

Property Management Application

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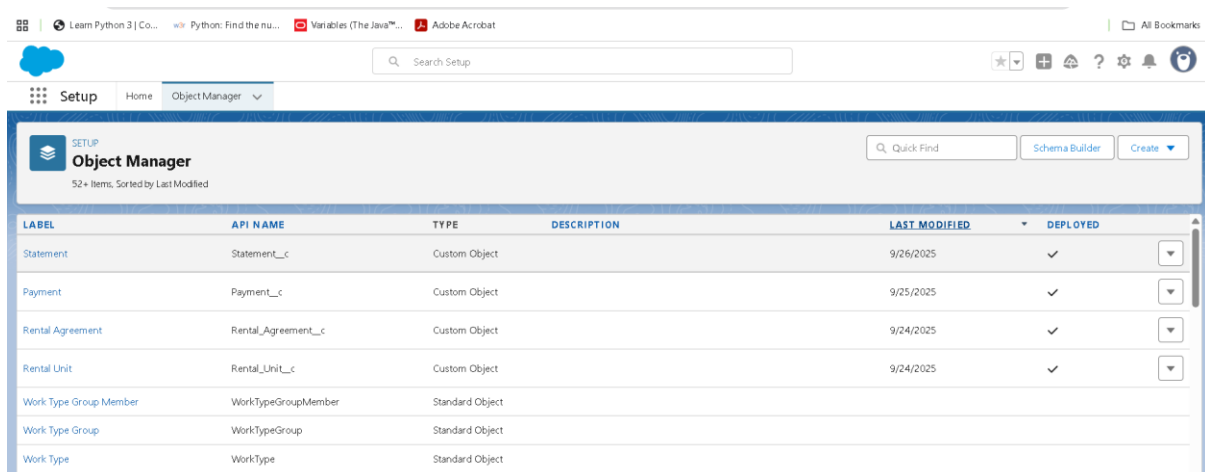
Phase 3: Data Modeling & Relationships Report

1. Overview

This phase focuses on designing and implementing the data model for the property management system, including custom objects, fields, relationships, and user interface configurations. The goal is to establish a robust foundation for managing Rental Units, Rental Agreements, Payments, and Statements, ensuring scalability and efficient data management. All custom objects and their relationships have been created and configured in the Salesforce org.

2. Standard & Custom Objects

- **Custom Objects Created:**
 - Rental_Unit__c: Represents individual rental units with detailed attributes.
 - Rental_Agreement__c: Manages agreements between landlords and renters, linked to Rental_Unit__c and Contact.
 - Payment__c: Tracks payment transactions related to Statement__c.
 - Statement__c: Records billing statements linked to Rental_Agreement__c.
- **Standard Objects Utilized:**
 - Contact: Used as the primary object for renters via a Master-Detail relationship from Rental_Agreement__c.



The screenshot shows the Salesforce Setup interface, specifically the Object Manager page. The page displays a list of objects, including custom objects and standard objects. The table has columns for Label, API Name, Type, Description, Last Modified, and Deployed. The custom objects listed are Statement, Payment, Rental Agreement, and Rental Unit. The standard objects listed are Work Type Group Member, Work Type Group, and Work Type.

LABEL	API NAME	TYPE	DESCRIPTION	LAST MODIFIED	DEPLOYED
Statement	Statement__c	Custom Object		9/26/2025	✓
Payment	Payment__c	Custom Object		9/25/2025	✓
Rental Agreement	Rental_Agreement__c	Custom Object		9/24/2025	✓
Rental Unit	Rental_Unit__c	Custom Object		9/24/2025	✓
Work Type Group Member	WorkTypeGroupMember	Standard Object			
Work Type Group	WorkTypeGroup	Standard Object			
Work Type	WorkType	Standard Object			

