

Phase 5: Project Design Phase II - Solution Requirements

Project Title: CRM Application for Jewel Management - Developer

Date: November 01, 2025

Team ID: NM2025TMID02152

Maximum Marks: 4 Marks

Functional Requirements

The following are the functional requirements for the CRM Application for Jewel Management:

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	Customer Registration & Profile Management	Customer registration through form; Social login (Google/Facebook); Profile with contact details, preferences, sizing information, purchase history
FR-2	Customer Portal	Secure login; View purchase history; Track custom orders; Update preferences; Schedule appointments; Download receipts and certificates
FR-3	Inventory Item Management	Add jewelry items with SKU, description, specifications; Track metal type/purity, gemstones (4Cs), weight, certifications; Upload multiple photos; Assign acquisition cost and retail price; Set status (available, reserved, sold, consignment)
FR-4	Inventory Tracking	Real-time stock levels across locations; Barcode/RFID scanning for check-in/check-out; Transfer tracking between locations; Automated reorder alerts; Loss prevention tracking
FR-5	Inventory Valuation	Automated valuation based on market prices; Historical valuation tracking; Consignment inventory separate tracking; Insurance valuation reports
FR-6	Custom Order Management	Create custom order with design specifications; Customer approval workflow; Production milestone tracking; Artisan assignment; Quality inspection checkpoints; Delivery scheduling
FR-7	Custom Order Communication	Automated notifications at each milestone; Customer portal for progress viewing; Design modification requests; Photo updates during production
FR-8	Sales Pipeline & Opportunities	Lead capture from walk-ins and online; Opportunity tracking by stage; Lead scoring based on engagement and budget; Win/loss analysis
FR-9	Quote & Pricing	Generate quotes with configurable pricing rules; Include financing options; Trade-in valuation; Discount management; Quote expiration tracking
FR-10	Sales Order Processing	Convert quotes to sales orders; Payment processing integration; Receipt generation with itemization; Tax calculation; Warranty/certificate generation
FR-11	Marketing Automation	Birthday/anniversary automated campaigns; New collection announcements; Segment-based targeted campaigns; Referral program tracking; VIP customer programs

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-12	Customer Segmentation	Segment by purchase history, preferences, budget tier; Behavioral segmentation; Inactive customer identification; High-value customer identification
FR-13	Data Protection & Business Rules	Prevent deletion of customers with active orders; Prevent deletion of inventory in pending transactions; Prevent deletion of historical sales for compliance; Audit trail for all modifications
FR-14	Security & Access Control	Role-based permissions (sales staff, manager, owner, admin); Multi-factor authentication for sensitive operations; Data encryption for customer and financial data; Session management and timeout
FR-15	Dashboards & Analytics	Sales performance by time period, category, staff; Inventory valuation and turnover; Customer lifetime value analysis; Marketing campaign effectiveness; Profit margin analysis
FR-16	Mobile Access	Mobile-optimized interface; Access customer profiles on mobile; Check inventory availability; Process transactions; Capture customer photos and signatures
FR-17	Reporting	Customizable reports; Scheduled report delivery; Export to Excel/PDF; Tax compliance reports; Insurance documentation

Non-Functional Requirements

The following are the non-functional requirements for the CRM Application for Jewel Management:

NFR No.	Non-Functional Requirement	Description
NFR-1	Usability	Intuitive interface designed for non-technical jewelry store staff. Mobile app must be easy to use during customer consultations. Training materials and in-app help available. Maximum 2 hours training required for basic operations.
NFR-2	Security	All sensitive data (customer information, inventory valuations, financial transactions) encrypted at rest and in transit. Multi-factor authentication for administrative functions. Role-based access control strictly enforced. Compliance with PCI-DSS for payment data. Annual security audits.
NFR-3	Reliability	99.9% uptime guarantee. Automated backups every 4 hours. Data validation rules prevent incorrect entries. Business rules ensure data integrity. Zero tolerance for data loss in high-value transactions. Graceful error handling with user-friendly messages.
NFR-4	Performance	Page load times <2 seconds for all operations. Search results display <1 second for inventory queries. Mobile app responsive on 3G networks. Support 50+ concurrent users. Database queries optimized for large inventory (10,000+ items).
NFR-5	Availability	System accessible 24/7 for customer portal. Maintenance windows scheduled during off-peak hours (midnight-3am). Disaster recovery with <2 hour RTO. Automated failover for critical services.
NFR-6	Scalability	Support single location to 50+ store chain. Handle inventory growth from 100 to 100,000+ items. Scale to millions of customer records. Support seasonal traffic spikes (holidays). Cloud infrastructure auto-scaling.

