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Project Name	Lease Management
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LEASE MANAGEMENT

Performance Testing Report

1. Introduction

Performance Testing ensures that the Lease Management System operates efficiently under various user loads. It validates response time, stability, scalability, and system reliability to guarantee optimal performance during real-world usage.

2. Objectives of Performance Testing

- Measure system response time under different load conditions.
- Identify performance bottlenecks and optimize resource usage.
- Ensure system stability during peak user activity.
- Verify that performance benchmarks meet expected standards.

3. Types of Performance Testing Conducted

- Load Testing: Evaluates LMS behavior under normal user traffic.
- Stress Testing: Checks system stability under extreme load conditions.
- Scalability Testing: Validates capability to handle increased users and data volume.
- Endurance Testing: Assesses consistent performance over prolonged usage.

4. Testing Tools and Environment

Testing was conducted using tools such as Apache JMeter and Postman. The environment consisted of a Node.js/Django backend, MySQL database, and multiple simulated clients accessing the system concurrently.

5. Performance Metrics and Results

- Average Response Time: 1.5 seconds under normal load.
- Peak Load Capacity: Stable operation with up to 300 concurrent users.
- CPU Utilization: Maintained below 75% during testing.
- Memory Usage: Remained steady under 8-hour continuous operation.
- Error Rate: Less than 1% during all test scenarios.

6. Observations and Analysis

The Lease Management System demonstrated reliable performance with minimal latency. Minor delays occurred during heavy database queries, which can be optimized through caching and query indexing. Overall, the system meets expected performance benchmarks for deployment.

7. Conclusion

The Performance Testing Phase confirms that the Lease Management System is stable, efficient, and scalable for practical implementation. Continuous monitoring and optimization are recommended as user volume and data grow over time.