



## Implementation of aadhar based voting machine using arduino with GSM

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**ABSTRACT--**The main objective is to design and develop a RFID based electronic voting machine for authentication and sorting out the wired electronic voting problems. This method includes the overall technical idea behind using Aadhar card for voting. Electronic Voting Machine (EVM) is a device, used to count ballot and record votes instead of doing it manually using human resource to record and count votes. Many problems are associated with the manual counting of votes that is laborious, erroneous and time consuming. This makes the entire system very inefficient. This project discusses in detail the design of a solar powered EVM prototype which is efficient and allows the user a relief from the laborious act of vote collection and counting. At the time of voting in the elections, the Barcode-Scanner also used to decode the Enrollment ID printed on the Aadhar card. This electronic voting machine will save time and efforts of human. Thus, the proposed EVM system is more fast and reliable as compared to existing electronic voting system. The security of data,

privacy of the voters and the accuracy of the vote are also main aspects that have to be taken into account while building secure electronic voting system. Overcoming the disadvantages of current voting system, the proposed method provide a secure and reliable voting system.

**KEYWORDS:** Aadhar card, RFID reader, Arduino, GSM module.

**I.INTRODUCTION:**

The term "AADHAR CARD BASED VOTING SYSTEM", represent the voting system to defencethe security, reliability and transparency. Before casting vote election commission follows process of registration of voter. After that it hasprovided voter list number and ID card to the respective voter. Then the voter has to show his voter id card whenever he/she goes to the polling booth to poll his/her vote. This is a

time consuming process as the voter has to check the voter id card in the list and list number he/she has, confirm it as an authorized card and then allow the voter to cast his vote, and after completion of voting counting of vote and display result. It is very complicating process and need to provide easy, secure and less time-consuming system with the help of AADHAR CARD database.

## II.EXSISTING SYSTEM:

Traditional or existing voting system has to be done in the following methods:

i. Verification: In the verification process, voter verifies by showing his/her finger, this step takes more time to scan the finger. At the end of verification process, governing officer allow voter to cast his / her vote.

ii. Voting Method:The voting process are takes place in a protected booth where voter cannot be seen by any person. The voter cast their vote on EVM machine.

iii. Vote counting: At the end of voting, the governing officer collects the all EVM machine and submitted to the counting canter. After that all the members of the election commission nominated by election commission of India, the votes are counted and the results are then announced. Conventional voting systems are does not efficient due to long period of preparation,bogus voting, and it cannot provide a security.

## III.PROPOSED SYSTEM:

In Aadhar based voting system, at first the person has to show his/her Aadhar card. Then RFID reader reads the barcode with already existing AADHAR CARD database stored on the system.If the data is matched, the voter is allowed to cast his/her vote. If not, a message is displayed on LCD as "UNAUTHORIZED PERSON" and the voter is not

allowed to cast his/her vote. GSM send conformation massage on registered voter mobile.If already vote casted person enters into booth with his/her RFID tag for second time voting, then buzzer will alert booth level officer. This voting machine will save time and efforts of

human.Thus the EVM system providesmorefast, security and reliability.

## FEATURES OF PROPOSED METHOD:

AADHAR based Electronic voting systems have many advantages over the traditional way of voting.Some of these advantages are lesser cost, faster tabulation of results, improved accessibility, greater accuracy, and lower risk of human and mechanical errors.It is very difficult to design ideal e-voting system which can allow security and privacy on the high level with no compromise.Future enhancements focused to design a system which can be easy to use and will provide security and privacy of votes on acceptable level by concentrating the authentication and processing section.

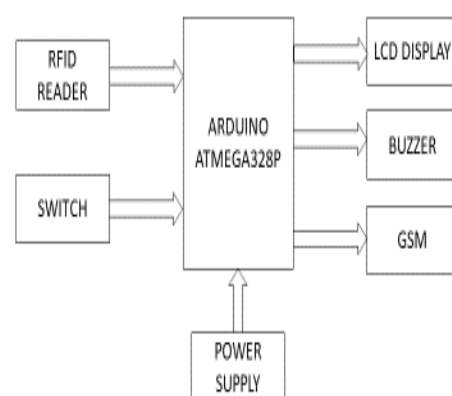


Fig.1.1. Block diagram of voting machine using Arduino ATMEGA328P

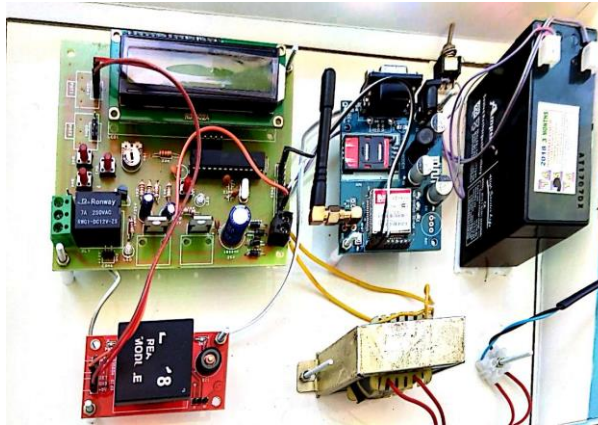


Fig.1.2 Module of the proposed method

#### HARDWARE REQUIREMENT:

##### 1.ARDUINO ATMEGA328:

The Arduino ATMEGA 328 device contains a non-volatile 64KB flash program memory that is both parallel programmable and serial programmable. The device is a single-chip 28-pin microcontroller manufactured in advanced CMOS process. It controls all the device and it contains the detail of the individual voter.

