A CRM APPLICATION FOR LAPTOP RENTALS

1. Project Review

This project focuses on creating a comprehensive **CRM application for managing laptop rentals** for a business on the Salesforce platform. The objective is to address the operational challenges of managing rental requests, tracking inventory, and ensuring smooth communication with customers. By utilising Salesforce's capabilities in automation, workflow management, and data storage, this project aims to:

- **Streamline the rental process:** Automate booking and return processes, reducing the time and manual work required to manage each rental.
- **Enhance customer experience:** Provide timely email updates to customers about booking confirmation and return reminders.
- **Improve data accuracy and reporting:** Maintain real-time insights on laptop inventory and rental statuses, helping staff make informed decisions quickly.

This CRM application provides the **Laptop Rentals team** with an efficient way to manage and monitor all rental activities, supporting their mission to deliver high-quality service and optimised resource management.

2. Objectives

Business Goals:

- Automate the laptop rental and return process to minimize manual intervention.
- Improve customer relationship management and enhance service quality for rental customers.
- Ensure accurate tracking and reporting of laptop inventory.

Specific Outcomes:

- A custom Salesforce CRM application for managing rentals, with a streamlined interface for users to view, manage, and track rentals.
- Automated workflows to handle rental requests, status updates, and email notifications.
- Reports and dashboards for real-time insights on inventory, rentals, and customer activity.

3. Salesforce Key Features and Concepts Utilized

This section outlines the core Salesforce functionalities and tools applied within the CRM application for Laptop Rentals.

- **Custom Objects and Fields:**
  - Created a custom object Laptop_Bookings__c to manage each rental booking, with fields such as Customer Name, Email__c, Amount__c, Core__c, Laptop_Type__c, and Status.
  - Set up a Laptops__c object to represent inventory items, tracking details like model, specifications, and availability status.
- **Apex Triggers and Classes:**
  - Developed an **AfterInsert Trigger** (LaptopBooking) to automatically send emails when a booking is made. The LaptopBookingHandler class contains methods to format and dispatch these emails, personalising them with customer details.
- **Process Builder and Flows:**
  - Implemented a Process Builder flow to manage the lifecycle of each booking, automating actions such as status changes (e.g., from "Booked" to "In Use" to "Returned") without requiring manual updates.
- **Validation Rules:**
  - Added validation rules to ensure data quality, such as requiring certain fields to be filled (e.g., Email__c for customer contact and Amount__c for booking costs), preventing incomplete records from being saved.
- **Reports and Dashboards:**
  - Created dashboards with reports on metrics such as **current inventory**

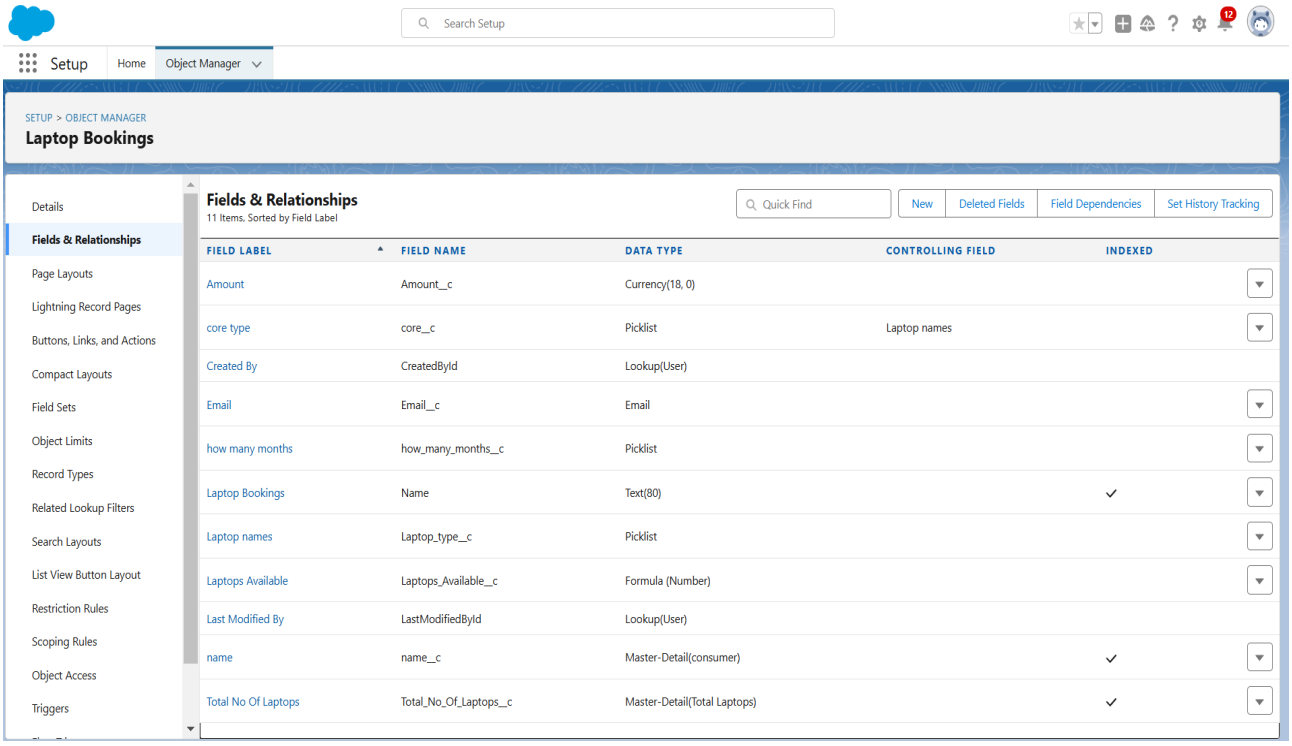
levels, **total rentals over time**, **top laptop models in demand**, and **customer demographics**. These reports are accessible to management for strategic planning and resource allocation.

