Visitor Management System for College
(SAKEC GATE-APP)

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ABSTRACT

Visitor management system is utilized by places where an enormous number of guests travel every which way. Regardless of whether we are running an immense corporate organization, a little office, universities or schools. We should manage guests consistently. For wellbeing, we should monitor each one of the individuals who visit your premises. Visitor management system records the visitant subtleties in the database to keep up records of all the individuals who visited the structure. An app that sends a notification with visitor's details to a staff member. Staff member further sends an acknowledgement about a visitor who met the guard. A notice board section is provided for important notices to be declared. Security has been provided for login sections using the latest security hash method. Phone number of each faculty member is provided for emergency purposes.

Keywords-- Acknowledgement, Firebase, Flutter, Notification, SHA-512, VMS

INTRODUCTION

Whenever a visitor enters the college campus, the first person to greet him is the guard. The role of a guard is manifold. A guard handles variety of tasks such as greeting the people, phone answering, data entry, package delivery, providing concierge services etc. Due to the advancement in technology and availability of automated visitor management systems, the work of guards can be reduced. The "Visitor Management System" overrides the problems prevailing in the practicing manual system. This software supports the elimination and, in some cases, reduces the hardships faced by this existing system. Moreover, this system is designed for the particular need of the company to carry out operations in a smooth and effective manner. The application reduces as much as possible to avoid errors while entering the data. Users need no formal knowledge to use this. Thus, it is a user-friendly application. Visitor management system, normally alluded to as a construction to continue to track guest's activities in an Organization or public structure. It can give important yield and data to the clients and record the approaching and out coming guests inside the most limited time. In any case, VMS is additionally skilled to smooth out the enlistment cycle and give legitimate and incorporated information to the guests. By and large, there are numerous associations or schools that utilize the traditional paper log or visitor book to record the entrance of the guests. This manual strategy devours longer times when the quantity of guests surpasses the breaking point. In the interim, an expanding number of guests shows that the security issues ought to be a concern in the association or school. This is essentially on the grounds that the administrators have no time to confirm the ID of every guest when there are huge loads of visitors entering the structure. In addition, paper log is insufficient to offer more noteworthy recognizability, whose recovery isn't productive following quite a long while. Likewise, a Notice board is incorporated for both security and Staff individuals.

LITERATURE SURVEY

The technique proposed in this paper is to record the attendance through pictures utilizing face discovery and face acknowledgment. The proposed approach has

been executed in four stages, for example, face location, marking the identified faces, preparing a classifier dependent on the named dataset, and face acknowledgment. The data set has been built with positive pictures and negative pictures [1-3].

In this paper, the log-in process in online applications requires refreshing of the encryption technique utilized by the strategy for SHA 512 calculation. This update means to improve the security of secret phrase information on logging highlights that are more reliable and powerful so the attacker will be extremely hard to attack the system. Execution of the SHA 512 calculation technique creates the longest number of pieces of 512 pieces to guarantee system security and data classification [4, 5].

Visitor data are recorded in a centralized database server, which provides data management and administration through searching and reports forming. The benefits of E-VIMS are improving the level of protection implemented in premises, rendering an authorized view of guest records, and decreasing the time spent on handling guest data [4].

OVERVIEW

The objective of the work is to create an app that allows college staff members as well as guards to ease their work and make visitors comfortable on the college campus. The proposed framework consists of 3 boards: Visitor, Security Guard, Administrator. Visitors need to register themselves on the application. Once the Security Guard has done the needful, after that visitor can check in, if a specific staff is available inside the campus. From the Staff side, he/she can login and see the rundown of visitors who have enrolled. Further he/she can choose to acknowledge/reject the Visitor. From the Admin side, the administrator has all the details about the Visitor, Staff, and the entire database. Administrator and staff side can update the Notice Board Section which is readable to everyone using the application [6, 7].

SYSTEM DESIGN
Flutter

The Flutter system provides developers with the following features:

a. Application that is both modern and responsive.
b. It makes use of the dart programming language, which is quick to pick up.
c. Rapid advancement.
d. User interfaces that are both beautiful and fluid.
e. A wide range of widgets is available.
f. The same user interface is used by different platforms.
g. Application with a lot of control.

