

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 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.

● **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

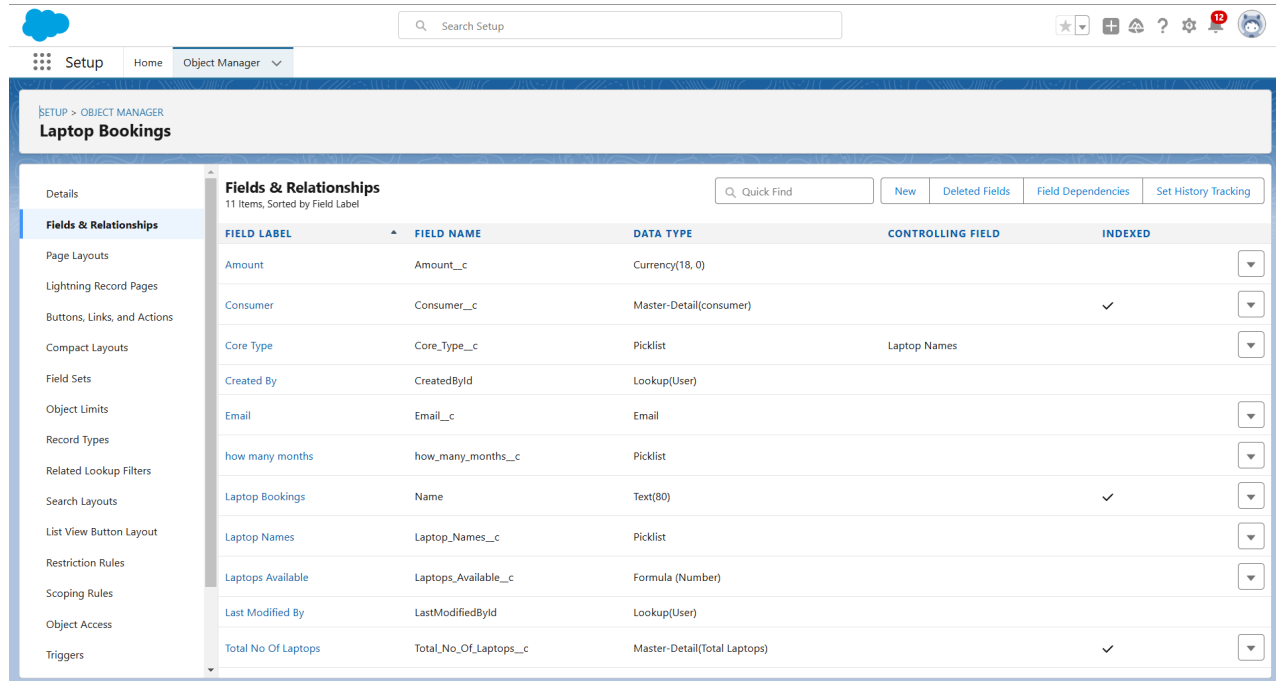
(Account or Contact) to connect customers with their respective bookings.

○ 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 **LaptopBooking** object:




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		
Laptops Available	Laptops_Available__c	Formula (Number)		
Last Modified By	LastModifiedById	Lookup(User)		
Total No Of Laptops	Total_No_Of_Laptops__c	Master-Detail(Total Laptops)		✓

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:



Search...



LAPTOP RENTALS

Total Laptops consumer Laptop Bookings Billing Process

consumer

Recently Viewed


New Import Change Owner Assign Label

7 items • Updated a few seconds ago








Search this list...

☐ consumer_name

1	<input type="checkbox"/> mukesh	
2	<input type="checkbox"/> santhosh	
3	<input type="checkbox"/> ravi	
4	<input type="checkbox"/> yash	
5	<input type="checkbox"/> jeeva	
6	<input type="checkbox"/> ram	
7	<input type="checkbox"/> raj	



Search...



