ELECTRONIC VOTING MECHANISM USING MICROCONTROLLER

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ABSTRACT:

        Election is the main concern of any Country when to elect someone.Some of them misused it so that we can make the voting machine with Face recognition. In this proposed system we have used Face recognition that can identify each voter and can prevent fake votes.

An idea of this project by using Matlab, it is a three level processing i.e, Train the Recognition system, Face detector and data Gather, Face Recognizer. The system is more digital, technology-based and secured system. In this system we are implementing the keypad and buzzer.

 The final vote is then displayed onto an LCD for the satisfaction of voters. The project displays transparency and also carries the feature of being autonomous during the course of operation.

KEYWORDS: MICROCONTOLLER-ATMEGA328P,KEYPAD, DISPLAY, BUZZER ,LED

INTRODUCTION:

                In   earlier   times,   paper-based elections were conducted. In that, voters cast their votes on the ballot paper and then drop that paper in sealed boxes provided by the election department.   In this process sometime there can be manually error or cheating to declare the results. Also, there is lot of wastage of paper and manpower.

                To   overcome   this   problem,   the Indian government installed direct record electronics - DRE voting system which are popularly known as E-voting machines - EVMs [1]. The ideation in this work is to redesign electronics voting system using Arduino and face recognition algorithm to make the system more efficient and reliable. The proposed idea will help in creating a transparent environment free from data manipulation as it can freeze the vote instantly. The system here relatesto n number of the switches where n represents the number of political parties.

        The user or voter will choose the intended desired contesters from the list of options. The result is then played on an LCD display and the result is automatically calculated by pressing the result button. The live votes are displayed using Thing Speak server to prevent any data manipulation which mightoccur when storing on an external drive.

LITERATURE REVIEW:

    Agarwal, et al. [2] have designed a password-based system to increase the efficiency of system by proclaiming results in very short span. Anandaraj, et al. have improvised the security in the existing system. They presented scaling up the number of voters as they increase. Here matching is done the server level Also the GSM and IoT is used to generate the results very fast to increase the system efficiency [3]. Rezwan et al. proposed a Biometrically Secured Electronic Voting Machine using Arduino and Fingerprint Scanner that help in identifying each user uniquely and avoid fake voters. The reported system is a secured digital one that is utilized in countries like Bangladesh, etc. [4]. Srikrishnaswetha et al. presented a study on smart evotes with facial recognition and aadhar verifying along with IoT. They proposed a technology that is highly secure for voting as it uses unique Aadhar card number for identification of users, face recognition along with IoT. It is intended for different users for long usage and to ensure data security [5]. Khasawneh et al. demonstrated a secured Biometric Voting System. The system uses simple biometrics. . The system uses flag system which ensures that no voter can press buttons multiple times as once the buttons is pressed all the flags get automatically locked and will get unlocked only when another voter arrives as the controller unlocks the flag. Thus, the proposed design guarantees transparency in voting system [6]. Jagtap et al. also proposed a system for vote from anywhere. Here the voters

are verified based upon his/her unique id and then using raspberry pi, more numbers of used can be managed efficiently [7]. In B. R., et al. system age criteria of the country are followed for voter verification using his/her Id.

Also, the details of the voter are locked once after his voting, and no other can use his details for casting the vote [8]. Priya, et al. used different layers of security in their design to avoid the duplicity or cheating [9]. Ramprasad et al. designed a system in which RFID is used to improvise the process [10]. In the system proposed by Bhattacharya at al. biometric fingerprint recognizing and retina scans are employed to enhance the overall voting system [11]. Kanwardeep et al. also proposed a voting machine based on biometric fingerprint identification. Their system is more reliable in terms of security of the voting process. [12] Samuel Manoharan also presented a system to improve the dairy business. Monitoring the drinking behavior of cows and ambient condition using Neural Network model are also used to analysis the heat stress on dairy cows. [13] Jennifer S. Raj presented the use of metasurface to manipulating the properties of light for different applications. This feature can be used to improve the security in the existing [14] Several researchers are working to develop electronic voting using block chain to make it more secure as the data is encrypted. Researchers are also trying to develop Voice Authentication system for electoral to help people with disabilities. Earlier the optical scanning voting method was developed to read marked paper ballots and tally the results.

Existing Methods:

Elections from a major part of any democratic society to elect its new government .In earlier times, paper-based elections were conducted. In that ,voters cast there votes on the ballot paper and then drop that paper in sealed boxes provided by the election department. When the elections end, the secret ballots are opened and manually counted to proclaim results. But in this process some times there can be manually error or cheating to declare the results .Also, there is lot of wastage of paper and manpower.

