A CRM APPLICATION FOR WHOLESALE RICE MILL

BY

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Abstract:

This project is a customized CRM solution specifically designed for rice mill operations, helping to efficiently track daily production, sales, and revenue. It includes detailed reporting features, rollup summary fields to monitor rice supply, and cross-object formula fields for automating payment calculations. To ensure data accuracy, validation rules are implemented, while role-based permissions provide secure access to different user groups like owners, managers, and workers. Leveraging Salesforce CRM, the system improves operational efficiency and resource management, making it a valuable asset for rice mills.

11.	**Report** ● 11.1 Create Report ● 11.2 Sharing Report to Owner ● 11.3 Create a Report Folder	
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13.	**APEX** ● 13.1 Creating an Apex Class (ConsumerRecord) ● 13.2 Creating an Apex Trigger	

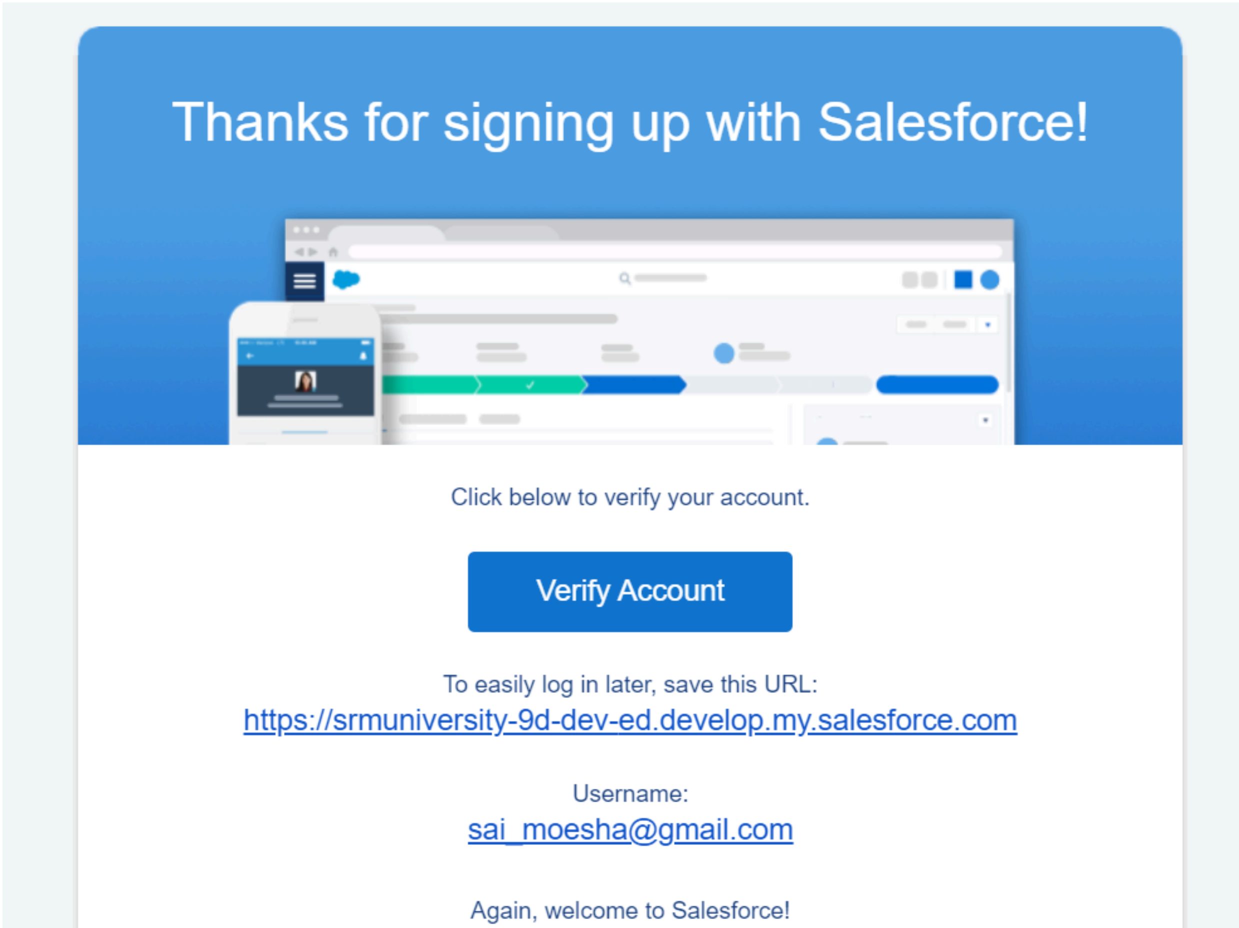
1. Introduction to Salesforce

1. Creating a Developer Account

- Visit [Salesforce Developer Signup]
- Fill in the required details (name, email, role, etc.) and click "Sign Me Up."

2. Account Activation

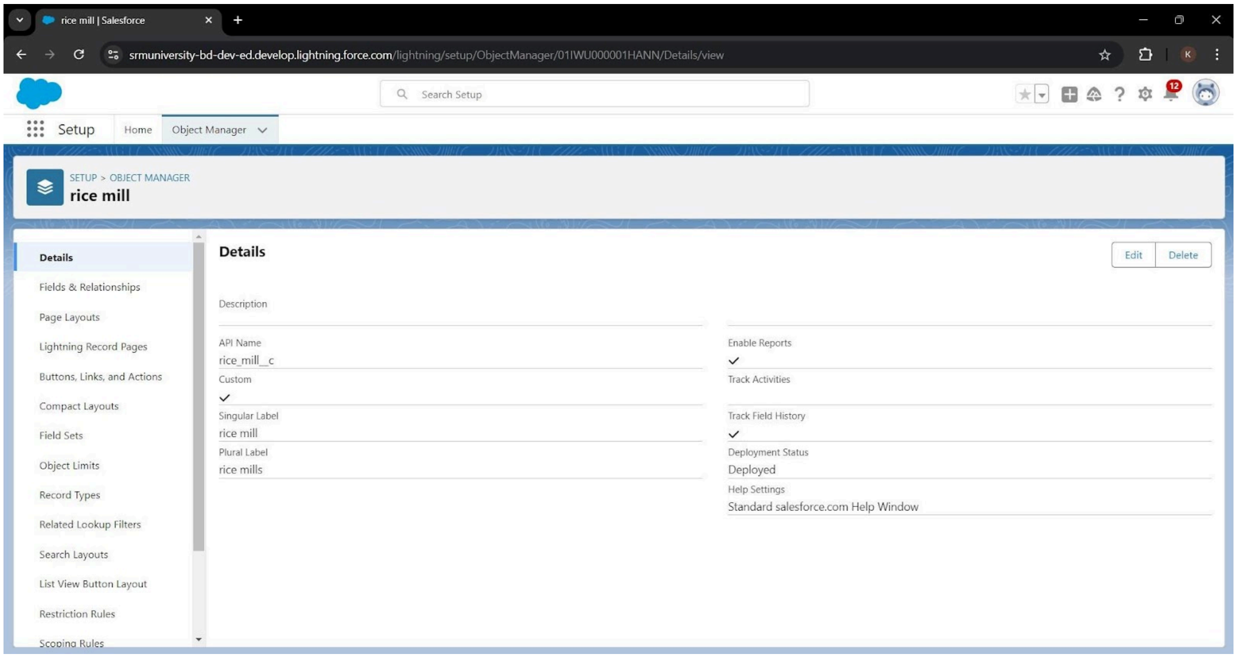
- Check your email, click "Verify Account," set your password, and complete the security question setup.



2. Create Objects

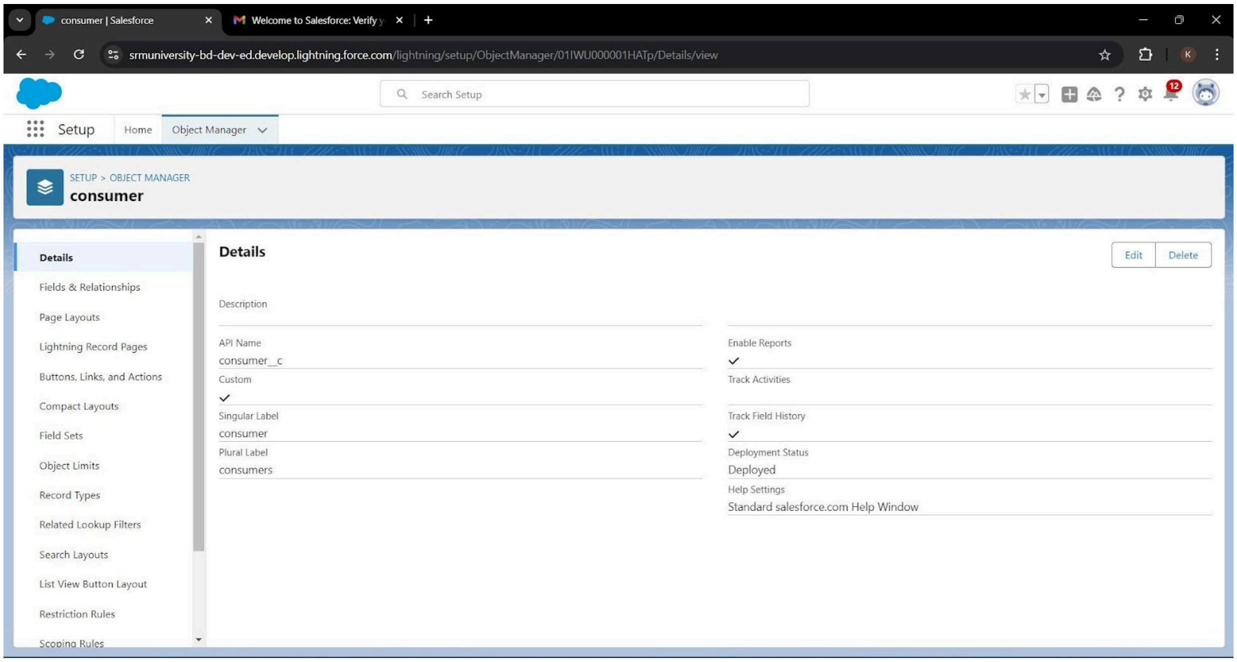
1. Rice Mill Object

- Go to **Setup** > **Object Manager** > **Create** > **Custom Object**
- Enter:
  - **Label Name**: Rice Mill
  - **Plural Label**: Rice Mills
  - **Record Name**: Auto Number (Format: rice-{000})
  - **Starting Number**: 1
- Enable **Reports**, **Track Field History**, and **Allow Search**
- Click **Save**.



