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LAN BASED VOTING SYSTEM

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ABSTRACT

LAN Based Voting system is the system in which the voter can cast his vote from client PC to voting server via LAN. Voter will be asked for the authentication of identity. The voter can then authenticate his identity using FINGER PRINT RECOGNITION. Moreover to prevent fake voting there is provision of voter identification hardware which will prevent fake voting.
Result of the LAN Based voting system in which after completion of voting at server PC counting is done automatically. Result of elected person is published immediately after the election of whole day is completed. Security maintained up to whole session of election. Important goal that is each person can cast his vote only one time in each election is achieved.

I. INTRODUCTION

India has asymmetric federal government. In 2009 the election involves an electorate of 714 million people. In 2014 electorate strength increased to 814.5 million. .In 2014 voting percentage is much less than 55%.There includes educated people who are not vote and chances of fraud voting may occur. For such cases there is a solution of "LAN based voting system" where the voter is identified by Fingerprint to minimize fraud voting. Because of secured voting ,voters are attracted for voting and purpose of to enable the voter to vote is achieved.

II. METHODOLOGY

The basic ideas of LAN based voting system include, Client PC's acts as booth in various area of different cities. Server PC is supervised by government .Data base of each eligible voter includes voter ID (identification number), password of voter and finger prints minutiae point features.

Functionality of this system is mainly categorized in following steps.

A. Fingerprint detection

In this step finger of the voter is detected by finger print module and corresponding data in ASC II form of related person finger is saved in finger print module.

B. Finger print reorganization

At the time of voting when voter put his finger on the finger print module if data base saved in finger print module is matched then LCD shows message of voter ID 'xyz' identified.

If match is not occurring then message on LCD is 'No match' of finger print is displayed.

C. Communication between finger print module and microcontroller

This communication is serial communication using RS232 standard.

D. Communication between fingerprint and client PC

When the match of voter finger print occur with saved data base in finger print module then LCD display the identification about finger print of voter This information in the form of finger print ID of voter is send by finger print module to client PC via microcontroller .Finger print ID automatically displayed on client PC window then voter required to only enter the password which is given by election committee of government to each voter.

E. Communication between client PC and Server PC

IP address of server PC and client PC is matched then server open the voting window on client PC then voter is able to vote one time in each election. But before matching the IP address data base of voter including name of candidate, finger print ID, password, address, and mobile number. Saved in server PC this is the whole data base including ID of voter at finger print module.

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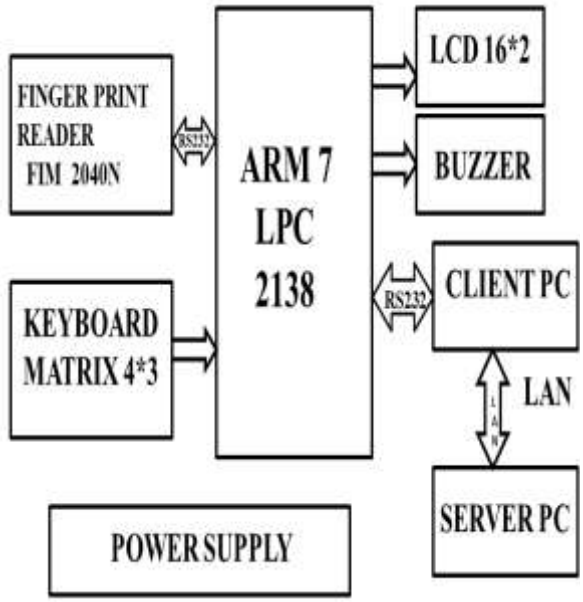


"Figure1. Block diagram of LAN based voting system"

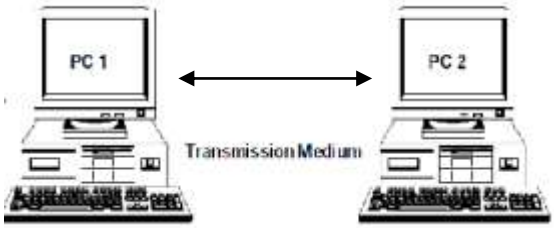
Following is important information about block diagram of LAN Based Voting System.

A. Finger Print Identification

The finger print module is connected to the microcontroller using the RS232 serial module. The voter has to put the finger on the finger print module. The finger print module then scans the finger and recognizes the fingerprint related data saved in data base in finger print module and sends finger print ID to client PC via microcontroller. The client PC has Visual Basic software (VB). The VB software then open the window for voting then voter enters his password which is unique for voter. If match occur with data base saved in server PC, then the user can able to vote once.

