

Project Title: A CRM Application for Laptop Rentals

1. Project overview:

This **CRM application** is designed to streamline and enhance the process of **renting laptops for short-term use**. The primary objective is to leverage **Salesforce's Customer Relationship Management** capabilities to foster better customer relationships, resulting in an elevated customer experience. By managing customer data, rental transactions, and inventory through a unified platform, this project optimizes store operations, reducing manual effort and improving overall efficiency. Additionally, the CRM facilitates seamless communication with customers via automated **email notifications**, keeping them informed about bookings, billing, and other important updates. The result is a comprehensive solution that supports **efficient rental management, improved customer satisfaction, and operational excellence** for the business.

Goals:

- Enhance customer satisfaction through personalized service.
- Streamline and automate rental booking and inventory management.
- Improve team productivity and reduce manual tasks.
- Provide data-driven insights for informed decision-making.
- Ensure secure and efficient data management across users and roles.

Benefits:

- Centralizes customer data for personalized service and relationship management.
- Automates repetitive tasks to boost productivity and efficiency.

- Provides real-time insights with customizable reports and dashboards.
- Integrates easily with other tools, enhancing data flow and reducing silos.
- Offers mobile accessibility, enabling flexibility and responsiveness on the go.

2.Objectives:

- **Streamline Sales Processes:** Use Salesforce solutions to automate and enhance sales workflows, minimizing manual tasks and boosting lead management efficiency.
- **Improve Customer Engagement:** Take advantage of Salesforce tools to deliver a tailored experience overall satisfaction. for customers, enhancing communication and overall satisfaction.
- **Insights from Data:** Utilize Salesforce analytics to collect actionable insights and effectively monitor performance metrics.

3.Salesforces key features and concepts utilized

This Salesforce CRM project utilize the following concepts and incorporates a variety of features

- **Custom Objects:** Defined unique custom objects such as **Consumer, Laptop Bookings, Total Laptops, Billing Process** to handle specific requirements for managing customer data, rental transactions, and inventory. These custom objects allowed precise data handling and organization beyond standard Salesforce objects.
- **Custom Tabs:** Created custom tabs for each custom object to provide easy access to the **Consumer, Laptop Bookings, Billing Process** and **Total Laptops** information, enabling the team to navigate and manage data directly from the Salesforce app interface.
- **Creating Lightning Apps:** Built custom Lightning apps for the **Laptop Rentals CRM** to provide a tailored user interface, streamline workflows, and improve user experience by

organizing all necessary tabs, reports, and dashboards under one cohesive application.

- **Validation Rules:** Implemented validation rules to maintain data integrity and enforce business requirements. For example, the customer should specify his/her contact information either the email or phone number.
- **Profile Cloning and Custom Permissions:** Cloned the standard User profile to create **Owner** and **Agent** profiles, customizing permissions to restrict or allow access to specific objects and data fields based on user roles. This ensured proper access control and safeguarded sensitive information.
- **Role Hierarchy and Role Creation:** Established a role hierarchy by creating an **Owner** role under the CEO and an **Agent** role under the Owner.
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- **User Creation:** Created two user accounts: Owner and Agent. The Owner has elevated permissions for full control, while the Agent can handle customer interactions and manage bookings within the limits set by their profile.
- **Flows for Laptop Models:** Created a Record Triggered for Laptop Models and for automating the model selection, processor type selection, selecting the number of months to rent the laptop and the charges based on the chosen inputs.
- **Apex Programming:** Created Apex classes and triggers to carry out complex business logics and trigger the email notifications after booking a laptop for rent.
- **Reports and Report Sharing:** Created a custom report to provide insights into rental activity, and filtered the data according to the types of versions shared this report to the Owner.
- **Dashboard Folder and Dashboard Creation:** Created a Dashboard to represent the created report in the form of a donut chart that enables to analyse the rental amounts for each version.

4.Detailed steps to Solution Design:

The a step-by-step outlinefor the **Solution Design** of the **Laptop RentalsCRM**

Step 1: Creating objects and required fileds

Created objects such as cosumer, Laptop Bookings, Total Laptops, Billing Process and created the required filed and relationships for each of the objects.

- **Consumer Object:** The Consumer object is designed to store and track customer information within the Laptop Rentals CRM system. It provides a centralized repository of customer details,allowing quick access to key information for each rentaltransaction.

