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Social Awareness by Jagruti App- Anonymous

Under the guidance of Prof. Madhura Phadke

Team members: Chaitali Shidunkar[1], Saili Mhatre, Akshay Mohite[3], Prof.Madhura Phadke[4]

[1-4]*Datta Meghe College of Engineering, Airoli, Navi-Mumbai. MumbaiUniversity.*

Abstract— Everyday crimes occur should be known to each and every person. Garbage, water problems, sanitation, power supply etc., municipal issues are a common sight every day and crimes exist in various forms everywhere. But people don't readily come forward for reporting these issues due to the fear of revealing oneself. Therefore, we are proposing such a system that will help people to present their issues without any fear. Registering complaints about a civic issue is now just an App away. The prime objective of. The proposed system is to preserve the privacy of people while they are reporting for any of the problems which we discussed earlier. With smartphones becoming increasingly popular, citizens can now download any Android applications at any-time since they are cost-efficient and easily available. Hence, we are developing an Android Application which is very helpful for the people to come against any issues they might be facing.

Index Terms — Location sensing, Shamir's Algorithm.

1.INTRODUCTION

We are living in the 21st century so-called as the modern century, as a member of this century we all have seen many technological developments in the field of Information and Technology. Development in technology has led to a more comfortable lifestyle but still there are many general problems which are not yet been solved. Problems involving municipal related issues and crimes are increasing at a higher rate. Everyday crimes occur should be known to each and every person. Garbage, water problems, sanitation, power supply etc., municipal issues are a common sight every day and crimes exist in various forms everywhere. But people don't readily come forward for reporting these issues due to the fear of revealing oneself. Therefore, we are proposing such a system that will help people to present their issues without any fear. Registering a complaint about a civic issue is now just an App away. The prime objective of the proposed system is to preserve the privacy of people while they are reporting for any of the problems which we discussed earlier. With smartphones becoming increasingly popular, citizens can now download any Android applications at any-time since they are cost-efficient and easily available. Hence, we are developing an Android Application which is very helpful for the people to come forward and raise their voice against any issues (which are discussed above) they might be facing. Using our proposed Android Application people can lodge complaints and report incidents such as criminal incidents. The techniques used in our system are Shamir's Secret Sharing Algorithm for encryption purposes to preserve the identity of users. Citizens can not only make a complaint on several issues using the application but they can also upload photographs of the civic problem. After registering on the application, the user can make complaints regarding garbage, cattle, potholes and street lights. User can also report incidents that are dedicated to social issues like lost items, events, local crime spotting, etc.

The rest of the paper is organized as follows. Section II describes our data and collection method. In Section III, we show the temporal patterns of different venue categories. In Section IV, usage of Shamir's algorithm. In Section V, usage of APIs for login, storage and authentication purpose. In Section VI, usage of app b normal user. Finally, we conclude our work and discuss some future work.

2. BACKGROUND AND DATA COLLECTION

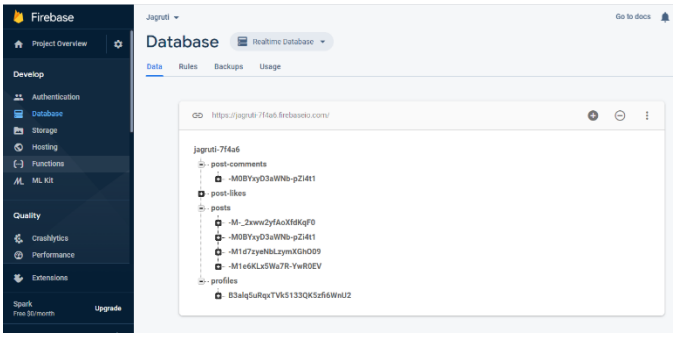
Application Name	Features
• NDMC(New Delhi Municipal Council)	• Raise Complaints regarding Municipal Issues. • Find Parking Lots in the area. Pay Bills for Civic amenities like Water, Electricity & File Property Tax and Estate Tax. • Register in OPD of Near by Hospitals. • 24X7 Helpline for emergencies like Fire, Ambulance, Police etc.
• CITIZEN	• Real-time Safety Alerts • Live Breaking Video • Keep Your Community Safe

