



e-ISSN:2582-7219



INTERNATIONAL JOURNAL OF MULTIDISCIPLINARY RESEARCH IN SCIENCE, ENGINEERING AND TECHNOLOGY

Volume 6, Issue 5, May 2023



INTERNATIONAL
STANDARD
SERIAL
NUMBER
INDIA

Impact Factor: 7.54



6381 907 438



6381 907 438



ijmrset@gmail.com



www.ijmrset.com



Biometric Voting System

Mukta S Mulay¹, Sakshi M Deshmukh², Siddhant M Saigaonkar³

Zeal College of Engineering and Research, Pune, India^{1,2,3}

ABSTRACT—In this paper, the proposed system is a fingerprint-based voting machine using Arduino Uno. Biometric Fingerprint devices are used in the Electronic Voting machine for voter verification. This proposed to design a fingerprint-based voting machine where there is no need for the user to carry his ID which contains his required details. The person at the polling booth only needs to place his/her finger on the device, thus allowing the acquisition of an on-spot fingerprint from the voter which serves as an identification. This Fingerprint reader reads the details from the tag. This data is passed onto the controlling unit for verification. The controller fetches the data from the reader and compares this data with the already existing data stored during the registration of the voters. If the data matches with the pre-stored information of the registered fingerprint, the person is allowed to cast his vote. If not, a warning message is displayed on LCD, and the person is barred from polling his vote. The vote-casting mechanism is carried out manually using push buttons. LCD is used to display the related messages, warnings, and ensuing results.

KEYWORDS—Fingerprint Module, LCD

I. INTRODUCTION

The basic idea of this system is to create an Online Voting System that will help to suppress deception of the manual voting system and also the prior versions of online voting by fingerprint verification. We are also implementing a location-free voting system for the voters for whom it is not possible to come to the voting location (hometown). Each voter can access the system only when being recognized and checked with the given database of enlisted voters. Once the corresponding fingerprint is matched with the information provided, the voter will be allowed to proceed with choosing their preferred candidate from the panel. Everyone has patterns of friction ridges on their fingers, and it is this pattern that is called the fingerprint. Fingerprints are uniquely detailed, durable over an individual's lifetime, and difficult to alter. Because there are countless combinations, fingerprints have become an ideal means of identification.

Biometrics is the science and technology of measuring and analyzing biological data. Biometrics refers to technologies that measure and analyze human body characteristics, such as DNA, fingerprints, eye retinas and irises, voice patterns, facial patterns, and hand measurements, for authentication purposes. The field of biometrics was formed and has since expanded on too many types of physical identification. Among the several human fingerprints remain a very common identifier and the biometric method of choice among law enforcement. These concepts of human identification have led to the development of fingerprint scanners that serve to quickly identify individuals and assign access privileges. The basic point of these devices is also to examine the fingerprint data of an individual and compare it to a database of other fingerprints. In this project, the fingerprint is used for voter identification or authentication. As the thumb impression of every individual is unique, it helps in minimizing the error. A database is created containing the fingerprint images of all the voters as required. Illegal votes and repetition of votes are checked for in this system with accurate coding. Hence with the application of this fingerprint-based EVM system elections could be made fair and free from rigging. Further that the elections would be no longer tedious and expensive jobs.

II. METHODOLOGY

The system aims to develop a fingerprint-based advanced Electronic Voting Machine (EVM) which helps in a free and fair way of conducting elections which is the basis for a democratic country like India. This project consists of the following units a Voting system, fingerprint module, and Arduino controller Unit. The voter first puts his finger on the fingerprint module which checks for the authentication of the user. If the voter is the authenticated one, he will now poll his vote in the voting system by simply pressing a button against his favorite leader through a button. The control unit consists of an Arduino controller and a push-button for different operations of EVM. The votes cast for a particular candidate in that particular section of a constituency are shown through an LCD. To perform this intelligent task, the Arduino controller is loaded with an intelligent program written in embedded "C" language.



III. SOFTWARE USED

- ProteusVersion8:

For simulating the circuit this software is been used. Schematic capture in the Proteus Design Suite is used forboth the simulation of designs and the design phase of a PCB layout project. The microcontroller simulationin Proteus works by applying either a hex file or a debug file to the microcontroller part on the schematic. Here,thelibraries usedare:

- a. Arduinolibrary(Arduino. LIBand Arduino. IDX)
- b. Ultrasoniclibrary(UltrasonicTEP.IDX,UltrasonicTEP.LIB, and UltrasonicTEP.HEX)
- c. Bluetoothlibrary(Bluetooth. LIB andBluetooth. IDX)
- d. Solarpanellibrary(SolarPanelTEP.IDXandSolarPanelTEP.LIB)

- NIMultisim Version 12.0:

For simulating the power supply design, Multisim is used. The output of the solar panel (12V) is applied as input toa voltage regulatorand5Voutput isverified at theoutput of the voltageregulator.

