

E-Voting and E-Forum Android Application for Student Council

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Abstract— The evolution of Information Technology (IT) has made possible the development of Electronic Voting Systems and Forums nowadays, with wide-spread of mobile devices. Voting for any social issue is essential for modern democratic societies. So it is becoming very important to make voting process more easy and efficient. The following system is implemented to allow every student to actively participate in college election process irrespective of the place and get updated with the forums posted by admin so that they can get acquainted with candidates and select college representatives in various sectors. This is built on Android application which will accept the votes of different students. The purpose of project is to denote a voting process, which enables voters to cast secure ballot over a network as manual voting process over a user-friendly platform.

Key words: Advanced Encryption Standard (AES), Google Cloud Messaging (GCM), Android

I. INTRODUCTION

21st century has been experiencing the development in technology day-by-day. Various fields have grown in past few years. The growth & development is so rapid that the newly invented or modified technology today gets replaced by something new & innovative tomorrow. One of these field is Voting. In the age of internet, where many or most of the things are conducted online, the use of it has expanded globally hardly leaving any field to be covered. Electronic Voting (E-Voting) is thus, a process of conducting voting through the internet. Focusing at the college level, every college has Council that runs various events in the college. In order to run these events smoothly, appropriate members for appropriate posts must be elected. This is quite similar to Democracy. Hence to carry out this voting effectively & efficiently, an ANDROID application is developed that enables maximum students to participate & vote for their favourite & liable candidates for the various posts of the Council. However, only registered students can vote to only registered candidates. This ensures that the process is not interfered by any anonymous user. The results of the voting are notified to every legal student through E-Forum. Besides, the notifications of the various notices, events & their registrations links (if any) are also notified through same. Thus, E-forum is basically enables the students to get notified directly through the android application making it simpler & convenient to stay updated about the happenings inside the college.

II. WORK DESCRIPTION

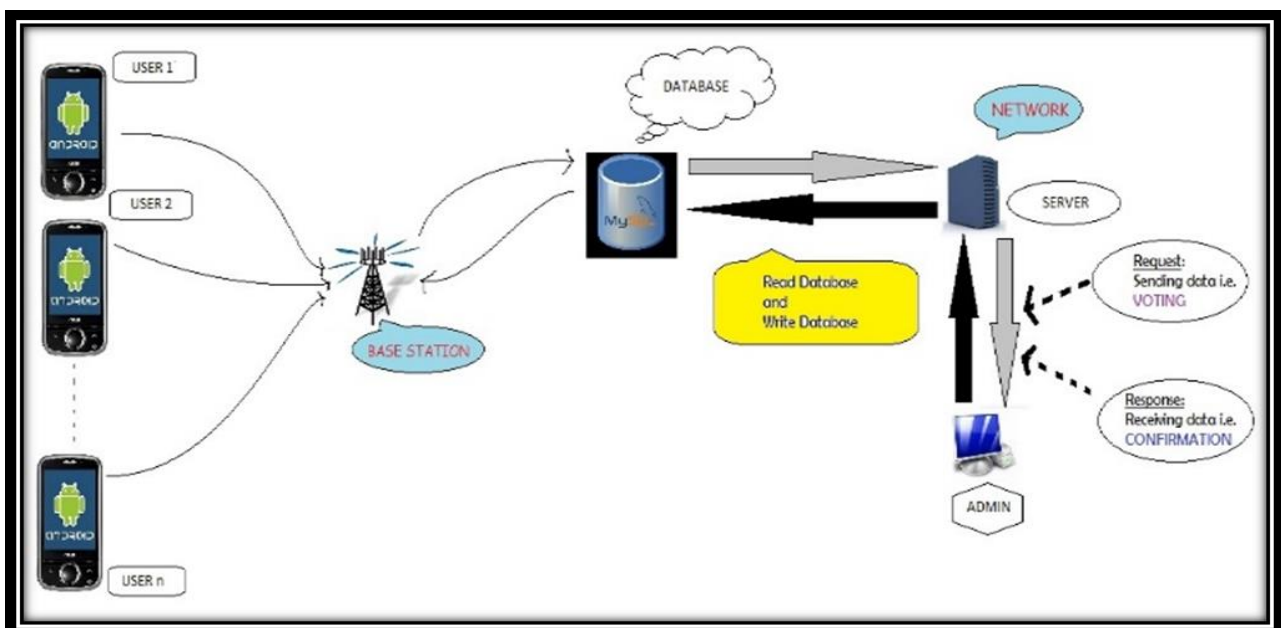


Fig. 1: The general architecture of the system

As mentioned, only registered students can vote to the registered candidates. This means that the students need to register themselves with their name, year & branch, roll no, email-id, etc. (as given in college) to avail the use to the application whereas the candidates must also register with their name, desired post, year & branch, email-id, etc. The details must match to what given in the college so as to ensure that only the students of that college are enrolled in the activities. This is controlled by the Admin. The data is stored in the database, which acts as a backend in this work & is written in MySQL. The control the elections and the notification, the server is setup which is only accessible by admin. It forms the middleware & is written in PHP. The connectivity between the database & the user is also governed by the server. Lastly, the (registered) user, who uses an Android application (frontend), can casts vote only once & can get notified about the happenings on it through GOOGLE CLOUD MESSAGING (GCM). The general architecture of the system diagram is shown below. Along with these activities, keeping the security in mind, the above data is encrypted using ADVANCED ENCRYPTION STANDARDS (AES) algorithm.

