## Final Year Project Proposal

**Project Title**

Online Voting System Using Face Recognition (Web Application)

**Names and IDs of Students**

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**Project Advisor (Name, Email Address)**

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**Nomination of 5 Evaluation Committee members by the advisor (FYP Committee will select two of them)**

Farrukh Liaqat

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**External Collaboration/Funding (if any) + Paid or Unpaid (Confirmed or Expected)**

No

**Project Description (Brief Introduction)**

With the conceptualization of e-Voting, the voting process will be revolutionized. To date, voting has been conducted either manually through ballot papers or using electronic voting machines (EVMs) that are based on Direct Response Electronic (DRE) or Identical Ballot Boxes. For multinational companies and organizations, a more digitalized and convenient method of voting has been in demand.

In order to overcome the weaknesses of the traditional voting system, we have designed the WEB Application Voting System Using Face Recognition. The proposed system will definitely protect the identity and credentials of the voters and it also encourages everyone to vote for their favourite candidate. This system will also increase the number of votes and give better and more accurate results compared to the traditional voting system. Private voting polls can also be created. For face recognition, we will be using Microsoft Cognitive Services Face API. The Azure Face service provides AI algorithms that detect, recognize, and analyze human faces in images. Its features include face detection that perceives facial features and attributes in an image, and identification of a person by matching to your private repository or via photo ID.

**Major Features/Requirements/Objectives (Tentative)**

The system comprises 2 major modules with their sub-modules as follows:

* **Admin:**
* **Login:**
* The admin will have to login into the system.
* **Manage User**:
  + **Pending**:
* The admin can approve or disapprove profiles which are newly created.
  + **All**:
* They can view all the user listings and details.
* **Manage Poll**:
* They can add, update and delete a poll.
* Candidates can be from the user list or a person not registered from this app.
* They can also add a poll as private which can be accessed only by selected users, where a security code is generated and an email is sent to them**.**
* **View Poll**:
* Current: They can view the list of the polls that are currently going on.
* Upcoming: They can view the list of the polls that will start in the coming days.
* Expired: They can view the list of polls that are completed.
* They can view the candidate scoring.
* They can view the list of voters and candidates they voted for.
* **User:**
* **Register**:
* The user would need to register first to log in**.**
* **Login**:
* Initial login will be done with email & password until the profile is not approved. Biometric Authentication will be used to unlock the app.
* **Profile**:
* They can view their profile and update the details.
* **Home**:
* They can check out the list of ongoing current polls, the list of candidates and the last day to vote.
* **Poll list**
  + Current: They can view the list of current polls that are open. If they have voted already, they will not be allowed to vote again but they can see their voted party/candidate.
  + Expired: They can view the list of all the polls that are completed. They can check the winner of that poll and the score of all the candidates/parties.
  + If the poll is private, the user will need to enter the security code to see the poll details and cast a vote.
  + When they will cast the vote, face authentication will be done.

1. **Scope of the Project/Proposed System**

The proposed system is an online voting system that utilizes face recognition technology to authenticate voters and prevent fraudulent voting. The scope of the project includes the followng tasks:

1.Design and development of a user-friendly web-based interface for the online voting system.

2.Integration of face recognition technology for voter authentication.

3.Design and development of a secure database to store voter information and voting records.

4.Implementation of security measures to prevent hacking, tampering, or unauthorized access to the system.

5.Testing and validation of the system to ensure its accuracy, reliability, and usability.

6.Deployment of the system to a cloud-based server or a dedicated server for public use.

The online voting system using face recognition will enable voters to cast their votes remotely from anywhere in the world, without the need to physically visit a polling station. The system will ensure the integrity of the voting process and prevent any attempts to manipulate the election results. The proposed system will provide an efficient and secure alternative to traditional voting methods, making the voting process more accessible and convenient for citizens.

**Tools/Technologies (Tentative Listing)**

1. Programming Languages:

The system may be developed using programming languages Node JS,React,

1. Face Recognition Technology:

The system will require face recognition technology to authenticate voters. that can be used for face recognition.

1. Database Management System:

A secure database management system Mongo DB will be used to store voter information and voting records.

1. Security Measures:

The system will require various security measures such as encryption, secure authentication, and firewalls to prevent hacking, tampering, or unauthorized access.

1. Testing Frameworks:

The system will require testing frameworks such as Selenium, Pytest, or Unittest to ensure the accuracy, reliability, and usability of the system.

1. Hardware:

The system will require high-performance, powerful CPU to handle the load of processing facial recognition algorithms and good internet connection.