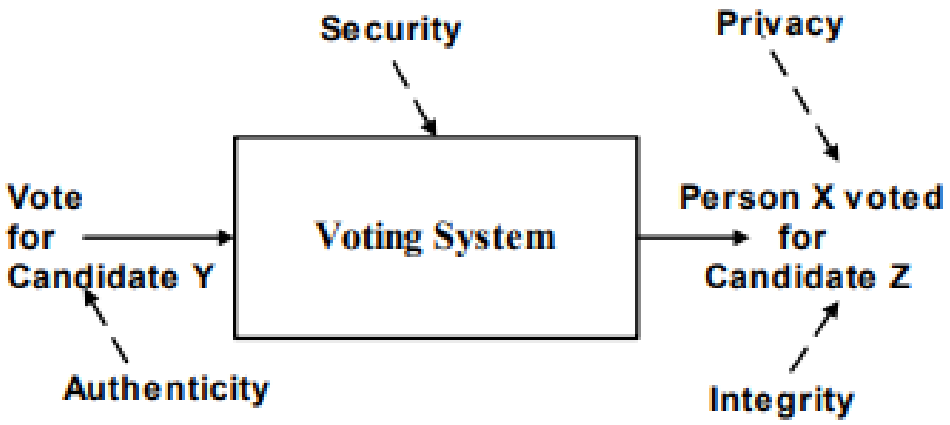
Project Design Phase - Part 2

Requirement Analysis / Flow Charts

TEAM ID	NM2023TMID04400
PROJECT NAME	BIOMETRIC SECURITY SYSTEM FOR VOTING PLATFORM

Functional Requirements :



1. Mobility:

- The voter should not be restricted to cast his ballot at a single poll-site at his home precinct.
- Realistic: He shall be able to vote from any poll-site within the nation.

- Unrealistic/Expensive: He shall be able to vote from any county-controlled kiosk (situated at public places such as banks, shopping malls, etc.) within the nation. (Unrealistic because of logistical and cost issues).

- Infeasible: He shall be able to vote from virtually anywhere using an Internet connection. (Infeasible both for technical security issues as well as social science issues).

2. Convenience:

- The system shall allow the voters to cast their votes quickly, in one session, and should not require many special skills or intimidate the voter (to ensure Equality of Access to Voters).

3. User-Interface:

- The system shall provide an easy-to-use user-interface. Also, it shall not disadvantage any candidate while displaying the choices (e.g., by requiring the user to scroll down to see the last few choices).

4. Transparency:

- Voters should be able to possess a general knowledge and understanding of the voting process.

5. Flexibility:

- The system shall be flexible in that it allows a variety of ballot question formats including open-ended questions (e.g. Write-in candidates and survey questions).

6. Support for Disabled Voters:

- The system shall cater to the needs of physically challenged voters (e.g. blind voters).

7. Accuracy:

- The system shall record and count all the votes and shall do so correctly.

8. Eligibility:

- Only authorized voters, who are registered, should be able to vote.

9. Uniqueness:

- No voter should be able to vote more than once.

10. Auditability:

- It should be possible to verify that all votes have been correctly accounted for in the final election tally, and there should be reliable and demonstrably authentic election records, in terms of physical, permanent audit trail (which should not reveal the user's identity in any manner).

11. Voter Confirmation:

- The voter shall be able to confirm clearly how his vote is being cast, and shall be given a chance to modify his vote before he commits it.

12. To issue Receipt or not?

- The system may issue a receipt to the voter if and only if it can be ensured that vote-coercion and vote-selling are prevented, so that he may verify his vote at any time and also contend, if necessary.

13. No Over-voting:

- The voter shall be prevented from choosing more than one candidate / answer.

14. Under-voting:

- The voter may receive a warning of not voting, but the system must not prevent undervoting.

15. Provisional Ballots:

- The voter shall be able to vote with a provisional (electronic) ballot if he has some registration problems, which could be counted if verified by the authorities later.

