Problem Statement: Online Voting System using Smart Contracts

Overview:

Traditional voting systems often suffer from issues such as lack of transparency, centralized control, and vulnerability to tampering or manipulation. With the advent of blockchain technology, there is an opportunity to revolutionize voting systems by implementing a decentralized, transparent, and secure online voting platform using smart contracts.

Objective:

Design and implement an Online Voting System using Ethereum smart contracts to ensure transparency, security, and immutability of votes. This system should allow registered voters to cast their votes for candidates during a specified voting period. The results should be computed automatically and stored on the blockchain for public verification.

Requirements:

1. The system should allow an administrator to:
   - Register voters before the election.
   - Register candidates.
   - Set the voting start and end time.

2. Voters should be able to:
   - Vote only once.
   - Vote only during the active voting period.

3. The system should:
   - Prevent double voting.

- Automatically count votes after the voting period ends.
- Allow the public to view the final results on the blockchain.

Constraints:

- Only registered voters can vote.
- Only the admin can register voters and candidates.
- Voting can only occur during the specified period.
- All data should be stored immutably on the blockchain.

Expected Outcome:

A secure, decentralized voting system where transparency and accuracy are guaranteed through the use of Ethereum smart contracts. The system should demonstrate key blockchain features such as decentralization, immutability, and trustlessness.