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PRESERVING VOTING SYSTEM THROUGH CRYPTOGRAPHIC TECHNIQUES

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Abstract – *In a democratic system of governance, election is very crucial and the integrity of the electoral process is sacrosanct. Election is a repetitive operation that occurs every specified period of time. Internet Voting System (IVS) Using Visual Cryptography (VC) aims at providing a facility to cast vote for critical and confidential internal corporate decisions. It has the flexibility to allow casting of vote from any remote place, even when key stakeholders of election process are not available at workplace. The key concerns of elections and essence of a voting system is Transparency. The implementation of electronic voting would allow increased access to the voting process for millions of potential voters.*

Key Words: cryptography, Authentication, Election, Registration, Administrator, Share.

1.INTRODUCTION

The voting system is the process to take the opinion of people to run the constitution properly. According to the article published in 2019 only 64.47% of voters casted their votes. It's little surprising that nearly 46% voters who are eligible to vote didn't cast their votes. It is found that the main cause the people couldn't cast their vote is that, people are from various locations and other countries . To caste vote, voter must be present at voting site. This may decrease voter participation. Online voting makes this task easy.

2.OBJECTIVE OF PROJECT

The Objective of this project is to bring the transparency towards the voting system: ordinary voters should be able to understand and observe the vote casting and counting process**.** This Project ultimately focuses on Flexibility of the Voting system. The voter can cast their vote from anywhere regardless of their Locations.

Further, the election is held confidentially by applying appropriate security measures using visual cryptographic techniques.

3.EXISTING SYSTEM

Internet voting generally refers to remote internet voting, where the client software communicates over the internet to server software from a voters PC. However, there are numerous ways to hamper the voting process. In remote voting, a third party, or the voter himself has control over the voting client and operating environment. In Kiosk voting, the voting client may be installed by election officials, but the voting environment is out of election official's control. In Poll-Site voting, voters authenticate themselves by providing identification or an affirmation to a trusted poll worker**.**

4.PROPOSED SYSTEM

The Visual Cryptography is a technique which allows visual information to be encrypted in such a way that the decrypted information appears as a visual image. This system is designed for remote internet voting, nothing prevents it from being deployed for poll-site or Kiosk voting, depending on the security requirements. VC has to carry out small-scale and large-scale election procedure. In this project election is held in full confidentially by applying appropriate security measures to allow the voter to vote for any participating candidate only if he/she logs into the system entering the correct password. This internet voting system provides them good solutions with security using visual Cryptography.

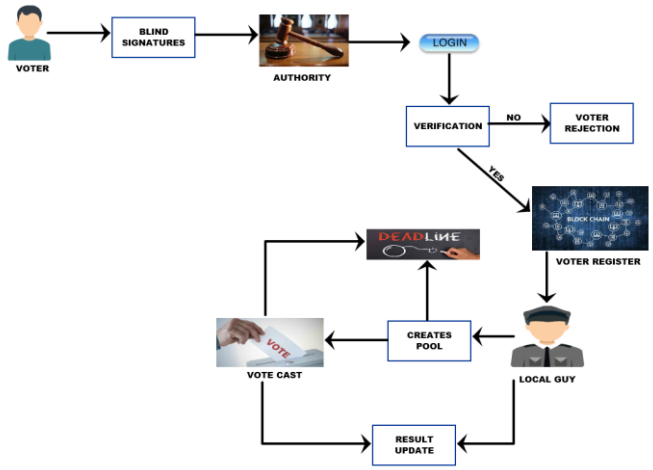
4.1.METHODOLOGY

candidate can logs into the system by entering the correct password which is generated by merging the two shares (Black & White dotted Images)using VC scheme. Where, Administrator (Election officer) sends share 1 to voter e-mail id before election and share 2 will be available in the voting system for his login during election. Voter will get the secret password to cast his vote by combining share 1 and share 2 using VC. Visual Cryptography (VC) is a secret sharing scheme in which an image is converted into shares. No information can be revealed by observing any share (Black &

White dotted Image). The information about the original image (Voter Password) will be revealed only after stacking sufficient number of shares. There are various schemes present in VC, 2 out of 2, k out of n, n out of n, etc.

In the proposed method, IVS with 2-out-of-2 VC has been used for an efficient authentication voting system. Even if the hacker gets one share of the password, it is impossible to get the other share of the password, as it will be sent to the E-Mail Id of the voter. Thus IVS provides two way securities to the voting system, which is very much in need.

5.SYSTEM DIAGRAM



6.SYSTEM ARCHITECTURE

WORKING MODULES

6.1.CANDIDATE REGISTRATION

Eligible Candidates details will be registered by the administrator .Details include candidate name, phone number, mail id. The admin has to create the username and password and will be sent to the corresponding candidate .The candidate can use this user id and password for logging into the system.

