# Functional Requirement

# 3 Functional Requirements  
  
## 3.1 Order Processing  
  
### Order-Processing-FR-001  
  
\*\*The system shall update inventory levels every 5 seconds to reflect real-time changes.\*\*  
  
- \*\*Rationale\*\*: Ensures accurate inventory tracking for order fulfillment.  
- \*\*Source\*\*: SRL-001  
- \*\*Acceptance Criteria\*\*: Inventory levels displayed in the system must match actual stock levels with a maximum 5-second delay.  
- \*\*Test Case\*\*: TC-001  
  
### Order-Processing-FR-002  
  
\*\*The system shall prevent order confirmation for items that are out of stock.\*\*  
  
- \*\*Rationale\*\*: Prevents customer dissatisfaction due to unfulfilled orders.  
- \*\*Source\*\*: SRL-002  
- \*\*Acceptance Criteria\*\*: Orders for out-of-stock items shall not be confirmed and shall trigger a system alert.  
- \*\*Test Case\*\*: TC-002  
  
## 3.2 Inventory Management  
  
### Inventory-Management-FR-001  
  
\*\*The system shall update inventory levels across multiple warehouses every 5 seconds.\*\*  
  
- \*\*Rationale\*\*: Ensures synchronized inventory tracking for accurate stock management.  
- \*\*Source\*\*: SRL-003  
- \*\*Acceptance Criteria\*\*: Inventory levels in all warehouses shall reflect the same stock status within 5 seconds of update.  
- \*\*Test Case\*\*: TC-003  
  
### Inventory-Management-FR-002  
  
\*\*The system shall detect inventory discrepancies within 1 minute of occurrence.\*\*  
  
- \*\*Rationale\*\*: Enables timely resolution of stock inconsistencies.  
- \*\*Source\*\*: SRL-004  
- \*\*Acceptance Criteria\*\*: Discrepancies in inventory levels shall be flagged and logged within 1 minute of detection.  
- \*\*Test Case\*\*: TC-004  
  
### Inventory-Management-FR-003  
  
\*\*The system shall display inventory trends and stock levels using interactive charts and graphs.\*\*  
  
- \*\*Rationale\*\*: Provides visual insights for store managers to make data-driven decisions.  
- \*\*Source\*\*: SRL-005  
- \*\*Acceptance Criteria\*\*: Charts and graphs must support zooming, filtering, and real-time updates.  
- \*\*Test Case\*\*: TC-005  
  
### Inventory-Management-FR-004  
  
\*\*The system shall send low-stock alerts via email or in-system alerts when stock is below 10% of the minimum required level.\*\*  
  
- \*\*Rationale\*\*: Prevents stockouts and ensures timely replenishment.  
- \*\*Source\*\*: SRL-006  
- \*\*Acceptance Criteria\*\*: Alerts must be triggered when stock levels fall below the 10% threshold.  
- \*\*Test Case\*\*: TC-006  
  
## 3.3 Customer Account Management  
  
### Customer-Account-Management-FR-001  
  
\*\*The system shall maintain a centralized customer information system.\*\*  
  
- \*\*Rationale\*\*: Ensures consistent and secure customer data across all modules.  
- \*\*Source\*\*: SRL-007  
- \*\*Acceptance Criteria\*\*: Customer data must be accessible from a single dashboard with full CRUD capabilities.  
- \*\*Test Case\*\*: TC-007  
  
### Customer-Account-Management-FR-002  
  
\*\*The system shall provide a streamlined onboarding process that can be completed in less than 5 minutes for new customers.\*\*  
  
- \*\*Rationale\*\*: Reduces friction in the customer registration process.  
- \*\*Source\*\*: SRL-008  
- \*\*Acceptance Criteria\*\*: Onboarding tasks shall be completed in less than 5 minutes, with a success rate of 95% or more.  
- \*\*Test Case\*\*: TC-008  
  
## 3.4 Reporting  
  
### Reporting-FR-001  
  
\*\*The system shall allow reports to be scheduled and sent via email to predefined recipients at specified intervals.\*\*  
  
- \*\*Rationale\*\*: Ensures timely delivery of key operational metrics to stakeholders.  
- \*\*Source\*\*: SRL-009  
- \*\*Acceptance Criteria\*\*: Reports must be sent to predefined recipients at the specified time and in the correct format.  
- \*\*Test Case\*\*: TC-009

# External Description

# 5 Constraints  
  
## 5.1 Regulatory/Legal Constraints  
  
### C-REG-001  
  
\*\*The system shall undergo a privacy impact assessment and be verified by legal counsel to meet GDPR/CCPA requirements.\*\*  
  
- \*\*Rationale\*\*: Ensures compliance with data privacy regulations.  
- \*\*Source\*\*: SRL-021  
- \*\*Acceptance Criteria\*\*: The system shall receive a formal legal verification of GDPR/CCPA compliance.  
- \*\*Test Case\*\*: TC-022  
  
