E-BALLOT

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Abstract. This project is a customized electronic Ballot System used for Student Council elections of Waljat College of Applied Sciences (can be modified to use in other voting processes).The project enables a fair and unbiased voting system with features including voter identification and authentication, voting and recording of votes and vote counting. It makes use of simple cost-effective hardware to provide a portable and highly reliable voting machine.

Keyword. Arduino Mega, SD module, Digital display, Arduino Barcode scanner

INTRODUCTION

Election is a decision making process to elect an individual by casting votes, to represent a group or a public office. Various government and private establishments use this process to give the population the best services. From ancient times this process has been used to select a public figure. It helps in selecting the most apt candidate, and helps in keeping a check on them on a regular basis.

The objective of voting is to allow voters to exercise their right to express their choices regarding specific issues, pieces of legislation, citizen initiatives, constitutional amendments, recalls and/or to choose their representatives. Technology plays a major role in assisting the voters to cast their votes.

Motivation: During the recent elections in our college we perceived the complications and difficulties faced by our Faculty members. Colossal amount of time wasted – ensuring voter identification, counting of votes and publication. The method followed was the "PAPER BALLOT SYSTEM". Having witnessed the situation we started working to simplify the System.

In our project we have taken up the topic of our own college's Student Council electoral process consisting of 5 departments and 11 other categories. Until the year 2013, we have used only a paper ballot system and a physical counting of votes to elect the appropriate candidate for each post. Our project proposes an easier, less time consuming automated state of art technology for the betterment of this process.

METHODOLOGY
- The project makes use of Arduino Mega 2560 microcontroller, SD card shield and a digital display for ease of user.
- A voter who wants to vote starts by scanning his id card for which we have made use of an android based barcode scanner.

- The voter information is stored in the SD card.
- E-Ballot allows the voter to vote for various candidates for numerous categories, which are displayed on a digital display screen.
- Displaying the photograph of the candidates in the screen makes it more convenient for the voters to identify the candidates and cast their votes.
- Based on the user's ID card information his department is selected and he is directed to vote for the candidate of his choice.
- When the vote is cast for one category, the display changes to the next.
- At the end of the voting session all data is stored on a database on the SD card**.**
- We have an automated counting of the votes which will be saved in an excel format in the SD card. All the details of the voting (ie the candidate leading at a given point of time, the number of casted votes, etc) can be gathered from this excel sheet
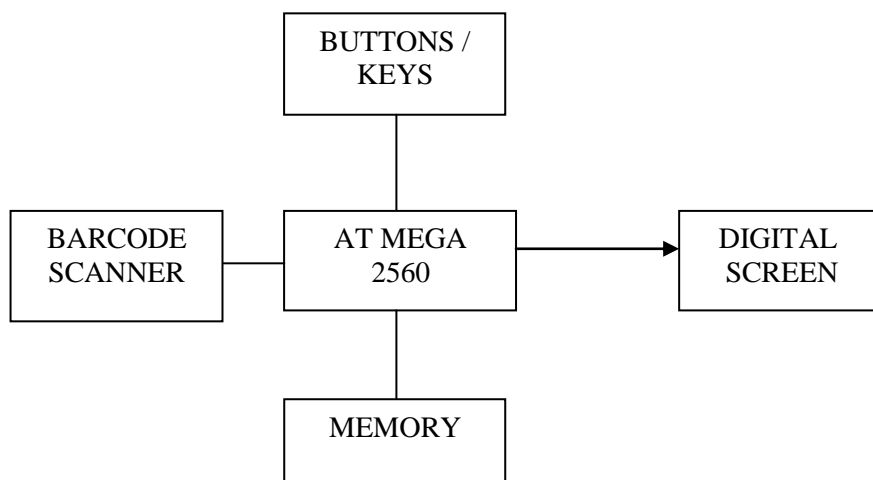
Figure 1. Block diagram

Figure 2. Voting machine

RESULTS AND DISCUSSION

E-BALLOT is an improvement in the customary system by giving way for *more than one category* to vote and provides full privacy and secrecy for the user. It is a compact device that is easily portable and is one of the first of its kind.

This project can be implemented in small organizational elections and be extended right up to democratic nation –level voting.
It fixes all the disadvantages of time consumption and ensures minimal time for the organizers.
It reduces the amount of paper spent and the amount, cost and energy spent for security.
It is a small portable device. On power up, the display opens up to reveal itself. The ID card holder and mobile phone holder are smartly concealed and can be manually opened.
Overall it is a highly efficient, innovative and compact(hence portable) machine.

CONCLUSION

Election of a candidate by fair means can be done using our project. Even though this is a customized voting system for electing student council members in Waljat Colleges of Applied Sciences, it can be modified to be used in other voting processes.

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