3. Fields

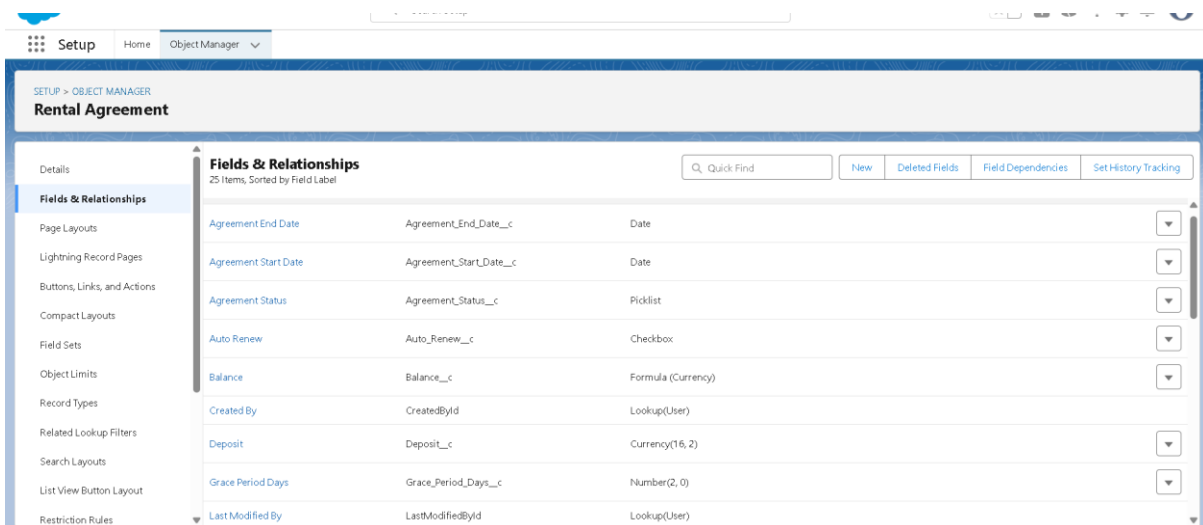
- **Rental_Unit__c Fields:**
 - Unit #: Text (Length: 255)
 - Number of Bedrooms: Number (2, 0 decimals)
 - Number of Bathrooms: Number (2, 0 decimals)
 - Floors: Number (2, 0 decimals)
 - Garage: Picklist (Attached, Detached, Assigned Parking)
 - Number of Parking Spaces: Number (2, 0 decimals)
 - Laundry: Picklist (In-unit hook-ups, Community)
 - Appliances Included: Checkbox
 - Furniture Included: Checkbox
 - Total Square Feet: Number (15, 3 decimals)
 - Air Conditioning: Picklist (Window Unit, Ceiling Fan, Central)
 - Heating: Picklist (Forced Air, Central)
 - Pets Allowed: Checkbox
 - Utilities Included: Multiselect Picklist (Cold Water, Hot Water, Gas, Electric, Sewage, Trash)

The screenshot shows the Salesforce Setup interface for the 'Rental Unit' object. The left sidebar contains navigation links: Setup, Home, Object Manager, Details, Fields & Relationships, Page Layouts, Lightning Record Pages, Buttons, Links, and Actions, Compact Layouts, Field Sets, Object Limits, Record Types, Related Lookup Filters, Search Layouts, List View Button Layout, and Restriction Rules. The main content area is titled 'Rental Unit' and shows a list of fields and their relationships. The table has columns: FIELD LABEL, FIELD NAME, DATA TYPE, CONTROLLING FIELD, and INDEXED. The fields listed are: Air Conditioning (Picklist), Appliances Included (Checkbox), Created By (Lookup(User)), Date Available (Date), Floor (Number(2, 0)), Furniture Included (Checkbox), Garage (Picklist), and Heating (Picklist). The table is sorted by Field Label.

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Air Conditioning	Air_Conditioning__c	Picklist		
Appliances Included	Appliances_Included__c	Checkbox		
Created By	CreatedById	Lookup(User)		
Date Available	Date_Available__c	Date		
Floor	Floor__c	Number(2, 0)		
Furniture Included	Furniture_Included__c	Checkbox		
Garage	Garage__c	Picklist		
Heating	Heating__c	Picklist		

- **Rental_Agreement__c Fields:**

- Rental Unit: Master-Detail (Rental_Unit__c)
- Renter: Master-Detail (Contact)
- Pet Deposit: Currency (16, 2 decimals)
- Rental Has Pets: Checkbox
- Deposit: Currency (16, 2 decimals)
- Rental Amount: Currency (16, 2 decimals)
- Total Deposit: Formula (Currency 16, 2 decimals) = Pet_Deposit__c + Deposit__c
- Total Invoiced: Currency (16, 3 decimals) - Apex roll-up of Statement__c amounts
- Total Payments: Currency (16, 2 decimals) - Apex roll-up of Payment__c amounts
- Balance: Formula (Currency 16, 2 decimals) = Total_Invoiced__c - Total_Payments__c



The screenshot shows the Salesforce Setup interface for the 'Rental Agreement' object. The 'Fields & Relationships' tab is selected, displaying a list of 25 fields. The fields are sorted by label and include various data types such as Date, Picklist, Checkbox, Formula, Lookup, and Currency. The 'Balance' field is highlighted as a Formula field.

