

Salesforce Virtual Internship Program

SmartInternz

A CRM APPLICATION FOR WHOLESALE RICE MILL

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ENGINEERING (A)**

PROJECT TITLE

A CRM APPLICATION FOR WHOLESALE RICE MILL

Objective: Develop a Customer Relationship Management (CRM) application tailored to the unique needs of rice mills to improve their operations, customer engagement, and sales management using Salesforce platform.

1. Project Overview

This project focuses on the development of a **CRM Application for Wholesale Rice Mills** using Salesforce to streamline and optimize daily operations, improve data accuracy, and provide actionable insights. Designed to meet the specific needs of rice mill owners, this application automates key processes such as tracking daily rice production, sales data, inventory management, and generating real-time reports.

The primary challenge addressed by this project is the manual handling of critical business operations, which often leads to inefficiencies and data inaccuracies. By leveraging Salesforce's robust CRM platform, the project delivers a comprehensive, user-friendly solution that ensures efficient resource management, enhanced customer relationships, and seamless reporting.

Through this project, the rice mill business aims to achieve:

- **Operational Excellence:** Automating routine processes to save time and reduce errors.
- **Data-Driven Decision Making:** Providing owners with detailed, real-time insights into production, sales, and customer trends.
- **Scalability and Efficiency:** Supporting long-term growth with a flexible, secure, and scalable solution.

2. Objectives

Business Goals:

1. **Streamlining Operations:** Automating daily processes such as rice production tracking, inventory updates, and sales recording.
2. **Improved Decision-Making:** Delivering detailed reports and dashboards for real-time analytics, enabling better resource allocation and strategic planning.
3. **Enhancing Customer Relationships:** Providing personalized insights into customer preferences and purchasing behavior.
4. **Ensuring Data Security:** Implementing role-based access controls to restrict sensitive information to authorized users.

Specific Outcomes:

1. A centralized platform to monitor and manage rice mill operations effectively.
2. Real-time automated reports on daily production, sales, and revenue trends.
3. Reduction of manual errors in data entry and calculations.

4. User-friendly dashboards to visualize performance metrics and insights.

3. Salesforce Key Features and Concepts Utilized

1. Reports and Dashboards:

- **Automated Reports:** Generate daily, weekly, and monthly reports on rice production, sales, inventory levels, and revenue.
- **Dashboards:** Display critical metrics such as:
 - Most purchased rice types.
 - Top customers.
 - Revenue trends.

2. Rollup Summary Fields:

- **Purpose:** Summarize data from child records to parent records in master-detail relationships.
- **Examples:**
 - Total rice supplied by each supplier.
 - Total sales revenue generated from specific rice types.

3. Cross-Object Formula Fields:

- **Purpose:** Perform calculations across related objects.
- **Example:**
 - Total payment owed to suppliers, calculated using: Quantity of Rice x Price per Kilogram.

4. Validation Rules:

- **Purpose:** Ensure data accuracy and completeness.
- **Example:**
 - The ISBLANK formula prevents saving records with missing mandatory fields, such as rice quantity or customer details, and displays error messages to guide users.

5. Permission Sets and Organization-Wide Defaults (OWD):

- **Access Configuration Based on Roles:**
 - **Owner:** Full access to all records, including employees and workers.
 - **Employer:** Access restricted to worker-related records.
 - **Worker:** Limited access based on job-specific requirements.
- **Objective:** Protect sensitive data while enabling collaboration.

4. Detailed Steps to Solution Design

Requirement Gathering:

- Conducted extensive discussions with stakeholders, including owners, employers, and workers, to understand:
 - Operational pain points.
 - Reporting needs.
 - Goals.

Data Model Design:

- **Custom Objects Created:**
 - "Rice Inventory"
 - "Supplier"
 - "Sales"
 - "Customer"
- **Relationships Defined:**
 - Master-detail relationship between "Rice Inventory" and "Supplier".
 - Lookup relationship between "Sales" and "Customer".

User Interface (UI) Design:

- **Lightning Pages:**
 - Developed intuitive pages tailored to different user roles (e.g., Owner Dashboard, Sales Entry Form).
- **Custom Components:**
 - Facilitated data entry and quick access to reports.

Business Logic Implementation:

- **Automation:**
 - Workflows for low inventory alerts and sales notifications.
- **Apex Development:**
 - Created Apex classes and triggers for advanced calculations and inventory updates.

Reports and Dashboards:

- **Configured Reports to Highlight:**
 - Daily rice production and sales trends.
 - Inventory levels and popular rice types.
 - Revenue generated by different customer segments.
- **Dashboards:**
 - Real-time visualizations for quick decision-making.

Documentation and Screenshots:

- Detailed all components, configurations, and workflows.
- Accompanied by screenshots for clarity and reference.

Objects

Salesforce objects are database tables that allow you to store data specific to an organization. There are two main types of Salesforce objects:

1. **Standard Objects:** Predefined objects provided by Salesforce, such as Accounts, Contacts, Leads, and Opportunities.
2. **Custom Objects:** User-defined objects created to store specific data that is not covered by standard objects.

Creating Required Objects:

Steps to Create an Object:

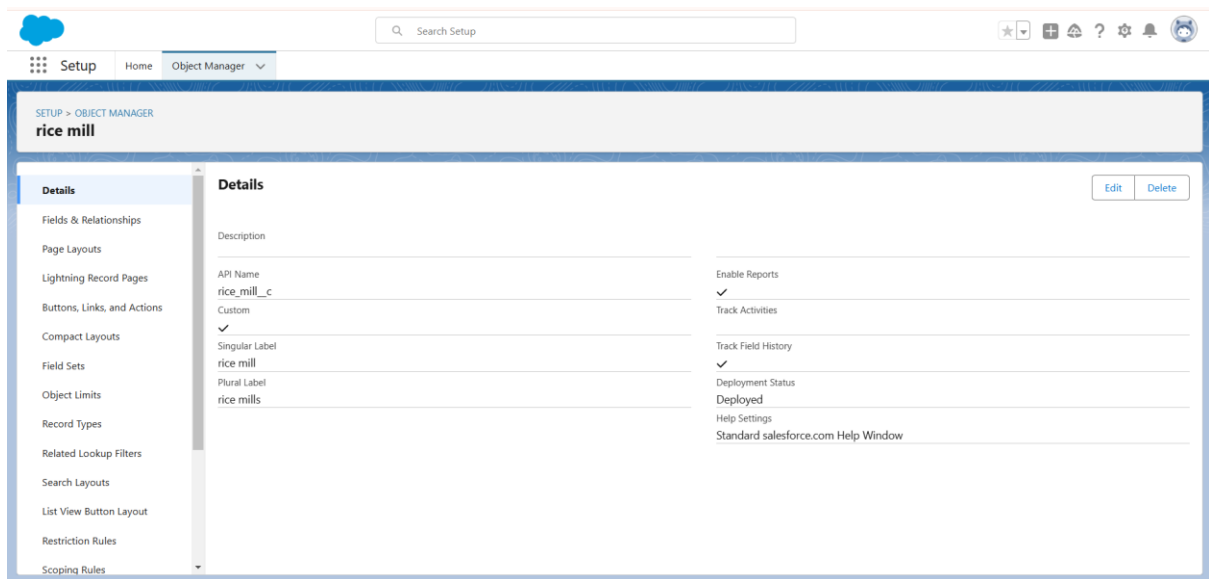
1. From the setup page:
 - Click on **Object Manager**.
 - Click on **Create**.
 - Click on **Custom Object**.
2. On the Custom Object Definition Page:
 - Enter the **Label Name** and **Plural Label Name**.
 - Enable the following options:
 - **Allow Reports**.
 - **Allow Search**.
 - **Track Field History**.
 - Click on **Save**.

Example: Creating Specific Objects

1. "Rice Mill" Object:

- **Label Name:** Rice Mill
- **Plural Label Name:** Rice Mills
- **Record Name:**

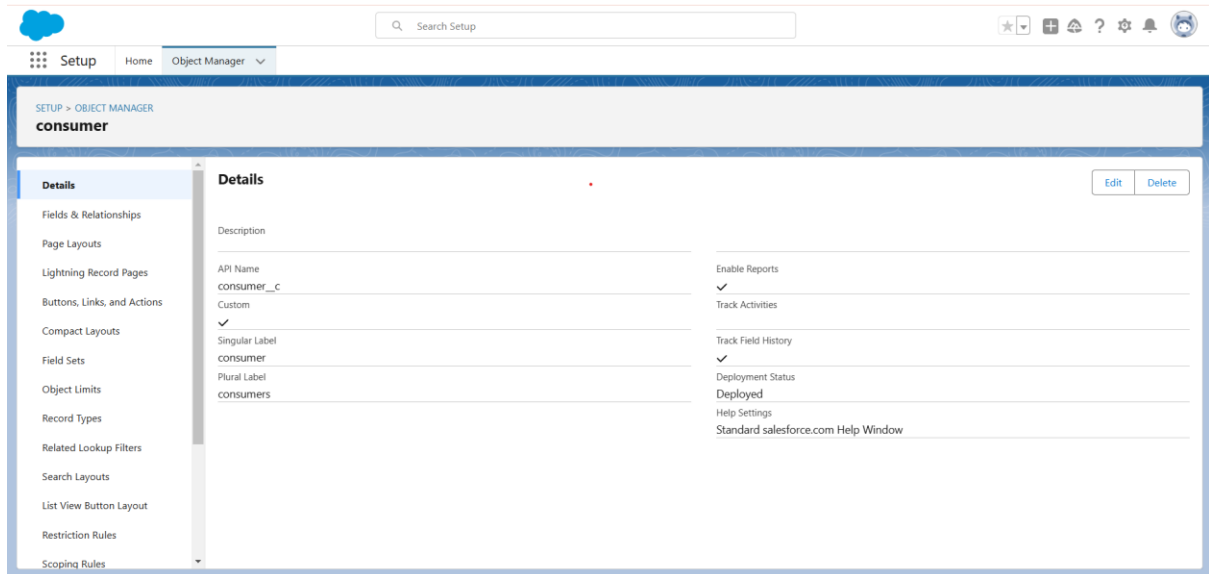
- **Data Type:** Auto Number
- **Display Format:** rice-{000}
- **Starting Number:** 1
- **Enable:**
 - **Allow Reports**
 - **Track Field History**
 - **Allow Search**
- **Click Save.**



The screenshot shows the Salesforce Setup interface. At the top, there's a navigation bar with 'Setup', 'Home', and 'Object Manager'. Below this, the breadcrumb trail reads 'SETUP > OBJECT MANAGER' and the object name 'rice mill' is displayed. On the left, a sidebar lists various configuration options: 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, and Scoping Rules. The 'Details' section is selected and expanded, showing a list of fields: Description, API Name (rice_mill__c), Custom (checked), Singular Label (rice mill), and Plural Label (rice mills). On the right, there are checkboxes for 'Enable Reports' (checked), 'Track Activities', 'Track Field History' (checked), and 'Deployment Status' (Deployed). At the bottom right, there's a link to 'Help Settings' and a note about the 'Standard salesforce.com Help Window'. 'Edit' and 'Delete' buttons are visible in the top right corner of the details section.

