

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.

Benifits:

- 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 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.
- **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 outline for the Solution Design of the Laptop Rentals CRM

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 rental transaction.

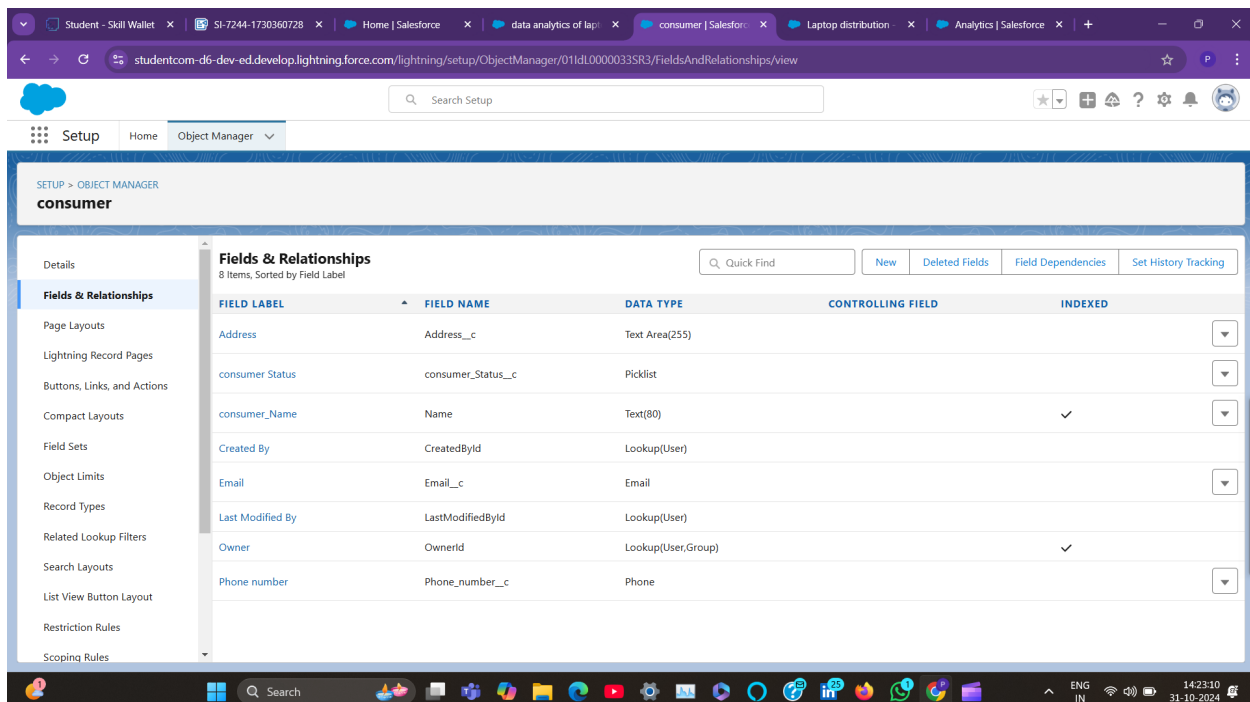
Fields and Relationships created:

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: Holds the customer's physical address for delivery or identification purpose.

consumer_Status__c: Indicates the current status of the customer (e.g., student, employee or 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 8 fields. The table has columns for FIELD LABEL, FIELD NAME, DATA TYPE, CONTROLLING FIELD, and INDEXED. The fields listed are: Address (Text Area(255)), consumer Status (Picklist), consumer Name (Text(80)), Created By (Lookup(User)), Email (Email), Last Modified By (Lookup(User)), Owner (Lookup(User,Group)), and Phone number (Phone). The 'consumer Name' and 'Owner' fields are marked as indexed.

| 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 | | |

● 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 the stores the booking name for each booking

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

core_type__c: A picklist value to specify the processor type for the laptop models 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 species the number of laptops the consumer wants to rent

The screenshot shows the Salesforce Setup interface for the 'Laptop Bookings' object. The 'Fields & Relationships' tab is selected, displaying a table of 11 fields. The table has columns for FIELD LABEL, FIELD NAME, DATA TYPE, CONTROLLING FIELD, and INDEXED. The fields listed are: Amount (Currency), core type (Picklist), Created By (Lookup), Email (Email), Laptop Bookings (Text), Laptop names (Picklist), Laptops Available (Formula), Last Modified By (Lookup), Name (Master-Detail), Total No Of Laptops (Master-Detail), and values (Picklist).