PROPOSED SYSTEM:

In this project, an advanced voting machine is designed, in which two step security is added and after that voters may cast their vote to desired candidate. The first step of security is Aadhar card verification and 2nd step security is face recognition. When the voter is verified in both the steps then after he/she can cast their vote. Also, the information of voting is continuously sent to the central

serer of the election department, so that the discrepancy can be reduced, and proper fair process can be implemented. Also, the LCD is used to show the voting casted to the voter at the same time. The Aadhar card verification and face recognition is done on the Computer/Laptop running separate.
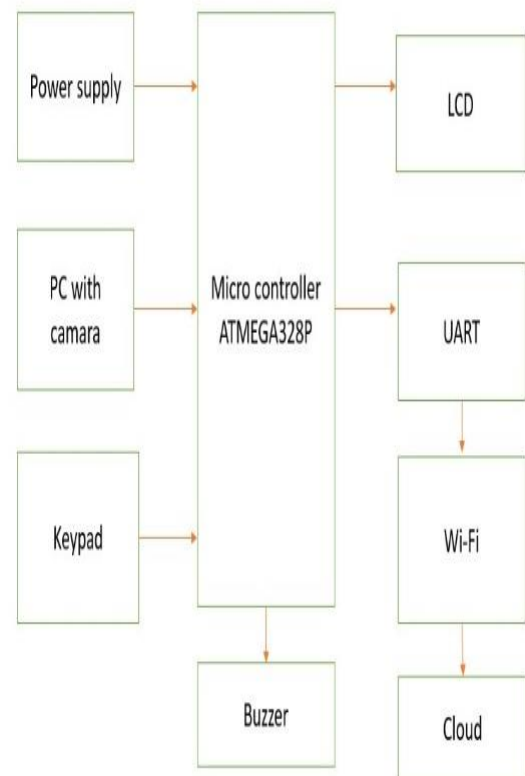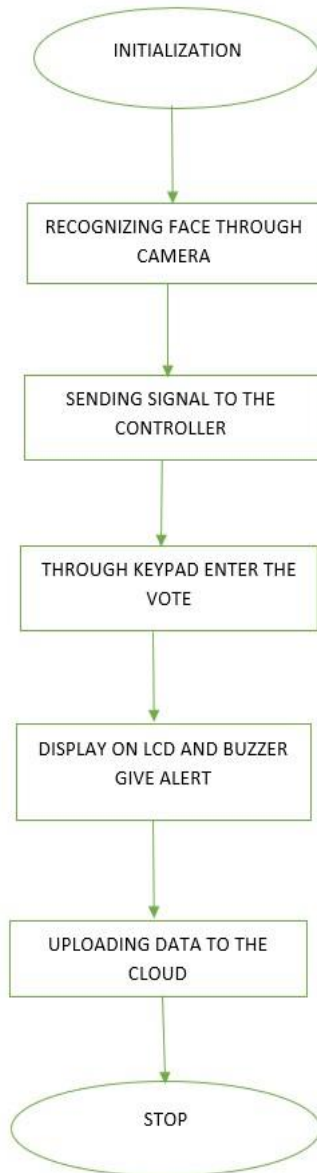
Block Diagram:

Fig:Block Diagram

Algorithm:

Fig:Algorithm

Arduino Uno Overview:

Arduino Uno Is a microcontroller board based on 8-bitATmega328Pmicrocontroller.Alongwith ATmega328P, it consists other components such as crystal oscillator, serial communication, Voltage regulator, etc. to support the microcontroller. ArduinoUnohas14digitalinpu t/output pins (out of which 6 can be used as PWM outputs), 6 analog input pins, a USB connection, A Powerbarrel jack, an ICSP header and a reset button. It contains everything needed to support the microcontroller; simply connect it to a computer with a USB cable or power it with an AC-to- DC adapter or battery to get started.
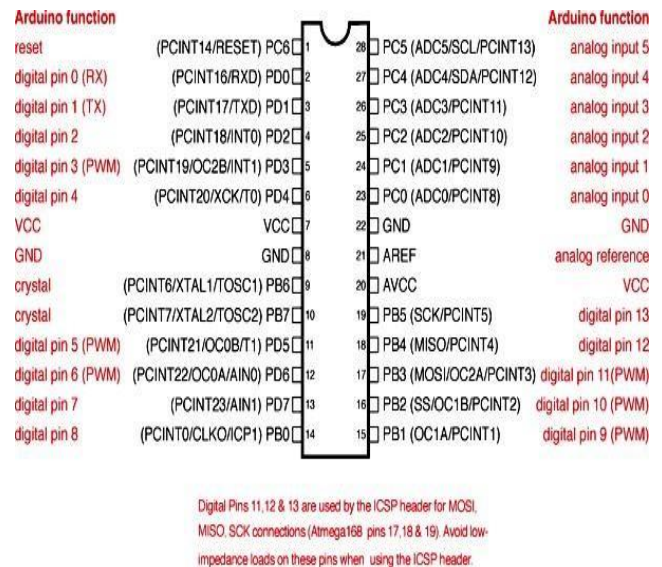
Arduino Uno to ATmega328 Pin Mapping:

Fig:Pin Diagram

Steps:

Step 1:Electronic voting mechanism

Step 2: waiting for face authentication.

