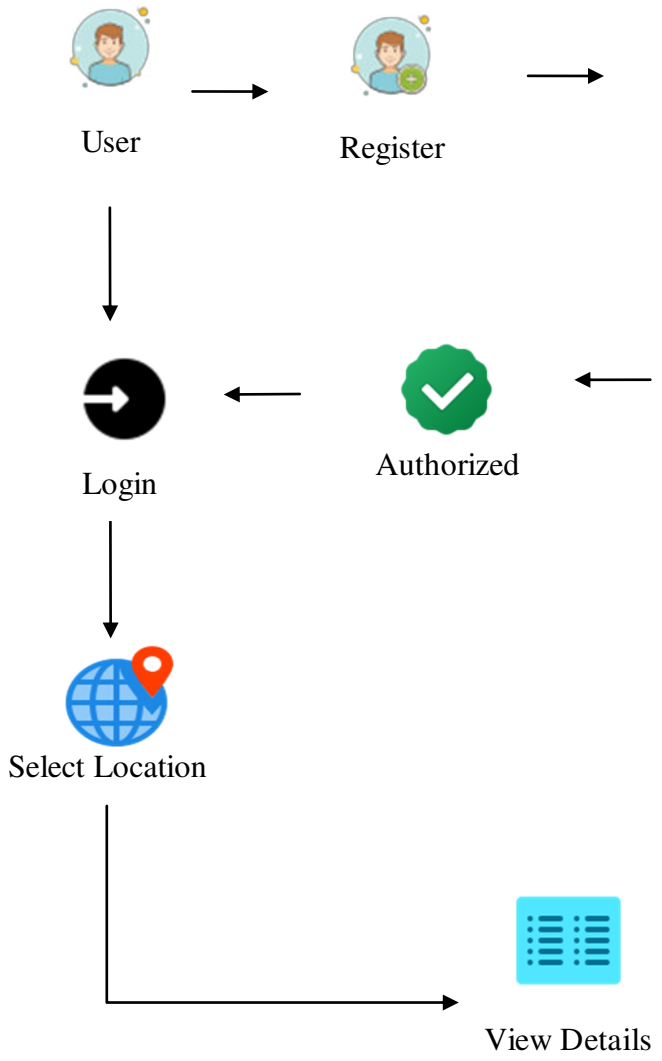

Fig 1. Architecture Diagram

5.Uml Diagrams

5.1 Sequence Diagram

A Sequence diagram is a kind of interaction diagram that shows how processes operate with one another and in what order. It is a construct of Message Sequence diagrams are sometimes called event diagrams, event sceneries and timing diagram.

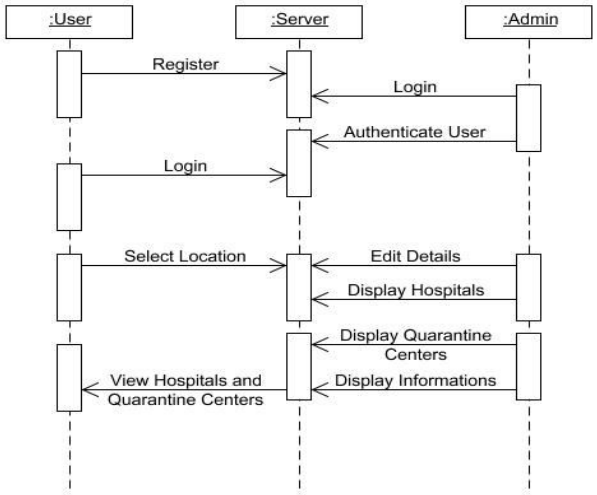

Fig 2. Sequence Diagram

5.2 Use Case Diagram

Unified Modeling Language (UML) is a standardized general-purpose modeling language in the field of software engineering. The standard is managed and was created by the Object Management Group. UML includes a set of graphic notation techniques to create visual models of software intensive systems. This language is used to specify, visualize, modify, construct and document the artifacts of an object oriented software intensive system under development.

A Use case Diagram is used to present a graphical overview of the functionality provided by a system in terms of actors, their goals and any dependencies between those use cases. Use case diagram consists of two parts:Use case: A use case describes a sequence of actions that provided something of measurable value to an actor and is drawn as a horizontal ellipse.

Actor: An actor is a person, organization or external system that plays a role in one or more interaction with the system

