

# 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:

- a. Optimize the Rental Workflow: Streamline the booking and return processes to reduce time and minimize manual intervention required for each rental.
- b. Enhance Customer Satisfaction: Send timely email notifications to customers for booking confirmations and return reminders.
- c. 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:

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

### Specific outcomes:

- i. A customized Salesforce CRM application designed to manage rental services with an intuitive interface, allowing users to easily view, manage, and track rental activity.

- ii. Automated workflows streamline the handling of rental requests, provide real-time status updates, and send email notifications.
- iii. 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.

#### **1. Custom Objects and Fields:**

- a. **Laptop\_Bookings\_\_c:** A custom object created to manage each rental booking, featuring fields such as:
  - i. Customer Name
  - ii. Email\_\_c
  - iii. Amount\_\_c
  - iv. Core\_\_c
  - v. Laptop\_Type\_\_c
  - vi. Status
- vii. **Laptops\_\_c:** An additional custom object representing inventory items, which tracks details like model, specifications, and availability status

#### **1. Apex Triggers and Classes:**

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

#### **2. Process Automation with Process Builder and Flows:**

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

### **3. Validation Rules for Data Accuracy:**

- a. Added rules to enforce data quality, requiring key fields like Email and Amount for complete booking records.
4. **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:

### **1. Data Model Design:**

- a. Created **Laptop\_Bookings\_\_c** and **Laptops\_\_c** custom objects.
- b. Established relationships between **Laptop\_Bookings\_\_c** and standard Salesforce objects (Account or Contact) to connect customers with their respective bookings.
- c. 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 LaptopBooking object:**

SETUP > OBJECT MANAGER

### Laptop Bookings

Details

**Fields & Relationships**  
11 Items, Sorted by Field Label

Quick Find:

New Deleted Fields Field Dependencies Set History Tracking

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Amount	Amount__c	Currency(18, 0)		
Consumer	Consumer__c	Master-Detail(consumer)		✓
Core Type	Core_Type__c	Picklist	Laptop Names	
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		

## User Interface(UI) Design:

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

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

## Navigation Items on LaptopRental Application:

LAPTOP RENTALS

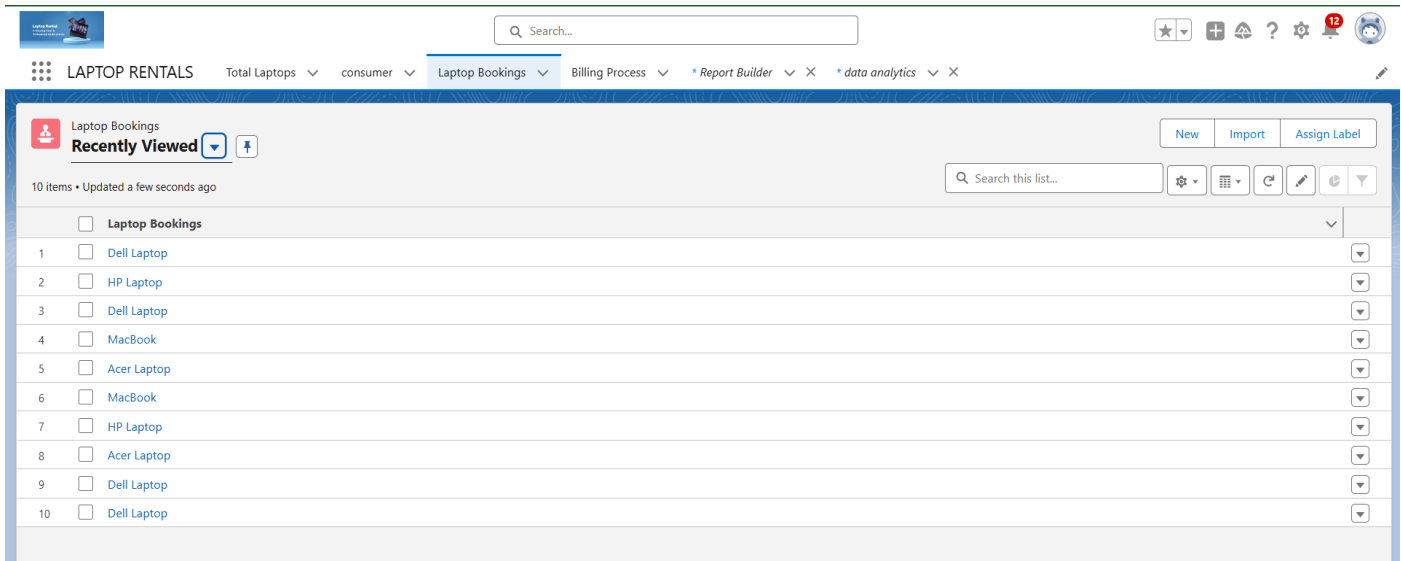
Total Laptops consumer Laptop Bookings Billing Process Report Builder data analytics

