Biometric E-Voting With Multi Factor Authentication UsingIot Technology

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ABSTRACT: In India, which is one of the world's largest **democracies**, honest election **methods are beset by problems such as** booth capturing, rigging, **pretend preference, and tampering** with Electronic Voting Machines (EVMs), among others. The voting system iselectronic, **which removes** the use of ballot paper to cast votes in elections because it is**extremely** time **consuming and prone** to errors. would possibly hit the system unknowingly or accidentally. The most downside in those methods is that the voter's identity is victimized and additionally the count of non-voters will increase. Our main objective is to create a biometric e-voting system which isnecessary to overcome the problems and difficulties of the normal voting methods such as EVM (Electronic Voting Machine) andtraditional voting system. The proposed method of voting uses the voter's biometrics(fingerprint) and a physical key (RFID) to cast the ballot, as well as the ability to capture the voter's picture during the voting process. The voting information, including voting time and date, is securely stored on the server, and the voting results can be published instantly using this process.

1. INTRODUCTION

Internet of things may be a system of reticulatedcomputing devices, mechanical and digital machines given distinctive identifiers and therefore the ability to transfer knowledge over a network while not requiring human to human or human to pc interaction. The definition of the netof things has evolved thanks to the convergence of multiple technologies, in time period analytics, machine learning, artifact sensors, and embedded systems. ancient fields of embedded systems,wireless device networks, management systems, animation, and far additional, of these contributesto change the net of things. The major securitygoals of IoT area unit to confirm correct identity authentication mechanisms and supplyconfidentiality concerning info and alternative connected information. the safety triad or Central Intelligence Agency triad, a distinguished modelfor the event of security mechanisms, implements the safety by creating use of the 3-area unit as that are knowledge confidentiality, integrity and convenience.

1.1 ELECTRONIC VOTING

The current electronic voting system in India uses the M3 version voting machine with VVPAT capability. There were many e-voting systems such as paper based electronic voting machine which uses some external devices. But those were still in the development stage. And it also requiresa lot of hardware implementation. In the existing system, the election process was preceded by casting the vote by showing the voter ID card at the polling booth and by pressing the button against the party symbol. But in that there is a chance of rigging. These systems can sometimesbe malfunctioning. And they can lead to a lot of problems such as the deletion of the saved votes and also cause wrong calculation of votes during the counting process.

1.2 IOT LAYERED ARCHITECTURE

The IoT architecture is the system of numerous elements: sensors, protocols, actuators, cloud services, and layers.

Given its complexity, there exist 4 stages of IoT architecture.
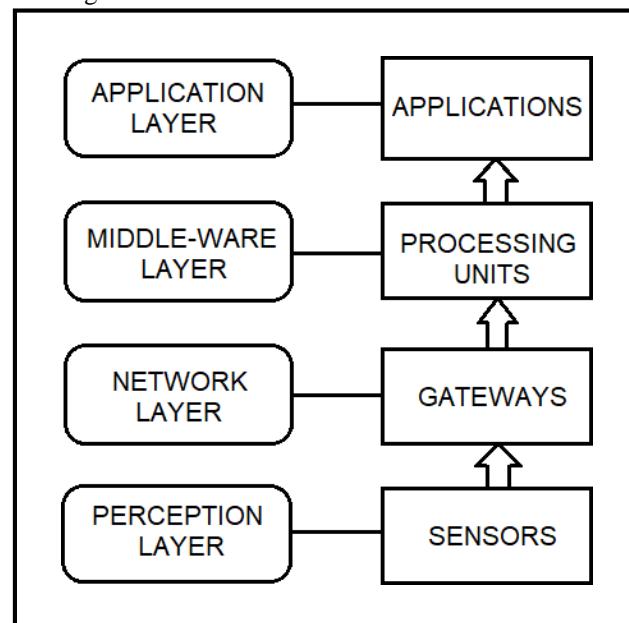
The bottom layer consists of different kinds of data sensors like fingerprint scanner, barcodereaders, RFID or any other sensor network. The basic purpose of this layer is to identify the unique objects and deal with its collected data obtained from the real world with the help of its respective sensors. The purpose of the network layer is to transmit the gathered data obtained from the perception layer, to any explicitscientific discipline system through existing communication networks like web, mobile network or the other reasonably reliable network. The middle-ware layer consists of information processing systems that takeautomated actions based on the results ofprocessed data and links the system with thedatabase which provides storage capabilities to the collected data. This layer is service oriented which ensures some service type between the connected devices. The application layer realizes various practical applications of IoT based on the needs of users and different kindsof industries such as smart home, smart environment, smart transportation and smart cities, etc.

2. RELETAD WORK

2.1 BIOMETRIC VOTING

Various reference papers were mentioned andused to analyse the issues within the existing system and located out the simplest solutionsthat would be economically efficient. Background research on the organization and comparative studies of existing systems is additionally done to more understand the systemrequirements before the system was developed. Here we'll be explaining the papers proposedpreviously during which the biometric e-votingis completed.

2.2   VARIOUS VOTING SYSTEMS ANDTHEIR ISSUES AND DRAWBACKS

SYSTEMS	ISSUES	DRAWBACKS
Hand counted paper ballet	The papers used to count may sometimes be torn or may not be usable. This may also lead to wrong calculations in while counting the votes. These can be easily misused by many people.	This method requires a lot of paper needed to be carried to register the votes. The main drawback is that it takes a lot of time to count the votes and publish result.
Paper ballet with optical scan	This method requires the paper to be properly inked otherwise the system won't recognise the casted vote. The main issue is that if the paper is too light then the system wrongly counts the votes.	The system needs the paper to be filled with dark inked material in order to properly count the vote. This takes long time in recognising the paper.
Direct recording electronic voting machine	There is no way of verifying that the voting system is	The system doesn't allow the user to verify their registered vote and