4. Detailed Steps to Solution Design

The solution was carefully designed in multiple steps, covering data models, user interface, and business logic. Here's an overview:

- **Data Model Design:**
  - Created Laptop_Bookings__c and Laptops__c custom objects.
  - Established relationships between Laptop_Bookings__c and standard Salesforce objects (like Account or Contact) to connect customers with their respective bookings.
  - Additional fields like Email__c, Amount__c, Cores__c, and Laptop_Type__c are used to store booking-specific data. Relationships between objects are established to link the Laptop_Bookings__c object with other standard or custom objects (e.g., Account, Contact) to enhance data integrity and support comprehensive reporting.

Screenshot: Fields included in laptop bookings object are

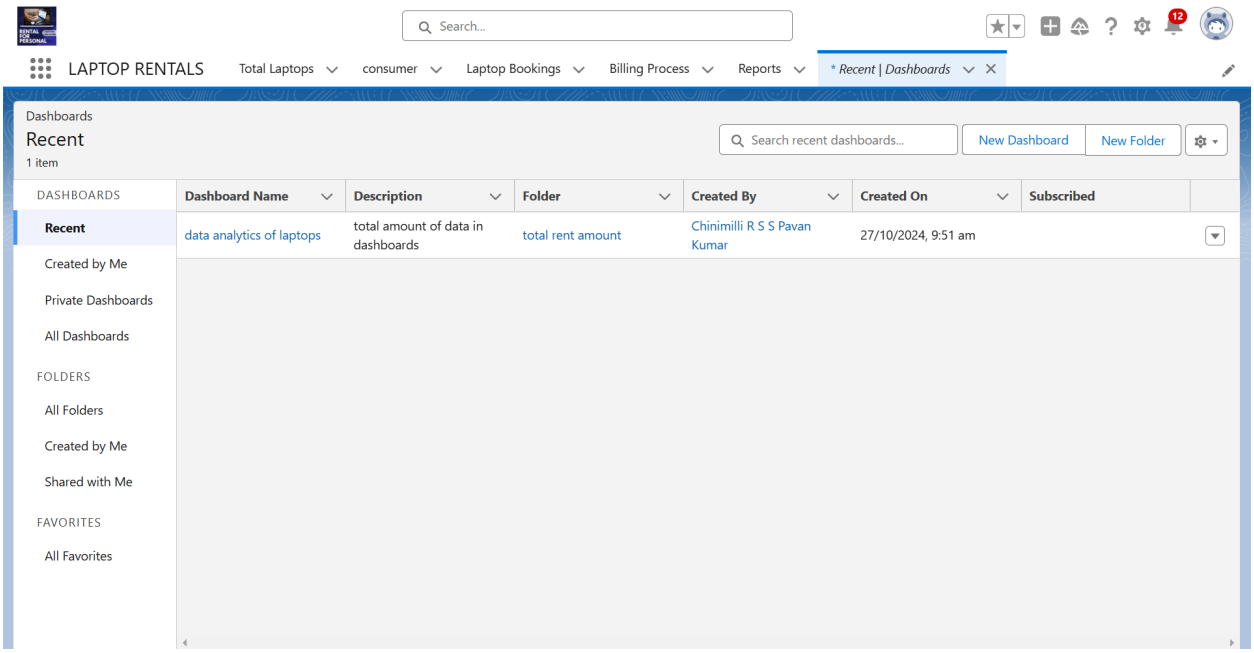


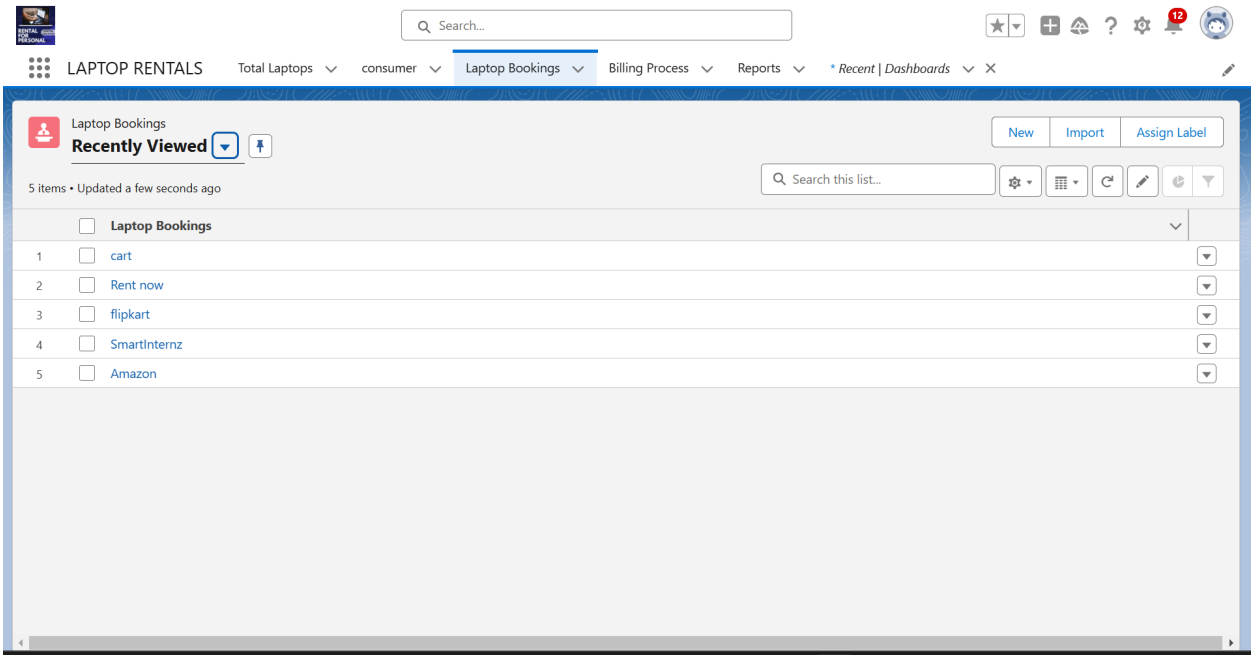
User Interface (UI) Design:

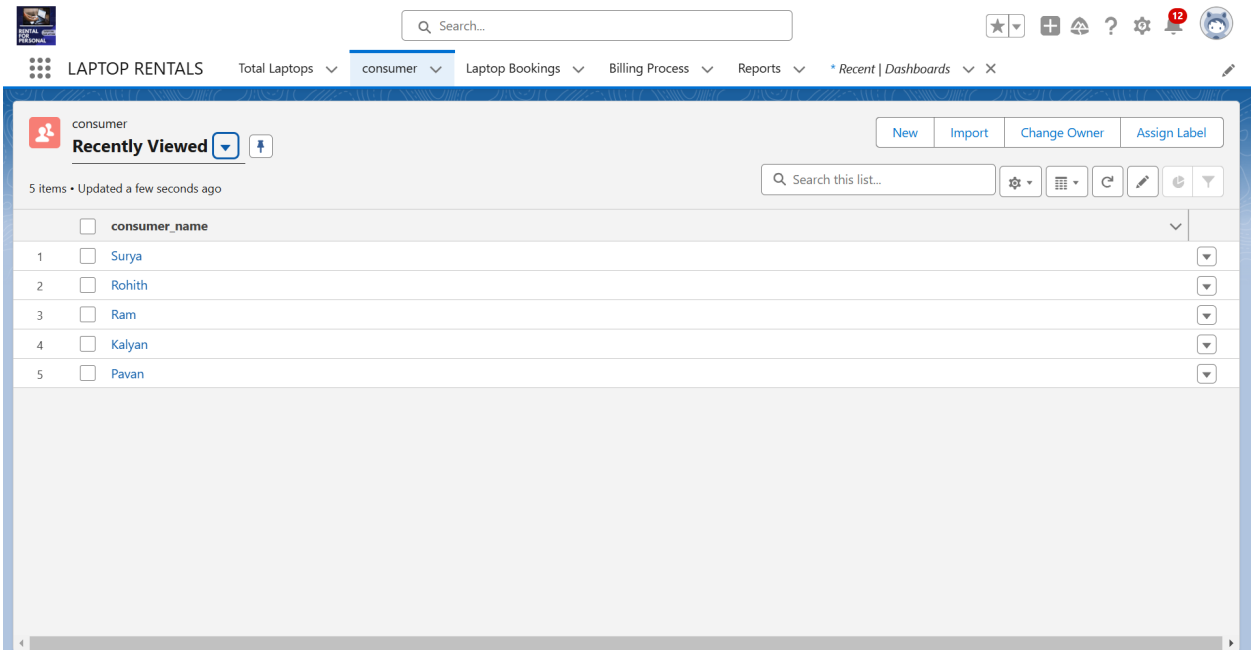
The custom Lightning app "Laptop Rentals" features easy navigation with tabs for key components such as bookings, reports, and dashboards.

- Configured **Page Layouts** for Laptop_Bookings__c and Laptops__c with relevant fields, sections, and related lists for ease of access.
- Designed dashboards for quick visual insights on active rentals, availability, and top-performing laptops.
- Custom Lightning components may be added to enhance specific sections, such as displaying a chart of most rented laptop models.

