

# Counting and Vote Distribution Mechanism in Preferential Election Using PEVM

Shaikh Adiba<sup>1</sup>, Dr. Ramesh R. Manza<sup>2</sup>  
Research Student<sup>1</sup>, Research Guide<sup>2</sup>

Dr. Babasaheb Ambedkar Marathwada University, Aurangabad, India  
adibasaher0@gmail.com<sup>1</sup>, manzaramesh@gmail.com<sup>2</sup>

## Abstract:

Electronic voting machines has gained wide acceptance for implementation of voting process worldwide. In view of the complexity and technicality involved in counting and vote distribution process in preferential election, this paper intends at presenting this complex election mechanism using Preferential Electronic Voting Machine.

**Keywords:** ATmega32, counting, CU, elimination, election, microcontroller, PEVM, scrutiny, Visual Basics.

## I. INTRODUCTION

Preferential election being different from general election, involves a very complicated process for counting of votes. In preferential voting, voters assign preference number to the contesting candidates according to their choice on the ballot paper. There are many clauses in counting method that makes the task very complex [1]. Therefore, the time taken in declaring the result of the election is much more. This paper deals with the process of scrutiny and counting mechanism with the help of Preferential Electronic Voting Machine. With the help of PEVM Solutions software, it is quite simple and easy to know the result in just few minutes with the click of a button only. All the processing is done by the software. Hence, no manual work is involved here.

## II. APPROACH

The machine is designed using ATmega32 microcontroller which is used for recording voter's preferential vote. The software which is used for scrutiny and further calculation is developed using Visual Basics as front end and MS-Access 2007 as back end. This software is user friendly. Calibrating the PEVM machine erases all the previous stored information and allows the user to load new data. It is obvious that the backup must be taken before deleting earlier records. This software is capable of taking backup automatically just at a click.

## III. SCRUTINY AND COUNTING

To begin with this process one has to connect the CU to the computer system. Run the PEVM Solutions software. Read voting data from PEVM and store it as excel file. Open this excel file for further processing. Separate valid votes from invalid votes and calculate quota. Update the records in database with new records. Calculate vote count of the contesting candidate in the order of preferences assigned. Insert record in the database. Read 1<sup>st</sup> choice vote count for all candidates to check if anyone crosses the quota. If such candidate is found, mark it as elected thereby updating database record. If number of vacancies equals the number of candidate elected then the process is over. Otherwise, surplus votes of the elected candidates are distributed according to next preference among the remaining candidates. Counting for the next round is done here. When surplus is less than the vote count of lowest candidate; eliminate such candidate. Distribute

his vote again and go to next round. The process continues till all the vacancies are filled. Flowchart below shows the process:

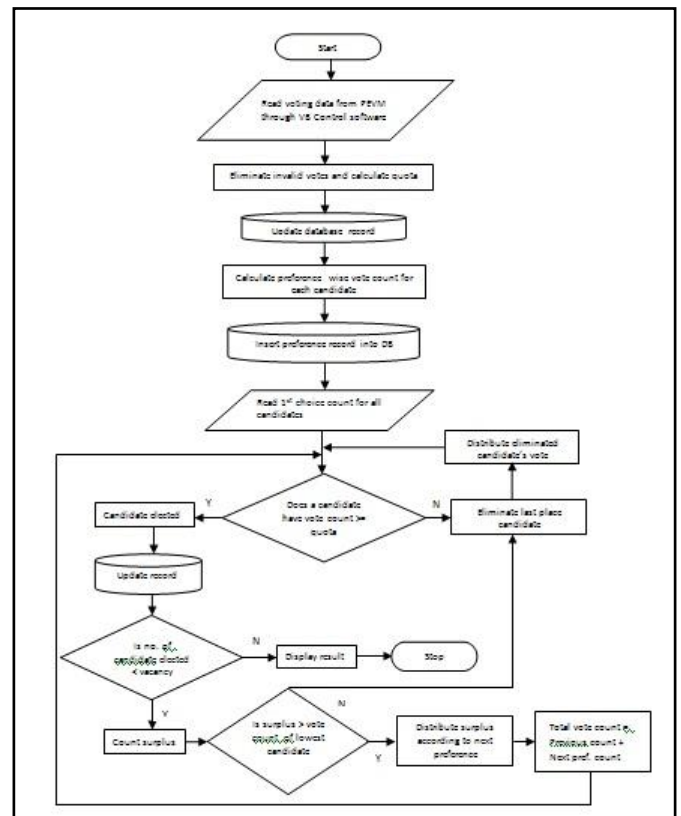


Figure 1: Scrutiny and Counting

## IV. WORKING

Once the polling session is over the result of the election can be known within few minutes without any labor work. This is possible with the help of PEVM Solutions software. Here we have to again connect the Control Unit to the system to extract the voting data. One has to follow the instructions shown in the software window. Click on DATA ACQUISITION FROM MACHINE option. The user has to click RECEIVE. This starts reading data from CU and stores it in the excel file format. Voting data is also available with the Ballot Unit in case of accidental loss. The following figures demonstrate the working of the software:

