



A CRM Application on E-Commerce Activities



NAAN MUDHALVAN PROJECT REPORT

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BONAFIDE CERTIFICATE

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LIST OF ABBREVIATION

CRM	Customer Relationship Management
ESP	Email Service Provider
UI	User Interface
UX	User Experience
OWD	Org - Wide Default
CTA	Call To Action
CSV	Comma - Separated Values
SLA	Service Level Agreement
API	Application Programming Interface
SaaS	Software as a Service
PaaS	Platform as a Service

CHAPTER-1

PROJECT SPECIFICATION

1.1 Project Goal

The goal of a Salesforce CRM application for e-commerce activities is to streamline and enhance the management of customer relationships within the e-commerce ecosystem. This includes the tracking of customer interactions, order history, and preferences, allowing for personalized marketing and customer support. By centralizing customer data, the project aims to improve customer engagement, drive sales, and ultimately boost the e-commerce business's profitability.

Furthermore, the project seeks to leverage Salesforce's robust features for automation, reporting, and analytics to optimize sales and marketing efforts. This entails implementing lead and opportunity management, email marketing, and customer service solutions, all within the Salesforce platform, to drive higher conversion rates and deliver a seamless and satisfying e-commerce experience for customers. In summary, the project's primary goal is to leverage Salesforce CRM to maximize efficiency and revenue in e-commerce operations through superior customer relationship management.

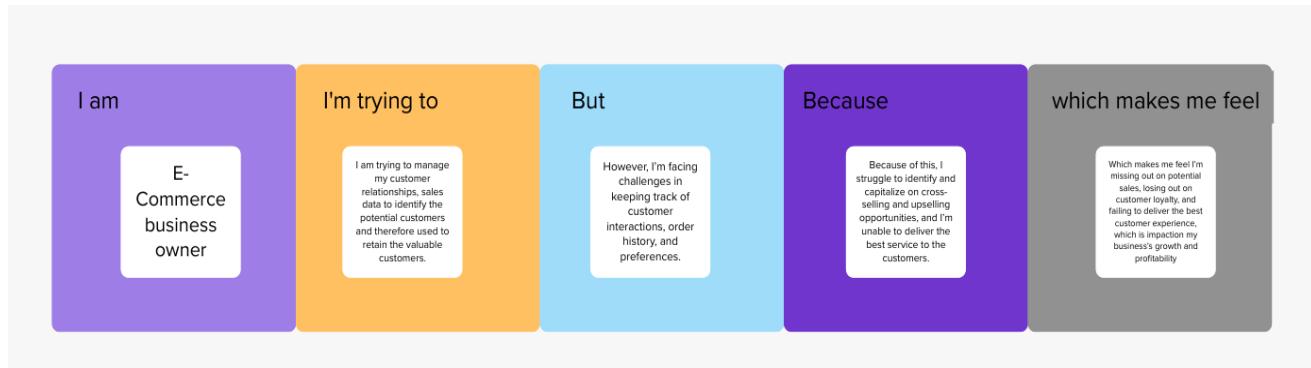
1.2 Project Scope

Developing a CRM application for e-commerce activities within the Salesforce ecosystem involves a multifaceted project scope. This initiative is focused on creating a robust platform that enables businesses to effectively manage and optimize customer interactions and transactions in the e-commerce domain. It includes features such as customer profile management, order processing, inventory tracking, and integration with customer support functions, all seamlessly integrated with Salesforce's CRM capabilities.

Moreover, the project scope encompasses the implementation of advanced CRM features, including lead and opportunity management, email marketing automation, and customer segmentation. This empowers businesses to personalize marketing strategies, boost customer engagement, and enhance the overall e-commerce experience. The project also necessitates data synchronization between the e-commerce platform and Salesforce CRM to provide real-time insights into customer behavior and sales trends, enabling data-driven decision-making and ultimately improving customer acquisition, retention, and overall business success.

To ensure the successful deployment of this CRM application, the project involves user training, system customization, and ongoing support. This comprehensive approach ensures that the Salesforce CRM solution becomes a central and indispensable component of the e-commerce ecosystem, facilitating businesses in achieving their sales and customer relationship management objectives.

1.3 Problem Statement Definition

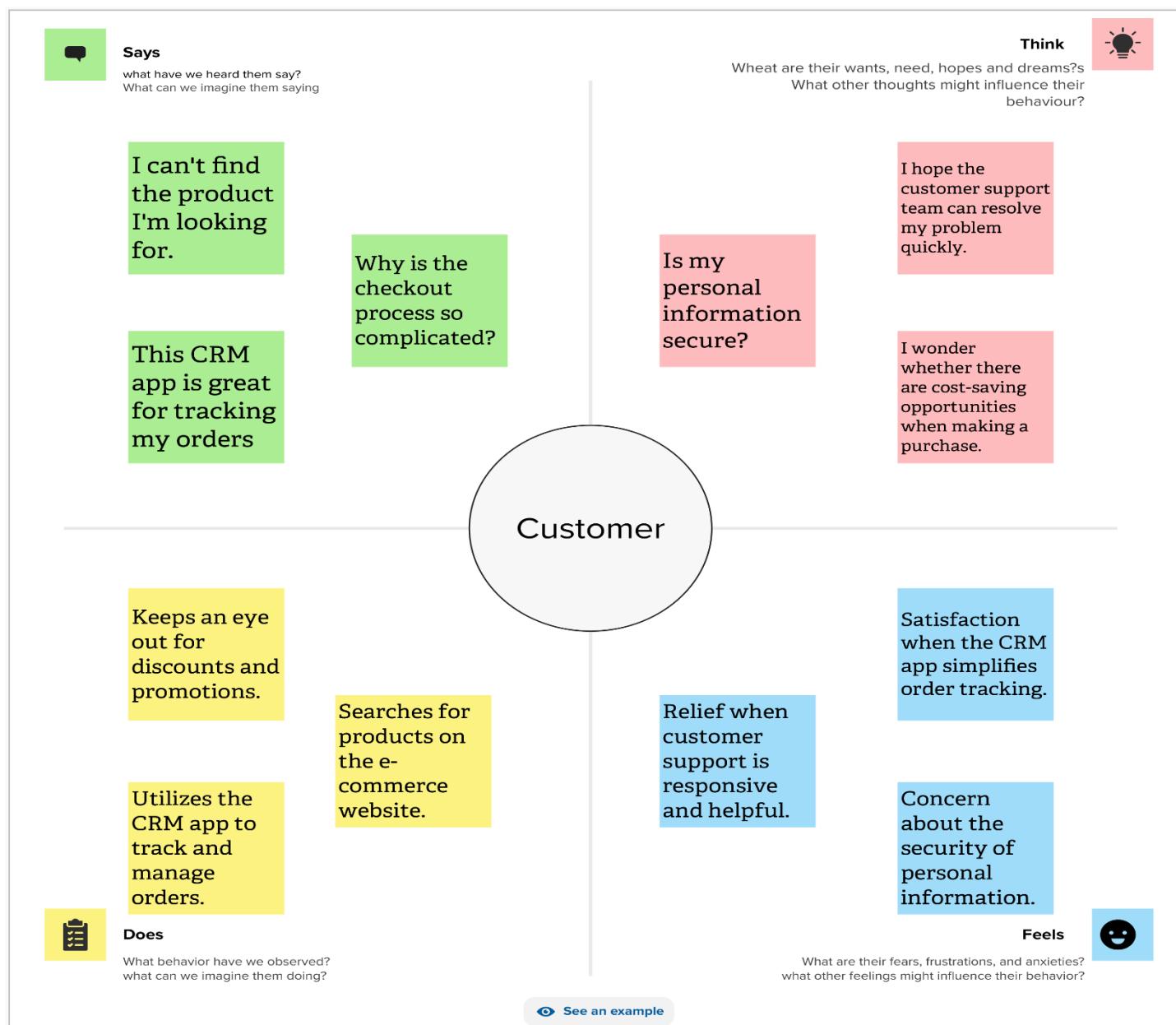


Problem Statement (PS)	I am (E-Commerce business owner)	I'm trying to	But	Because	Which makes me feel
PS	E-Commerce business owner	I am trying to manage my customer relationships, sales data to identify the potential customers and therefore used to retain the valuable customers.	However, I'm facing challenges in keeping track of customer interactions, order history, and preferences.	Because of this, I struggle to identify and capitalize on cross-selling and upselling opportunities, and I'm unable to deliver the best service to the customers.	Which makes me feel I'm missing out on potential sales, losing out on customer loyalty, and failing to deliver the best customer experience, which is impacting my business's growth and profitability

1.4 Empathy Map Canvas

An empathy map is a simple, easy-to-digest visual that captures knowledge about a user's behavior and attitudes.

It is a useful tool to help teams better understand their users. Creating an effective solution requires understanding the true problem and the person who is experiencing it. The exercise of creating the map helps participants consider things from the user's perspective along with his or her goals and challenges.



1.5 Ideation & Brainstorming

Brainstorming provides a free and open environment that encourages everyone within a team to participate in the creative thinking process that leads to problem solving. Prioritizing volume over value, out-of-the-box ideas are welcome and built upon, and all participants are encouraged to collaborate, helping each other develop a rich amount of creative solutions.

Step-1: Team Gathering, Collaboration and Select the Problem Statement:

Template



Brainstorm & idea prioritization

Use this template in your own brainstorming sessions so your team can unleash their imagination and start shaping concepts even if you're not sitting in the same room.

10 minutes to prepare
1 hour to collaborate
2-8 people recommended

Before you collaborate
10 minutes

A Team gathering
 Define who should participate in the session and send an invite. Share relevant information or pre-work ahead.

B Set the goal
 Think about the problem you'll be focusing on solving in the brainstorming session.

C Learn how to use the facilitation tools
 Use the Facilitation Superpowers to run a happy and productive session.
[Open article](#)

Define your problem statement
5 minutes

PROBLEM
 How might we improve customer engagement and retention for e-commerce businesses through an effective CRM application?

Key rules of brainstorming
 To run an smooth and productive session.

- Stay in topic.
- Encourage wild ideas.
- Defer judgment.
- Listen to others.
- Go for volume.
- If possible, be visual.

Need some inspiration?
 See a finished version of this template to kickstart your work.
[Open example](#)

Step-2: Brainstorm, Idea Listing and Grouping:

2

Brainstorm

Write down any ideas that come to mind that address your problem statement.

10 minutes

Tip
You can select a sticky note and then press [shift] to sketch icon to start drawing!

Person 1

- Personalized Product Recommendations:** Utilizes machine learning to analyze customer data and browsing history to provide personalized recommendations tailored to each individual, increasing the chances of making a sale.
- Customer Segmentation:** Segmenting customers into different groups based on their behavior, preferences, or demographics. This allows for more targeted marketing and customer retention.

Person 2

- Loyalty Program Integration:** Integrating a loyalty program within the CRM system to reward repeat customers, encourage brand loyalty, and increase customer retention.
- Inventory Management Integration:** Connecting the CRM with inventory management systems to ensure accurate product availability information and to manage stock levels effectively.

Person 3

- Customer Feedback Collection:** Implementing features to collect feedback and reviews from customers, which can be valuable for improving products and services and building trust.
- Multi-Channel Communication:** Enabling seamless communication with customers through various channels, such as email, SMS, and chat, to cater to the preferences and needs of different customer segments.

Person 4

- Social Media Marketing and Engagement:** Tracking social media mentions and engaging with customers on platforms like Facebook, Twitter, and Instagram to address queries and build brand loyalty.
- Automated Follow-up Emails:** Implementing automated email sequences to follow up with customers after a purchase or a recent visit, helping to increase engagement and recover potential sales.