consumer

**Recently Viewed**

3 items • Updated a few seconds ago

	consumer_Name
1	<input type="checkbox"/> durga
2	<input type="checkbox"/> pramodh
3	<input type="checkbox"/> satyam



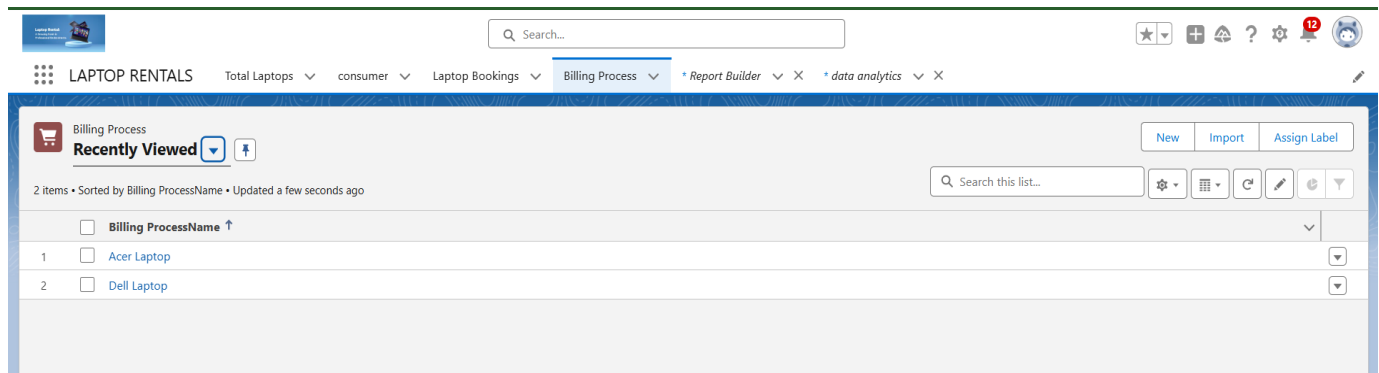
Laptop Bookings

Recently Viewed

10 items • Updated a few seconds ago

Search this list...

	Laptop Bookings	
1	<input type="checkbox"/> Dell Laptop	
2	<input type="checkbox"/> HP Laptop	
3	<input type="checkbox"/> Dell Laptop	
4	<input type="checkbox"/> MacBook	
5	<input type="checkbox"/> Acer Laptop	
6	<input type="checkbox"/> MacBook	
7	<input type="checkbox"/> HP Laptop	
8	<input type="checkbox"/> Acer Laptop	
9	<input type="checkbox"/> Dell Laptop	
10	<input type="checkbox"/> Dell Laptop	



