

# **A CRM APPLICATION FOR LAPTOP RENTALS**

## **1. Project Overview:**

This project is dedicated to developing a robust CRM application tailored for managing laptop rentals within a business environment using the Salesforce platform. The primary goal is to tackle operational challenges, including handling rental requests efficiently, monitoring inventory, and facilitating effective communication with customers. Leveraging Salesforce's strengths in automation, workflow optimization, and data storage, this CRM application aims to:

1. Optimize the Rental Workflow: Streamline the booking and return processes to reduce time and minimize manual intervention required for each rental.
2. Enhance Customer Satisfaction: Send timely email notifications to customers for booking confirmations and return reminders.
3. Increase Data Accuracy and Insightful Reporting: Provide real-time visibility into laptop inventory and rental status, empowering staff to make informed, quick decisions.

## **2. Objective Goals:**

1. Streamline the laptop rental and return processes to minimize manual effort, enhancing efficiency and accuracy.
2. Strengthen customer management practices to improve service quality and foster lasting customer relationships.
3. Implement precise tracking and reporting for laptop inventory to ensure accurate availability and effective asset management.

### **Specific outcomes:**

- A customized Salesforce CRM application designed to manage rental services with an intuitive interface, allowing users to easily view, manage, and track rental activity.
- Automated workflows streamline the handling of rental requests, provide real-time status updates, and send email notifications.
- Comprehensive reports and dashboards deliver real-time insights into inventory levels, rental activity, and customer engagement.

### **3. Salesforce Key Features and Concepts Utilized:**

This section details the core Salesforce functionalities and tools used in the Laptop Rentals CRM application.

- **Custom Objects and Fields:**

- **Laptop\_Bookings\_\_c:** A custom object created to manage each rental booking, featuring fields such as:

- Customer Name
    - Email\_\_c
    - Amount\_\_c
    - Core\_\_c
    - Laptop\_Type\_\_c
    - Status

- **Laptops\_\_c:** An additional custom object representing inventory items, which tracks details like model, specifications, and availability status.

- **Apex Triggers and Classes:**

- Developed an AfterInserttrigger (LaptopBooking) to send automated confirmation emails when a booking is made. The LaptopBookingHandler class formats and personalises these emails with customer details.

- **Process Automation with Process Builder and Flows:**

- Designed a Process Builder flow to manage booking status changes (e.g., from "Booked" to "In Use" to "Returned") without manual updates.

- **Validation Rules for Data Accuracy:**

- Added rules to enforce data quality, requiring key fields like Email and Amount for complete booking records.

- **Reports and Dashboards:**

Created dashboards and reports to provide insights on inventory, rental volumes, popular laptop models, and customer demographics, supporting strategic planning and resource allocation.