In general, creating a mobile application is a difficult and time-consuming task. A mobile application can be built using a variety of frameworks. Flutter is a simple, high-performance platform based on the Dart programming language. It does this by rendering the user interface directly on the operating system's canvas rather than using a native framework. Flutter also comes with a range of ready-to-use widgets (UI) for creating a modern app. These widgets are mobile-friendly, and creating an application with them is as easy as creating an HTML page. Flutter is an open-source mobile SDK developer can use to construct native-looking Android and iOS applications from a similar code base. Flutter additionally gives developers reactive-style sees. To keep away from execution issues getting from utilizing an incorporated programming language to fill in as the JavaScript bridge, Flutter utilizes Dart. It compiles Dart early (AOT) into the native code for various stages.

SHA-512

The login mechanism in web-based applications executes the MD5 hash work as a sort of catchword encoding that demonstrates to possess shortcomings inside the sort of Collision Attack that is presumably to claim a comparable hash cost on 2 totally unique information esteems that may undermine the security and secrecy of the data. Execution of slogan security in electronic applications needs change to support reliability and assurance framework security by exploitation SHA 512 strategy. data combination was finished by writing study, data arrangement from net, and perception. The investigation procedure is part of numerous cycles, especially needs examination and framework weakness, and examination for development. The program style comprises

stream sheet style and theoretical style of a hash work occupation instrument. Alleviation is dispensed with the execution of the new hash work occupation a way, code correction for framework fix (fixing) and investigate results from execution. Testing is finished by entrance investigate it and client acknowledgment test (UAT) Testing once use of fix, the inputted catchword has been recovering to extra dependable hash work exploitation SHA 512 strategy, and hence the aftereffects of UAT shows the outcome in arrangement and capably trust 86%, that the execution of the fix acclimated secure the slogan that was made all through login will run PRN (Table 1).

Table 1: Differences each SHA algorithm variation.

Algorithm	Message Length (bit)	Block Size (in bits)	Word Size (in bits)	The Size of the Message Digest (bit)
SHA 1	2^{64}	512	32	160
SHA 256	2^{64}	512	32	256
SHA 384	2^{128}	1024	64	384
SHA 512	2^{128}	1024	64	512

Firebase Cloud Notification

Firebase Cloud messaging (FCM) may be a cross-platform messaging resolution that permits you to faithfully send messages at no price. Using FCM, you will inform a consumer app that new email or alternative information is obtainable to synchronize. You will send notification messages to drive user re-engagement and retention. To be used in cases like instant electronic communication, a message will transfer a payload of up to 4KB to a consumer app. When the app is running in the background and user is not currently using the app at that moment notification messages are stored in the notification tray (Fig. 1).
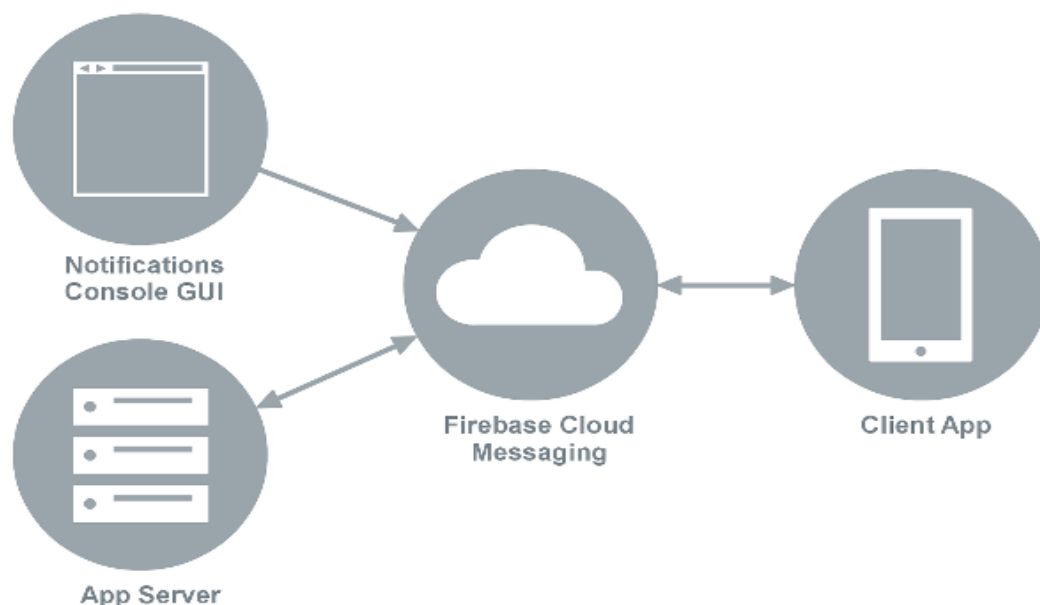