3

Group ideas

Take turns sharing your ideas while clustering similar or related notes as you go. Once all sticky notes have been grouped, give each cluster a sentence-like label. If a cluster is bigger than six sticky notes, try and break it up into smaller sub-groups.

20 minutes

TIP
Add a color-coded border or a red dot to the notes to quickly identify them. Orange and green are good colors when you're grouping.

Customer Engagement:

- Personalized Product Recommendations
- Loyalty Program Integration
- Customer Feedback Collection
- Multi-Channel Communication
- Social Media Monitoring and Engagement

Customer Segmentation:

- Automated Follow-up Emails
- Sales Funnel Tracking
- Customer Satisfaction Surveys
- Predictive Analytics for Customer Behavior

Step-3: Idea Prioritization:

4

Prioritize

Your team should all be on the same page about what's important moving forward. Place your ideas on this grid to determine which ideas are important and which are feasible.

20 minutes

TIP
Participants can use their cursor to point at where sticky notes should go on the grid. The user can confirm the spot by using the laser pointer holding the H key on the keyboard.

After you collaborate

You can export the mural as an image or pdf to share with members of your company who might find it helpful.

Quick add-ons

- Share the mural**
Share a view link to the mural with stakeholders to keep them in the loop about the outcomes of the session.
- Export the mural**
Export a copy of the mural as a PNG or PDF to attach to emails, include in slides, or save in your drive.

Keep moving forward

- Strategy blueprint**
Define the components of a new idea or strategy.
[Open the template →](#)
- Customer experience journey map**
Understand customer needs, motivations, and obstacles for an experience.
[Open the template →](#)
- Strengths, weaknesses, opportunities & threats**
Identify strengths, weaknesses, opportunities, and threats (SWOT) to develop a plan.
[Open the template →](#)

Share template feedback

1.6 Proposed Solution

S. No	Parameter	Description
1.	Problem Statement (Problem to be solved)	<p>The problem to be solved with the implementation of a CRM (Customer Relationship Management) application in e-commerce activities is the inefficient management of customer relationships, data, and interactions. E-commerce businesses often struggle to centralize and effectively utilize customer information, including order history and preferences.</p> <p>This lack of a comprehensive CRM system hampers their ability to provide personalized marketing, targeted promotions, and efficient customer support. As a result, they miss out on potential sales, customer loyalty, and the ability to deliver a superior shopping experience, which can significantly impact their competitiveness and profitability in the e-commerce market.</p>
2.	Idea / Solution description	<p>Our proposed solution for the problem in e-commerce activities involves integrating a customized CRM application, such as Salesforce, into the existing infrastructure to centralize and manage customer data, allowing for personalized marketing, efficient customer support, and enhanced cross-selling and upselling opportunities, ultimately improving customer satisfaction, increasing sales, and bolstering the e-commerce business's competitive edge.</p>

3.	Novelty / Uniqueness	<p>The novelty and uniqueness of implementing a CRM application in e-commerce activities stem from its ability to transform and enhance customer relationship management in the online retail space. Unlike traditional CRM applications used in various industries, the uniqueness of this solution lies in its adaptability to the specific needs of e-commerce businesses.</p> <p>It centralizes complex customer data, including order history and preferences, and tailors it for personalized marketing and efficient customer support within the e-commerce context. This innovation provides a competitive edge by improving customer engagement, increasing sales, and elevating the e-commerce shopping experience, making it distinctive and valuable in the e-commerce industry.</p>
4.	Social Impact / Customer Satisfaction	<p>Our application will have a substantial social impact by centralizing and optimizing customer data management, this solution empowers e-commerce businesses to deliver a superior shopping experience. This, in turn, enhances customer satisfaction, fostering stronger brand loyalty and trust. Improved customer engagement and personalized marketing lead to more relevant product recommendations and promotions, ultimately increasing customer satisfaction.</p> <p>Additionally, efficient customer support and quicker issue resolution contribute to happier customers. Altogether, this solution not only benefits individual consumers but also positively impacts the e-commerce industry as a whole by promoting positive customer relationships and driving long-term customer retention, thereby strengthening the social reputation of e-commerce businesses.</p>

1.7 Functional & Technical Requirements

1.7.1 Functional Requirements

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	Customer Data Management	<p>Data Capture: The system should capture and store customer information, including contact details and purchase history.</p> <p>Data Validation: Ensure that customer data is accurate and complete by validating entries and correcting errors.</p> <p>Data Privacy: Comply with data privacy regulations to protect customer information.</p>
FR-2	Sales Lead Tracking	<p>Lead Assignment: Assign leads to sales representatives based on predefined criteria, such as geography or product interest.</p> <p>Lead Progress Monitoring: Track the progress of leads through the sales funnel, from initial contact to conversion.</p> <p>Lead Scoring: Assign scores to leads based on their likelihood to convert, enabling prioritization.</p>
FR-3	Customer Communication	<p>Email Integration: Allow for the sending and tracking of email communications directly within the CRM system.</p> <p>Automated Messaging: Implement automated messages for order confirmations, shipping updates, and customer feedback requests.</p> <p>Personalized Messaging: Enable the personalization of messages based on customer data and behavior.</p>
FR-4	Order and Inventory Management	<p>Order Tracking: Monitor and update order status in real-time, providing customers with accurate information.</p> <p>Inventory Sync: Synchronize inventory levels with the CRM to prevent over-selling and backorders.</p> <p>Returns and Refunds Handling: Manage the returns and refunds process efficiently and update customer records accordingly.</p>

FR-5	Customer Support and Service	<p>Ticketing System: Implement a customer support ticketing system to manage and prioritize customer inquiries.</p> <p>Knowledge Base Integration: Provide access to a knowledge base with FAQs and resources for self-service support.</p> <p>Service Level Agreements (SLAs): Define and track SLAs for response and resolution times for support requests.</p>
FR-6	Reporting and Analytics	<p>Sales Performance Analytics: Generate reports on sales performance, revenue, and customer acquisition.</p> <p>Customer Segmentation: Segment customers based on their behaviors and demographics to tailor marketing efforts.</p> <p>Predictive Analytics: Utilize predictive analytics to forecast customer behavior and trends for proactive decision-making.</p>

1.7.2 Technical Requirements

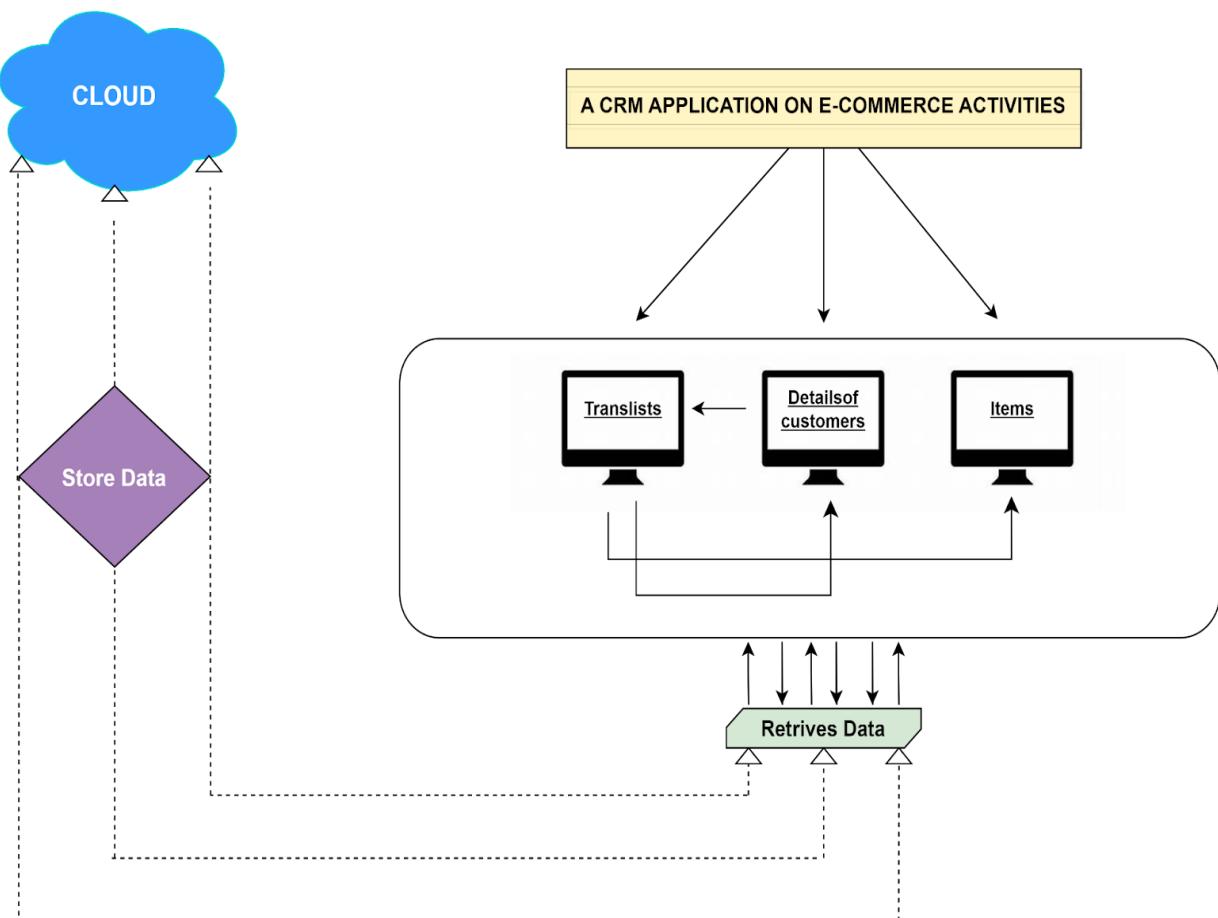
TR No.	Technical Requirement	Description
TR-1	Salesforce Environment	Utilize Salesforce's Enterprise or Unlimited edition to ensure scalability and access to advanced features.
TR-2	Development language	Develop using Salesforce's proprietary programming language, Apex, for server-side logic.
TR-3	Security and Compliance	The CRM system should implement robust security measures to protect sensitive customer data. This includes encryption, access control, and compliance with relevant data protection regulations, such as GDPR or CCPA, to ensure data privacy and legal compliance.
TR-4	Integration	The CRM application should offer a well-documented API and integration framework to allow developers to extend its functionality and connect it to other systems or services. This flexibility supports customization and the integration of third-party tools or plugins.
TR-5	Customization	Allow administrators to customize and configure the application, including approval workflows, fields, and user profiles.
TR-6	Mobile Accessibility	<ul style="list-style-type: none"> • Ensure that the application is accessible via the Salesforce mobile app for on-the-go request submission and tracking. • Develop a custom mobile app using Salesforce Mobile SDK for more tailored mobile functionality.

1.8 Project Road Map

1.8.1 Project Flow

Project Description:

CRM Application on E-Commerce Activities is about fetching and gathering of all the related data from the Commerce websites, outdoor retail shops and performing operations on that data .This operations are of type : Inserting a new data, updating the already existing data or deleting the data. Additional to these, we also need to do an effective CRM i.e via communicating through email with the potential customers identified.