Step 3: Face is authenticated
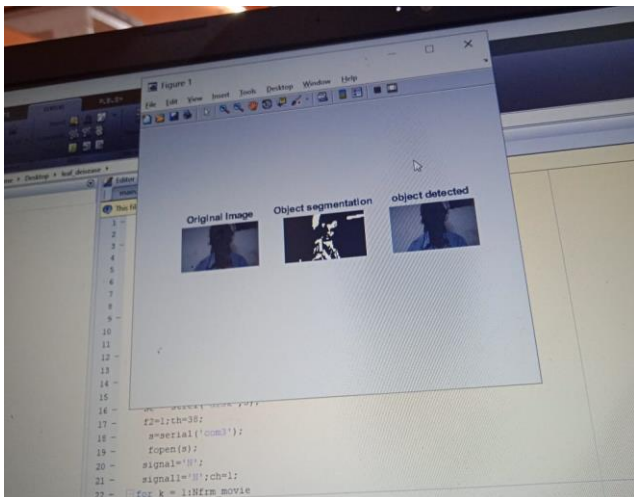

Step 4: Waiting for voting.

Step 5: Vote is done.

Step 6: Find winner

Result and discussion:

The electronic voting mechanism using microcontroller.This allows a person for face authentication for detection a person.After a detect person it allows for voting.It is security based system.

CONCLUSION:

The aim of the currently reported work is to develop a system that is more advantageous and reliable compared to the earlier ones. Also, we have used the two-step verification process before casting the vote. IoT is employed to improviseupon the overall efficacy of the system by sending the cast vote information regularly to the central server of the Election Department of the Government of India.

In future advancement, we can add more security in the verification process such as biometric retina or fingerprint scanning along with more advancement inthe IoT and AI. Due to increase in a greater number of household devices and mobile, the future of IoT is unlimited. A Networking and connectivity protocol have made it possible to connect people and machines on all platforms. This can be extended by adding additional verification process such as fingerprint scanneretc. Also, we can extend it by adding additional server and sharing the details to the authorized person.

REFERENCES:

[1] S. Sridharan, "Implementation of authenticated and secure online voting system," 2013 Fourth International Conference on Computing, Communications and Networking Technologies (ICCCNT), Tiruchengode, 2013, pp. 1-7: 10.1109/ICCCNT.2013.6726801

[2] H. Agarwal and G. N. Pandey, "Online voting system for India based on ADHAAR ID," 2013 Eleventh International Conference on ICT and Knowledge Engineering, Bangkok, 2013, pp. 1-4: 10.1109/ICTKE.2013.6756265

[3] Anandaraj S, Anish R and Devakumar P.V, "Secured e voting machine using biometric," 2015 International Conference on Innovations in Information, Embedded and Communication Systems (ICIIECS), Coimbatore, 2015, pp. 1-5: 10.1109/ICIIECS.2015.7192976.

[4] R. Rezwan, H. Ahmed, M. R. N. Biplob, S. M. Shuvo and M. A. Rahman, "Biometricsecured e voting machine," 2017 IEEE Region 10 Humanitarian Technology Conference (R10-HTC), Dhaka, 2017, pp. 510-512: 10.1109/R10- HTC.2017.8289010.

[5] Srikrishnaswetha, Kone Kumar, Sandeep Mahmood, Smart Electronics Voting Machine Using Face Recognition and Adhar Verification with IOT. 10.1007/978- 981-13-3765-9_10.

[6] M. Khasawneh, M. Malkawi, O. Al-

Jarrah, L. Barakat, T. S. Hayajneh and M. S. Ebaid, "A biometric-secure voting system for election process," 2008 5th International Symposium on Mechatronics and Its Applications, Amman, 2008, pp. 1-8: 10.1109/ISMA.2008.4648818.

[7]   M. Jagtap, V. Kesarkar and A. Supekar, "Electronic Voting System usingBiometrics, Raspberry Pi and TFT," 2019 3rd International Conference on Trends in Electronics and Informatics (ICOEI), Tirunelveli, India, 2019, pp. 977-982: 10.1109/ICOEI.2019.8862671.

[8] B. R., R. B. S., S. P. and K. V.K.G., "Smart voting," 2017 2nd International Conference on Computing and Communications Technologies (ICCCT), Chennai, 2017, pp. 143-147: 10.1109/ICCCT2.2017.7972261.