

Report on project : E-Vote and E-Petition

-Varul Srivastava

Vison

The main focus of this project is the decentralisation and location independence of important procedures like elections and petitions for reforms and complaints.

Motivation:

E-Vote

Attending the 2019 student parliament elections of the college, we realised the inefficiency of the procedure

It was time consuming for organisers as they had to sit in H-105 till elections were held (2-5 hrs) and for voters, they had to go to 105 to cast vote, which despite being provided 2-4 hours of time to attend, was inconvenient.

We thus thought it a solution to both these problems if a location independent, anonymous and secure way of carrying elections was used.

This led our attention to the block-chain based approach to elections, which solves the problems without compromising the security

E-Petition

Again, during our first year, we faced multiple minor issues, and had in mind few ideas to better our college experience (E.g Movie screening once a week).

But such ideas didnot get a platform to be addressed at, not that the MPs were inefficient, but the very nature of manual parliament is that it cannot touch every voter.

We thus thought of an online platform where students can post petitions, and other colleagues and friends can sign/upvote them to show that the idea is supported by a large portion of the college community.

For practical reasons, we felt that this portal can be regulated by a group of people to maintain content quality, and the parliament can have a source where they can not only listen to the problems of the voters, but can choose which one is more immediate, seeing the number of upvotes.

Code Implementation and App features

Code

The app uses react-js and crypto-js. The blockchain implementation has been done from scratch. The proof-of work technique makes it difficult to mine votes even with reasonable resources.

The code consists of few container classes, all implemented from scratch and the App.js which contains the app UI. The front-end is not so good looking yet, because of given the 2 day span, it was less important to do than the backend and the blockChain (still, apologies for the UI). Furthermore, we have plans to make it better in time.

App Features

The E-Vote app is a location independent way of voting, and the anonymity of who votes whom is at its best, as we don't store the voter, just a block denoting his/her vote.

It provides anonymity from all from of authorities, even the election regulators.

E-Petition as a platform to make requests, is very good, as it does not disclose the user who has filed the petition. It just needs a content regulating body, but other than that, it also is a fully decentralised portal. The voter's and the complainee's anonymity excludes biases towards any group (if exists).

App Usage

The idea of E-Vote can be implemented by a group of organisers from any location.

The users of E-Vote can access the website from any device(phones, PCs)

The E-Petition will require a regulating authority, and the content data will be open for everyone equally.

It can also be regulated from any location, and can be used from any device.

The implementation, being easy was one of the motivations for these solutions.

For testing purposes we have created dummy accounts that can be found in ./app/src/DataSet.js. Please use them to test the app. We plan to integrate it with CAS for real-time deployment.

To use the app please read the README.md on github repository.

Further innovations

The idea of E-Vote can be implemented by a group of organisers from any location.

The users of E-Vote can access the website from any device(phones, PCs)

The E-Petition will require a regulating authority, and the content data will be open for everyone equally.

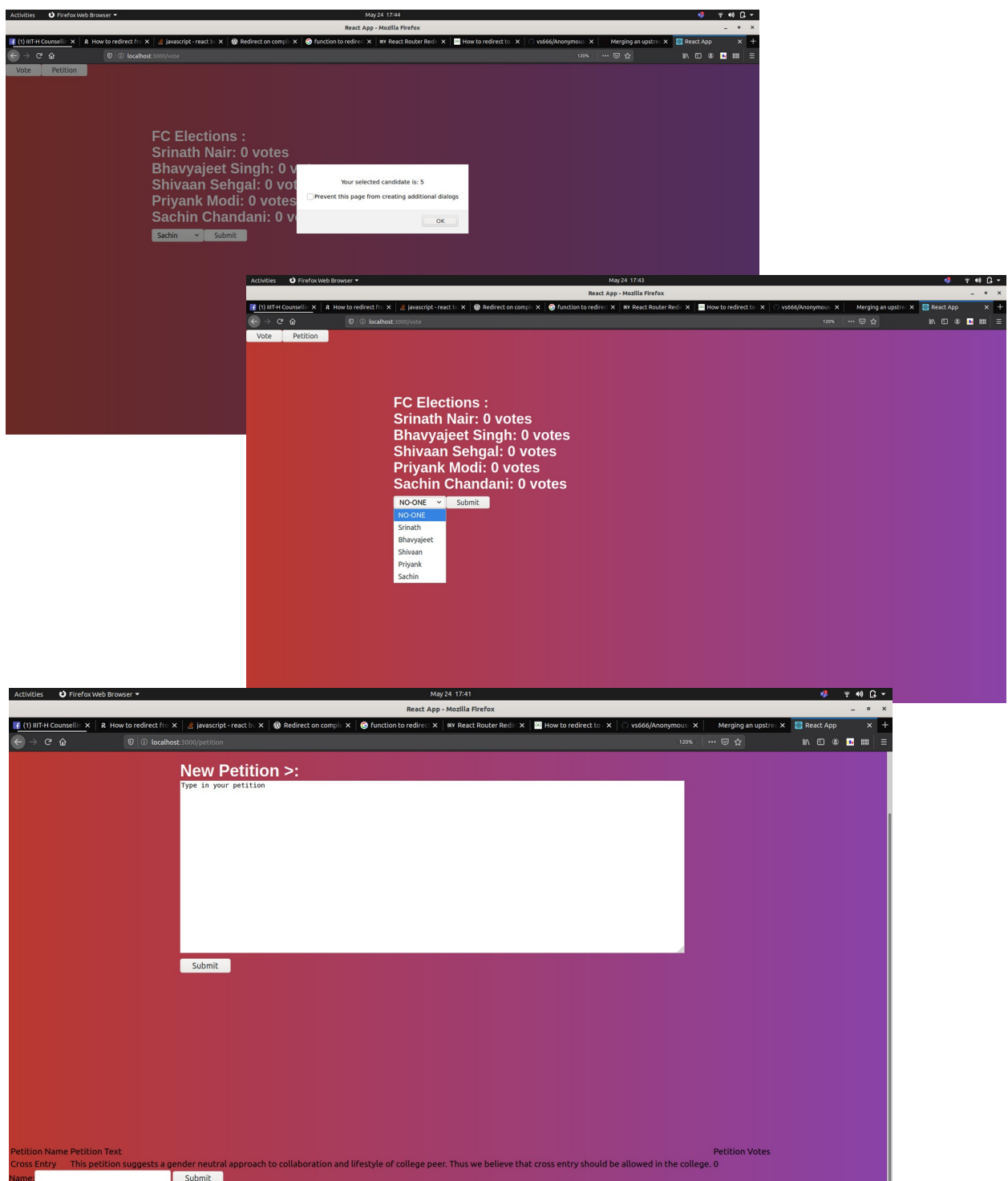
It can also be regulated from any location, and can be used from any device.

The implementation, being easy was one of the motivations for these solutions.

App images

E-vote

In the E-Petition, the text area is to type in and file the petition and the text box below is to select the name of a petition to upvote/sign.



Username and password authentication.

