

FINGERPRINT ACCESS BASED ELECTRONIC VOTING SYSTEM

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Abstract-- The main aim of studying this paper is to understand the new method for voting. The voting can be done through fingerprints or biometrics. To solve the current issues in the ongoing voting system, this upgradation is a must. A large fingerprint database will be required for this system. The voter will first verify his/her fingerprints, that is, the system will check whether the fingerprint of the voter is present in the data base or not. If it is present, then and only then the voter will be able to vote for his/her desired candidate.

Keywords— Fingerprint module, EVM, LCD, IOT

I. INTRODUCTION

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 to many types of physical identification. Among the several biometrics, human fingerprints remain a very common identifier and the biometric method of choice among law enforcement. These concepts of human identification have lead 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 our system we have used fingerprint for the purpose of 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 is checked. Hence with the application of this fingerprint based EVM system, elections could be made fair.

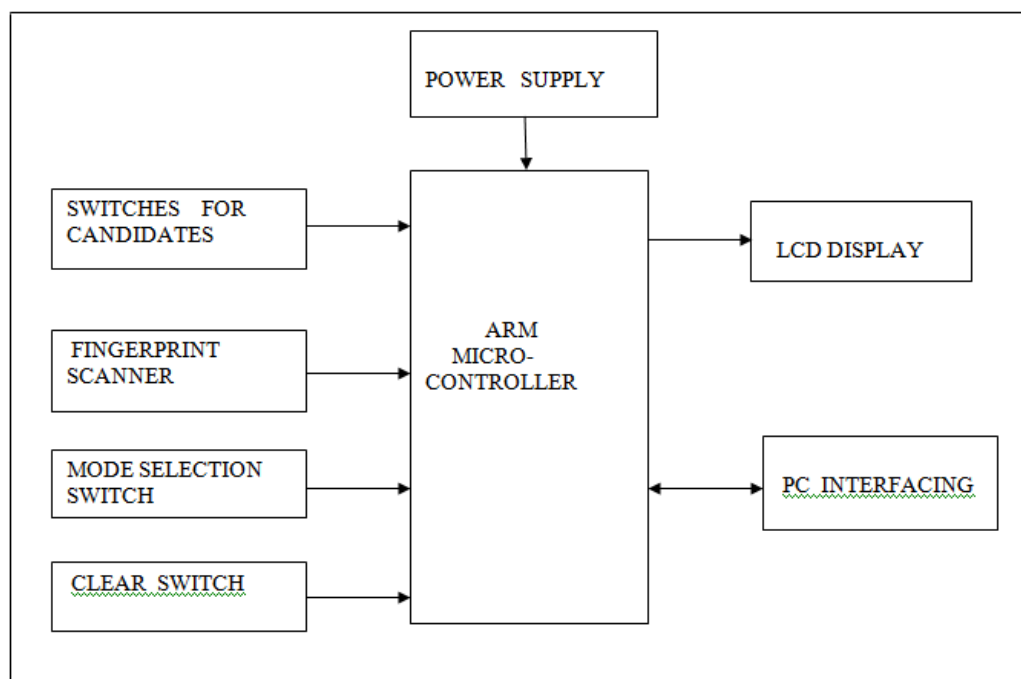


Figure 1. Block diagram

2. COMPONENTS

2.1. FINGERPRINT SENSOR –Fingerprint sensor is an electronic device used to capture the digital image of the fingerprint pattern. Fingerprint sensors generate an image of the ridges and valleys that make a fingerprint.

2.2. MICROCONTROLLER –The microcontroller used is ARM 7. ARM7 is one of the widely used micro-controller family in embedded system application. This section is humble effort for explaining basic features of ARM-7. ARM is a family of instruction set architectures for computer processors based on a reduced instruction set computing (RISC) architecture developed by British company ARM Holdings. A RISC-based computer design approach means ARM processors require significantly fewer transistors than typical processors in average computers. This approach reduces costs, heat and power use. These are desirable traits for light, portable, battery-powered devices—including smart phones , laptops, and other embedded systems. A simpler design facilitates more efficient multi-core CPUs and higher core counts at lower cost, providing higher processing power and improved energy efficiency for servers and supercomputers.