| 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) | | |
| Email | Email__c | Email | | |
| Laptop Bookings | Name | Text(80) | | ✓ |
| Laptop names | Lap__c | Picklist | | |
| Laptops Available | Laptops_Available__c | Formula (Number) | | |
| Last Modified By | LastModifiedById | Lookup(User) | | |
| Name | Name__c | Master-Detail(consumer) | | ✓ |
| Total No Of Laptops | Total_No_Of_Laptops__c | Master-Detail(Total Laptops) | | ✓ |
| values | values__c | Picklist | | |

- **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.

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' section is active, displaying a table of 6 items sorted by field label. The table includes columns for Field Label, Field Name, Data Type, Controlling Field, and Indexed status.

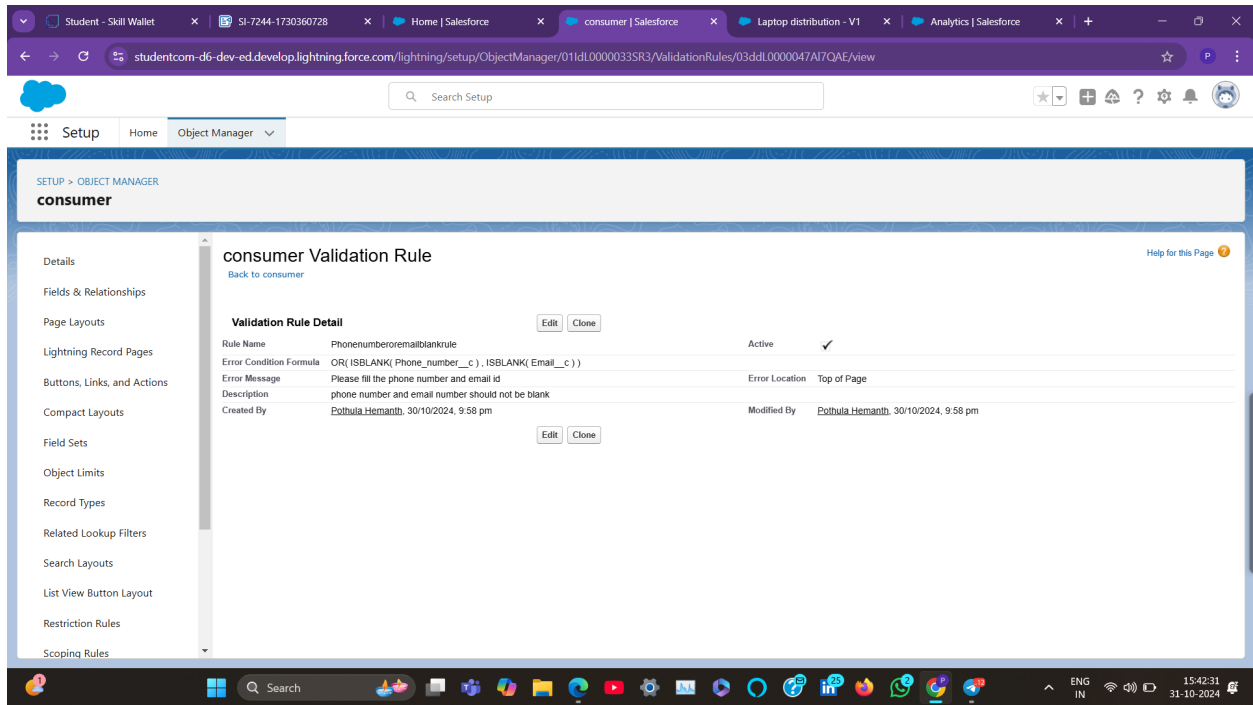
| FIELD LABEL | FIELD NAME | DATA TYPE | CONTROLLING FIELD | INDEXED |
|---------------------|----------------------|---|-------------------|---------|
| Created By | CreatedById | Lookup(User) | | |
| Laptops Available | Laptops_Available__c | Formula (Number) | | |
| Laptops delivered | Laptops_delivered__c | Roll-Up Summary (COUNT Laptop Bookings) | | |
| Last Modified By | LastModifiedById | Lookup(User) | | |
| Owner | OwnerId | Lookup(User,Group) | | ✓ |
| Total No Of Laptops | Name | Text(80) | | ✓ |

Step - 2: 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, and handling billing activities, all in one place.