##### 2.RFID READER MODULE:

The RFID module operates at 125KHz and comes with an on-chip antenna and can be powered up with 5V power supply. The transmit pin of this module is connected to the receiver pin of the microcontroller. The RFID card should be shown within the reading distance and the card number is thrown at the output. It is important to keep in mind that, SEL=1 for TTL output on Transmission pin and SEL=0 for output on DATA 0/D0 AND DATA 1/D1 pin. RFID reader is used to read the RFID tag, the barcode is scanned then the voter is allowed to poll the vote.

##### 3.GSM MODULE:

GSM module is digital communication system which is rapidly gained market share worldwide and acceptance. The mobile service is

based on GSM technology. This system is provided with many other useful features such as authentications and security the ability to switch phones without the need to reconfigure the phone with the existence of the sim card.

##### 4.BUZZER:

Piezoelectric buzzer is used and it is based on the inverse principle of piezoelectricity. Phenomena of procreating electricity, when mechanical pressure is applied. It indicates sound when the vote is polled successfully.

##### 5.LCD DISPLAY:

LCD display is the most common device attached to microcontroller. It is special thin flat panels that can let light go through it, or can blocked the light. Some of the common LCD's connected to microcontroller are 16\*2 and 20\*2 LCD display. Display the activity to perform the candidates.

##### 6.SWITCH:

The push button switch is a type of switch that connects two points in a circuit when you press switch. Three wires Arduino board is connected to switch. The first wire goes from 1 leg of push button through a pull up resistor to the 5V supply; the second wire goes from leg of push button to the ground level, the third wire connected to a digital I/O which reads the buttons status.

##### 7.POWER SUPPLY:

The power supply will supply the regulated power supply to the unit which is first converted into 12V AC. 12V AC is converted into DC using rectifier circuit. Finally, the 7805 IC voltage regulator provides constant 5V DC supply which has mentioned in the circuit.

#### IV.RESULTANDDISCUSSION:

The security and complexity of existing method is overcome by proposed method. In existing method biometric method is used so time consumption is more. But in this method time consumption is less. In the proposed method both electrical and solar voting system is used. It has to handle in the absence of electrical supply. Counting of vote is easy in the proposed method than the existing method. Processing speed and efficiency is high as compared to existing one.

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Table.1.1

Performance comparison between existing and proposed method

S.N	PARAMETERS	EXISTING METHOD	PROPOSED METHOD
1	Security	Poor	Strong
2	Voting machine	Biometric	RFID, Aadhar card
3	Time consumption	High	Less
4	GSM	Voting information is not send to the mobile	Voting information is send to the mobile
5	Working	Electrical	Electrical

	method of voting machine	power	power and solar power
6	Counting of votes	Difficult	Easy
7	Efficiency	Low	High
8	Complexity	High	Low
9	Illegal votes	May be occurred	Avoided
10	Processing speed	Low	High

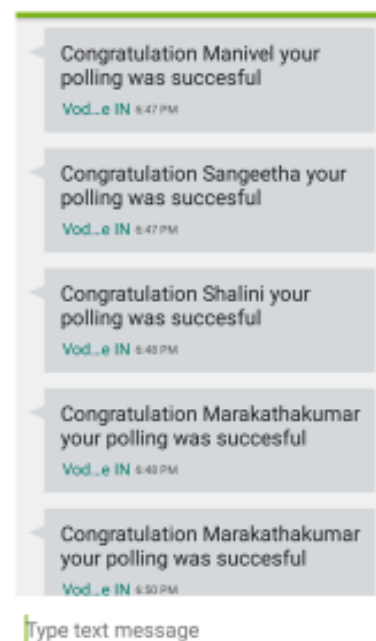


Fig.1.3 Voting information through mobile.

#### V.CONCLUSION:

The proposed method enables secured voting and reduces man power efficiently. It is easy to eliminate bogus voting and vote repetition, less election expenditure, more transparency and fast counting of results. The Aadhar based voting system will be very useful to avoid rigging, to avoid time consumption, to keep the voter's information more secured. GSM module is also used so that the voted information can be send through the registered mobile number is shown in

the fig.1.3. This voting system has many advantages over traditional way of voting. Some of these advantages are high efficiency, avoids invalid voting, low complex design, high speed processing.

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