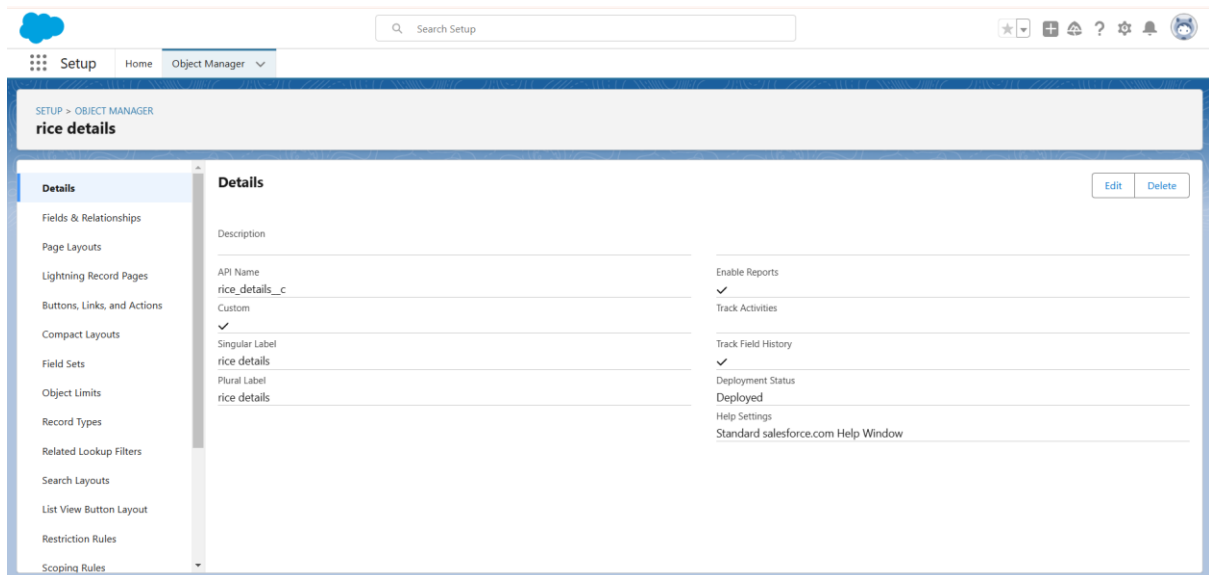
2. "Consumer" Object:

- Follow the same steps as above, but use the following details:
 - **Label Name:** Consumer
 - **Plural Label Name:** Consumers



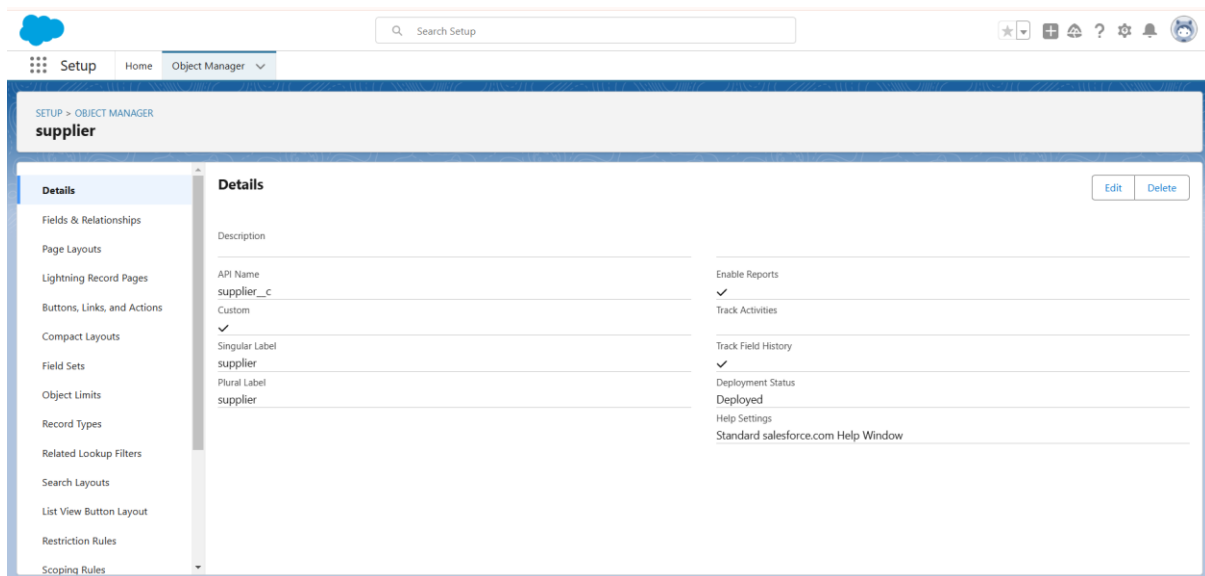
3. "Rice Details" Object:

- Follow the same steps as above, but use the following details:
 - Label Name:** Rice Details
 - Plural Label Name:** Rice Details
 - Display Format:** rice-{000}
 - Starting Number:** 1



4. "Supplier" Object:

- Follow the same steps as above, but use the following details:
 - **Label Name:** Supplier
 - **Plural Label Name:** Suppliers
 - **Record Name:**
 - **Data Type:** Text
 - **Record Name Label:** Supplier Name
 - Enable:
 - **Allow Reports**
 - **Track Field History**
 - **Allow Search**
 - Click **Save**.



By following these steps, you can create and configure custom objects tailored to your organization's specific data requirements.

Tabs

A tab is a user interface element used to build records for objects and view the records in those objects.

Types of Tabs:

1. Custom Tabs:

- Custom object tabs are the user interface for custom applications that you build in Salesforce. They look and behave like standard Salesforce tabs such as Accounts, Contacts, and Opportunities.

2. Web Tabs:

- Web tabs are custom tabs that display web content or applications embedded in the Salesforce window. These tabs make it easier for users to access frequently used content and applications without leaving Salesforce.

3. Visualforce Tabs:

- Visualforce tabs display a Visualforce page. They look and behave like standard Salesforce tabs.

4. Lightning Component Tabs:

- Lightning Component tabs allow you to add Lightning components to the navigation menu in Lightning Experience and the mobile app.

5. Lightning Page Tabs:

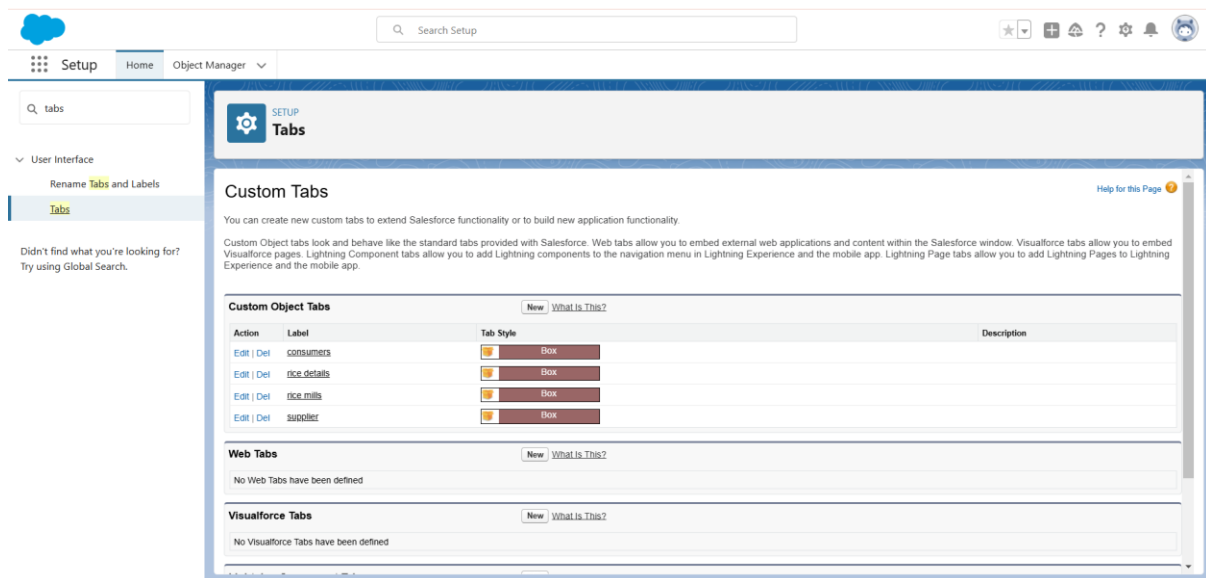
- Lightning Page tabs allow you to add Lightning Pages to the mobile app navigation menu. They don't behave like other custom tabs. For example:
 - They don't show up on the "All Tabs" page when clicking the Plus icon.
 - They don't appear in the "Available Tabs" list when customizing app tabs.

Steps to Create a Tab (Example: Supplier):

1. Go to the **Setup** page.
 - Type **Tabs** in the Quick Find bar.
 - Click on **Tabs**.
 - Under "Custom Object Tabs," click on **New**.
2. Select the following options:
 - **Object:** Supplier
 - **Tab Style:** Choose a style that matches your object.

3. Click **Next**:
 - On the "Add to Profiles" page, keep the default settings.
4. Click **Next**:
 - On the "Add to Custom App" page, uncheck the option to include the tab.
5. Ensure the option **Append tab to users' existing personal customizations** is checked.
6. Click **Save**.

By following these steps, you can create and configure tabs for your custom objects, enhancing the user experience and navigation in Salesforce.



The Lightning App

A Lightning app is a collection of items that work together to serve a particular function. In Lightning Experience, Lightning apps provide users access to sets of objects, tabs, and other items in one convenient bundle in the navigation bar.

Lightning apps allow you to:

- Brand your apps with a custom color and logo.
- Include a utility bar and Lightning page tabs.
- Enable users to work more efficiently by easily switching between apps.

Steps to Create a Lightning App Page:

1. Go to the **Setup** page:
 - Search for "App Manager" in the Quick Find bar.
 - Select **App Manager**.
 - Click on **New Lightning App**.
2. Fill in the App Details:
 - **App Name:** MY RICE
 - Click **Next**.
3. On the App Options page:
 - Keep the default settings.
 - Click **Next**.
4. On the Utility Items page:
 - Keep the default settings.
 - Click **Next**.
5. Upload a related photo for your app.
6. To Add Navigation Items:
 - Select the items (**Supplier, Rice Mill, Consumer, Rice Details**) from the search bar.
 - Move them using the arrow button.
 - Click **Next**.
7. To Add User Profiles:
 - Search for profiles (e.g., **System Administrator**) in the search bar.
 - Click the arrow button to add them.
 - Click **Save & Finish**.