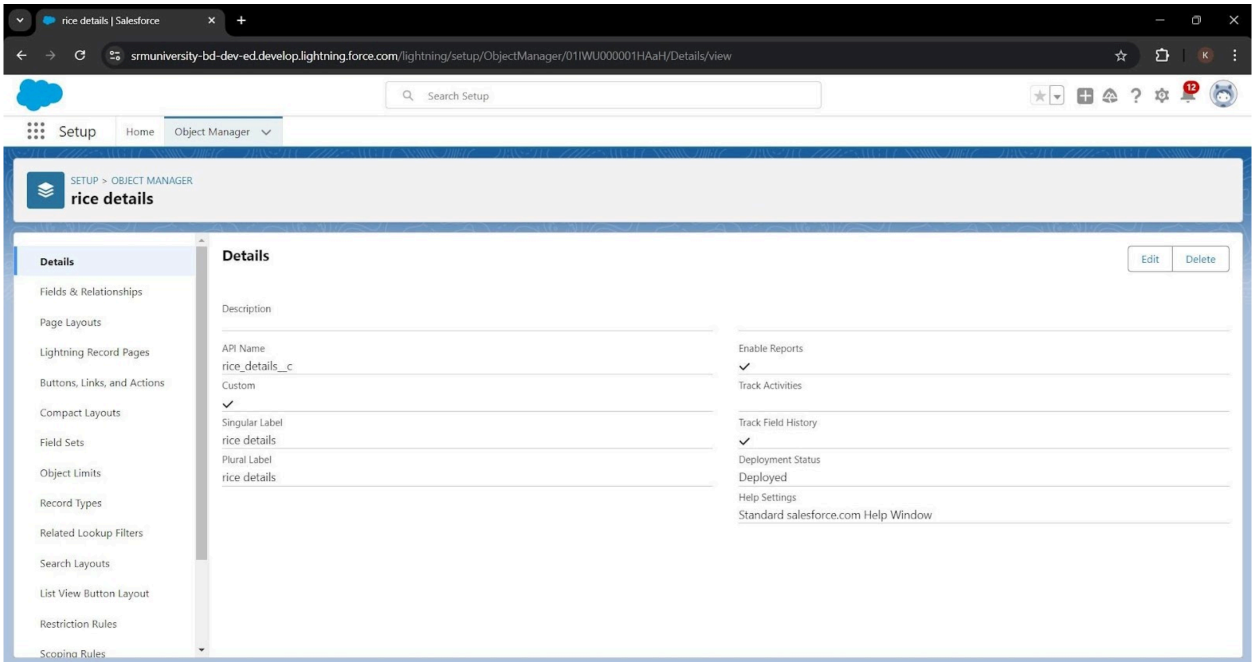
2. Consumer Object

- Same steps as Rice Mill Object
- Use:
  - **Label Name**: Consumer
  - **Plural Label**: Consumers
  - **Display Format**: consumers-{000}
  - **Starting Number**: 1



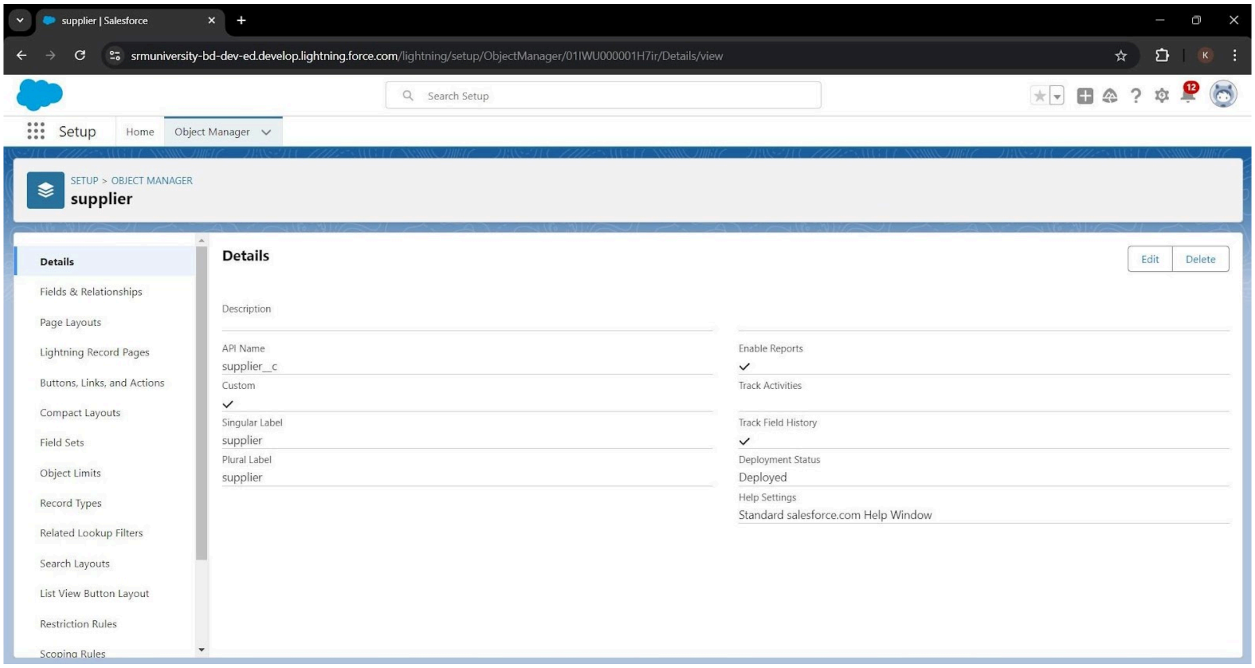
3. Rice Details Object

- Same steps as Rice Mill Object
- Use:
  - **Label Name**: Rice Details
  - **Plural Label**: Rice Details
  - **Display Format**: rice-{000}
  - **Starting Number**: 1



4. **Supplier Object**

- Same steps as Rice Mill Object
- Use:
    - **Label Name**: Supplier
    - **Plural Label**: Suppliers
    - **Record Name**: Supplier Name (Text)
- Enable **Reports**, **Track Field History**, and **Allow Search**
- Click **Save**.



3. Tabs

Tab: A UI element for creating and viewing object records.

Types of Tabs:

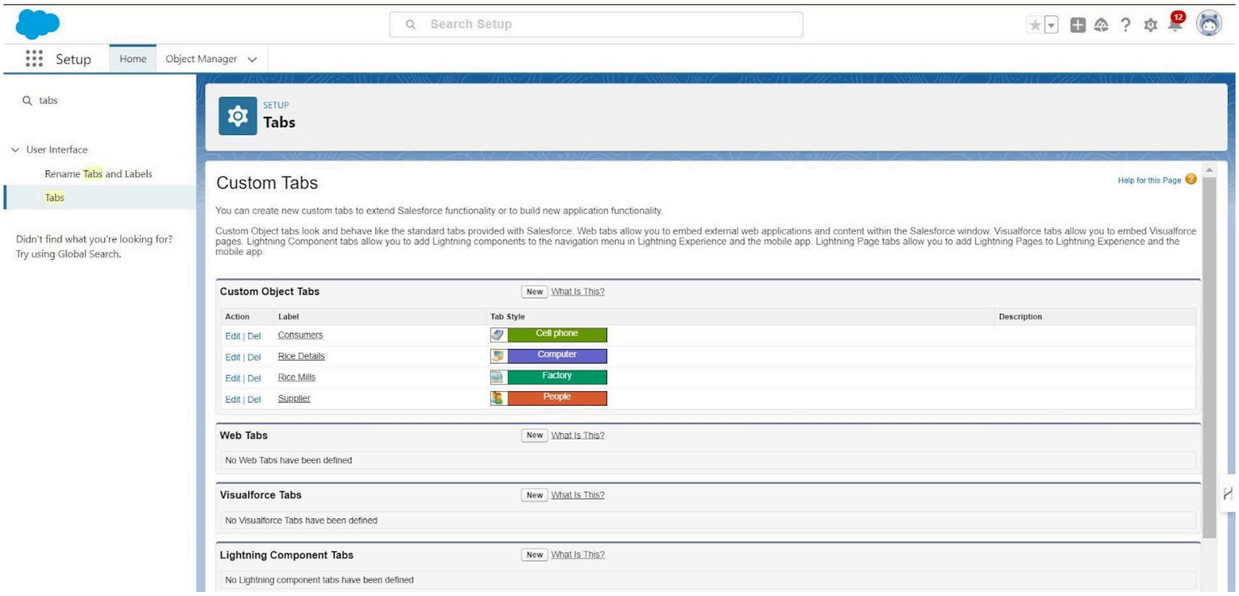
1. **Custom Tabs**: For custom objects, similar to standard tabs.
2. **Web Tabs**: Display external web content inside Salesforce.
3. **Visualforce Tabs**: Show custom Visualforce pages.
4. **Lightning Component Tabs**: Add Lightning components to the navigation.
5. **Lightning Page Tabs**: Add Lightning Pages to mobile app navigation.