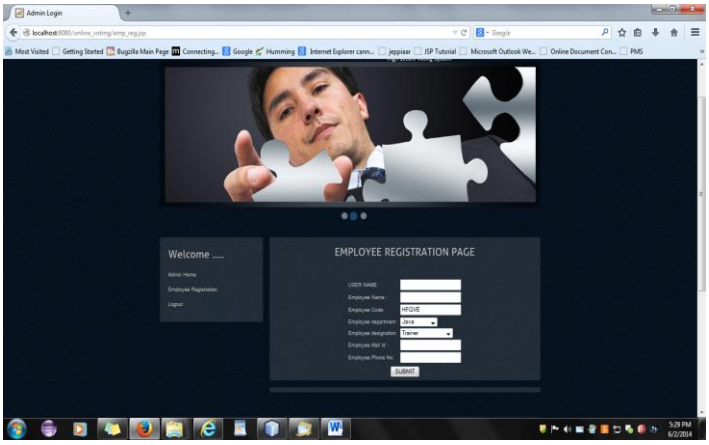


Fig.1.1.Registration Page

6.2. ELECTION AND CANDIDATE DETAILS

Once employee and candidates has been registered , relevant details will be added into table. When the admin clicks Election details ,he would have options to add election details. Through that, the admin can set the election date .only during that date the candidate could cast their vote.

Fig.1.2.Election details

6.3. POLLING AND LOGIN PHASE:

A voter visits the election website and enters the type able username. The election web site maintains a list of the username values used to generate the transparencies and checks that the entered key is on the list and has not been used already. If the entered username is valid, the election server can calculate the corresponding transparency image.

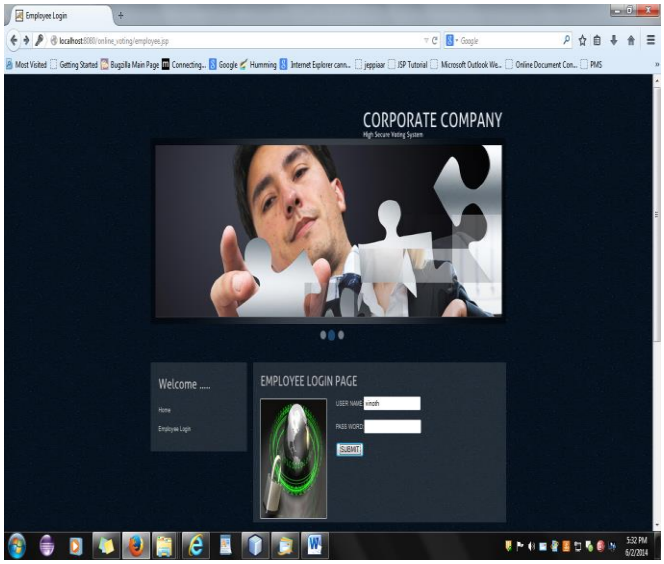


Fig.1.3.Login page of candidate

6.4.IMAGE AUTHENTICATION

The election server generates an image containing that string rendered as a bitmap image and the web server displays the corresponding image generated from username. Then the voter combines both the images. These processes authenticate the voter to the election server and the election server web site to the voter. Only someone with the correct username transparency could decode the password in the generated image.

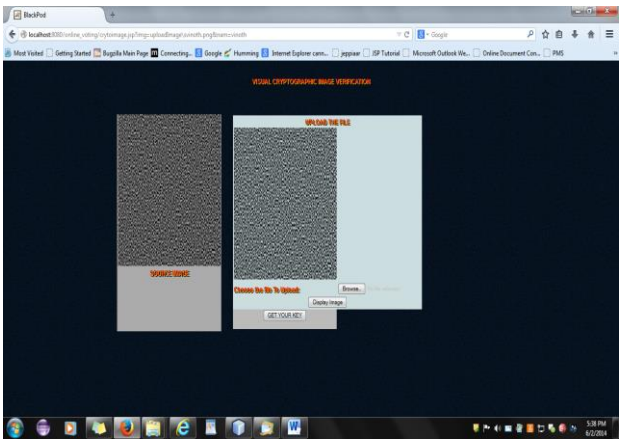


Fig.1.4.Image Binding

7.TECHNICAL REQUIREMENTS

A. Software Requirements

Operating System	Windows 7/8/10
Front End	JSP, HTML
Programming Language	JAVA
Database	MySQL
IDE	Net Beans
Application Server	Tomcat 8.0

B .Hardware Requirements

Processor	Intel corei3
Hard Disk	512 GB
Speed	2.2 GHz
Ram	2GB

8.CONCLUSION

This system enables us to conduct voting process. Various elections can be conducted using this system. This includes various government elections. Area wise voting can be done in easy and efficient manner. Voting can be done from any place. The system enables security through visual cryptography technique. Voting can be done only if correct Security share associated to that user is uploaded. Visual cryptography technique adds a layer of security to the voting process. We access internet almost daily to carry out various tasks, so online voting will enable maximum participation. The proposed system provides security to users. It has several layers of security. User can login only if correct id and password is entered .In this way voting can be done confidentially without integrity and transparency issues.

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