LAPTOP RENTALS

Total Laptops consumer Laptop Bookings Billing Process

Laptop Bookings

Recently Viewed

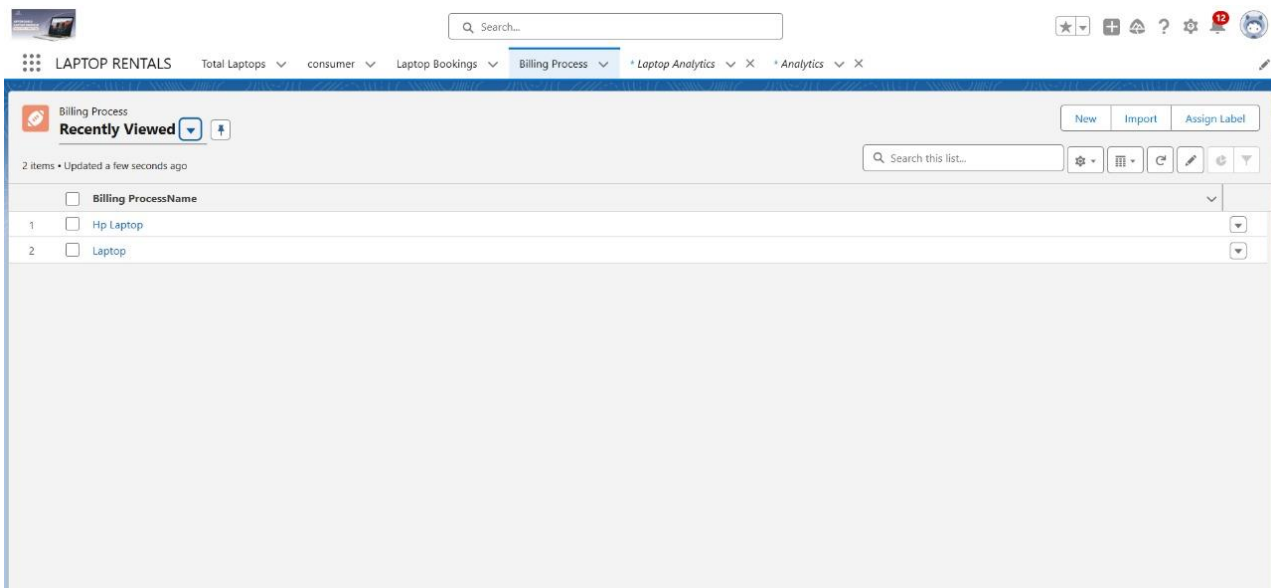
New Import Assign Label

3 items • Updated a few seconds ago

Search this list...

☐ Laptop Bookings

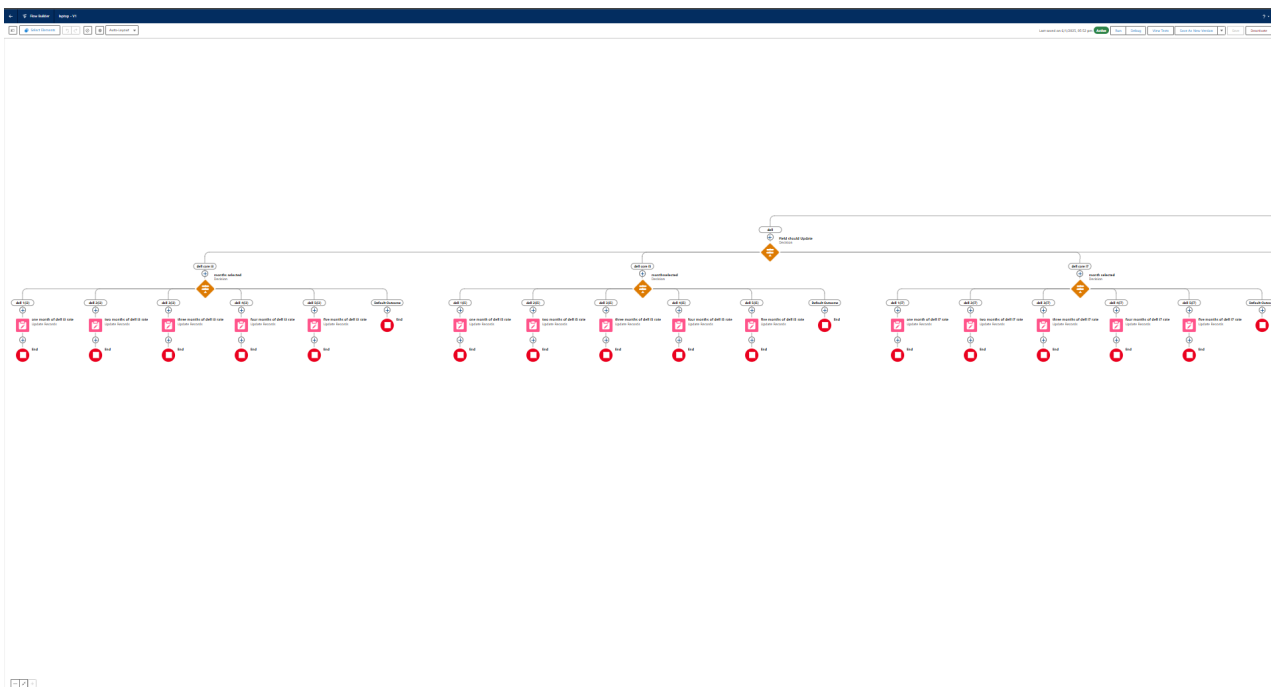
1	<input type="checkbox"/> hp laptop	
2	<input type="checkbox"/> mac laptop	
3	<input type="checkbox"/> Dell laptop	

