

## 1. PROBLEM STATEMENT

Students will be looking at the problem of voting and its underlying considerations in this term project. Students will be using blockchain technology (Ethereum platform) to improve transparency in the electoral system while at the same time ensuring that the necessary privacy and anonymity is maintained.

1. There is usually a lot of confusion in the minds of the masses whether their vote went to the candidate they intended, this was evident when paper ballot was replaced with EVMs (Electronic Voting Machines) and some political parties tried leverage this mass hysteria. With the blockchain voting mechanism the voter can check who he/she voted for, thus solving the confusion and increasing transparency in the electoral system.
2. Voters need to be present in their hometown at the time of voting and wait in long lines at the polling booths to cast their vote. With blockchain technology, voters will be able to vote from any part of the world without from the comfort of their homes.
3. As the blockchain technology provides a decentralized immutable ledger no one can make changes to the votes after they have been cast.

## 2. System Architecture

System Architecture of our Senate Election System will be as follows :

### Users:

- Admin : Senate Election Commissioner, he will be responsible for deploying contract and will be doing so using command line interface
- Voters : Students of the College, and they will be interacting with the system using a webpage where they can view the list of candidates and cast their vote.

### Blockchain Technology:

**Ethereum Blockchain Network :** Students can choose Ethereum

Network

## 3. Feature list

Following are some of the features of Voting System :

1. Easy to use web interface for voters
2. Authentication of voters using LDAP verification
3. Blockchain Technology for transparency and unmodifiable record of votes cast.
4. Fast transaction speed for voting and easily scalable application.

## 4. Milestones

Following are the first priority tasks to develop the project :

### Basic Smart Contract for Voting System

Students first have to develop a smart contract that implements the basic functionality of the voting system.

## **Voters Registration and Authentication**

Students will automatically be enrolled using LDAP. An authorization key will be sent to them via email which will be used for authentication by our app.

## **Web Interface**

Students will develop a Web Interface for Voters so that they can easily authenticate themselves and cast their votes. They can check whom they voted for and also check election results once the voting phase is over.

## **5. DISCLAIMER**

Before doing anything “extra” (which might fetch bonus marks), first, complete the basic expectations from your implementation. Software tools are expected to display their results in a user-friendly manner; a user would never like to use a tool that simply spits out a bunch of numbers. So, display the results from your tool suitably possibly in a good web-based UI or the terminal in verbose user-friendly manner. Discussion is healthy, copying is not. You are encouraged to discuss the projects with your peers, but you must implement the projects by yourself. If any two groups are found with "similar" pieces of code, both of them will be failed (with no concern as to who was the source). Copying from internet sources or open-source github repositories must be refrained from. TAs may conduct a code-review after every milestone is reached or 15 days (which ever is earlier) so please be careful about plagiarism.