Figure 1: Firebase working model.

Flow Diagram of System

The following Fig. 2 represents the flow diagram of the system. The role of watchman includes a login part with OTP verification, checking the notice board section for new updates, and sending notification to the staff member. Staff members can send back acknowledgement to the guard about a successful meet. Staff member responsibility is to update the notice board about important notices. Admin has the access for the database and can monitor activity of every individual.
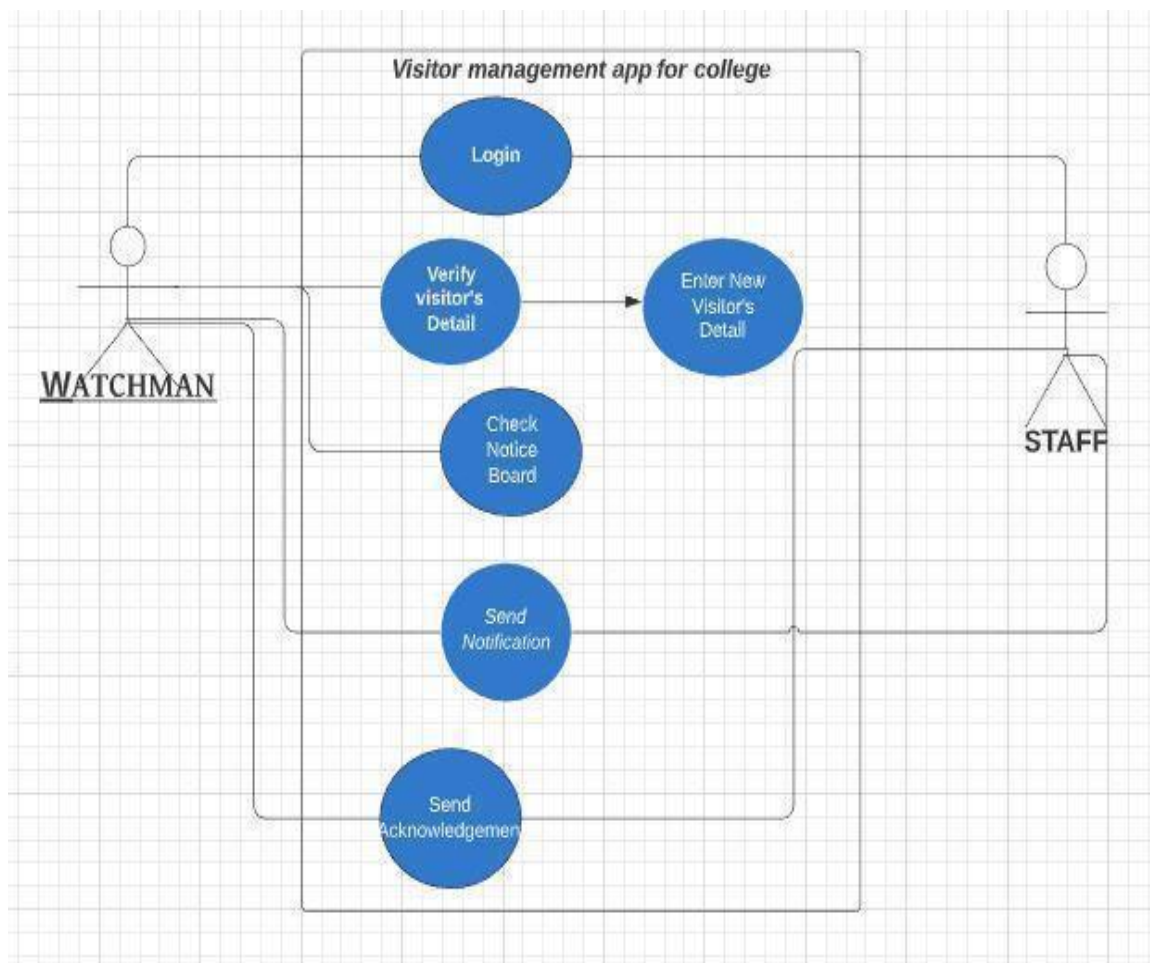
Figure 2: Flow diagram of system.