Screenshot:Navigation items in the laptop rentals app







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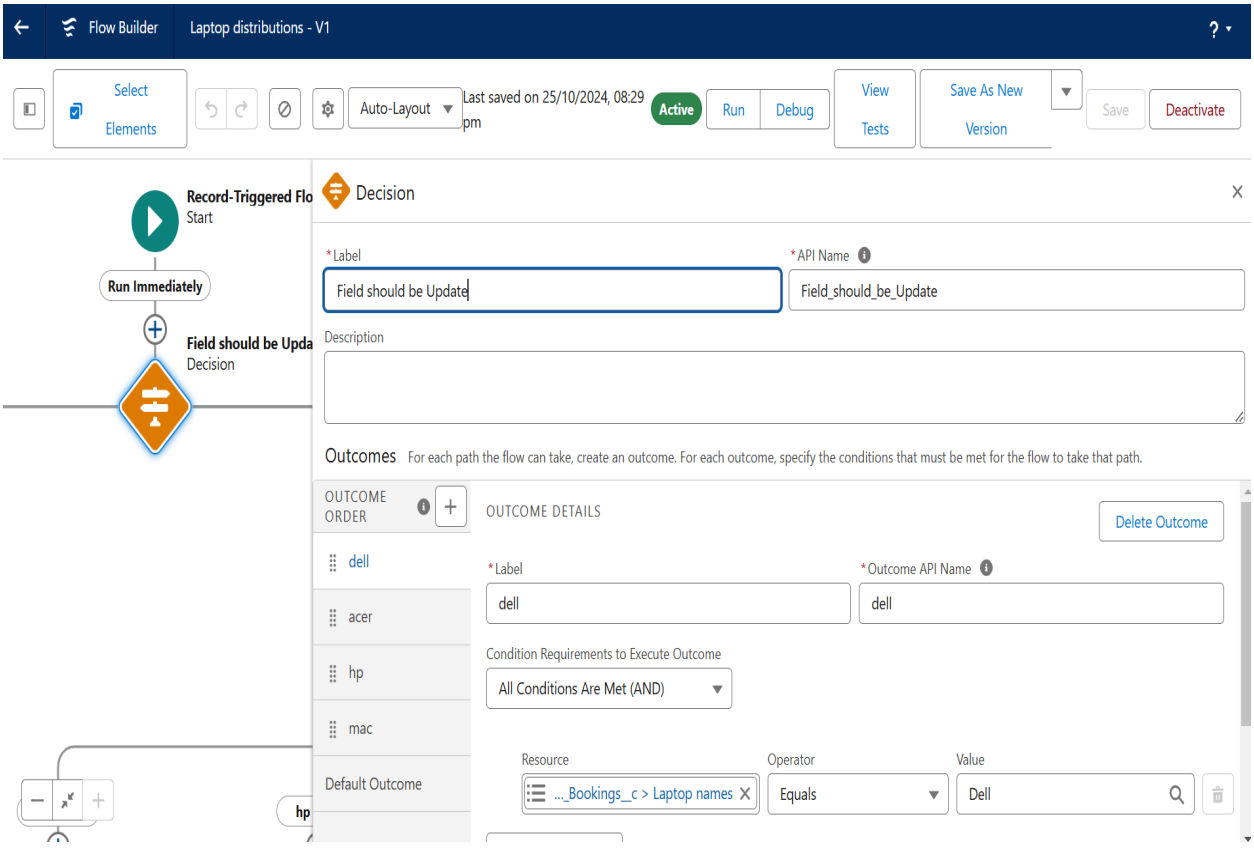
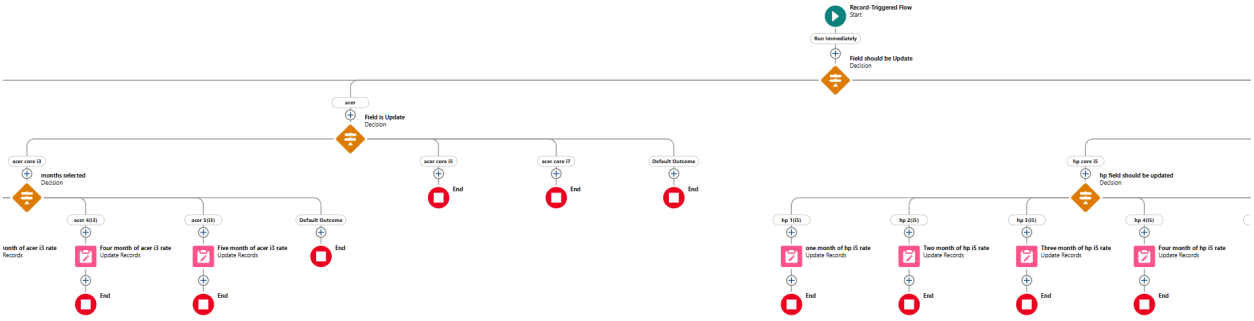
Business Logic Design:

- Developed the LaptopBookingHandler class to handle email notifications using Messaging.SingleEmailMessage.
- Added the AfterInsert trigger on Laptop_Bookings__c to initiate the