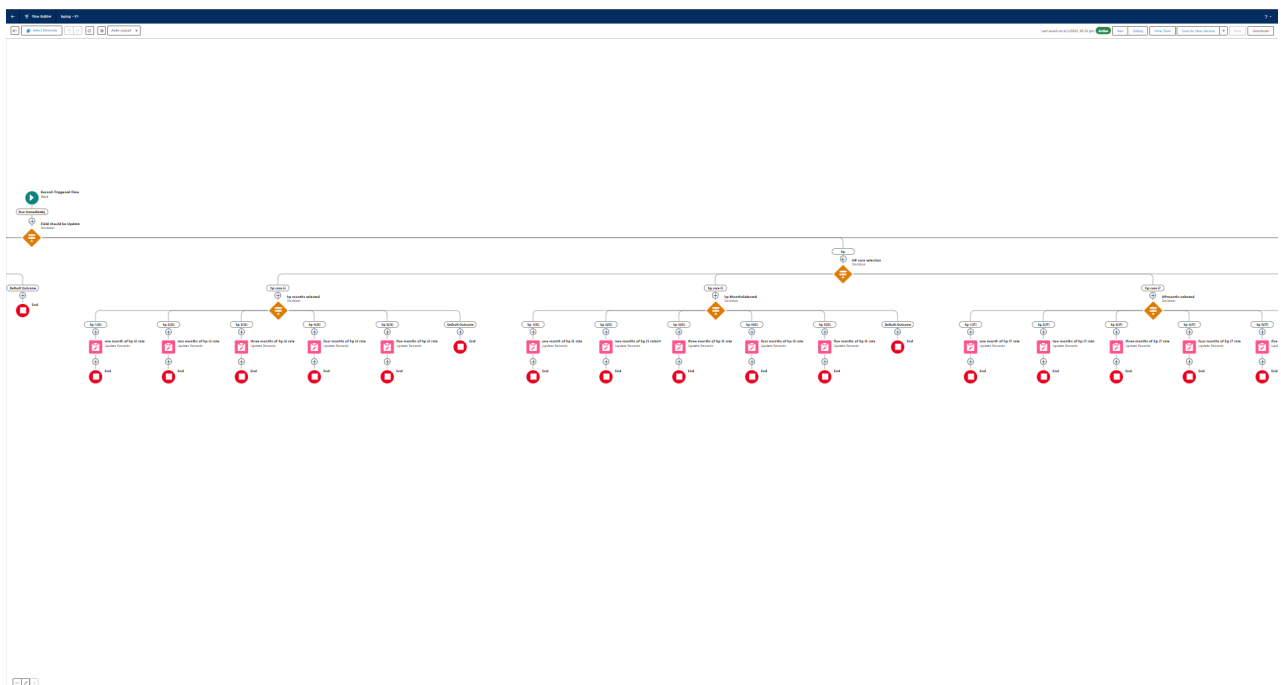


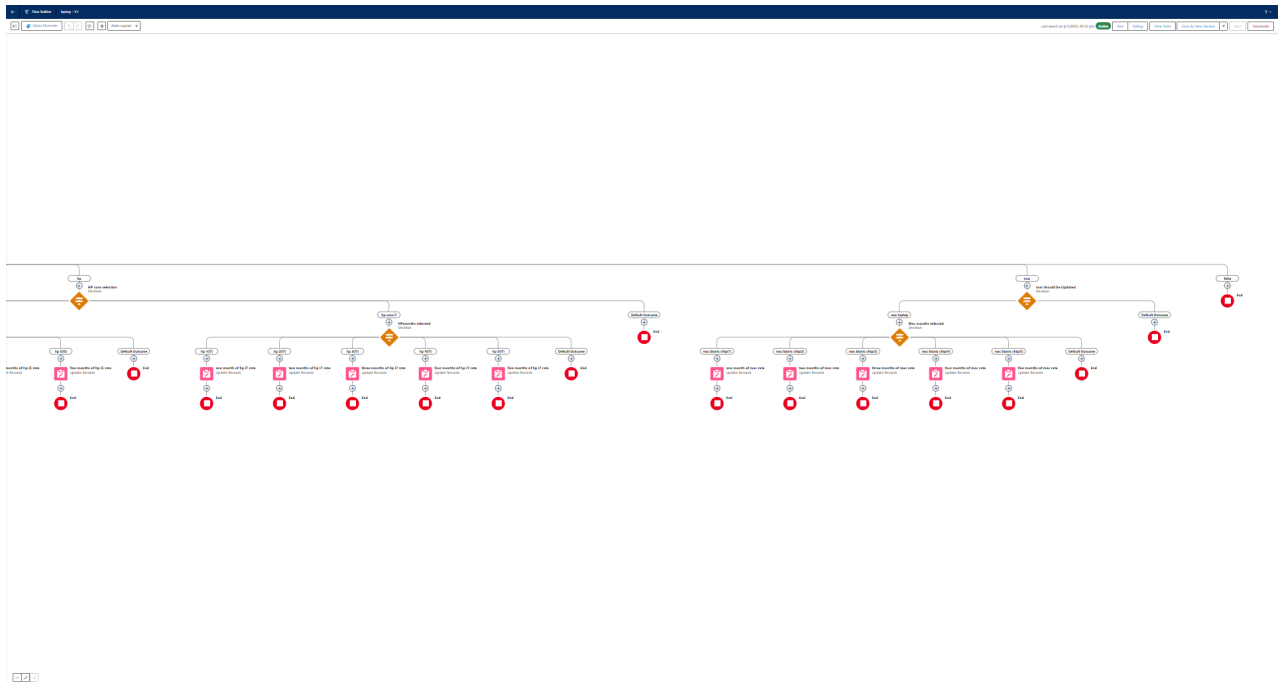
Business Logic Design:

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

Flow Automation:







Flow Builderlaptop - V1

Select Elements

Auto-Layout

Last saved on 6/1/2025, 05:52 pmActiveRunDebugView TestsSave As New VersionSaveDeactivate

hp 1(15)

one month of hp i5 rate
Update Records

End

hp 2(15)

two months of hp i5 rate34
Update Records

End

hp 3(15)

three
Update

End

Update Records

* Labelone month of hp i5 rate

* API Nameone_month_of_hp_i5_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 RecordNone—Always Update Record

Set Field Values for the Laptop Bookings Record

Field

Amount_c

Value

1700

+ Add Field

Validation Rule:

Setup

Home

Object Manager

Search Setup

Star

Plus

Cloud

Help

Settings

Notifications

Profile

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

Scoping Rules

Object Access

Triggers

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	✓	YaswanthKumar Pudi, 05/01/2025, 9:35 pm

Conditional Formula:

[Setup](#)
[Home](#)
[Object Manager](#)

[SETUP > OBJECT MANAGER](#)

consumer

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Scoping Rules

Object Access

Triggers

consumer Validation Rule

Back to consumer