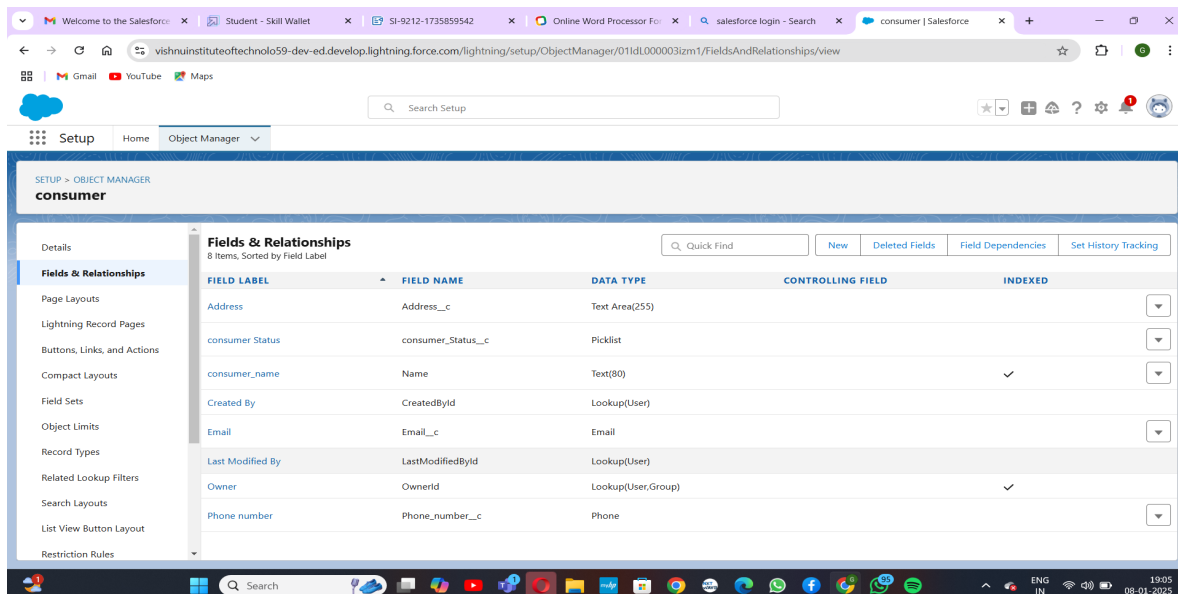
Fields and Relationships created:

Phone_number__c: Stores the contact number of the customer for easy communication.

Email__c:Records the customer's email address for notifications and follow-ups.

Address__c: Holdsthe customer's physicaladdress for deliveryor identification purpose.

consumer_Status__c: Indicates the currentstatus of the customer (e.g., student, employeeor others) for tracking engagement.



The screenshot shows the Salesforce Setup interface for the 'consumer' object. The 'Fields & Relationships' section is active, displaying a table of fields. The table has columns for Field Label, Field Name, Data Type, Controlling Field, and Indexed status. The fields listed are:

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	CreatedBy	Lookup(User)		
Email	Email__c	Email		
Last Modified By	LastModifiedBy	Lookup(User)		
Owner	OwnerId	Lookup(User Group)		✓
Phone number	Phone_number__c	Phone		

- **Laptop Bookings Object:** The Laptop Bookings custom object is used to store and manage information about each rental booking made by customers. It links to the Consumer object to associate bookings with specific customers and connects with the Total Laptops object to track inventory.

Fields and Relationships created:

Name: A text data type stores the booking name for each booking

Laptop_names__c: A picklist value that enables the consumers to select the laptop model to be selected.

core_type__c: A picklist value to specify the processor type for the laptop model that has been selected by the consumers.

Amount__c: Amount the consumer wants to pay for the selected laptop model. **Email__c:** Stores the email of the customers.

Name__c: A lookup value to the consumer object that specifies which consumer is going to rent the laptop.

Total_No_Of_Laptops__c: A lookup value to the Total Laptops object that specifies the number of laptops the consumer wants to rent.

The screenshot shows the Salesforce Setup page for the 'Laptop Bookings' object. The 'Fields & Relationships' section is expanded, displaying a table of fields. The table has columns for Field Label, Field Name, Data Type, Controlling Field, and Indexed. The fields listed are:

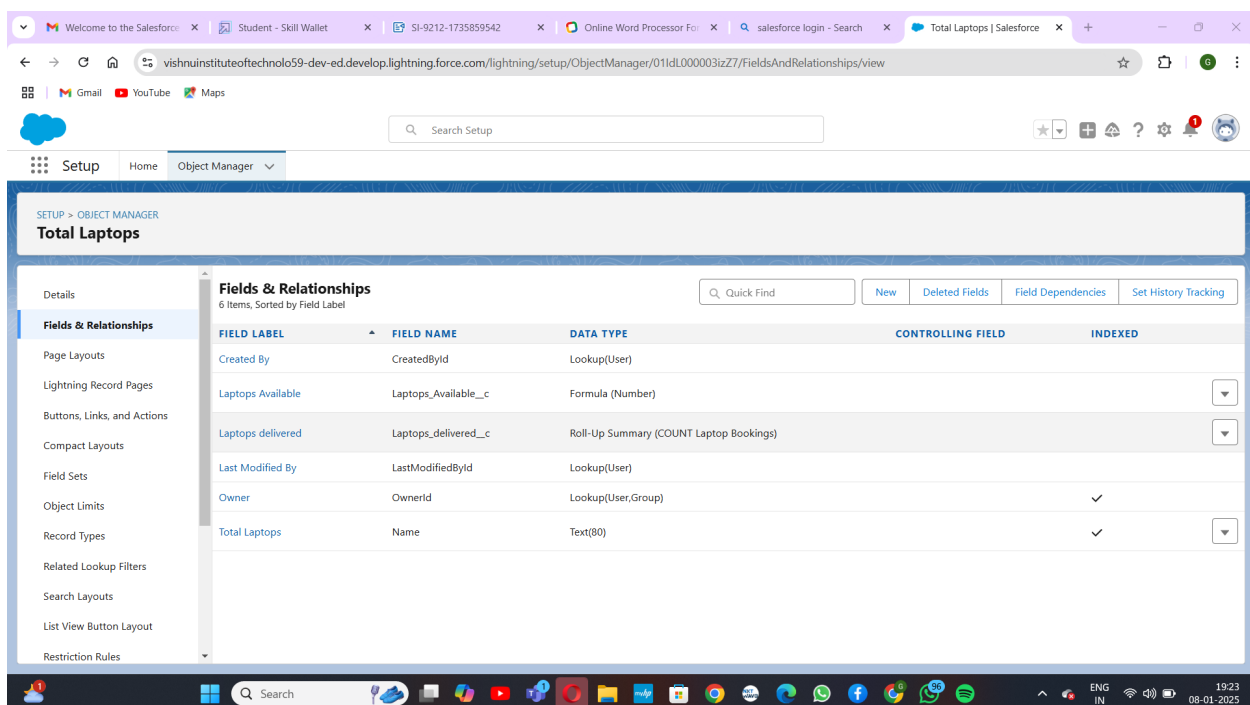
FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Amount	Amount__c	Currency(18, 0)		
Core Type	Core_Type__c	Picklist	Laptop Names	
Created By	CreatedById	Lookup(User)		
how many months	how_many_months__c	Picklist		
Laptop Bookings	Name	Text(80)		✓
Laptop Names	Laptop_Names__c	Picklist		
Laptops Available	Laptops_Available__c	Formula (Number)		
Last Modified By	LastModifiedById	Lookup(User)		

- **Total Laptops Object:** This custom object maintains an inventory of all available laptops for rental. It tracks details like the specifications of each laptop, its availability status, and usage history.

Fields and Relationships:

Laptops_Available__c: Keeps track of the number of laptops available in the inventory.

This is a formula field in which the value will be updated when laptops are to be shipped from the inventory.



The screenshot shows the Salesforce Setup interface for the 'Total Laptops' object. The 'Fields & Relationships' tab is selected, displaying a table of fields. The table has columns for Field Label, Field Name, Data Type, Controlling Field, and Indexed. The fields listed are: Created By (Lookup(User)), Laptops Available (Formula (Number)), Laptops delivered (Roll-Up Summary (COUNT Laptop Bookings)), Last Modified By (Lookup(User)), Owner (Lookup(User,Group)), and Total Laptops (Text(80)).

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)		✓

- **Billing Process Object:** This custom object manages the billing process for laptop rentals. It tracks billing details, payment status, and related transactions to ensure accurate financial records for each rental.

Fields and Relationships

- **Amount__c:** A formula field (Number) that calculates the total amount for the billing process based on predefined criteria.
- **Name:** The standard text field used as the unique identifier for each billing record. This field's label might be "Billing Process Name."

- **Laptop_Booking__c:** A lookup field that associates each billing record with a specific

laptop booking in the Laptop_Bookings__c object.

- **Name__c:** A master-detail relationship to the Consumer object, linking each billing record to a specific consumer.
- **Payment_Mode__c:** A picklist field that specifies the mode of payment (e.g., "Credit Card," "Bank Transfer," "Cash").

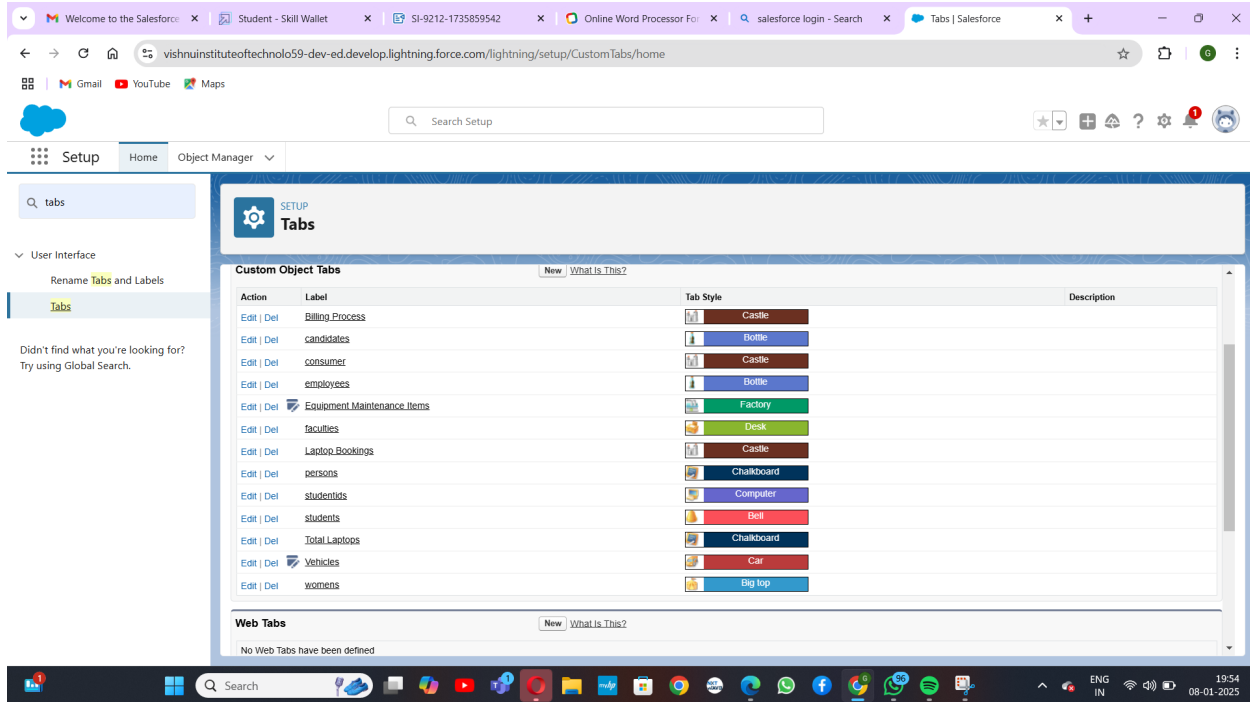
The screenshot shows the Salesforce Setup interface. The left sidebar contains a navigation menu with options like Details, Fields & Relationships, Page Layouts, Lightning Record Pages, Buttons, Links, and Actions, Compact Layouts, Field Sets, Object Limits, Record Types, Related Lookup Filters, Search Layouts, List View Button Layout, and Restriction Rules. The main content area is titled 'Billing Process' and shows the 'Fields & Relationships' section. It lists 7 items, sorted by Field Label. The table below shows the details of these fields.