1. Creating a Custom Tab (Supplier)

1. Go to **Setup** > search "Tabs" > click **Tabs** > **New** under Custom Object Tab.
2. Select **Supplier** object > choose a style > click **Next**.
3. Keep default settings > click **Next**.
4. Uncheck **Include Tab in Custom App**, ensure **Append Tab** is checked.
5. Click **Save**.

2. Creating Remaining Tabs

- Repeat the same steps for **Rice Mill**, **Consumer**, and **Rice Details**.



4. The Lightning App

A Lightning App bundles objects, tabs, and tools for easy access, with options for branding and a utility bar for quick navigation.

1. Create a Lightning App

1. **Access Setup:** Go to the Setup page and search for **App Manager** in the quick find box.
2. **Create New App:** Select **App Manager** and click on **New Lightning App**.

3. App Details:

- Enter the app name as **MY RICE** and click **Next**.
- Leave the App Options page as default and click **Next**.
- Keep the Utility Items as default and click **Next**.

4. **Upload Photo:** Upload a photo related to your app.

5. Add Navigation Items:

- Select items (Supplier, Rice Mill, Consumer, Rice Details) from the search bar and move them using the arrow button. Click **Next**.

6. Add User Profiles:

- Search for **System Administrator** in the search bar and click the arrow button to add it. Click **Save & Finish**.

5. Fields

In Salesforce, fields store data in the columns of a relational database, making it easier to search, delete, and edit records.

Types of Fields

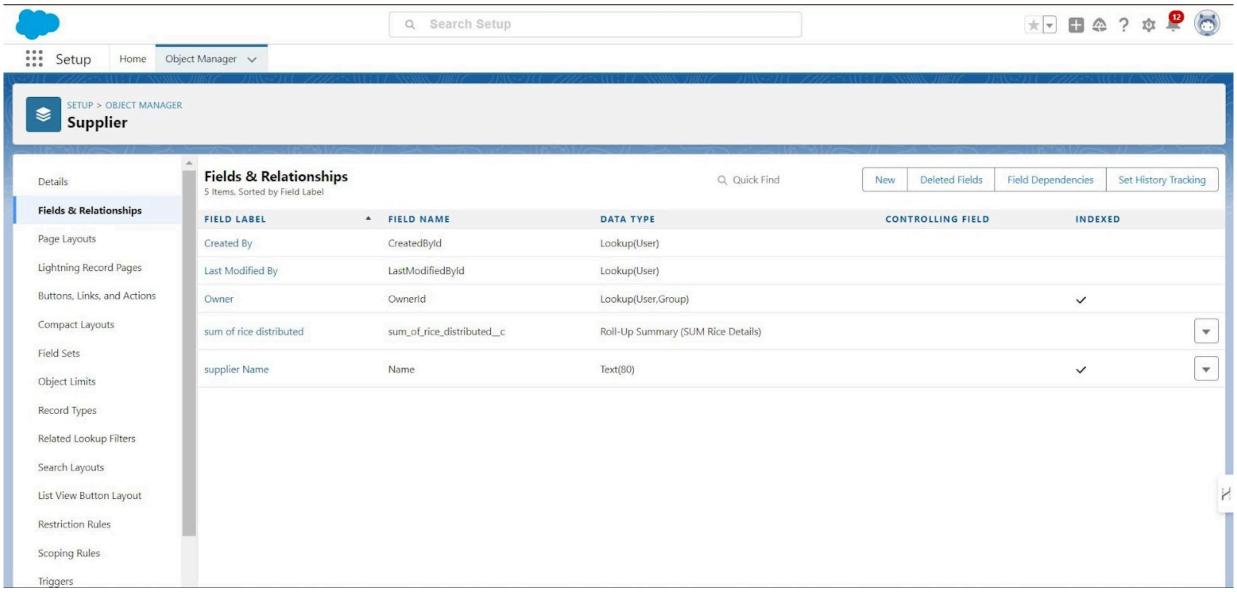
1. **Standard Fields:**
    - Predefined fields performing standard tasks.
    - Cannot be deleted if required; otherwise, they can be removed.
    - Common examples: Created By, Owner, Last Modified.
2. **Custom Fields:**
    - Flexible fields that users can modify as needed.
    - Users can choose to add or remove them from records.

1. Creating the Number Field in Rice Details Object

1. Go to **Setup** > **Object Manager** > **Edit** for the **Rice Details** object.
2. Click **Fields & Relationships** > **New**.
3. Select **Number** as the data type and click **Next**.
4. Enter **Field Label** as **Rice Distributed** (length: 5) and click **Next** > **Next** > **Save**.

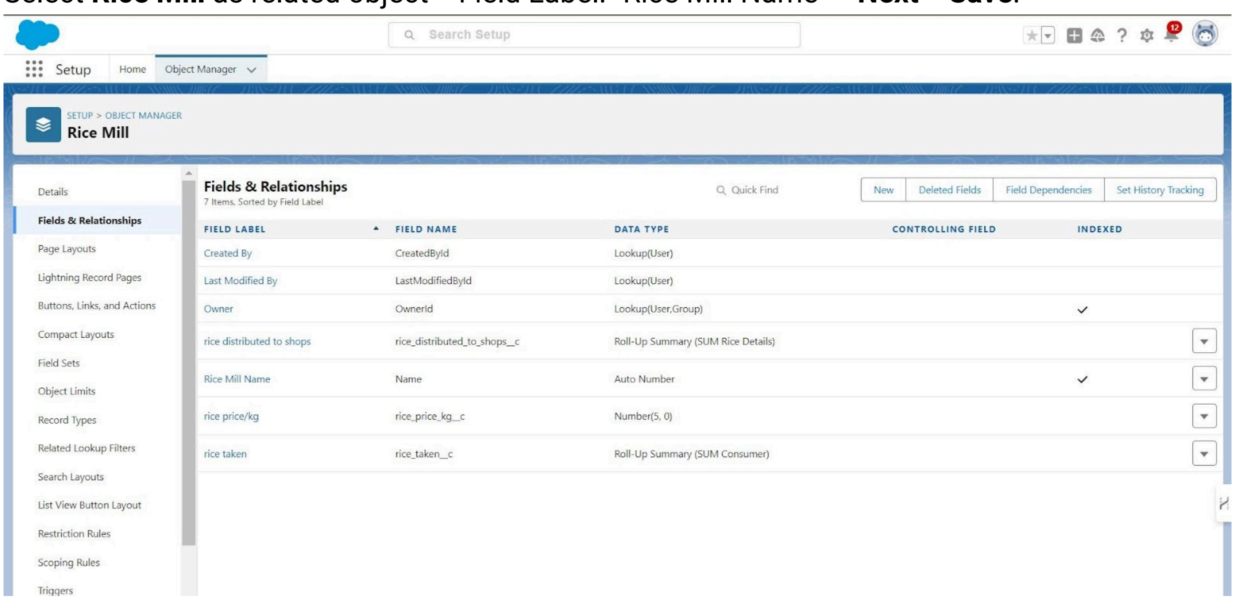
2. Creating Junction Object

1. Go to **Setup** > **Object Manager** > edit **Rice Details** object.
2. Click **Fields & Relationships** > **New** > select **Master-Detail** relationship.
3. Select related object as **Supplier** > Field Label: "Supplier Name" > **Next** > **Save**.
4. Repeat for **Rice Mill** object with label "Rice Mill 1".



3. Creating a Master-Detail Relationship

1. Go to **Setup** > **Object Manager** > edit **Consumer** object.
2. Click **Fields & Relationships** > **New** > select **Master-Detail** relationship.
3. Select **Rice Mill** as related object > Field Label: "Rice Mill Name" > **Next** > **Save**.

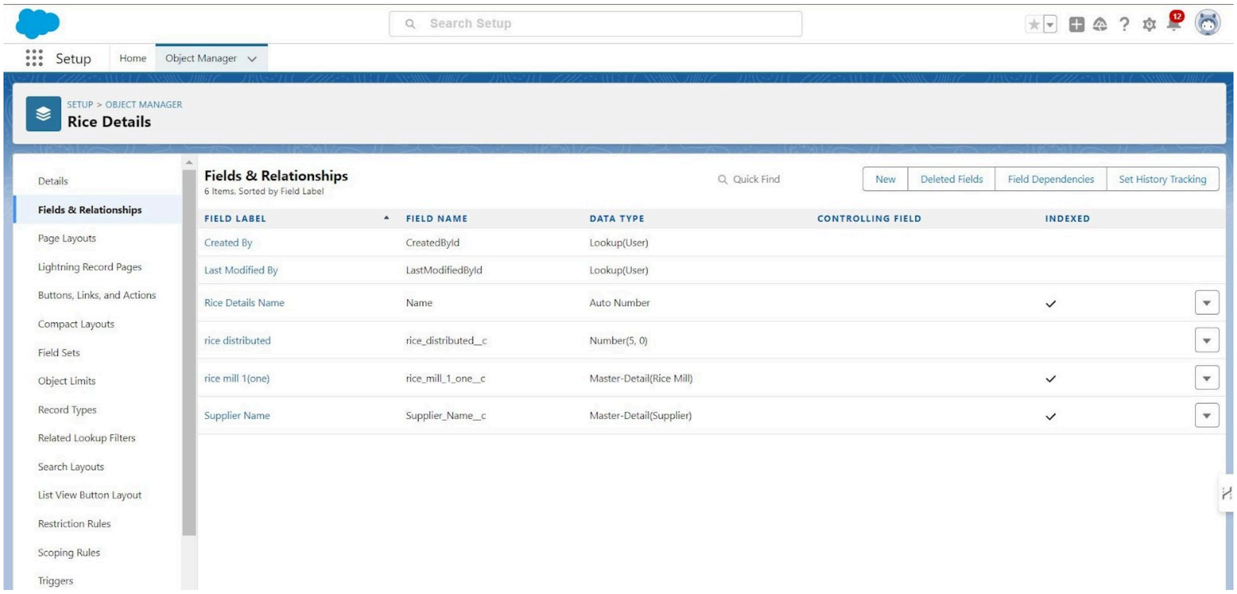


4. Creating Roll-Up Summary Field

1. Go to **Setup** > **Object Manager** > select **Supplier** > **Fields & Relationships** > **New**.
2. Select **Roll-Up Summary** > Field Label: "Sum of Rice Distributed".
3. Select summarized object as **Rice Details** > Roll-up type: **Sum** > field to aggregate:

Rice Distributed.

