

Project Documentation: CRM Application for Laptop Rentals

Category: Salesforce

Skills Required: Salesforce Developer

Project Overview

The **CRM Application for Laptop Rentals** is designed to streamline the process of renting laptops to customers. The application utilizes Salesforce's robust CRM capabilities to enhance customer interactions, optimize store operations, and increase overall efficiency. A key feature of the application is the integration of email communication, enabling effective engagement with potential and existing customers.

Features and Functionalities

- **Total Laptops Management:** Tracks and manages the inventory of laptops available for rent.
- **Consumer Management:** Manages customer details and their interactions with the rental service.
- **Laptop Booking Process:** Facilitates the booking of laptops and manages the entire booking lifecycle.
- **Billing Process:** Automates billing and payment processes for rentals.
- **User Roles and Profiles:** Defines different levels of access and roles, such as Owner and Agent, within the application.
- **Validation Rules:** Ensures the accuracy and completeness of critical data fields such as phone number and email.
- **Automation via Flows and Apex:** Automates key processes like laptop distribution using Salesforce Flows and Apex triggers.
- **Reports and Dashboards:** Provides actionable insights through reports and visual data dashboards.

Detailed Setup Instructions

1. Creating Custom Objects

1. Navigate to Setup:

- Go to the Setup page in Salesforce and click on Object Manager.

2. Create Custom Object: Total Laptops

- Click on `Create > Custom Object`.
- Fill in the following details:
 - **Label Name:** Total Laptops
 - **Plural Label Name:** Total Laptops
 - **Record Name Label:** Total Laptops
 - **Data Type:** Text
- Enable the following options:
 - Allow Reports
 - Allow Search
 - Track Field History
- Click `Save`.

3. Repeat the process for the following custom objects:

- Consumer
- Laptop Booking
- Billing Process

Total Laptops Object:

The screenshot shows the Salesforce Object Manager interface for the 'Total Laptops' object. The left sidebar contains a navigation menu with options: 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, and List View Button Layout. The 'Details' section is active, showing the following configuration:

Details	
Description	
API Name	Total_Laptops__c
Custom	✓
Singular Label	Total Laptops
Plural Label	Total Laptops
Enable Reports	✓
Track Activities	
Track Field History	✓
Deployment Status	Deployed
Help Settings	Standard salesforce.com Help Window

Consumer Object:

SETUP > OBJECT MANAGER

consumer

Details

Fields & Relationships

Page Layouts

Lightning Record Pages

Buttons, Links, and Actions

Compact Layouts

Field Sets

Object Limits

Record Types

Details

Description

API Name
consumer__c

Custom
✓

Singular Label
consumer

Plural Label
consumer

Enable Reports
✓

Track Activities

Track Field History
✓

Deployment Status
Deployed

Help Settings
Standard salesforce.com Help Window

Laptop booking Object:

SETUP > OBJECT MANAGER

Laptop Bookings

Details

Fields & Relationships

Page Layouts

Lightning Record Pages

Buttons, Links, and Actions

Compact Layouts

Field Sets

Object Limits

Record Types

Related Lookup Filters

Details

Description

API Name
Laptop_Bookings__c

Custom
✓

Singular Label
Laptop Bookings

Plural Label
Laptop Bookings

Enable Reports
✓

Track Activities

Track Field History
✓

Deployment Status
Deployed

Help Settings
Standard salesforce.com Help Window

Billing process Object:

SETUP > OBJECT MANAGER

Billing Process

Details

Fields & Relationships

Page Layouts

Lightning Record Pages

Buttons, Links, and Actions

Compact Layouts

Field Sets

Object Limits

Record Types

Related Lookup Filters

Details

Description

API Name
Billing_Process__c

Custom
✓

Singular Label
Billing Process

Plural Label
Billing Process

Enable Reports
✓

Track Activities

Track Field History
✓

Deployment Status
Deployed

Help Settings
Standard salesforce.com Help Window

2. Creating Tabs

1. Navigate to Setup:

- Type "Tabs" in the Quick Find bar and select **Tabs**.

2. Create a New Tab:

- Click on **New** under Custom Object Tabs.
- Select the custom object **Total Laptops** and choose a Tab Style.
- Keep default settings and uncheck **Include Tab in Custom App**.
- Click **Save**.

3. Repeat for the following objects:

- Consumer
- Laptop Booking
- Billing Process

Tabs:

Q tabs

✓ User Interface

Rename **Tabs** and Labels

Tabs

Didn't find what you're looking for?
Try using Global Search.

SETUP
Tabs

Custom Tabs

[What is This?](#) [Help for this Page](#)

You can create new custom tabs to extend Salesforce functionality or to build new application functionality.