III. ACTIVITY LOG

The following are the activities that occur throughout the single process of a vote: -

FOR USER	
Steps	Activity Log
1	Login to vote by entering your username and password.
2	Select the candidate and cast your vote / review the notice and apply for the same if interested.
3	Logout and wait for the results.

Table 1. Activity log of the user

FOR ADMIN	
Steps	Activity Log
1	Login.
2	Upload the list of candidates with their respective design / upload notice regarding the events.
3	Set a particular duration for voting / post the link for registration.
4	After that duration, analyze the result and display.
5	Logout.

Table 2. Activity log for admin

IV. SIMULATION RESULTS

The block diagram of the system is shown. As discussed earlier, this system consists of 3 fundamental components viz., Android user (frontend), the admin panel i.e., server (middleware) & the database (backend).

The simulation results first involve the e-voting process. Initially the student & the candidates must register themselves through their details. (The details must match with the one given in the college.) The admin will set up a specific duration for the voting for a SINGLE post. The user now need to login, note the list of eligible candidates for the post, cast a vote & logout. Every student can cast a vote ONLY ONCE. On completing voting, the vote cannot be retrieved. The server, meanwhile, keeps the track on the number of votes received as soon as the user has casted a vote. The server however, maintains the voting line active only for the duration prescribed by the admin. On elapsing the time, the voting line is deactivated & now no user can vote.

The server calculates the result & display it to the admin. In the entire voting process, the votes are kept confidential to the admin as well. Hence, the admin can only know that a vote has been casted but cannot know by whom to whom. It is now the admin's job to notify the result to the user. This is done using e-forums.

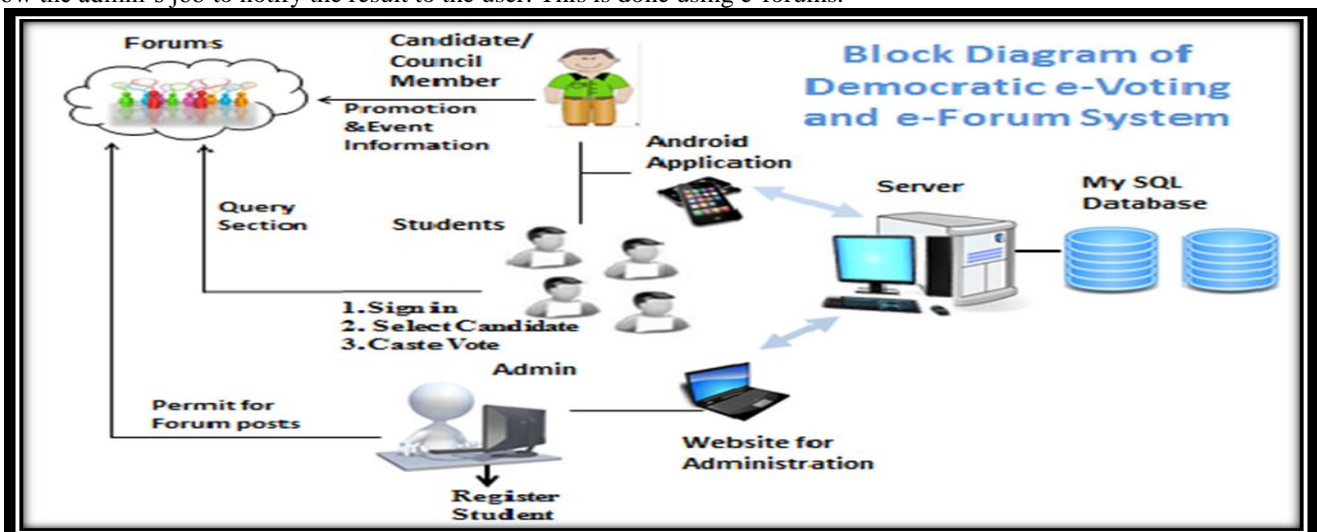


Fig. 2: The block diagram of the system

All users (registered with the app) receives notification of the election via., e-forum. On displaying the result, the admin resets the voting counter to the initial position & get ready to begin a new vote for another post by similar process. E-forums are also used to send the notifications of the notices that are displayed on the notice boards. This ensures that the student won't miss out the important notice if he/she fails to reach to college or to the notice boards. Besides, e-forums are also used to notify about the various upcoming events or the festivals & also the registrations forms or links (if any) for the same so that the students can apply directly.

V. CONCLUSION & FUTURE WORK

Electing Representatives for every section in college comprises of great responsibility and fairness in decision. In this project, it is maintained by conducting voting process and getting notified about the results anytime and anywhere through e-Voting application. It tackles the time-consuming and data integrity which has been suffered in previous system of voting process. This platform is designed to motivate students to make full utilization for the opportunity of selecting desired pupil for the selective (i.e., elective) post. Following process will lead to quick results notified on e-Forums resulting in again time-consume process. The proposed system minimizes the needed requirements and provides the platform and outcome towards performing platform in easy and user-friendly manner.

As we all know the future is totally based on electronic devices & mediums. The fair use of technology can be really proving beneficial to the humanity. Nevertheless, the internet threats are the major concerns that needed be tackled. Votes should not be hacked by the hacker & and neither the conducting of votes for unethical posts should be carried. The notified data on the forums should be displayed exactly same what the admin has requested. Even the admin, who plays a key role in the entire process, must remain as a trusted person by all. Hence, the future work must concentrate on the above issues so as to make this system more efficient & secure.

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