Step - 3: Creating Validation Rules

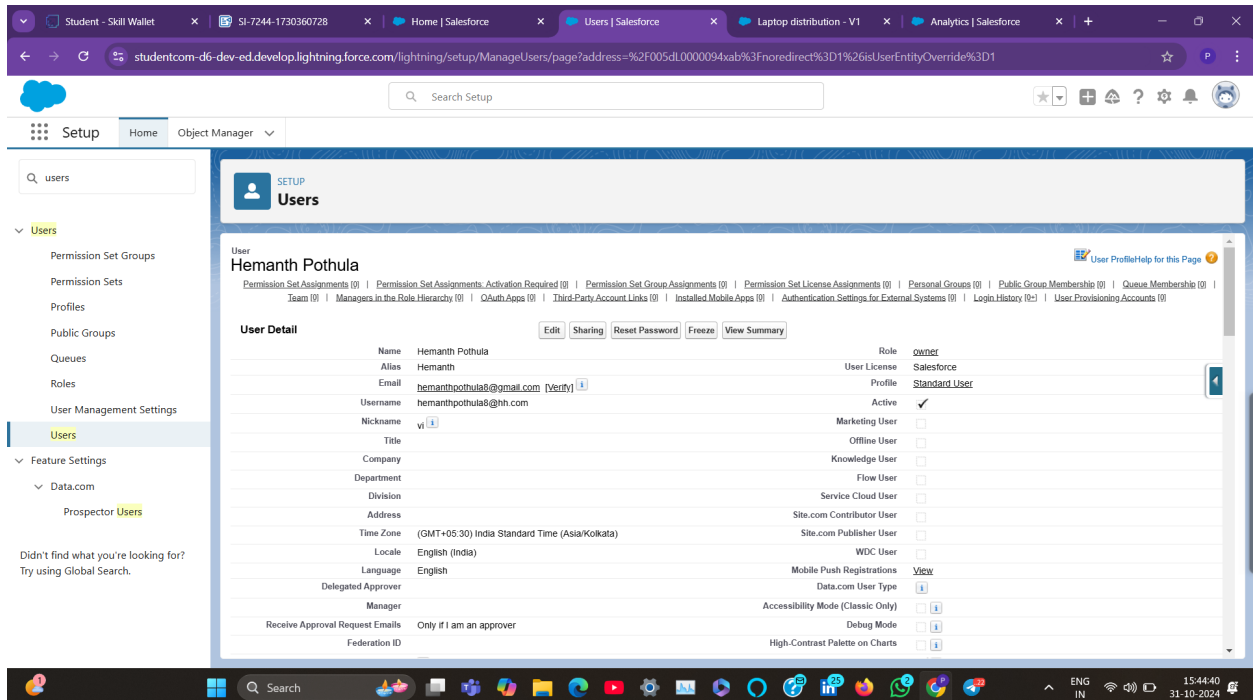
Created a validation rule to ensure the consumer enters at least one of his contact information either the phone number or email.



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 creating these Roles Heirarchy.

Owner:



Agent:

The screenshot shows the Salesforce Setup interface with the 'Roles' page selected. The left sidebar contains a navigation menu with 'Users' and 'Roles' highlighted. The main content area displays the 'Agent' role details. Below the role name, there is a table for 'Users in Agent Role' with one user listed: 'ram.ram' with the alias 'ram' and email 'hemantpothula8@nht.com'. The role details section includes fields for 'Label', 'Role Name', 'Modified By', 'Opportunity Access', 'Case Access', 'Partner Role', and 'Customer Role'.

