

# Performance Testing

Performance testing evaluates the system speed, responsiveness, and stability under different operating conditions. It ensures that the application performs smoothly when multiple users access it simultaneously.

## Tests Conducted

- Load Testing

- Tested the application with multiple users accessing book browsing and cart features simultaneously.
- Verified that the server handles expected user traffic without slowing down.

- Stress Testing

- Increased the number of requests beyond normal capacity to check system limits.
- Observed system behavior under heavy load to ensure no crashes or data loss.

- Response Time Measurement

- Measured API response time for login, book fetching, cart, and order placement.
- Ensured pages load quickly and API responses are delivered within acceptable time.

- Database Performance

- Tested MongoDB query performance for fetching books and orders.
- Verified indexing and optimized queries for faster data retrieval.

## Result:

- The system performs efficiently under expected user load.
- APIs respond quickly, and the database handles read/write operations smoothly.
- No major performance issues were observed during testing.