2.3. LCD - LCD (Liquid Crystal Display) screen is an electronic display module and find a wide range of applications. A 16x2 LCD display is very basic module and is very commonly used in various devices and circuits. These modules are preferred over seven segments and other multi segment LEDs.

2.4. REGULATED POWER SUPPLY - Power supply is the first and the most important part of our project. For our project we require +12V regulated power supply with maximum current rating 500Ma.The basic building blocks of the power supply are transformer, rectifier, filter, 7805 voltage regulator. Step down transformer is used to step down the mains 230V to +12VAC. Rectifier unit is a circuit which converts A.C. into pulsating D.C. Generally semi-conducting diode is used as rectifying element.The output of rectifier has pulsating character (AC component) such, components are undesirable and must be kept away from the load. To do so a filter circuit is used which removes (or filters out) the A.C. components reaching the load. Obviously a filter circuit is installed between rectifier and voltage regulator. And then voltage regulator circuit is used , that supplies constant voltage to the kit regardless of change in load current. IC voltage regulators are versatile and relatively cheaper.

3. RESEARCH METHODOLOGY

3.1. EXISTING TECHNOLOGY - Most of the time voting was done through ballots .Ballot device is used to cast votes in an election. Ballots were later replaced by EVM's. The EVM consists of two units, control unit and balloting unit. Balloting units facilitates voting by voter via labelled buttons and displays it on the LCD. The control unit controls the operations in the EVM.

3.2. NEED FOR BIOMETRICS – Passwords have left over. Biometrics can provide authentication that is secure and convenient. Biometrics have also been used in the IOT world. It becomes easy to identify people using biometrics.

3.3. PROPOSED SYSTEM – This system uses biometrics for voting purpose. A large fingerprint database will be required for this system. The voter will first verify his/her fingerprints, that is, the system will check whether the fingerprint of the voter is present in the data base or not. If it is present , then and only then the voter will be able to vote for his/her desired candidate.

4. RESULTS

In this technique, the details of the voter are obtained from the FINGERPRINT database. By using this database, the voter's information will be stored in the personal computer. At the time of elections, for finger print accessing finger sensing module will be used. Fingerprint verification could also be an honest choice in voting systems. As a result, the system will have low price, small size, and easy integration. First capture the finger vein image and compare or match to database. If captured finger vein and database finger vein match, then it suggests that this person will be valid for polling section. Voting machine buttons will be activate or inactivate depending on the status of the voter. After successful voting, a message will be displayed on the LCD . The amount of votes is counted by the voting machine.

