PDA College of Engineering

## Department of Computer Science and Engineering

SYNOPSIS OF THE PROPOSED MINIPROJECT (22CSMP56)

ON

# Blockchain-Based E-Voting System

Submitted by

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## Under the Guidance of

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**Academic Year : 2025-26**

##### Department Vision Mission Statement

##### Vision

To become a premier department in Computer education, research and to prepare highly competent IT professionals to serve industry and society at local and global levels.

##### Mission

* To impart high quality professional education to become a leader in Computer Science and Engineering.
* To achieve excellence in research for contributing to the development of the society.
* To inculcate professional and ethical behaviour to serve the industry

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## Title

**Blockchain-Based E-Voting System**

## Introduction

Traditional voting systems face challenges such as voter fraud, tampering, and lack of transparency. With the rise of digital governance, there is a growing need for a secure and transparent online voting mechanism that maintains the anonymity and integrity of each vote.

The Blockchain-Based E-Voting System leverages decentralized ledger technology to build a tamper-proof, transparent, and efficient voting process. Each vote is recorded as a transaction on a blockchain, ensuring immutability and preventing manipulation. This system promotes trust, accessibility, and scalability for institutional or governmental elections.

## Problem Statement

* Current electronic and paper-based voting systems suffer from:
* Risk of data manipulation or hacking.
* Lack of transparency in vote counting.
* High operational cost and inefficiency in verification.
* Difficulty in maintaining voter anonymity and data integrity.
* A blockchain-powered solution ensures transparency, security, and voter confidence.

## Objectives

* 1. To design a decentralized e-voting platform using blockchain.
* 2. To ensure data integrity, voter anonymity, and transparency in elections.
* 3. To prevent double voting and unauthorized access.
* 4. To demonstrate the practical application of blockchain technology in governance.

## Implementation Tools

* Programming Languages: JavaScript, Python
* Blockchain Framework: Ethereum / Hyperledger Fabric
* Smart Contracts: Solidity
* Database: IPFS / MongoDB
* Frontend: React.js / HTML / CSS
* Security: SHA-256 / RSA Encryption

### ● Programming Language

* Python