1.8.2 Technical Architecture

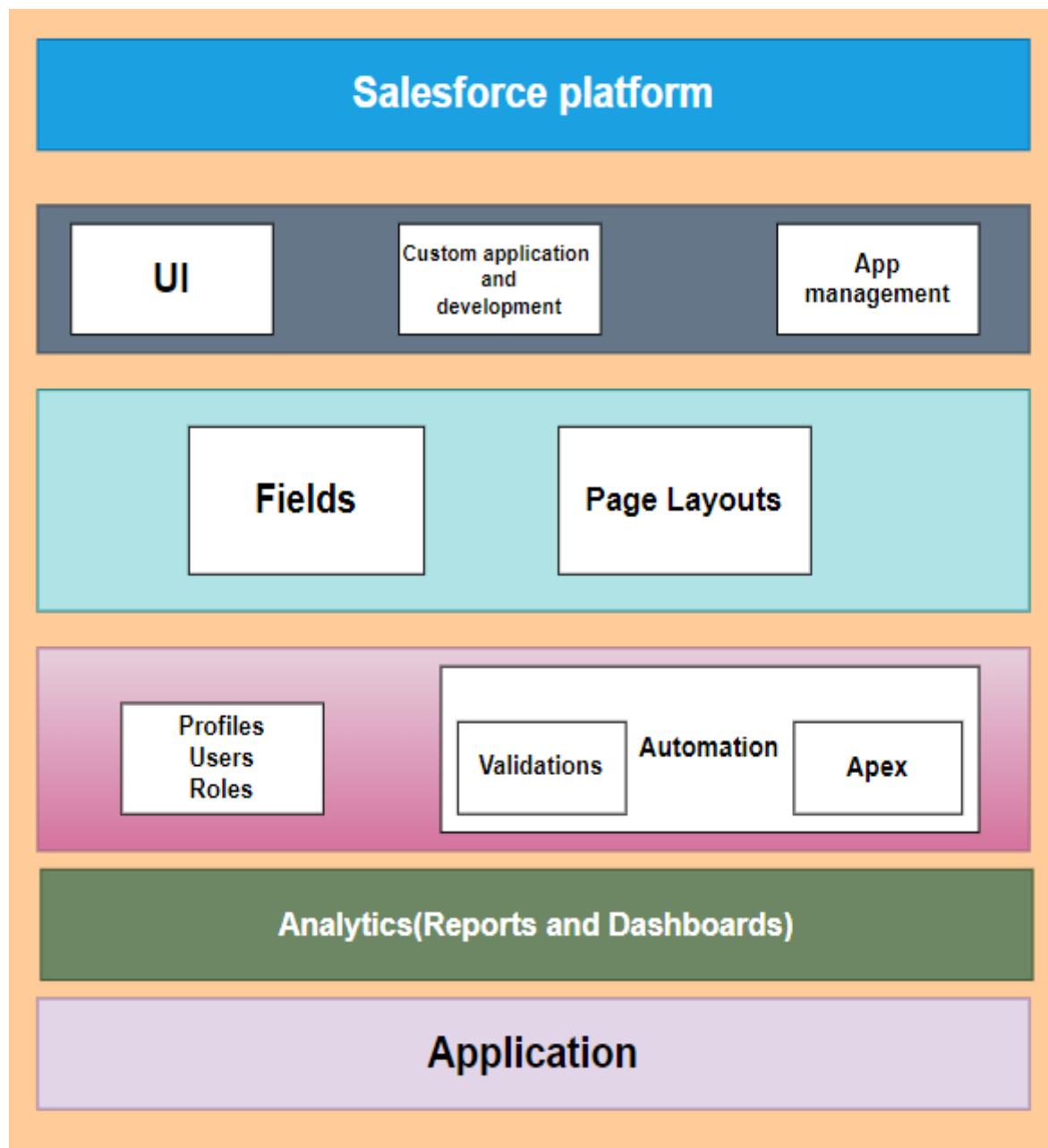


TABLE-1: Component and Technologies:

S.No	Component	Description	Technology
1.	User Interface	<p>Lightning Components: Use Salesforce Lightning components to design the user interface for employees, managers, and administrators.</p> <p>Custom Pages: Create custom Visualforce pages for more tailored and complex UI elements</p>	Salesforce
2.	Data Model	<p>Custom Objects: Define custom objects in Salesforce to represent entities like travel requests, expenses, and approvals.</p> <p>Master-Detail and Lookup Relationships: Establish relationships between objects to maintain data integrity.</p> <p>Custom Fields: Create custom fields to capture specific information, such as travel dates, expenses, and approval status.</p>	Salesforce
3.	Customer Data Storage and Retrieval	Salesforce provides a robust API and query language (SOQL) for accessing and retrieving customer data within the platform.	Salesforce API and SOQL
4.	Reporting and Analytics	Salesforce offers built-in reporting and analytics capabilities. You can create custom reports and dashboards to track e-commerce activities and generate insights.	Salesforce Reporting and Analytics tools

5.	Security	<p>Role-Based Access Control (RBAC): Configure RBAC to control who can access and modify data.</p> <p>Data Encryption: Encrypt sensitive data both in transit and at rest.</p> <p>Salesforce comes with robust security features, including user authentication, role-based access control, and data encryption, to ensure the security of customer data.</p>	Salesforce
6.	Salesforce Development	<p>Apex: Use Salesforce's proprietary programming language, Apex, for server-side logic and data manipulation.</p> <p>Visualforce: Develop custom user interfaces with Visualforce pages and components.</p> <p>Lightning Web Components: Create modern, component-based UIs using Lightning Web Components for a more responsive and dynamic user experience</p>	Salesforce

Table-2: Application Characteristics:

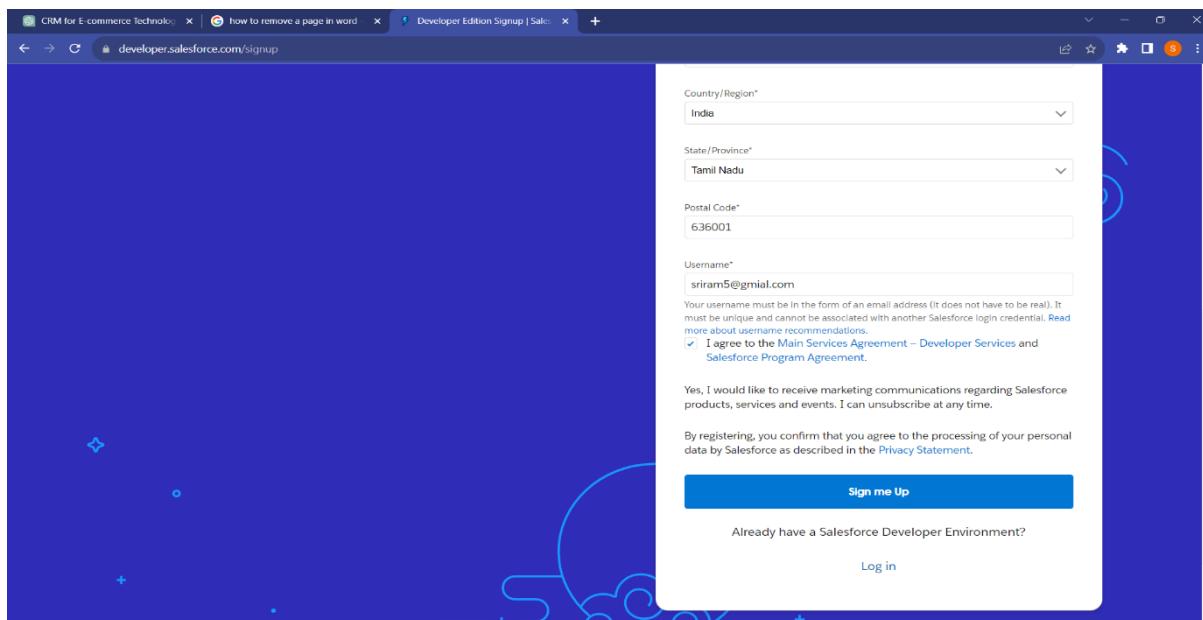
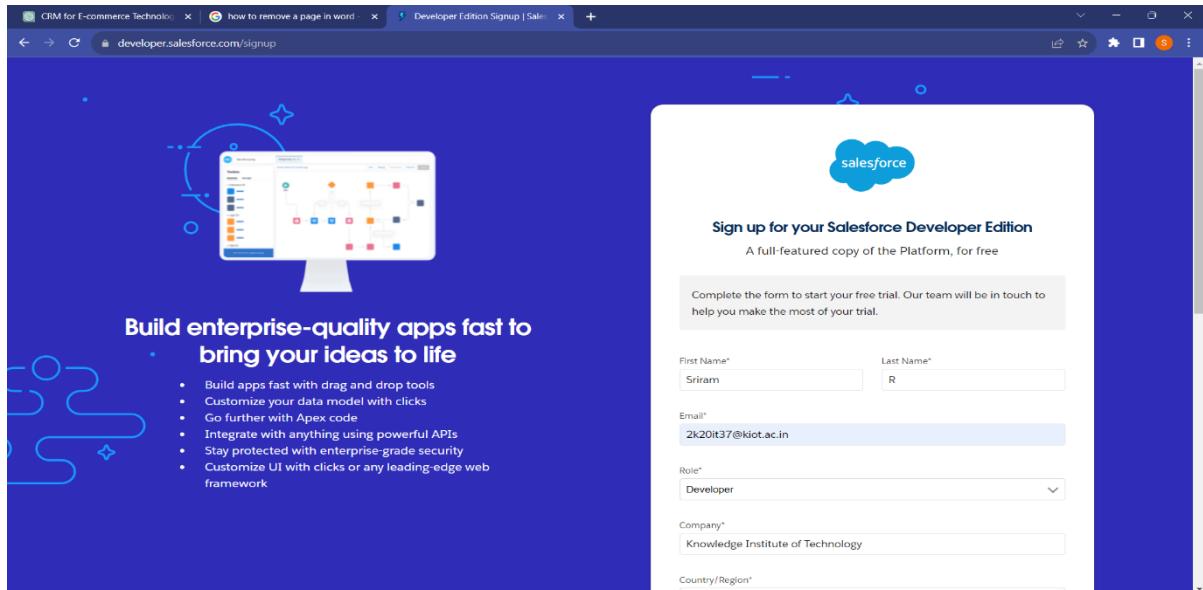
S. No	Characteristics	Description	Technology
1.	Customer Data Centralization	The CRM application should centralize all customer-related data, including contact information, purchase history, preferences, and interactions. This centralized data repository ensures that all employees have access to a complete and up-to-date customer profile.	salesforce
2.	Integration Capabilities	The CRM should seamlessly integrate with other e-commerce systems and tools, such as the e-commerce platform, email marketing software, payment gateways, and inventory management systems. Integration ensures a consistent and holistic view of customer data and streamlines operations.	salesforce
3.	User-friendly	The application should have an intuitive and user-friendly interface to make it easy for customers, managers, and administrators to navigate and use the system without extensive training.	Salesforce
4.	Scalability	The application should be able to scale with the growing number of users and data, accommodating increasing demands without significant performance degradation.	salesforce
5.	Performance	Ensure the application's performance meets or exceeds user expectations, with rapid response times for actions such as submitting requests or generating reports.	salesforce
6.	Reporting and Analytics	Robust analytics and reporting capabilities are vital for understanding customer behavior, tracking e-commerce performance, and making data-driven decisions. The CRM should provide dashboards and reports to monitor KPIs and generate insights.	salesforce

CHAPTER-2

PREPARATION DATA MODELING

2.1 Salesforce Developer Org

In Salesforce, a Developer Sign Up or Developer Edition is a special type of Salesforce environment that is primarily used for development, testing, and learning purposes.