IMPLEMENTATION

Block diagram is given in Fig. 3.
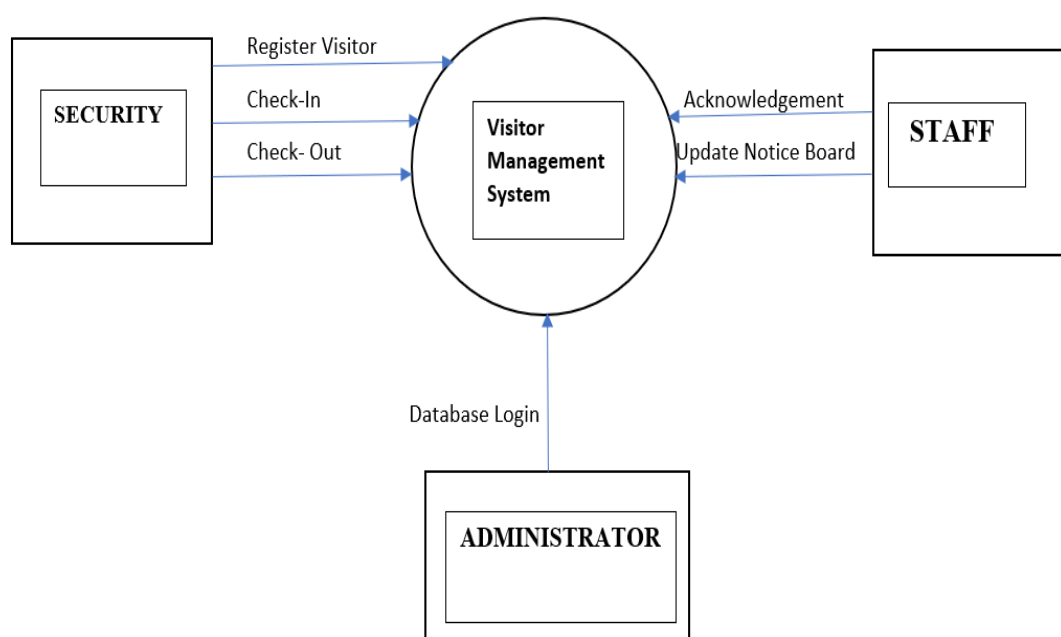
Figure 3: Block diagram of VMS system.

Now, we will see the implementation of the application, it is segregated into:
1) Staff, 2) Security, 3) Administrator.