4. Repeat for **Rice Mill** object.



5. Creating Fields in Rice Details Object

1. Go to **Setup** > **Object Manager** > **Edit** for the **Rice Details** object.
2. Click **Fields & Relationships** > **New**.
3. Select **Data Type** as **Master-Detail** and click **Next**.
4. Enter **Field Label** as **Supplier Name** (Length: 5).
5. Field Name will auto-populate; click **Next** > **Next** > **Save**.

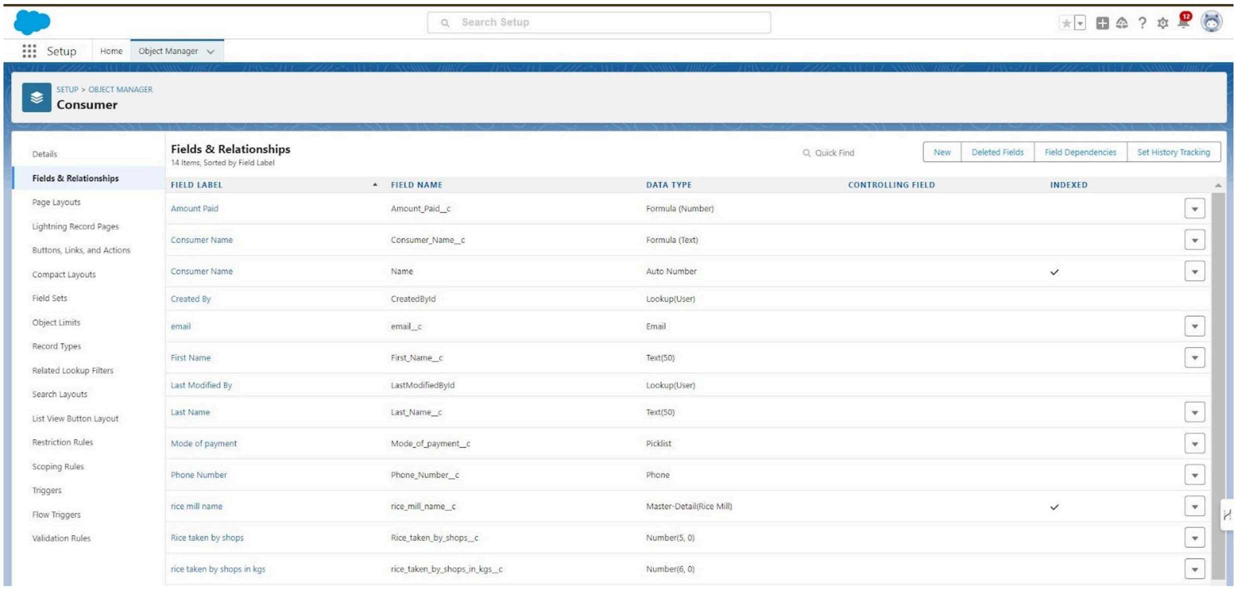
6. Creating Fields in Rice Mill Object

1. Go to **Setup** > **Object Manager** > **Edit** for the **Rice Mill** object.
2. Click **Fields & Relationships** > **New**.
3. Select **Number** as the data type and click **Next**.
4. Enter **Field Label** as **Rice Price/kg** (length: 5) and click **Next** > **Next** > **Save**.

7. Creating Fields in Consumer Objects

- First Name: **Text**
- Last Name: **Text**
- Phone Number: **Phone**
- Email: **Email**
- Rice Taken by Shops: **Number (5)**

- Rice Type: **Picklist (Basmati, Normal Rice)**
- Mode of Payment: **Picklist (Credit Card, Debit Card, Net Banking, UPI, Cash)**



8. Creating Cross-Object Formula Field in Consumer Object

1. Go to **Setup** > **Object Manager** > edit **Consumer** object.
2. Click **Fields & Relationships** > **New** > select **Formula** > Formula return type: **Number**.
3. Field Label: "Amount Paid" > Formula: `rice_taken_by_shops_c * rice_mill_name_r.rice_price_kg_c`.
4. Click **Check Syntax** > **Save**.

9. Creating Validation Rule (Phone Number & Email)

1. Go to **Setup** > **Object Manager** > edit **Consumer** object.
2. Click **Validation Rules** > **New**.
3. Rule Name: "Phonenumberoremailblankrule" > Formula: `OR(ISBLANK(phone_number_c), ISBLANK(email_c))`.
4. Error Message: "Please fill in your phone number" > Error location: "Top of page" > **Save**.

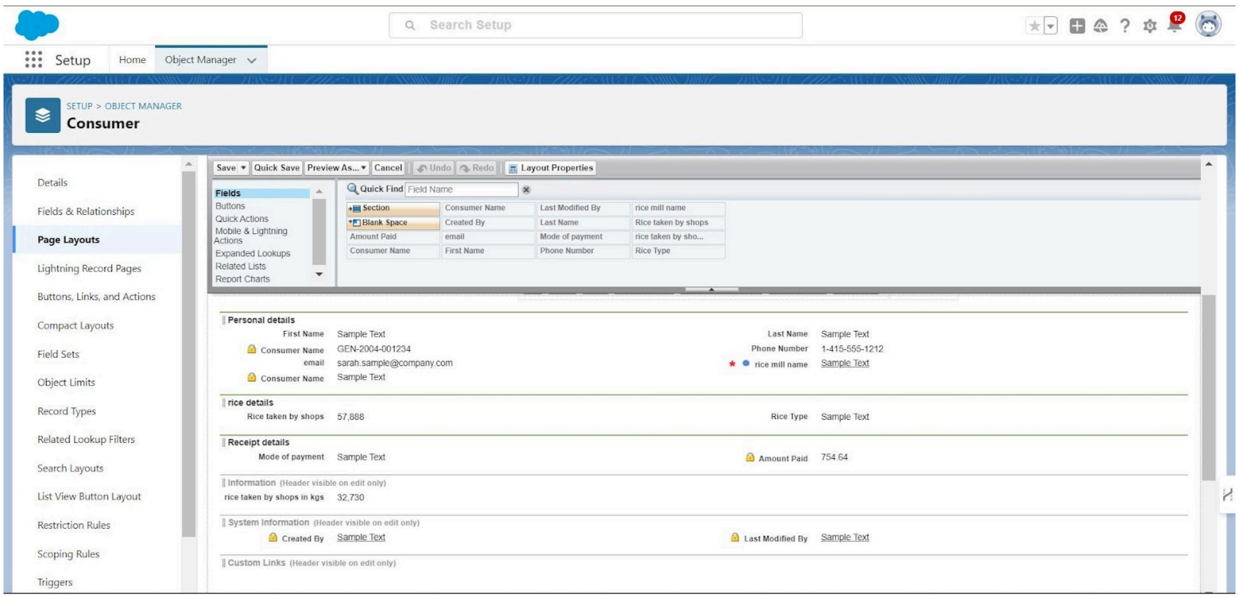
6. Page Layouts

Page Layouts in Salesforce let us customize the design and arrangement of detail and edit pages for records. They control how fields, related lists, and custom links are displayed for both standard and custom objects, improving the user interface and experience.

1. Creating a Page Layout

To create a Page Layout:

1. Go to **Setup** > **Object Manager**.
2. Search for and select the **Consumer** object.
3. Click on **Page Layouts** > **New**.
4. Choose an existing layout, name it "**Consumer Layout**," and click **Save**.
5. Drag and drop fields into the section named **Personal Details**: First Name, Last Name, Consumer Name, Phone Number, Email, Rice Mill Name.
6. Create another section called **Rice Details** and add: Rice Taken by Shop, Rice Type.
7. Create a final section called **Receipt Details** and add: Mode of Payment, Amount Paid.
8. Click **Save**.



7. Profiles

A profile is a set of settings and permissions that determine what users can do within the system. It controls object and field access, app settings, and login restrictions. Profiles can be tailored to specific job roles, such as System Administrator or Sales Representative.

Types of

Profiles

Standard

Profiles:

- Default profiles provided by Salesforce (e.g., Contract Manager, Read Only, Marketing User, Standard User, System Administrator).
- Cannot be deleted and come with default permissions for standard objects.