Custom Object tabs look and behave like the standard tabs provided with Salesforce. Web tabs allow you to embed external web applications and content within the Salesforce window. Visualforce tabs allow you to embed Visualforce pages. Lightning Component tabs allow you to add Lightning components to the navigation menu in Lightning Experience and the mobile app. Lightning Page tabs allow you to add Lightning Pages to Lightning Experience and the mobile app.

Action	Label	Tab Style	Description
	Billing Process	Credit card	
	consumer	People	
	Laptop Bookings	Apple	
	Total Laptops	Laptop	

Web Tabs [What is This?](#)
No Web Tabs have been defined

Visualforce Tabs [What is This?](#)
No Visualforce Tabs have been defined

Lightning Page Tabs [What is This?](#)

3. Creating a Lightning App Page

1. Navigate to App Manager:

- Search for **App Manager** in the Quick Find bar.

2. Create a New Lightning App:

- Click New Lightning App and name it LAPTOP RENTALS.
- Add relevant Navigation Items such as Total Laptops, Consumer, Laptop Booking, and Billing Process.
- Add System Administrator to the User Profiles section.
- Click Save & Finish.

App Details:

The screenshot shows the 'App Details & Branding' configuration page in the Lightning App Builder. The left sidebar lists 'App Settings' with sub-items: 'App Details & Branding' (selected), 'App Options', 'Utility Items (Desktop Only)', 'Navigation Items', and 'User Profiles'. The main content area is titled 'App Details & Branding' and includes the instruction: 'Give your Lightning app a name and description. Upload an image and choose the highlight color for its navigation bar.' It is divided into two sections: 'App Details' and 'App Branding'. The 'App Details' section contains fields for 'App Name' (LAPTOP RENTALS), 'Developer Name' (LAPTOP_RENTALS), and a 'Description' field with the placeholder 'Enter a description...'. The 'App Branding' section includes an 'Image' upload area showing a laptop, a 'Primary Color Hex Value' field with the value '#0070D2', and 'Org Theme Options' with a checkbox 'Use the app's image and color instead of the org's custom theme' which is currently unchecked. Below these is an 'App Launcher Preview' showing a button with the app icon and the name 'LAPTOP RENTALS'.

App navigation:

The screenshot shows the 'Navigation Items' configuration page in the Lightning App Builder. The left sidebar is the same as the previous screenshot, with 'Navigation Items' selected under 'App Settings'. The main content area is titled 'Navigation Items' and includes the instruction: 'Choose the items to include in the app, and arrange the order in which they appear. Users can personalize the navigation to add or move items, but users can't remove or rename the items that you add. Some navigation items are available only for phone or only for desktop. These items are dropped from the navigation bar when the app is viewed in a format that the item doesn't support.' It is divided into two sections: 'Available Items' and 'Selected Items'. The 'Available Items' section has a search bar and a list of items including Accounts, All Sites, Alternative Payment Methods, Analytics, App Launcher, Approval Requests, Asset Action Sources, Asset Actions, Asset State Periods, and Assets. The 'Selected Items' section shows a list of items that have been added to the navigation bar: Total Laptops, consumer, Laptop Bookings, and Billing Process. Arrows on the right side of the 'Selected Items' list allow for reordering the items.

App user profiles:

App Settings

User Profiles

Choose the user profiles that can access this app.

Available Profiles

Search: Type to filter list...

- Agent
- Analytics Cloud Integration User
- Analytics Cloud Security User
- Authenticated Website
- Authenticated Website
- B2B Reordering Portal Buyer Profile
- cleaner
- Contract Manager
- Cross Org Data Proxy User
- Custom: Marketing Profile
- Custom: Sales Profile

Selected Profiles

- System Administrator

4. Adding Fields to the Objects

Follow standard Salesforce procedures to add required fields to the following objects:

1. Total Laptops

SETUP > OBJECT MANAGER

Total Laptops

Fields & Relationships

6 Items, Sorted by Field Label

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Created By	CreatedById	Lookup(User)		
Laptops Available	Laptops_Available__c	Formula (Number)		
Laptops delivered	Laptops_delivered__c	Roll-Up Summary (COUNT Laptop Bookings)		
Last Modified By	LastModifiedById	Lookup(User)		
Owner	OwnerId	Lookup(User,Group)		✓
Total Laptops	Name	Text(80)		✓