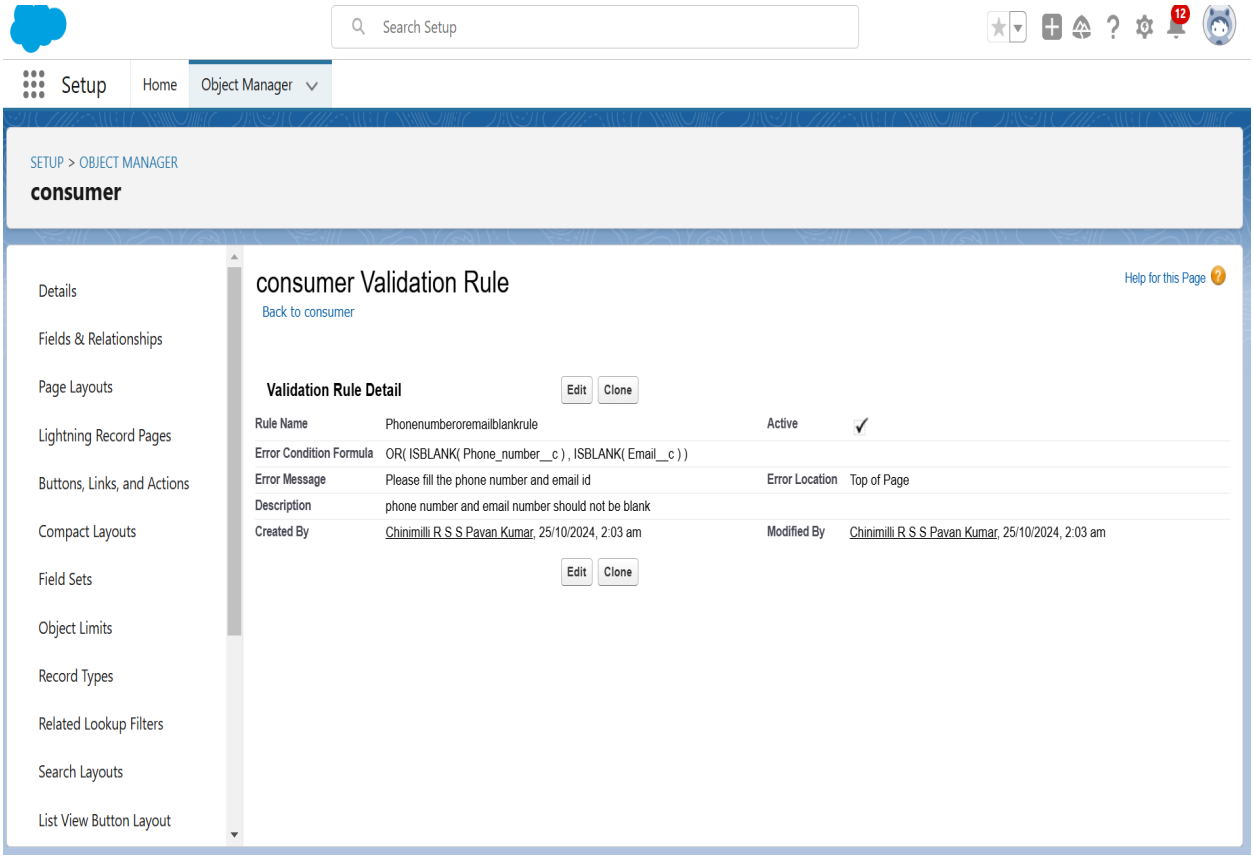
sendEmailNotification method, ensuring customers receive a welcome and confirmation email after booking.