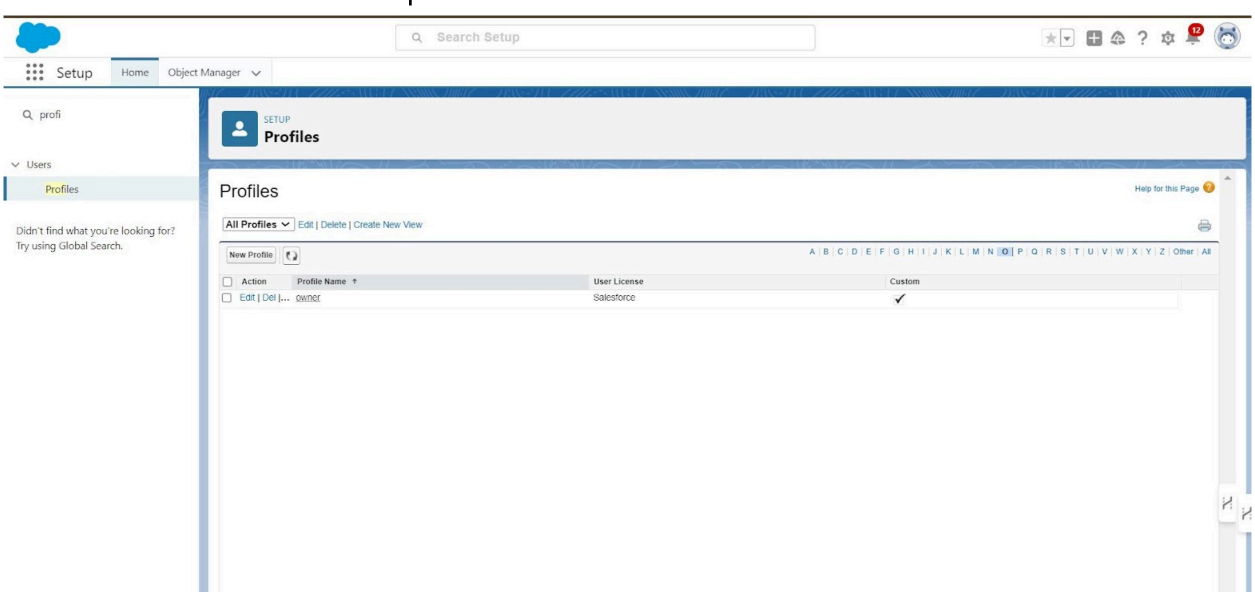
Custom Profiles:

- Defined by users and can be deleted if not assigned to any users.

1. Owner Profile

To create a new Owner Profile:

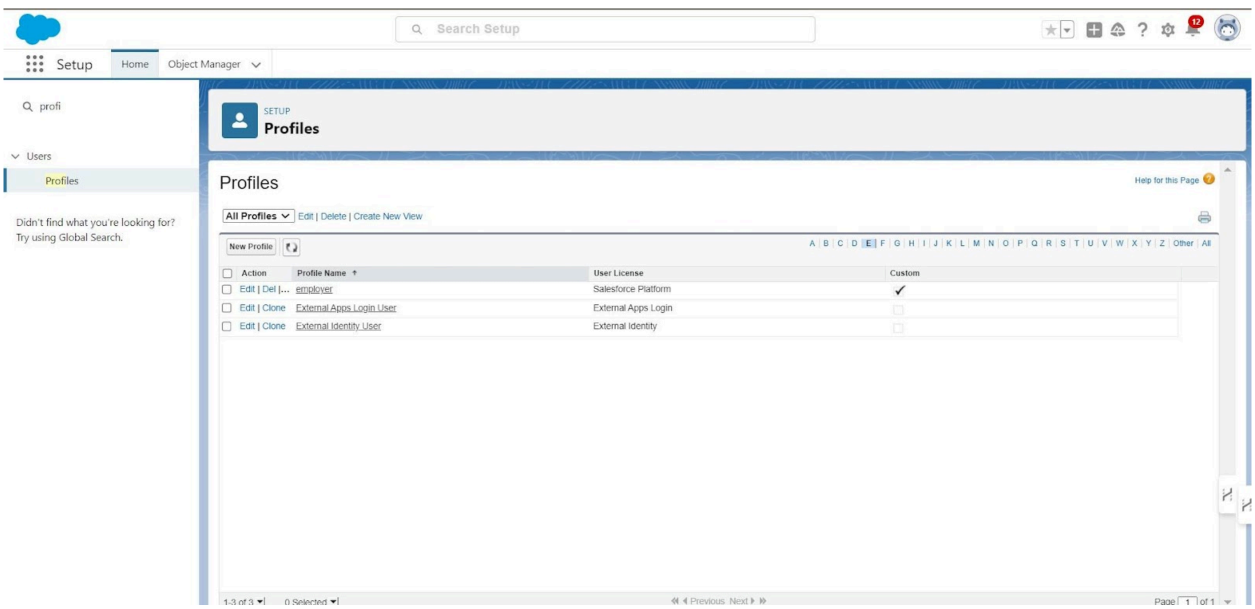
1. Go to **Setup** and type **Profiles** in the Quick Find box.
2. Click on **Profiles** and clone the desired profile (e.g., **Standard User**).
3. Enter the profile name as **Owner** and click **Save**.
4. Scroll down to **Custom Object Permissions** and grant access permissions for the following objects:
    - Consumers
    - Rice Details
    - Rice Mill
    - Suppliers
5. Click **Save** to finalize the permissions.



2. Employer Profile

To create a new Employer Profile:

1. Go to **Setup** and search for **Profiles**.
2. Clone the **Standard Platform User** profile and name it **Employer**. Click **Save**.
3. Click **Edit** and set the **Custom App Settings** to default for the Rice Mill.
4. In **Custom Object Permissions**, grant access for:
    - Consumers
    - Rice Details
    - Rice Mill
    - Suppliers
5. Click **Save**.

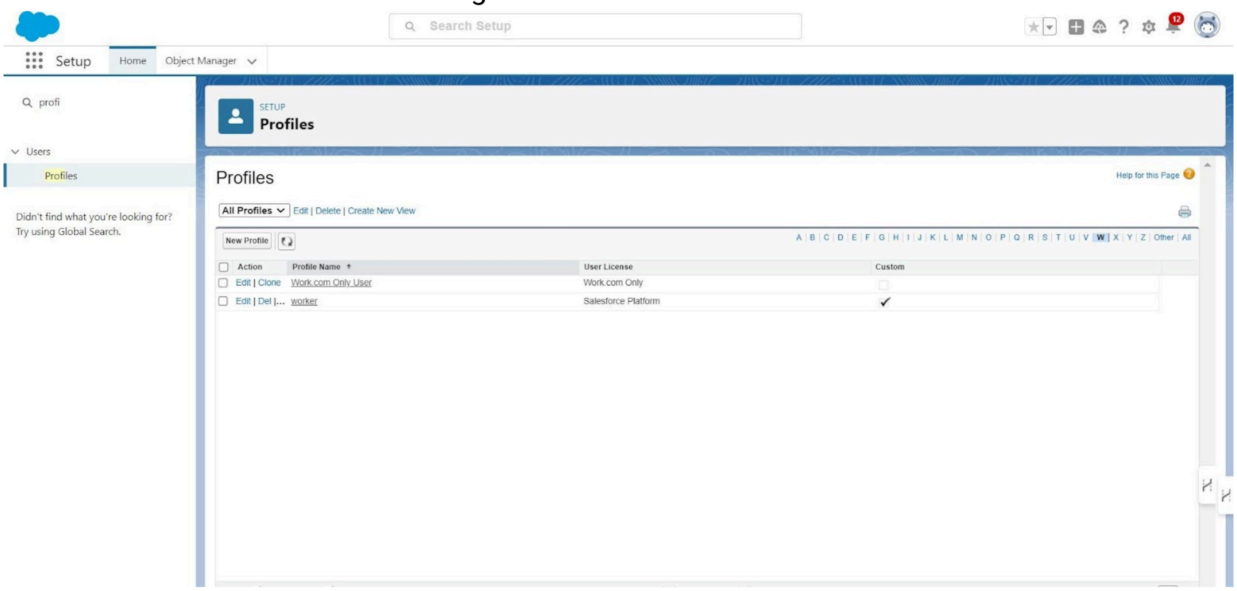


3. Worker Profile

To create a new Worker Profile:

1. Go to **Setup** and search for **Profiles**.
2. Clone the **Standard Platform User** profile and name it **Worker**. Click **Save**.
3. Click **Edit** on the profile page.
4. Set the **Custom App Settings** to default for the Rice Mill.

5. In **Custom Object Permissions**, grant access for:
    - Consumers
    - Rice Details
    - Rice Mill
    - Suppliers
6. Click **Save** to finalize the changes.



8. Role & Role Hierarchy

In Salesforce, a role determines a user's visibility and access to records. Roles specify the level of data access, controlling what users can view within the organization. They manage data visibility and sharing based on a user's position in the role hierarchy.

