Exercise

Problem Statement:

Write Pseudo code first

Context:
 In traditional digital voting systems, a central authority manages candidate registration, vote collection, and result tabulation. This centralized control raises concerns around transparency, vote tampering, and trust in the system. Blockchain technology, with its inherent decentralization and immutability, presents an opportunity to redesign voting mechanisms in a more transparent, trustless, and verifiable way.

Problem:
Design and implement a minimal decentralized voting smart contract that allows:

- A contract owner to add candidates,

- Users to vote **only once**, and

- Anyone to retrieve candidate details and vote counts.

This must be done:

- Using **Solidity** to structure smart contract logic,

- Ensuring secure access control,

- Validating user actions with input checks (`require`),

- Emitting **events** for off-chain transparency, and

- Understanding **gas costs** and deployment implications.