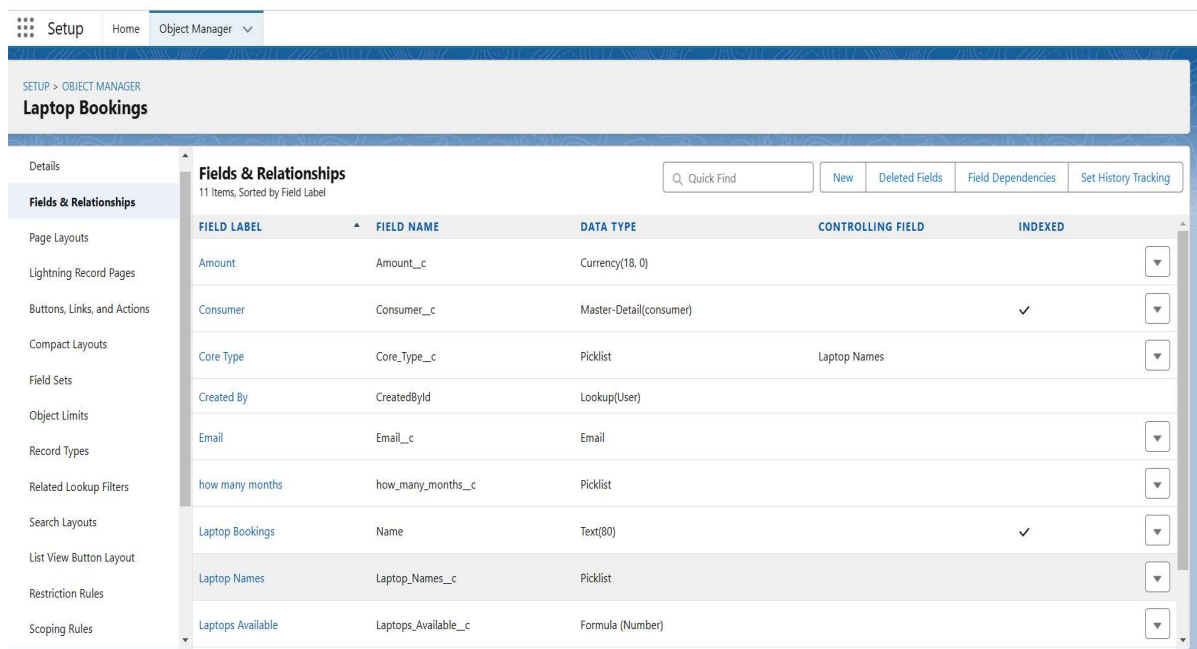
## 4. Detailed Steps to Solution design:

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 (Account or Contact) to connect customers with their respective bookings.
- Additional fields, such as **Email\_\_c**, **Amount\_\_c**, **Core\_\_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.

Fields Included in the **LaptopBookings** object:



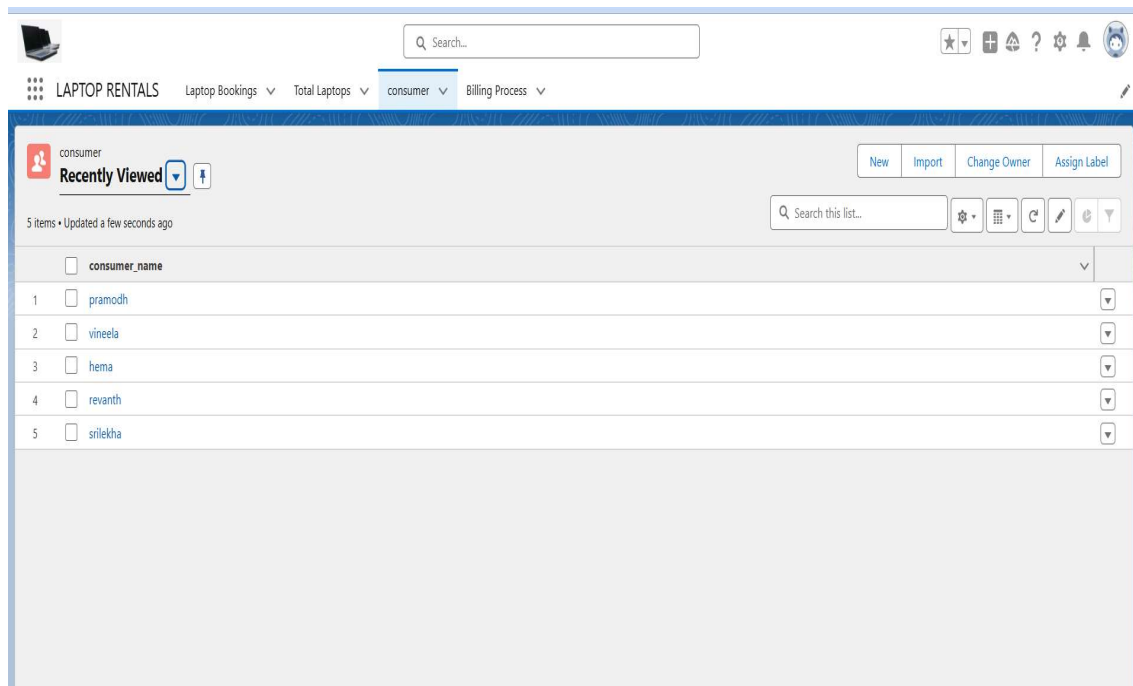
Setup	Home	Object Manager
SETUP > OBJECT MANAGER		
Laptop Bookings		
Details		
Fields & Relationships		
11 Items, Sorted by Field Label		
Q Quick Find		
New Deleted Fields Field Dependencies Set History Tracking		
FIELD LABEL	FIELD NAME	DATA TYPE
Amount	Amount__c	Currency(18, 0)
Consumer	Consumer__c	Master-Detail(consumer)
Core Type	Core_Type__c	Picklist
Created By	CreatedById	Lookup(User)
Email	Email__c	Email
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)