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Amount	Amount__c	Formula (Currency)		
Billing ProcessName	Name	Text(80)		✓
Created By	CreatedById	Lookup(User)		
Laptop Booking	Laptop_Booking__c	Lookup(Laptop Bookings)		✓
Last Modified By	LastModifiedById	Lookup(User)		
Name	Name__c	Master-Detail(consumer)		✓
Payment Mode	Payment_Mode__c	Picklist		

Step 2: Creating Tabs

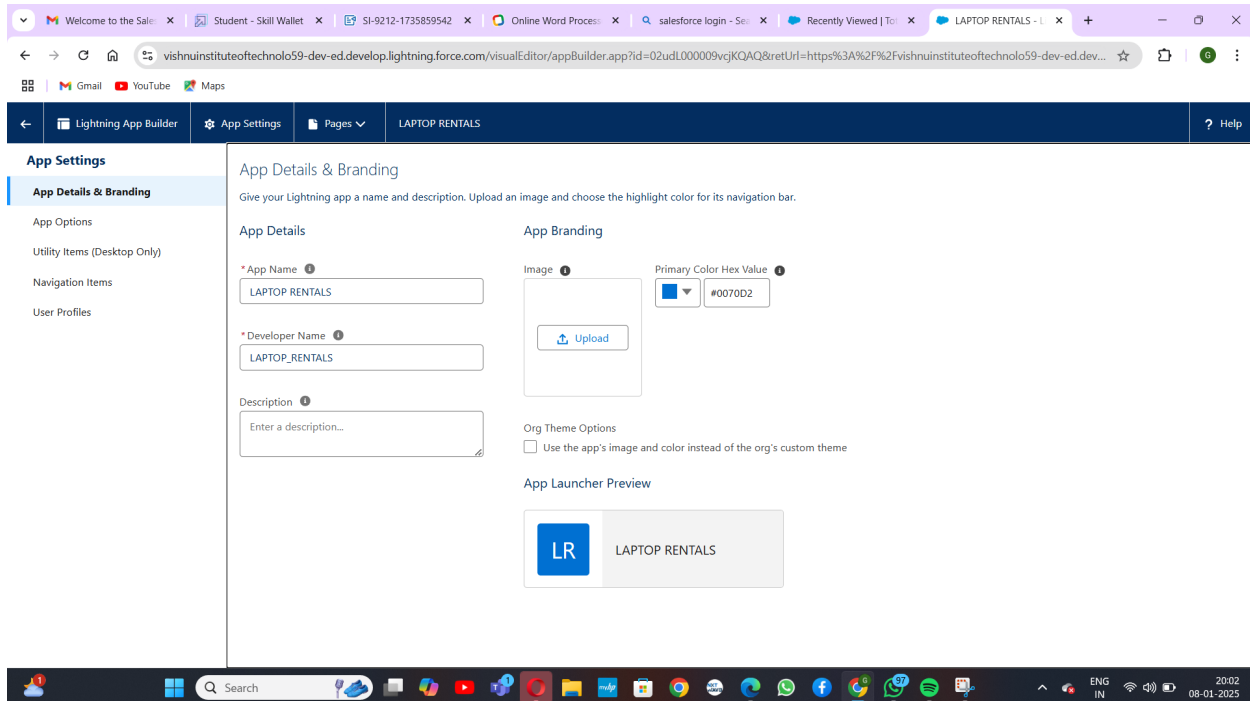
The custom tab for **Total Laptops** was created to provide users easy access to the inventory management object, centralizing data on available laptops for rental.

