

Secured Online Voting System over the Network

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ABSTRACT

The voting system still have many problems like security and the low percentage of voting,late results etc.E-voting gives very easy,safe and convenient way to cast and count of votes in election.This project is all about e-voting with high security so that the people can vote from anywhere and high security will surely reduce the false votes.This software allows online voting and creates as well as manages an election details of the registred users.All the users should login by their username and password so that they can choose their favourite candidate and can cast the vote.Because of this project people who have citizenship of india and whose age is above 18 years and of any sex can give their vote through online without physical presence at any polling station.This will help to increase voting percentage in india.

Keywords: E-voting,Image Processing,Secured Network,Face regnition,Online Voting.

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I. INTRODUCTION

In today's world,democracy has become an important part of people's lives.The heart of democracy is voting and in the voting system accuracy,security impartiality,transparency are important and we can achieve this terms by the major term E-voting.. E-voting can improve elections with high percentage of voting and less false votes.An Electronic voting (E-voting) system is a voting system in which the data is recorded,stored and processed.The detail research on E-voting is a very important topic for the betterment and progress of democracy.If a safe,secure and convenient E-voting system is provided,it will be used more frequently to gather people's views through the internet. Internet voting system is defined as a voting system,where user can cast the vote over internet and send the vote to respective election authority securely.In internet voting system user can vote from anywhere in the world by any computer connected to the internet.

This paper explains the "Secured Online Voting System" in detail.The proposed software should be user friendly so that least educated user can also handle it well. OTP i.e one time password is the basic and very beneficial way to provide security for the user identification. Moreover, this voting

system can improve voter identification by face detection using image processing.The whole procedure of the software is depend on the four actors are Admin, User, Server, Database In the paper,Proposed system is explained by the Proper Block diagram which shows the complete flow of the software.The Face detection Part is detailed in the Image processing,explained with the used algorithms of it.

II. LITERATURE SURVEY

Traditional methods of voting system like ballot box or butterfly ballot are very time consuming and needs operational requirements. In electronic voting system voting is done through computerised machines which is quite efficient from traditional method of voting system.

The NSF Internet Voting Report [1] addresses the feasibility of different forms of Internet voting .It groups Internet voting systems into three general categories as follows:

- Poll-site Internet voting
- Kiosk voting.

• Remote Internet voting.

Upto now many literature survey are been done on online voting system In “an efficient online voting system”[2] the eligible registered candidate is verified by the Election Commission Officer and she/he is allowed to caste a vote without going physically to the polling boot stations,all the unwanted human errors are removed with better scalability ,it can handle multiple modality. Real time internet voting system through android phone proposed by research paper[3] has very high usability in real life election process as android phones ,to make internet voting more strong i.e to provide more security visual cryptography is used (VC) **Visual cryptography** is a cryptographic technique which allows visual information (pictures, text, etc) to be encrypted in such a way that decryption becomes a mechanical operation that does not require a computer [4] such kind of internet voting system is mostly used to caste a confidential vote in internal corporate decisions. It has flexibility to caste the votes from any kind of remote place. In our purposed system apart from all the above mentioned things we have additionally introduced online image verification that is face recognition/face detection [5]which is part of image processing for the registered user which will provide high security .Also we have used OTP(One Time Password)[6].The main aim of this paper is to capture the image at the time of logging the page which validates the image which is stored in database and develop an interactive voting system with which the users can participate with the image which is stored in their database[7].Weekly updation of the image will be done because system can be penetrated by anyone. Thus all the methodologies are combined in a single website to provide higher level of security. In this way higher security level is maintained the authenciation of the user is done by that cover image recognition(face recognition)and password security and does not require geographical proximity

III. PROPOSED SYSTEM

The fig.a shows the proposed System of the implemented software.the system extend with only four actors Admin,User,Server and Database.Each actor has his own work to do and in the system all are connected with each other for the good result.