## User Interface (UI) Design:

The custom Lightning app Laptop Rentals features easy navigation with tabs for key components, including 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.

## Navigation Items on Laptop Rental Application:






★

+

🏠

?

🔔



LAPTOP RENTALS

Laptop Bookings

Total Laptops

consumer

Billing Process

Laptop Bookings

Recently Viewed

NewImportAssign Label

5 items • Updated a few seconds ago

⚙

📊

🔄

✎

🗑

⏮

☐ Laptop Bookings

1

☐ Mynta

2

☐ Snap deal

3


☐ lap life

4

☐ flipkart

5

☐ Amazon




★

+

🏠

?

🔔



LAPTOP RENTALS

Laptop Bookings

Total Laptops

consumer

Billing Process

Billing Process

Recently Viewed

NewImportAssign Label

5 items • Updated a few seconds ago

⚙

📊

🔄

✎

🗑

⏮

☐ Billing ProcessName

1

☐ lap partners billing

2

☐ amazon billing

3

☐ care center billing

4

☐ snapdeal billing

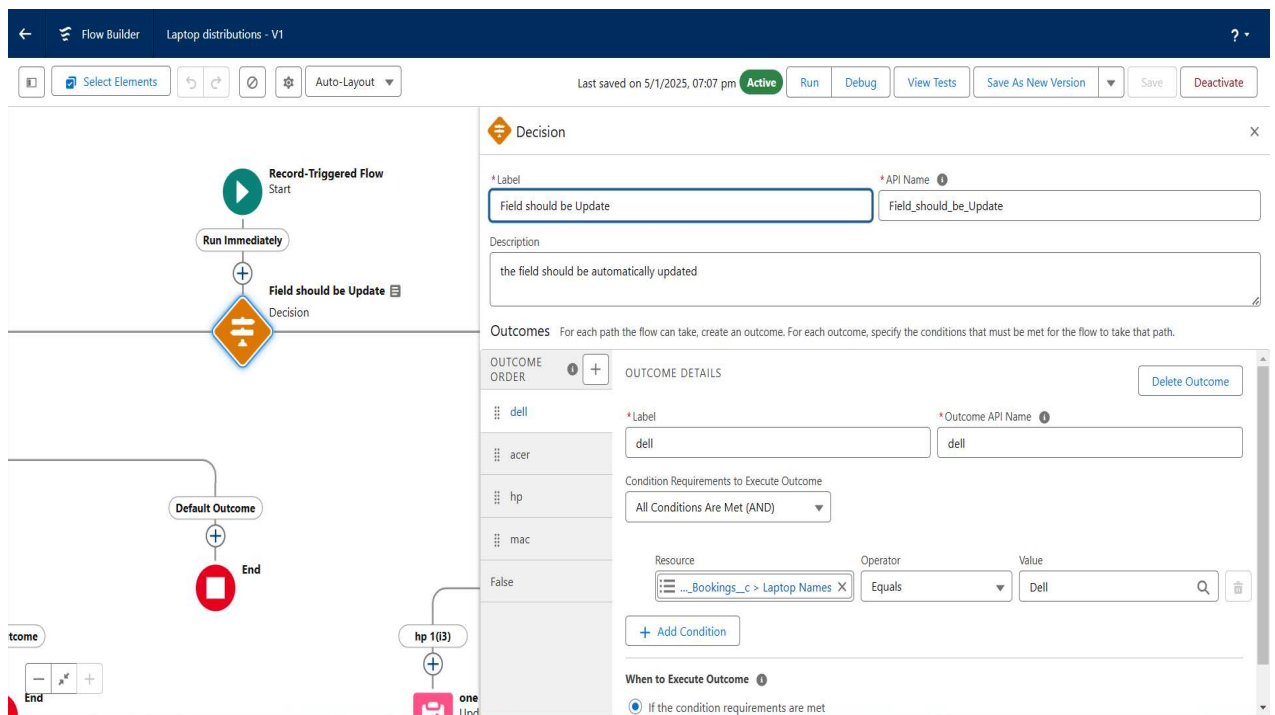
5

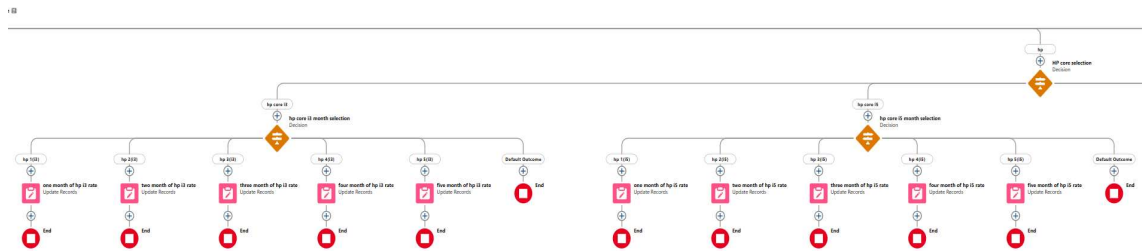
☐ lap life billing

## Business Logic Design:

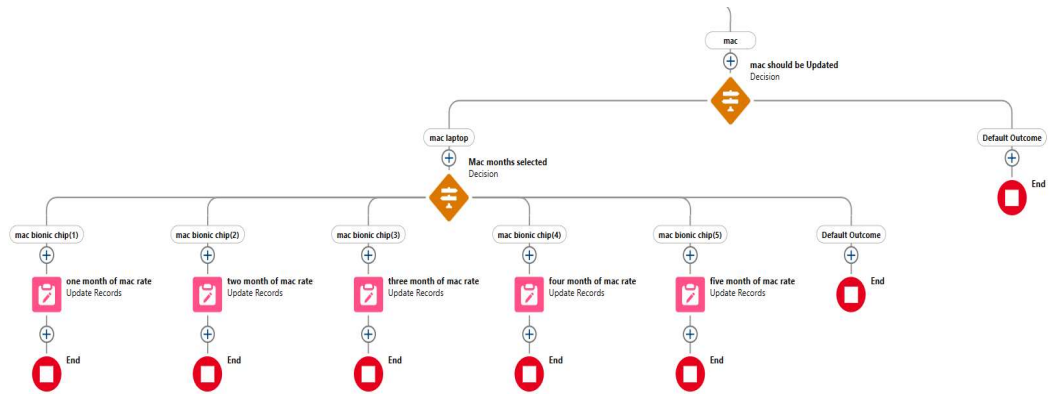
- Developed the LaptopBookingHandler class to handle email notifications using Messaging.SingleEmailMessage.
- Added the AfterInsert trigger on Laptop\_Bookings\_\_c to initiate sendEmailNotification method, ensuring customers receive a welcome and confirmation email after booking.

## Flow Automation:









←

Flow Builder

Laptop distributions - V1

?