2. Consumer

SETUP > OBJECT MANAGER

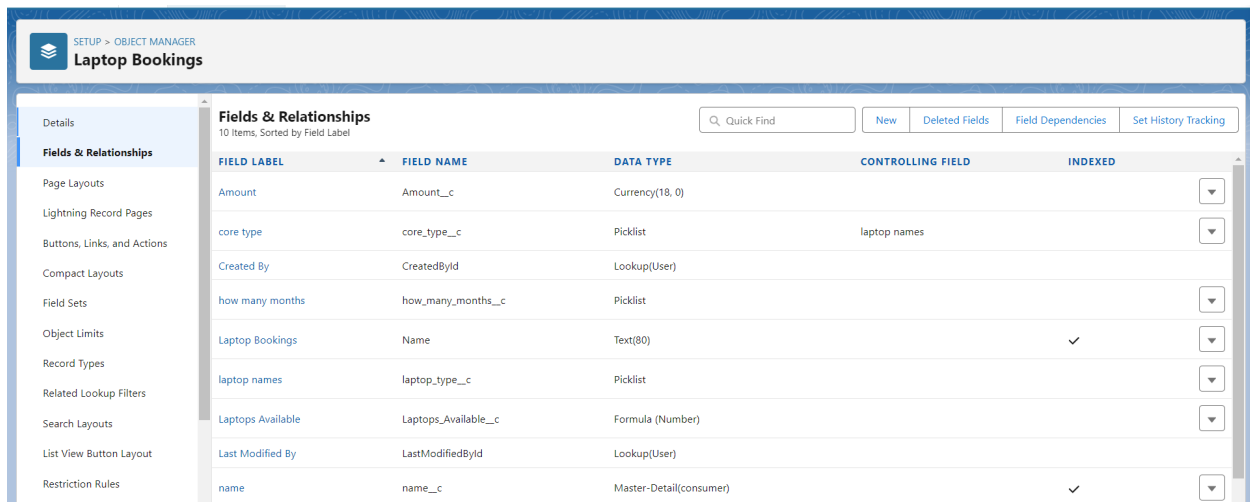
consumer

Fields & Relationships

8 Items, Sorted by Field Label

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Address	Address__c	Text Area(255)		
consumer Status	consumer_Status__c	Picklist		
consumer_name	Name	Text(80)		✓
Created By	CreatedById	Lookup(User)		
Email	Email__c	Email		
Last Modified By	LastModifiedById	Lookup(User)		
Owner	OwnerId	Lookup(User,Group)		✓
Phone number	Phone_number__c	Phone		

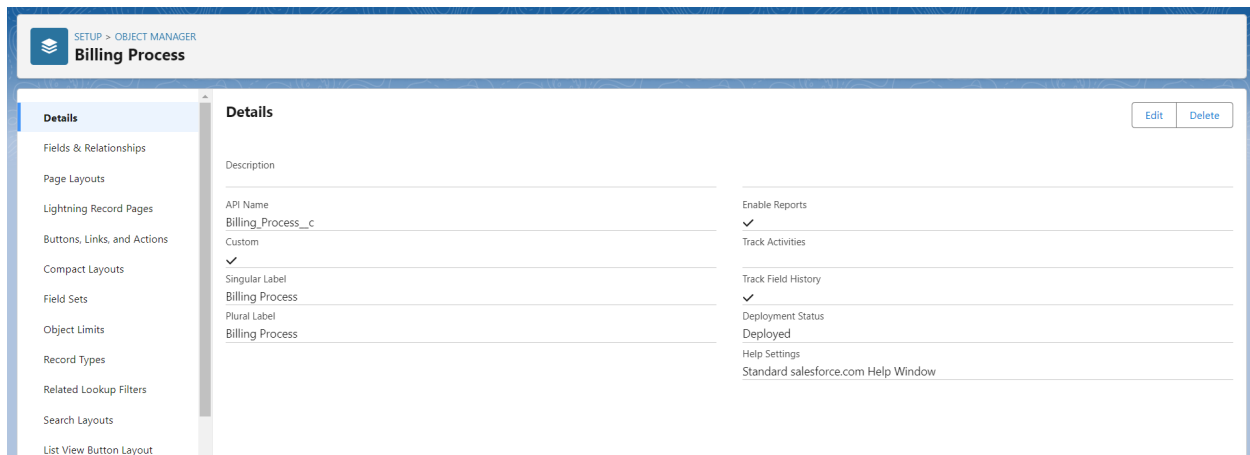
3. Laptop Booking



The screenshot shows the Salesforce Object Manager interface for the 'Laptop Bookings' object. The left sidebar contains navigation links: Details, Fields & Relationships (selected), 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 'Fields & Relationships' and shows a list of 10 items. The table has columns: FIELD LABEL, FIELD NAME, DATA TYPE, CONTROLLING FIELD, and INDEXED. The items are: Amount (Currency), core type (Picklist, controlled by laptop names), Created By (Lookup), how many months (Picklist), Laptop Bookings (Text, indexed), laptop names (Picklist), Laptops Available (Formula), Last Modified By (Lookup), and name (Master-Detail, indexed).