2.2 Custom Object Creation & Tabs

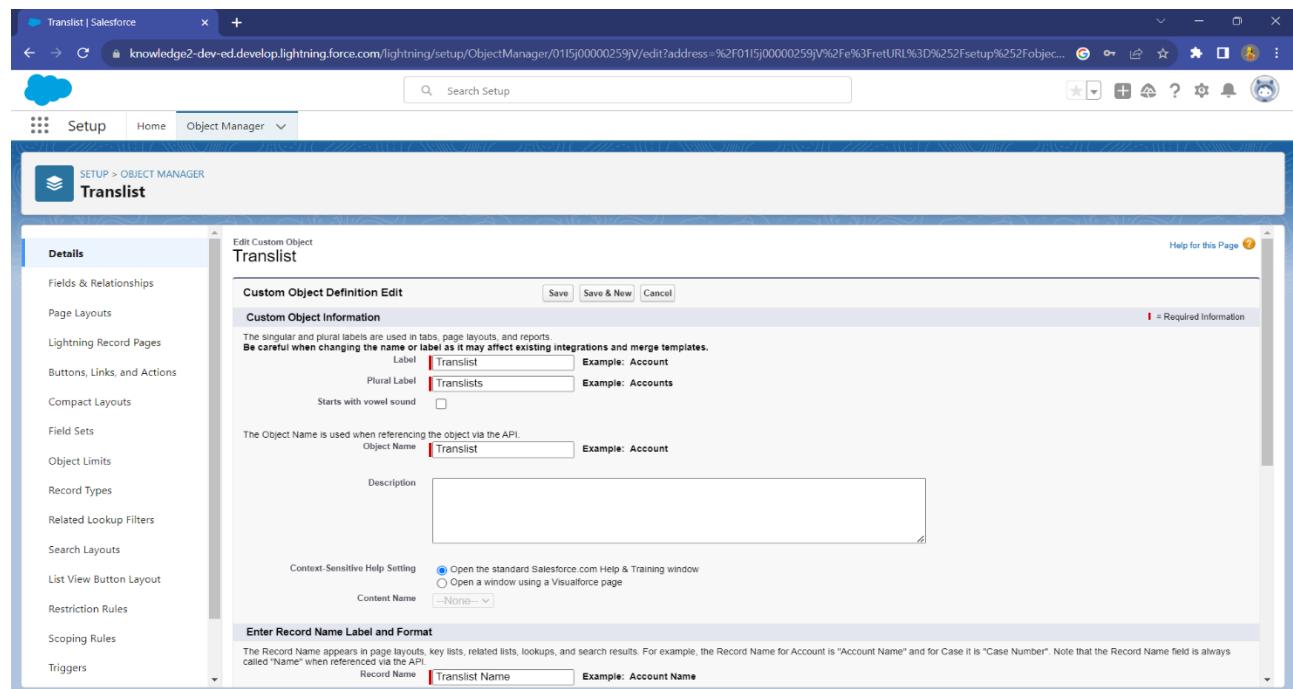
Custom Object Creation

Create translists Object:

1. From the setup page >> Click on Object Manager >> Click on Create >> Click on Custom Object.

 - 1) Enter the label name>> Translist
 - 2) Plural label name>> Translists
 - 3) Enter Record Name Label and Format
 - >> Record Name >> Translists Name
 - >> Data Type >> Name

2. Click on Allow reports and Track Field History,
3. Allow Search ? **Save.**



A CRM Application on E-Commerce Activities

The screenshot shows the Salesforce Setup interface for creating a new object named 'Translist'. The 'Record Name' is set to 'Translist Name' and the 'Data Type' is 'Text'. Under 'Optional Features', 'Allow Reports' and 'Track Field History' are checked. In 'Object Classification', 'Allow Sharding' and 'Allow Bulk API Access' are checked. The 'Deployment Status' is set to 'Deployed'. The 'Search Status' is enabled with 'Allow Search' checked. The bottom right of the screen displays the message 'What is this?'. The left sidebar lists various setup categories.

Similarly, create objects for Details of customer and Item:

The screenshot shows the Salesforce Setup interface for creating a new custom object named 'Detailsofcustomer'. The 'Label' is 'Detailsofcustomer' and the 'Plural Label' is 'Detailsofcustomers'. The 'Object Name' is also 'Detailsofcustomer'. The 'Description' field is empty. Under 'Context-Sensitive Help Setting', 'Open the standard Salesforce.com Help & Training window' is selected. The 'Content Name' dropdown is set to 'None'. The bottom right of the screen displays the message 'Help for this Page'. The left sidebar lists various setup categories.

A CRM Application on E-Commerce Activities

The screenshot shows the Salesforce Setup interface with the title 'Detailsofcustomer | Salesforce'. The main area displays the 'Object Manager' configuration for the 'Detailsofcustomer' object. The 'Details' tab is selected. Key settings shown include:

- Record Name:** Detailsofcustomer Name (Example: Account Name)
- Data Type:** Text
- Optional Features:** Allow Reports, Allow Activities, Track Field History, Allow in Chatter Groups, Enable Licensing
- Object Classification:** Allow Sharing, Allow Bulk API Access, Allow Streaming API Access
- Deployment Status:** Deployed
- Search Status:** Allow Search

Buttons at the bottom include Save, Save & New, and Cancel.

The screenshot shows the Salesforce Setup interface with the title 'Item | Salesforce'. The main area displays the 'Object Manager' configuration for the 'Item' custom object. The 'Details' tab is selected. Key settings shown include:

- Custom Object Definition Edit:** Save, Save & New, Cancel
- Custom Object Information:** Label: Item (Example: Account), Plural Label: Items (Example: Accounts), Starts with vowel sound:
- Object Name:** Object Name: Item (Example: Account)
- Description:** A large text input field.
- Context-Sensitive Help Setting:** Open the standard Salesforce.com Help & Training window (selected), Open a window using a Visualforce page
- Content Name:** None
- Enter Record Name Label and Format:** Record Name: Item Name (Example: Account Name)

Buttons at the bottom include Save, Save & New, and Cancel.

Tabs

Salesforce Tabs are like the menu options in a software application. They allow you to access specific functions, objects, or data.

1. Go to setup page >> type Tabs in Quick Find bar >> click on tabs >> New (under custom object tab).
2. Select Object >> Select the tab style >> Next (Add to profiles page) keep it as default >> Next (Add to Custom App) uncheck the include tab >> **Save**.
3. Make sure that append tab to users' existing personal customizations is checked.

Action	Label	Tab Style	Description
Edit Del	Detailsofcustomers		Books
Edit Del	Items		Laptop
Edit Del	Translists		Bank

2.3 Fields

Steps to Create a Field in an Object:

1. While still on your salesforce account, navigate to the gear icon present in the top right corner. You will notice Setup and click on setup.
2. You will now be navigated to the setup page, and click on object manager and search for object “translists”.
3. Click on “Fields & Relationships” in the left panel.
4. Click on New and choose the data type that is required by the field you need.
5. Click next and fill the following details in the mentioned.
6. Click Next, Next and click on “Save and New”.

Fields in Translists Object

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
ContactNo	ContactNo_c	Phone		
Created By	CreatedById	Lookup(User)		
DateofTrans	DateofTrans_c	Date		
Detailsofcustomer	Detailsofcustomer_c	Lookup(Detailsofcustomer)		
Discount	Discount_c	Number(18, 0)		
GrandTotal	GrandTotal_c	Formula (Number)		
Item	Item_c	Lookup(Item)		
Last Modified By	LastModifiedById	Lookup(User)		
listname	listname_c	Text(25)		
MailId	MailId_c	Email		
Owner	OwnerId	Lookup(User Group)		

Formula Fields

Decimal Places

Enter your formula and click Check Syntax to check for errors. Click the Advanced Formula subtab to use additional fields, operators, and functions.
Example: `Fahrenheit = 1.8 * Celsius + 32` [More Examples...](#)

[Simple Formula](#) [Advanced Formula](#)

[Insert Field](#) [Insert Operator](#)

GrandTotal (Number) =
`Subtot__c - (Subtot__c * Discount__c)/100`

Functions

- All Function Categories -
- ABS
- ACOS
- ADDMONTHS
- AND
- ASCII
- ASIN

[Insert Selected Function](#)

[Check Syntax](#)

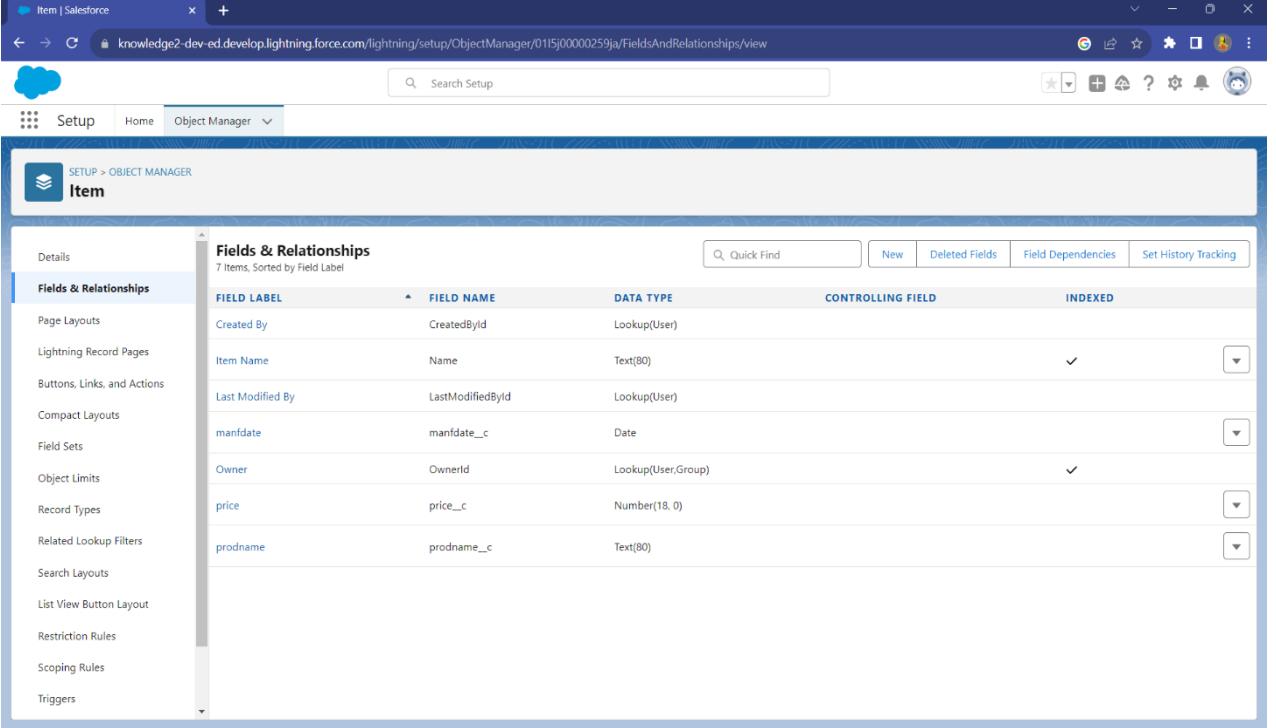
Fields in Details Of Customer Object

The screenshot shows the Salesforce Setup interface with the following details:

- Page Header:** Detailsofcustomer | Salesforce
- URL:** knowledge2-dev-ed.lightning.force.com/lightning/setup/ObjectManager/01Ij00000259im/FieldsAndRelationships/view
- Left Sidebar:** Details, Fields & Relationships (selected), 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, Triggers.
- Content Area:**
 - Section:** SETUP > OBJECT MANAGER
 - Object:** Detailsofcustomer
 - Table:** Fields & Relationships (6 items, Sorted by Field Label)

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Contno	Contno__c	Phone		
Created By	CreatedById	Lookup(User)		
Detailsofcustomer Name	Name	Text(80)		✓
Last Modified By	LastModifiedById	Lookup(User)		
mailid	mailid__c	Email		
Owner	OwnerId	Lookup(User,Group)		✓

Fields in Item Object



The screenshot shows the Salesforce Object Manager interface for the 'Item' object. The left sidebar lists various setup options like Page Layouts, Lightning Record Pages, and Field Sets. The main area is titled 'Fields & Relationships' and displays a table of fields. The table has columns for FIELD LABEL, FIELD NAME, DATA TYPE, CONTROLLING FIELD, and INDEXED. The fields listed are:

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Created By	CreatedById	Lookup(User)		
Item Name	Name	Text(80)		✓
Last Modified By	LastModifiedById	Lookup(User)		
manfdate	manfdate__c	Date		
Owner	OwnerId	Lookup(User,Group)		✓
price	price__c	Number(18, 0)		
prodname	prodname__c	Text(80)		

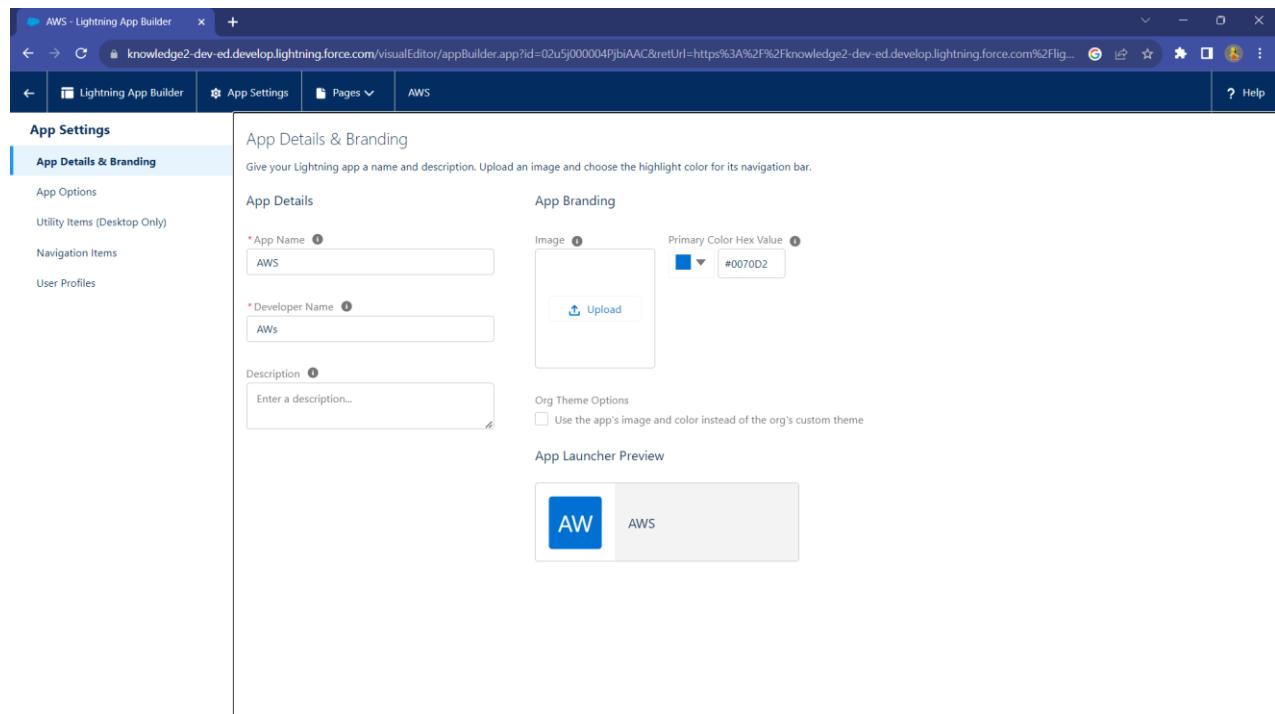
2.4 Lightning App

The Lightning App Builder is a point-and-click tool that makes it easy to create custom pages for the Salesforce mobile app and Lightning Experience, giving your users what they need all in one place.

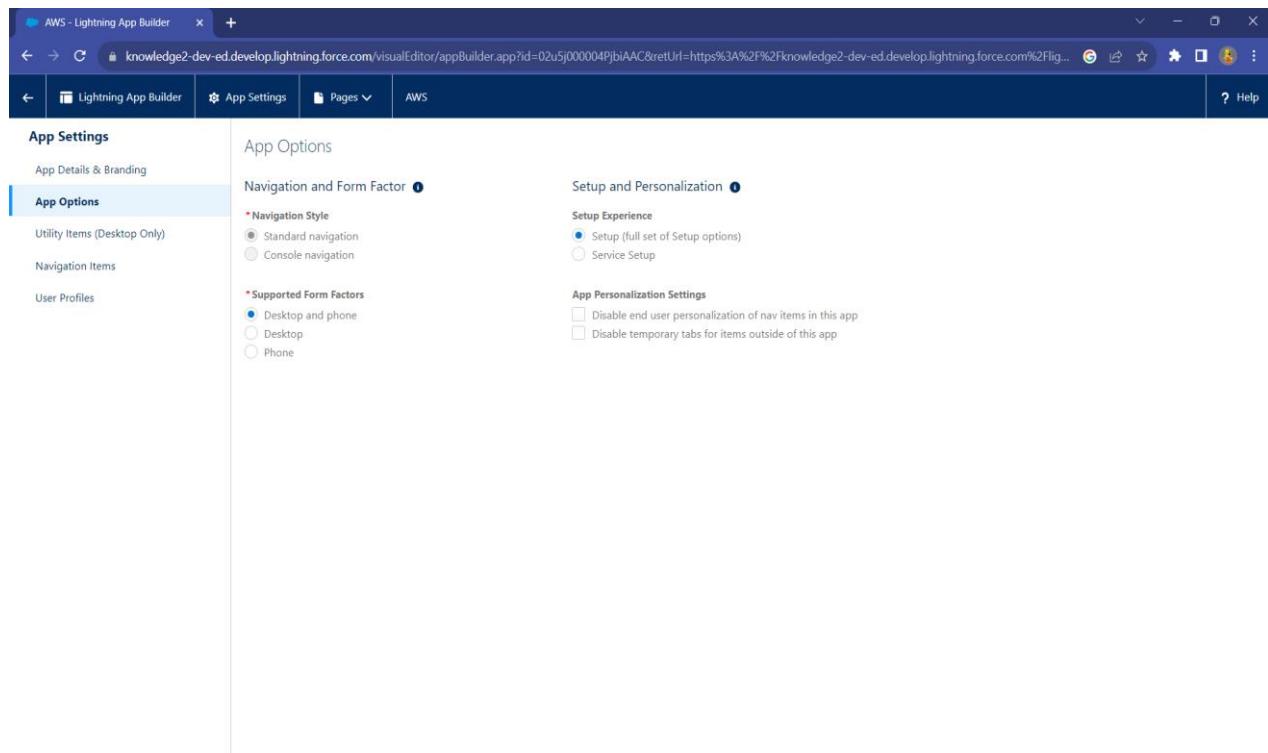
Create a Lightning App

- Build a Lightning app, add tabs, and customize page layouts.
- Create custom objects and fields for the app.
- Define relationships between objects.
- Import data and test the app.

App Details & Branding:



Add Options:



Utility Items:

The screenshot shows the 'Utility Items (Desktop Only)' section of the Lightning App Builder. On the left, a sidebar lists 'App Settings' options: 'App Details & Branding', 'App Options', 'Utility Items (Desktop Only)', 'Navigation Items', and 'User Profiles'. The 'Utility Items (Desktop Only)' option is selected and highlighted with a blue border. The main content area displays the title 'Utility Items (Desktop Only)' and a sub-instruction 'Give your users quick access to productivity tools and add background utility items to your app.' Below this, there's a 'Default' dropdown menu with the label 'Utility Bar' and an 'Add Utility Item' button. A callout box provides a visual representation of the utility bar as a fixed footer with various icons. A note states: 'The utility bar is a fixed footer that opens components in docked panels. Available only when the app is viewed in Lightning Experience on a desktop.' At the bottom of the utility item section, a message says: 'To enable the utility bar for this app, add a utility item.'

Navigation Items:

The screenshot shows the 'Navigation Items' configuration page. The left sidebar includes 'App Settings' (selected), 'App Details & Branding', 'App Options', 'Utility Items (Desktop Only)', 'Navigation Items' (selected and highlighted with a blue border), and 'User Profiles'. The main content area is titled 'Navigation Items' and contains the instruction: 'Choose the items to include in the app, and arrange the order in which they appear. Users can personalize the navigation to add or move items, but users can't remove or rename the items that you add. Some navigation items are available only for phone or only for desktop. These items are dropped from the navigation bar when the app is viewed in a format that the item doesn't support.' Below this, there are two sections: 'Available Items' and 'Selected Items'. The 'Available Items' section features a search bar and a list of items with small icons: Accounts, Alert Settings, All Sites, Alternative Payment Methods, Analytics, App Launcher, Appointment Categories, Appointment Invitations, Approval Requests, Asset Action Sources, Asset Actions, and Asset State Periods. The 'Selected Items' section shows a list of items already chosen: Translists, Reports, Dashboards, Details of customers, and Items. Arrows on either side of the 'Selected Items' list allow for moving items between the two sections.

User Profile:

The screenshot shows the AWS - Lightning App Builder interface with the URL knowledge2-dev-ed.lightning.force.com/visualEditor/appBuilder.app?id=02u5j000004PjbAAC&retUrl=https%3A%2F%2Fknowledge2-dev-ed.lightning.force.com%2F.... The left sidebar has tabs for App Details & Branding, App Options, Utility Items (Desktop Only), Navigation Items, and User Profiles, with User Profiles selected. The main area is titled "User Profiles" and says "Choose the user profiles that can access this app." It shows two sections: "Available Profiles" (listing various profile types like Analytics Cloud Integration User, Authenticated Website, etc.) and "Selected Profiles" (listing "System Administrator").

2.5 Relationship between Objects

Look up Relationship

Lookup Relationship in Salesforce relates two objects together but does not affect deletion (cascade delete functionality) or security.

The screenshot shows the Salesforce Object Manager interface. The left sidebar is titled 'Fields & Relationships' and lists various options like 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, and Triggers. The main content area is titled 'Translist Custom Field Details of customer'. It shows the 'Custom Field Definition Detail' section with fields like Field Label (Details of customer), Field Name (Details of customer), API Name (Details of customer__c), Description, Help Text, Data Owner, Field Usage, Data Sensitivity Level, Compliance Categorization, Created By (Boopathi S.), and Modified By (Boopathi S.). Below this is the 'Lookup Options' section, which includes 'Related To' (Details of customer), 'Related List Label' (Translists), 'Required' (unchecked), and a note about what to do if the lookup record is deleted. The 'Field Information' section also lists Object Name (Translist) and Data Type (Lookup). A 'Help for this Page' link is at the top right.