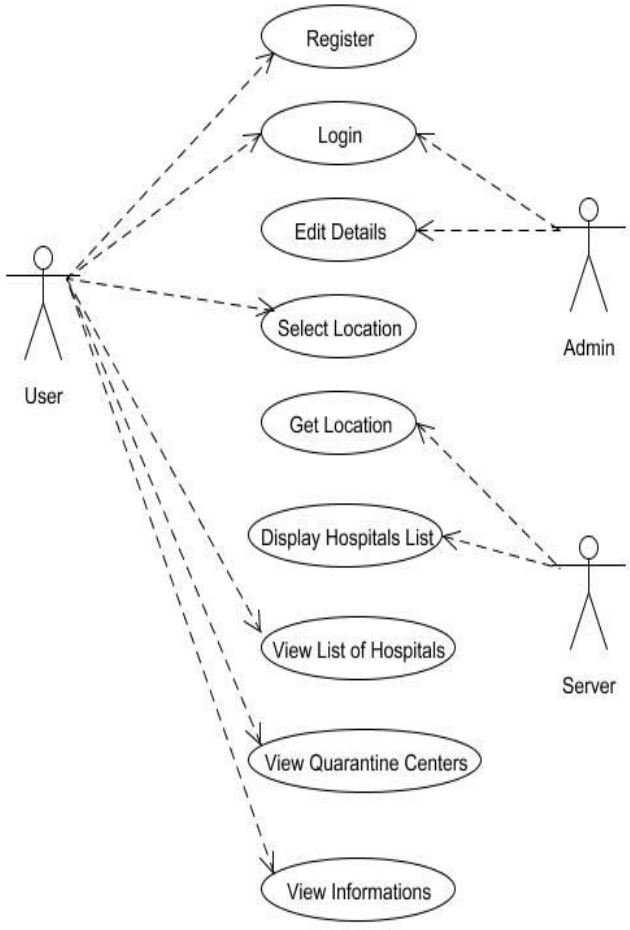

Fig 3. Use Case Diagram

6. CONCLUSION

The main objective of this project is reduce the burden on the users who might need the information about Covid hospital in the state. This project helps the user to find the hospitals in an efficient way , so that the user need not to worry about whether the hospital can treat them with all the required amenities. The user can get the detailed information about the availability of various types of beds and their count in a hospital and quarantine centres**.**

7. FUTURE ENHANCEMENTS

Since, this application is being implemented for only one state, In future the same application can be implemented for other states too. At the same time the other future work involves the addition of various modules like vaccination info, test centres, live updates etc , so that this app will be one stop application for any Covid related queries.

Since, this application provides information about various availability of beds, their counts and information about equipment in the hospitals . At any time this information can come handy in an emergency situations.

REFERENCES

[1] Nathan peiffer, Gisele Bendjelloul, Lila bouadma-Challenges and issues about organising a hospital to respond to the COVID-19 outbreak: experience from a French reference centre sept 2020

[2] Rashmi A.Nimbalkar, R.A. Fadnavis – "SEARCH OF NEAREST HOSPITAL AND HEALTHCARE MANAGEMENT SYSTEM", Proceedings of 2014 RACECS UITET Panjab University Chandigarh, 06-08 March, 2014.

[3] G. Valenzise, G. Prandi, M. Tagliasacchi, A.Sarti – "RESOURCE CONSTRAINED EFFICEINET ACOUSTIC SOURCE LOCALIZATION AND TRACKING USING DISTRIBUTED NETWORK OF MICROPHONES", ICASSP 2008

[4] Mingding Han, Ghasem Naddafzadeh Shirazi, Peijie Wang, and Chen Khong Tham – "MOBILE TARGET TRACKING FOR HEALTHCARE APPLICATIONS: TRADE-OFF BETWEEN ACCURACY AND ENERGY"

[5] Yuanyuan Du, Yu Chen, Dan Wang, Jinzhao Liu, Yongqiang Lu,"AN ANDROID-BASED EMERGENCY ALARM AND HEALTHCARE MANAGEMENT SYSTEM", 978- 1- 61284-704-7/11/$26.00 ©2011IEEE

[6] Li-Linchen," AN EMERGENCY MEDICAL SERVICE SUPPORT SYSTEM FOR PATIENTS IN RURAL AREAS - AN EXAMPLE FROM TAIWAN",
Proceedings of the 2012 International Conference on Machine Learning and Cybernetics, Xian, 15-17 July, 2012

[7] Hsiao-Hsien Rau, Chien-Yeh Hsu, Ajit Kumar, Ni-Chun Hung," IDENTIFICATION OF VARIABLES TO DECIDE OPTIMAL HOSPITAL FOR EMERGENCY PATIENTS", 978-1-4244-9666-2/11/$26.00 ©2011 IEEE.

[8] Inkyung Sung Taesik Lee, "MODELING REQUIREMENTS FOR AN EMERGENCY

MEDICAL SERVICE SYSTEM DESIGN EVALUATOR", Proceedings of the 2012 Winter Simulation Conference C. Laroque, J. Himmelspach, R. Pasupathy, O. Rose, and A.M. Uhrmacher.

[9] Charalampos Doukas, Thomas Pliakas, and Ilias Maglogiannis, " MOBILE HEALTHCARE INFORMATION MANAGEMENT UTILIZING CLOUD COMPUTING AND ANDROID OS", 32nd Annual International Conference of the IEEE EMBS Buenos Aires, Argentina, August 31 - September 4, 2010.

[10] Armstrong, N. , Nugent C.D. , Moore G. ,Finlay D.D. – "DEVELOPING SMARTPHONE APPLICATIONS FOR PEOPLE WITH ALZHEIMER'S DISEASE, INFORMATION TECHNOLOGY AND APPLICATIONS IN BIOMEDICINE (ITAB)", 2010 10th IEEE International Conference on, 3-5 Nov.2010.