1. Creating Owner Role

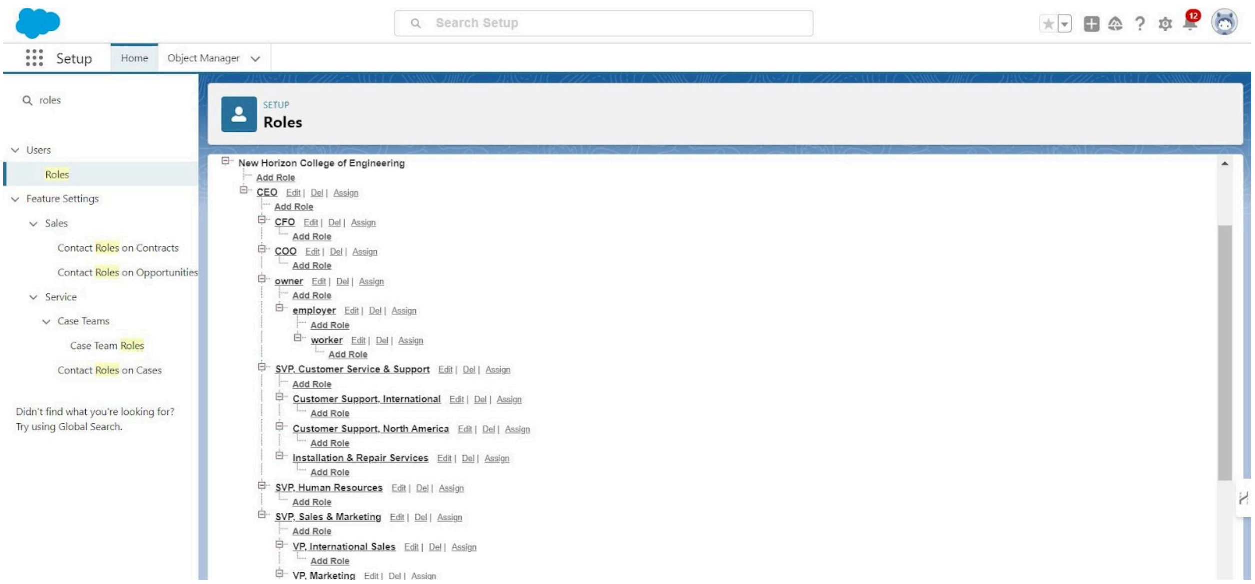
To create an Owner Role:

1. Go to **Quick Find** and search for **Roles**.
2. Click on **Setup Roles**.
3. Click **Expand All** and then click **Add Role** under the relevant parent role.
4. Enter **Owner** as the label (Role name auto-populates).
5. Click **Save**.

2. Creating Employer Roles

To create Employer and Worker roles under Manager:

1. Go to **Quick Find** and search for **Roles**.
2. Click on **Setup Roles**.
3. Click the **plus (+)** next to the **CEO** role and select **Add Role** under **Owner**.
4. Enter **Employer** as the label (Role name auto-populates) and click **Save**.
5. Repeat the process: click the **plus (+)** next to **CEO**, then under **Owner**, click the **plus (+)** next to **Employer** and select **Add Role**.
6. Enter **Worker** as the label (Role name auto-populates) and click **Save**.



9. Users

A user in Salesforce is anyone who logs into the platform, such as sales reps, managers, and IT specialists. Each user has an account that identifies them and defines their access to features and records within the system.

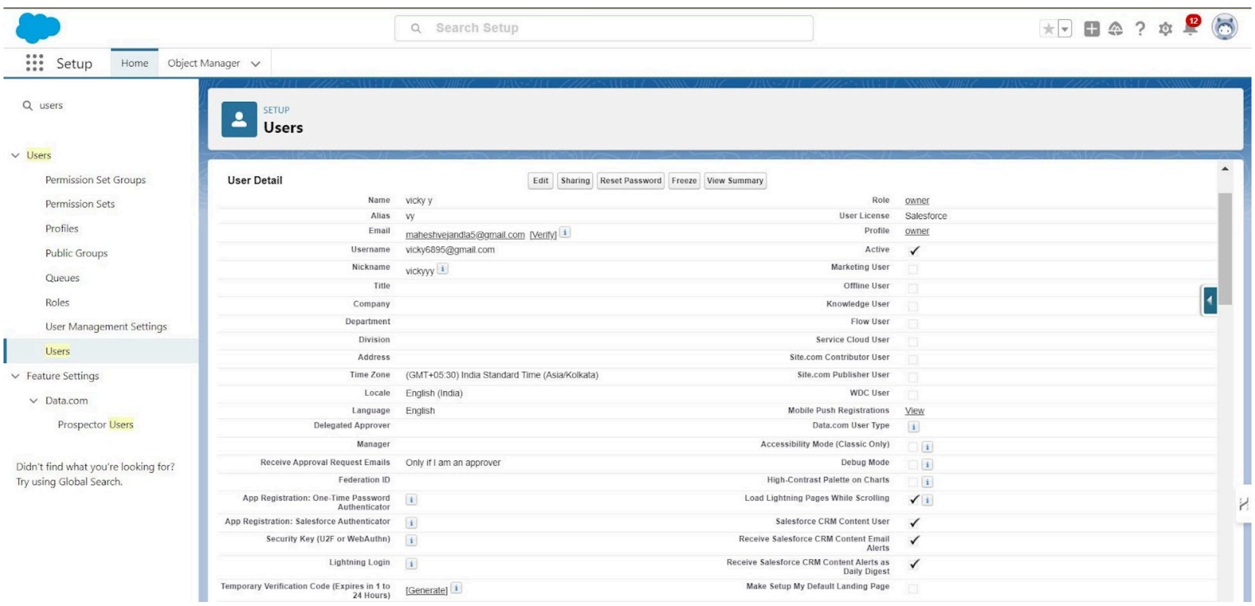
1. Create User

To create a new user:

1. Go to **Setup** and type **Users** in the Quick Find box.
2. Select **Users** and click **New User**.
3. Fill in the fields:
    - **First Name:** Vicky

- **Last Name:** Y
- **Alias:** (Enter an alias)
- **Email:** (Enter your personal email)
- **Username:** (Use the format text@text.text)
- **Nickname:** (Enter a nickname)
- **Role:** Owner
- **User License:** Salesforce
- **Profile:** Owner

4. Click **Save**.



2. Creating Another User

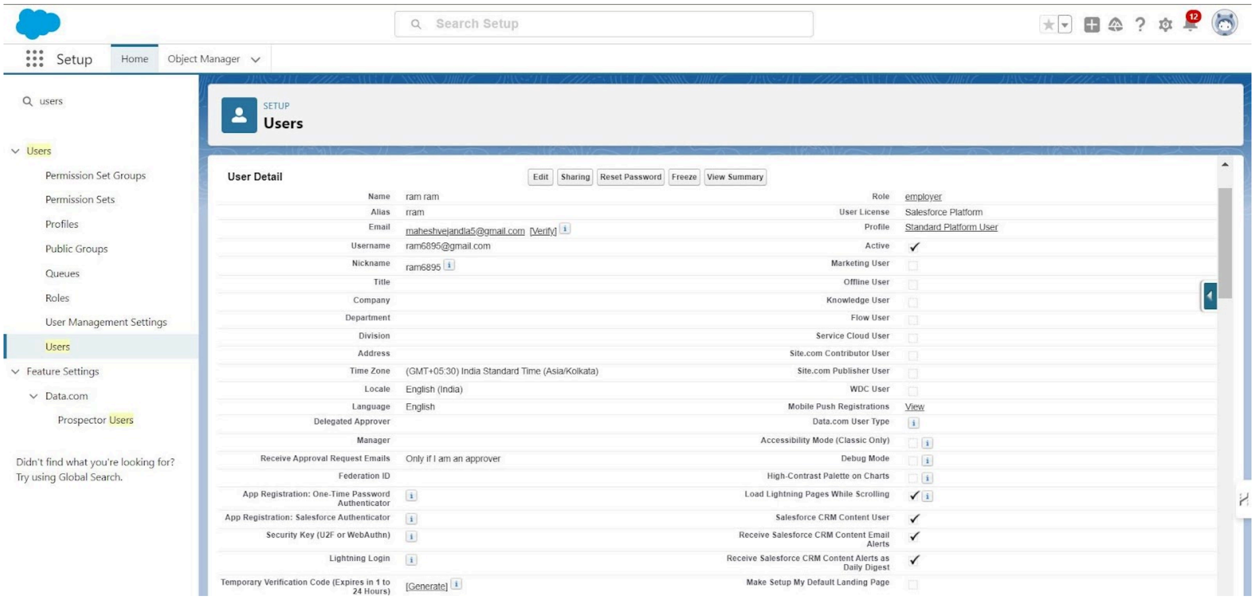
To create another user:

1. Go to **Setup** and type **Users** in the Quick Find box.
2. Select **Users** and click **New User**.
3. Fill in the fields:

- **First Name:** Ram
- **Last Name:** Ram
- **Alias:** (Enter an alias)
- **Email:** (Enter your personal email)
- **Username:** (Use the format text@text.text)
- **Nickname:** (Enter a nickname)
- **Role:** Employer

- **User License:** Salesforce Platform
- **Profile:** Standard Platform User

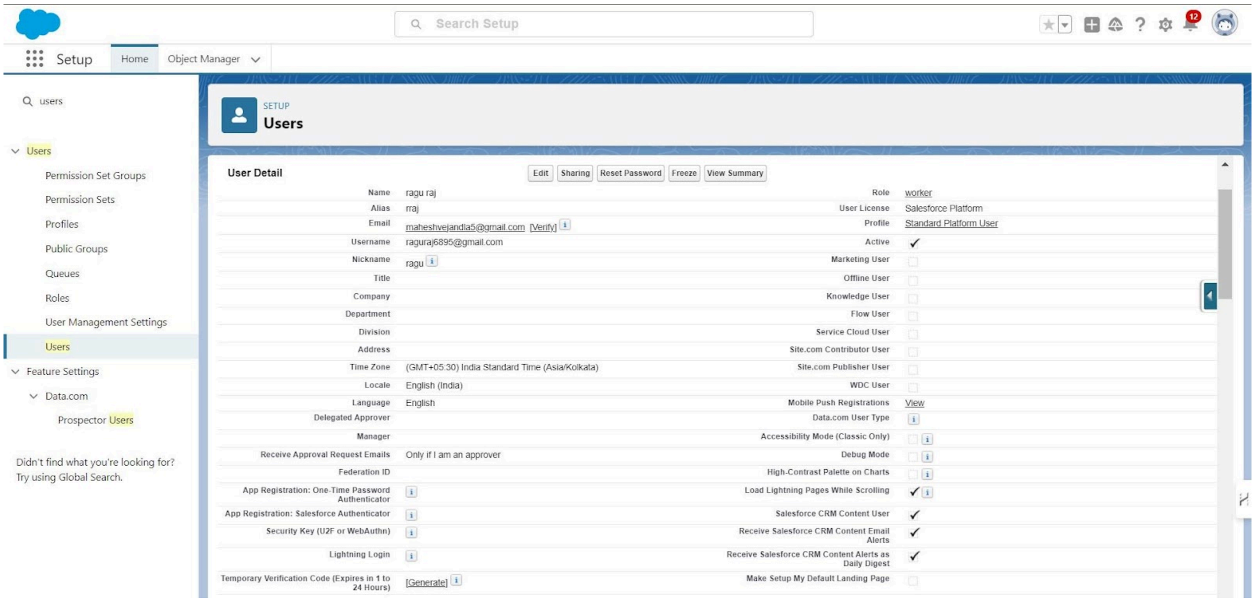
4. Click **Save**.



