PERFORMANCE & FINAL SUBMISSION PHASE

Date	O4 November 2023
Team ID	NM2023TMID02239
Project Name	Electronic Voting Machine
Maximum Mark	4 Marks

MODEL PERFORMANCE METRICS:

When assessing the performance of an electronic voting machine (EVM), several key metrics can be used to evaluate its effectiveness, accuracy, security, and usability. Here are some model performance metrics for an EVM:

1. Accuracy:

   - Vote Accuracy: The percentage of votes accurately recorded and counted without errors.

   - Authentication Accuracy: The percentage of eligible voters correctly authenticated by the system.

2. Integrity:

   - Data Integrity: Ensuring that the stored and transmitted data remains unchanged and unaltered.

   - Tamper Detection Rate: The ability of the system to detect any attempts at tampering or unauthorized access.

3. Security:

   - Authentication Success Rate: The percentage of eligible voters successfully authenticated without fraudulent access.

   - Resistance to Malicious Attacks: Evaluates the system's ability to withstand various types of attacks (e.g., hacking, tampering, denial-of-service).

4. Usability:

   - User Satisfaction: Measures user satisfaction with the interface, process, and overall experience of using the EVM.

   - Error Rate: The rate at which users encounter and report errors during the voting process.

5. Efficiency:

   - Voting Throughput: The number of votes processed per unit of time.

   - Resource Utilization: Assessing the system's use of computational resources (e.g., CPU, memory) during operation.

6. Accessibility:

- Accessibility Compliance: Ensuring that the EVM meets accessibility standards to accommodate voters with disabilities.

- Ease of Use for Diverse User Groups: Evaluating how well the EVM caters to voters of different demographics and technological proficiency levels.

7. Reliability:

- System Uptime: The duration the EVM remains operational without experiencing failures.

- Failure Rate: The rate at which the system encounters technical issues or malfunctions.

8. Auditability:

- Audit Trail Completeness: The comprehensiveness of the audit trail, including time-stamped logs of all interactions and operations.

- Verifiability: The ability to independently verify the accuracy of the election results based on the recorded votes.

9. Compliance:

- Regulatory Compliance: Ensuring that the EVM adheres to all relevant electoral laws, standards, and regulations.

- Privacy Compliance: Guaranteeing the protection of voter privacy and compliance with privacy laws.

10. Scalability:

- Ability to Scale: The EVM's capability to handle an increasing number of voters or transactions without compromising performance.

11. Cost-Efficiency:

- Total Cost of Ownership (TCO): The overall cost of acquiring, operating, and maintaining the EVM over its lifespan.

12. Feedback and Incident Handling:

- Response Time to Incidents: The time taken to address reported incidents or issues with the EVM.

- Feedback Loop Effectiveness: How well feedback from users and stakeholders is incorporated into system improvements.

13. Legal Compliance and Transparency:

- Legal Adherence: Confirming that the EVM meets all legal requirements and regulations pertaining to elections.

- Transparency in Operation: Ensuring that the operation of the EVM is transparent and verifiable.

Evaluating an EVM based on these metrics helps ensure that it operates reliably, securely, and efficiently, and that it meets the needs and expectations of both voters and electoral authorities. Additionally, ongoing monitoring and assessment are essential to address any issues and continuously improve the system's performance.