V-Electronics: Revolutionizing Smart Device Management

Phase 3: Data Modeling & Relationships

With the Salesforce environment configured in Phase 2, the next step in the **V-Electronics Project** was to design the underlying data architecture. This phase was dedicated to building a logical and scalable model that could represent the organization's business entities (customers, products, and orders) and their interrelationships.

A robust data model ensured that the system could store, retrieve, and manage information accurately while supporting reporting, automation, and integration needs.

---

1. Introduction

In Salesforce, data modeling involves creating objects, fields, and relationships that mirror real-world entities. For V-Electronics, this meant setting up objects such as **VCustomers, VOrders, and VProducts**, and defining how they interact with one another.

The data model was carefully designed to balance **simplicity (ease of use)** and **scalability (supporting future growth)**.


2. Objectives of this Phase

- To design standard and custom objects that capture essential business data.
- To configure fields, record types, and layouts for data accuracy and usability.
- To establish meaningful relationships (lookup, master-detail, junction objects) between entities.
- To leverage schema builder for visualizing and validating the data model.
- To introduce external objects where integration with external systems was required.

---

3. Detailed Description of Contents

Standard & Custom Objects

- **Standard Objects Used:** Accounts, Contacts, Opportunities for basic CRM functionality.
- **Custom Objects Created:**
  - **VCustomers** → captured customer details specific to electronics retail.

- **VProducts** → tracked electronic products with specifications like warranty, price, and stock.
- **VOrders** → managed customer orders and their fulfillment.
- These objects formed the **core entities** of the system.
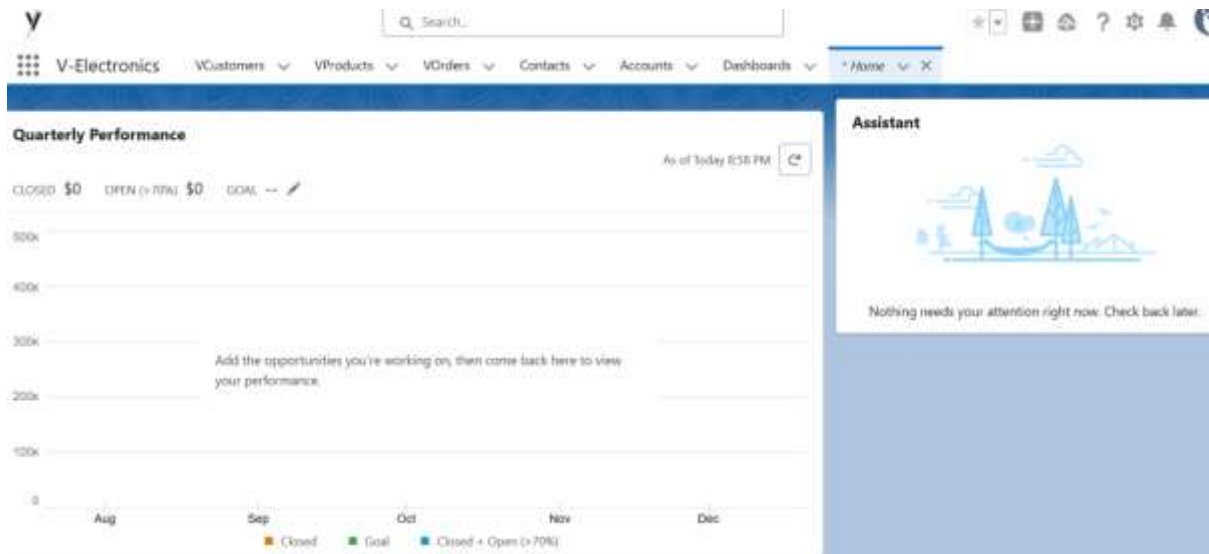
Fields

- Added **custom fields** to capture specific details.
  - Example: Full name(text),first name(text).
- Used formula fields for automatic calculations (e.g., Order Total).
- Applied validation rules to ensure field accuracy (e.g., warranty period cannot be negative).


Record Types

- Created record types for handling variations in objects.

o Example:
　　　　　　　　▪ VProducts → Consumer Electronics, Home Appliances.
　　　　　　　　▪ VOrders → Retail Orders, Wholesale Orders.
- Each record type had its own page layout for context-specific data capture.