4.1 FINGERPRINT ENROLLING

A) Putting finger for enrolling. As shown in fig.2

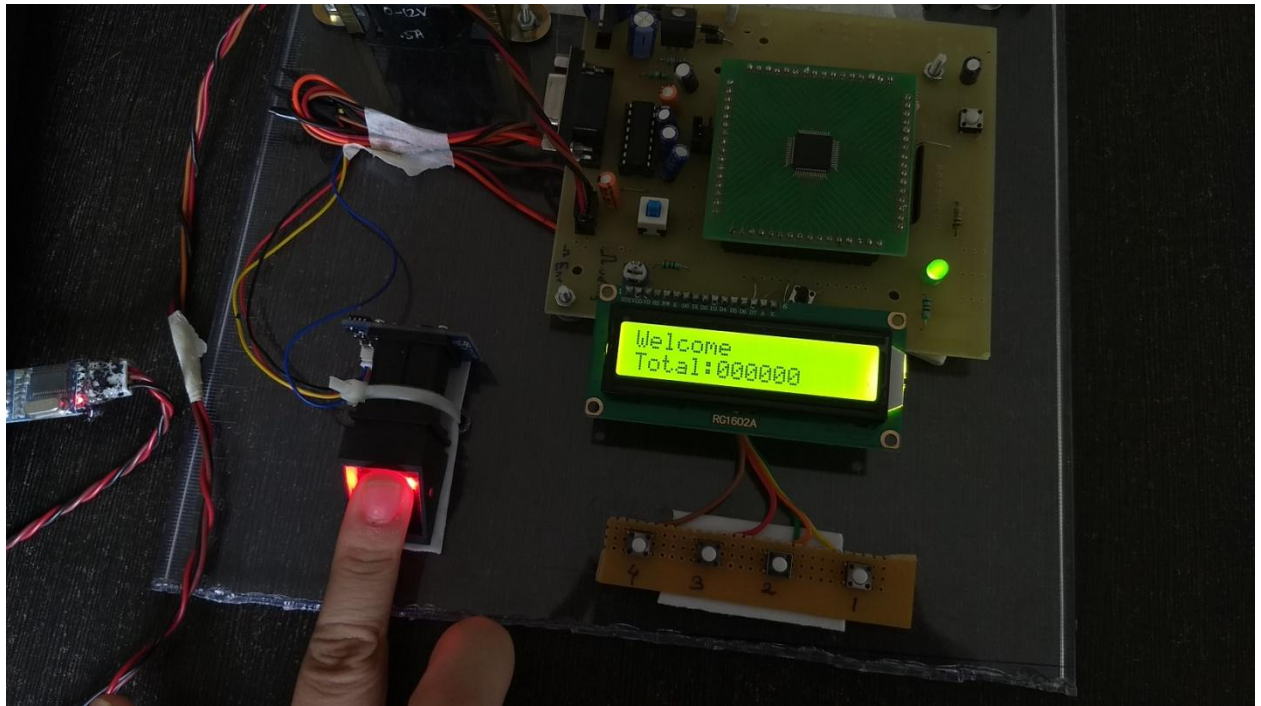


Figure 2.Fingerprint Enrolling

B) Enrolling successful. As shown in fig.3

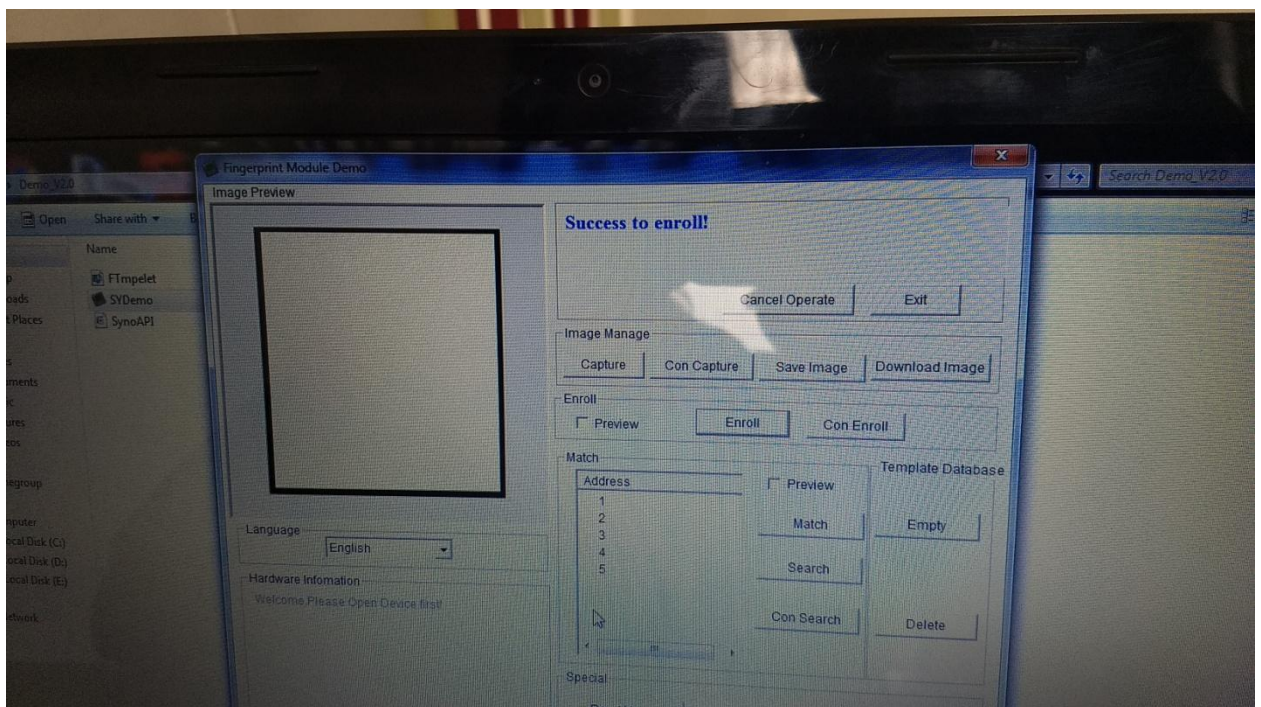