Further, both have to proceed with registration or login where verification will take place using an OTP, sent to the user. On Android devices, which support automatic SMS code resolution, this handler will be called if the device has not automatically resolved an SMS message within a certain timeframe. Once the timeframe has passed, the device will no longer attempt to resolve any incoming messages. By default, the device waits for 30 seconds, however, this can be customized with the timeout argument. Basic details like First name, Last name and Email ID, Password is entered, the password is stored using SHA-256. Auto-Login is also provided. Fig. 4 is the welcome page of the visitor management system app.
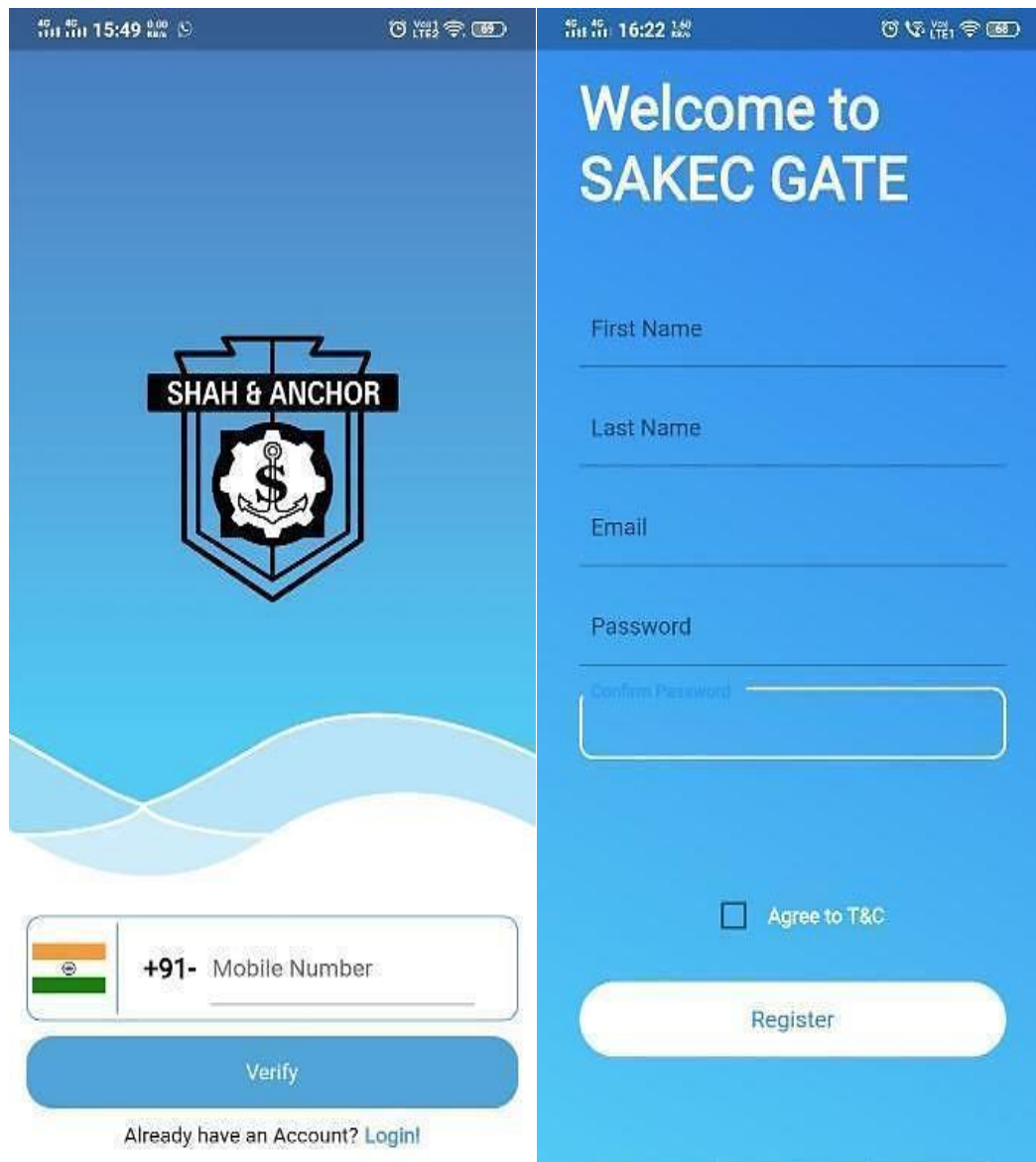
Figure 4: Welcome page of system notice.