By completing these steps, you can create a customized Lightning app that provides users with streamlined access to essential features and data.

The screenshot shows the 'App Settings' interface in Salesforce Lightning App Builder. The top navigation bar includes 'Lightning App Builder', 'App Settings', 'Pages', and 'MY RICE'. The left sidebar lists 'App Details & Branding' (selected), 'App Options', 'Utility Items (Desktop Only)', 'Navigation Items', and 'User Profiles'. The main content area is titled 'App Details & Branding' and includes a subtitle: 'Give your Lightning app a name and description. Upload an image and choose the highlight color for its navigation bar.' The interface is divided into two columns: 'App Details' and 'App Branding'. Under 'App Details', there are input fields for 'App Name' (MY RICE), 'Developer Name' (MY_RICE), and a 'Description' field (placeholder: 'Enter a description...'). Under 'App Branding', there is an 'Image' upload area showing a bowl of rice, a 'Primary Color Hex Value' dropdown set to '#0070D2', and a 'Clear' link. Below these is the 'Org Theme Options' section with a checkbox 'Use the app's image and color instead of the org's custom theme' which is currently unchecked. At the bottom is an 'App Launcher Preview' showing a small icon of the bowl of rice next to the text 'MY RICE'.

Fields

When we talk about Salesforce, Fields represent the data stored in the columns of a relational database. It can also hold any valuable information that you require for a specific object. Hence, the overall searching, deletion, and editing of the records become simpler and quicker.

Types of Fields

1. **Standard Fields**
2. **Custom Fields**

Standard Fields:

As the name suggests, the Standard Fields are the predefined fields in Salesforce that perform a standard task. The main point is that you can't simply delete a Standard Field until it is a non-required standard field. Otherwise, users have the option to delete them at any point from the application freely. Moreover, we have some fields that you will find common in every Salesforce application. They are:

1. **Created By**
2. **Owner**
3. **Last Modified**
4. **Field Made During Object Creation**

Custom Fields:

On the other side of the coin, Custom Fields are highly flexible, and users can change them according to requirements. Moreover, each organizer or company can use them if necessary. It means you need not always include them in the records, unlike Standard fields. Hence, the

final decision depends on the user, and they can add/remove Custom Fields of any given form.

Creating Fields and Related Operations

Creating a Number Field in Rice Details Object:

1. Go to the setup page >> Click on **Object Manager** >> From the dropdown, click **Edit** for the Rice Details object.
2. Click on **Fields & Relationship** >> Click on **New**.
3. Select **Data Type** as "Number" and click **Next**.
4. Give the Field Label as "Rice Distributed" and length as "5".
5. The Field Name will be auto-populated. Click **Next** >> **Next** >> **Save**.

Junction Object

A Junction Object is a custom object that serves as a bridge between two related objects in a many-to-many relationship. It allows you to create a relationship between records of two different objects by creating a many-to-many relationship model.

Creating Junction Object as Rice Details with Supplier & Rice Mill:

1. Go to the setup page >> Click on **Object Manager** >> From the dropdown, click **Edit** for the Rice Details object.
2. Click on **Fields & Relationship** >> Click **New**.
3. Select "Master-Detail Relationship" as the Data Type and click **Next**.
4. Select the related object "Supplier" and click **Next**.
5. Give the Field Label as "Supplier Name" and click **Next**.
6. Click **Next** >> **Next** >> **Save & New**.
7. Follow the same steps from 1 to 3.
8. Select the related object "Rice Mill" and click **Next**.
9. Give the Field Label as "Rice Mill 1 (one)" and click **Next**.
10. Click **Next** >> **Next** >> **Save**.

Master-Detail Relationship

A Master-Detail Relationship is a type of relationship between two objects where the master object controls certain behaviors and settings of the detail object.

Creating Master-Detail Relationship Between Consumer & Rice Mill Object:

1. Go to the setup page >> Click on **Object Manager** >> From the dropdown, click **Edit** for the Consumer object.
2. Click on **Fields & Relationship** >> Click **New**.
3. Select "Master-Detail Relationship" as the Data Type and click **Next**.
4. Select the related object "Rice Mill".
5. Give the Field Label as "Rice Mill Name" and click **Next**.
6. Click **Next** >> **Next** >> **Save**.

Rollup Summary Field

A Rollup Summary Field is a field that summarizes data from a child object to a parent object that shares a master-detail relationship. Rollup summary fields can use the COUNT, SUM, MIN, and MAX functions. For example, you could use a rollup summary field to display the total value (amount of rice supplied) from Rice Details on a related Supplier.

Creating the Rollup Summary Field on Supplier & Rice Mill Objects:

1. Go to **Setup** >> Click on **Object Manager** >> Type the object name (Supplier) in the search bar >> Click on the object.
2. Now click on **Fields & Relationships** >> **New**.

Creating Fields in Objects

Rice Details Object:

1. Go to the setup page >> Click on **Object Manager** >> From the dropdown, click **Edit** for the Rice Details object.
2. Click on **Fields & Relationships** >> Click **New**.
3. Select **Data Type** as "Master Detail" and click **Next**.
4. Give the Field Label as "Supplier Name" and length as "5".
5. The Field Name will be auto-populated. Click **Next** >> **Next** >> **Save**.

Rice Mill Object:

1. Select **Data Type** as "Number" and click **Next**.
2. Give the Field Label as "Rice Price/Kg" and length as "5".

Consumer Object:

S.No	Object Name	Fields	Data Type
1	Consumer	First Name	Text
		Last Name	Text
		Phone Number	Phone

Additional Picklist Fields:

- **Rice Type:** Picklist values include:
 1. Basmati
 2. Normal Rice
- **Mode of Payment:** Picklist values include:
 - Credit Card
 - Debit Card
 - Net Banking
 - UPI
 - Cash

Cross-Object Formula Field

A Cross-Object Formula Field is a formula field that references fields from another object in Salesforce. This type of formula allows users to calculate and display data from multiple objects on a single record.

Creating Cross-Object Formula Field in Consumer Object:

1. Go to **Setup** >> Click on **Object Manager** >> Type object name (Consumer) in the search bar >> Click on the object.
2. Click on **Fields & Relationships** >> Click **New**.
3. Select **Data Type** as "Formula" and click **Next**.
4. Give Field Label and Field Name as "Amount Paid" and select Formula Return Type as "Number". Click **Next**.
5. Insert fields formula should be:

rice_taken_by_shops__c * rice_mill_name__r.rice_price_kg__c

6. Under **Advanced Formula**, write down the formula and click **Check Syntax**. Save the field.

Creating Formula Field in Consumer Object:

1. Go to **Setup** >> Click on **Object Manager** >> Type object name (Consumer) in the search bar >> Click on the object.
2. Click on **Fields & Relationships** >> Click **New**.
3. Select **Data Type** as "Formula" and click **Next**.
4. Give Field Label and Field Name as "Consumer Name" and select Formula Return Type as "TEXT". Click **Next**.
5. Insert field formula should be:
First_Name__c + ' ' + Last_Name__c
6. Click **Check Syntax** and Save.

Validation Rules

Improve the quality of your data using Validation Rules. Validation rules verify that the data a user enters in a record meets the standards you specify before the user can save the record. A validation rule can contain a formula or expression that evaluates the data in one or more fields and returns a value of "True" or "False". Validation rules also include an error message to display to the user when the rule returns a value of "True" due to an invalid value.

Creating the Validation Rule for Phone Number Field in Consumer Object:

1. Go to the setup page >> Click on **Object Manager** >> From the dropdown, click **Edit** for the Consumer object.
2. Click on **Validation Rules** >> Click **New**.
3. Enter the Rule Name as "Phonenumberoremailblankrule".
4. Enter the Description as "Phone number and email number should not be blank".
5. Enter the formula as:

OR(ISBLANK(phone_number__c), ISBLANK(email__c))

and check the syntax.

6. Under the Error Message, write "Please fill in your phone number.".
7. Select Error Location "Top of Page".
8. Save the Validation Rule.

Setup

Home

Object Manager

Search Setup

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

Fields & Relationships

14 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 Paid	Amount_Paid__c	Formula (Number)		
Consumer Name	Consumer_Name__c	Formula (Text)		
consumer Name	Name	Auto Number		✓
Created By	CreatedBy	Lookup(User)		
email	email__c	Email		
First name	First_name__c	Text(20)		
Last Modified By	LastModifiedById	Lookup(User)		
Last name	Last name__c	Text(40)		
Mode of payment	Mode_of_payment__c	Picklist		

Setup

Home

Object Manager

Search Setup

Setup > OBJECT MANAGER

rice details

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

Fields & Relationships

7 Items, Sorted by Field Label

Quick Find

New

Deleted Fields

Field Dependencies

Set History Tracking

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Created By	CreatedBy	Lookup(User)		
Last Modified By	LastModifiedById	Lookup(User)		
rice details Name	Name	Auto Number		✓
rice distributed	rice_distributed__c	Number(5, 0)		
rice mill Name	rice_mill__c_name__c	Master-Detail(Rice mill)		✓
rice price/kg	rice_price/kg__c	Number(5, 0)		
supplier Name	supplier_Name__c	Master-Detail(supplier)		✓

Setup

Home

Object Manager

Search Setup

Setup > OBJECT MANAGER

rice mill

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

Fields & Relationships

7 Items, Sorted by Field Label

Quick Find

New

Deleted Fields

Field Dependencies

Set History Tracking

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Created By	CreatedBy	Lookup(User)		
Last Modified By	LastModifiedById	Lookup(User)		
Owner	OwnerId	Lookup(User Group)		✓
rice distributed to shops	rice_distributed_to_shops__c	Roll-Up Summary (SUM rice details)		
rice mill Name	Name	Auto Number		✓
rice price/kg	rice_price/kg__c	Number(5, 0)		
rice taken	rice_taken__c	Roll-Up Summary (SUM consumer)		

