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# ONE STOP SHOP APP - AN ONLINE SLOT BOOKING APPLICATION

[1] B.Nikhila, [2] B.Vijay Kumar, [3] Dr. L.Sridhara Rao

[1]Assistant Professor, [2]Assistant Professor,[3] Associate Professor
Department of Information Technology
J.B. Institute of Engineering & Technology, Hyderabad.

***Abstract:*** This application gives a one stop solution to all the problems of COVID-19 pandemic situation by controlling heavy traffic and maintaining social distancing in shopping complexes, malls etc. Today with the rising number of home needs and essential demand in everyone's life for daily essentials like groceries, vegetables, home appliances, electronic appliances, accessories, clothes, footwear, stationary etc which we can buy in a single place without transferring from one place to another place for every item. The customer is pretty interested in such a place where everything is available at a single location. So, due to increasing population, increasing demand and the needs of people getting increased in everyone's life. We can reduce the risks associated with COVID-19 attacks easily. With our application we aim to solve the daily needs of a customer by waiting for longer time in the queue especially in this pandemic situation by maintaining social distancing and all precautionary measures is a risky task for the customer to shop. With this application we can save a lot of time by allotting a prescribed time slot booking to every customer. So, by this application the customer can easily book a timeslot which are free and have a safe shopping. This application gives us 80% accurate results as we can reduce the risks in this pandemic situation by easily maintaining the social distancing ,less mutual contact from person to person, contactless items selection which will finally save the life of a person from COVID-19 attacks.

*Index Terms* - **COVID-19 attacks, pandemic, customer, social distancing, booking slot, traffic control.**

## I. INTRODUCTION

This application will bring out a solution to the problems caused due to COVID-19 attacks of maintaining social distancing, sanitization after every two hours, lot of time saving by huge traffic control and finally to save the life of a person in this pandemic situation. The app will help in reducing the traffic congestions by making social distancing caused due to COVID-19 thereby aiding to reduce the risk attacks of CORONA VIRUS.

The application allows the users to check for availability of booking slots nearby or a place they want to visit, that enables them to book a spot for their shopping, for how long they require that particular slot etc information details should be given. Once the user arrives at the location spot, he/she scans a QR code to start the timer. Failing to do so within 15 minutes from the start of the booking time, may cause the booking to be cancelled and will be allotted to users in need and who are ready to shop. After the purpose of visit is done the user can leave the spot and if the booked time elapses the booking is closed. There is also a verifier app, which is for verifying the booking spot. Once the listed spot bookings has been verified by a verifier, the booking slot is made available for the users for booking.

## II. PROBLEM DEFINITION

Our main purpose behind pursuing this idea of developing an application, where users could book a slot just like booking movie tickets, is to save people's life and time . With the help of this application users can enter their required location and based on that the app shows various booking slots nearby. The user can then check for the availability of a slot at the location at the desired time and for the desired duration and if available he can book it. Users also get the pricing details of various items in that area. The owners/hosts of the booking slot can also see this app as an extra source of revenue especially in this pandemic situation. The complete information of our project is explained in detail in the further sections of this paper.

## III. OBJECTIVE OF THE PROPOSED SYSTEM

The purpose is aiming to develop an application in which the customers can book their desired booking slot. The hosts and the customers have a common application connected to a central database which is managed by the administrator. The verifier app is also linked to this central database and updates the verified booking slots available to the users. The functionality includes:

A. Getting various slots booking data
B. Login authentication for customers of the app
C. Checking booking availability
D. Centralized server/database

E. Feedback taken from the customer to improve the user experience

## IV. SYSTEM ARCHITECTURE

It uses a client-server model, in a distributed system, consisting of both client and server software. The client process request for a service from the server, while the server process always waits for request from any client and provide service to the client. The major components of the architecture are: Mobile App, Verification App, Central Database, Admin, Users, Own- ers/Hosts.(see Fig. 1)