After registration and Login, the Notice Board page will be displayed to all the users. Board can be accessed by both guards as well as staff members, the only difference is the staff can edit updates and the Notice Board is visible to all. In the security section the security can view the Notice Board. Fig. 5 is the notice board section of both staff as well as guard section.
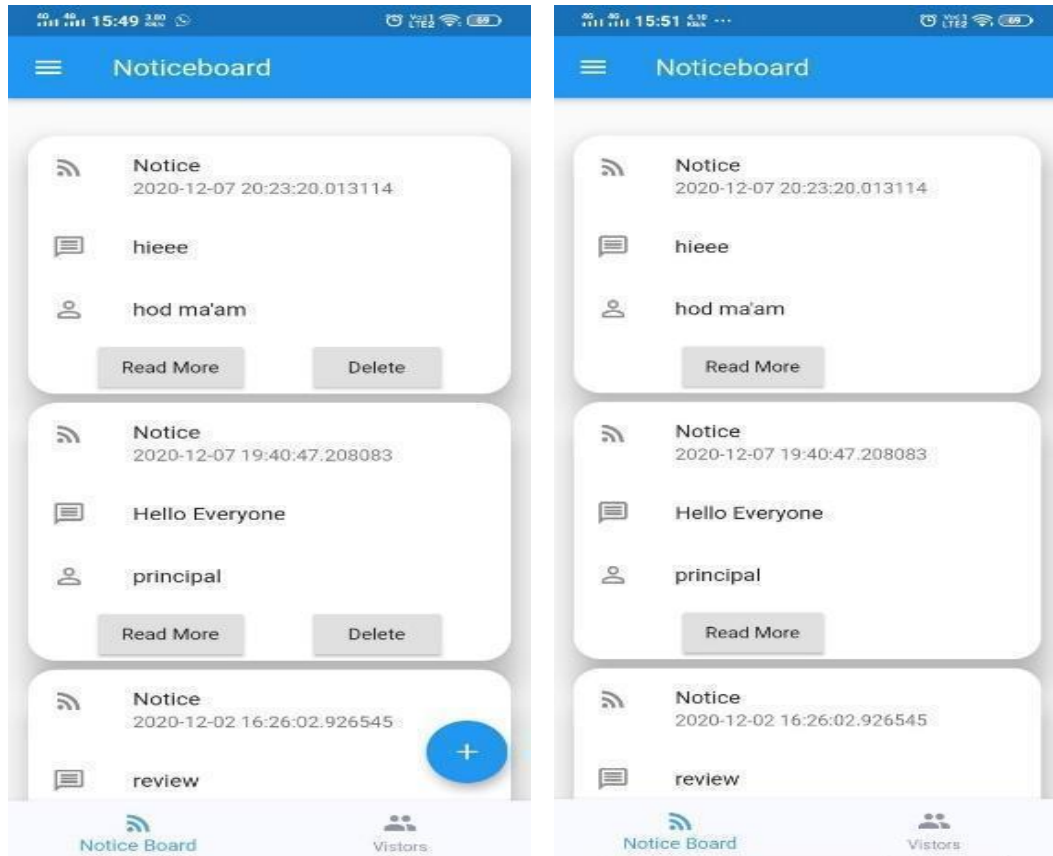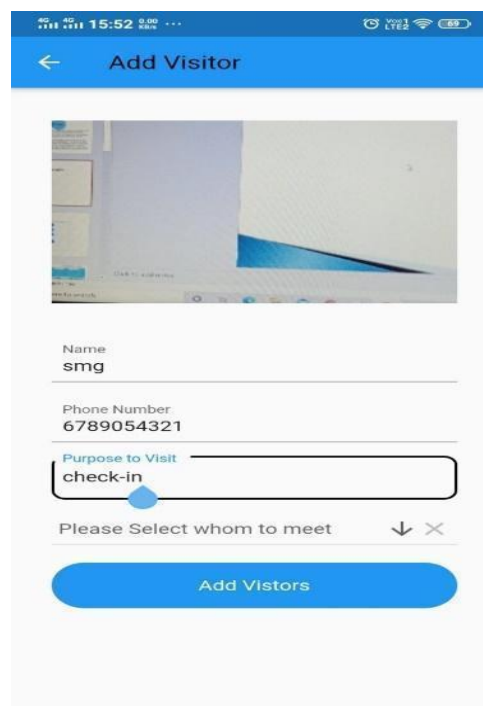
Figure 5: *Notice board section of system.*

Guard can add new visitor in the visitor's section, the name, phone number, purpose of visit and picture of visitor is entered.

