



A CRM APPLICATION TO ENGINEERING WORKS



A PROJECT REPORT

Submitted by

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IN

COMPUTER SCIENCE AND ENGINEERING

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RVS TECHNICAL CAMPUS - COIMBATORE

(An Autonomous Institution)

Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai.

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BONAFIDE CERTIFICATE

Certified that this project report "**A CRM APPLICATION TO ENGINEERING WORKS**" is the bonafide work of **KAVIYAPANDISRI SPJC (712921104020)**, **ISWARYA S (712921104017)**, **LOGASRI A (712921104025)** and **VINODINI S(712921104702)** who carried out this project under my supervision.

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Submitted to the Project Viva-Voce Examination held on.....

INTERNAL EXAMINER

EXTERNAL EXAMINER

Abstract

The customer relationship management (CRM) systems to streamline operations and enhance customer satisfaction. This paper presents the design and development of a CRM application tailored specifically for engineering works. The proposed system integrates various functionalities that enable engineering firms to efficiently manage client interactions, project workflows, communications, and service delivery. It provides tools for tracking customer inquiries, managing project timelines, storing engineering specifications, and analyzing client feedback. By automating routine tasks and centralizing client data, the CRM application aims to improve decision-making, optimize resource allocation, and foster long-term client relationships. The application also offers real-time reporting and analytics, helping businesses gain insights into their customer base, project progress, and operational efficiency. The study highlights the potential impact of CRM solutions in transforming engineering firms' approach to customer service, collaboration, and business growth. The paper concludes with recommendations for implementing the CRM system to ensure a seamless integration into existing business processes, ensuring maximum value and scalability for engineering firms.

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Project Overview

To develop a robust CRM application that streamlines client relationship management, project tracking, and resource allocation for engineering firms. This application will enhance operational efficiency, improve client satisfaction, and support business growth by providing a centralized platform for managing critical business processes.

1. Objectives

• Client Management:

- Centralized database for storing client details.
- Client interaction history, including emails, meetings, and calls.
- Automated follow-ups and reminders.

• Project Management:

- Dashboard for tracking project progress and timelines.
- Task assignment and status tracking.
- Gantt charts for project planning and visualization.

• Resource Management:

- Monitor allocation of engineers and technical staff to various projects.
- Inventory tracking for tools, machinery, and materials.

• Quotations and Invoicing:

- Generate quotes for engineering projects based on client requirements.
- Manage invoices and payment status.

• Reporting and Analytics:

- Real-time insights into project performance.
- Financial summaries and profitability analysis.
- Customizable reports for decision-making.

• Integration Capabilities:

- Integration with CAD software for seamless project designs.
- Compatibility with accounting tools like QuickBooks.
- API support for third-party applications.

- **Mobile and Web Accessibility:**

- Responsive design for desktop, tablet, and mobile use.
- Offline mode for field engineers to access essential data.

Detailed Stepsto Solution Design

A CRM APPLICATION TO ENGINEERING WORKS:

Hardware Required:

Windows 8 machine

Software Required:

Install with two web browser

System Required:

Bandwidth of 30mbps

An application is required to efficiently manage client information for engineering projects, encompassing details such as company information, owner details, contact information, worker details, and their respective requirements for materials, including measurements. Additionally, the application should automatically calculate the price based on the specified materials and measurements. The available works in Engineering Works comprise Fabrication, Shed Construction, and Pipe Lining. Within the Fabrication work, various processes are involved, namely Drilling, Welding, Cutting, and Folding. Similarly, the shed-work involves the construction of the sheds, and Pipe Lining involves pipe repairing and replacing. These processes are integral to the fabrication workflow and need to be accurately tracked and managed within the application.

Step1:Milestone 1-Salesforce developer account creation :

1.Creating Developer Account

Creating a developer org in salesforce.

1. Go to <https://developer.salesforce.com/signup>
2. On the sign up form, enter the following details :

Build enterprise-quality apps fast to bring your ideas to life

- Build apps fast with drag and drop tools
- Customize your data model with clicks
- Go further with Apex code
- Integrate with anything using powerful APIs
- Stay protected with enterprise-grade security
- Customize UI with clicks or any leading-edge web framework

Sign up for your Salesforce Developer Edition
A full-featured copy of the Platform, for free

Complete the form to start your free trial. Our team will be in touch to help you make the most of your trial.

First Name* Last Name*

Email*

Role*

Company*

1. First name & Last name
2. Email
3. Role : Developer
4. Company : College or Company Name
5. County : India
6. Postal Code : pin code
7. Username : should be a combination of your name and company

This need not be an actual email id, you can give anything in the format :

username@organization.com

Click on sign me up after filling these

Step2:AccountActivation

1. Goto the inbox of the email that you used while signing up. Click on the verify account to activate your account. The email may take 5-10 mins.
2. Click on Verify Account

Give a password and answer a security question and click on change password.