- **Total Laptops Tab:** A custom tab for Total Laptops was created to provide users with easy access to the inventory management object, centralizing data on available laptops for rental.
- **Consumer Tab:** A custom tab for Consumer was created to manage customer details, enabling streamlined customer relationship management.
- **Laptop Booking Tab:** A custom tab for Laptop Booking was created to manage laptop rental transactions, linking each booking with specific customers and inventory.
- **Billing Process Tab:** A custom tab for Billing Process was created to handle billing and payment details, tracking all financial transactions related to laptop rentals.



Step 3: Creating a Lightning App

A new **Lightning App** called **LAPTOP RENTALS** was created to centralize and streamline the entire laptop rental management process within Salesforce. This app serves as a dedicated platform for managing customer data, processing laptop rental bookings, monitoring inventory,



Step 4: Creating the Validation Rule for Phone Number Field in Consumer Object

Phonenumberoremailblankrule: A validation rule called Phonenumberoremailblankrule was created in the Consumer object to ensure that both phone number and email fields are not left blank. This rule enforces that either the Phone Number or Email field must be populated for each consumer record.

Validation Rule Details:

- Rule Name: Phonenumberoremailblankrule
- Description: "Phone number and email should not be blank."
- Formula: $\text{OR}(\text{ISBLANK}(\text{phone_number_c}), \text{ISBLANK}(\text{email_c}))$

This validation rule improves data integrity by requiring at least one contact method (phone or email) to be present on each consumer record, ensuring effective communication with customers.

The screenshot displays the Salesforce Setup interface for the 'consumer' object. The left sidebar shows the navigation menu with 'Setup' selected. The main content area is titled 'consumer Validation Rule' and includes a 'Back to consumer' link. Below this, the 'Validation Rule Detail' section shows the following information:

Validation Rule Detail		Active
Rule Name	Phonenumberoremailblankrule	<input checked="" type="checkbox"/>
Error Condition Formula	$\text{OR}(\text{ISBLANK}(\text{Phone_number_c}), \text{ISBLANK}(\text{Email_c}))$	
Error Message	Please fill the phone number and Email id	Error Location: Top of Page
Description	phone number and email number should not be blank	
Created By	GURUGUBELLYESWANTH, 03/01/2025, 4:18 am	Modified By: GURUGUBELLYESWANTH, 03/01/2025, 4:18 am

The bottom of the screen shows the Windows taskbar with various application icons and the system clock indicating 20:56 on 08-01-2025.

Step 4: Cloned the Profiles

Cloned the the Standard User to Owner and Agent Profiles and given Custom Object Permissions to each of the Roles. And then created two users with Owner and Agent Role after creatingthese Roles Heirarchy.

AGENT:

Setup Profiles

Users with this profile have the permissions and page layouts listed below. Administrators can change a user's profile by editing that user's personal information.

If your organization uses Record Types, use the Edit links in the Record Type Settings section below to make one or more record types available to users with this profile.

Login IP Ranges [0] | Enabled Apex Class Access [0] | Enabled Visualforce Page Access [0] | Enabled External Data Source Access [0] | Enabled Named Credential Access [0] | Enabled External Credential Principal Access [0] | Enabled Custom Metadata Type Access [0] | Enabled Custom Setting Definitions Access [0] | Enabled Flow Access [0] | Enabled Service Presence Status Access [0] | Enabled Custom Permissions [0]

Profile Detail

Name: Agent

Profile: Agent - Salesforce - Developer Edition

Description:

Created By: GURUGUBELLI YESIWANTH, 03/01/2025, 4:29 am

Modified By: GURUGUBELLI YESIWANTH, 03/01/2025, 4:30 am

Page Layouts

Standard Object Layouts	Global	Global Layout [View Assignment]	Fulfillment Order Item Tax	Fulfillment Order Item Tax Layout [View Assignment]
Email Application	Not Assigned [View Assignment]		Fulfillment Order Product	Fulfillment Order Product Layout [View Assignment]
Home Page Layout	Home Page Default [View Assignment]		Idea	Varies by Record Type [View Assignment]
Account	Account Layout [View Assignment]		Individual	Individual Layout [View Assignment]
Alternative Payment Method	Alternative Payment Method Layout [View Assignment]		Invoice	Invoice Layout [View Assignment]
Appointment Invitation	Appointment Invitation Layout		Invoice Line	Invoice Line Layout

Owner:

Role after creating these Roles Hierarchy.

Owner:

Profile: owner

Users with this profile have the permissions and page layouts listed below. Administrators can change a user's profile by editing that user's personal information.

If your organization uses Record Types, use the Edit links in the Record Type Settings section below to make one or more record types available to users with this profile.