Billing Process

Recently Viewed

2 items • Sorted by Billing ProcessName • Updated a few seconds ago

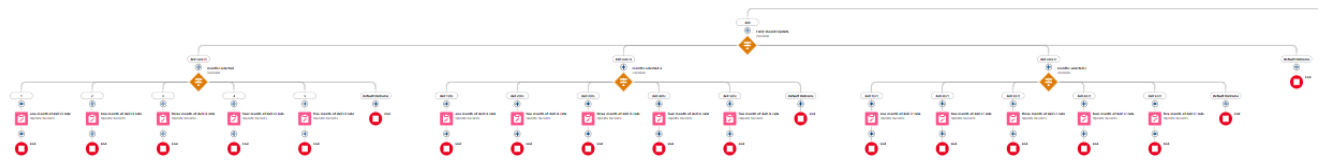
Search this list...

	Billing ProcessName ↑	
1	<input type="checkbox"/> Acer Laptop	
2	<input type="checkbox"/> Dell Laptop	

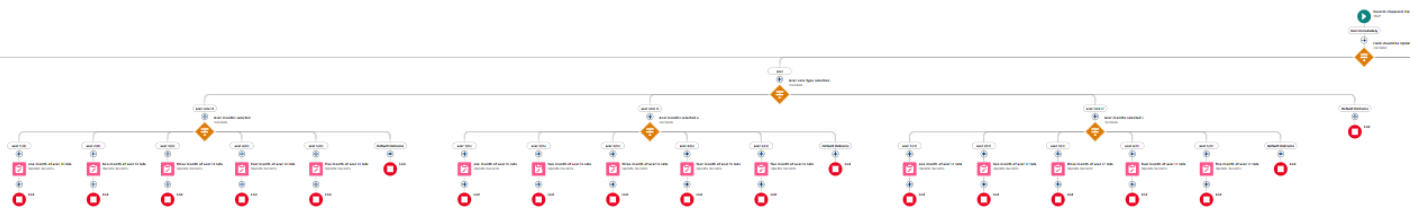
### Business Logic Design:

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

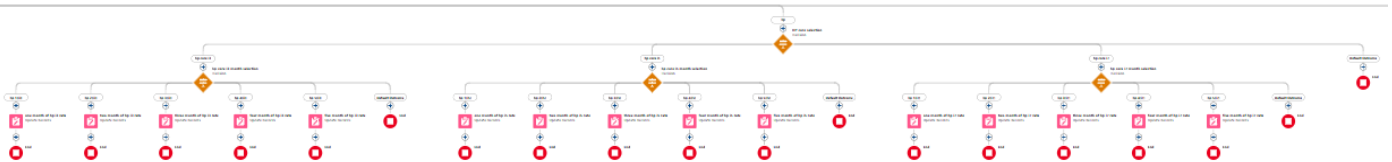
### Flow Automation: Dell:



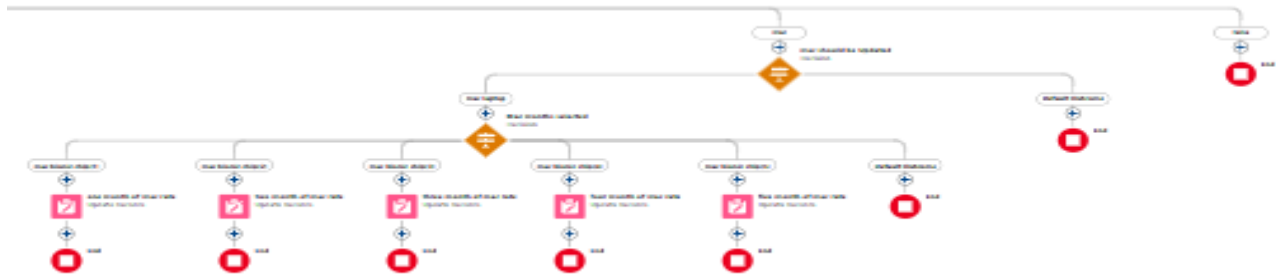
Acer:



Hp:



Mac:



Flow Builder

Laptop distributions - V2

?