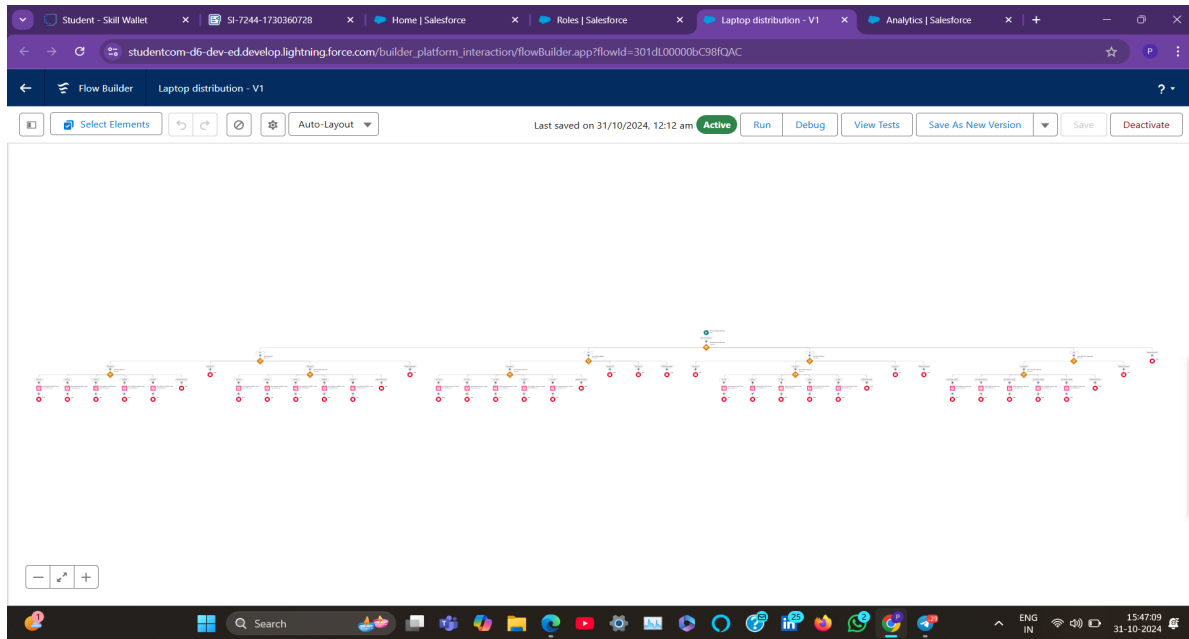
Step - 5: Creating the Roles in Roles Heirarchy

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

The screenshot shows the Salesforce Setup interface with the 'Roles' page selected. The left sidebar contains a navigation menu with 'Users' and 'Roles' highlighted. The main content area displays the 'Creating the Role Hierarchy' section. It shows a tree view of the role hierarchy starting from 'none' at the top, followed by 'CEO', 'CFO', 'COO', 'owner', and 'Agent'. Each role in the hierarchy has an 'Add Role' button next to it. The 'owner' role is expanded, showing its sub-roles: 'SVP, Customer Service & Support', 'Customer Support, International', 'Customer Support, North America', and 'Installation & Repair Services'.