- ArduinoIDE:

All the software programming is written in Arduino Integrated Development Environment (IDE). Arduino IDEis open-source software that makes it easy to write code and upload it to the board. It runs on Windows, MacOS X, and Linux. Interrupts are used in programming to make the system more effective and respond to changesaccordingly.

Here,thelibrariesusedare:

1. Ultrasoniclibrary
2. HMC5883Llibrary
3. Wirelibrary
4. HC05 library

- AndroidStudio:

AndroidStudio istheofficialintegrateddevelopmentenvironment (IDE)for Google'sAndroid operatingsystem,builton JetBrains' IntelliJIDEA softwareanddesignedspecificallyfor Androiddevelopment. Itisavailable for download on Windows, macOS, and Linux-based operating systems. It includes features such asa visuallayouteditor, an intelligentcodeeditor, real-timeprofilers, a flexiblebuildsystem, and an APKanalyzer.

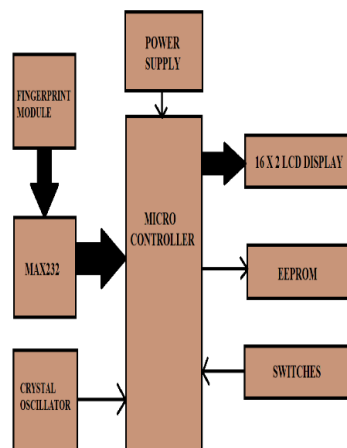


Fig.1 Block Diagram

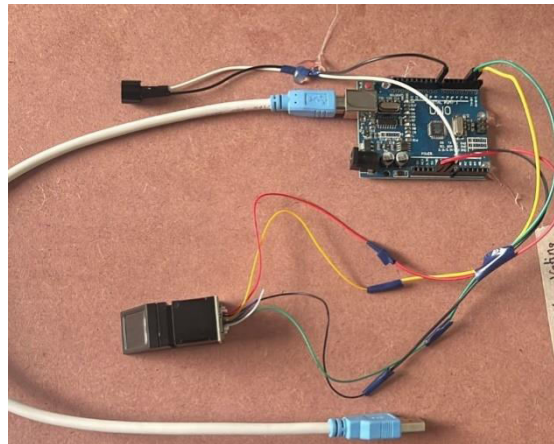


Fig.2 Hardware Setup

REFERENCES

1. Prof.KritiPatidar, Prof.Swapnil Jain “Decentralized E-Voting Portal UsingBlock-chain.
2. Prof.Shashank S Kadam, Ria N Choudhary, SujayDandekar, DebjcetBardhan,NamdeoBVaidya“ElectronicVotingMachinewithEnhancedSecurity
3. RahilRezwan, Huzaiifa Ahmed, M. R. N. Biplob, S. M. Shuvo, Md.Abdur-Rahman“BiometricallySecuredElectronicVotingMachine”
4. Z.A. Usmani, KaifPatanwala, MukeshPanigrahi, Ajay Nair "Multipurpose platformindependentonlinevotingsystem.
5. RavikumarCV.—PerformanceanalysisofHSRPinprovisioninglayer-3Gatewayredundancyforcorporatenetworks||,IndianJournalofScienceTechnology.Vol9,issue20,2016.
6. Ashwini Mandavkar, Prof. Rohini Agwane, "Mobile-based facial recognitionusingOTPverificationforvotingsystem”,2015IEEE,IACC,pp.644-649.
7. HimikaParmar,NancyNainan,SumaiyaThaseen,“Generationofsecureone-time password based on image authentication”, CSIT-CSCP 2012, pp. 195-206
8. HongyuZhang.,QianziYou,andJunxingZhang(2015),‘AlightweightelectronicvotingschemebasedonblindsignatureandKerberosmechanisms’, In internationalconferenceonadvancednetworksandtelecommunicationsystems, pp. 978-4799.



INNO SPACE
SJIF Scientific Journal Impact Factor
Impact Factor
7.54

ISSN

INTERNATIONAL
STANDARD
SERIAL
NUMBER
INDIA



INTERNATIONAL JOURNAL OF MULTIDISCIPLINARY RESEARCH IN SCIENCE, ENGINEERING AND TECHNOLOGY

| Mobile No: +91-6381907438 | Whatsapp: +91-6381907438 | ijmrset@gmail.com |

www.ijmrset.com