3. Creating Another User

To create another user:

1. Go to **Setup** > **Users**.
2. Click **New User**.
3. Fill in the fields:
   - **First Name:** Ragu
   - **Last Name:** Raj
   - **Alias:** (Enter an alias)
   - **Email:** (Enter your personal email)
   - **Username:** (Format: text@text.text)
   - **Nickname:** (Enter a nickname)
   - **Role:** Worker
   - **User License:** Salesforce Platform
   - **Profile:** Standard Platform User
4. Click **Save**.



10. Permission Sets

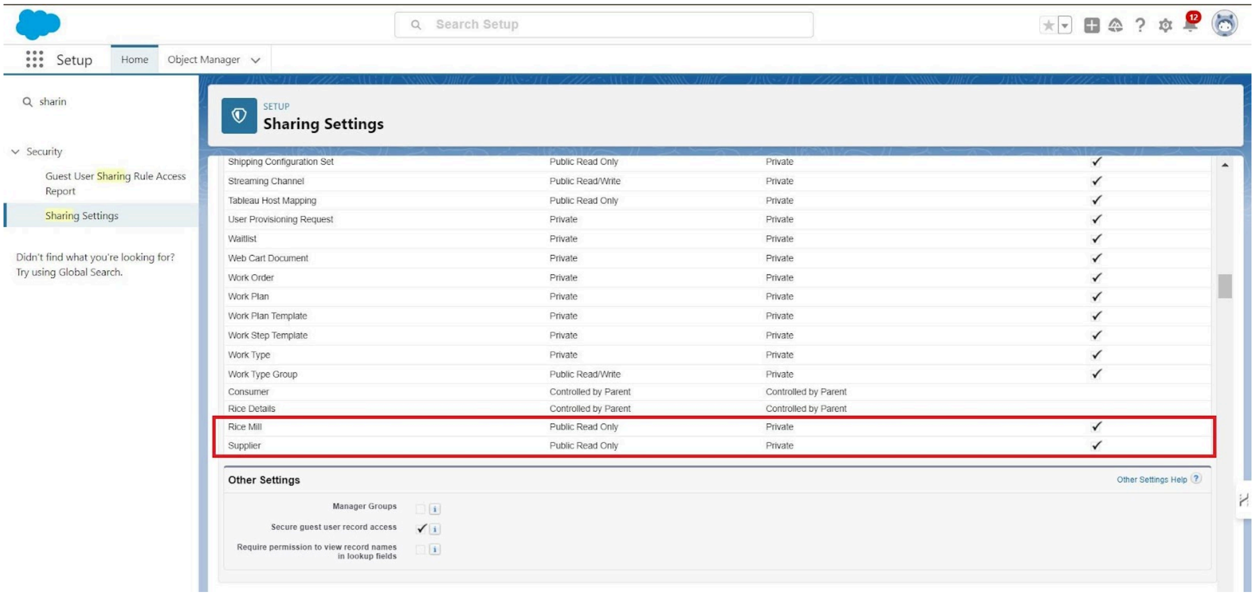
A permission set is a collection of settings and permissions that gives users access to specific tools and functions. It extends access without changing user profiles and is the recommended way to manage user permissions.

1. Creating OWD Settings

To create OWD settings:

1. Go to **Setup** and type **Sharing Settings** in the Quick Find box.
2. Click **Edit**.
3. Scroll down and change the default internal access to **Public Read-Only** for the Rice Mill and Supplier objects.
4. Click **Save**.

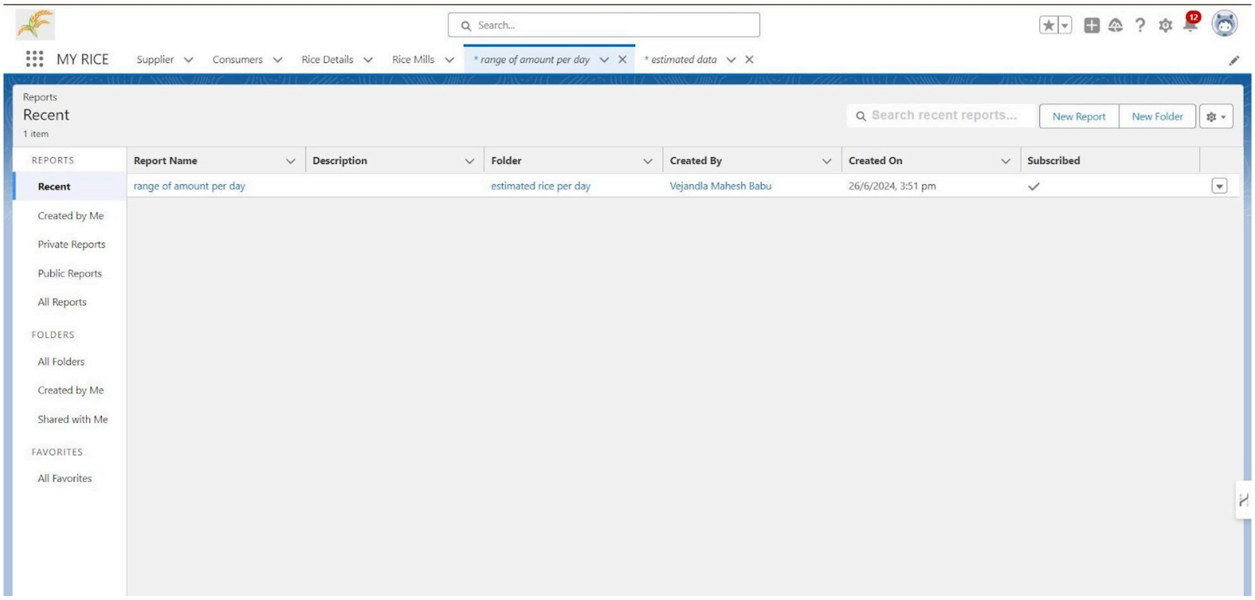
Note: Each profile has its own access. In this case, roles are structured so that the owner can see employer and worker records, while the employer can see worker records.



11. Report

1. Create Report

1. **Prepare Data:** Create the latest **10** records in the Consumer object, filling in every field.
2. Go to the app and click on the **Reports** tab.
3. Click **New Report**.
4. Search for the report type **Rice Mill with Consumers**, click on it, and then click **Start Report**.
5. In the Outline pane, select the following fields for the columns:
   - Consumer Name
   - Rice Type
   - Rice Price/kg
   - Mode of Payments
   - Amount Paid
6. Remove unnecessary fields.
7. In the **GROUP ROWS** section, select:
   - Rice Taken by Shops
8. Click **Save and Run**, naming the report **Range of Amount per Day** and saving it.



2. Sharing Report to Owner

1. Click the **Edit** dropdown and select the **Subscribe** option.
2. Follow the prompts as per the provided image.
3. In the **Run Report** section, select **Another Person** and choose your personal account or the intended recipient.
4. Click **Save**.

Note: The owner will receive daily email notifications of the Rice Mill report, allowing them to view all data remotely.

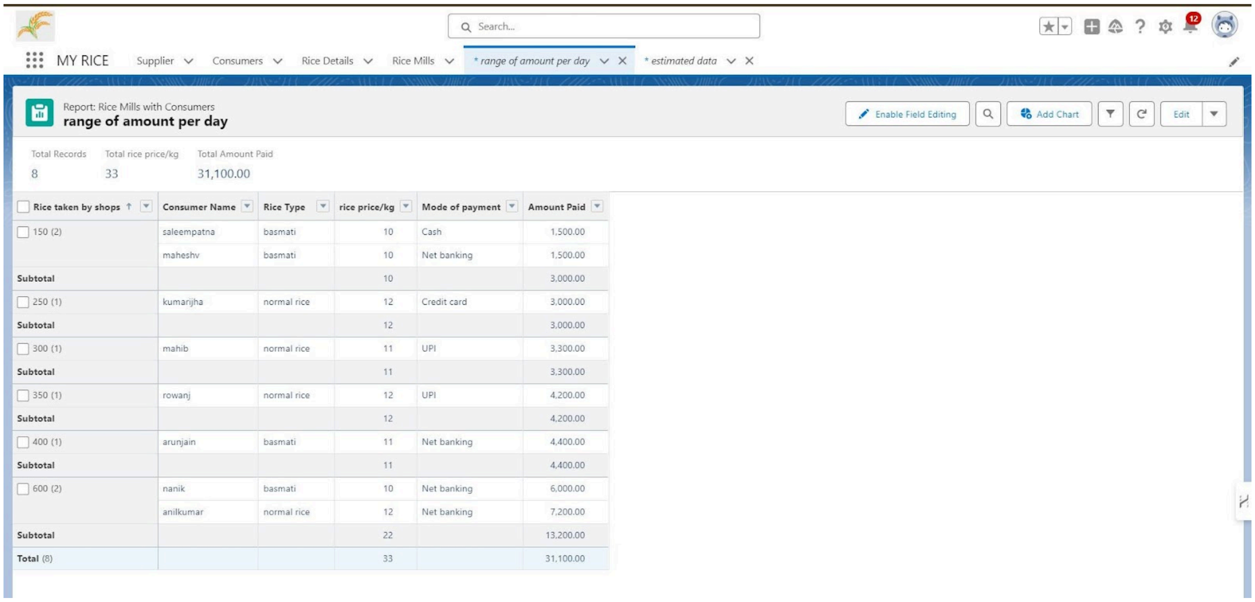
3. Create a Report Folder

1. Click on the **App Launcher** and search for **Reports**.
2. Double-click on the report; the **Reports** tab will auto-populate in the navigation bar.
3. Click on the **Reports** tab and select **New Folder**.
4. Enter the folder label as **Estimated Rice per Day** (the unique name will auto-populate).
5. Click **Save**.

