

Project Design Phase-II

Data Flow Diagram & User Stories

Date	05 November 2025
Team ID	NM2025TMID03680
Project Name	CRM Application for Jewel Management(Developer)
Maximum Marks	4 Marks

Project Design Phase-II: Data Flow Diagram & User Stories

The **Data Flow Diagram (DFD)** for the **CRM Application for Jewel Management(Developer)** illustrates how key operations, especially **user and inventory management**, flow through the system.

The DFD shows how actions like **adding products, managing customers, processing sales, and updating inventory** are handled. For example, when an admin adds a new jewellery item, the system:

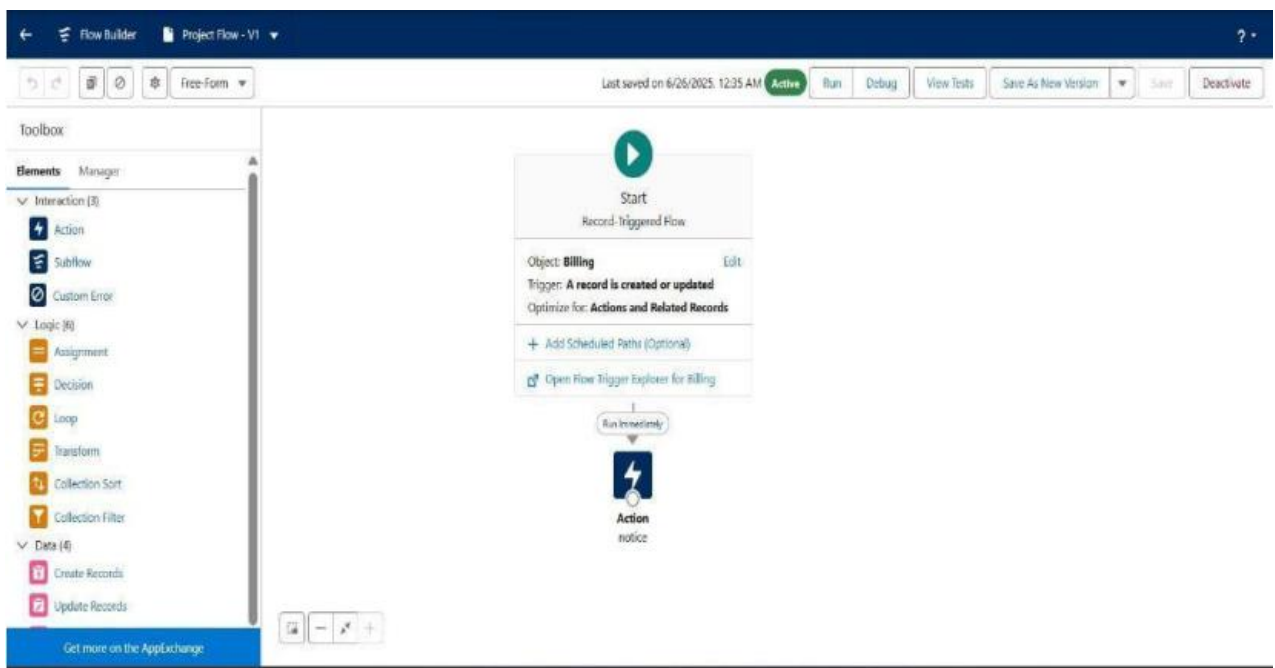
- Validates input fields (weight, price, category)
- Updates the **inventory database**
- Reflects changes in **dashboards and reports**

Similarly, sales transactions trigger automatic updates to:

- Customer records
- Product stock
- Analytics modules

This ensures **real-time accuracy** and smooth workflow across all modules, making the CRM system .

Creation of Flows:



User Stories

- **Administrator – User Management (USN-1):**

As an admin, I want to **create and manage users** in the system so that I can control access and maintain accurate records.

Acceptance Criteria: Users are created with proper roles, validation rules, and profile assignments.

Priority: High | *Release:* Sprint-1

- **System – Inventory Validation (USN-2):**

As a system, I must **check that all product entries** (jewellery items) have valid attributes before adding them to the inventory.

Acceptance Criteria: Products with missing or invalid fields are rejected, and error messages are displayed.

Priority: High | *Release:* Sprint-1

- **Sales Manager – Transaction Logging (USN-3):**

As a sales manager, I want all **sales transactions to update customer records and product stock automatically**.

Acceptance Criteria: Stock is reduced, invoices are generated, and dashboards reflect real-time updates.

Priority: High | *Release:* Sprint-2

- **Admin & System – Alerts & Reports (USN-4):**

As an admin, I want **automated alerts for low stock or pending orders** and **accurate dashboards** for decision-making.

Acceptance Criteria: Alerts trigger on thresholds, and reports show up-to-date sales and inventory data.