Field Name	Field Label	Field Type
Agreement End Date	Agreement_End_Date__c	Date
Agreement Start Date	Agreement_Start_Date__c	Date
Agreement Status	Agreement_Status__c	Picklist
Auto Renew	Auto_Renew__c	Checkbox
Balance	Balance__c	Formula (Currency)
Created By	CreatedById	Lookup(User)
Deposit	Deposit__c	Currency(16, 2)
Grace Period Days	Grace_Period_Days__c	Number(2, 0)
Last Modified By	LastModifiedById	Lookup(User)

- **Payment__c Fields:**

- Amount: Currency (16, 2 decimals)
- Statement: Master-Detail (Statement__c)
- Status: Picklist (Paid, Failed)
- Payment Date: Date/Time
- Authorize.net Transaction Id: Text (Length: 255, External Id)

- Authorize.net Authorization Code: Text (Length: 255)
- Authorize.net Response: Text (Length: 255)
- Billing Name: Text (Length: 255)
- Billing Street: Text Area (Length: 255)
- Billing City: Text (Length: 255)
- Billing State: Text (Length: 2)
- Billing Postal Code: Text (Length: 10)
- Check Account Number: Encrypted Text (Length: 128, Mask: 4)
- Check Routing Number: Encrypted Text (Length: 128, Mask: 4)
- Credit Card Number: Encrypted Text (Length: 16, Mask: Credit Card)
- Credit Card Expiration Month: Picklist (January - December)
- Expiration Year: Text (Length: 4)
- Credit Card Security Code: Encrypted Text (Length: 4, Mask: All)

Setup Home Object Manager

SETUP > OBJECT MANAGER

Payment

Details

Fields & Relationships
22 Items, Sorted by Field Label

Q Quick Find New Deleted Fields Field Dependencies Set History Tracking

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Amount	Amount__c	Currency(16, 2)		
Authorize.net Authorization code	Authorize_net_Authorization_code__c	Text(255)		
Authorize.net Response	Authorize_net_Response__c	Text(255)		
Authorize.net Transaction Id	Authorize_net_Transaction_Id__c	Text(255) (External ID)		✓
Billing City	Billing_City__c	Text(255)		
Billing Name	Billing_Name__c	Text(255)		
Billing Postal Code	Billing_Postal_Code__c	Text(10)		
Billing State	Billing_State__c	Text(2)		

Distribution Order

● **Statement__c Fields:**

- Amount: Currency (16, 2 decimals)
- Additional Fees: Currency (16, 2 decimals, Default: 0)
- Total Amount: Formula (Currency 16, 2) = Amount__c + Additional_Fees__c
- Rental Agreement: Lookup (Rental_Agreement__c)
- Statement Date: Date (Default: Today())
- Due Date: Date (Default: Today() + 15)

- Status: Picklist (Issued, Paid, Past Due)
- Amount Paid: Roll-up Summary (SUM of Payment__c.Amount__c where Status__c = Paid)

Setup > OBJECT MANAGER
Statement

Details
Fields & Relationships
17 Items, Sorted by Field Label

Q, Quick Find New Deleted Fields Field Dependencies Set History Tracking

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Additional Fees	Additional_Fees__c	Currency(16, 2)		▼
Amount	Amount__c	Currency(16, 2)		▼
Amount Paid	Amount_Paid__c	Roll-Up Summary (SUM Payment)		▼
Balance	Balance__c	Formula (Currency)		▼
Created By	CreatedById	Lookup(User)		
Description	Description__c	Long Text Area(32768)		▼
Due Date	Due_Date__c	Date		▼
Last Modified By	LastModifiedById	Lookup(User)		

4. Record Types

- No record types were created for this phase, as the initial data model does not require different business processes or page layouts based on record variations. Record types can be added in future phases if needed to differentiate rental unit types or agreement statuses.