NFR No.	Non-Functional Requirement	Description
NFR-7	Maintainability	Modular design for easy feature additions. Comprehensive documentation for administrators. Version control for all customizations. Automated testing for core workflows. Easy upgrade path for Salesforce platform updates.
NFR-8	Compliance	PCI-DSS compliance for payment processing. GDPR compliance for customer data. Sales tax calculation accuracy for all jurisdictions. Audit trails for regulatory compliance. Support for insurance and customs documentation.
NFR-9	Compatibility	Support iOS and Android for mobile app. Compatible with Chrome, Firefox, Safari, Edge browsers. Integration with common POS systems. Support barcode scanners and RFID readers. API integration with appraisal services and certification databases.
NFR-10	Data Quality	Validation rules for mandatory fields. Format validation for SKUs, certification numbers. Duplicate detection for customer and inventory records. Data cleansing tools for imports. Historical data retention for 7+ years.
NFR-11	Disaster Recovery	Daily automated backups to geographically distributed locations. Backup retention for 1 year. Recovery Time Objective (RTO): 2 hours. Recovery Point Objective (RPO): 4 hours. Quarterly disaster recovery testing.
NFR-12	Internationalization	Support multiple currencies with automated conversion. Multi-language interface (English, Spanish, Chinese, Hindi). Regional tax and compliance rules. Support for different metal purity standards (karat vs. fineness).

System Architecture & Technical Specifications

Technology Stack

- **Cloud Platform:** Salesforce Sales Cloud + Experience Cloud
- **Frontend:** Lightning Web Components (LWC) for web interface; Salesforce Mobile App
- **Backend:** Salesforce Apex classes, REST APIs
- **Database:** Salesforce Database with custom objects
- **Automation:** Salesforce Flow Builder, Process Builder, Approval Processes
- **Integration:** REST APIs for POS systems, payment gateways, appraisal services
- **Security:** Salesforce Shield for encryption, event monitoring, field audit trail
- **Mobile:** Salesforce Mobile SDK with offline capabilities

Data Model & Custom Objects

- **Customer:** Standard Contact object extended with jewelry preferences, sizing, VIP status
- **Jewelry_Item:** SKU, category, metal type/purity, primary stone, secondary stones, weight, certifications, photos, acquisition cost, retail price, status, location
- **Custom_Order:** Customer, design specifications, approval status, production milestones, assigned artisan, estimated completion, actual completion

- **Sales_Opportunity:** Standard Opportunity object with jewelry-specific fields
- **Appraisal:** Item, appraiser, date, valuation, purpose (insurance/resale), certificate
- **Marketing_Campaign:** Standard Campaign object with jewelry-specific segmentation

Key Business Rules

- **BR-1:** Prevent deletion of customers with active orders or orders within past 2 years
- **BR-2:** Prevent deletion of inventory items with pending transactions or sold within past 7 years
- **BR-3:** Require manager approval for discounts >15%
- **BR-4:** Automated alerts when inventory item not scanned for 90 days (loss prevention)
- **BR-5:** Automated reorder alerts when category stock falls below minimum levels
- **BR-6:** Automated customer notification when custom order milestone completed
- **BR-7:** Require certification number for gemstones >0.5 carats
- **BR-8:** Audit log all changes to inventory valuations and customer financial data

Acceptance Criteria

Requirement	Acceptance Criteria
FR-1 to FR-2	Customer registration and portal functional; 100+ test customers; portal accessible via web and mobile
FR-3 to FR-5	500+ jewelry items entered with complete specifications; barcode scanning operational; real-time valuation working
FR-6 to FR-7	50+ custom orders tracked through full workflow; automated notifications sent; customer portal showing progress
FR-8 to FR-10	Sales pipeline with 100+ opportunities; quote generation working; payment processing integrated
FR-11 to FR-12	Automated campaigns sent to segmented customer lists; open rates >25%; click rates >5%
FR-13 to FR-14	Business rules prevent 100% of unauthorized deletions; role-based permissions enforced; zero security breaches
FR-15 to FR-17	Dashboards loading <2 seconds; mobile app functional on iOS and Android; reports exportable
NFR-1 to NFR-4	90% of staff trained in <2 hours; 99.9% uptime achieved; all pages load <2 seconds; zero data loss
NFR-5 to NFR-8	System scales to 10 locations without performance degradation; PCI-DSS compliance certified; audit trails complete
NFR-9 to NFR-12	Mobile app works on iOS/Android; POS integration successful; multi-currency support working; backups tested

Constraints & Dependencies

Constraints

- Budget: Mid-market jewelry retailer budget limitations
- Timeline: 46 days for complete development and deployment
- Team: 3 developers with varying Salesforce expertise
- Compliance: Must meet PCI-DSS and GDPR requirements

Dependencies

- Salesforce platform API limits and governor limits
- Third-party integrations: POS systems, payment gateways, appraisal databases
- Hardware: Barcode scanners and RFID readers availability and compatibility
- User adoption: Staff training and change management
- Data migration: Quality of legacy data from existing systems

Conclusion

Phase 5 establishes comprehensive functional and non-functional requirements for the CRM Application for Jewel Management. These requirements address the unique challenges of jewelry retail including high-value inventory management, custom order workflows, personalized customer relationships, and stringent security needs. With clear acceptance criteria and technical specifications, the development team has a precise roadmap to deliver a solution that improves operational efficiency, enhances customer satisfaction, and drives business growth for jewelry retailers.