Setup

Home

Object Manager

Search Setup

Setup > OBJECT MANAGER

supplier

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

Fields & Relationships

3 Items, Sorted by Field Label

Quick Find

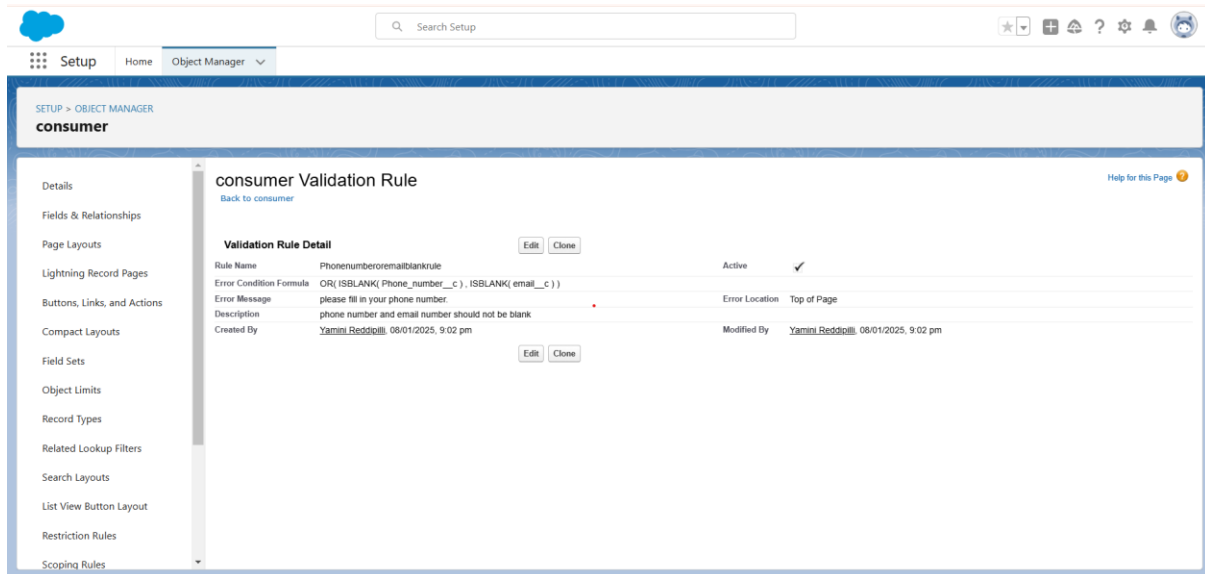
New

Deleted Fields

Field Dependencies

Set History Tracking

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Created By	CreatedBy	Lookup(User)		
Last Modified By	LastModifiedById	Lookup(User)		
Owner	OwnerId	Lookup(User Group)		✓
sum of rice distributed	sum of rice distributed__c	Roll-Up Summary (SUM rice details)		
supplier Name	Name	Text(80)		✓



Page Layouts

Page Layout in Salesforce allows us to customize the design and organize detail and edit pages of records. Page layouts can be used to control the appearance of fields, related lists, and custom links on standard and custom objects' detail and edit pages.

Steps to Create a Page Layout

1. Navigate to Setup

- Go to **Setup**.
- Click on **Object Manager**.
- Search for the object (e.g., **Consumer**).
- From the dropdown, select the object and click on it.

2. Create a New Page Layout

- Click on **Page Layout**.
- Click on **New**.

3. Select Existing Layout and Name the Layout

- Select an existing page layout.
- Give the new page layout a name, such as "**Consumer Layout**".
- Click **Save**.

4. Create a Section for Personal Details

- Drag and drop the **Section** field to the consumer details area and create the section.

- Enter the section name as **"Personal Details"**, and click **OK**.

5. Add Fields to the Personal Details Section

- Drag and drop the following fields into the "Personal Details" section:
 - First Name
 - Last Name
 - Consumer Name
 - Phone Number
 - Email
 - Rice Mill Name

6. Create a Section for Rice Details

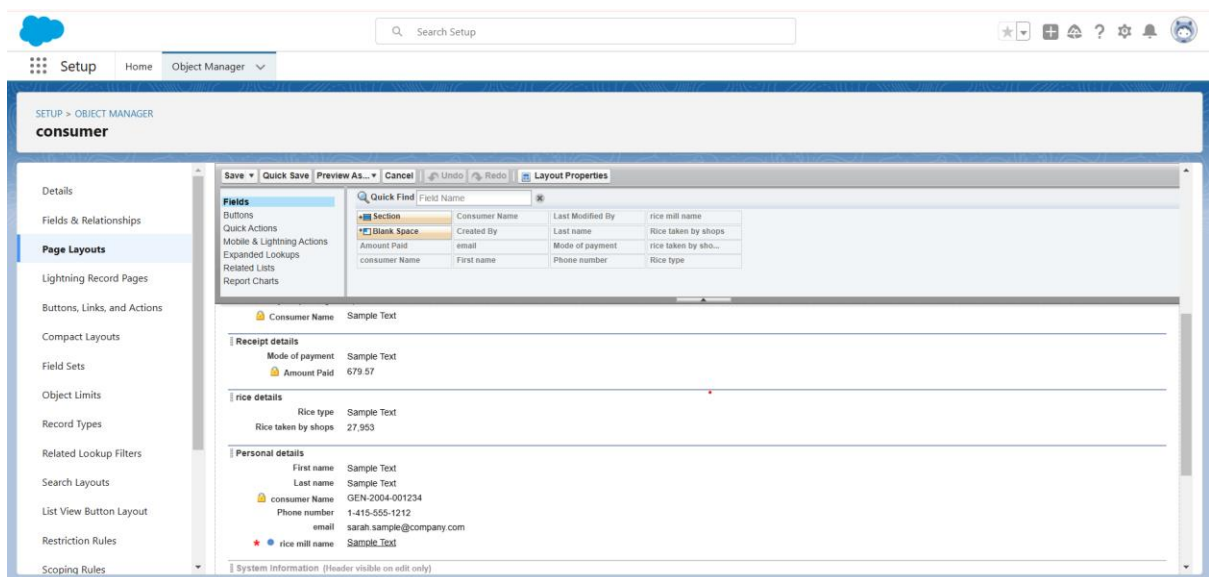
- Follow the same process to create another section named **"Rice Details"**.
- Drag the following fields into the "Rice Details" section:
 - Rice Taken by Shop
 - Rice Type

7. Create a Section for Receipt Details

- Follow the same process to create another section named **"Receipt Details"**.
- Drag the following fields into the "Receipt Details" section:
 - Mode of Payment
 - Amount Paid

8. Save the Layout

- After all sections and fields are added, click **Save**.



Profiles

A **Profile** in Salesforce is a group or collection of settings and permissions that define what a user can do within the platform. Profiles control:

- **Object Permissions**
- **Field Permissions**
- **User Permissions**
- **Tab Settings**
- **App Settings**
- **Apex Class Access**
- **Visualforce Page Access**
- **Page Layouts**
- **Record Types**
- **Login Hours & Login IP Ranges**

Profiles are typically defined based on a user's job function, such as **System Administrator**, **Developer**, or **Sales Representative**.

Types of Profiles in Salesforce

1. Standard Profiles:

Salesforce provides several default (standard) profiles that cannot be deleted:

- **Contract Manager**
- **Read Only**
- **Marketing User**
- **Solutions Manager**
- **Standard User**
- **System Administrator**

Each of these profiles includes a default set of permissions for all of the standard objects available on the platform.

2. Custom Profiles:

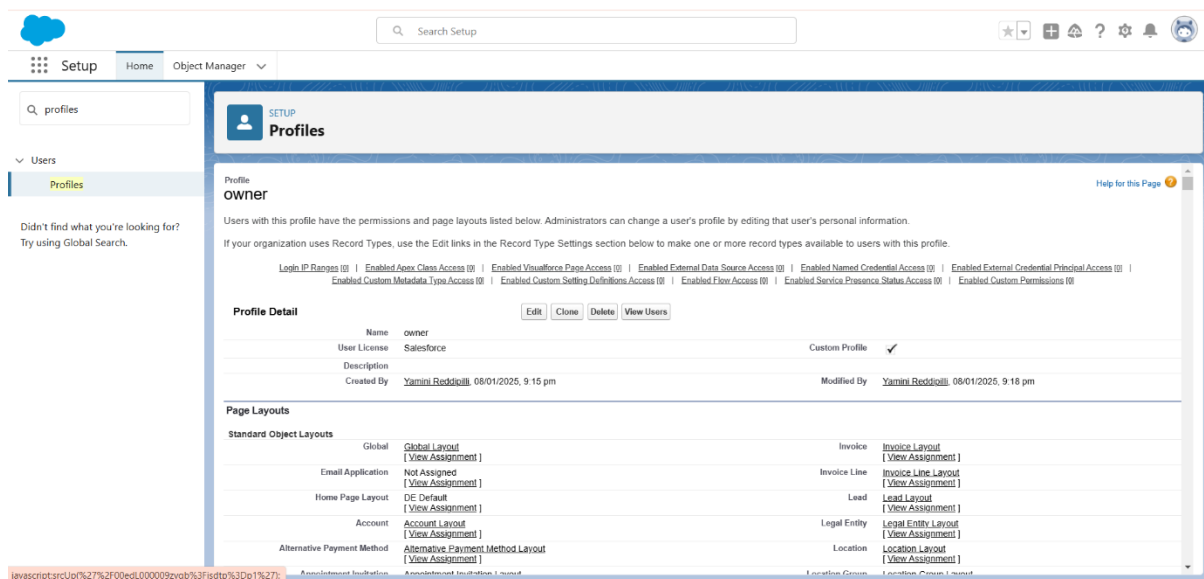
- These profiles are created by users (admins).
- Custom profiles **can be deleted**, but only if no users are assigned to them.

Owner Profile (Custom Profile Creation)

To create a **Owner Profile**:

1. Go to **Setup**.
2. Type **Profiles** in the quick find box and click on **Profiles**.

- Grant access permissions for the following objects as shown in the diagram:
 - **Consumers**
 - **Rice Details**
 - **Rice Mill**
 - **Suppliers**
- Click **Save**.