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	YaswanthKumar Pudi, 05/01/2025, 9:35 pm	Modified By	YaswanthKumar Pudi, 05/01/2025, 9:35 pm

Edit

Clone

Help for this Page

Apex class:

Created Apex class with name of **LaptopBookingHandler** Apex Triggers:

The screenshot displays the Salesforce Setup interface. On the left, a navigation menu shows 'Setup' with a search bar containing 'apex'. The 'Apex Classes' link is selected. The main content area is titled 'Apex Classes' and shows the details for the 'LaptopBookingHandler' class. The class is active, created by 'YaswanthKumar Pudi' on 06/01/2025 at 5:58 pm. The 'Class Body' tab is selected, showing the following code:

```
1 public class LaptopBookingHandler {
2
3   public static void sendEmailNotification(List<Laptop_Bookings__c> lapList){
4     for(Laptop_Bookings__c lap lapList)
5     {
6       Messaging.SingleEmailMessage email = new Messaging.SingleEmailMessage();
7
8       email.setToAddresses( new List<String>({lap.Email__c});
9
10      email.setSubject('Welcome to our company');
11
12      string body = 'Dear Customer, In';
13
14      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;
15
16      email.setPlainTextBody(body);
17
18      Messaging.sendEmail(new List<Messaging.SingleEmailMessage>({email});
19    }
20  }
21 }
22
23
24
25
26
27
28 }
```