Figure 3. Success to Enroll

4.2 FINGERPRINT IDENTIFICATION

c) Placing finger for identification . As shown in figure 4

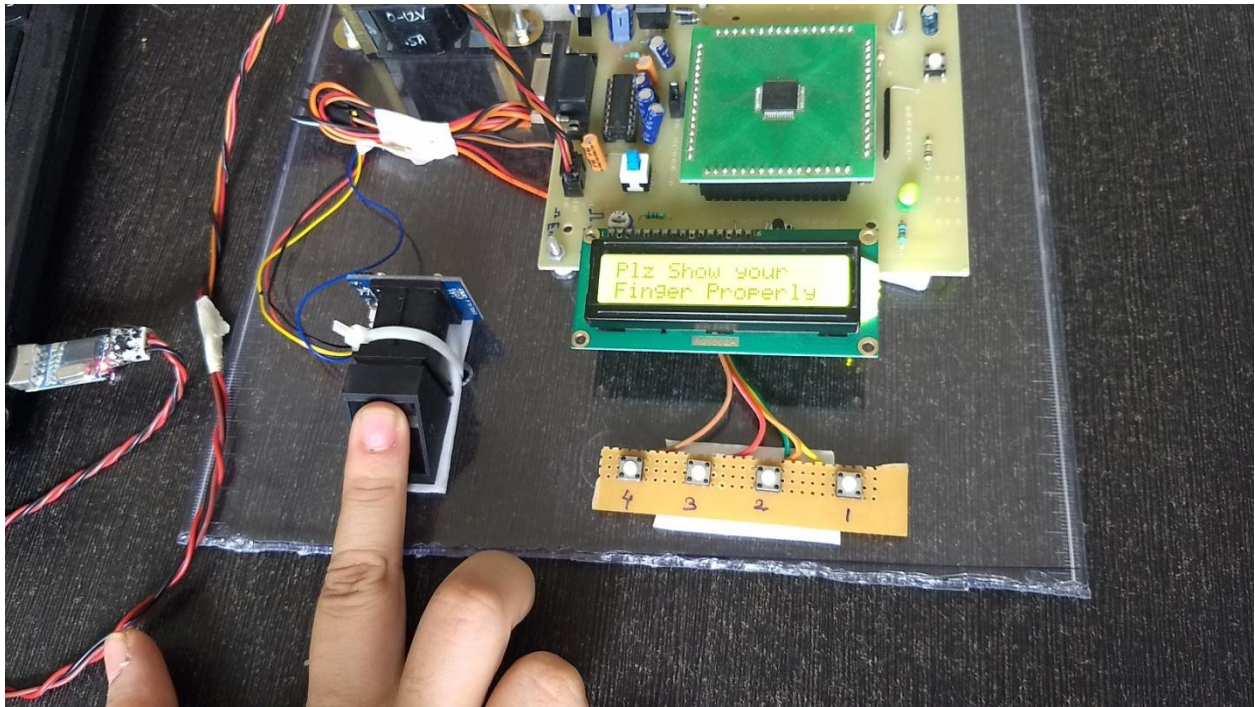


Figure 4. Finger Identification

D) fingerprint identified successfully. As shown in figure 5.

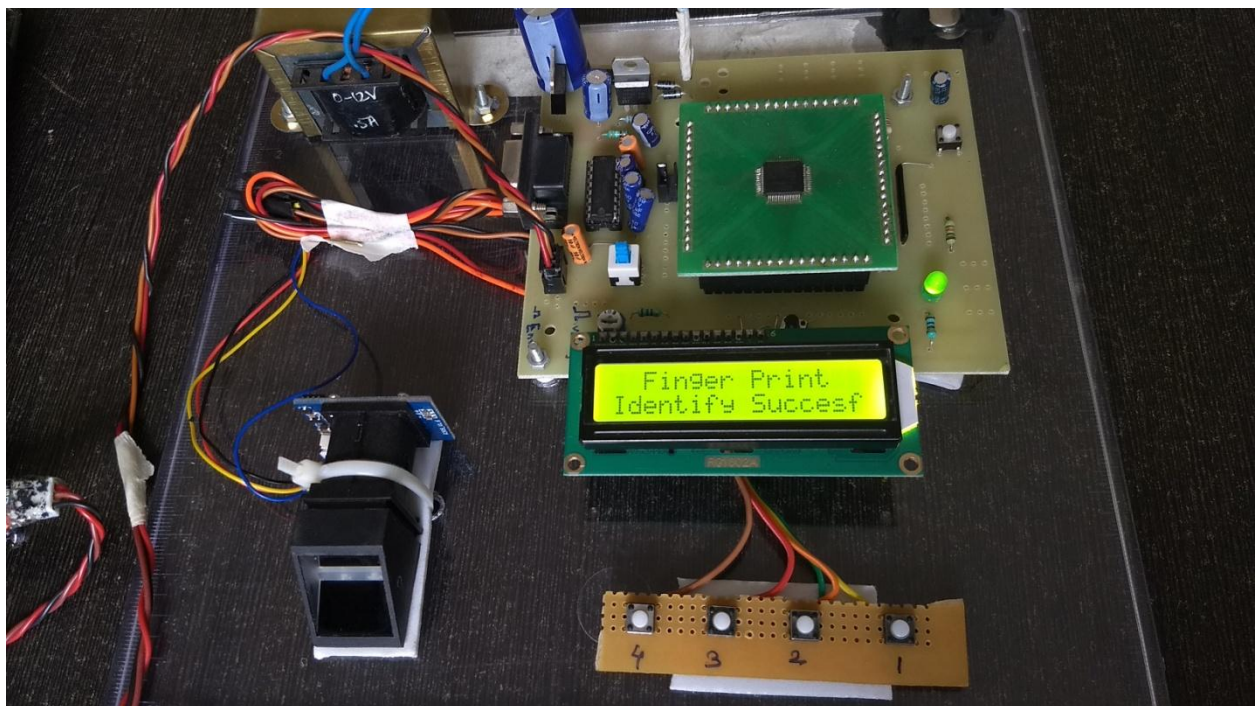


Figure 5.successfull identification

4.3 CASTING OF VOTE

E) Giving votes to any candidate by pressing one of the four buttons. As shown in figure 6

