

REVIEW OF NFC BASED VOTING SYSTEM

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Abstract – An electronic voter casting mechanism is a voting device where the vote statistics is collected, safeguarded, and often structured as automated pieces of data. As a part of the post-survey technique, the directing officer collects the EVMs, tallying stations, and submits them to the centre. The success of races depends largely on educated populations and real citizens. Elections must be fair and legally conducted; this requires a lot of money. Uncertainty over the relationship between survey results and the real judgement (decision) made by the general public. Traditional elections involve a lot of manpower and a large number of forces; ballot boxes are not secure or private. This paper describes the various operation or technique used in smart EVM using various components to improve the election process by avoiding the electoral fraud and to ensure safety, reliability, security, guarantee and transparency and smooth conduct of elections in the country as the voting is of crucial importance in the society where people determine its government. In this describe about the Existing system which are present and Components which are suitable for the system.

Key Words: NFC, IOT, EVM, Reader, Election, Voting.

1. INTRODUCTION

India's general elections with 814 million eligible voters broaden the vision of all conducting equitable Elections neutralizing malevolent tendencies. Due to a result of rampant corruption in this exercise, the People have been raising dubious eyebrows about it and the general expression has prevailed that the Democratic system has proved to be a boon only to a handbreadth of people having capital. The success of Elections largely relies upon enlightened masses, scrupulous citizens. The common populace relapses in Indolence after the elections are over. On 9th Nov2015, the former Chief Election Commission of India SY Quraishi stated that – "Booth capturing and other poll violations are history". The Election Commission Has taken measures through vulnerability mappings to endeavor smooth elections. During the polls, several Paramilitary forces are employed across India, surveillance cameras are placed at the polling stations. Despite all these efforts, the coverage headlines reveal events different as chalk and cheese. During the 2014 General Elections in India, there were reports allegedly indulged in booth-capturing, proxy voting, Missing names from the voter's list, voter turnout being greater than 100%. In Assam, miscreant polling

Officers were arrested after being caught in rigging exercises and booth capturing. In Nagaland more than 40booths, the voter turnout was more than 100%. In Haryana, Orissa, and Maharashtra, there was a report On missing names from the voter's list i.e. approximately 6 million. In the recent past, Bihar was related to The employment of manpower in elections for malicious frauds, but now cash inundates to lure voters. SY Quraishi has mentioned the use of currency in his book "Undocumented Wonder- the Making of Great Indian Elections" where he highlighted that politicians camouflage the use of black money to increase Votes.

Also on Jan 28, 2015, in Chhattisgarh Panchayat polls, 50% of the candidate selected unopposed as The rebels looted ballot boxes from around 30 booths. There is a need to curb such menace and the evil of Corruption to secure a voting ambiance that the people can entrust. Also, the technology used should be Solved to be able to contemplate supporting every citizen's need.

Today's world is democratic world, voting is pillar of construction of society. Traditionally voting is using manual format. Voter faces so many problems like voting, voting booth is far from home, standing in queue etc. Elections are the fundamental function in every democratic country, which is being governed by the people expressing their choices and opinions in the form of voting. Electronic Voting Machine (EVM) is a gadget that is utilized to check and recorded votes. Now a day's people are astonished by watching results in Elections. People are opposed to doing it physically utilizing human asset to record and tally votes. The various issues related with direct counting of votes that it burdensome, erroneous and repetitive. As voting is a sensitive trouble, mismanagement can result in issues as huge and complex as political unrest. To overcome this problem, we're going to propose the model.

2. EXISTING SYSTEM

The earlier suggested approach is a two-part system that combines website voting and SMS voting system. The voter may choose between the two options based on their preference. Another System has, an RFID reader module is utilised. Which detects RFID tags with distinctive identities. RFID tags are given out with unique identifiers for various candidates running for office. An RFID Interface between the module and the Arduino controller to tally and save the cast votes. Display device is used to show the voter the candidate's

name and the vote they have cast. In chronological order to complete the voting and show the outcomes there is a dedicated RFID tag that is separate that will in the care of the responsible Officer .LED and Buzzer are both used to signal cast votes. The use of a switch has avoided multiple Voting.

And another module focused on the use of RFID and fingerprint technologies in smart voting systems. Voter information is stored using RFID tags, and each user receives a voter ID using this method. The hardware proposal includes a thumbprint scanning sensor that compares the user's finger print to the user's previously stored finger print. Both of a voter's fingers are scanned during the voting checked for matching, and if not, a buzzer is used to sound an alert. Keypad is employed in the selection procedure. LCD is used to show the user the relevant data for each key. As a result, it is impossible to cast a false vote because finger exceptional for every individual. Only when the thumb print matches the recorded value is the voting procedure carried out. As soon as the fingerprint scanner is when a user is prepared to vote, a TFT display shows the user's readiness.

The most popular research tools during the previous year included NFC, RFID module, GSM modems, keyboard interfaces, microcontrollers, and processors. In this paper, an unique voting procedure is covered in which the voter identity card's RFID tag communicates with the voting machine. A controller looks at the voter's identification when the voter scans his card. If the two match, the controller creates an OTP and sends via the GSM module to the voter's mobile device.

It is unable to address every voter issue, and nobody is making an effort to address issues with voter identification, real-time vote counting, and the prevention of tampering and fraudulent voting.