A dropdown of the faculty whom the visitor wants to visit is displayed to send the notification (Fig. 6).

Figure 6: *User details.*

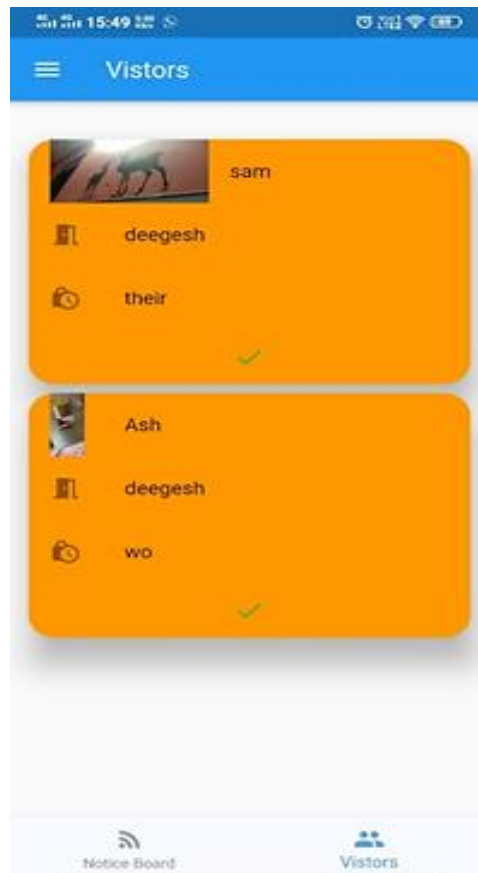In the staff section, the faculty can view the coming visitors. They can let security know about their availability (Fig. 7).

Figure 7: Visitor's detail to staff member.