Login IP Ranges [0] | Enabled Apex Class Access [0] | Enabled Visualforce Page Access [0] | Enabled External Data Source Access [0] | Enabled Named Credential Access [0] | Enabled External Credential Principal Access [0] | Enabled Custom Metadata Type Access [0] | Enabled Custom Setting Definitions Access [0] | Enabled Flow Access [0] | Enabled Service Presence Status Access [0] | Enabled Custom Permissions [0]

Profile Detail

Name: owner

User License: Salesforce

Description:

Created By: Cheegilli Maresh, 27/10/2024, 6:09 pm

Modified By: Cheegilli Maresh, 27/10/2024, 6:14 pm

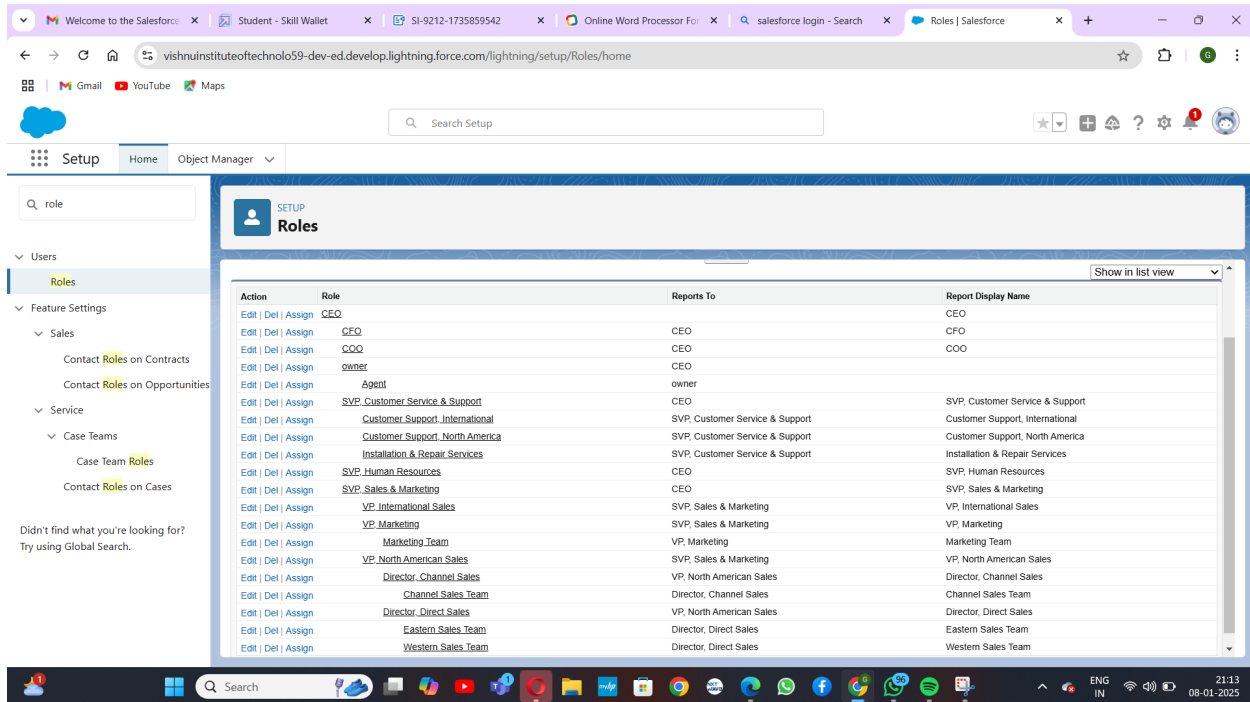
Page Layouts

Standard Object Layouts	Global	Global Layout [View Assignment]	Invoice	Invoice Layout [View Assignment]
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Agent:

Step 5: Creating the Roles in Roles Hierarchy

The created Owner Role and the Agent Role are included in the Role hierarchy. Owner role is placed under the CEO Role and Agent Role under the Owner Role.



The screenshot shows the Salesforce Setup interface for Roles. The left sidebar contains navigation options: Users, Roles, Feature Settings, Sales, Contact Roles on Contracts, Contact Roles on Opportunities, Service, Case Teams, Case Team Roles, and Contact Roles on Cases. The main content area displays a table of roles with columns for Action, Role, Reports To, and Report Display Name. The roles are organized in a hierarchy starting from the CEO role.

Action	Role	Reports To	Report Display Name
Edit Del Assign	CEO		CEO
Edit Del Assign	CEQ	CEO	CFO
Edit Del Assign	COO	CEO	COO
Edit Del Assign	owner	CEO	
Edit Del Assign	Agent	owner	
Edit Del Assign	SVP, Customer Service & Support	CEO	SVP, Customer Service & Support
Edit Del Assign	Customer Support, International	SVP, Customer Service & Support	Customer Support, International
Edit Del Assign	Customer Support, North America	SVP, Customer Service & Support	Customer Support, North America
Edit Del Assign	Installation & Repair Services	SVP, Customer Service & Support	Installation & Repair Services
Edit Del Assign	SVP, Human Resources	CEO	SVP, Human Resources
Edit Del Assign	SVP, Sales & Marketing	CEO	SVP, Sales & Marketing
Edit Del Assign	VP, International Sales	SVP, Sales & Marketing	VP, International Sales
Edit Del Assign	VP, Marketing	SVP, Sales & Marketing	VP, Marketing
Edit Del Assign	Marketing Team	VP, Marketing	Marketing Team
Edit Del Assign	VP, North American Sales	SVP, Sales & Marketing	VP, North American Sales
Edit Del Assign	Director, Channel Sales	VP, North American Sales	Director, Channel Sales
Edit Del Assign	Channel Sales Team	Director, Channel Sales	Channel Sales Team
Edit Del Assign	Director, Direct Sales	VP, North American Sales	Director, Direct Sales
Edit Del Assign	Eastern Sales Team	Director, Direct Sales	Eastern Sales Team
Edit Del Assign	Western Sales Team	Director, Direct Sales	Western Sales Team