Screenshot: Flow Automation

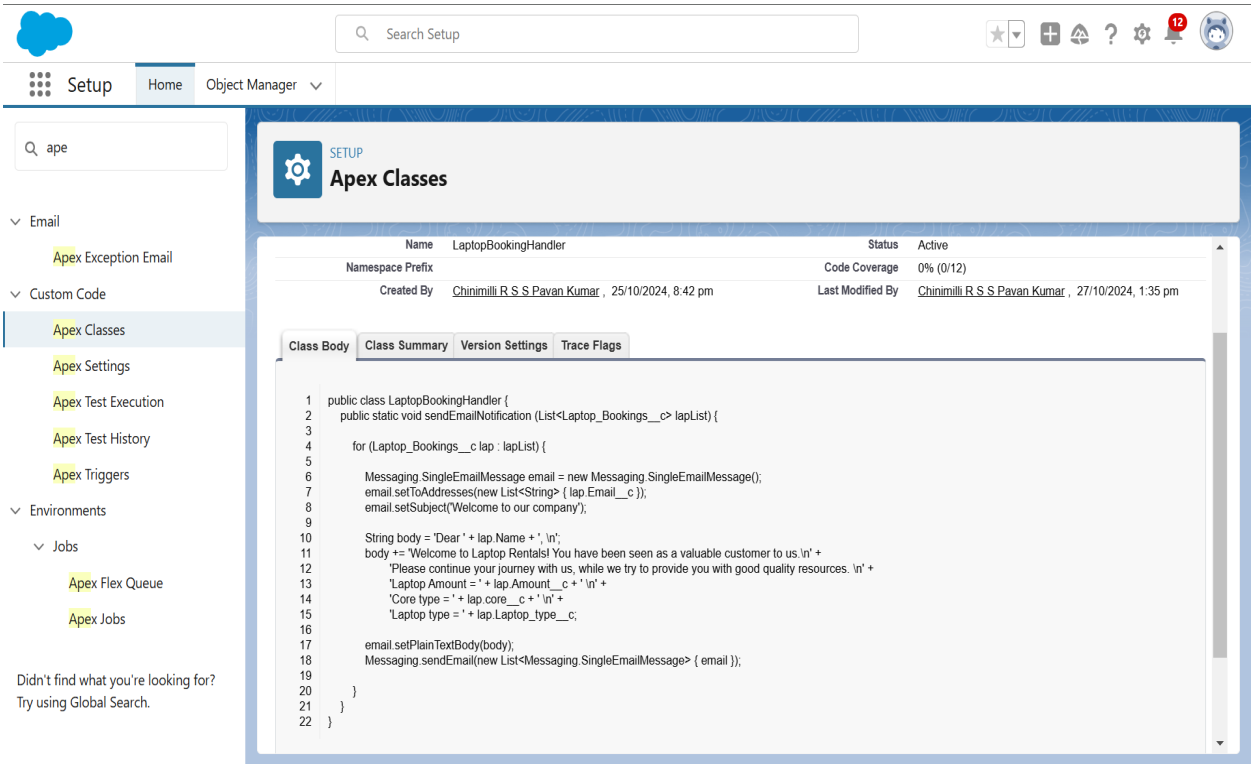




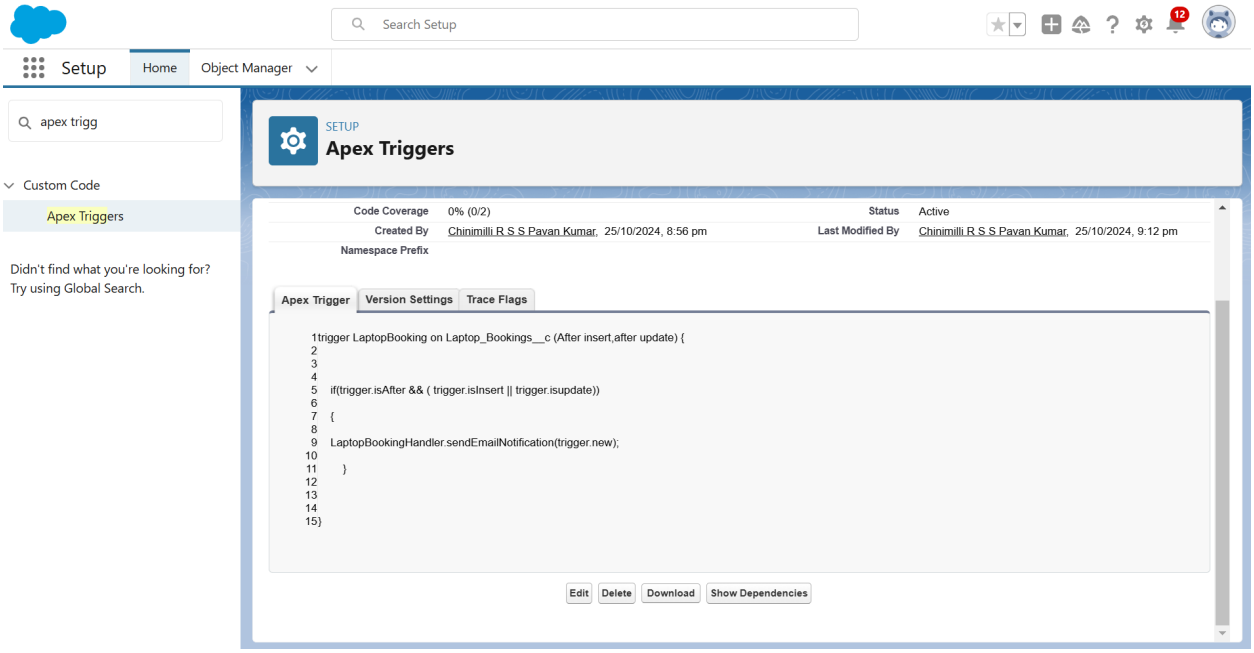
Validation rules:



Creating the Apex class:class name for the apex class is LaptopBookingHandler



Creating apex trigger: LaptopBooking trigger



Reports and Dashboards:

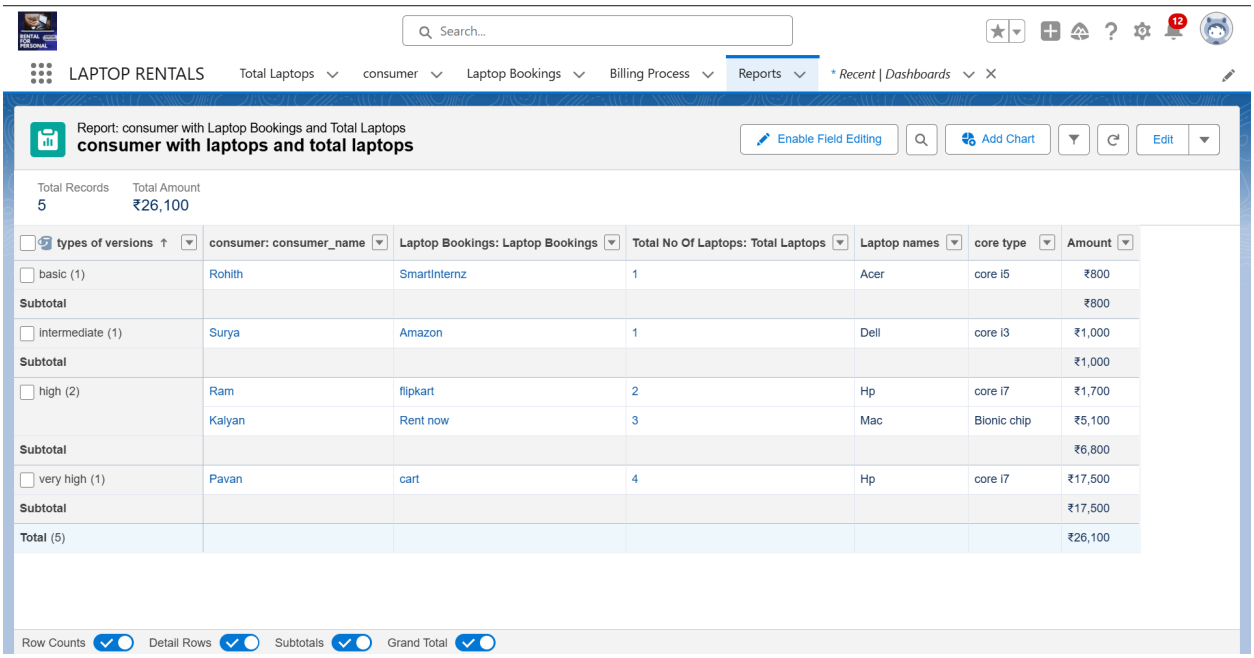
Reports and dashboards in Salesforce provide valuable insights into the Laptop Rentals CRM application, helping the business monitor bookings, revenue, and customer trends effectively.