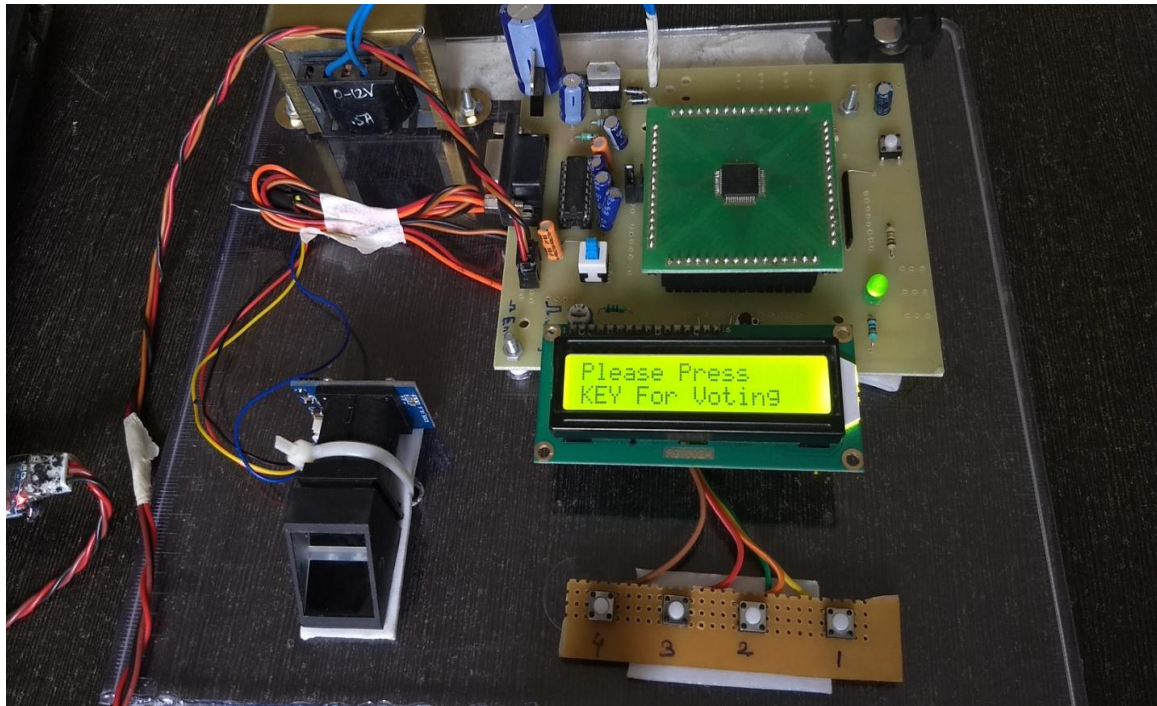


Figure 6. Casting vote

F) for example vote is cast to 3rd candidate. As shown in figure 7

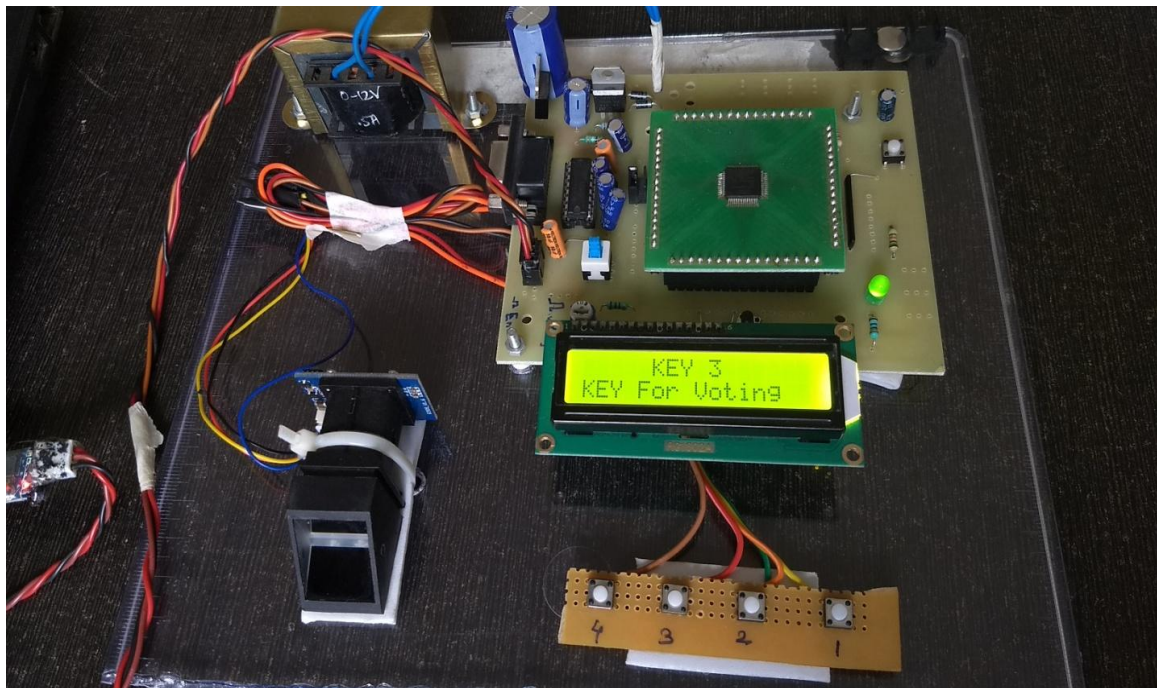


Figure 7. Voting

4.4.TOTAL COUNT OF VOTINGS

G) Total counts of voting is displayed on LCD display. As shown in figure 8.

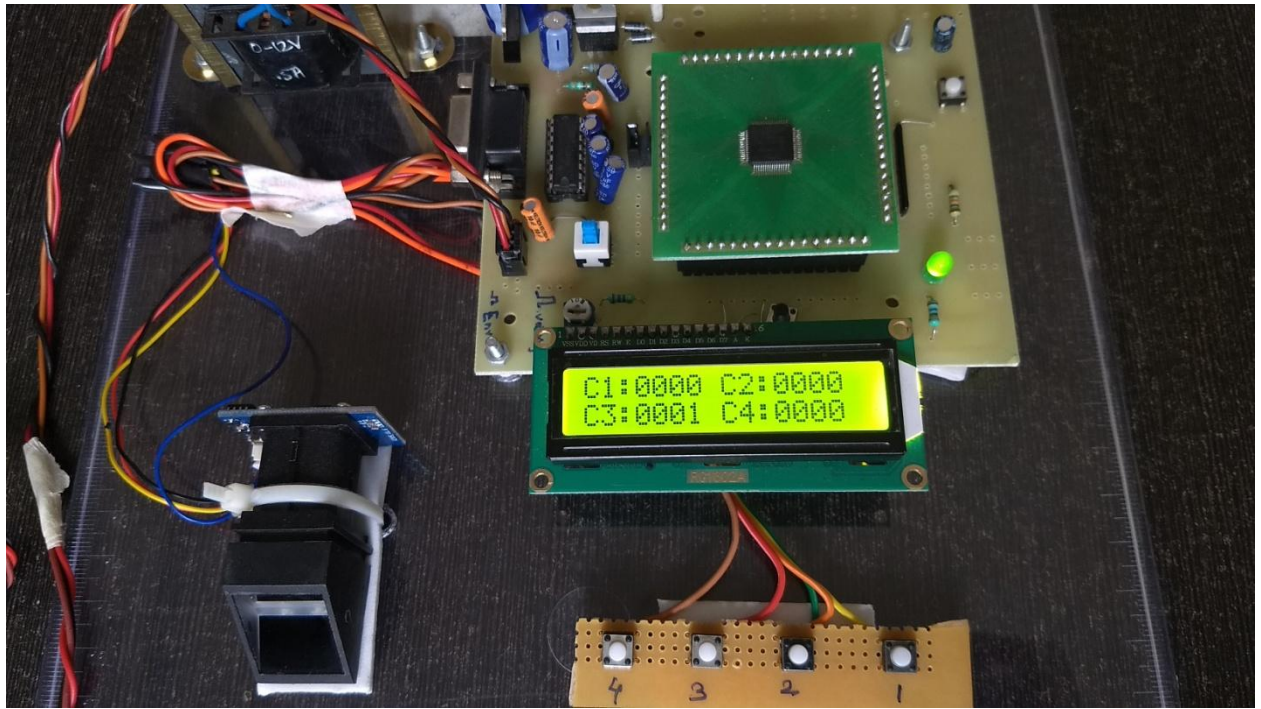


Figure 8. Total count

5.CONCLUSIONS

As there are more chances of fake voting, the “Fingerprint accessed based Electronic Voting System” needs to be implemented. Using this system, one can enroll, verify and vote through his/her fingerprints. The fingerprint access based EVM will be more precise and it will nearly have 90% accuracy, which will help in free and fair way of conducting elections in democratic country like India

6.REFERENCES

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