Select Elements

↶ ↷ ⌂ ⚙ Auto-Layout

Last saved on 5/1/2025, 07:07 pm

Active Run Debug View Tests

Save As New Version Save Deactivate

hp core i7

+

hp core i7 Decision

+

hp 3(i7)

+

three month of hp i7 rate Update Records

+

End

three month of hp i7 rate Update Records

\* Label

three month of hp i7 rate

\* API Name

three\_month\_of\_hp\_i7\_rate

Description

\* How to Find Records to Update and Set Their Values

☒ Use the laptop bookings record that triggered the flow
 ☐ Update records related to the laptop bookings record that triggered the flow
 ☐ Use the IDs and all field values from a record or record collection
 ☐ Specify conditions to identify records, and set fields individually

Set Filter Conditions

Condition Requirements to Update Record

None—Always Update Record

Validation Rule:

SETUP > OBJECT MANAGER

consumer

Details

Fields & Relationships

Page Layouts

Lightning Record Pages

Buttons, Links, and Actions

Compact Layouts

Field Sets

Object Limits

Record Types

Related Lists and Filters

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 id	✓	Bhagya Lakshmi Kadambala, 05/01/2025, 4:21 pm

New

Conditional Formula:

SETUP > OBJECT MANAGER

consumer

Details

Fields & Relationships

Page Layouts

Lightning Record Pages

Buttons, Links, and Actions

Compact Layouts

Field Sets

Object Limits

Record Types

Related Lists and Filters

consumer Validation Rule

Back to consumer

Help for this Page

Validation Rule Detail

EditClone

Rule Name	Phonenumberoremailblankrule	Active	✓
Error Condition Formula	OR( ISBLANK( Phone_number__c ) , ISBLANK( 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	Bhagya Lakshmi Kadambala, 05/01/2025, 4:21 pm	Modified By	Bhagya Lakshmi Kadambala, 05/01/2025, 4:21 pm

EditClone

## Apex class:

Created Apex class with name of **LaptopBookingHandler**

SETUP

Apex Classes

Apex Class

LaptopBookingHandler

Apex Class Detail

Edit

Delete

Download

Security

Show Dependencies

Name	LaptopBookingHandler	Status	Active
Namespace Prefix		Code Coverage	0% (0/10)
Created By	Rhagya Lakshmi Kadambala , 05/01/2025, 7:22 pm	Last Modified By	Rhagya Lakshmi Kadambala , 05/01/2025, 9:25 p

Class Body

Class Summary

Version Settings

Trace Flags

```
1 public class LaptopBookingHandler {
2
3     public static void sendEmailNotification (List<Laptop_Bookings__c> lapList){
4         for(Laptop_Bookings__c lap lapList)
5         {
6
7             Messaging.SingleEmailMessage email = new Messaging.SingleEmailMessage();
8
9             email.setToAddresses( new List<String>{lap.Email__c});
10
11             email.setSubject('Welcome to our company');
12
13             string body = 'Dear Customer, \n';
14
15             body += 'Welcome to Laptop Rental! You have been seen as a valuable customer to us. \n Please continue your journey with us, while we try to provide you with good quality resources. \n Laptop Amount = ' + lap.Amount__c + ' \n core type = ' + lap.core_type__c;
16
17             email.setPlainTextBody(body);
18
19             Messaging.sendEmail(new List<Messaging.SingleEmailMessage>{email});
20
21         }
22     }
23 }
24
25
26 }
```

## Apex Triggers:

Created an APEX Trigger with name of **LaptopBooking**

SETUP

Apex Triggers

Apex Trigger

LaptopBooking

Apex Trigger Detail

Edit

Delete

Download

Show Dependencies

Name	LaptopBooking	sObject Type	Laptop Bookings
Code Coverage	0% (0/2)	Status	Active
Created By	Rhagya Lakshmi Kadambala , 05/01/2025, 7:13 pm	Last Modified By	Rhagya Lakshmi Kadambala , 05/01/2025, 9:25 pm
Namespace Prefix			

Apex Trigger

Version Settings

Trace Flags

```
1 trigger LaptopBooking on Laptop_Bookings__c (After insert,after update) {
2
3
4
5     if(trigger.isAfter && ( trigger.isInsert || trigger.isupdate))
6     {
7
8         LaptopBookingHandler.sendEmailNotification(trigger.new);
9
10    }
11
12
13
14
15 }
```

## 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 inventory and marketing decisions.
- **Customer Insights:** Provides data on customer types, helping target future marketing campaigns more effectively.