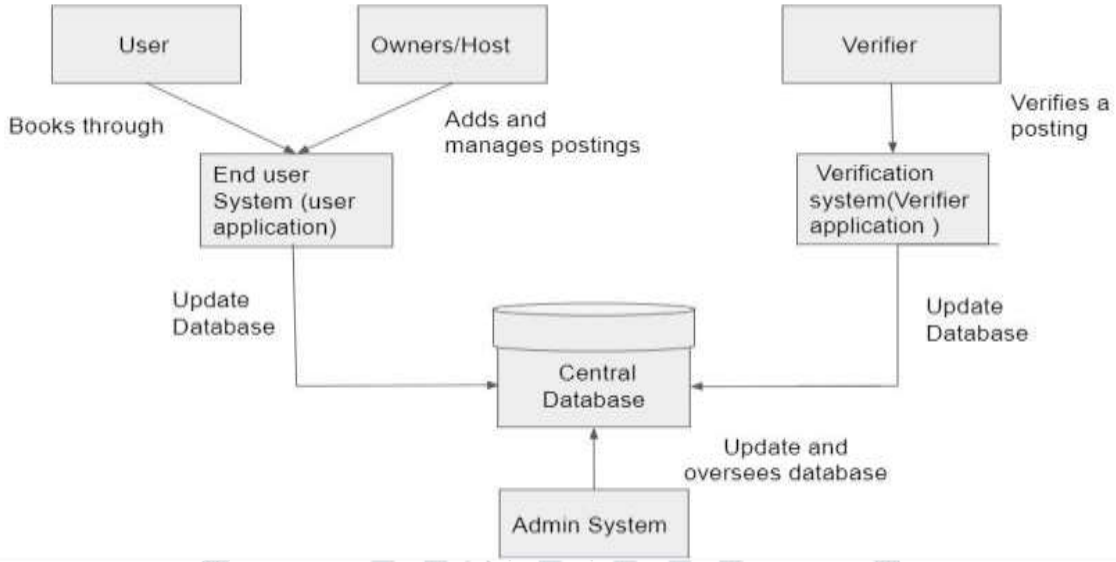


Fig.1 System Architecture

## V. SYSTEM WORKING

### A. Working Mechanism

The customer initially has to sign up into the application which registers the user onto the central database and thereafter the user can log onto the application wherein available spots are shown. The user selects the suitable spot and mentions the time for how long he might need the spot and confirms the booking for the spot online. The user upon reaching the designated location spot in the booked time slot he/she scans a QR code placed there in order to begin the timer. The user must reach the location spot within 15 minutes of the booked time in order to prevent auto cancellation. The user after his purpose of visit is over can leave the location spot/shopping complex/mall. The user can view his previous bookings, upcoming bookings and also save postings that he wishes to reuse or review later. The user also has an option to chat with the host of the bookings slot he has just booked in case he requires some assistance. One more feature of this app is that the users can rate and review hosts and postings through the mobile application. The application contains a hosting dashboard which lets the users to create a post on the app (i.e. add their booking slot) and also modify certain things related to their already existing posts. It also provides them a platform to view upcoming bookings and their previous bookings and savings. The other module in this software package is the verifier app, which is used by company appointed verifiers to verify that the newly added postings are genuine and that necessary documents are present with the owner. Only after verification by a verifier, will be posting available timeslots for other users to view or book.

### B. Functionality of the Modules

**1) Mobile App for Users**

**a) Sign In and Sign Up:** The user can Sign In and Sign up into the application for the booking of time slots and the authorization is managed by the Google's Fire Auth Service.

**b) Find Booking Spots:** The user can select a slot from the various time slots displayed on the application's Explore page. He can also make searches based on the name of the location or the city which the user is intending to visit.

**c) Booking Spot Details**: Once the user has selected a time slot, the slot's details are shown including the availability, a brief description, address, location on the map as a place marker, rating, host details, review form and reviews. The user can then select the desired duration for which he/she will be needing to shop and then confirm the booking .

**d) QR based Check In:** Once the user on reaching the spot scans the QR code at the designated spot which checks the user in and initiates the timer. Failing to check in, within 15 minutes of the booking may lead to cancellation of the booking.

**e) Managing the spots**: The owners can Sign into the App and manage the active booking slots and also view the current bookings of the slots and the total revenue from the booking app.