Step - 6: Flows

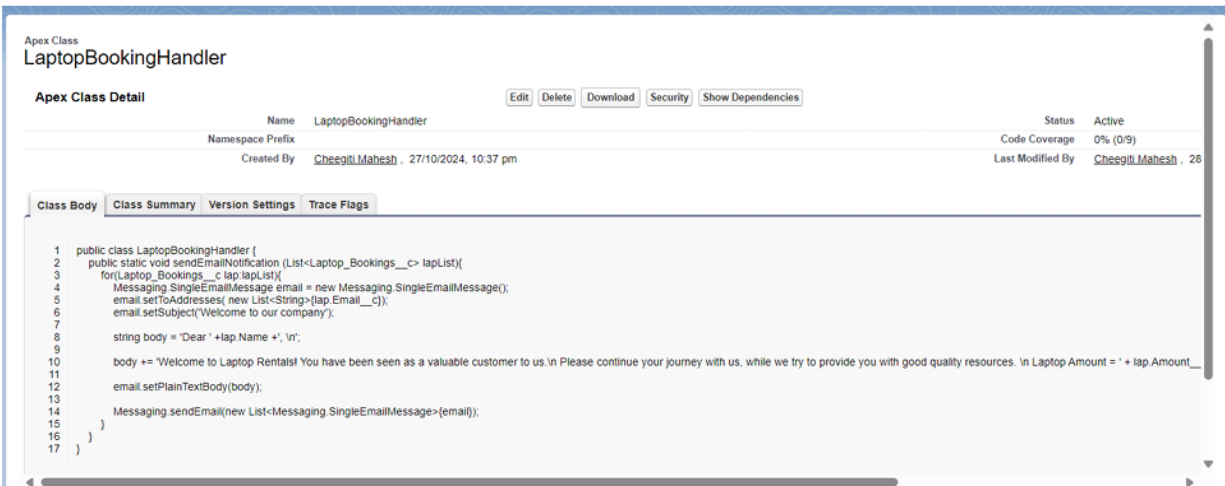
Created a Record-triggered flow to automate the laptop booking process that is initiated by the consumer. This flow automates what to do after booking the laptop like triggering email notifications.



Step - 6: Apex Programming

Apex Classes:

LaptopBookingHandler.apxc: The LaptopBookingHandler class's sendEmailNotification method sends a welcome email to customers in the Laptop_Bookings c list. It customizes the email body with details like the customer's name, laptop amount, core type, and model, then sends it using Messaging.SingleEmailMessage



LaptopHandlerTest.apxc:

This test class, LaptopBookingHandlerTest, verifies the sendEmailNotification method in LaptopBookingHandler. It starts by creating a test consumer and a laptop inventory record. Then, it adds a sample booking in the Laptop_Bookings c list, linking it to the consumer's email and specifying details like laptop model and rental period. Using Test.startTest() and Test.stopTest(), it executes the sendEmailNotification method and checks if emails were sent by asserting the Limits.getEmailInvocations() count, ensuring the method behaves as expected.



Apex Trigger:

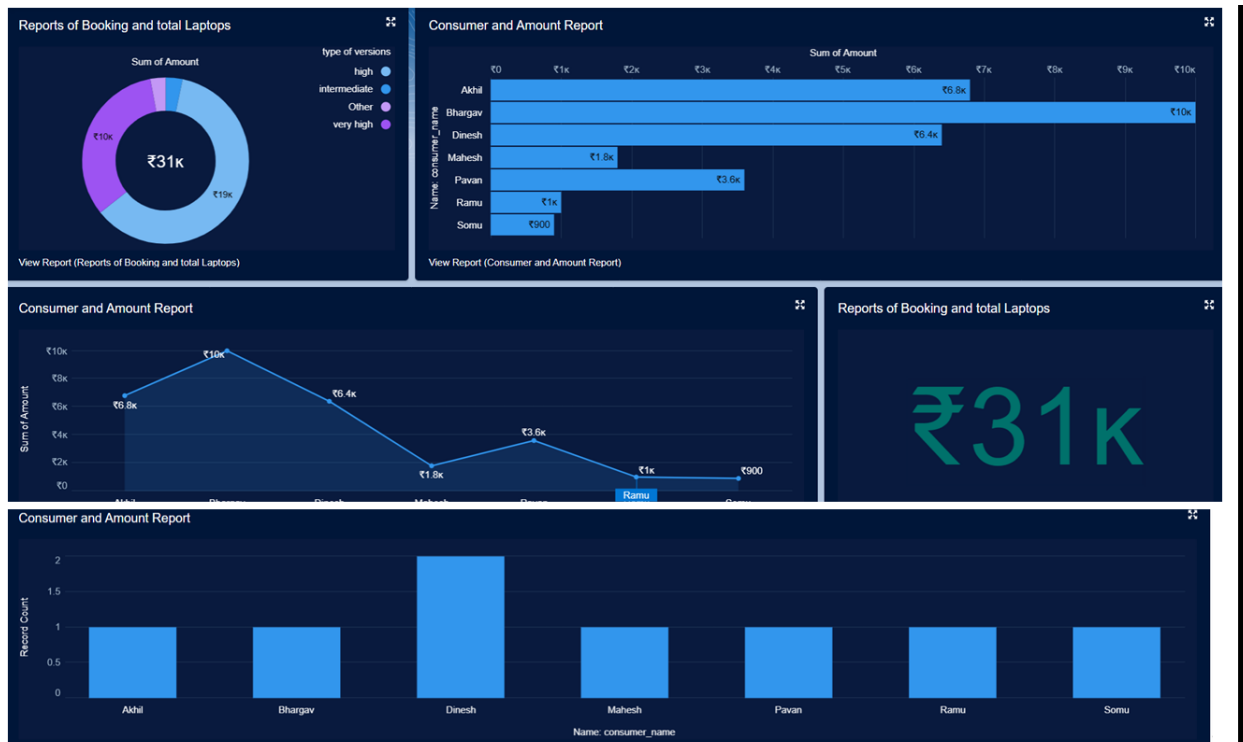
LaptopBooking.apxt:

This trigger, LaptopBooking, runs on the Laptop_Bookings c object after records are inserted or updated. When triggered, it checks if the operation is an after insert or after update and then calls the sendEmailNotification method from LaptopBookingHandler, passing in the newly inserted or updated records. This ensures that customers receive a notification email whenever a new booking is created or an existing one is updated.

Report: consumer with Laptop Bookings and Total Laptops Reports of Booking and total Laptops								
Total Records 8	Total Amount ₹30,500							
<input type="checkbox"/> type of versions ↑	Laptop Bookings: Laptop Bookings	consumer: consumer_name	Total No Of Laptops: Total Laptops	Address	Phone number	Laptop names	core type	Amount
<input type="checkbox"/> basic (1)	Care Laps	Somu	50	Bhimavaram	6302761758	Acer	core i3	₹900
Subtotal								₹900
<input type="checkbox"/> intermediate (1)	Lap Life	Ramu	50	Bhimavaram	7710917207	Dell	core i3	₹1,000
Subtotal								₹1,000
<input type="checkbox"/> high (5)	Lap Partners	Akhil	50	Bhimavaram	7569345477	Mac	Bionic chip	₹6,800
	SnapDeal	Dinesh	50	Bhimavaram	8309891599	Dell	core i3	₹3,000
	Flipkart	Mahesh	50	Pinnintipeta, Srikakulam	8639838411	Acer	core i3	₹1,800
	Jim LapCare	Pavan	50	Bhimavaram	9394077809	Acer	core i3	₹3,600
	Care Center	Dinesh	50	Bhimavaram	8309891599	Hp	core i5	₹3,400
Subtotal								₹18,600
<input type="checkbox"/> very high (1)	Amazon	Bhargav	50	Bhimavaram	8179327201	Dell	core i7	₹10,000
Subtotal								₹10,000
Total (8)								₹30,500

Step - 8: Creating a dashboard

A donut chart and some more charts were added to the dashboard to visually represent the Laptop Bookings report, segmented by the pricing buckets—Basic, Intermediate, High, and Very High. This chart provides an at-a-glance view of the distribution of bookings across different price tiers, making it easier to understand customer demand patterns and quickly assess which laptop rental options are most popular.



5. Testing and Validation

To ensure the application performs as expected, various testing approaches were applied:

- **Unit Testing:** All Apex classes and triggers were tested with unit tests, achieving at 100% code coverage.
- **User Interface Testing:** UI elements such as the flow of booking laptops, navigation between tabs, and form validations were tested manually and via test scripts.

6. Key Scenarios Addressed by Salesforce in the Implementation Project

- **Efficient Customer Management:** Salesforce captures and organizes customer data, allowing for streamlined management and quick access to customer details, contact information, and booking history.
- **Automated Rental Booking Process:** By using custom objects and workflows, the system automates the booking process, including tracking available laptops and ensuring up-to-date inventory status.
- **Seamless Billing and Invoicing:** Automated billing functionality through Apex triggers and workflows ensures accurate billing for each rental, with invoice details readily accessible for both customers and staff.
- **Enhanced Customer Communication:** Salesforce enables personalized, automated email notifications, keeping customers informed at each stage of their rental experience—from booking confirmation to reminders.

7. Conclusion

In conclusion, the Laptop Rentals CRM implementation exemplifies a transformative approach to customer relationship management, seamlessly integrating automation, personalized communication, and insightful analytics. This solution not only enhances operational efficiency but also elevates the customer experience, positioning the business for sustained growth and success in the competitive rental market.

Gurugubelli Yeswanth
VISHNU INSTITUTE OF TECHNOLOGY