Sales

Home

Opportunities

Leads

Tasks

Files

Accounts

Contacts

Campaigns

Dashboards

Reports

Chatter

Groups

Calendar

\* More

REPORT

Reports of Booking and total Laptops

Total Laptops with Laptop Bookings and consumer

↶

↷

Add Chart

Save & Run

Save

Close

Run

Show Fields

Filters 1

Previewing a limited number of records. Run the report to see everything.

Update Preview Automatically

Type of versions	Consumer: Address	Consumer: Phone number	Laptop Bookings: Laptop Bookings	Consumer: consumer_name	Amount	Laptops Available	Total Laptops
high (5)	vizag (3)	7895469735 (1)	flipkart	pramodh	₹1,700	49	50
		Subtotal			₹1,700	49	
		789541256 (1)	Myntra	srilekha	₹5,100	47	50
		Subtotal			₹5,100	47	
		9874562178 (1)	lap life	hema	₹4,500	47	50
	srikakulam (2)	Subtotal			₹4,500	47	
					₹11,300	96	
		798172991 (2)	Amazon	vineela	₹2,500	47	50
		Snap deal	vineela	₹2,400	49	50	
		Subtotal			₹4,900	96	
Subtotal				₹4,900	96		
Subtotal				₹16,200	145		
Total (5)				₹16,200	145		

Columns

Add column...