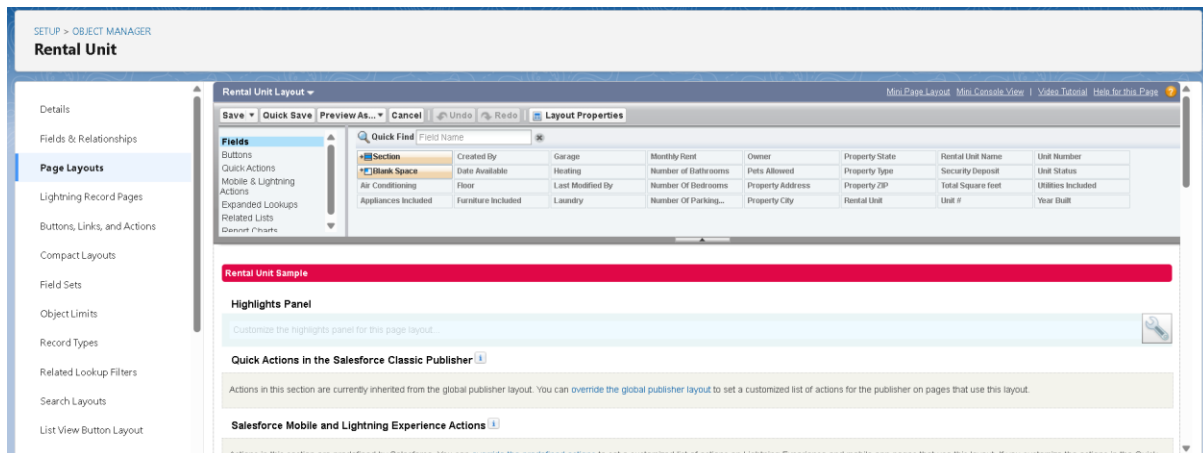
Record Types
3 Items, Sorted by Record Type Label

Q, Quick Find New Page Layout Assignment

RECORD TYPE LABEL	DESCRIPTION	ACTIVE	MODIFIED BY
Cash		✓	Mathand Bhargav Jalasutram, 9/25/2025, 12:07 PM
Check		✓	Mathand Bhargav Jalasutram, 9/25/2025, 12:07 PM
Credit Card		✓	Mathand Bhargav Jalasutram, 9/25/2025, 12:07 PM

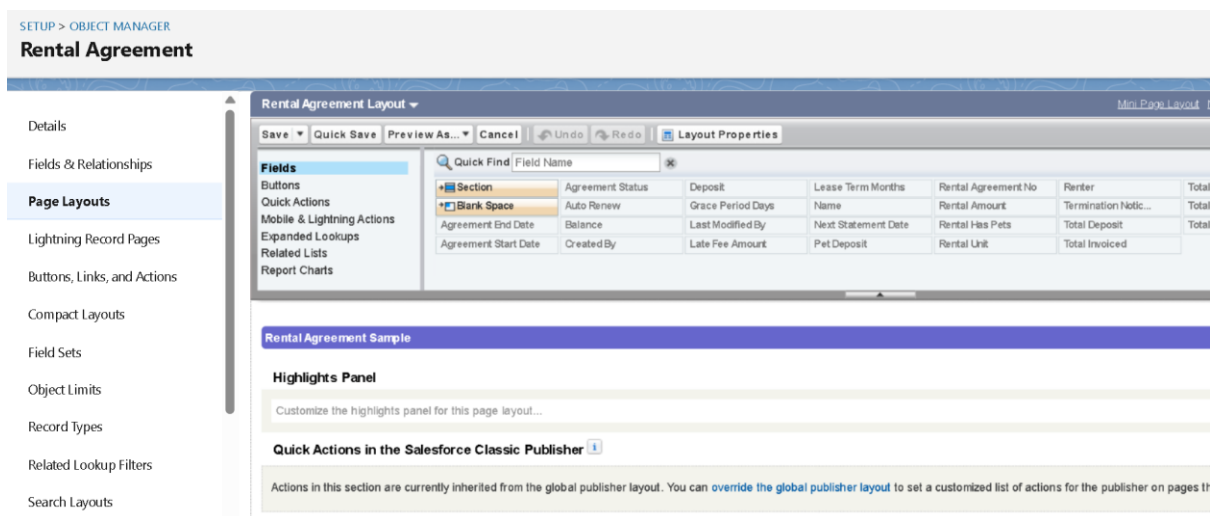
5. Page Layouts

- **Rental_Unit__c Page Layout:**
 - Created a custom page layout named "Rental Unit Detail" to display all fields in a logical order: Unit Details (Unit #, Bedrooms, Bathrooms, Floors), Amenities (Garage, Parking Spaces, Laundry, Appliances Included, Furniture Included, Square Feet, Air Conditioning, Heating, Pets Allowed, Utilities Included).
 - Added a related list for Rental_Agreement__c to view associated agreements.