• MyBMC 24x7	• Help the citizens to lodge their complaints. • payment of water bills. • payment property tax. renewal of licenses from anywhere at any time and accordingly make their life stress free and hassle-free.
• Swachhata-MoHUA	• Enables a citizen to post a civic-related issue (eg; a garbage dump) • capture the location while the picture is being taken. • Take a picture of the Civic-related issue using your smart phone

Fig 1: Background

A. Data Collection

Our data collection has three parts. The first is to collect the information related to similar apps available on Play-Store but also survey for the disadvantages of those apps and then the second one is to find out how to overcome them so that there is much better awareness among public. And finally survey for the algorithms which can be used to implement our application. Different login API' s is also provided so we have to use the google-APIs like Facebook and Gmail. Also, for location purposes we will be using google-maps API in our application. For storage purposes whether Firebase or SQLite will be better had to be surveyed. So finally, as our app is distributed one means the posts from users will be in dynamic and distributed form hence, Firebase was the solution for database purposes. Following is the snapshot of data store in firebase.



Also, information related to Secret Sharing algorithm, we surveyed different algorithm and found 2 algorithms viz, Blakeley algorithm and Shamir Algorithm. With ref.fig.2 Shamir algorithm is more useful and efficient in storage and complexity parameters.

BLAKLEY SCHEME	SHAMIR'S SCHEME
This scheme uses 3 dimensions.	This scheme uses 2 dimensions.
Secret is at which 3 lines intercept.	Secret is at Y intercept.
Less space efficient.	More space efficient.
Secret Size is t times larger where t is threshold.	Secret size is same as the original size.
More complex	Less complex

Fig:2 Comparison between algorithms.

3. VISUALIZATION OF TEMPORAL DATA TRAFFIC

In our application the users after registering in the application will be able to post any municipal or criminal related issues and facts. These posts can be liked, reviewed, rated, commented by many users who can see those posts. And hence, spread awareness among people without

any fear of revealing their identity to public. It is useful to spread awareness amongst people without any fear of getting threatened by any higher authority. And this identity hiding is done using Shamir's secret sharing algorithm used in our app.

a0=1234, a1=166, a2=94, where a0 is secret.

Our polynomial to produce secret shares (points) is therefore:

$f(x)=1234+166x+94x^2$

We construct six points from the polynomial:
D0= (1,1494),
D1= (2,1942),
D2= (3,2578),
D3= (4,3402),
D4= (5,4414),
D5= (6,5614)
We give each participant a different single point This is necessary because f (0) is the secret.

4. SHAMIR SECRET SHARING ALGORITHM

a) Preparation

Suppose that our secret is 1234 .We wish to divide the secret into 6 parts (n=6) , where any subset of 3 parts (k=3) is sufficient to reconstruct the secret. At random we obtain k-1 numbers: 166 and 94.

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5. Related Work

In our application we used an algorithm i.e. Shamir Secret Sharing Algorithm for hiding identity as explained in the above section. For authentication purposes we have provided two ways login for user i.e., via Gmail and via Facebook. For this we required Google APIs for both the logins. Also, for storage purposes we used firebase as SQLite is useful only for limited no of users and also for offline purposes. Firebase is for distributed and dynamic system. All the information related to user personal information or posts that he/she posted is stored on the cloud using Firebase.

6. Conclusion and Discussions

The problem of criminal activities and municipal issues is increasing day by day, so we can develop such an application for altering the concerning issues which can help us to stop such type of illegal activities. We can also make people aware of any facts happening anywhere and also make people fearless about spreading social awareness as their identity is not revealed.

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