Laptop Bookings: Laptop Bookings

Consumer: consumer\_name

# Amount

# Laptops Available

Total Laptops: Total Laptops

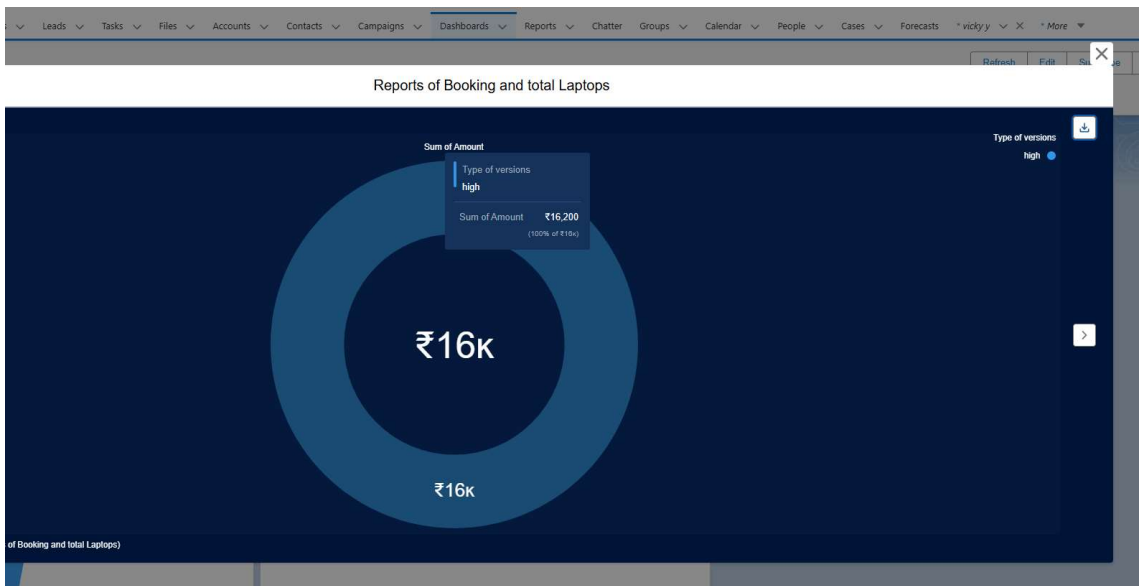
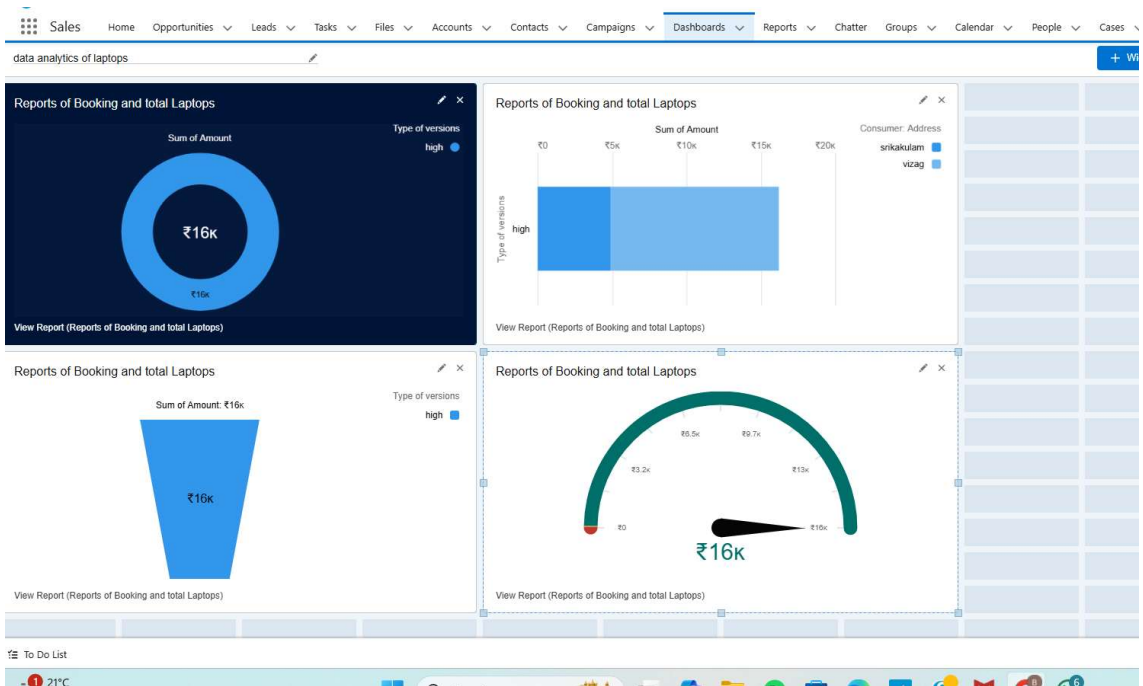
Row Counts

Detail Rows

Subtotals

Grand Total

Conditional Formatting



## 5. Testing and Validation :

### ● Unit Testing:

Each Apex class and trigger was thoroughly tested, ensuring at least 75% code coverage. Tests were designed to validate that:

- Booking confirmation emails are sent correctly.
- Inventory statuses update accurately.

### ● 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:** Check that validation rules enforce required fields like Email\_\_c and Amount\_\_c.
- **Scenario 3:** Test that inventory adjust automatically when a booking status is changed from "Booked" to "Returned."

