Online Election Management System

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Abstract - The Project Online Election Management system is designed to automate the overall election system of Pakistan. This system deals with the design and development of a web based election system using fingerprint authentication and NIC card for the sack of high performance, high security and to reduces the fake votes to the Election system.

Overall process of election would be maintaining by this project including Voters registration, Candidates Registration, Vote Casting facility and as well as Results counting and declaration.

The vote casting system is accomplished in a simpler way as all the users must login by NIC and after fingerprint authentication they can select his/her favorite candidates to cast the vote.

Keywords— Election, NIC (National Identity Card), Fingerprint, ECP (Election commission of Pakistan), NADRA (National Database and Regulatory Authority).

1. INTRODUCTION

Pakistanis are becoming part of growing digital Pakistan. In Pakistan Election System involve manual vote casting using paper based ballots. Also counting are done through hands as well as registration of Voters and Candidates Are Manual. The Proposed system involve registration of Voters and Candidates through computers. Also contain computerize casting and counting of votes. The number of votes candidate obtained. It restricts duplication of votes. It declares the winner at each constituency. Voter Verification in digital Voter list. The project is divided in two section Administration and User. The Administrator responsibility is on ECP to maintain the overall aspects of the system Administration involve Voters registration, Candidate registration, Result declaration etc. The user is allowing to see the list of all candidates relevant to its constituency and should cast vote to their desired candidates

1.1 Existing System

The Current Election system of Pakistan is running manually. The Voter has to Visit to polling stations which will be allocated by ECP to cast their Vote. The registration process of Voters into Voter List is manual. Also Vote counting has to be done by hands manually which consume a lot of time as well as possibility of mistakes. Voters must be present at the day of election in their Constituency to cast his/her Vote. The Election system used by the Government is completely paper based system, in which the Two Ballot papers are issued to voter after its verification from ECP officials, and then the person goes to polling booth and cast

their vote to their favorite candidate of their constituency. Some of the existing systems are:

Paper-based voting (Use in Pakistan)

Machine Voting

Punch card

The current manual system election system which is paper based implemented in Pakistan has plenty of problems and disagreements some discuss below

Registration of Voters: There are may be handwriting mistakes and lose number of voters to cast their vote also

there is no way to inform voter after registration about his/her registration status.

Problem Faced by People: On day of election there are a lot of people who are frustrated to cast vote due to weather condition in different areas during elections. Those people who are outside of their city / village don't be able to come to their area/constituency for casting votes due to many problems such as shortage of time, transportation and expanses problems.

Low Turnout of Votes: People feel difficulty at current system and that's why the turnout of votes is very less. Many people are outside of its residential area and won't come for casting votes

Votes Counting Errors: Another problem is Error in counting of votes (may be intentionally or by mistake) by officials of Election Commission in polling station. Due to which some results are challenged.

Fraud and Cheating: Fraud and cheating during elections is common in current system. In current system many people are registered in multiple areas and they cast multiple votes, there are also many bogus votes cast by a person.

Heavy Cost: Current Election system consume a lot of money and resources (Sources says that approximately (6 Billion Rupees) will be occur on General Election 2018 and 120 crores occurs only on ballot papers).

Speed and Accuracy: Over all process of election is manual so after election there are a lot of time take to get election results also it is impossible to make error free election because people are involved working 24 hours and are tired and can't perform better which make mistakes in results

1.2 Proposed System

The proposed system overcome the decades of existing system. To make the election process easy and efficient web technologies are used. Pakistani nation is well known of present technologies. The Online Election Management system should store Data about Voters and Candidates in a

database which will be maintained by ECP. Voter can be registered by two ways one by creating NADRA NIC card and the ECP should have to access NADRA Database for voter information at time of vote casting and the second way is that after NIC creation of a person NADRA send his/her information to ECP database. The role of NADRA is very important here because NADRA has main Database to maintain information about people of Pakistan and also NADRA already provide their online services to many organizations in Pakistan e.g. Telecom operators, Passport Issuing Authority etc. After registration voter should be informed through E-SMS about his/her registration status (name, cnic.no, National constituency, Provincial constituency etc.). Candidates would be registered by ECP after candidate's scrutiny. Pakistani citizen which are able to vote should have National Identity Card (NIC). For secure and unique Authentication to ballots NIC number and Biometrics (Thumb impression) of voters should be used. After successful login list of candidates should be displayed to voter according to his/her National and Provincial constituency. Voter can cast their vote from any polling station situated by ECP so voter's turnout would be increased. Voter should be restricted by the system to cast multiple votes. There is no concept of casting invalid vote in the proposed system. Result will be calculated through computers and provide real time result view facility. After casting time is finished result of returned candidate has been displayed at each constituency as well as result of every single candidate is also be declared. Votes counting through computers would almost remove the counting errors.

This system eliminates the expanses of printing specially ballots papers and voter list from the overall process of election. It allows voter to go back and correct any mistakes before final submission of his/her ballots because once submission is final so it cannot be changed.

The proposed system can be able to provide vote casting facility to overseas Pakistani's because 7.6 million Pakistanis live abroad.

1.3 Goals of the System

Through this system we try to achieve the below objectives

- To boost turnout of votes.
- To inform voters about their registration status before election.
- To allow voters to cast their vote from every polling station.
- To counts votes correctly.
- To stop the impersonation.
- To prevent voter from casting Invalid vote.
- To Reduce cost, occur on election

2. Fingerprint Authentication

Use of fingerprint authentication of voters is the best way to implement secure and unambiguous voting. Fingerprint scanners are security systems of biometrics. Fingerprint authentication is the comparison of the supplicant's actual fingerprint to a stored fingerprint.

Individuals have a pattern of ridges on their fingers. This thumbprint cannot be removed or altered. Every person has different fingerprint in the world. Because there are uncountable combinations, thumb impressions are much used for identification.

Fingerprint scanner is used for scanning fingerprints and software which compare the fingerprint of the individual in a database to already stored fingerprint. In database fingerprint is usually matched to the PIN number, reference number also called biometric minutiae which is then matched to the person other information. Due to security reason the match of fingerprints is generally used to allow or disallow access to the system

2.1. Biometric Minutiae

A Biometric Access System (BMAS) Technology primarily scans human characteristics and then translate these images to some form of minutiae. Minutiae are unique points of reference that are digitized and kept in an encrypted format when the user try to access system credentials are created.

Each access attempt is then compared with the minutiae to determine if the user is who he or she claims to be.
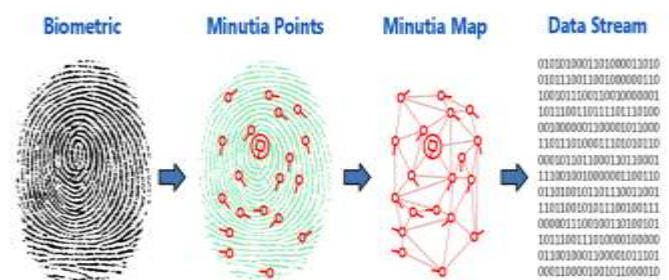

Fig -1: Biometric Minutiae

3. CONCLUSION

Once the system is developed the software is tested for the sack of the system validity. This is the technique by which functionality of modules is examined. After the system is tested then a trial run of the system is done so that errors if any can be found and eliminated.

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