On clicking the ✓ button, the acknowledgement of the meeting will be sent to the security ensuring that the person can check-out (Fig. 8).
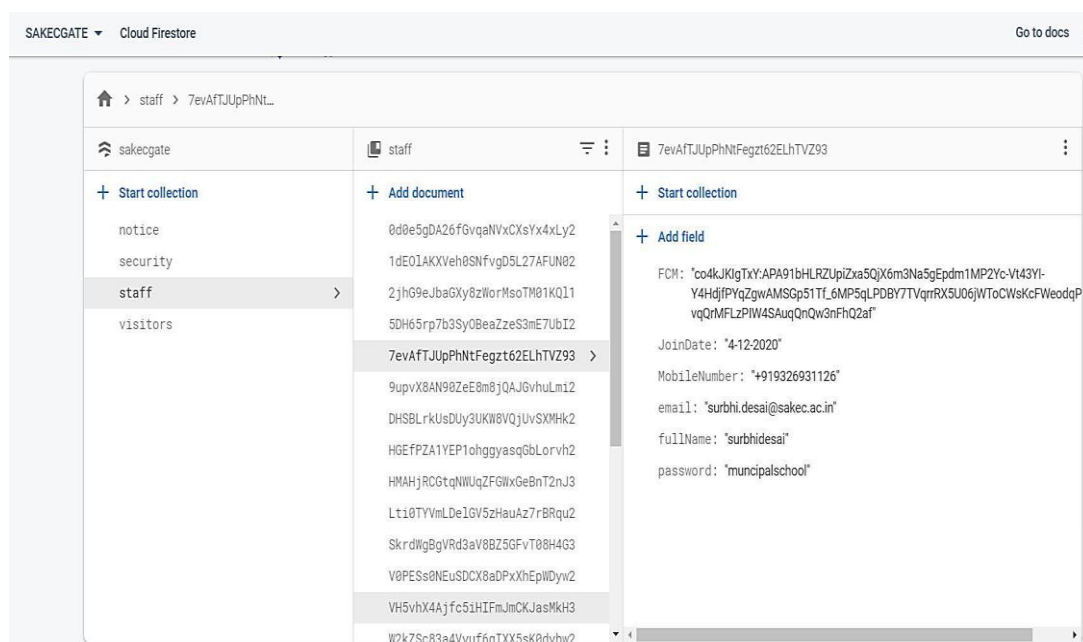
Figure 8: Encrypted data of staff members.
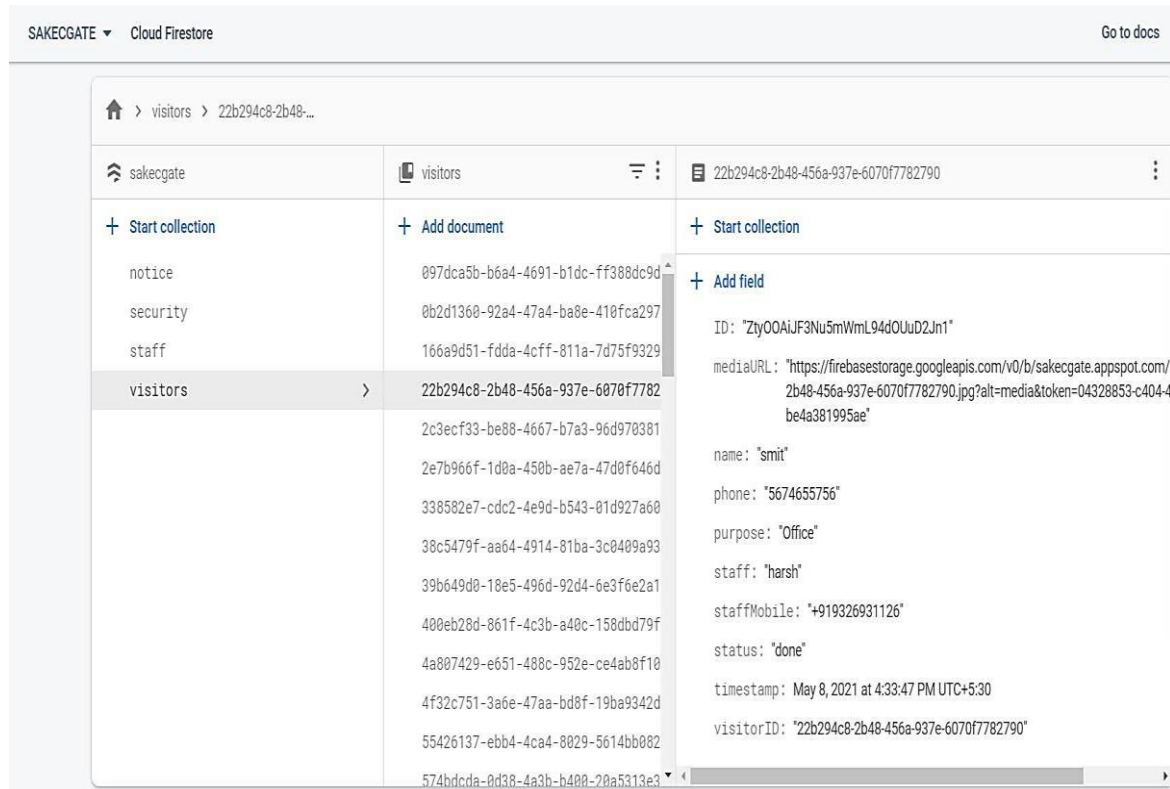
Figure 9: Encrypted data of visitors.

This shows the hashing of the password. It also provides FCM token which is unique for every registration done on the application. Along with that, it shows timestamps and details of every individual (Fig. 9).

CONCLUSION

Visitor management system is useful for enormous associations by keeping up normal visitor subtleties in the data set. In our Visitor Management System visitors can check the accessibility of staff members. Staff authorities can get the insights regarding the visitor who has booked him/her. Staff members have an alternative of accepting or dismissing the visitor; administrators can get to and keep an information database. Hence, making track of records and acknowledgement easy to access and ensure its safety. Face recognition can make it safer than the earlier biometric means. Last but not least, this project can be further improved from many aspects, since, it could always update and modify. Therefore, it can be seen that there are many possibilities to enhance this project from day to day, which not only limit to certain aspects.

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