# Apex Testing class:

## Create a Testing class LaptopBookingTest.apxc

 **Apex Classes**

Apex Class Detail

EditDeleteDownloadRun TestShow Dependencies

NameLaptopBookingHandlerTest

StatusActive

Namespace Prefix

Created ByBhagya Lakshmi Kadambala05/01/2025, 7:32 pm

Last Modified ByBhagya Lakshmi Kadambala05/01/2025, 9:25 pm

Class Body

Class Summary

Version Settings

Trace Flags

```
1  @isTest
2  public class LaptopBookingHandlerTest {
3
4      @isTest
5      static void testLaptopBookingTrigger(){
6
7          Laptop_Bookings__c testBooking = new Laptop_Bookings__c(
8              Consumer__c = 'SnapDeal',
9              Email__c = 'test@example.com',
10             Laptop_Names__c = 'Dell',
11             Total_No_Of_Laptops__c = '10',
12             Name = 'Test User',
13             how_many_months__c = '3'
14         );
15
16         Test.startTest();
17         insert testBooking;
18
19         testBooking.how_many_months__c = '4';
20         update testBooking;
21
22         Test.stopTest();
23         Integer sentEmailCount = Limits.getEmailInvocations();
24         System.assertEquals(1, sentEmailCount, 'One email should have been sent');
25     }
26 }
```

FileEditDebugTestWorkspaceHelp<>

LaptopBookingHandlerTest.apxcLaptopBookingHandlerTest.apxcLaptopBooking.apxc

Code Coverage: NoneAPI Version: 62Run TestGo To

```
1  @isTest
2  public class LaptopBookingHandlerTest {
3
4      @isTest
5      static void testLaptopBookingTrigger(){
6
7          Laptop_Bookings__c testBooking = new Laptop_Bookings__c(
8              Consumer__c = 'SnapDeal',
9              Email__c = 'test@example.com',
10             Laptop_Names__c = 'Dell',
11             Total_No_Of_Laptops__c = '10',
12             Name = 'Test User',
13             how_many_months__c = '3'
14         );
15
16         Test.startTest();
17         insert testBooking;
18
19         testBooking.how_many_months__c = '4';
20         update testBooking;
21
22         Test.stopTest();
23         Integer sentEmailCount = Limits.getEmailInvocations();
24         System.assertEquals(1, sentEmailCount, 'One email should have been sent');
25     }
26 }
```

Logs

Tests

Checkpoints

Query Editor

View State

Progress

Problems

User	Application	Operation	Time +	Status	Read	Size
Bhagya Lakshmi Kadambala	Browser	/aura	1/4/2025, 10:46:14 AM	Success	Unread	15.91 KB
Bhagya Lakshmi Kadambala	Unknown	common.api.soap.DirectSoap	1/4/2025, 10:46:14 AM	Success	Unread	479 bytes
Bhagya Lakshmi Kadambala	Browser	/aura	1/4/2025, 10:46:31 AM	Success	Unread	15.91 KB
Bhagya Lakshmi Kadambala	Unknown	common.api.soap.DirectSoap	1/4/2025, 10:46:31 AM	Success	Unread	484 bytes
Bhagya Lakshmi Kadambala	Browser	/aura	1/4/2025, 10:44:26 AM	Success	Unread	13.84 KB

1/4/2025

Click here to Edit this Test Set

## 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 provide status updates as the rental progresses. This keeps 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\_Booking\_Lifecycle:** Manage booking statuses with automation, moving each booking from "Booked" to "In Use" and finally "Returned" without manual intervention.
- **Role-Based\_Data\_Access:** Define roles and permissions, allowing staff to manage bookings and customers, while customers can only access their rental information.

## 7. Conclusion:

The Laptop Rentals CRM application demonstrates an effective use of Salesforce to automate and manage key rental business processes. Leveraging custom objects, Apex programming, and flow automation, the project streamlines data management and enhances customer interactions. Key features like email notifications, dynamic pricing, and streamlined booking processes have improved both customer experience and operational efficiency.

Salesforce's reporting and dashboard tools offer valuable insights into rental trends, revenue tracking, and decision-making. With validation rules and role-based access, the solution ensures data security and integrity, supporting sustainable business growth. This project not only meets immediate objectives but also establishes a scalable foundation for future enhancements, positioning Laptop Rentals for long-term success in customer satisfaction and operational efficiency.