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

The screenshot displays the Salesforce Setup interface. On the left, a navigation menu shows 'Setup' with a search bar containing 'apex'. The 'Apex Triggers' link is selected. The main content area is titled 'Apex Triggers' and shows the details for the 'LaptopBooking' trigger. The trigger is active, created by 'YaswanthKumar Pudi' on 06/01/2025 at 5:55 pm. The 'Apex Trigger' tab is selected, showing the following code:

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

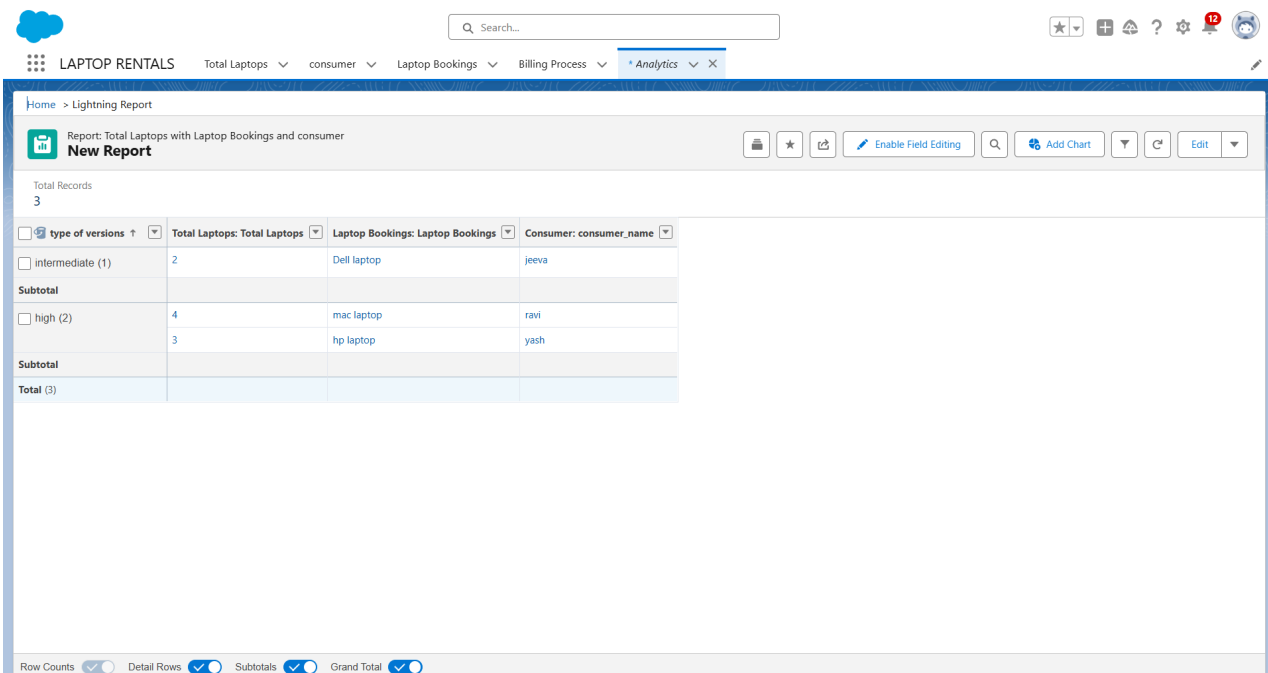
Reports and Dashboards:

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:



Home > Lightning Report

Report: Total Laptops with Laptop Bookings and consumer
New Report

Total Records: 3

<input type="checkbox"/> type of versions ↑	Total Laptops: Total Laptops	Laptop Bookings: Laptop Bookings	Consumer: consumer_name
<input type="checkbox"/> intermediate (1)	2	Dell laptop	jeeva
Subtotal			
<input type="checkbox"/> high (2)	4	mac laptop	ravi
	3	hp laptop	yash
Subtotal			
Total (3)			

Row Counts ☒ Detail Rows ☒ Subtotals ☒ Grand Total ☒

- **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.

4. 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."

5.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.

6.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.