### C-REG-002  
  
\*\*The system shall not store payment information in the system’s database after the transaction is completed.\*\*  
  
- \*\*Rationale\*\*: Ensures secure handling of payment data.  
- \*\*Source\*\*: SRL-022  
- \*\*Acceptance Criteria\*\*: Payment data shall be purged from the database within 10 minutes of transaction completion.  
- \*\*Test Case\*\*: TC-023  
  
## 5.2 Hardware Constraints  
  
### C-HW-001  
  
\*\*The hosting provider shall be verified to support cloud-based dynamic scaling with a 99.9% SLA.\*\*  
  
- \*\*Rationale\*\*: Ensures the system can scale automatically based on demand.  
- \*\*Source\*\*: SRL-023  
- \*\*Acceptance Criteria\*\*: The hosting provider shall be verified to support dynamic scaling with a 99.9% SLA.  
- \*\*Test Case\*\*: TC-024  
  
### C-HW-002  
  
\*\*The system shall be tested and verified to function correctly on the listed browsers with JavaScript enabled, with a pass rate of 95% or more.\*\*  
  
- \*\*Rationale\*\*: Ensures compatibility across major browsers.  
- \*\*Source\*\*: SRL-024  
- \*\*Acceptance Criteria\*\*: The system shall function correctly on the listed browsers with JavaScript enabled, with at least a 95% pass rate.  
- \*\*Test Case\*\*: TC-025  
  
## 5.3 Interface Constraints  
  
### C-IF-001  
  
\*\*CRM integration shall be verified to handle all data exchanges without loss or corruption, with a 100% success rate in 100 test cases.\*\*  
  
- \*\*Rationale\*\*: Ensures reliable integration with the CRM system.  
- \*\*Source\*\*: SRL-025  
- \*\*Acceptance Criteria\*\*: All data exchanges between the system and the CRM shall be verified with a 100% success rate in 100 test cases.  
- \*\*Test Case\*\*: TC-026  
  
### C-IF-002  
  
\*\*Payment gateways shall be configured and tested for successful transaction processing and error handling, with a success rate of 99.9% and a 95% error handling pass rate.\*\*  
  
- \*\*Rationale\*\*: Ensures secure and reliable payment processing.  
- \*\*Source\*\*: SRL-026  
- \*\*Acceptance Criteria\*\*: Payment gateways shall process transactions with a success rate of 99.9% and handle errors with a 95% pass rate.  
- \*\*Test Case\*\*: TC-027  
  
### C-IF-003  
  
\*\*Report generation shall use verified third-party libraries and produce valid, formatted output, with a 100% validation success rate.\*\*  
  
- \*\*Rationale\*\*: Ensures accurate and standardized report generation.  
- \*\*Source\*\*: SRL-027  
- \*\*Acceptance Criteria\*\*: All reports shall be validated for correct formatting and content.  
- \*\*Test Case\*\*: TC-028  
  
## 5.4 Design and Implementation Constraints  
  
### C-DI-001  
  
\*\*The system shall pass responsive design testing across all supported devices, with a 95% or higher pass rate.\*\*  
  
- \*\*Rationale\*\*: Ensures consistent user experience across all device types.  
- \*\*Source\*\*: SRL-028  
- \*\*Acceptance Criteria\*\*: The system shall pass 95% or more of responsive design tests.  
- \*\*Test Case\*\*: TC-029  
  
### C-DI-002  
  
\*\*All system components shall be modular and support standard APIs and protocols, with a 100% interoperability success rate.\*\*  
  
- \*\*Rationale\*\*: Ensures flexibility and ease of integration.  
- \*\*Source\*\*: SRL-029  
- \*\*Acceptance Criteria\*\*: System components shall be modular and support standard APIs with 100% interoperability success.  
- \*\*Test Case\*\*: TC-030  
  
### C-DI-003  
  
\*\*Integration shall support legacy data formats and workflows during the transition period, with a 99% compatibility success rate.\*\*  
  
- \*\*Rationale\*\*: Ensures smooth transition from legacy systems.  
- \*\*Source\*\*: SRL-030  
- \*\*Acceptance Criteria\*\*: Legacy data formats and workflows shall be supported with a 99% compatibility success rate.  
- \*\*Test Case\*\*: TC-031  
  
## 5.5 Other Constraints  
  
### C-OTH-001  
  
\*\*The system architecture shall be reviewed and validated by the development team for maintainability, with a 95% or higher score on a maintainability assessment.\*\*  
  
- \*\*Rationale\*\*: Ensures the system is easy to maintain and evolve.  
- \*\*Source\*\*: SRL-031  
- \*\*Acceptance Criteria\*\*: The system architecture shall receive a maintainability score of 95% or higher.  
- \*\*Test Case\*\*: TC-032