

1 Gaps and Omissions in Testing

Test Data Variability

Test data primarily consisted of synthetic cases, which may not accurately reflect real-world scenarios. Limited diversity in the input datasets restricted the validation of robustness under unpredictable user interactions.

Resolution: Future testing should simulate more diverse user inputs, potentially derived from usage logs or simulated customer data.

Stress Testing on REST Server Interactions

Due to reliance on an external REST server, stress testing to evaluate system performance under high concurrency was omitted.

Resolution: Develop mock REST servers to simulate high-load scenarios, enabling isolated stress testing of system interactions.

2 Target Coverage/Performance Levels

Functional Testing

Target: Ensure all functional requirements (F1-F5) pass tests.

Outcome: Achieved 100% success across all functional tests, ensuring compliance with specifications.

Structural Testing

Target: Achieve 90% line coverage and 80% branch coverage.

Outcome: Line coverage reached 85%, and branch coverage achieved 78%. While acceptable, minor gaps in edge-case coverage were noted.

Performance Testing

Target: Ensure path calculations execute within 60 seconds.

Outcome: All tests passed with an average runtime of 3.4 seconds, meeting stakeholder expectations.