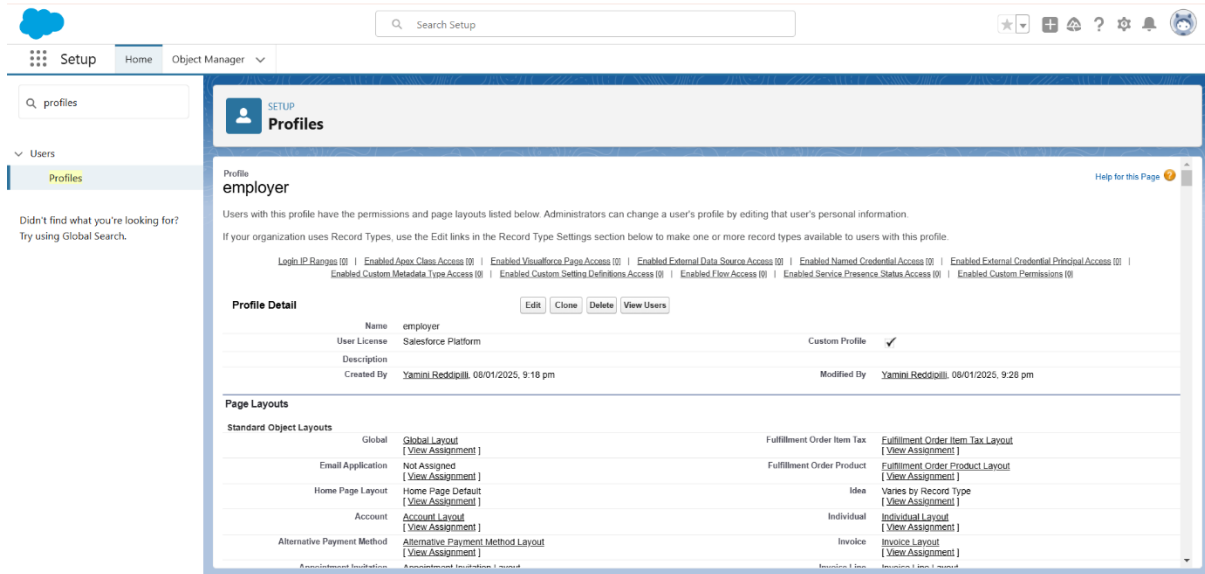
Employer Profile (Custom Profile Creation)

To create an **Employer Profile**:

1. Go to **Setup**.
2. Type **Profiles** in the quick find box and click on **Profiles**.
3. Clone the desired profile (e.g., **Standard Platform User**).
4. Enter the profile name, such as **Employer**, and click **Save**.
5. While still on the profile page, click **Edit**.
6. Select the **Custom App Settings** and set the default for **Rice Mill**.
7. Scroll down to **Custom Object Permissions** and grant access to the following objects:
 - **Consumer**

- **Rice Details**
- **Rice Mill**
- **Suppliers**

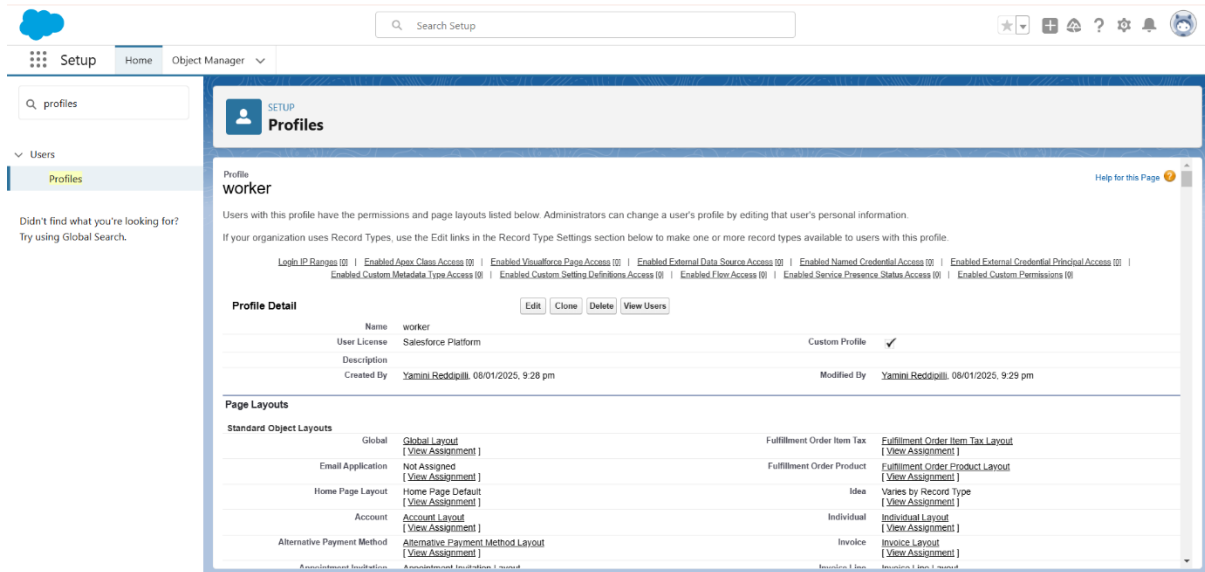
8. Click **Save**.



Worker Profile (Custom Profile Creation)

To create a **Worker Profile**:

1. Go to **Setup**.
2. Type **Profiles** in the quick find box and click on **Profiles**.
3. Clone the desired profile (e.g., **Standard Platform User**).
4. Enter the profile name, such as **Worker**, and click **Save**.
5. While still on the profile page, click **Edit**.
6. Select the **Custom App Settings** and set the default for **Rice Mill**.
7. Scroll down to **Custom Object Permissions** and grant access to the following objects:
 - **Consumer**
 - **Rice Details**
 - **Rice Mill**
 - **Suppliers**
8. Click **Save**.



Roles & Role Hierarchy

A **Role** in Salesforce defines a user's visibility and access to records. Roles are used to specify the level of access a user has to data within your Salesforce organization. Simply put, it describes what a user can **see** and **access** in Salesforce.

Creating the Owner Role

To create the **Owner Role**:

1. Go to **Quick Find**, search for **Roles**, and click on **Setup Roles**.
2. In the **Quick Find** search bar, search for **Roles** again and click on **Setup Roles**.
3. Click on **Expand All** to view all roles.
4. Under the role structure, click on **Add Role** under the parent role (typically the top-level role).
5. Give the **Label** as "**Owner**". The **Role Name** will auto-populate.
6. Click **Save** to create the role.

Creating Roles under the Manager Role

To create additional roles under the **Manager Role** (e.g., **Employer** and **Worker** roles):

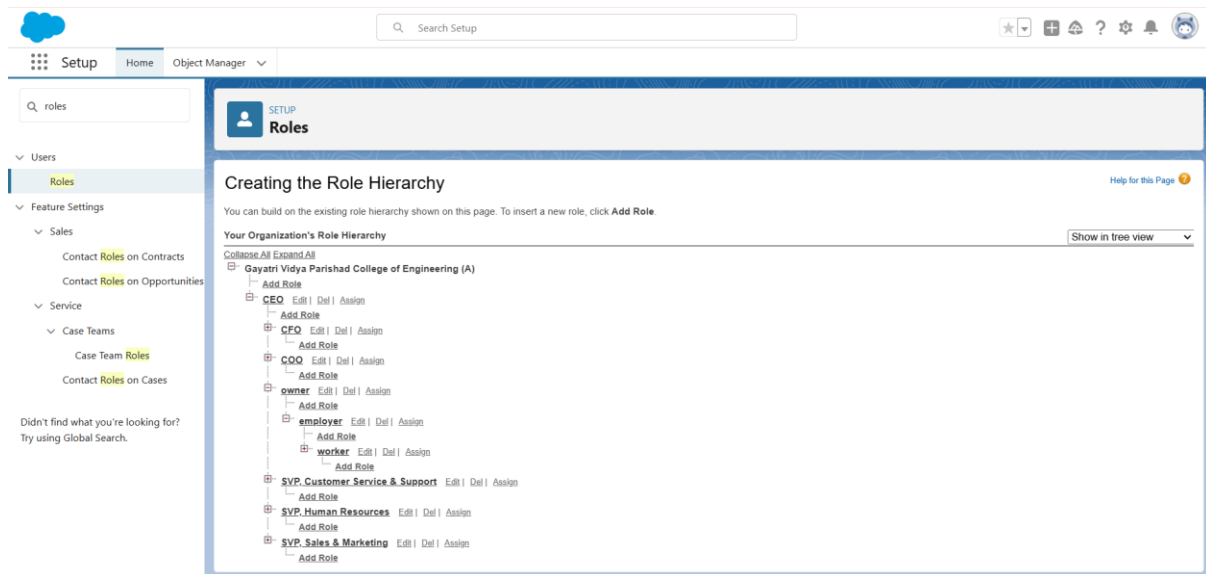
1. Create the Employer Role:

1. Go to **Quick Find**, search for **Roles**, and click on **Setup Roles**.
2. Click on the **plus (+)** sign next to the **CEO Role** (or whichever role is above it in the hierarchy).
3. Select **Add Role** under the **Owner** role.
4. Enter **Label** as "**Employer**". The **Role Name** will auto-populate.

5. Click **Save** to create the **Employer** role.

2. Create the Worker Role:

1. Repeat the steps for creating the **Employer Role**.
2. Click the **plus (+)** sign next to **CEO Role**, then the **plus (+)** sign next to **Owner**, and select **Add Role** under the **Employer** role.
3. Enter **Label** as "**Worker**". The **Role Name** will auto-populate.
4. Click **Save** to create the **Worker** role.



Users

A **User** in Salesforce is anyone who logs in to the platform. Users are typically employees in your organization who need access to records. Each user has a **user account**, which defines their permissions and access to Salesforce features and records.

Steps to Create a New User

To create a new user:

1. **Go to Setup**
 - In **Quick Find**, type **Users** and select **Users**.
 - Click on **New User**.
2. **Fill in the Required Fields**
 - **First Name:** Vicky
 - **Last Name:** Y
 - **Alias:** Provide a unique alias name.

- **Email ID:** Enter your personal email address.
 - **Username:** Enter the username in this format: **text@text.text**.
 - **Nickname:** Provide a nickname.
 - **Role:** Select **Owner** (or the appropriate role).
 - **User License:** Select **Salesforce**.
 - **Profile:** Select **Owner**.
3. **Save the User**
 - After filling in all the details, click **Save**.

Creating Another User (Employer Role)

To create another user, for example with the **Employer Role**:

1. **Go to Setup**
 - In **Quick Find**, type **Users** and select **Users**.
 - Click on **New User**.
2. **Fill in the Required Fields**
 - **First Name:** Ram
 - **Last Name:** Ram
 - **Alias:** Provide a unique alias name.
 - **Email ID:** Enter your personal email address.
 - **Username:** Enter the username in this format: **text@text.text**.
 - **Nickname:** Provide a nickname.
 - **Role:** Select **Employer**.
 - **User License:** Select **Salesforce Platform**.
 - **Profile:** Select **Standard Platform User**.
3. **Save the User**
 - After filling in all the details, click **Save**.