16. Documentation and Assurance:

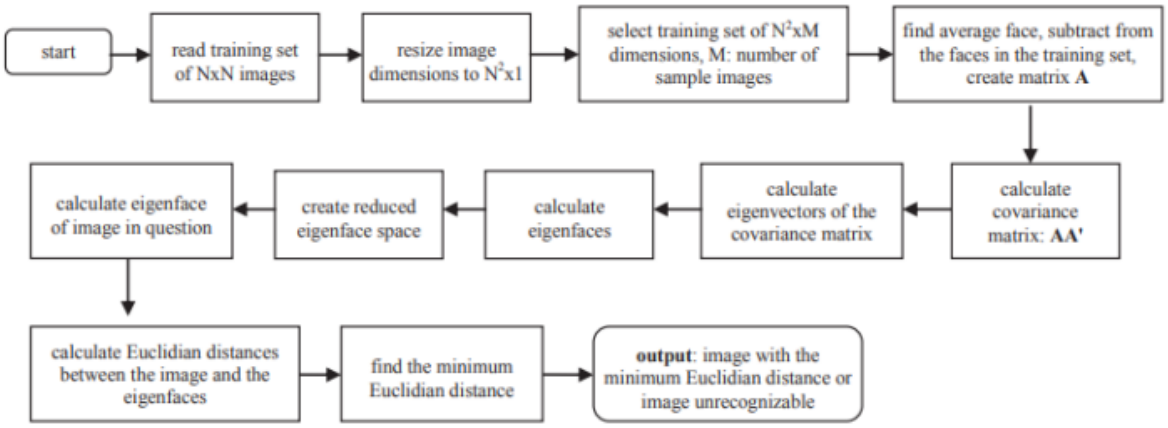
- The design, implementation, and testing procedures must be well documented so that the voter-confidence in the election process is ensured.

17. Cost-effectiveness:

- Election systems should be affordable and efficient.

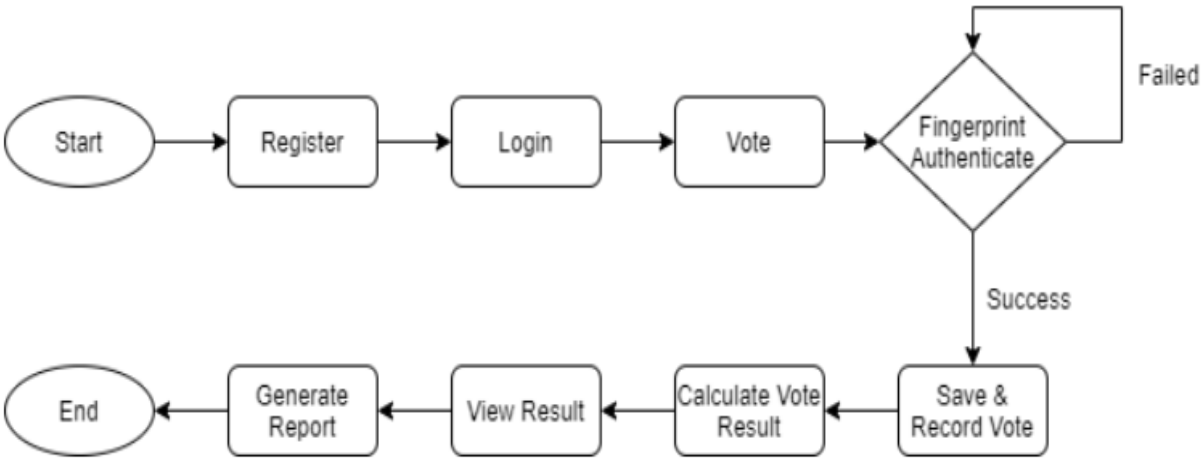
Face Recognition Flow Charts :

- The system can recognize a person by the facial image. In this technique, the facial image will be captured by the camera and matching with sample in database. The image captured can be highly noisy by affect by many things.
- such as the face are required to proper centered, the light, shadow and scale of face are sensitive.



Overview Flow Chart :

- The fingerprint e-voting system will be designed for this project. The system is planned and designed to developed as mobile android application. The design of the application will discuss in this sub-chapter.



- The flow of the system should start on login or register of user. After that, a home page will be displayed, the user can select what to perform in this page.
- If user want to join a vote event, the user needs to perform a fingerprint authentication before submitting the vote.
- If the authentication is successful, the vote of user will be record and save into database. When the vote event closed, the system will calculate the vote result and generate a report.