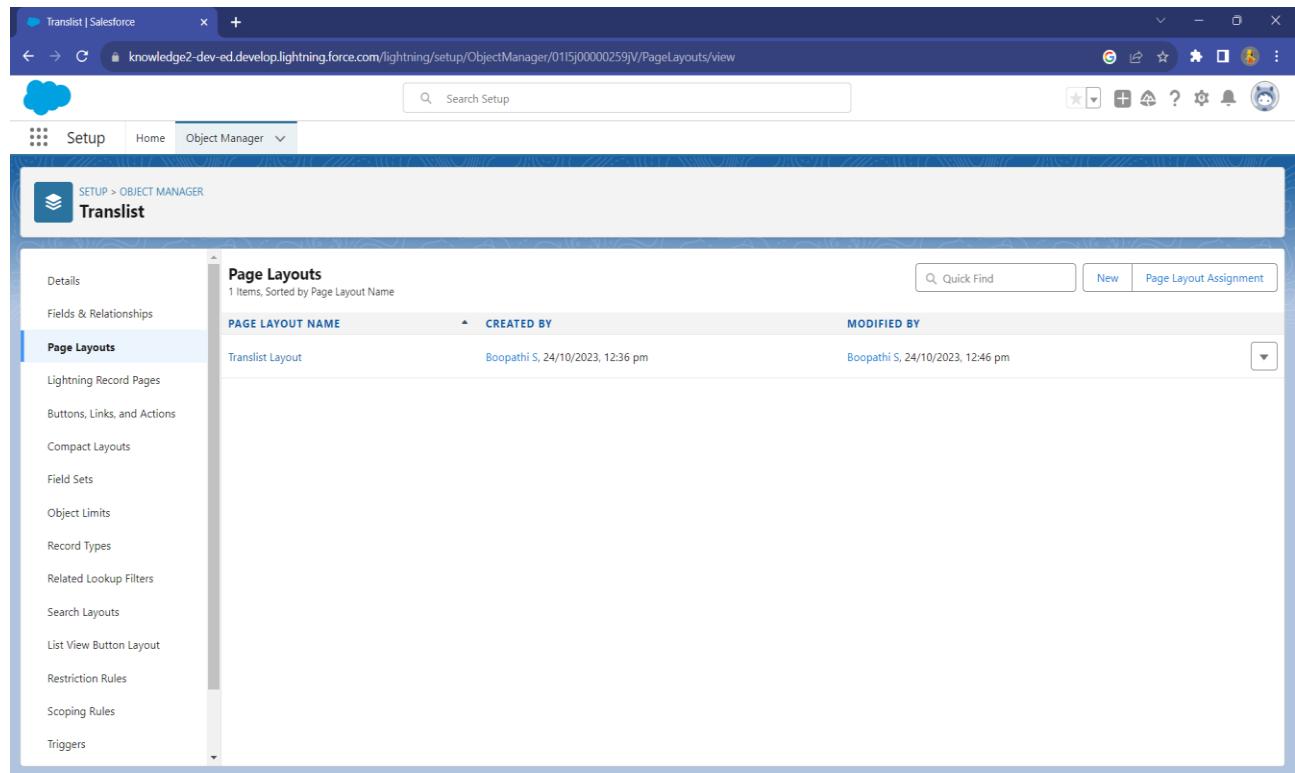
This screenshot shows the same Salesforce setup interface as the previous one, but for a different custom field named 'Item'. The left sidebar and main content area are identical, showing the 'Custom Field Definition Detail' for the 'Item' field. The 'Field Information' section shows Object Name (Translist) and Data Type (Lookup). The 'Lookup Options' section shows 'Related To' (Item), 'Related List Label' (Translists), and 'Required' (unchecked). The 'Field Information' section also lists Object Name (Translist) and Data Type (Lookup).

2.6 Customize User Interface

Customize your app's page layouts, compact layouts, and actions.

Page Layout

A page layout determines the fields, sections, related lists, and buttons that appear when users view or edit a record. You can modify an object's default page layout or create a custom page layout.



The screenshot shows the Salesforce Setup interface for the 'Translist' object. The left sidebar menu is open, showing various setup categories like Details, Fields & Relationships, Page Layouts (which is selected and highlighted in blue), 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, and Triggers. The main content area displays a list titled 'Page Layouts' with one item: 'Translist Layout'. The list includes columns for 'PAGE LAYOUT NAME', 'CREATED BY', and 'MODIFIED BY'. The 'Translist Layout' entry shows it was created by 'Boopathi S.' on 24/10/2023, 12:36 pm, and last modified by 'Boopathi S.' on 24/10/2023, 12:46 pm. There are also 'Quick Find', 'New', and 'Page Layout Assignment' buttons at the top right of the list table.

The screenshot shows the Salesforce Setup interface for the Translist object. The left sidebar lists various setup categories, and the main area displays the 'Translist Layout' configuration. The 'Fields' section contains a table with columns for Field Name, Type, and Description. The 'Highlights Panel' section allows customization of highlights for the page layout. The 'Quick Actions' section indicates actions inherited from the global publisher layout. The 'Salesforce Mobile and Lightning Experience Actions' section shows actions predefined by Salesforce. The bottom 'Translist Detail' section includes standard buttons like Edit, Delete, Clone, and Print.

Field Name	Type	Description
DateofTrans	Date	Date of Transaction
Item	Text	Product Item
Owner	User	Owner of the Record
SubTot	Text	Subtotal of the Transaction
Detailsofcustomer	Text	Details of the Customer
Last Modified By	User	Last Modified By
ContactNo	Text	Contact Number
Discount	Text	Discount Applied
listname	Text	List Name
Created By	User	Created By
GrandTotal	Text	Grand Total of the Transaction
MailId	Text	Email Address
Translist Name	Text	Name of the Transaction List

CHAPTER-3

USERS & DATA SECURITY

3.1 User Adaption

Create A Record For Items Object:

Go to the App Launcher present in the top left corner in the trailhead page.

1. We will find many apps present in the app launcher, visit any app present in the app launcher.
2. You will find the products tab present in the app page, click on the tab.
3. Then click on NEW to insert a new record into the products object.
4. Create a Item Record – Prodname : Oreo
Price : 100
5. Create a Item Record - prodname : raspberry
Price : 200
6. Create a Item Record – prodname : cranberry
Price : 300
7. Create a Item Record - prodname : shakes
Price : 400

The screenshot shows the Salesforce Lightning Experience interface. The top navigation bar includes the App Launcher, Home, and various tabs like AWS, Translists, Reports, Dashboards, Details of customers, and Items. A search bar is at the top right. The main area displays a modal dialog titled "New Item" for the "Items" object. The "Information" section contains the following fields:

- Item Name: shakes
- Price: 400
- Mandate: 29/10/2023
- Prodname: shakes

 The "Owner" field is populated with "Boopathi S". At the bottom of the dialog are three buttons: "Cancel", "Save & New", and "Save". The status bar at the bottom of the screen shows "38 | NM2023TMID01805".

The screenshot shows a Salesforce Lightning interface for the 'Items' object. The title bar indicates 'Recently Viewed | Items | Sales'. The URL is 'knowledge2-dev-ed.lightning.force.com/lightning/o/Item__c/list?filterName=Recent'. The page displays a list titled 'Recently Viewed' with 4 items updated a few seconds ago. The items are: 1. shakes, 2. cranberry, 3. raspberry, 4. Oreo. There are checkboxes next to each item name. A search bar at the top right says 'Search this list...' and buttons for 'New', 'Import', and 'Change Owner'.

Create A Record For Translists Object:

The screenshot shows a Salesforce Lightning interface for the 'Translist' object. The title bar indicates 'Parthiban | Translist | Salesforce'. The URL is 'knowledge2-dev-ed.lightning.force.com/lightning/r/translist_c/a075j00000C6fEZAAZ/view'. The page displays a form for creating a new Translist record named 'Parthiban'. The form fields include: Translist Name (Parthiban), TransId (8.001), listname (Translist), ContactNo (9842501529), MailId (parthidas7@gmail.com), DateofTrans (24/10/2023), SubTot (400.00), Discount (2), GrandTotal (392.00), Item (Oreo), and DetailsOfCustomer (Parthiban). The owner of the record is 'Boopathi S'. Buttons at the top right include 'New Contact', 'Edit', and 'New Opportunity'.

CHAPTER-4

AUTOMATION

4.1 Apex

Apex is a strongly typed, object-oriented programming language that allows developers to execute flow and transaction control statements on the Lightning platform server in conjunction with calls to the Lightning Platform API. Using syntax that looks like Java and acts like database stored procedures, Apex enables developers to add business logic to most system events, including button clicks, related record updates, and Visualforce pages. Apex code can be initiated by Web service requests and from triggers on objects.

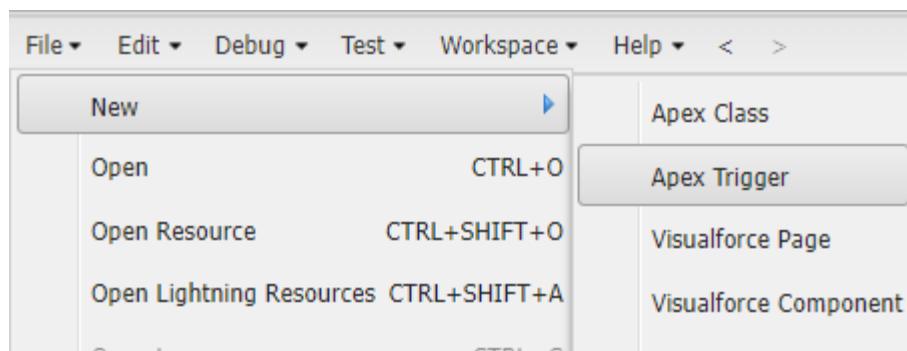
It is as similar as java i.e, it also supports OOP (Object oriented programming) like Classes, objects, methods.

4.2 Identifying Potential Customers

Triggers:

How to create a new trigger:

1. While still in the trailhead account, navigate to the gear icon in the top right corner.
2. Click on developer console and you will be navigated to a new console window.
3. Click on File menu in the tool bar, and click on new>>Trigger.
4. Enter the trigger name and the object to be triggered.



New Apex Trigger

Name:

sObject:

Trigger code:

Developer Console - Google Chrome
knowledge2-dev-ed.develop.my.salesforce.com/_ui/common/apex/debug/ApexCSIPage

File • Edit • Debug • Test • Workspace • Help • < >

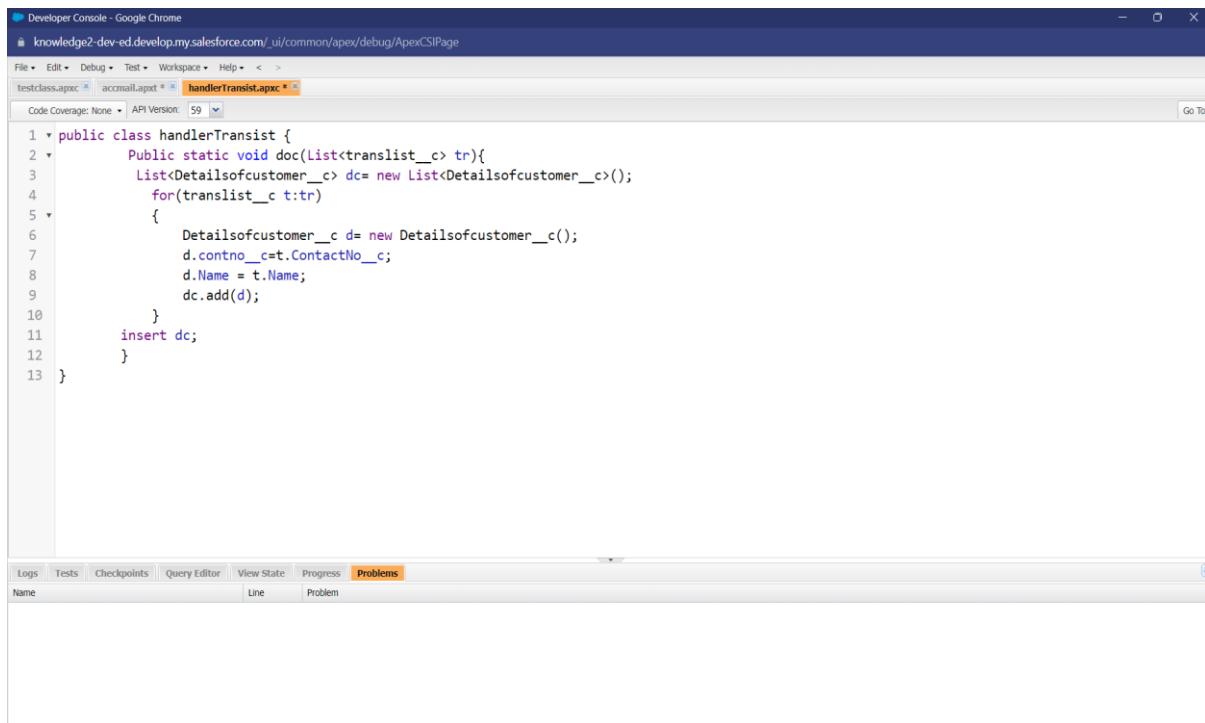
testclass.apxc **acmail.apex** * Go To

Code Coverage: None • API Version: 59

```
trigger acmail on translist__c (After insert)
{
    if(trigger.isAfter)
    {
        if(trigger.isInsert)
        {
            handlerTransist.doc(trigger.new);
            translist__c trr= new translist__c();
        }
    }
}
```