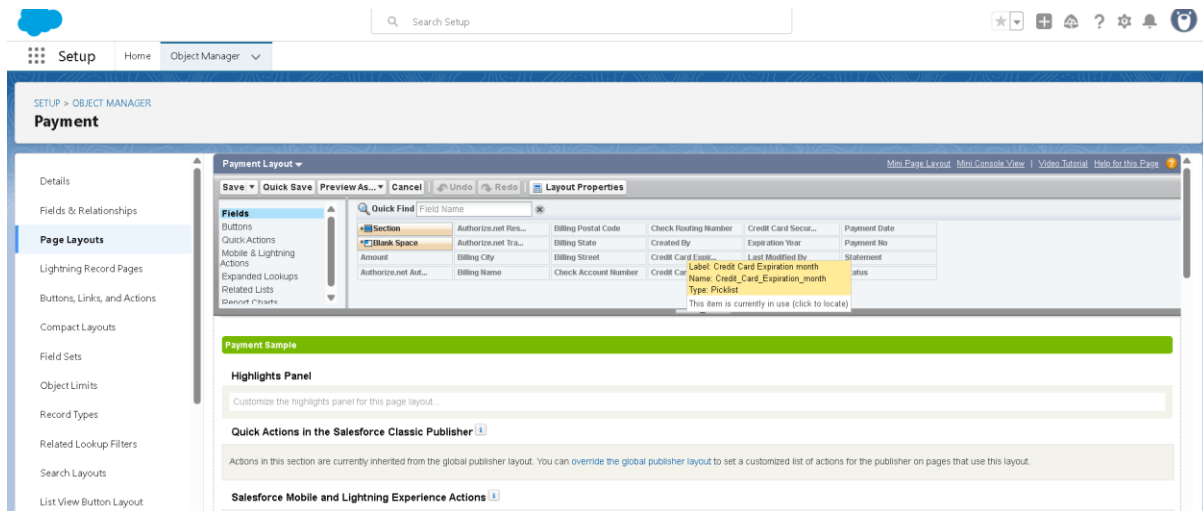
- **Rental_Agreement__c Page Layout:**

- Created "Rental Agreement Detail" layout with sections for Agreement Details (Rental Unit, Renter, Pet Deposit, Rental Has Pets, Deposit, Rental Amount, Total Deposit, Balance) and Financials (Total Invoiced, Total Payments).
- Included related lists for Statement__c and Payment__c.



- **Payment__c and Statement__c Page Layouts:**

- Default layouts were customized to include all fields in sections: Payment Details and Statement Details, respectively.

