Performance Testing

Strategic Product Placement Analysis: Unveiling Sales Impact with Tableau Visualization

1. Purpose of Performance Testing

Performance testing was conducted to evaluate the efficiency, responsiveness, and stability of the analytics system and dashboards under different data loads and user interactions.
The goal was to ensure reliable performance and fast insight delivery during real-time usage.

2. Objectives of Performance Testing

• Measure dashboard loading time
• Evaluate query execution speed
• Assess system response under high data volume
• Test performance during concurrent user access
• Verify stability during continuous usage
• Ensure smooth interaction with filters and drill-downs

3. Test Environment

Hardware Configuration:
• Standard workstation configuration
• 8 GB RAM or above
• SSD storage

Software Environment:
• Business intelligence platform
• Data storage repository
• Network connectivity for live data access

Dataset Characteristics:
• Historical sales transactions
• Product placement records
• Customer behavior data
• Multi-store performance data

4. Performance Test Scenarios

Scenario 1: Dashboard load time measurement
Scenario 2: Data refresh performance evaluation
Scenario 3: Filter interaction response testing
Scenario 4: Concurrent user access simulation
Scenario 5: Large dataset processing evaluation

5. Performance Metrics

Metric	Description

Load Time	Time taken to open dashboard
Query Response Time	Time required to retrieve data
Refresh Time	Time required to update data
Interaction Latency	Delay in filter or drill-down response
System Stability	Performance consistency over time

6. Test Results Summary

• Dashboard loading time remained within acceptable limits
• Filter response was smooth with minimal delay
• Data refresh completed successfully without system failure
• Performance remained stable during continuous use
• System handled moderate concurrent access efficiently
• Increased data volume slightly impacted loading speed but remained manageable

7. Performance Optimization Techniques

• Data aggregation before visualization
• Removal of redundant fields
• Use of optimized queries
• Efficient dashboard design
• Data extraction and caching
• Reduced real-time processing load

8. Challenges Encountered

• Initial delay with large datasets
• Slower rendering of complex visualizations
• Increased response time during peak usage

These challenges were addressed through query optimization and data model refinement.

9. Conclusion

Performance testing confirmed that the system operates efficiently under normal and moderate workload conditions.
The dashboards provide responsive interaction, stable data refresh, and reliable visualization performance.
Implemented optimizations ensure scalability and effective decision-making support.