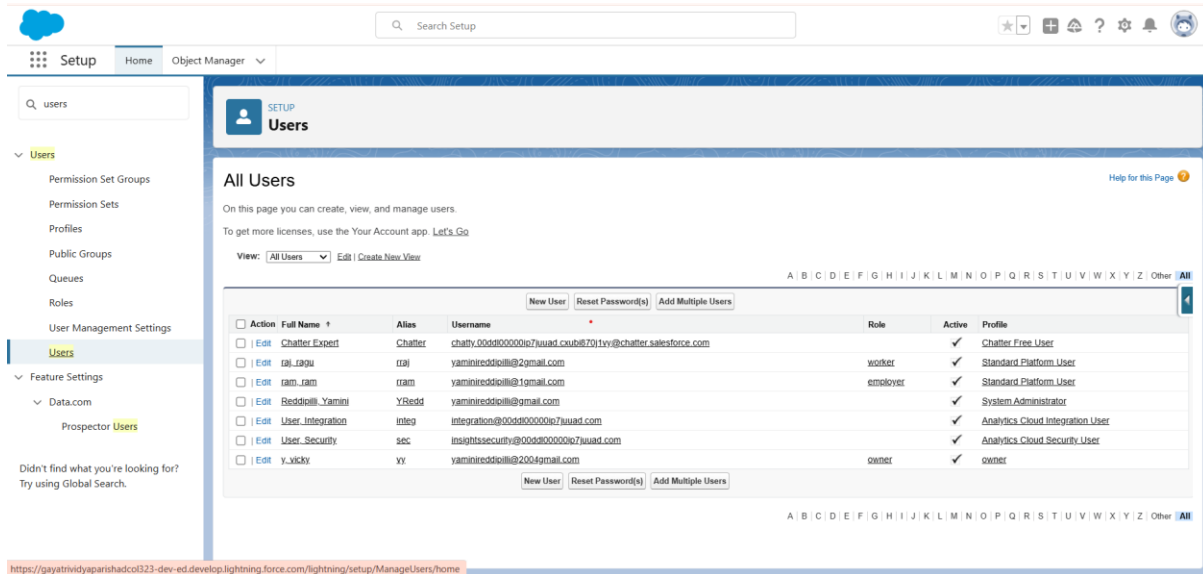
Creating Another User (Worker Role)

To create another user, for example with the **Worker Role**:

1. **Go to Setup**
 - In **Quick Find**, type **Users** and select **Users**.
 - Click on **New User**.
2. **Fill in the Required Fields**
 - **First Name:** Ragu
 - **Last Name:** Raj
 - **Alias:** Provide a unique alias name.
 - **Email ID:** Enter your personal email address.
 - **Username:** Enter the username in this format: **text@text.text**.
 - **Nickname:** Provide a nickname.
 - **Role:** Select **Worker**.
 - **User License:** Select **Salesforce Platform**.
 - **Profile:** Select **Standard Platform User**.

3. Save the User

- After filling in all the details, click **Save**.



Permission Sets

A **Permission Set** in Salesforce is a collection of settings and permissions that grant users access to various tools and functions. Permission sets are used to extend the functional access of users without modifying their profiles, and they are the recommended way to manage user permissions in Salesforce.

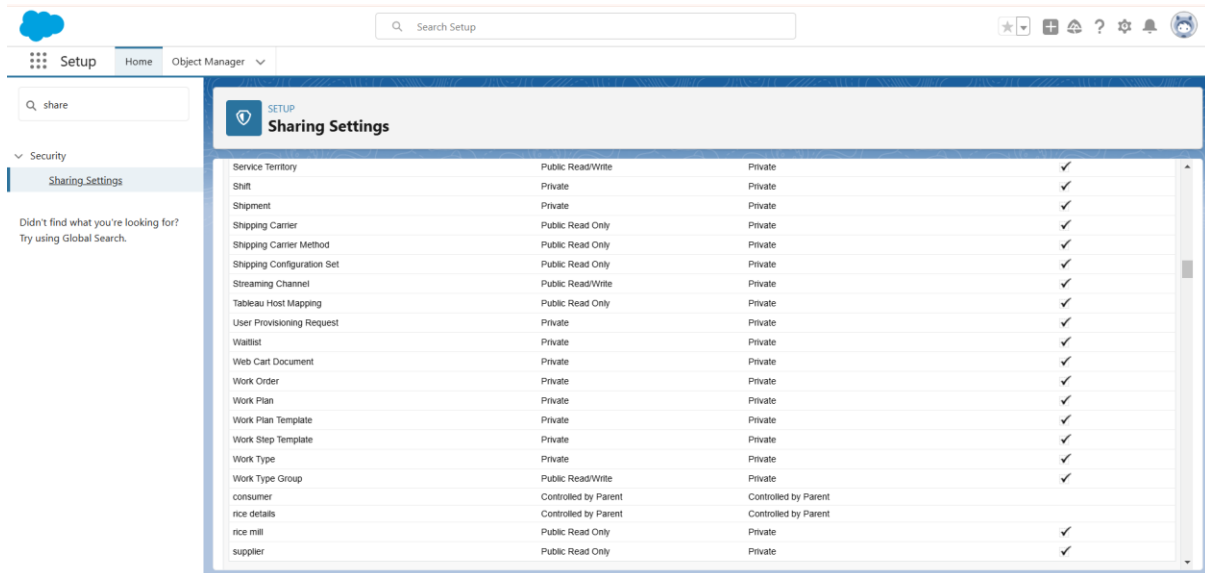
Creating OWD (Organization-Wide Default) Settings

To configure **OWD (Organization-Wide Default) Settings**:

1. **Navigate to Sharing Settings**
 - Go to **Setup**.
 - In the **Quick Find** box, type **Sharing Settings** and select it from the search results.
 - Click **Edit**.
2. **Modify Default Internal Access**
 - Scroll down to the **Default Internal Access** section.
 - Change the default internal access for the following objects to **Public Read-Only**:
 - **Rice Mill**
 - **Supplier**
3. **Save the Changes**
 - After making the changes, click **Save**.

4. Additional Information

- By setting these permissions, each **Profile** will have its own access to the objects, based on the role and profile assigned to users.
- In this case, roles were created in such a way that:
 - **Owner** can view records for both **Employer** and **Worker**.
 - **Employer** can only view records for **Worker**.



Reports

Creating a Report

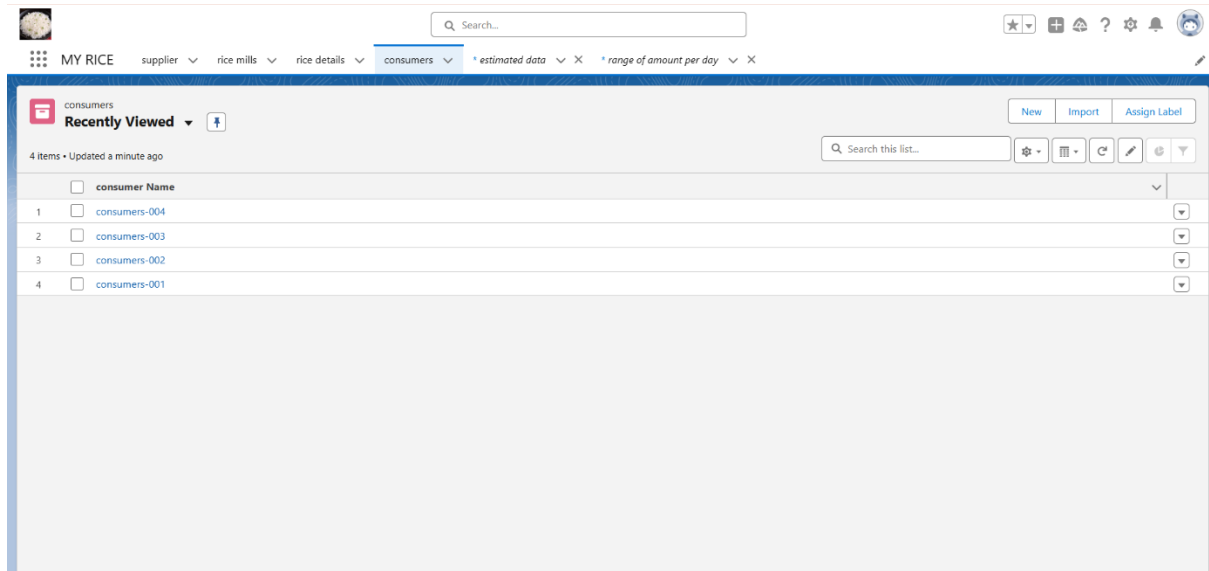
1. **Navigate to Reports**
 - Go to the **App** and click on the **Reports** tab.
2. **Create a New Report**
 - Click on **New Report**.
 - In the **Report Type** search bar, search for "**Rice Mill with Consumers**".
 - Select the report type and click **Start Report**.
3. **Select Fields to Include in the Report**
 - The **Outline Pane** will be open. Select the following fields to be included in the **Columns** section:
 - **Consumer Name**
 - **Rice Type**
 - **Rice Price/KG**
 - **Mode of Payment**
 - **Amount Paid**
4. **Remove Unnecessary Fields**
 - Remove any fields that are not needed for the report.

5. Select Fields for Group Rows

- In the **Group Rows** section, select:
 - **Rice Taken by Shop**

6. Save and Run the Report

- Click **Save and Run**.
- Save the report with the name "**Range of Amount per Day**".



Sharing the Report with the Owner

1. Edit the Report

- Click the **Edit** dropdown and select the **Subscribe** option.

2. Configure the Subscription

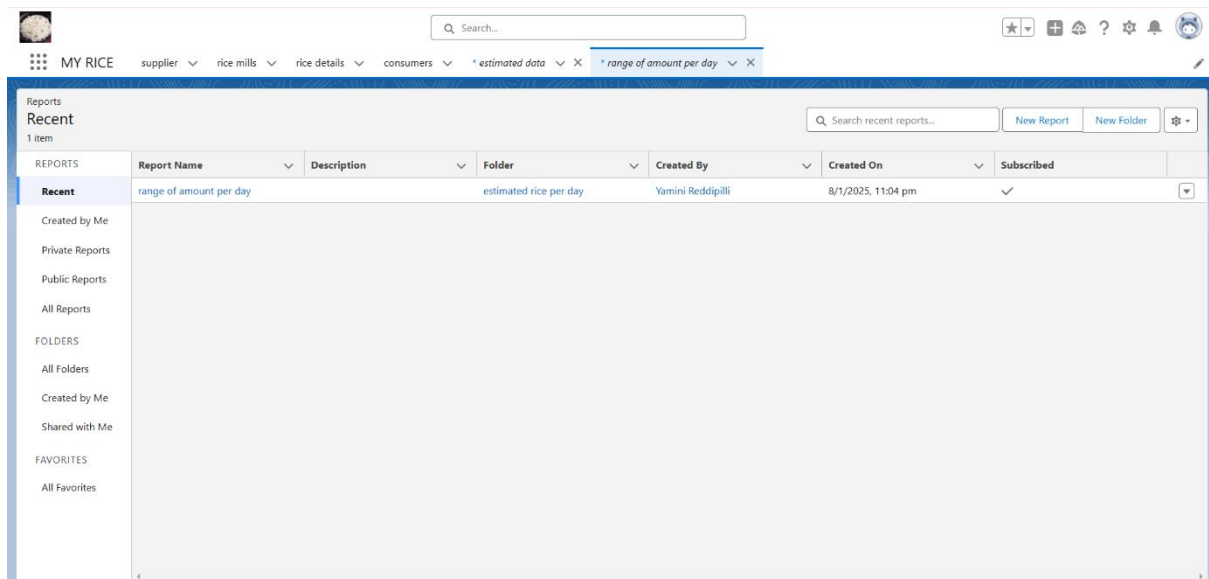
- Follow the steps as shown in the image (details would be in the provided image).
- Select **Run Report As** and choose **Another Person**.