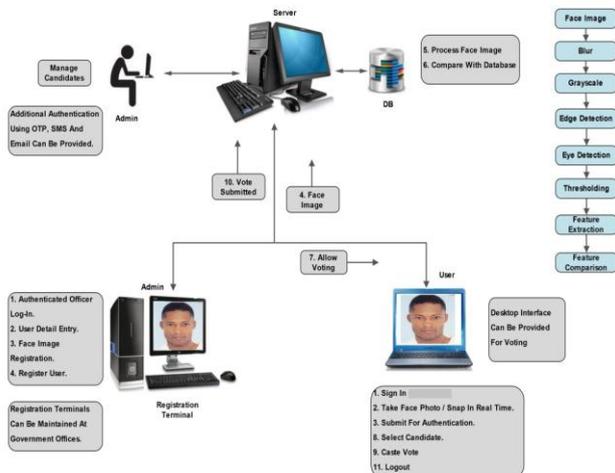


Fig.(a)-proposed system of the software

1.Admin-

Admin plays the keyrole,he can add and manage the candidates.In the system authenticated officer plays admin role.Officer log-in himself then for user registration he takes the detailed user entry with the photo of the user for face image registration then the user will be registered.

2.User-

The whole system is about the user concern.making software user friendly is the main aim of the project.User will be sign in by his User id and the OTP as the password.Afterwards he will take his real time photo and photo will get submit for the further authentication.After matching the database image and real time image of the user,he will allow to select his favorite candidate.by clicking the vote button he can submit or caste his valuable vote and can log out from his account.

Server-

Server establishes the communication between the admin and user.Admin and user both are connected to the server.Moreover,server detects their activities.In user part when user clicks his real time image.this image is get processed within the the server for user identification by the image. .In additional admin authenticates user by provding the OTP through sms or email.In When user selects his favorite candidate to vote his vote get submitted and pass in the server for further calculation part.

Database-

The database of the system contains all the stored data of the whole project.The users all entries with their registration are present in the database. It contains the all user information and the image of the user clicked at the time of registration,from Server the real time image of the user get compared with the database image,So in the database two main procedure carried out that are Processing Face Image and the Comparision with the database.

For Face recognition image processing part is mandatory.Image get passes through various algorithms and after fine procedures face get recognized or get refused.

Image processing-

1.Blurring

Blurring technique is used simply to blur an image. If we blur an image, the image becomes more detailed or more sharp and then we are able to perceive all the objects and their shapes correctly. Consider an example of a human face,it is said to be clear if a person is able to identify the facial features like forehead, eyes, nose, lips, ears and etc like exactly what they are.

2.Edge Detection and sharpness

To increase the sharpness of an image we use masks or filters in order to detect the edges in an image.

Edges:

Why shall the edges be detect ?

The maximum amount of shape information is obtained from its edges. Initially the edges of an image are detected and few filters are then used to enhance those areas of image like edges. By applying these filters sharpness of the image is increased and the image becomes clearer.

The two masks which can be used are:

- Prewitt Operator
- Sobel Operator

1) Prewitt Operator:

To detect edges vertically and horizontally Prewitt operator is used.

2) Sobel Operator:

The Sobel operator is also a derivative mask used for edge detection. The edges are calculated vertically as well as horizontally. It is almost similar to the Prewitt Operator.

3. Grayscale

Grayscale or greyscale is where the value of each and every pixel is considered and calculated as an individual as the intensity information. This kind of images are also known as black-and-white images in a general language and are complete combination of exclusive grey shades, varying from black at the weakest intensity to white at the strongest.



A sample grayscale image

4. Thresholding

The simplest method of segmentation is thresholding. A binary image is created by using thresholding from a grayscale image. In the simplest thresholding method replacement of each pixel in an image is done with a black pixel if the intensity of an image $I_{i,j}$ is less than some fixed constant T (that is, $I_{i,j} < T$), or a white pixel if the image intensity is greater than that constant.

5. Feature extraction

The feature extraction starts from an initial set of measured data and then builds some derived values (features) which are expected to be non-redundant and informative, facilitating the subsequent learning and generalization steps, and in some cases also leads to better human interpretations. A set of input data is transformed into reduced set of features only when the input data given to an algorithm is too large to be processed and is suspected to be redundant. This process is called feature extraction.

IV. IMPLEMENTATION



Fig 1 Starting portal.



