



Biometric Voting Management System

Problem Description

- Post-election disputes disrupt a lot of daily activities.
- There are null and void votes that makes some votes not to be counted.
- Current voting systems can be easily tampered with

Solution Description

- A prototype that handles the whole election process.
- Minimizes the chances of null and void votes to almost 0.
- High voter authentication.

Potential Impact

- Reduced chances of post-election disputes.
- Ensures that the elected candidates are truly the ones the majority of the public wanted.

Device/System Design

Part I: Hardware Design

Design Feature 1: Sensors (Fingerprint, RFID), these send their inputs to the control unit.

Design Feature 2: Control Unit(Arduino), it manipulates the inputs, and processes them. Later on feeds information to the voting user interface.

Design Feature 3: Camera (Pc Camera), conducts face recognition and ensures/verifies that there is only 1 required voter.

Part II: Software Design

Design Feature 1: User Interface, that gets information from the control unit and the database and then displays the information accordingly.

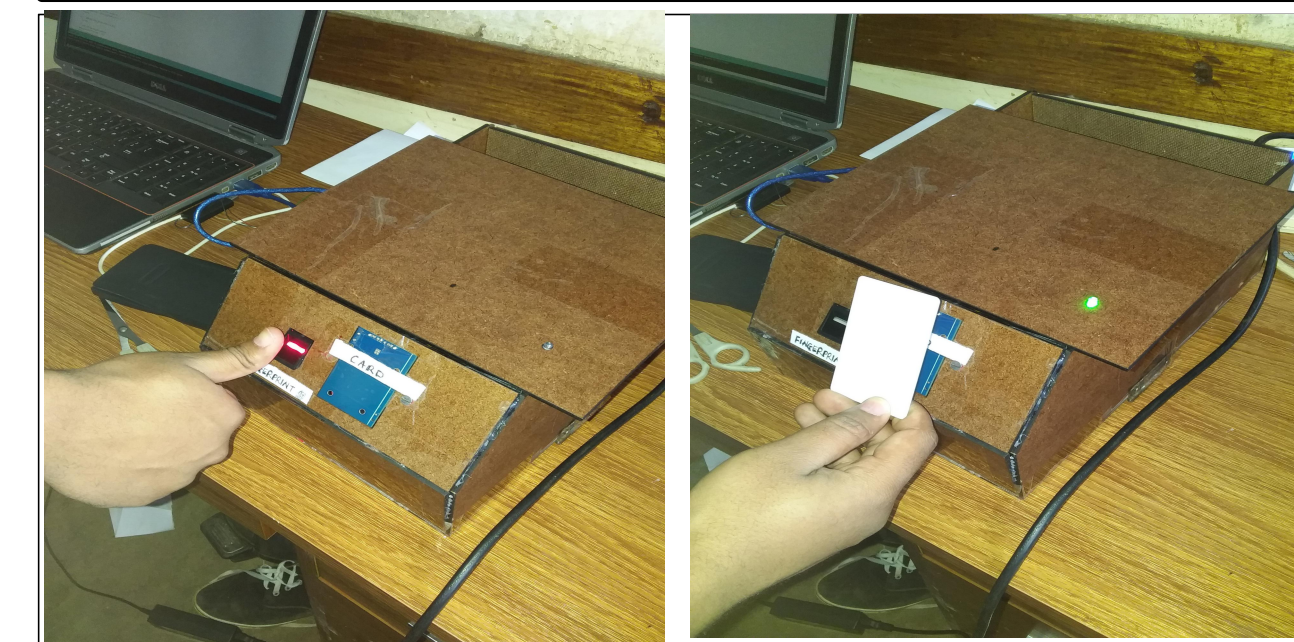
Design Feature 2: Database, contains voter information of voters and keeps information of the casted votes.

Design Feature 3: Voice feature for direction of voter, it comes in three languages (Chichewa, Chitumbuka and English) so that it is to improve its user-friendliness.

Principle of Operation

- A user (voter), taps his/her ID card on the RFID sensor and the data of the voter is shown on the screen.
- The system does face recognition, and ensures that there is only the required voter and no other.
- After the voter is verified he/she will be allowed to vote.
- Lastly the system will print the ballot paper which will be cast in the ballot box

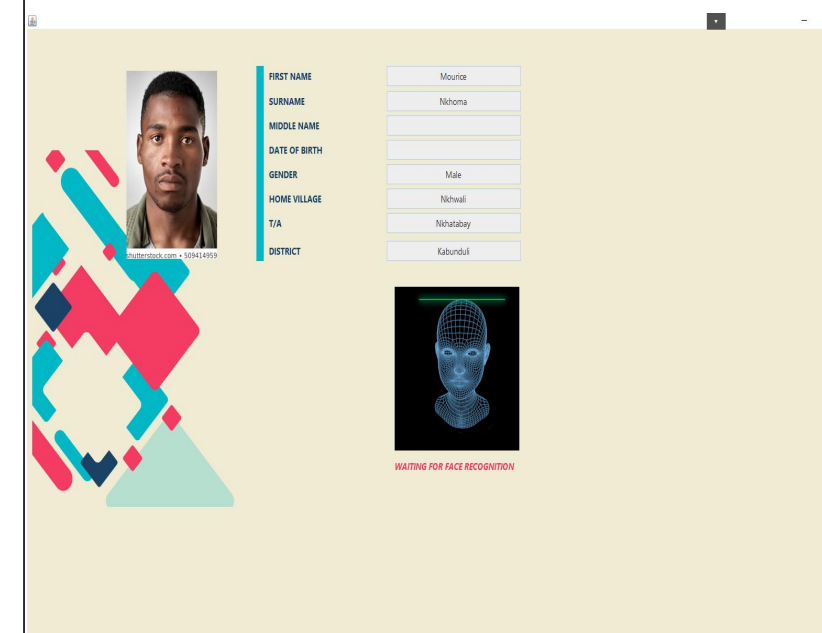
Testing Data



Picture 1: Hardware



Picture 2 : Software



Future Design Plans

- Have a section that helps the disabled people to vote with little assistance so that they are not influenced to vote for anyone but make their own choice e.g. the blind.