Select Elements

Auto-Layout

Last saved on 2/1/2025, 11:38 am

Active

Run

Debug

View Tests

Save As New Version

Save

Deactivate

+

dell core i3

+

months selected

Decision

3

+

three month of dell i3 rate

Update Records

+

End

4

+

four month of dell i3

Update Records

+

End

Decision

\*Label

months selected

\*API Name

months\_selected

Description

Outcomes

For each path the flow can take, create an outcome. For each outcome, specify the conditions that must be met for the flow to take that path.

OUTCOME ORDER	OUTCOME DETAILS
1	<div>*Label</div> <div>1</div> <div>*Outcome API Name</div> <div>X1</div> <div>Condition Requirements to Execute Outcome</div> <div>All Conditions Are Met (AND)</div> <div>Resource</div> <div>...kings__c &gt; how many months</div> <div>Operator</div> <div>Equals</div> <div>Value</div> <div>1</div>

+ Add Condition

## Validation Rule:

Setup Home Object Manager

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 Lookup Filters

Search Layouts

List View Button Layout

Restriction Rules

**Validation Rules**

1 Items, Sorted by Rule Name

[New](#)

RULE NAME	ERROR LOCATION	ERROR MESSAGE	ACTIVE	MODIFIED BY
Phonenumberoremailblankrule	Top of Page	Please fill the phone number and email id	✓	SANTOSH KUMAR SEERA, 01/01/2025, 11:02 am

## Conditional Formula:

Setup Home Object Manager

SETUP > OBJECT MANAGER

**consumer**

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Restriction Rules

**consumer Validation Rule**

[Back to consumer](#)

[Help for this Page](#)

**Validation Rule Detail**

[Edit](#) [Clone](#)

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	SANTOSH KUMAR SEERA, 01/01/2025, 11:02 am	Modified By	SANTOSH KUMAR SEERA, 01/01/2025, 11:02 am

[Edit](#) [Clone](#)

## Apex class:

Created Apex class with name of LaptopBookingHandler



**Apex Classes**

Apex Class: LaptopBookingHandler

Apex Class Detail

Name	Namespace Prefix	Status	Active
LaptopBookingHandler		0% (0/10)	Active

Created By: SANTOSH KUMAR SEERA, 02/01/2025, 12:09 pm

Last Modified By: SANTOSH KUMAR SEERA, 02/01/2025, 12:59 pm

Class Body

```

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
8
9         Messaging.SingleEmailMessage email = new Messaging.SingleEmailMessage();
10
11         email.setToAddresses(new List<String>({lap.Email__c}));
12         email.setSubject('Welcome to our company');
13
14         string body = 'Dear Customer, We';
15
16         body += 'Welcome to Laptop Rentals! You have been seen as a valuable customer to us in Please continue your journey with us, while we try to provide you with good quality resources. In Laptop Amount = ' + lap.Amount__c + ' in core type = ' + lap.core_type__c + ' in Laptop type = ' + lap.Laptop_Type__c;
17
18         email.setPlainTextBody(body);
19
20         Messaging.sendEmail(new List<Messaging.SingleEmailMessage>({email}));
21
22
23
24     }
25
26 }
27
28 }