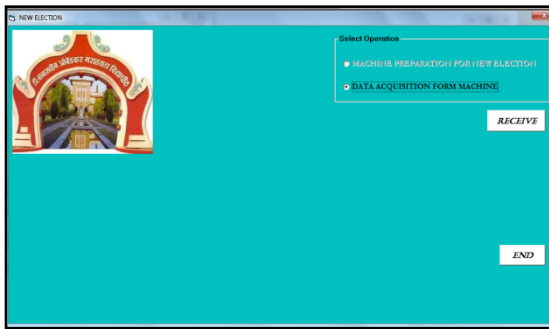


Figure 2: Data acquisition from CU

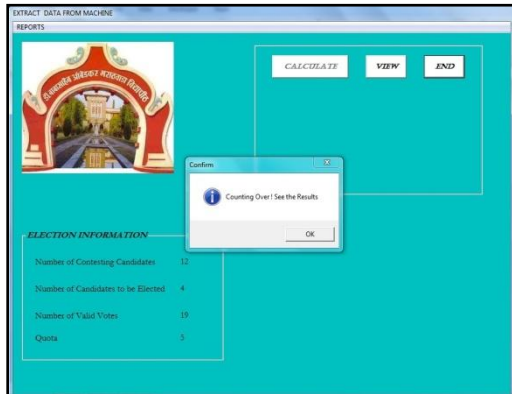


Figure 3: Counting over

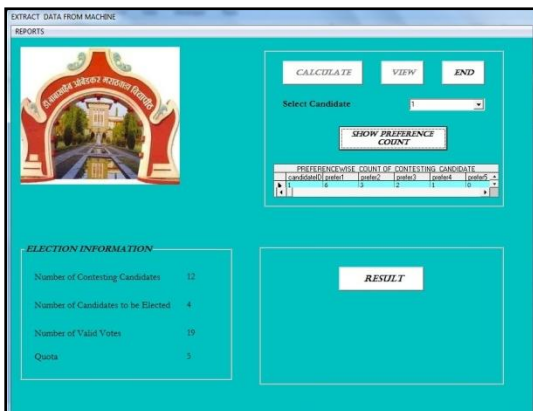


Figure 4: Candidate's preference count

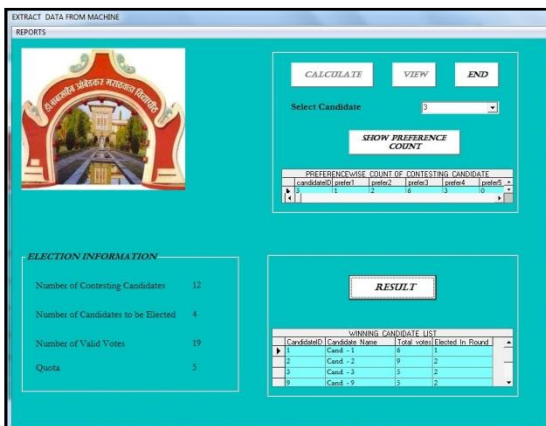


Figure 5: Result

#### IV. CONCLUSION

The screen shots showed successful execution of the work. All the necessary requirements are incorporated in the software. This software can prove very useful in reducing time and complexity involved in Preferential Election.

#### V. REFERENCES

1. Shaikh Adiba, Dr. Ramesh R. Manza, "Calibration and Voting Process of Preferential Electronic Voting Machine Using Microcontroller", In International Journal of Innovative Research in Computer and Communication Engineering (IJIRCCE), Vol 3, Issue 7, July 2015.
2. Shaikh Adiba, Ramesh R Manza, "Architecture of Electronic Voting Machine for Preferential Voting used in University Election". In International Journal of Engineering Research & Technology, Vol1, Issue 5, July 2012.
3. Shaikh Adiba, Ramesh R Manza, "Design of Preferential Electronic Voting Machine using AVR series Microcontroller". In International Journal of Emerging Trends & Technology in Computer Science (IJETTCS), Vol 4, Issue 3, May-June 2015.
4. Steven Holzner, "Visual Basic 6 Black Book". Publisher: The Coriolis Group
5. LIEW VOON KIONG, "Visual Basic 6.0 Made Easy".