Fig 2 Main portal

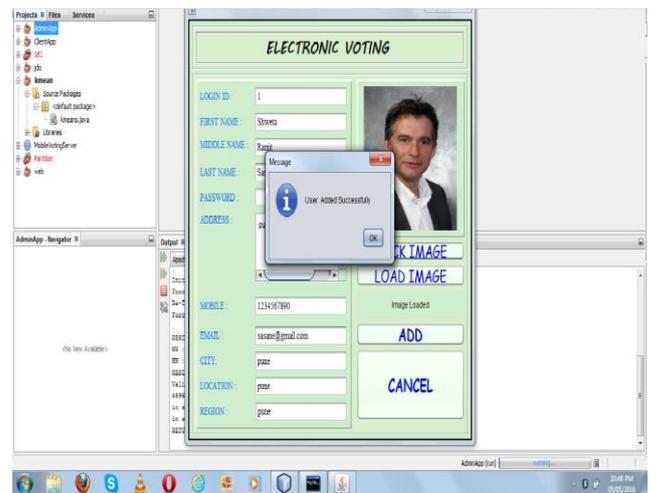


Fig 3 Adding user successfully



Fig 4 Party added successfully

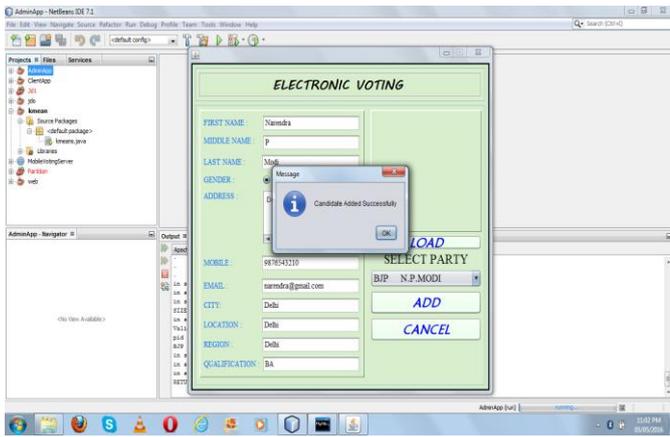


Fig 5 candidate added successfully

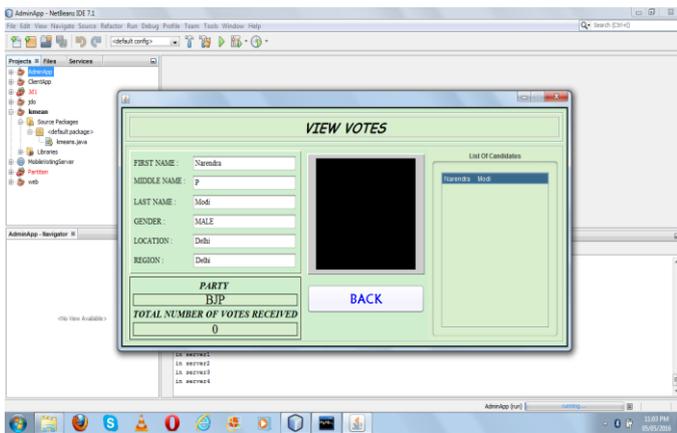
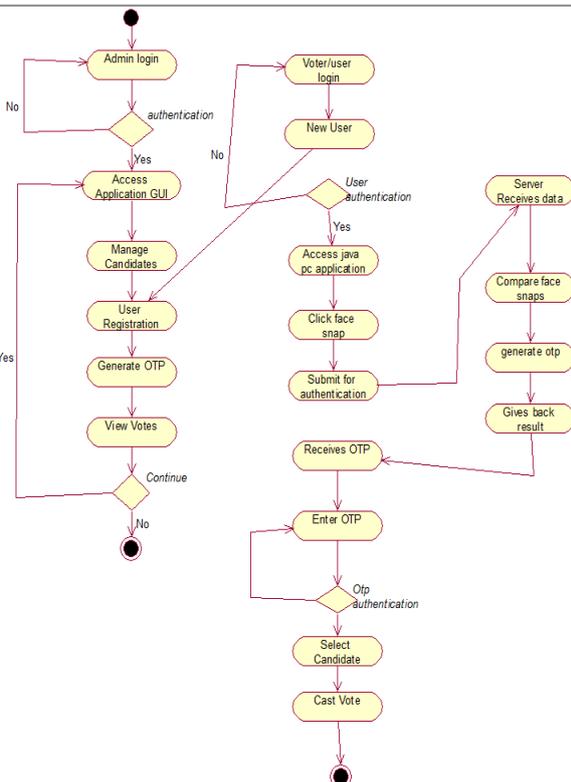


Fig 6 Total no of votes

V. WORKFLOW



VI. CONCLUSION

In this paper we have implemented which integrates cryptography over network which provides highly security on Online Voting System. The authentication of a user is done by adding password and face recognition. Using online voting system all the unwanted human errors can be reduced. Online Voting System is a wonderful mechanism where geographical vicinity of voters is not required. Example, any NRI or soldier can actively participate in elections through Online Voting System. This will drastically increase the votes.

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