```

## Apex Triggers:

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

**Apex Triggers**

Apex Trigger: LaptopBooking

Apex Trigger Detail

Name	Object Type	Status	Active
LaptopBooking	Laptop Bookings	0% (0/2)	Active

Created By: SANTOSH KUMAR SEERA, 02/01/2025, 11:50 am

Last Modified By: SANTOSH KUMAR SEERA, 02/01/2025, 12:59 pm

Apex Trigger

```

1 trigger LaptopBooking on Laptop_Bookings__c (after insert, after update) {
2     // Ensure this logic only runs after insert or update
3     if (Trigger.isAfter && (Trigger.isInsert || Trigger.isUpdate)) {
4         // Call the handler method and pass the trigger new records
5         LaptopBookingHandler.sendEmailNotification(Trigger.new);
6     }
7 }

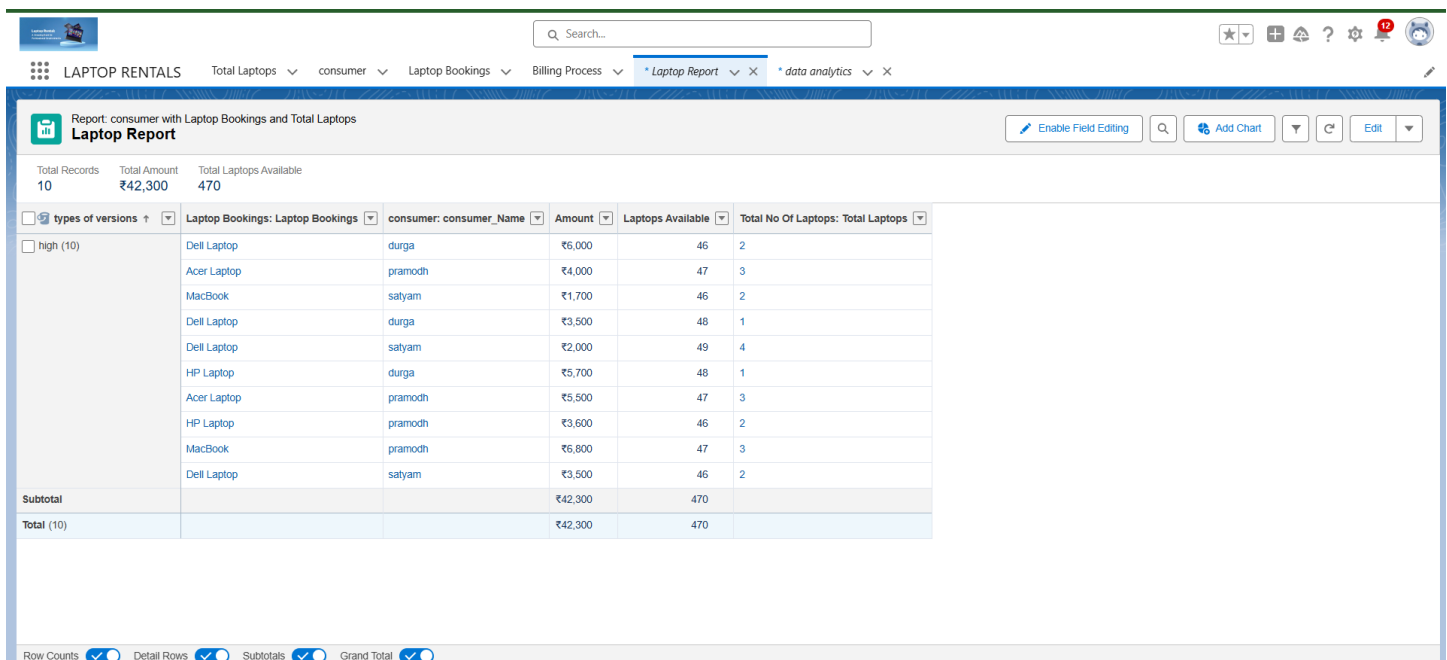
```