Page Layouts

- Configured layouts to show relevant fields to the right audience.
  - Example: For Sales Agents, the Order Layout emphasized customer details and order status.
- Enhanced usability by grouping related fields together.
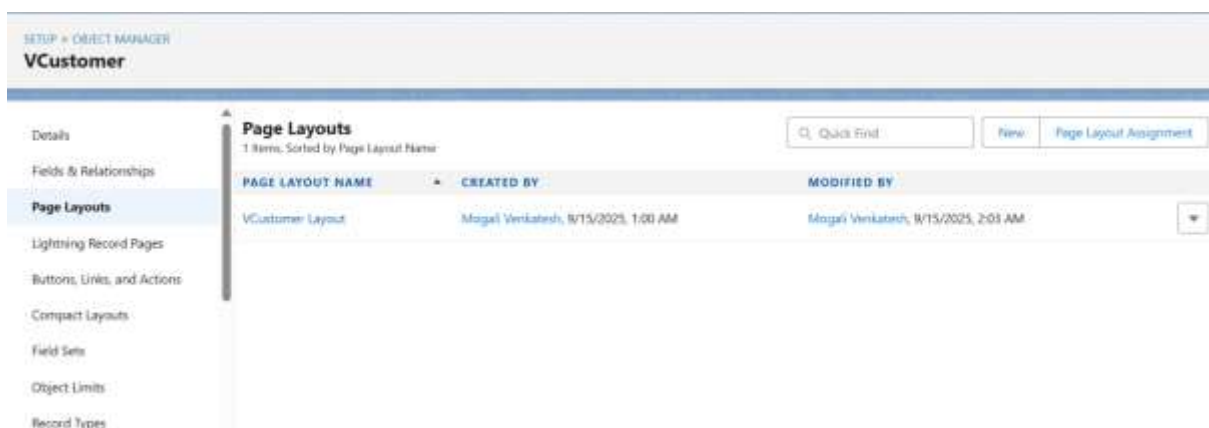
Compact Layouts

- Defined compact layouts for mobile users to quickly see key fields.
  - Example: For VCustomers → Name, Contact, Loyalty Tier.
- Improved the mobile experience for sales agents working in the field.
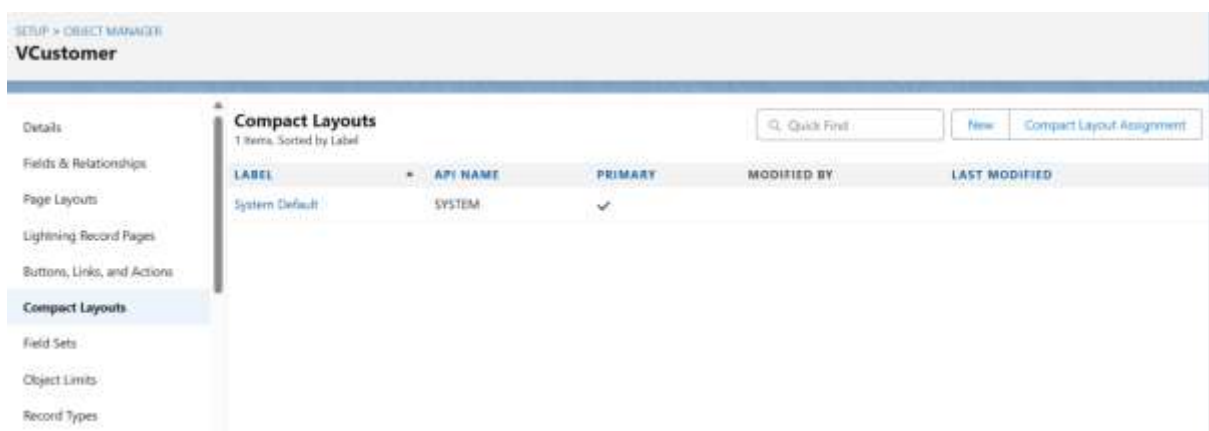
Schema Builder

- Used Salesforce Schema Builder to visually represent object relationships.
- This allowed validation of how VCustomers, VProducts, and VOrders were connected.
- Made it easier to communicate the model with stakeholders and technical teams.

Lookup vs Master-Detail vs Hierarchical Relationships

- **Lookup Relationships:** Used for optional, flexible links.
  - Example: Linking Orders to a Referring Agent.
- **Master-Detail Relationships:** Enforced strong ownership.
  - Example: VOrders → VCustomers (a customer owns their orders).
- **Hierarchical Relationships:** Applied within the User object to define reporting.

Junction Objects

- Designed junction objects for many-to-many relationships.
  - Example: **OrderProduct__c** object linked VOrders and VProducts to track multiple products per order.
- This enabled accurate order breakdowns and reporting.

External Objects

- Integrated external ERP data using **Salesforce Connect**.
- Example: Supplier inventory data was referenced as an external object, avoiding duplication while ensuring real-time availability.

---

4. Deliverables/Outcomes of Phase 3

- Defined standard and custom objects (VCustomers, VOrders, VProducts).
- Configured fields, record types, page layouts, and compact layouts.
- Established relationships using lookup, master-detail, and junction objects.
- Created a schema diagram via Schema Builder.
- Introduced external objects for ERP integration.

---

5. Conclusion

Phase 3 established the **data backbone** of the V-Electronics system. With a structured data model, the organization could capture critical business information and enforce relationships between entities.

This phase ensured data accuracy, scalability, and usability—serving as the **foundation for Phase 4 (Process Automation)**, where workflows and rules would bring this data to life through automation.