Reports

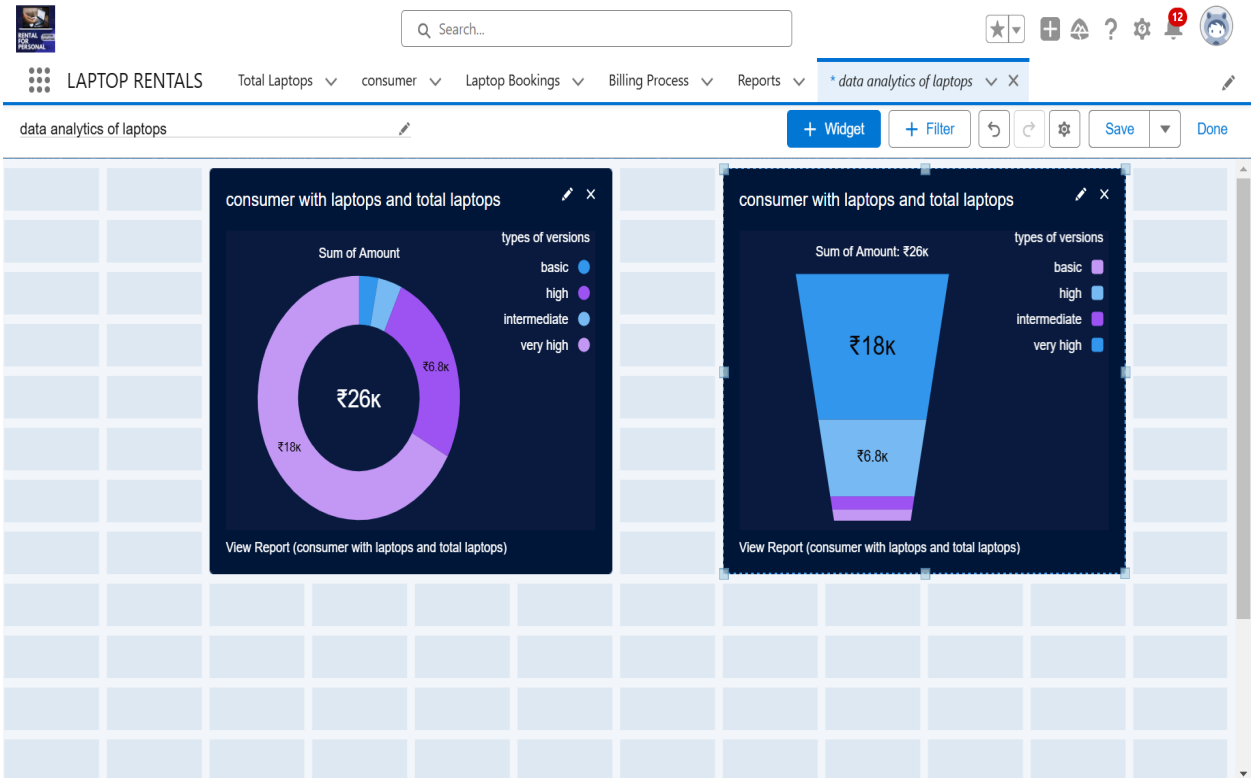
- **Tabular Reports**: Used for simple lists, such as a full list of active laptop bookings or consumer records, giving a quick snapshot of data.
- **Summary Reports**: Offers data with grouped subtotals, such as revenue grouped by laptop type, making it easy to identify high-performing categories.

Dashboards

- **Revenue Overview**: Shows total rental revenue over time, helping track financial performance.
- **Popular Laptops**: Displays the most rented laptop types, aiding in inventory and marketing decisions.
- **Customer Insights**: Provides data on customer types, helping target future marketing campaigns more effectively.