Logs Tests Checkpoints Query Editor View State Progress **Problems**

Handler Class:



The screenshot shows the Salesforce Developer Console in Google Chrome. The URL is knowledge2-dev-ed.develop.my.salesforce.com/_ui/common/apex/debug/ApexCSIPage. The tabs at the top are 'testclass.apxc', 'accmail.apxc', and 'handlerTransist.apxc'. The code editor contains the following Apex code:

```

1 public class handlerTransist {
2     Public static void doc(List<translist__c> tr){
3         List<Detailsofcustomer__c> dc= new List<Detailsofcustomer__c>();
4         for(translist__c t:tr)
5         {
6             Detailsofcustomer__c d= new Detailsofcustomer__c();
7             d.contrno__c=t.ContactNo__c;
8             d.Name = t.Name;
9             dc.add(d);
10        }
11        insert dc;
12    }
13 }

```

Below the code editor, there are tabs for 'Logs', 'Tests', 'Checkpoints', 'Query Editor', 'View State', 'Progress', and 'Problems'. The 'Problems' tab is selected, showing a table with columns 'Name', 'Line', and 'Problem'. The table is currently empty.

4.3 Apex Schedulers

The Apex Scheduler lets you delay execution so that you can run Apex classes at a specified time. This is ideal for daily or weekly maintenance tasks using Batch Apex. To take advantage of the scheduler, write an Apex class that implements the `Schedulable` interface, and then schedule it for execution on a specific schedule.

Schedulable Apex Syntax:

To invoke Apex classes to run at specific times, first implement the `Schedulable` interface for the class. Then, schedule an instance of the class to run at a specific time using the `System.schedule()` method. After you implement a class with the `Schedulable` interface, use the `System.schedule()` method to execute it. The `System.schedule()` method uses the user's timezone for the basis of all schedules, but runs in system mode—all classes are executed, whether or not the user has permission to execute the class.

```

public class SomeClass implements Schedulable {
    public void execute(SchedulableContext ctx) {
        // awesome code here
    }
}

```

A CRM Application on E-Commerce Activities

The screenshot shows the Salesforce Developer Console interface. The title bar reads "Developer Console - Google Chrome" and "knowledge2-dev-ed.develop.my.salesforce.com/_ui/common/apex/debug/ApexCSIPage". The menu bar includes "File", "Edit", "Debug", "Test", "Workspace", "Help", and "Go To". The tabs at the top are "testclass.apxc", "accmailApext", and "handlerTranslist.apxc". The code editor displays the following Apex code:

```
1 public class testclass implements Schedulable {
2     public void execute(SchedulableContext ctx)
3     {
4         List<translist__c> d = [select transid__c from translist__c order by transid__c desc];
5         List<translist__c> t = [select transid__c,item__c,name,mailid__c from translist__c order by transid__c desc];
6         Set<translist__c> s = new set<translist__c>(d);
7         list<translist__c> ls= new List<translist__c>();
8         list<translist__c> p = [ select item__c from translist__c];
9         list<translist__c> tc = new list<translist__c>();
10        for (translist__c c : s)
11        {
12            for (translist__c ts : t)
13            {
14                if (c.transid__c == ts.transid__c && !ls.contains(ts))
15                {
16                    ls.add(ts);
17                    integer c1=0;
18                    string s1=ts.item__c;
19                    for(translist__c tr:t)
20                    {
21                        if(tr.item__c!=s1 )
22                        {
23                            tc.add(tr);
24                        }
25                    }
26                    Id relatedRecordId = tc[0].item__c;
27                    string id1 = tc[0].item__c;
28                    string id2 = tc[1].item__c;
29                    ...
30                }
31            }
32        }
33    }
34 }
```

The screenshot shows the continuation of the Apex code for the "testclass.apxc" class. The code starts with a block of code from line 21 to line 25, which is identical to the previous screenshot. It then continues with the following code:

```
26         Id relatedRecordId = tc[0].item__c;
27         string id1 = tc[0].item__c;
28         string id2 = tc[1].item__c;
29         string id3 = tc[2].item__c;
30         item__C s2 = [SELECT Name FROM item__C WHERE Id = :id1];
31         item__C s3 = [SELECT Name FROM item__C WHERE Id = :id2];
32         item__C s4 = [SELECT Name FROM item__C WHERE Id = :id3];
33         system.debug(s4);
34         Messaging.SingleEmailMessage email = new Messaging.SingleEmailMessage();
35         email.setToAddresses( new List<String>{ts.mailid__c});
36         email.setSubject('Welcome to our company');
37         email.setPlainTextBody('Dear ' + ts.name + ' +' ,\n\nWelcome to our company!+'You have been seen as a valuable customer to us
38                                         'We are proud to associate with valuable customers like you and we look forward to collaborate with you
39                                         +'So why taking a step back, take a leap of faith and shop with us more, while we provide with the valua
40                                         Messaging.sendEmail(new List<Messaging.SingleEmailMessage>{email}));
41         system.debug(s4);
42         break;
43     }
44     break;
45 }
46 }
47 }
48 }
```

Schedule the Apex class:

1. Go to Home page in your salesforce account.
2. In the search bar, enter Apex and click on Apex Classes.

The screenshot shows the Salesforce Setup interface with the search bar set to 'apex'. The left sidebar is expanded, showing sections like Email, Custom Code, and Environments. Under Custom Code, 'Apex Classes' is selected and highlighted in blue. The main content area is titled 'Apex Classes' and contains a table listing two Apex classes: 'handleTransit' and 'testclass'. Both classes are listed as 'Active' with '59.0' API version. The table includes columns for Action, Name, Namespace Prefix, API Version, Status, Size Without Comments, Last Modified By, and Has Trace Flags. Below the table, there's a section titled 'Dynamic Apex Classes' with a note that it extends programming reach by interacting with Lightning Platform components. A table for dynamic apex classes is shown with no records displayed.

3. Click on Schedule Apex and enter the Job name.

The screenshot shows the 'Schedule Apex Execution' dialog box overlaid on the Apex Classes page. The dialog has fields for 'Job Name' (set to 'timeschedule') and 'Apex Class' (set to 'testclass'). Under 'Schedule Apex Execution', the 'Frequency' is set to 'Weekly' (radio button selected). The 'Recurs every week on' section shows 'Tuesday' checked. There are date and time input fields for 'Start' (31/10/2023), 'End' (30/11/2023), and 'Preferred Start Time' (10:00 am). At the bottom of the dialog are 'Save' and 'Cancel' buttons.

The screenshot shows a Salesforce Lookup page titled "Lookup". At the top, there is a search bar with the placeholder "Search..." and a "Go!" button. Below the search bar, a note says "You can use '*' as a wildcard next to other characters to improve your search results." The main section is titled "Recently Viewed Apex Classes" and contains a table with three columns: "Name", "Namespace Prefix", and "Api Version". A single row is shown for "testclass" with an Api Version of 58. At the bottom of the page, a copyright notice reads "Copyright © 2000-2023 salesforce.com, inc. All rights reserved."

The screenshot shows the Salesforce Setup Apex Jobs page. On the left, there is a sidebar with a search bar and sections for Email, Custom Code, Environments, and Jobs. The "Apex Jobs" section is selected. The main area is titled "Apex Jobs" and displays a message: "Click here to go to the new batch jobs page". Below this, it says "Monitor the status of all Apex jobs, and optionally, abort jobs that are in progress." A green box indicates "Percent of Asynchronous Apex Used: 0%". It notes that 1 asynchronous Apex operation was used out of a limit of 250,000. A table lists a single scheduled Apex job: "Scheduler: failed to execute scheduled job: jobID: 7075j00005eYKhb, class: common.apex.async.AsyncApexJobObject, reason: List index out of bounds: 0". The table has columns for Action, Submitted Date, Job Type, Status, Status Detail, Total Batches, Batches Processed, Failures, Submitted By, Completion Date, Apex Class, Apex Method, and Apex Job ID.

CHAPTER-5

REPORTS & DASHBOARD

5.1 Reports

Report for Translists:

A Salesforce report is a list of data generated based on filter criteria. Salesforce Reports helped us predict trends and gives us the advantage to increase profits.

The report builder provides a drag-and-drop interface to easily build and customize your reports.

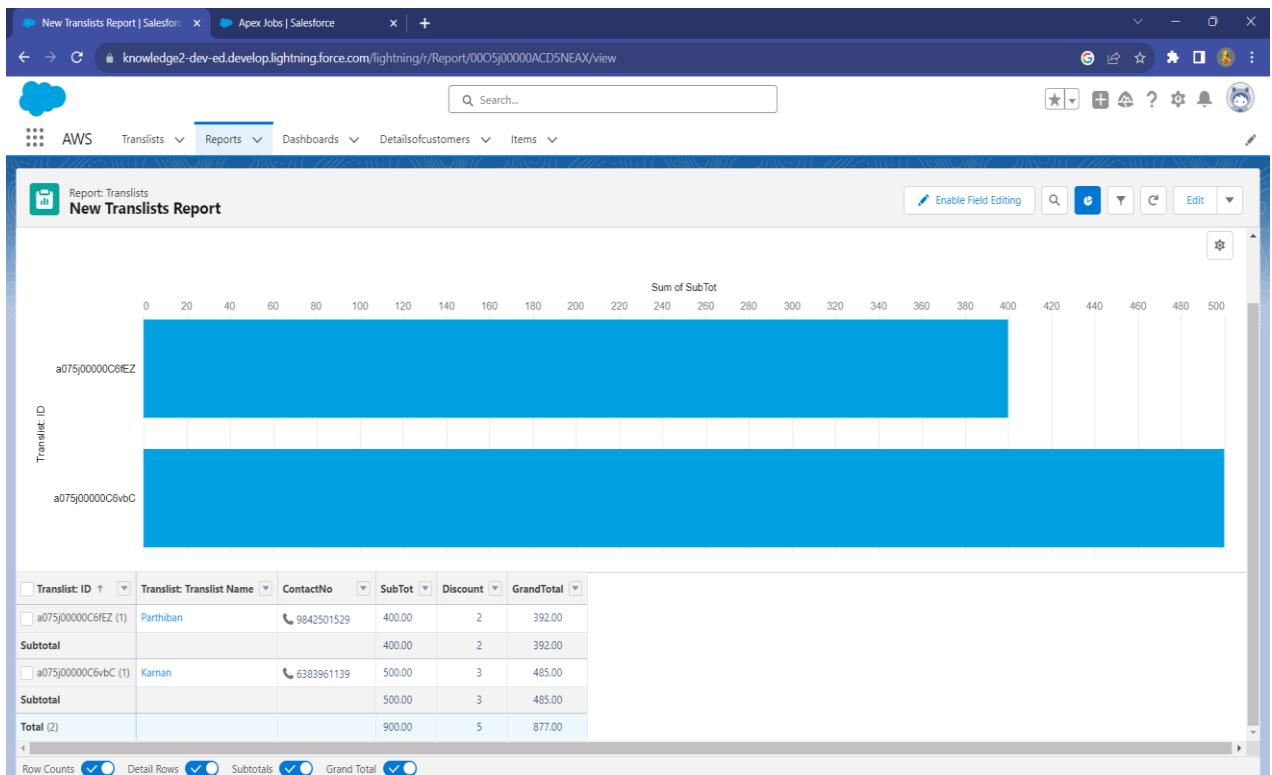
The screenshot shows the Salesforce Reports & Dashboards interface. The top navigation bar includes tabs for 'Reports | Salesforce' and 'Apex Jobs | Salesforce'. The main content area displays a list of recent reports under the 'Recent' section. The table has columns for Report Name, Description, Folder, Created By, Created On, and Subscribed. Two reports are listed: 'Items Report' and 'Translists Report'. The sidebar on the left contains links for Reports (Recent, Created by Me, Private Reports, Public Reports, All Reports), Folders (All Folders, Created by Me, Shared with Me), and Favorites (All Favorites).

