Electronic Voting System using Fingerprint Scanning
INTRODUCTION

We are presenting a new Electronic Voting System with Fingerprint scanning that will overcome the drawbacks of the current voting methods that are used in India.

Currently, the voting system in India is inefficient and vulnerable to outer threats, the only thing that the security checks is a voter ID card, which these days are faked by many. It is slow and counting the votes manually can take a long time.

In some rural areas, where there is not much security available, polling booths are captured and often most ballots are destroyed.

So, the development of such a system which is online will cut out these possibilities and many votes can be saved through this system, even if such incidents occur.

TEAM STRUCTURE

<table>
<thead>
<tr>
<th>Name</th>
<th>Roll No.</th>
<th>Individual Responsibilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Achal Thakur</td>
<td>B10040</td>
<td>Methodology, Interface Design, Usability, Presentation</td>
</tr>
<tr>
<td>Shivansh Agarwal</td>
<td>B10031</td>
<td>Introduction, Future use, Presentation</td>
</tr>
<tr>
<td>Manav Agarwal</td>
<td>B10022</td>
<td>Key Findings</td>
</tr>
<tr>
<td>Gaurav Chaudhary</td>
<td>B10012</td>
<td>Conclusion</td>
</tr>
</tbody>
</table>

METHODOLOGY

Electronic Voting System using Fingerprint scanning

A new voting system can be implemented, using login which requires a fingerprint scan and the name of the candidate. It is a web application, which supports all browsers.

Valid voters will have their name, fingerprint, and other details in the government database in each state or district as seen fit. Therefore a fingerprint scanner will ensure that only legitimate voters can cast their vote. See Figure 1.
This application also ensures that the voting is anonymous, after the login, each user is given a unique and random id which will have no ties to the user’s details, therefore there is no way to find out which user voted for which candidate.

A simple, user friendly interface in used, which will help even the illiterate voters. The focus in more on the visual representation of data, and no unnecessary links are used, the interface is made as simple as possible with only basic functionalities.
There are just 3 basic steps to complete the voting:

(i) Scan your fingerprint and the application will match it with the database at the server. If the match is successful the user is automatically switched to the next voting window.

(ii) The voting screen has all the logos and names of candidates standing for the post, the user just needs to press the vote link next to his/her favorite candidate. If any user doesn’t feel like picking any candidate for any reason, then he/she may directly logout using the logout option.

(iii) Auto-logout feature takes care of the rest after a vote has been placed and the main login screen is restored.

No information is stored at the host computer, so it helps in eliminating any possibility of changing the votes. No unauthorized users can get passed the login screen.
KEY FINDINGS

This system provides a better data management, all the information regarding the candidates is shown clearly on the web interface. Votes to respective candidates can be counted easily and they are safely stored.

Anonymous voting is still maintained which is preferred by most of the people.

FUTURE SCOPE

This system can be implemented in a few years, with recent development in technology, a fingerprint scanner is neither too expensive nor too complicated to use on daily basis. The internet connectivity has improved drastically and it is easy to create and maintain such an interface.

Unique Identification Numbers (aadhar cards) have already been introduced in India that contains an individual’s fingerprints and iris scan. Soon every Indian citizen can have a similar identity card and all the government will have all the necessary information required to bring such a system in play.

USABILITY ISSUES

To ensure that the Interface is designed properly and to tackle all the usability issues the GUIDELINES strategy is used.

Key Points:

(i) **Text Alternatives**: Provide text alternatives for any non-text content so that it can be changed into other forms people need, such as large print, speech, symbols or simpler language

(ii) **Adaptable**: Create content that can be presented in different ways (for example simpler layout) without losing information or structure.

(iii) **Distinguishable**: Make it easier for users to see and hear content including separating foreground from background.

(iv) **Keyboard Accessible**: Make all functionality available from a keyboard.

(v) **Enough Time**: Provide users enough time to read and use content.
CONCLUSION

In total, this system overcomes most of the problems faced during the voting period by the paper ballot system.

The efficiency of this system depends upon the web interface, its usability. This will surely ensure a safer voting method which is very much what is required for a healthy growth of a developing nation like ours.