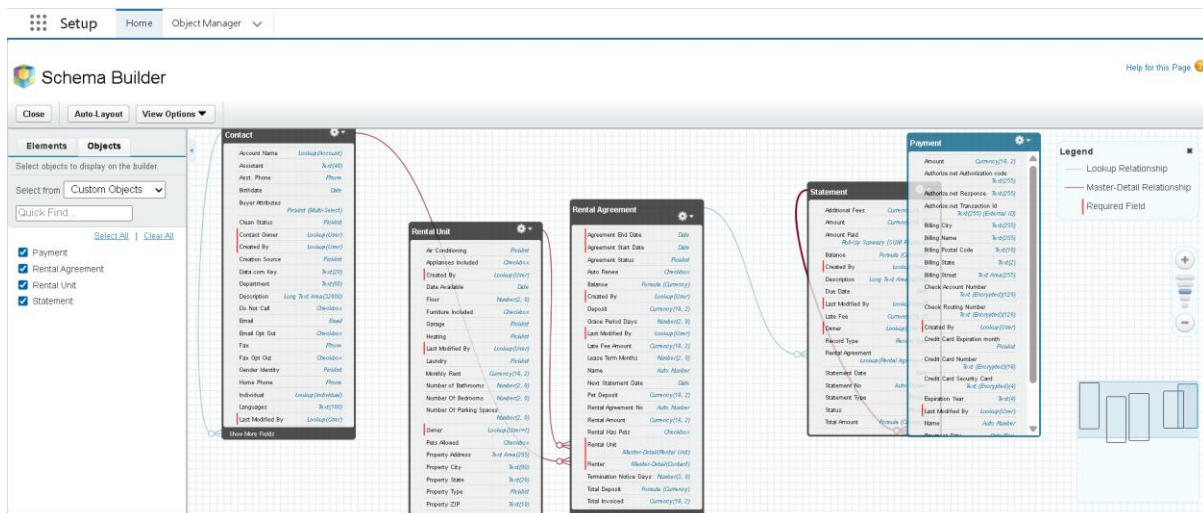


6. Compact Layouts

- **Rental_Unit__c Compact Layout:**
 - Created "Rental Unit Compact" with fields: Unit #, Number of Bedrooms, Number of Bathrooms, Total Square Feet.
- **Rental_Agreement__c Compact Layout:**
 - Created "Agreement Compact" with fields: Rental Unit, Renter, Rental Amount, Balance.
- **Payment__c Compact Layout:**
 - Created "Payment Compact" with fields: Amount, Status, Payment Date.
- **Statement__c Compact Layout:**
 - Created "Statement Compact" with fields: Total Amount, Due Date, Status.

7. Schema Builder

- The Schema Builder was used to visualize and confirm the relationships between objects:
 - Rental_Unit__c (Parent) → Rental_Agreement__c (Child) via Master-Detail.
 - Rental_Agreement__c (Parent) → Statement__c (Child) via Lookup.
 - Statement__c (Parent) → Payment__c (Child) via Master-Detail.
- The diagram ensures data integrity and reflects the hierarchical structure of the data model.



8. Lookup vs Master-Detail vs Hierarchical Relationships

- **Master-Detail Relationships:**
 - Rental_Agreement__c.Rental Unit (Master-Detail to Rental_Unit__c): Enforces data integrity, cascades deletes, and allows roll-up summaries.
 - Rental_Agreement__c.Renter (Master-Detail to Contact): Links to the standard Contact object for renter details.
 - Payment__c.Statement (Master-Detail to Statement__c): Ties payments to specific statements with deletion cascading.
- **Lookup Relationship:**
 - Statement__c.Rental Agreement (Lookup to Rental_Agreement__c): Allows flexibility, as statements can exist independently of agreements if needed, with no deletion cascade.
- **Hierarchical Relationships:**
 - Not implemented, as the model does not require user or role hierarchies (e.g., manager-subordinate relationships).

9. Junction Objects

- No junction objects were created in this phase, as the current model uses direct Master-Detail and Lookup relationships to manage one-to-many associations (e.g., one Rental_Unit__c to many Rental_Agreement__c). A junction object would be considered in future phases if many-to-many relationships (e.g., multiple renters per unit) are required.

10. External Objects

- No external objects were implemented, as the data model relies entirely on internal Salesforce objects. External objects could be added in future phases to integrate with

external systems (e.g., Authorize.net transaction data), but this is deferred to Phase 5 or later.

11. Testing & Validation

- **Validation:**
 - Created test records for Rental_Unit__c, Rental_Agreement__c, Statement__c, and Payment__c to verify field data entry and relationship behavior.
 - Confirmed roll-up summaries (Total Invoiced, Total Payments, Amount Paid) and formulas (Total Deposit, Balance, Total Amount) calculate correctly.
- **Testing:**
 - Tested page layouts and compact layouts in the UI to ensure all fields are visible and related lists function.
 - Verified Schema Builder reflects the intended relationships.

Insert Screenshot: Upload a screenshot of a sample Rental_Agreement__c record detail page showing related lists and field values. Place this screenshot after the "Testing" subsection.

12. Completion Checklist

- Custom Objects (Rental_Unit__c, Rental_Agreement__c, Payment__c, Statement__c) created.
- All fields defined and configured.
- Record Types (Not implemented, optional for future).
- Page Layouts customized.
- Compact Layouts created.
- Schema Builder used to visualize relationships.
- Relationships (Master-Detail, Lookup) implemented.
- Junction Objects (Not required in this phase).
- External Objects (Deferred to future phases).

13. Next Steps

- Proceed to **Phase 4: Process Automation** to implement Flows, Approval Processes, and Email Alerts.
- Consider adding Record Types or Junction Objects if business requirements evolve (e.g., multiple renters per unit).