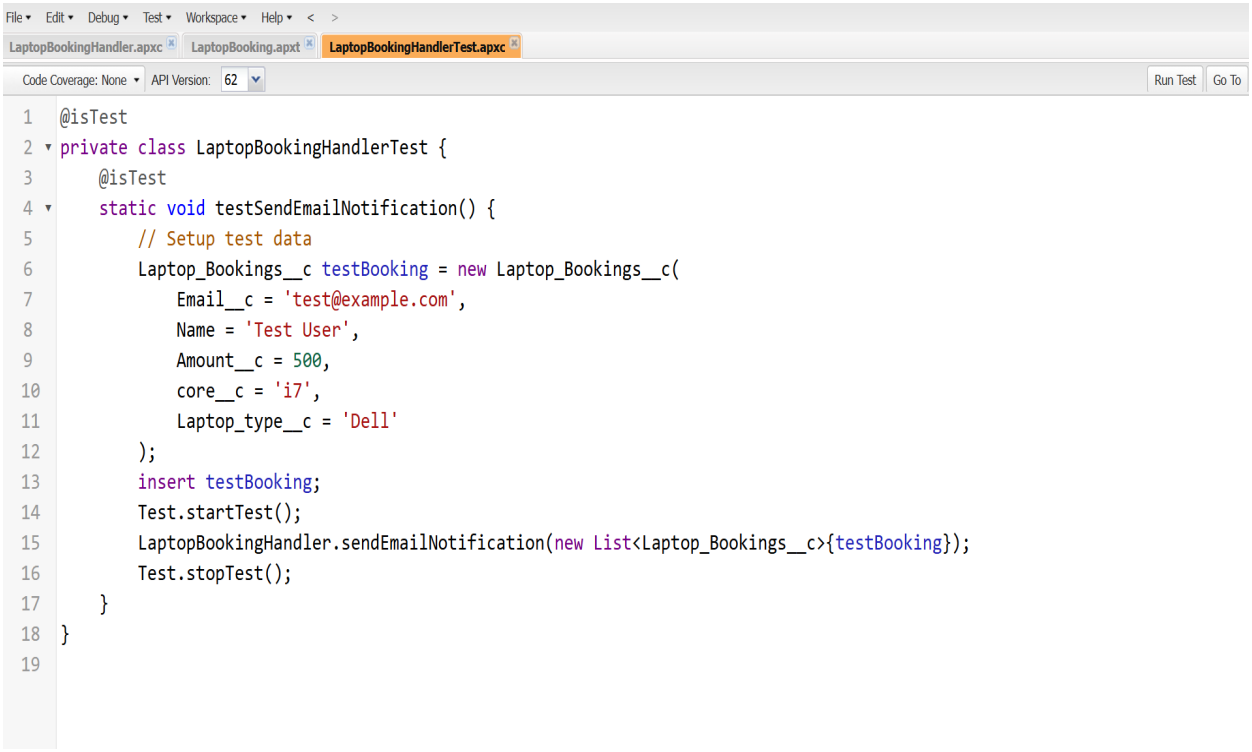
types of versions	consumer: consumer_name	Laptop Bookings: Laptop Bookings	Total No Of Laptops: Total Laptops	Laptop names	core type	Amount
basic (1)	Rohith	SmartInternz	1	Acer	core i5	₹800
Subtotal						₹800
intermediate (1)	Surya	Amazon	1	Dell	core i3	₹1,000
Subtotal						₹1,000
high (2)	Ram	flipkart	2	Hp	core i7	₹1,700
	Kalyan	Rent now	3	Mac	Bionic chip	₹5,100
Subtotal						₹6,800
very high (1)	Pavan	cart	4	Hp	core i7	₹17,500
Subtotal						₹17,500
Total (5)						₹26,100



5. Testing and Validation

Testing Approaches:

- **Unit Testing:**
  - Each Apex class and trigger was thoroughly tested, ensuring at least 75% code coverage. Tests were designed to validate that the booking confirmation emails are sent and inventory statuses update correctly.
- **User Interface Testing:**
  - Verified that the UI elements display correctly on page layouts and that all required fields and related lists are accessible. Ensured users could access only the fields allowed by their profile permissions.
- **Test Scenarios:**
  - **Scenario 1:** Create a new booking and verify that an email is sent with the correct booking details.
  - **Scenario 2:** Test that inventory adjusts automatically when a booking status is changed from "Booked" to "Returned."
  - **Scenario 3:** Check that validation rules enforce required fields like Email__c and Amount__c.




```apex
@isTest
private class LaptopBookingHandlerTest {
    @isTest
    static void testSendEmailNotification() {
        // Setup test data
        Laptop_Bookings__c testBooking = new Laptop_Bookings__c(
            Email__c = 'test@example.com',
            Name = 'Test User',
            Amount__c = 500,
            core__c = 'i7',
            Laptop_type__c = 'Dell'
        );
        insert testBooking;
        Test.startTest();
        LaptopBookingHandler.sendEmailNotification(new List<Laptop_Bookings__c>{testBooking});
        Test.stopTest();
    }
}
```

6. Key Scenarios Addressed by Salesforce in the Implementation Project

This project addresses several critical scenarios to ensure a smooth rental experience for both customers and staff:

- **Automated Notifications:** Automatically send confirmation emails when a booking is created and status updates as the rental progresses. This helps keep customers informed and reduces the workload for staff.
- **Real-Time Inventory Management:** Track the availability of laptops in real-time, updating inventory counts when laptops are rented and returned.
- **Workflow Automation for the Booking Lifecycle:** Manage booking statuses with automation, progressing each booking from "Booked" to "In Use" and finally "Returned" without manual intervention.
- **Role-Based Data Access:** Define roles and permissions so that staff can manage bookings and customers, while customers only have access to their rental information.

7. Conclusion

The Laptop Rentals CRM application demonstrates a comprehensive application of Salesforce's capabilities to manage and automate essential processes in a rental business. By leveraging custom objects, Apex programming, and flow automation, this project enables efficient data management and optimises customer interactions. Key functionalities, such as email notifications, automated pricing based on selections, and streamlined booking processes, have significantly enhanced the customer experience and operational efficiency.

Moreover, Salesforce's reporting and dashboard tools provide insightful data analysis, allowing business stakeholders to monitor rental trends, track revenue, and make data-driven decisions. Validation rules and role-based access control further ensure data integrity and secure handling of customer information, building a reliable foundation for business growth. The integration of these Salesforce features not only helps meet the immediate objectives but also sets up a scalable infrastructure for future

enhancements, making it adaptable to evolving business needs.

This project serves as a model for how Salesforce's robust platform can be tailored to a specific business scenario, providing both functional and strategic value. Through this application, the Laptop Rentals team now has a powerful tool to manage inventory, enhance customer satisfaction, and ensure efficient workflow automation, laying a strong foundation for sustained growth and improved customer relations.