Step - 6: Flows

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

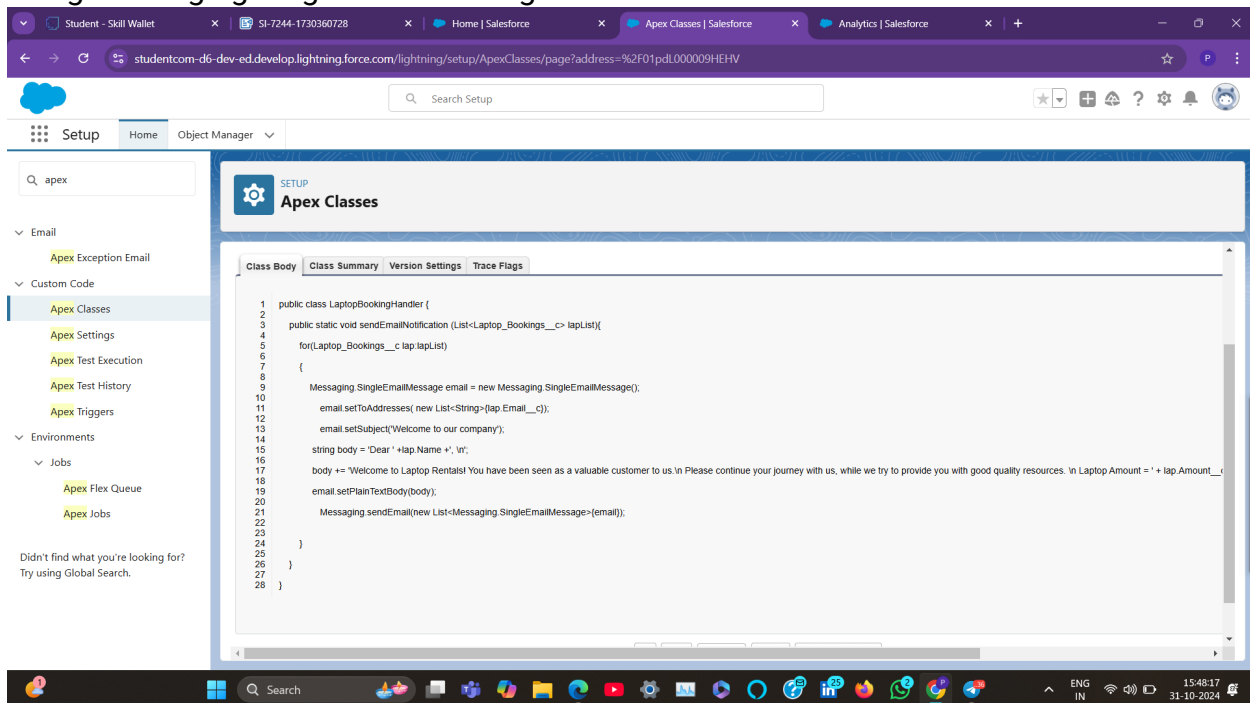


Step - 6: Apex Programming

Apex Classes:

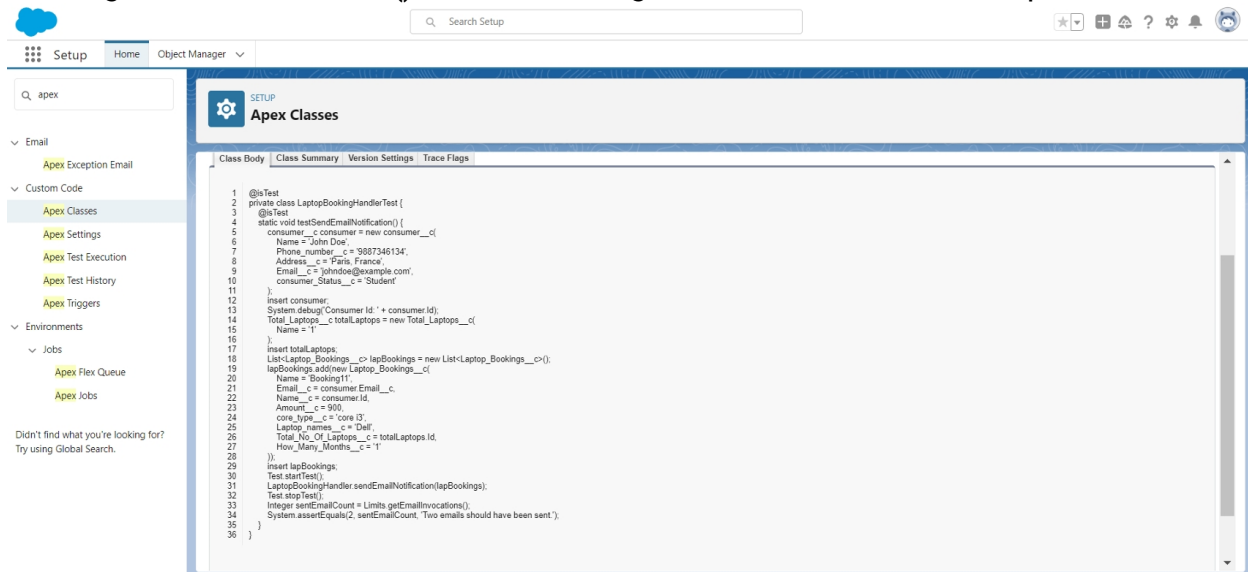
LaptopBookingHandler.apxc:

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.