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Amount	Amount__c	Currency(18, 0)		
core type	core_type__c	Picklist	laptop names	
Created By	CreatedById	Lookup(User)		
how many months	how_many_months__c	Picklist		
Laptop Bookings	Name	Text(80)		✓
laptop names	laptop_type__c	Picklist		
Laptops Available	Laptops_Available__c	Formula (Number)		
Last Modified By	LastModifiedById	Lookup(User)		
name	name__c	Master-Detail(consumer)		✓

4. Billing Process



The screenshot shows the 'Details' page for the 'Billing Process' object in Salesforce Object Manager. The left sidebar is the same as in the previous screenshot. The main content area is titled 'Details' and contains a form with the following fields: Description, API Name (Billing_Process__c), Custom (checked), Singular Label (Billing Process), Plural Label (Billing Process), Enable Reports (checked), Track Activities (checked), Track Field History (checked), Deployment Status (Deployed), Help Settings (Standard salesforce.com Help Window), and Edit/Delete buttons.

Field	Value
Description	
API Name	Billing_Process__c
Custom	✓
Singular Label	Billing Process
Plural Label	Billing Process
Enable Reports	✓
Track Activities	✓
Track Field History	✓
Deployment Status	Deployed
Help Settings	Standard salesforce.com Help Window

5. Creating a Validation Rule

1. Navigate to Object Manager:

- Go to the Setup page and select Object Manager.

2. Edit Consumer Object:

- Choose the Consumer object and click Edit.

3. Create a Validation Rule:

- Click on Validation Rules > New.
- Enter the following details:
 - **Rule Name:** Phonenumeroemailblankrule
 - **Description:** Ensure that both phone number and email are not blank.
 - **Formula:** `OR (ISBLANK (phone_number__c) , ISBLANK (email__c))`
- Click Save.

Rule:

SETUP > OBJECT MANAGER
consumer

Validation Rules
1 Items, Sorted by Rule Name

RULE NAME	ERROR LOCATION	ERROR MESSAGE	ACTIVE	MODIFIED BY
Phonenumberoremailblankrule	Top of Page	please fill the phone number and email	✓	Koda Dinesh, 26/09/2024, 9:10 pm

6. Creating Users

Follow these steps to create users in Salesforce for the Laptop Rentals CRM:

1. Navigate to Users:

- Go to Setup in Salesforce.
- In the **Quick Find** box, type **Users** and select the **Users** option.

2. Create New User (Owner):

- Click on **New User**.
- Fill in the following details:
 - **First Name:** Vicky
 - **Last Name:** Y
 - **Alias:** [Alias Name]
 - **Email:** [Your Personal Email]
 - **Username:** text@text.text
 - **Nickname:** [Nickname]
 - **Role:** Owner
 - **User License:** Salesforce
 - **Profiles:** Owner
- Click **Save**.

3. Create Another User (Agent):

- Click on **New User** again.
- Fill in the following details:
 - **First Name:** Ram
 - **Last Name:** Ram

- **Alias:** [Alias Name]
- **Email:** [Your Personal Email]
- **Username:** text@text.text
- **Nickname:** [Nickname]
- **Role:** Agent
- **User License:** Salesforce Platform
- **Profiles:** Standard Platform User

- Click **Save**.

Users:

The screenshot shows the Salesforce Setup Users page. The left sidebar contains navigation options: Setup Home, Service Setup Assistant, Commerce Setup Assistant, Multi-Factor Authentication Assistant, Hyperforce Assistant, Release Updates, Lightning Experience Transition Assistant, Salesforce Mobile App, Lightning Usage, Optimizer, Sales Cloud Everywhere, ADMINISTRATION, Users, Permission Set Groups, Permission Sets, Profiles, and Public Groups. The main content area is titled 'All Users' and includes a 'Quick Find' bar. Below the title, there's a description: 'On this page you can create, view, and manage users. To get more licenses, use the Your Account app. Let's Go'. A 'View' dropdown is set to 'All Users'. The user list table has columns: Action, Full Name, Alias, Username, Role, Active, and Profile. The table lists several users, including 'Brown Courtney' (Manager), 'Chatter Expert' (Chatter), 'Dinesh Koda' (System Administrator), 'guestadmin' (System Administrator), 'ram' (Agent), 'User Integration' (Analytics Cloud Integration User), 'User Security' (Analytics Cloud Security User), 'Wheeler Allison' (Standard Platform User), and 'y_vicky' (owner). At the bottom of the table, there are buttons for 'New User', 'Reset Password(s)', and 'Add Multiple Users'.