3. Select the Recipient

- Choose your personal account or the person you want to send the report to via email.

4. Save the Subscription

- Click **Save**.



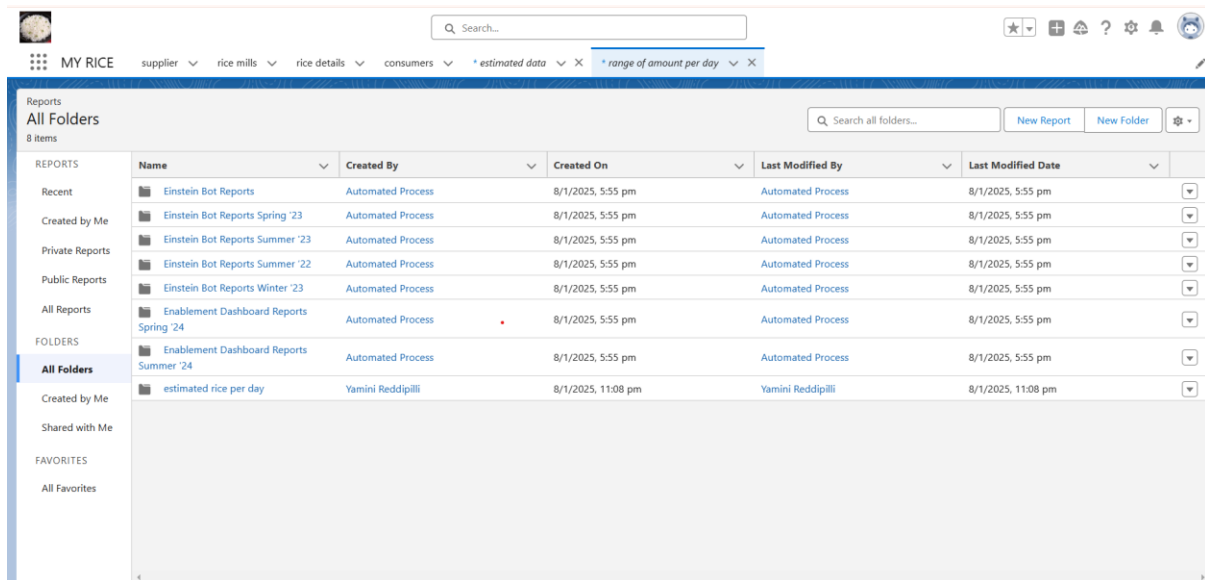
Rice taken by shops	rice mill: rice mill Name	consumer: consumer Name	Consumer Name	Rice type	rice price/kg	Mode of payment	Amount Paid
5 (1)	rice-004	consumers-004	Sanju Reddy	1 basmati	850	UPI	4,250.00
Subtotal					850		4,250.00
10 (1)	rice-002	consumers-002	Sanju Samson	1 basmati	1,000	Debit card	10,000.00
Subtotal					1,000		10,000.00
15 (1)	rice-003	consumers-003	Rohit Sharma	2 normal rice	800	UPI	12,000.00
Subtotal					800		12,000.00
20 (1)	rice-001	consumers-001	john singh	1 basmati	100	Credit card	2,000.00
Subtotal					100		2,000.00
Total (4)					2,750		28,250.00

Creating a Report Folder

- Navigate to Reports**
 - Click on the **App Launcher** and search for **Reports**.
- Open the Report**
 - Double-click on the report you want to save into a folder (e.g., **Range of Amount per Day**). The **Reports Tab** will automatically appear in the navigation bar.
- Create a New Folder**
 - Click on the **Reports Tab**, then click **New Folder**.
 - Enter **Folder Label** as "**Estimated Rice per Day**". The **Folder Unique Name** will auto-populate.
 - Click **Save**.

4. Move the Report into the Folder

- Go to the **App Launcher**, click **Reports**.
- Click on **All Reports**.
- Select the "**Range of Amount per Day**" report, click the **dropdown** next to it, and choose **Move**.
- Select the **Estimated Rice per Day** folder and move the report into that folder.



Dashboards

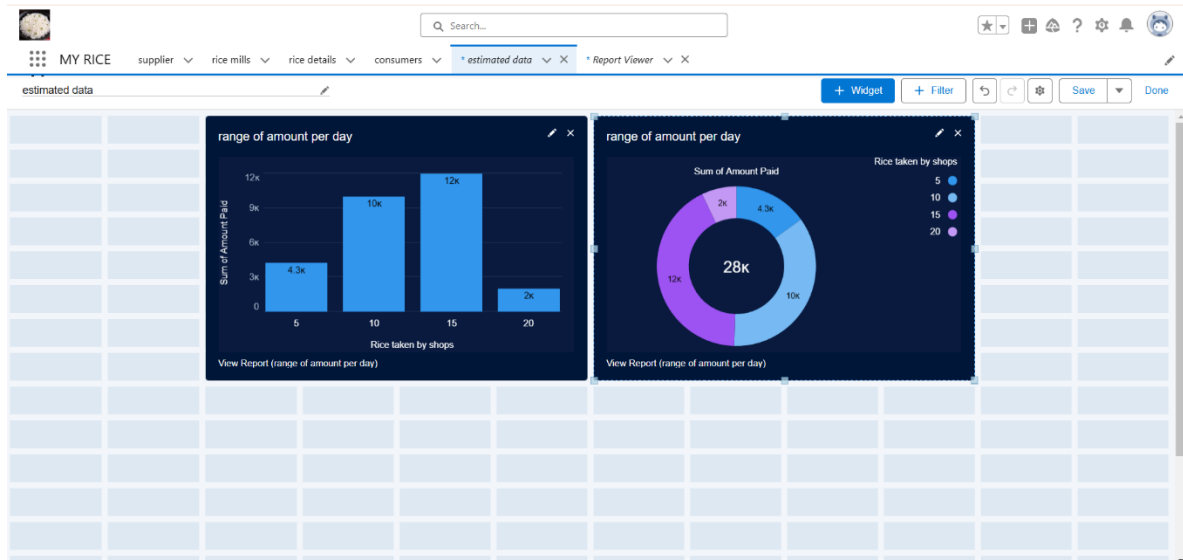
Dashboards help you visually track changing business conditions, enabling decision-making based on real-time data gathered through reports. They provide a way to monitor trends, analyze quantities, and measure the impact of business activities.

Creating a Dashboard Folder

1. **Navigate to Dashboards**
 - Click on the **App Launcher** and search for **Dashboards**.
2. **Open the Dashboards Tab**
 - Click on the **Dashboards** tab.
3. **Create a New Folder**
 - Click on **New Folder**.
 - Enter the **Folder Label** as "**Amount Data Dashboard**". The **Folder Unique Name** will auto-populate.
 - Click **Save**.

Creating a Dashboard

1. **Navigate to Dashboards**
 - Go to the **App** and click on the **Dashboards** tab.
2. **Create a New Dashboard**
 - Click on **Create New Dashboard**.
 - Give the dashboard a **Name** and select the folder you created earlier (e.g., "**Amount Data Dashboard**").
 - Click **Create**.
3. **Add Components to the Dashboard**
 - Click on **Add Component** to add a visualization.
4. **First Component: Vertical Bar Chart**
 - **Select a Report:** Choose the appropriate report (e.g., **Range of Amount per Day**).
 - **Display As:** Choose **Vertical Bar Chart**.
 - **X-axis:** Select **Rice Taken by Shops**.
 - **Y-axis:** Select **Sum of Amount**.
 - **Y-axis Range:** Select **Automatic**.
 - **Sort By:** Choose **Rice Taken by Shops**.
 - **Component Theme:** Select **Dark**.
5. **Add the First Component**
 - Click **Add** to insert this component into the dashboard.
6. **Add a Second Component: Donut Chart**
 - Click **Add Component** again to add another component.
 - **Display As:** Choose **Donut Chart**.
 - **Sort By:** Select **Sum of Amount**.
 - **Title:** Enter "**Range of Amount per Day**".
 - **Component Theme:** Select **Dark**.
7. **Add the Second Component**
 - Click **Add** to insert the donut chart into the dashboard.
8. **Save the Dashboard**
 - Click **Save** and then click **Done** to finalize your dashboard.



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.

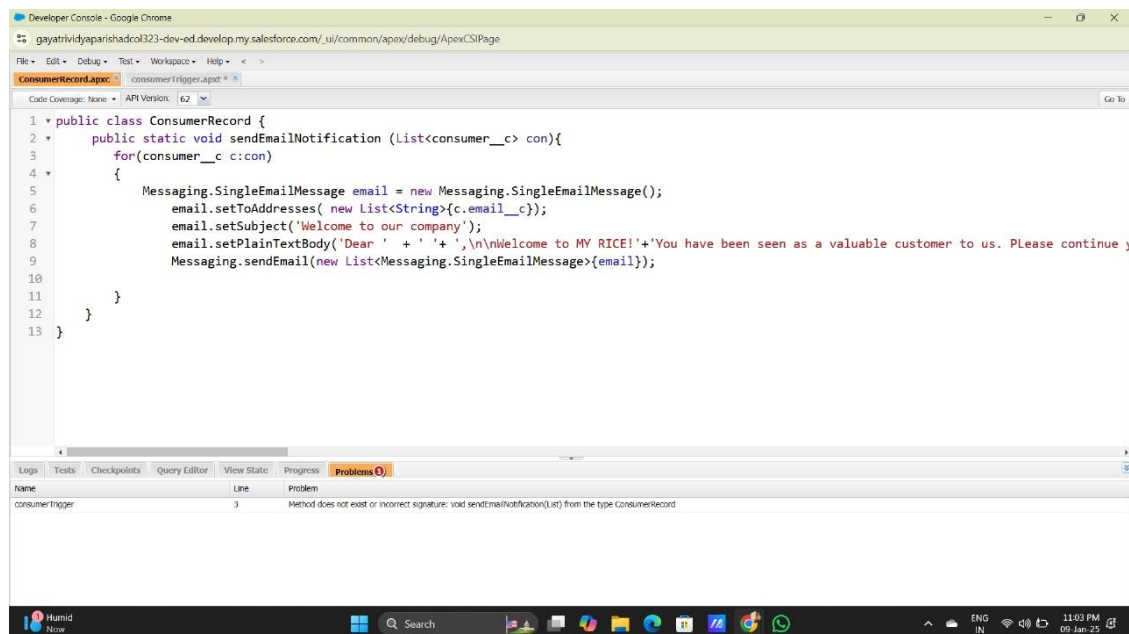
It is as similar as java i.e, it also supports OOP(Object oriented programming) like Classes, objects, methods.

