Online Voting: Redefining Security, Privacy, and Accessibility

This presentation explores the shortcomings of existing online voting systems and outlines a revolutionary model designed to address security, privacy, and accessibility concerns.

Current Online Voting Systems: Vulnerabilities and Flaws

Security Concerns

Current systems are susceptible to hacking and data breaches, compromising voter data and undermining confidence.

Privacy Issues

Existing models often lack robust measures to protect voter privacy , leaving individuals vulnerable to identification and tracking.

Fraud Vulnerability

Limited safeguards against fraud activities like multiple voting or manipulation raise serious concerns about election integrity.

Security Risks: Hacking and Data Breaches

1 **Cyberattacks**

Malicious actors can exploit vulnerabilities in online systems to manipulate vote counts or steal sensitive voter information.

2 **Data Leaks**

Data breaches can expose voter identities, voting preferences, and other sensitive information, avoiding privacy and trust.

3 **System Manipulation**

Hackers can attempt to alter election results by injecting fraud votes, compromising the integrity of the voting .

Voter Privacy and Concerns

Voter Identification

Some systems require personal identification, raising concerns about voter privacy and potential

Tracking and Profile Identification

Data collected during voting can be used for tracking and profiling voters, leading to potential misuse and privacy violations.

Lack of Confidentiality

Limited safeguards against unauthorized access and disclosure of voting data leave voters vulnerable to privacy risks.

Accessibility Challenges for Diverse Populations

Disability Access

Many systems lack features and accommodations for individuals with disabilities, hiding their participation.

Language Barriers

Platforms may not be available in multiple languages, excluding voters who speak languages other than the dominant one.

Digital Literacy

Individuals with limited digital literacy may struggle to navigate and use complex online voting systems.

Enhanced Security Features: Safeguards Against Hacking

1

End-to-End Encryption

Ensuring that all communication between voters and the system is encrypted, safeguarding sensitive data.

2

Multi-factor Authentication

Requiring multiple forms of verification to prevent unauthorized access and ensure voter identity verification.

3

Real-Time Election Results

Enables timely and accurate updates on vote counts, enhancing transparency and trust.

4

Election Process Workflow

Provides a structured and well-defined framework for managing all stages of the election process.

Design Patterns

Strategy

Defines a family of algorithms, encapsulates each one, and makes them interchangeable.

Chain of Responsibility

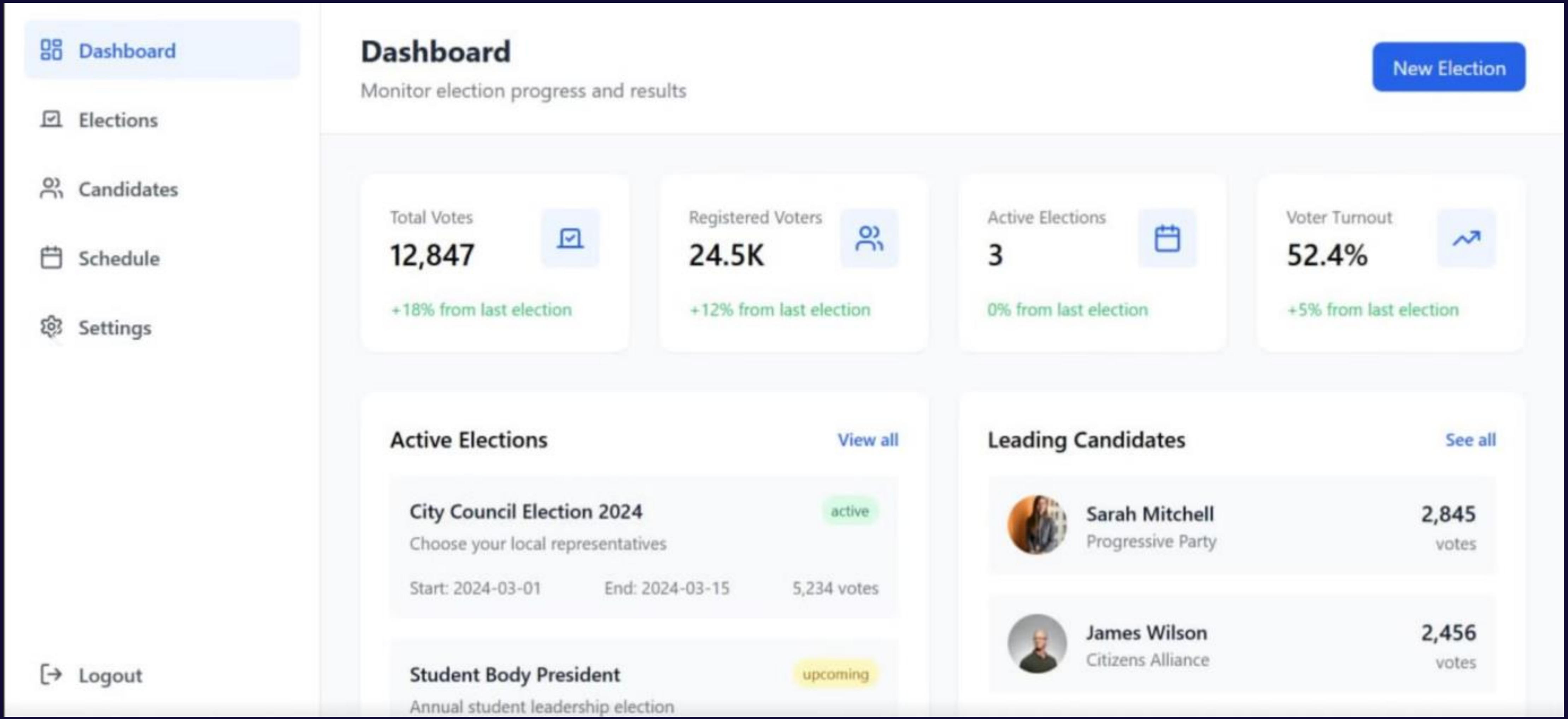
Avoids coupling the sender of a request to its receiver by giving multiple objects a chance to handle the request.

Proxy

Provides a surrogate or placeholder for another object to control access to it.

Decorator

Dynamically adds responsibilities to an object. A flexible alternative to subclassing for extending functionality.



Dashboard

Monitor election progress and results

Total Votes	Registered Voters	Active Elections	Voter Turnout
12,847	24.5K	3	52.4%
+18% from last election	+12% from last election	0% from last election	+5% from last election

Active Elections

View all

City Council Election 2024 active

Choose your local representatives

Start: 2024-03-01 End: 2024-03-15 5,234 votes

Student Body President upcoming

Annual student leadership election

Leading Candidates

See all

Sarah Mitchell	Progressive Party	2,845 votes
James Wilson	Citizens Alliance	2,456 votes