7. Creating a Flow for Laptop Distribution

To automate the laptop distribution process, follow these steps to create a Salesforce Flow that assigns laptops to customers based on availability and booking details.

Steps to Create a Salesforce Flow for Laptop Distribution:

1. **Navigate to Setup:**
 - In Salesforce, go to **Setup** and type **Flows** in the Quick Find bar.
 - Select **Flows** from the dropdown menu.
2. **Create a New Flow:**
 - Click on **New Flow** and choose **Record-Triggered Flow** as the type of flow.
 - This type of flow will trigger automatically when a laptop booking is created or updated.
3. **Select the Trigger Object:**

- In the next step, choose the **Laptop Booking** object as the trigger for the flow.
 - Set the trigger to fire when a record is **created or updated**.
4. **Define Criteria:**
 - Add a condition to check the availability of laptops in the **Total Laptops** object.
 - The flow should only proceed if there are available laptops that match the booking details, such as laptop type and configuration.
 5. **Assignment Element:**
 - Add an **Assignment** element to assign laptops to customers.
 - The flow should retrieve available laptops from the **Total Laptops** object and assign the first available one to the booking.
 6. **Update Records:**
 - Add an **Update Records** element to update the booking with the assigned laptop details.
 - Update the **Laptop Booking** record with the assigned laptop's ID, status (Booked), and any additional details.
 7. **Send Confirmation:**
 - Optionally, add an email notification to confirm the booking and notify the customer. Use **Email Alert** or **Apex Action** to send emails.
 8. **Test the Flow:**
 - Save and activate the flow.
 - Run tests to ensure that it correctly assigns laptops based on availability and updates the booking records.



8. Developing Apex Code

To automate the business processes involved in laptop bookings, such as updating laptop availability and sending notifications, you need to create both an Apex class and an Apex trigger.

Apex Class: LaptopBookingHandler

The **LaptopBookingHandler** class contains the business logic for handling the key processes, including sending email notifications when a laptop is booked.

```

public class LaptopBookingHandler {
    public static void sendEmailNotification (List<Laptop_Bookings__c> lapList){
        for(Laptop_Bookings__c lap: lapList){
            Messaging.SingleEmailMessage email = new Messaging.SingleEmailMessage();
            email.setToAddresses(new List<String>{lap.Email__c});
            email.setSubject('Welcome to our company');
            string body = 'Dear ' + lap.Name + ',\n';
            body += 'Welcome to Laptop Rentals! You have been seen as a valuable
customer.\n';
            body += 'Laptop Amount = ' + lap.Amount__c + '\n';
            body += 'Core type = ' + lap.core_type__c + '\n';
            email.setPlainTextBody(body);
            Messaging.sendEmail(new List<Messaging.SingleEmailMessage>{email});
        }
    }
}

```

Apex Trigger: LaptopBooking

The trigger you've provided is designed to send email notifications after a laptop booking record is inserted or updated. Below is a refined version with some improvements in readability and clarity.

```

trigger LaptopBooking on Laptop_Bookings__c (after insert, after update) {

    // Check if the trigger is after insert or after update
    if (trigger.isAfter && (trigger.isInsert || trigger.isUpdate)) {

        // Call the method to send email notifications from the LaptopBookingHandler
        class
            LaptopBookingHandler.sendEmailNotification(trigger.new);
    }
}

```

9. Generating Reports and Dashboards

In Salesforce, **Reports** and **Dashboards** are powerful tools that allow you to visualize and analyze key metrics. Here's how you can generate reports and create a dashboard for the Laptop Rentals CRM application.

Reports:

	consumer: consumer_name	Laptop Bookings: Laptop Bookings	Total No Of Laptops: Total Laptops	Amount
1	Neha Gupta	Neha Gupta	1	₹4,500
2	bhargav	bhargav	2	₹3,000
3	Anjali Bhatt	Anjali Bhatt	2	₹4,500
4	Amit Sharma	Amit Sharma	6	₹2,500
5	Kiran Desai	Kiran Desai	6	₹4,800
6	Rahul Mehra	Rahul Mehra	6	₹10,000
7	Vikas Kumar	Vikas Kumar	10	₹6,700
8	Vikas Kumar	Vikas Kumar	4	₹6,700
9				₹42,700

Dashboard:

