

NM Team ID	NM2023TMID07060
Project Name	Biometric Security System for Voting Platform

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Project Development Phase:

PERFORMANCE TESTING

Performance testing of the Biometric Security System for a Voting Platform is crucial to ensure that the system operates efficiently, reliably, and can handle the expected load during elections. Performance testing ensures that the Biometric Security System can handle the demands of real-world elections, providing a secure and efficient voting experience for all users.

Performance Metrics

❖ **Response Time:**

Metric: The time it takes for the system to respond to a user request.

Objective: Ensure low and consistent response times to provide a smooth and responsive user experience during voter authentication and other interactions.

❖ **Throughput:**

Metric: The number of transactions or operations the system can handle per unit of time.

Objective: Measure the system's capacity to process a high volume of voter authentication requests and other transactions during peak voting periods.

❖ **Concurrency:**

Metric: The number of simultaneous users or connections the system can handle.

Objective: Evaluate the system's ability to support multiple users accessing the platform concurrently without performance degradation.

❖ **Scalability:**

Metric: The system's ability to handle increased load by adding resources.

Objective: Assess how well the system scales vertically (adding resources to a single server) and horizontally (adding more servers) to meet growing demands.

❖ **Error Rate:**

Metric: The percentage of transactions that result in errors.

Objective: Minimize errors during voter authentication and other critical processes to ensure the accuracy and reliability of the voting system.

❖ **Database Performance:**

Metric: Database response time and throughput for read and write operations.

Objective: Optimize database performance to ensure efficient retrieval and storage of voter information and voting records.

❖ **Network Latency:**

Metric: The time it takes for data to travel between the client and server.

Objective: Minimize network latency to enhance the speed and responsiveness of the biometric authentication process.

❖ **Transaction Success Rate:**

Metric: The percentage of successful transactions.

Objective: Maintain a high success rate for voter authentication and other transactions to prevent service disruptions and ensure a positive user experience.

❖ **Load Balancing Efficiency:**

Metric: The effectiveness of distributing load across multiple servers.

Objective: Optimize load balancing mechanisms to evenly distribute traffic and prevent overloading of specific servers.

❖ **Redundancy and Failover Effectiveness:**

Metric: The system's ability to switch to redundant components in case of failure.

Objective: Verify that redundancy and failover mechanisms work seamlessly to ensure continuous operation and minimize the impact of component failures.

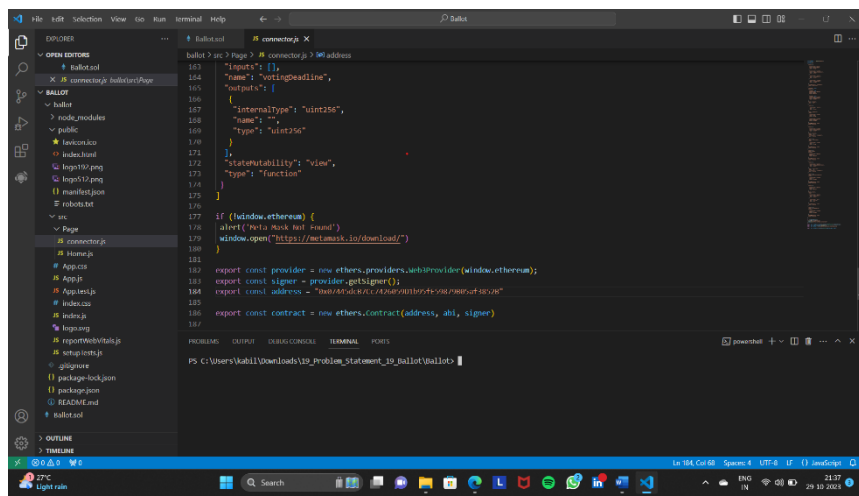
❖ **Security Performance:**

Metric: Performance impact of security measures (e.g., encryption, authentication).

Objective: Balance robust security measures with minimal impact on system performance, ensuring a secure voting environment.

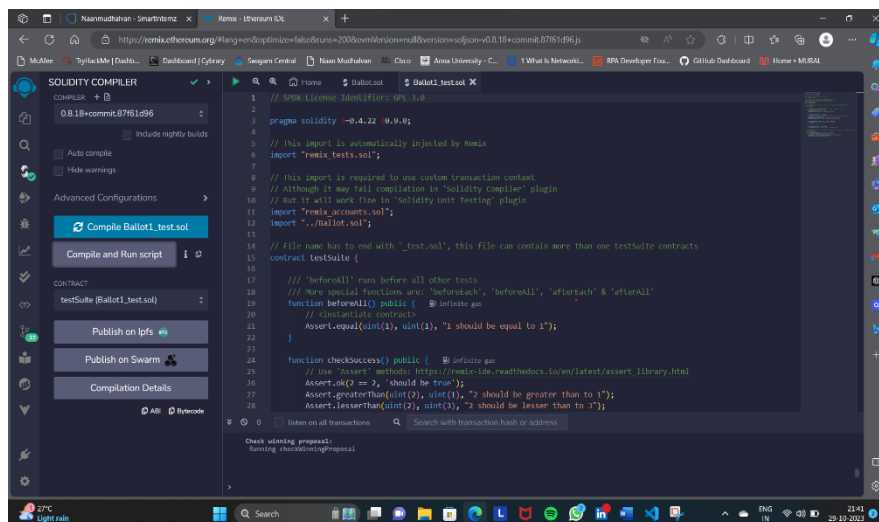


1. Information gathering

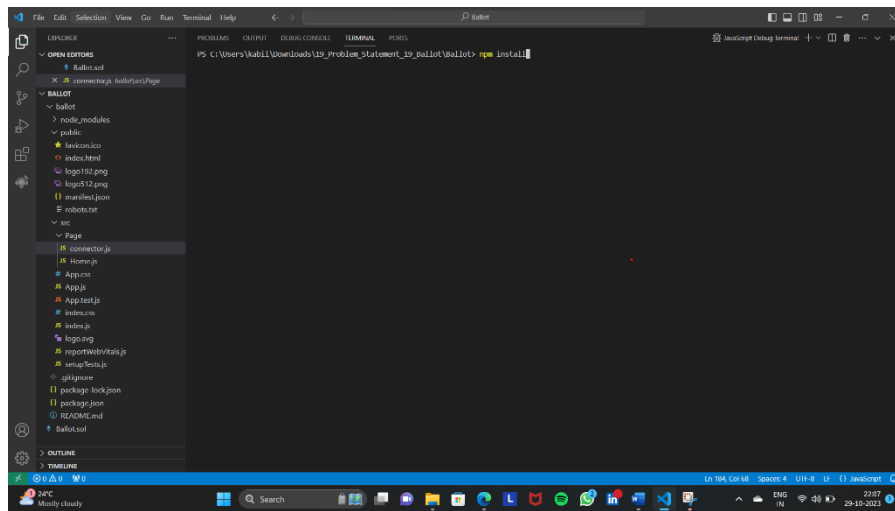


2. Open

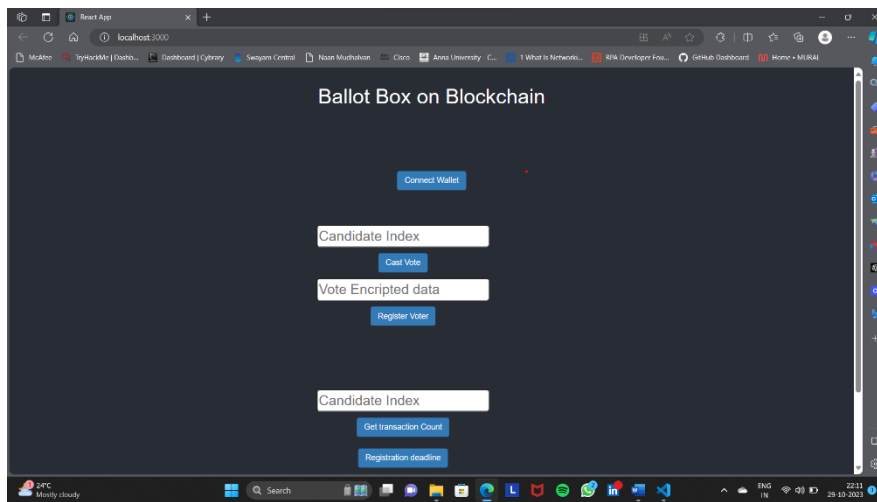
to vs code



3. Remix Ide platform exploring



4. Open file and done installation and code started



5. LOCALHOST IP ADDRESS