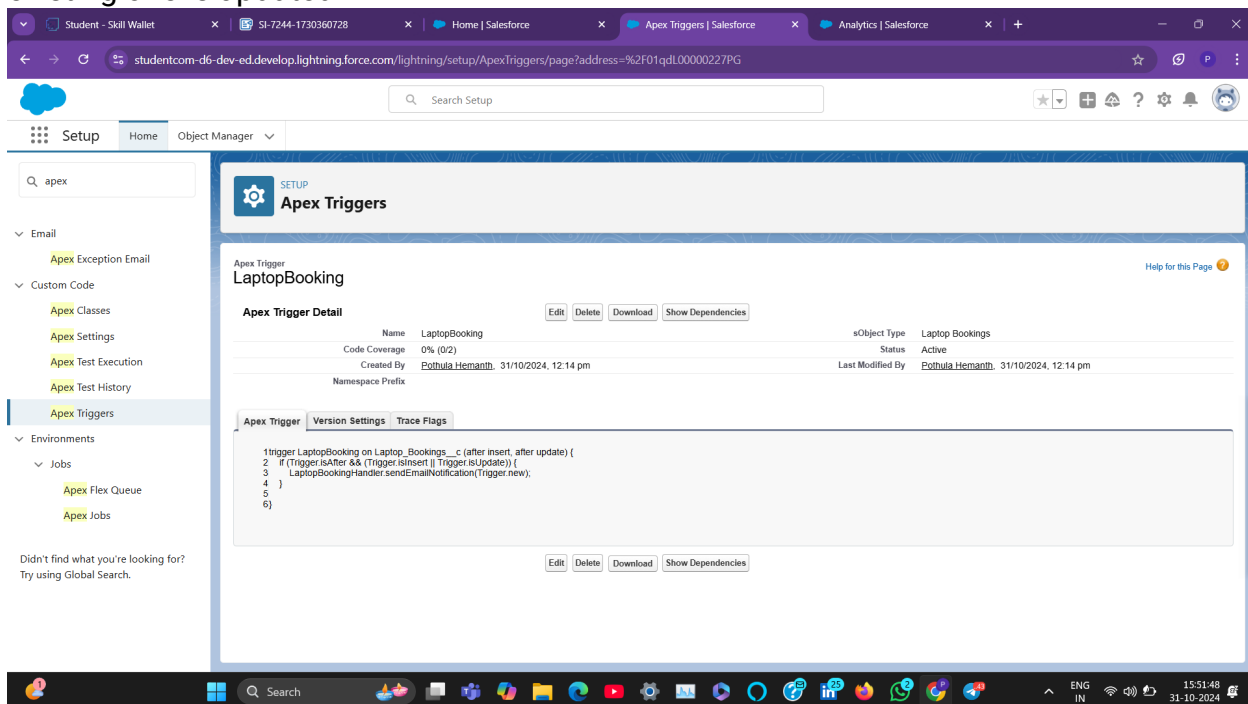
LaptopHandlerTest.apxc: This test class, LaptopBookingHandlerTest, verifies the sendEmailNotification method in LaptopBookingHandler. It starts by creating a test consumer and a laptop inventory record. Then, it adds a sample booking in the

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.



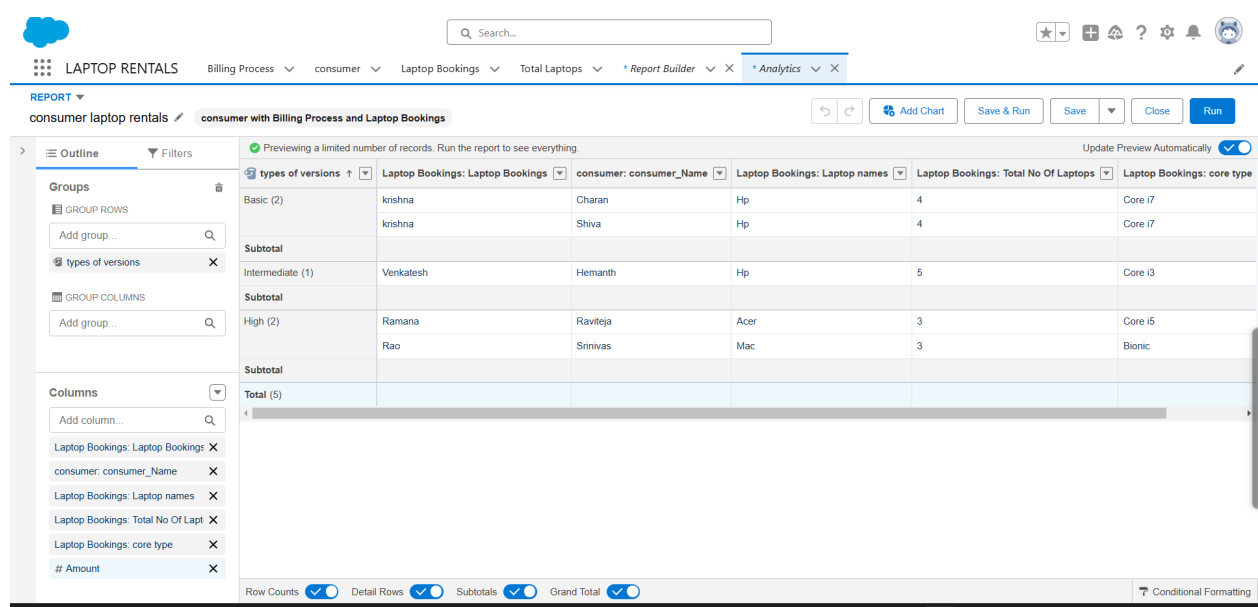
Apex Trigger:

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.



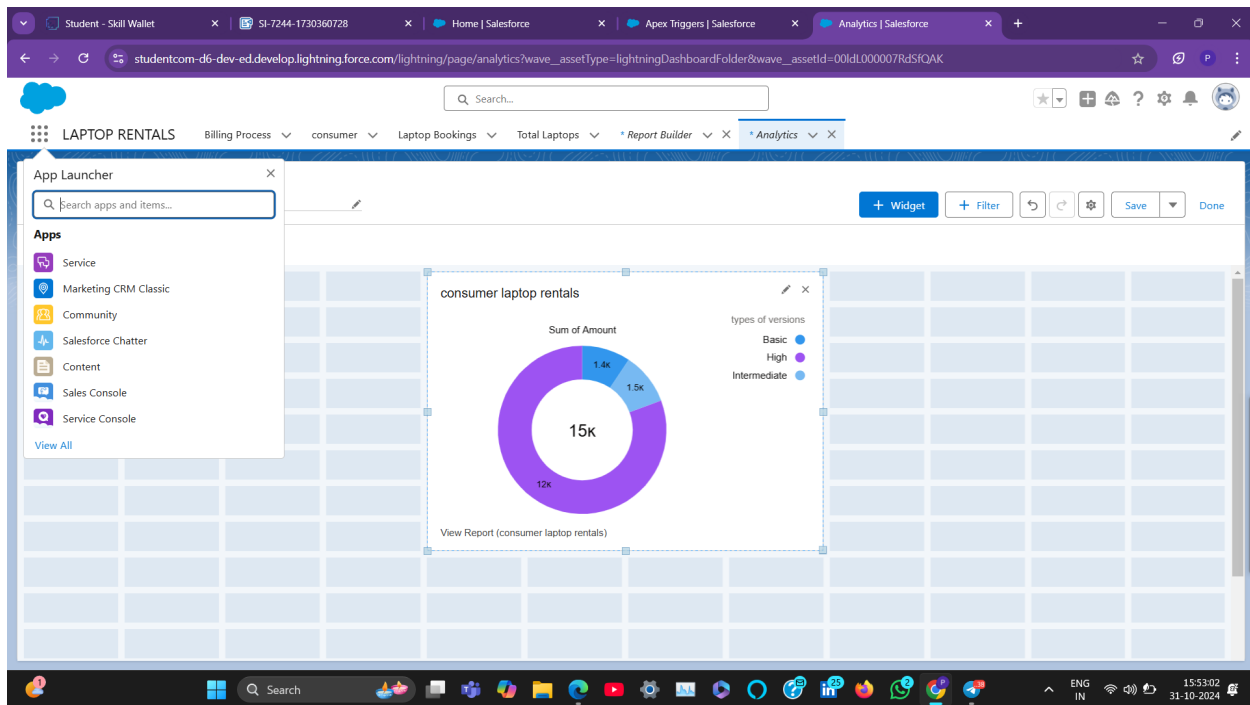
Step - 7: Creating Report

A report was created based on **Laptop Bookings**, organizing rental data into **buckets** according to the Amount__c field. The bookings are categorized into **Basic, Intermediate, High, and Very High** tiers, providing an easy-to-read summary of booking distributions across different price ranges. This setup enables quick insights into customer preferences for various pricing levels, helping to analyze rental demand and optimize inventory management accordingly.



Step - 8: Creating a dashboard

A donut chart was 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.

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