3. VARIOUS COMPONENT

3.1 Microprocessor

Single board computer called the Raspberry Pi is compact. The Raspberry Pi may function as a little personal computer by adding peripherals like a keyboard, mouse, and display to it. Robotics applications, IoT-based applications, and real-time image/video processing are all common uses for the Raspberry Pi. Raspberry Pi is a computer that may offer all the required features or abilities at a low power, albeit being slower than a laptop or desktop. Raspbian OS built on Debian is officially provided by Raspberry Pi Foundation. Additionally, they offers NOOBS OS for the Raspberry Pi. Many Third-Party OS versions, including Ubuntu, Archlinux, RISC OS, Windows 10 IOT Core, etc., are available for installation. The official operating system for Raspberry Pi is free to use. This OS is effectively tuned for Raspberry Pi usage.

3.2 Multiplexer

A network device known as a multiplexer (MUX) enables one or more analogue or digital input signals to pass through a single communications transmission connection simultaneously. Multiplexing is a technique used to aggregate and transmit signals across a single common media in order to increase efficiency and lower communication costs. A MUX essentially acts as a multiple-input, one-output switch that enables the routing of several analogue and digital inputs signals over a single output line. A separate device known as a demultiplexer retrieves the actual individual signals at the receiving end.

3.3 Microcontroller

An embedded system's microcontroller is a small integrated circuit that controls a single process. On a single chip, a typical microcontroller has a CPU, memory, and input/output (I/O) peripherals. Microcontrollers, also known as embedded controllers or microcontroller units (MCU), can be found in a variety of devices, including vending machines, robots, office equipment, medical devices, and office machines. They are essentially straightforward mini-personal computers (PCs) without a complicated front-end operating system that are used to operate minor aspects of bigger components (OS).

IOT platform NodeMCU is free source. Hardware based upon this ESP-12 module and firmware that runs on Espressif Systems' ESP8266 Wi-Fi SoC are also included. Instead of the development kits, the name "NodeMCU" as default refers to a firmware. Lua Is a scripting language used by the firmware. Numerous open-source initiatives are utilised, including SPIFFS and lua-cjson.

3.4 RFID

Internet-based automated identifying technology called RFID. When data from RFID tags is digitally encoded, it may be read by only a readers that works like a barcode and is then saved in a system by the reader. The integrated circuit and antenna are its two main components, and the tags are shielded from the effects of the environment by protective material. The most common types of RFID tags are passive, active, and passive. It originated from the Automatic Identification Capture (AIDC) technology, which is used to map acquired data to computer systems and collect data. To carry out AIDC functions, telecommunications and RFID utilise radio waves.

3.5 NFC

Wireless technology known as Near - field communication (NFC) is gaining popularity in the fleet sector. Short-range communication is made possible via NFC between two suitable devices, most often an NFC tag as well as smartphone

or tablet. NFC tags are tiny chips with data storage capabilities that are frequently used in labels, stickers, and magnets. The

majority of smartphones and tablets can read NFC tags' data at close distance (about four inches). NFC requires user interaction because the typical working range is only 0.1 meters, making it very limited in its range of action. It is a user-interactive technology, so in order for tasks like access or payment to be completed, the user's special participation is required.

4. COMPONENT BENEFITS AND DRAWBACK

Since microprocessors are more expensive than microcontrollers, microcontrollers are utilised instead of microprocessors. Additionally, the microcontroller utilised in the system includes built-in Wi-Fi, making it suited for IOT applications and affordable as well. When not in use, the microcontroller employed in the system may operate in a low power mode and sleep or hibernate to further minimise power usage. It can operate continuously and continuously around-the-clock without suffering any damage from heavy use.

Multiple Microcontrollers are utilised since a sole Microcontroller cannot manage many NFC Readers. Instead of employing numerous Microcontrollers, one solution to this is to use a multiplexer. However, since the users can tap on every NFC Reader of his or her choosing, the Multiplexer cannot be utilised in this situation since it will only read the data through one NFC Reader at a time.

NFC has typical operating range is about 0.1 metres, NFC has a very small field of effect. It is a user-interactive technology, therefore in order for tasks like access or payment to be completed, the user's particular participation is required. Access control, public transit, mobile payments, and other areas are greatly impacted by NFC technology. As an RFID scanners can read a lot of tags simultaneously, which is highly useful for warehouse inventory. The range of RFID is hundreds of feet. Unlike NFC, which allows for two-way communication, RFID normally only allows in one communication (from of the tags to the reader).

More complicated data than only identifying information may be stored via NFC. Up of about 4KB of data can be stored on NFC tags. Numerous forms, including text, URLs, and media, are possible for this data. The majority of recent smartphones are equipped with NFC reading capabilities, in contrast to RFID tags, which often require costly scanners to retrieve data. Since customers can access data using only their cellphones, deploying NFC tags becomes significantly less expensive. When a tag or card is scanned, smartphones may read and write data to it, receive extensive information, start an app or URL, and communicate data amongst themselves through NFC (peer-to-peer (P2P) communications).

Therefore because of all benefits of microcontroller, microcontroller are more beneficial more than of microprocessor and Mux. And because of all benefits of NFC, NFC are more beneficial instead of RFID in voting system.

5. CONCLUSION

We arrived to a conclusion that every strategy or components had a sizable downside by contrasting the many strategies used on all this old system. With this in mind, we made the decision to merge or use all of these strategies into a single, simple system that would be durable in design and more correct than the previously employed procedures. It could be possible. The project is found to be quite helpful in resolving the issues that arise during voting times.

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