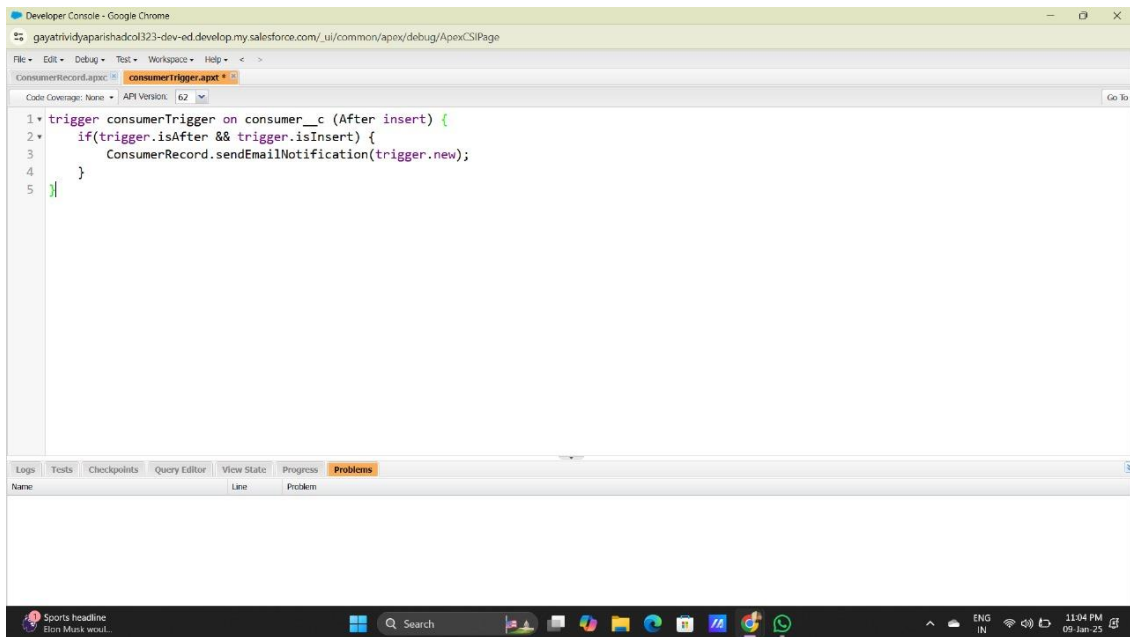
Creating Classes :

Apex classes are modeled on their counterparts in Java. You'll define, instantiate, and extend classes, and you'll work with interfaces, Apex class versions, properties, and other related class concepts.

- **Class:**
As in Java, you can create classes in Apex. A class is a template or blueprint from which objects are created. An object is an instance of a class.
- **Object**

Object is an instance of a class, where it can access all the properties that are present in a class i.e, variables and methods.





5. Testing and Validation

Testing is a critical component in ensuring that the Salesforce CRM implementation is robust, efficient, and meets the required business needs. The following types of testing were carried out:

Unit Testing:

- **Apex Classes and Triggers** were tested to handle edge cases and ensure they return accurate results.
- Achieved **>90% code coverage** to comply with Salesforce standards.

User Interface Testing:

- **Validated all forms and pages** across multiple browsers and devices.
- Ensured a **consistent user experience** and accurate data presentation across all platforms.

End-to-End Testing:

- Simulated real-world scenarios, such as:
 - Entering **daily production data**.
 - Generating **reports**.
 - Managing **inventory**.
- Confirmed that all functions work seamlessly and that the system meets the business requirements.

Code Snippet:

Here's a basic example of how email notifications are sent upon insertion of consumer records:

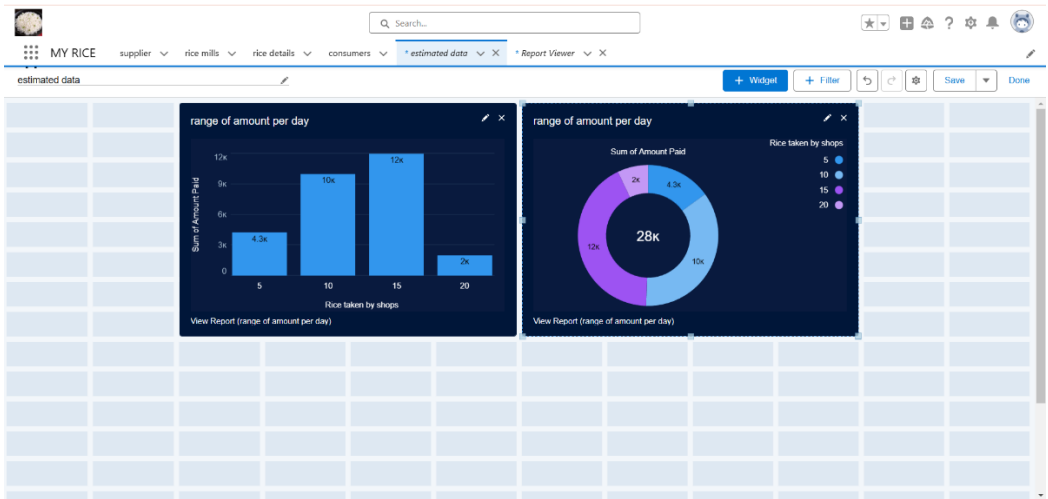
Apex Class - ConsumerRecord:

```
class ConsumerRecord {  
  
    public static void sendEmailNotification(List<Consumer> cons) {  
  
        for (Consumer c : cons) {  
  
            Messaging.SingleEmailMessage email = new Messaging.SingleEmailMessage();  
  
            email.setToAddresses(new List<String>{c.email});  
  
            email.setSubject('Welcome to our company');  
  
            email.setPlainTextBody('Dear ' + c.FirstName + ',\n\nWelcome to MY RICE! We  
value you as a customer and are excited to collaborate with you...');  
  
            Messaging.sendEmail(new List<Messaging.SingleEmailMessage>{email});  
  
        }  
  
    }  
  
}
```

Trigger Code - consumerTrigger:

```
trigger consumerTrigger on Consumer (After insert) {  
  
    if (trigger.isAfter && trigger.isInsert) {  
  
        ConsumerRecord.sendEmailNotification(trigger.new);  
  
    }  
  
}
```

This trigger sends a welcome email when a new **Consumer** record is inserted into the system.



MY RICE supplier rice mills rice details consumers * estimated data * range of amount per day

Report: rice mills with consumers
range of amount per day

Enable Field Editing

Total Records: 4 Total rice price/kg: 2,750 Total Amount Paid: 28,250.00

Rice taken by shops	rice mill: rice mill Name	consumer: consumer Name	Consumer Name	Rice type	rice price/kg	Mode of payment	Amount Paid
5 (1)	rice-004	consumers-004	Sanju Reddy	1.basmati	850	UPI	4,250.00
Subtotal					850		4,250.00
10 (1)	rice-002	consumers-002	Sanju Samson	1.basmati	1,000	Debit card	10,000.00
Subtotal					1,000		10,000.00
15 (1)	rice-003	consumers-003	Rohit Sharma	2.normal rice	800	UPI	12,000.00
Subtotal					800		12,000.00
20 (1)	rice-001	consumers-001	john singh	1.basmati	100	Credit card	2,000.00
Subtotal					100		2,000.00
Total (4)					2,750		28,250.00

Row Counts: ☒ Detail Rows: ☒ Subtotals: ☒ Grand Total: ☒

Mail Compose

Search mail

Active

Google

range of amount per day

As of 9/1/25 at 11:00 AM - Viewing as Yamini Reddipilli

OPEN IN SALESFORCE

Details

Filters

My rice mills rice mill: Created Date: All time

Summary

Total Records: 4 Total rice price/kg: 2,750 Total Amount Paid: 28,250.00

Rice taken by shops	rice mill: rice mill Name	consumer: consumer Name	Consumer Name	Rice type	rice price/kg	Mode of payment	Amount Paid
5 (1 record)	rice-004	consumers-004	Sanju Reddy	1.basmati	850	UPI	4,250.00
10 (1 record)	rice-002	consumers-002	Sanju Samson	1.basmati	1,000	Debit card	10,000.00
15 (1 record)	rice-003	consumers-003	Rohit Sharma	2.normal rice	800	UPI	12,000.00

Summary

Total Records	Total rice price/kg	Total Amount Paid
4	2,750	28,250.00

Rice taken by shops ↑	rice mill: rice mill Name	consumer: consumer Name	Consumer Name	Rice type	rice price/kg Sum	Mode of payment	Amount Paid Sum
5 (1 record)	rice-004	consumers-004	Sanju Reddy	1 basmati	850	UPI	4,250.00
					850		4,250.00
10 (1 record)	rice-002	consumers-002	Sanju Samson	1 basmati	1,000	Debit card	10,000.00
					1,000		10,000.00
15 (1 record)	rice-003	consumers-003	Rohit Sharma	2 normal rice	800	UPI	12,000.00
					800		12,000.00
20 (1 record)	rice-001	consumers-001	john singh	1 basmati	100	Credit card	2,000.00
					100		2,000.00
Grand Total (4 records)					2,750		28,250.00

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6. Key Scenarios Addressed by Salesforce in the Implementation Project

Salesforce played a crucial role in addressing several operational scenarios in the rice mill industry:

Scenario 1: Automated Reports

- **Daily reports** are automatically generated and sent to owners, summarizing **rice production, sales, and revenue trends**, which improves decision-making efficiency.

Scenario 2: Supplier Payment Calculations

- **Supplier payment details** are calculated automatically based on the rice supplied and price per kilogram, reducing manual effort and errors.

Scenario 3: Role-Based Dashboards

- Dashboards are role-based, allowing **owners, employers, and workers** to view relevant data, ensuring **security** and efficiency while keeping data access appropriate for each user role.

Scenario 4: Low Inventory Alerts

- **Alerts** notify managers of low inventory levels, ensuring **timely restocking** to prevent production delays and disruptions in operations.

Scenario 5: Customer Insights for Targeted Sales

- Salesforce provides insights into **customer preferences** and **purchasing behavior**, helping the business create **targeted sales strategies** for better customer engagement and increased revenue.

7. Conclusion

Summary of Achievements:

The implementation of the **CRM Application for Wholesale Rice Mill** has successfully addressed key business challenges, offering an integrated, automated, and user-friendly solution. Key accomplishments include:

- **Automated workflows and reports** that save time and reduce manual errors.
- **Real-time dashboards and analytics** that enhance decision-making capabilities for key stakeholders.
- **Streamlined data management** through the use of **rollup summary** and **cross-object formula fields**.
- **Role-based access controls** to ensure secure and efficient handling of data.

This project demonstrates the power of **Salesforce CRM** in transforming traditional business processes into efficient, data-driven operations. It serves as a strong foundation for scalable growth and operational excellence in the rice mill industry.