## 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:

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



Report: consumer with Laptop Bookings and Total Laptops  
**Laptop Report**

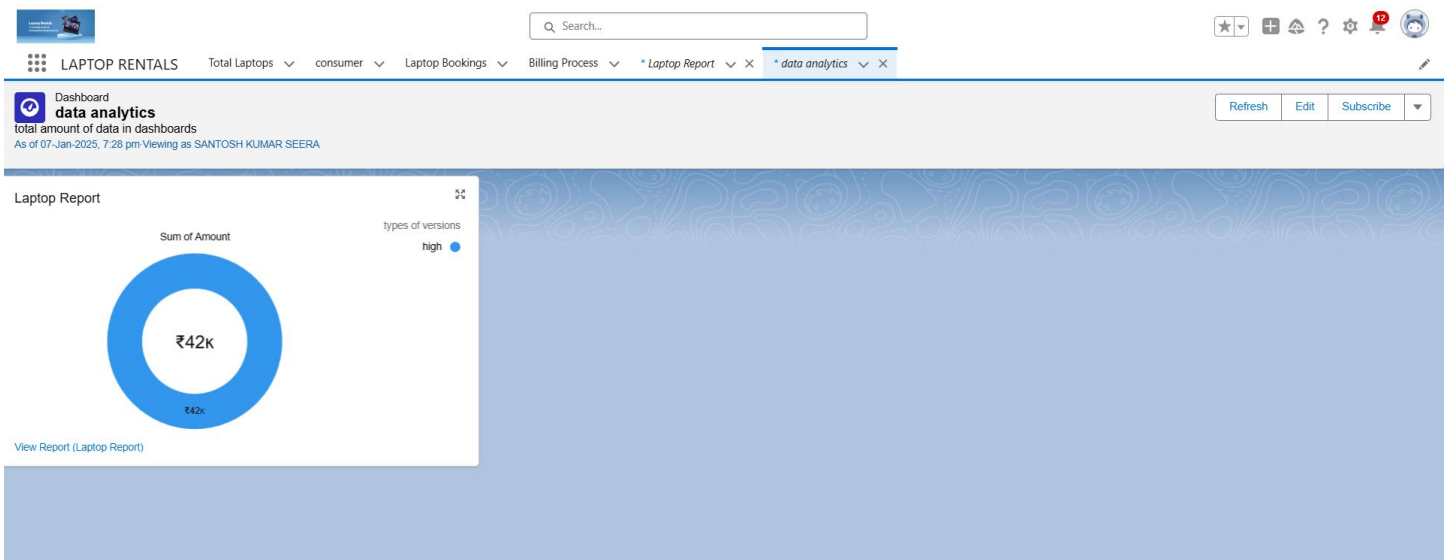
Total Records: 10    Total Amount: ₹42,300    Total Laptops Available: 470

types of versions	Laptop Bookings: Laptop Bookings	consumer: consumer_Name	Amount	Laptops Available	Total No Of Laptops: Total Laptops
<input type="checkbox"/> high (10)	Dell Laptop	durga	₹6,000	46	2
	Acer Laptop	pramodh	₹4,000	47	3
	MacBook	satyam	₹1,700	46	2
	Dell Laptop	durga	₹3,500	48	1
	Dell Laptop	satyam	₹2,000	49	4
	HP Laptop	durga	₹5,700	48	1
	Acer Laptop	pramodh	₹5,500	47	3
	HP Laptop	pramodh	₹3,600	46	2
	MacBook	pramodh	₹6,800	47	3
	Dell Laptop	satyam	₹3,500	46	2
	<b>Subtotal</b>		₹42,300	470	
	<b>Total (10)</b>		₹42,300	470	

Row Counts ☒ Detail Rows ☒ Subtotals ☒ Grand Total ☒

## Dashboards:

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



## 5. Testing and validation:

### a. Unit Testing:

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

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

### b. 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.

### C. Test Scenarios:

- i. **Scenario 1:** Create a new booking and verify that an email is sent with the correct booking details.

## **ii. Scenario 2:**

Check that validation rules enforce required fields like Email \_\_c and Amount \_\_c.

## **iii. Scenario 3:**

Test that inventory adjust automatically when a booking status is changed from "Booked" to "Returned."

# **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:

## **1. 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.

## **2. Real-Time Inventory Management:**

Track the availability of laptops in real time, updating inventory counts when laptops are rented and returned.

## **3. Workflow Automation for Booking Lifecycle:**

Manage booking statuses with automation, moving each booking from "Booked" to "In Use" and finally "Returned" without manual intervention.

## **4. 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.