B. LAN Communication

In this system we are designing a client server model, which communicates via RJ45 LAN cable using socket programming. The server can monitor as well as control the voting window via LAN communication, for this we have VB software on server as well as on client PC. Firstly the client and server will set and match the IP address. If the IP address matches then the connection is established. After that the data communication is done using socket programming.
Once authentication is done the server will open the voting window on client PC. The voter can then able to cast vote.

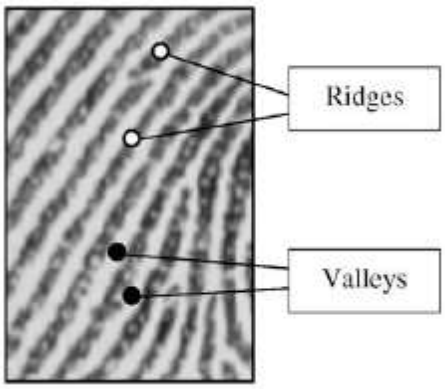


"Figure2. Two station LAN, smallest possible configuration"

From fig.2 PC1 is Server PC and PC2 is Client Pc. The LAN communication is done between them.

C. Finger Print module

There exist many human recognition techniques However, these techniques are rotation invariant and fail when enrolled image of person is matched with a rotated test image. this is occur because when the person save his data base in finger print module then, if initial orientation of finger on the finger print module is different than the orientation at time of voting so mostly used technique are rotation invariant and fail when enrolled image of person is matched. This fingerprint recognition technique uses local robust features for fingerprint representation and matching which is minutiae based finger print reorganization technique. These techniques perform well in presence of rotation of finger and able to carry out recognition in presence of partial minutiae points which is crossing of ridges and valleys. Ridges are dark line and valleys are space between two dark lines show in figer3.



"Figure3. Ridges and valleys on finger print image"

Finger print module is the heart of the complete system. This unit is used for scanning the fingers of the different voters. Optical finger print scanners provide robust finger print scanning, scratch resistance, long life and no effect of electrostatics current. They are suitable for large scale use and support thousands of scans per day.

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"Figure4. Finger print Module"

Finger print module is interfaced with the ARM microcontroller. The finger print module uses a sensor which identifies the human finger and stores the data in form of 8 bit data form Finger print module is interfaced with the microcontroller via RS232 standard. The Finger print module can be commanded by microcontroller using its standard commands. Using these commands we can register the voter, check and delete the voter from this module.

III. SOFTWARE DESIGN

In LAN Based Voting System Software is also important for development of system. In LAN Based Voting System software used is Visual Basic (VB) software. Also for design and simulation purpose Proteus software is used.

Algorithmically flow of LAN based voting system

i. Start
ii. Initialize LCD
iii. Display project name on "LAN based voting system"
iv. Is Fingerprint detected? No-> "LAN based voting system"
v. Yes->Read the data base of finger in ASC II form from Fingerprint module
vi. Read the user ID from the data base and send it to the client PC on RS232 at 9600 Baud rate
vii. Go to "LAN based voting system"
viii. Client PC
ix. Start VB (Visual Basic Software)
x. Execute the Main form
xi. Enter the IP address of server PC
xii. Enter the user name and Password to server
xiii. Wait for serial Interrupt
xiv. Send the user name, Password and FPID to sever via LAN using socket programming.
xv. Go to client
xvi. Select the candidate
xvii. Increase the counter at server
xviii. Go to start (i).

RESULT:

" Figure 5. Overall system"

"Figure 6. Client window"

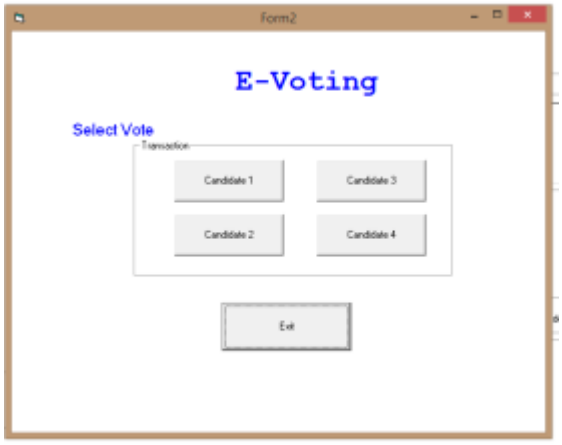

Figure 7. Voting window open on client

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"Figure 8. window open on server PC"

IV. ACKNOWLEDGMEN

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V. CONCLUSION

The LAN Based Voting System which having more security because of finger print authentication of voter. Also the man power requirement and expenditure is reduced considerably compared to other voting system and final counting of vote as well as publishing the result is immediate and most important purpose to avoid fake voting is achieved.

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