Move Report to the New Folder

1. Navigate to the **App Launcher** and click on **Reports**.
2. Click **All Reports**.
3. Select the **Range of Amount per Day** report and click **Move**.
4. Choose the **Estimated Rice per Day** folder and confirm the selection.

Note: To view the report, go to **Reports** > **All Folders** > **Estimated Rice per Day**; your report will be listed there.



12. Dashboards

Dashboards offer a visual representation of changing business conditions, helping users make decisions based on real-time data from reports. They enable users to identify trends, quantify data, and measure the impact of their activities. Understanding the basic principles of dashboards is crucial before creating, reading, or sharing them.

1. Create Dashboard Folder

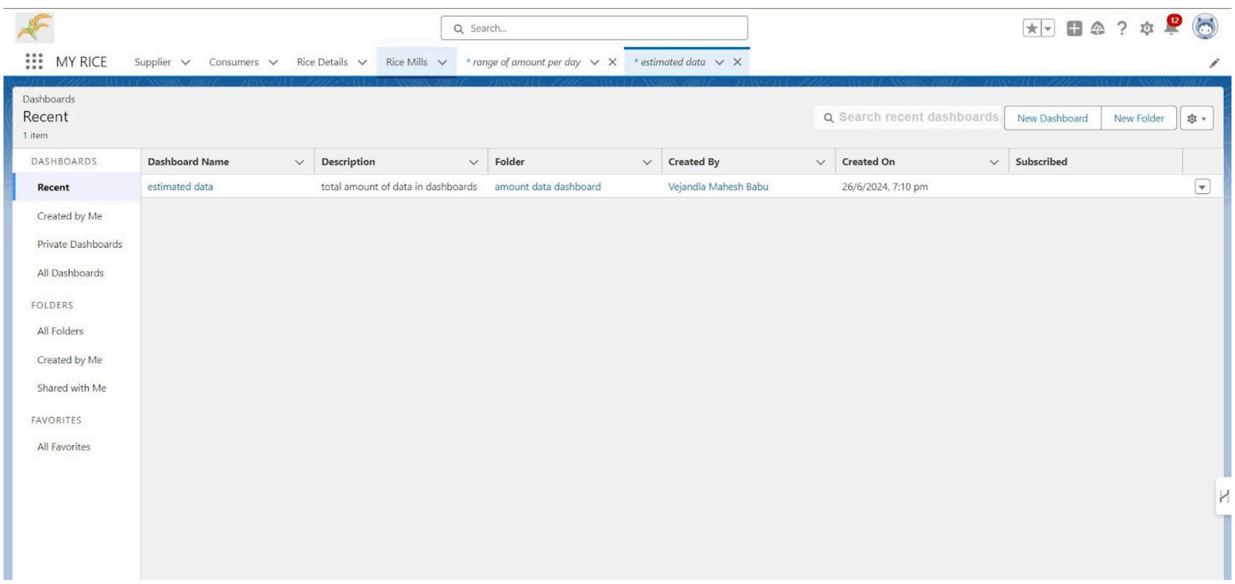
1. Click on the **App Launcher** and search for **Dashboards**.
2. Click on the **Dashboards** tab.
3. Select **New Folder** and enter the folder label as **Amount Data Dashboard** (the unique name will auto-populate).
4. Click **Save**.

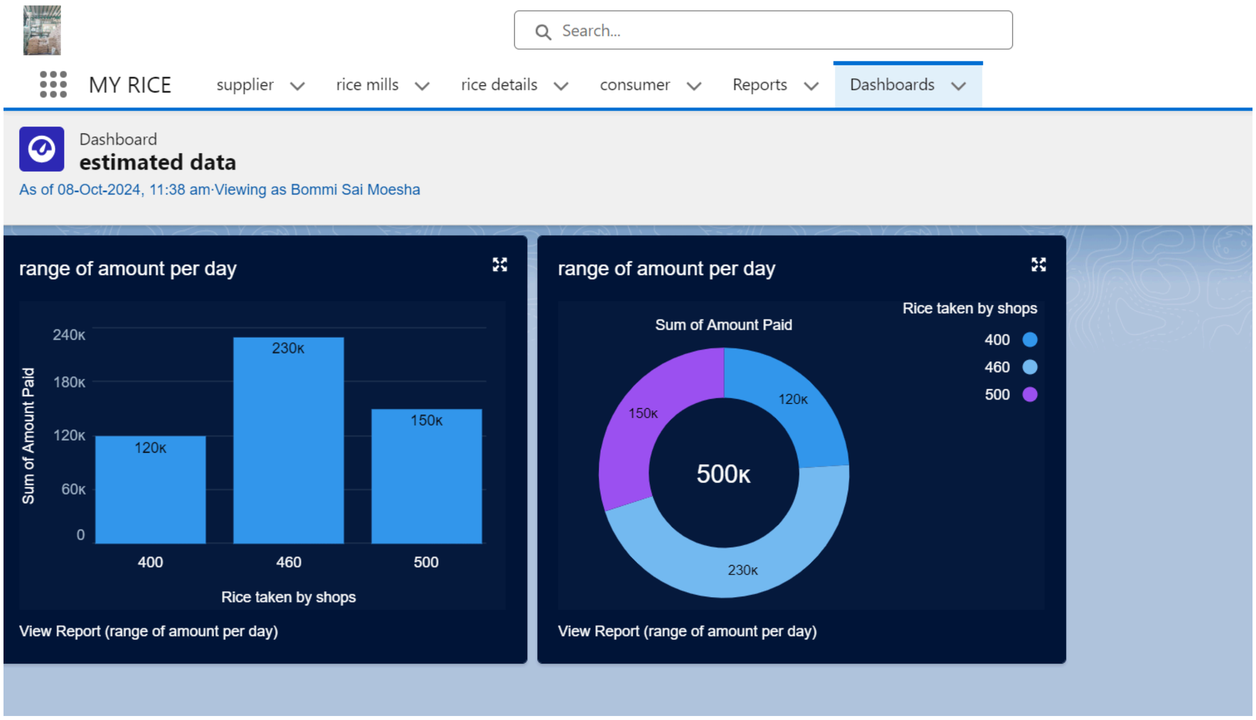
2. Create Dashboard

1. Go to the app and click on the **Dashboards** tab.
2. Enter a **Name** for the dashboard and select the folder you created, then click **Create**.
3. Click **Add Component**.
4. Select a report and click **Select**.
5. Configure the first component:

- **Display as:** Vertical Bar Chart
- **X-Axis:** Rice Taken by Shops
- **Y-Axis:** Sum of Amount
- **Y-Axis Range:** Automatic
- **Sort by:** Rice Taken by Shops
- **Component Theme:** Dark

6. Click **Add**.
7. Repeat the above steps for the second component:
    - **Display as:** Donut Chart
    - **Sort by:** Sum of Amount
    - **Title:** Range of Amount per Day
    - **Component Theme:** Dark
8. Click **Add**.
9. Click **Save** and then **Done**.





13. APEX

Apex is a strongly typed, object-oriented programming language similar to Java, enabling developers to execute flow and transaction control statements on the Lightning platform server. It allows adding business logic to system events like button clicks and record updates. Apex can also be triggered by web service requests and system triggers.

Key Concepts

- **Classes:** In Apex, classes serve as templates from which objects are created. You can define, instantiate, and extend classes, as well as work with interfaces and properties.
- **Objects:** An object is an instance of a class that can access all the properties (variables and methods) defined in that class.

1. Creating an Apex Class (ConsumerRecord)

1. **Log In:** Log in to your Salesforce account and click the gear icon in the top right corner.
2. **Access Developer Console:** Select **Developer Console** from the dropdown.
3. **Create New Class:**
    - Click on **File** > **New** > **Apex Class**.

- Enter the class name **ConsumerRecord**.

4. **Code Snippet:**

Write the code to define the `ConsumerRecord` class and include a method for sending email notifications to consumers.

5. **Save the Class.**

2. Creating an Apex Trigger

1. **Log In:** While still in your Salesforce account, click on the gear icon in the top right corner.
2. **Access Developer Console:** Click on **Developer Console** to open a new console window.
3. **Create New Trigger:**
   - Click on the **File** menu in the toolbar and select **New** > **Trigger**.
   - Enter the trigger name and specify the object to be triggered.
4. **Trigger Syntax:**

The syntax for creating a trigger is as follows:

```
Trigger [trigger name] on [object name] (Before/After event) {
//Trigger Logic }
```

5. **Trigger Code:**

Write the trigger to execute after a consumer record is inserted and call the method to send email notifications.

6. **Save the Trigger.**