Report Name	Description	Folder	Created By	Created On	Subscribed
Items Report	Private Reports	Boopathi S	24/10/2023, 3:07 pm		
Translists Report	Private Reports	Boopathi S	24/10/2023, 3:01 pm		

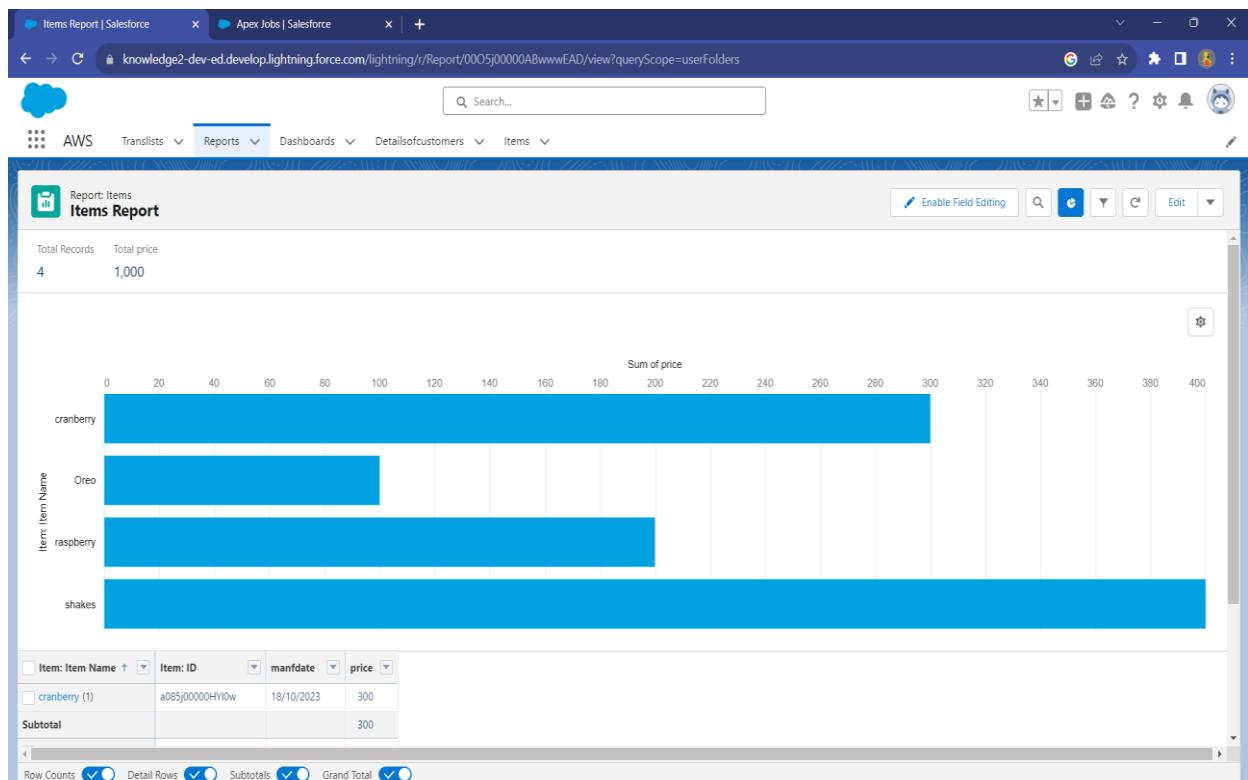
A CRM Application on E-Commerce Activities

Translist: ID	Translist: Translist Name	ContactNo	SubTot	Discount	GrandTotal
a075j00000C6fEZ (1)	Parthiban	9842501529	400.00	2	392.00
Subtotal			400.00	2	392.00
a075j00000C6vbC (1)	Karman	6383961139	500.00	3	485.00
Subtotal			500.00	3	485.00
Total (2)			900.00	5	877.00

A CRM Application on E-Commerce Activities

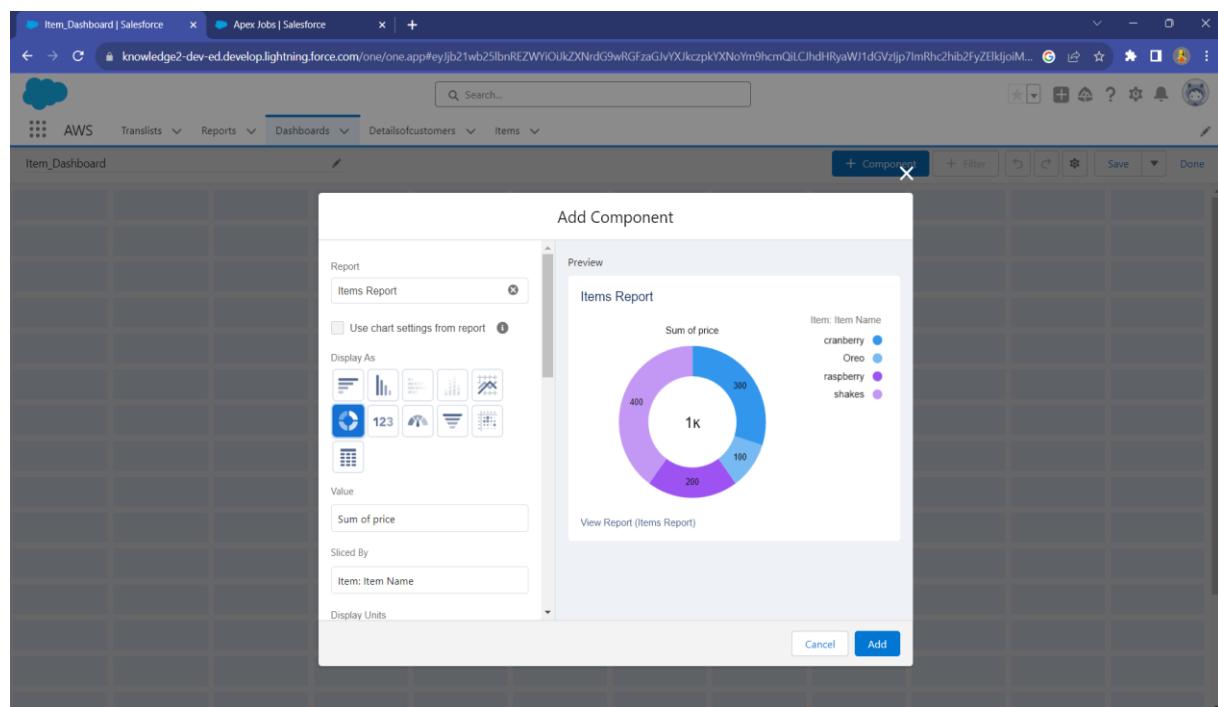
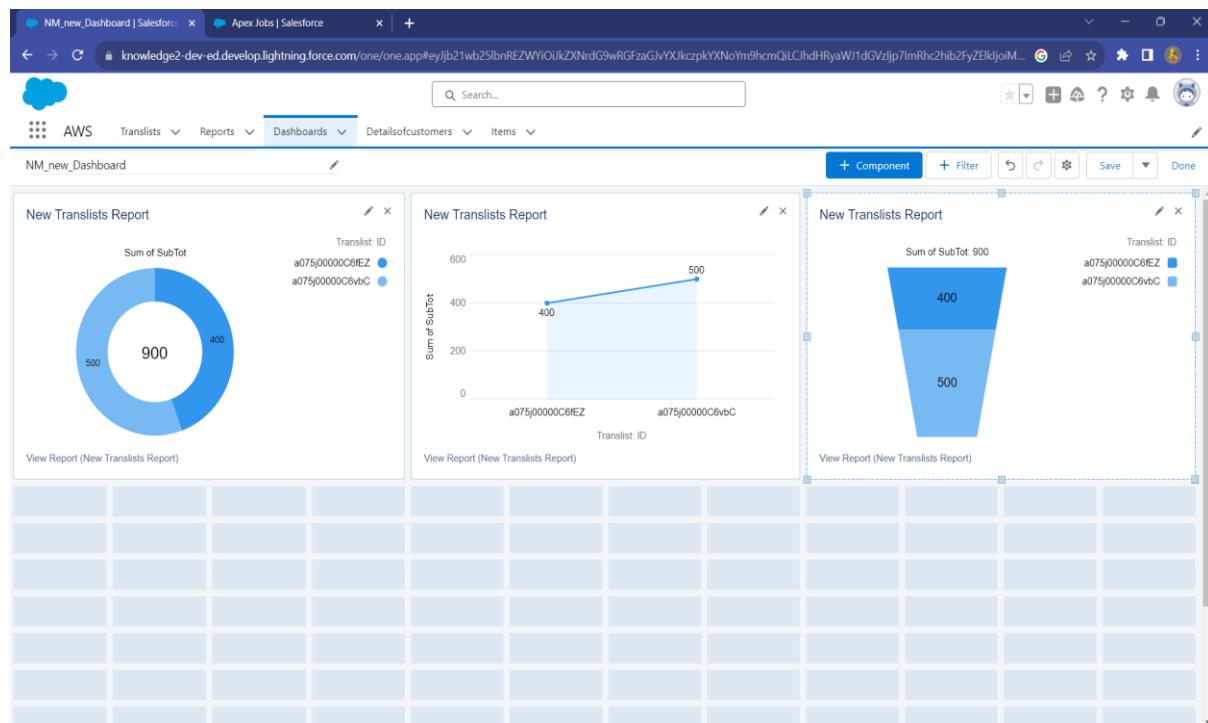


Report for Items:



5.2 Dashboard

A dashboard provides an interactive visual display of key metrics and trends. Multiple dashboard components can be shown together on a single dashboard layout, creating rich visual displays of multiple reports that have a common theme.



CHAPTER-6

CONCLUSION

In conclusion, the CRM application designed for e-commerce activities serves as a strategic cornerstone in the continued growth and success of e-commerce enterprises. This project report has emphasized the critical components and features that underpin an effective CRM system, including data centralization, integration capabilities, personalization, automation, analytics, and multi-channel communication.

This project represents not just a technological achievement, but a fundamental shift in how e-commerce businesses manage and nurture customer relationships. By harnessing the power of a well-crafted CRM application, companies can optimize their operations, increase customer satisfaction, and boost revenue through personalized experiences.

As we wrap up this project, it is essential to stress the importance of ongoing maintenance, data security, and continuous training to ensure the longevity and relevance of the CRM system. The dynamic nature of the e-commerce industry requires adaptability, making the CRM application a critical asset for achieving and sustaining a competitive advantage in the ever-evolving e-commerce landscape.

CHAPTER-7

PROJECT DEMONSTRATION

Github:

<https://github.com/Sanjai26/naanmudhalvan-Salesforce-NM2023TMID01805-kiot.git>

Demo Link:

https://drive.google.com/file/d/1MrTMycAoWmCiN_ySdOdJ5c9XP3f0EEb1/view?usp=drive_link