

# **DIGITAL VOTING & VOTER IDENTIFICATION** **USING BLOCKCHAIN TECHNOLOGY**

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## **MOTIVATION**

The traditional process of voting is prone to riggedness, and use of unfair means, as the electoral voting transactions are never made public, the whole process is not transparent. The best way to prevent rigged elections is to make the whole process **transparent**, yet **immutable to undesired changes**. The best solution for this is Blockchain technology.

## **INTRODUCTION: THE BLOCKCHAIN TECHNOLOGY**

Blockchain technology offers a **decentralized, distributed ledger** for storing the transactions (in our case, votes) and is controlled by a network of nodes, all having their own copy of the blockchain. This distributed ledger is ever-increasing, with blocks being appended to the blockchain every time new transactions need to be appended to the database.

The database is **public** yet **immutable to attacks** that intend to alter the transactions recorded in the blocks. The blockchain technology forms the backbone of the cryptocurrencies like Bitcoin and Ethereum.

## **OBJECTIVES**

The project aims at:

- (1) Allowing the voters to cast their votes from **anywhere, anytime**, using a mobile-app, in this case, referred to as **DApp (Decentralised Application)**, to facilitate the process of voting, also increasing the overall voting percentage, as many of the voters are unable to physically report to the polling booths in case of physical disability, or tense situations prevailing in the area, in that case they can easily cast votes from the comfort of their homes using the DApp, and lastly, cutting-off the huge costs incurred on management of poll-booths & transportation of voters to the polling booths.
- (2) Maintaining a proper database, i.e. electoral rolls of the voters that could also serve as **digital identity** of the voters.

## **IMPLEMENTATION DETAILS**

The project is intended to be developed in **Java** (tentatively), however the smart contracts may be coded using **Solidity**, a programming language specifically meant for creating smart contracts. The blockchain will be developed on **Ethereum platform** preferably.

## **HARDWARE REQUIREMENTS**

None as such.