Priority: Medium | *Release:* Sprint-2

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Solution Requirements (Functional & Non-functional)

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Functional Requirements:

- The CRM Application for Jewel Management(Developer) includes a set of functional requirements that define how the system behaves to support jewellery store operations.
- **User Registration (FR-1):** The system allows admins and staff to register using multiple methods including form-based registration, Gmail, or LinkedIn, ensuring flexibility in onboarding new users.
- **User Confirmation (FR-2):** Upon registration, users receive confirmation either via email or OTP to validate their identity.
- **User Deletion (FR-3):** Admins can request the deletion of a user from the system.
- **Assignment Check (FR-4):** Before processing the deletion, the system automatically verifies whether the user is assigned to any sales records, inventory tasks, or ongoing customer interactions.
- **Deletion Block (FR-5):** If the user is linked to any active transactions or inventory operations, the system blocks the deletion and displays a clear warning to prevent accidental data loss.
- **Safe Deletion (FR-6):** If no active assignments exist, the system allows the user to be safely removed, ensuring data integrity and smooth administrative operations.
- These functional requirements ensure that the CRM system handles user management and data integrity efficiently, while also supporting real-time inventory and sales operations.

Non-functional Requirements:

- The system also meets several non-functional requirements to ensure a reliable, secure, and scalable solution for jewellery management:
- **Usability (NFR-1):** The interface is simple, intuitive, and easy for admins to navigate for daily operations.
- **Security (NFR-2):** Only authorized users, such as admins, can delete users or modify critical data.
- **Reliability (NFR-3):** The system consistently checks user assignments before deletion, preventing errors in inventory and sales tracking.
- **Performance (NFR-4):** Assignment verification and deletion operations occur quickly, ensuring no workflow delays.
- **Availability (NFR-5):** The CRM system is accessible whenever admins need to manage users, inventory, or sales operations.
- **Scalability (NFR-6):** The system can handle an increasing number of users, sales transactions, and jewellery items without performance degradation, supporting business growth.
- By incorporating these functional and non-functional requirements, the CRM Application for Jewel Management(Developer) guarantees secure, reliable, and efficient management of users, customers, sales, and inventory, while providing a user-friendly interface for administrators and staff.

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Solution Requirements (Functional & Non-functional)

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Technical Architecture

The **CRM Application for Jewel Management(Developer)** is designed to streamline **inventory, sales, and customer management** while ensuring **secure user operations**. The architecture leverages **ServiceNow** as the primary platform to manage all system workflows.

The system workflow includes:

- Admins managing jewellery stock, customer records, and sales transactions via a **web dashboard**.
- Automatic **validation checks** to prevent deletion of users who are linked to active transactions, orders, or inventory assignments.
- Real-time **alerts and notifications** when deletion is blocked or when inventory thresholds are low.
- Centralized storage of users, inventory items, sales, and customer data in **ServiceNow CMDB and related tables**.

This architecture ensures **data integrity, operational efficiency, and real-time visibility** across all modules of the CRM system.

Components & Technologies

- **User Interface:** Admin interacts via **ServiceNow Web UI** to manage jewellery operations.
- **Application Logic-1:** Validates if a user is linked to active inventory, sales, or customer data before deletion (**ServiceNow Flow Designer, Script**).
- **Application Logic-2:** Checks the status of users and inventory in the database (**GlideRecord in Server Script**).
- **Application Logic-3:** Sends **notifications or alerts** if deletion is blocked or other actions are required (**ServiceNow Notifications**).
- **Database:** Stores users, jewellery items, customer records, and sales transactions (**ServiceNow CMDB, Inventory & Sales Tables**).
- **Cloud Database:** Managed securely on **ServiceNow Cloud Database**.
- **File Storage:** Minimal use; system logs stored internally.
- **External API-1:** Optional integration with **HR or vendor systems** via REST API.
- **External API-2:** Not applicable.
- **Machine Learning Model:** Not applicable.
- **Infrastructure (Server/Cloud):** Hosted and managed on **ServiceNow SaaS platform**, ensuring scalability and reliability.

Application Characteristics

- **Open-Source Frameworks:** Not applicable (ServiceNow is proprietary).
- **Security Implementations:** Role-based access control, ACLs, and secure scripts to ensure only authorized admins perform critical actions.
- **Scalable Architecture:** SaaS-based, horizontally scalable to handle growth in users, inventory, and transactions.
- **Availability:** Highly available due to **ServiceNow cloud hosting** with load-balanced instances.
- **Performance:** Optimized using **asynchronous flows, indexed tables, GlideRecord queries, and background scripts** for fast execution.

This structured approach ensures that the **CRM Application for Jewellery Management** is **secure, scalable, highly available, and efficient**, allowing admins to manage jewellery inventory, customer data, and sales transactions while **maintaining data integrity and preventing accidental user deletions**.

Project Details

Team ID : NM2025TMID03680
Project Title : CRM Application for Jewel Management(Developer)
Team Size : 4
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