**f) Real-time Data:** The Application continuously syncs with the Firebase database (Data store), providing data to the users and the owners and also enables the use of flags for avoiding the various race conditions.

**2) Mobile App for Verifiers**

**a) Sign in:** The verifiers can sign in to the application with the email id and password provided to them, for verifying the slots and the authorization service is handled by Google's Fire Auth.

**b) Verifying the slots:** The verifiers will make all the available slots to the users so that they can book a slot without any inconvenience and lot of time is saving here. The verifier verifies by visiting the registered spots and verifies the genuinely of the posting. After the completion of the verification process by the verifier the posting is available on the user application for booking by the other users.

**c) Data Backup:** Both the apps keep backup of the data regularly. The backup is saved on the data store. The backup will be taken automatically based on a regular interval. The admin can restore the database from the backup which is stored on the data store, if the server crashes.

### C. Setup Representation

A typical representation or the block diagram of the application package can be seen in fig. 2

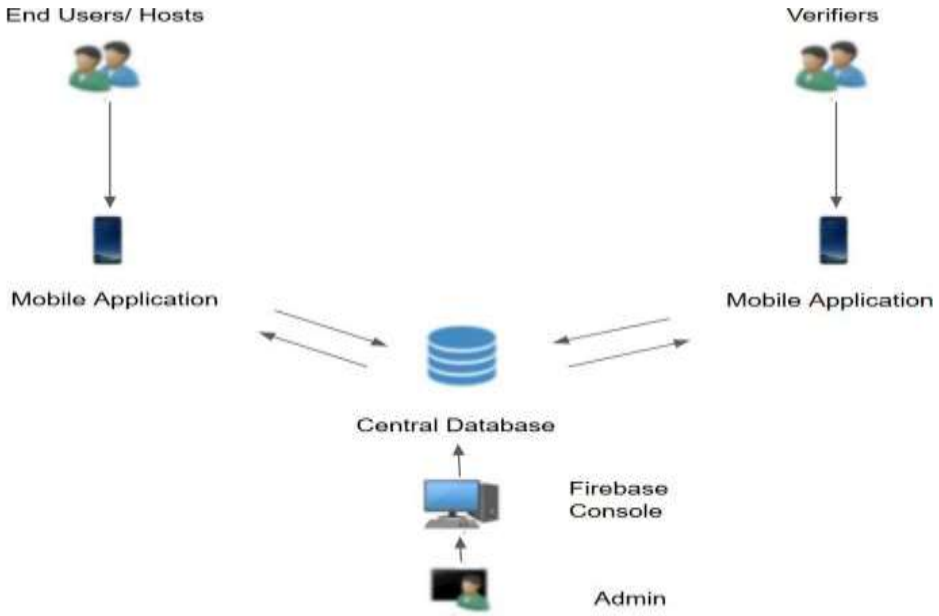


Fig. 2. Block Diagram

## VI. SIGNIFICANCE

One of the major significance of this application is that, it is easier to find available booking slots and thereby we can reduce traffic congestion by availing those time slots for shopping.

This application will effectively reduce the death rate happening due to COVID19 attacks. The application will also enable the users to shop safely in their flexible timings by pre booking without worrying about the pandemic situation.

## VII. CONCLUSIONS

This application is a solution for easy shopping of daily essentials in this COVID-19 pandemic situation. The application will help in reducing traffic congestions, reduces the loss of life damages caused due to social distancing and so the store management can easily sanitize the store after every 2hours.The application will thereby aid the users to find and book a slot without having to personally go to the store waiting in the queue for long hours in this pandemic situation, so in that alloted time slot a person can go to the store/mall/shopping complex and have a safe shop without any risk and 80% attacks of covid-19 will be decreased.

## VIII. FUTURE WORK

Furthermore, using this system we could study the congestion caused in cities and provide more number of malls required for daily essentials shopping thereby reducing the traffic problems,100% social distancing is maintained easily. Also we could include the pass system for the customers that very often use the booking slot by studying the data collected the app and the website. And also this data collected could be used for security purposes .Also automatic booking suggestions via the application can be included thereby improving the user experience furthermore.

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