Change Your Password

Enter a new password for lead@sb.oom.
Make sure to include at least:

- ✓ 8 characters
- ✓ 1 letter
- ✓ 1 number

* New Password
 Good

* Confirm New Password
 Match

Security Question
 In what city were you born?

* Answer
 asdfghjkl

Change Password

3. Go to the inbox of the email that you used while signing up. Click on the verify account to activate your account. The email may take 5-10 mins.
 4. Click on Verify Account
 5. Give a password and answer a security question and click on change password.
6. Then you will redirect to your salesforce setup page.

Change Your Password

Enter a new password for lead@sb.oom.
Make sure to include at least:

- 8 characters
- 1 letter
- 1 number

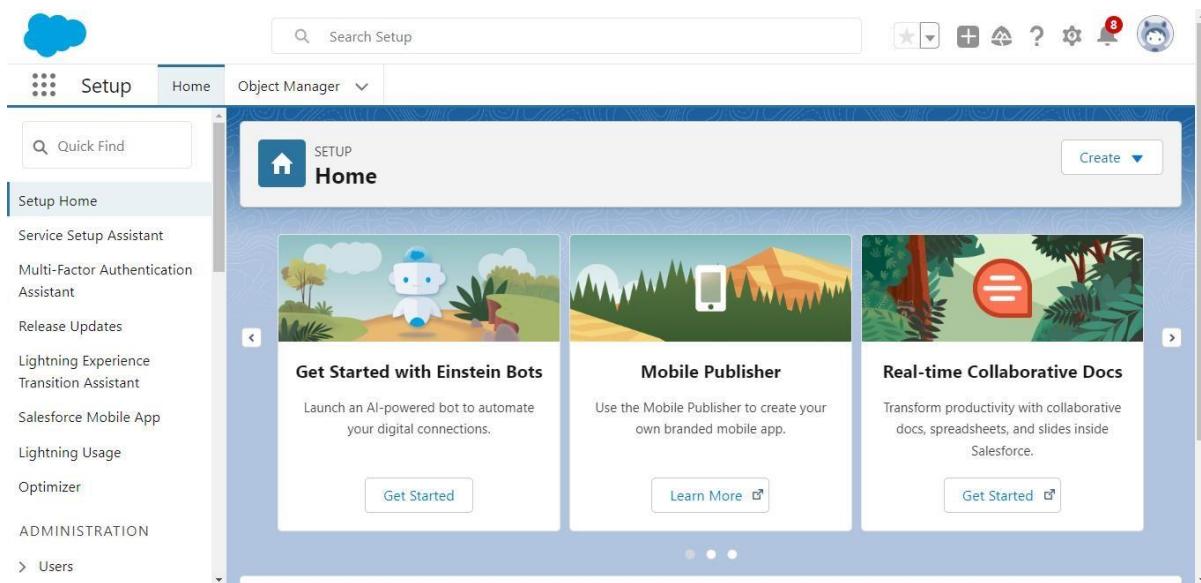
* New Password
..... Good

* Confirm New Password
..... Match

Security Question
▼ In what city were you born?

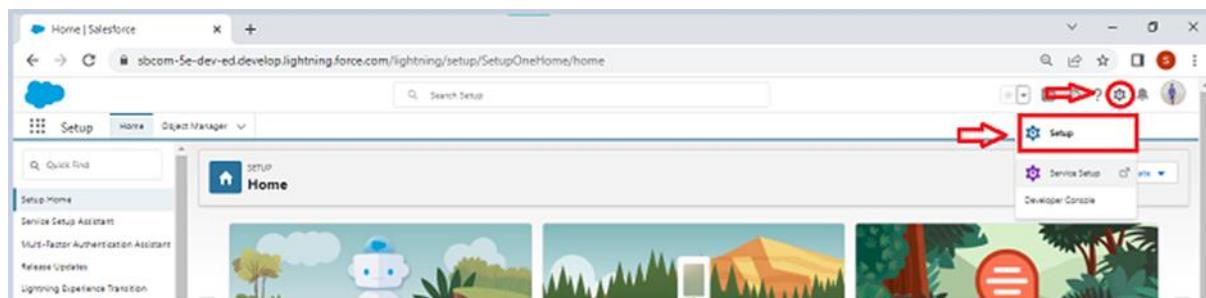
* Answer
asdfghjkl

Change Password



Step 3: Milestone 2- Object :

To Navigate to Setup page:

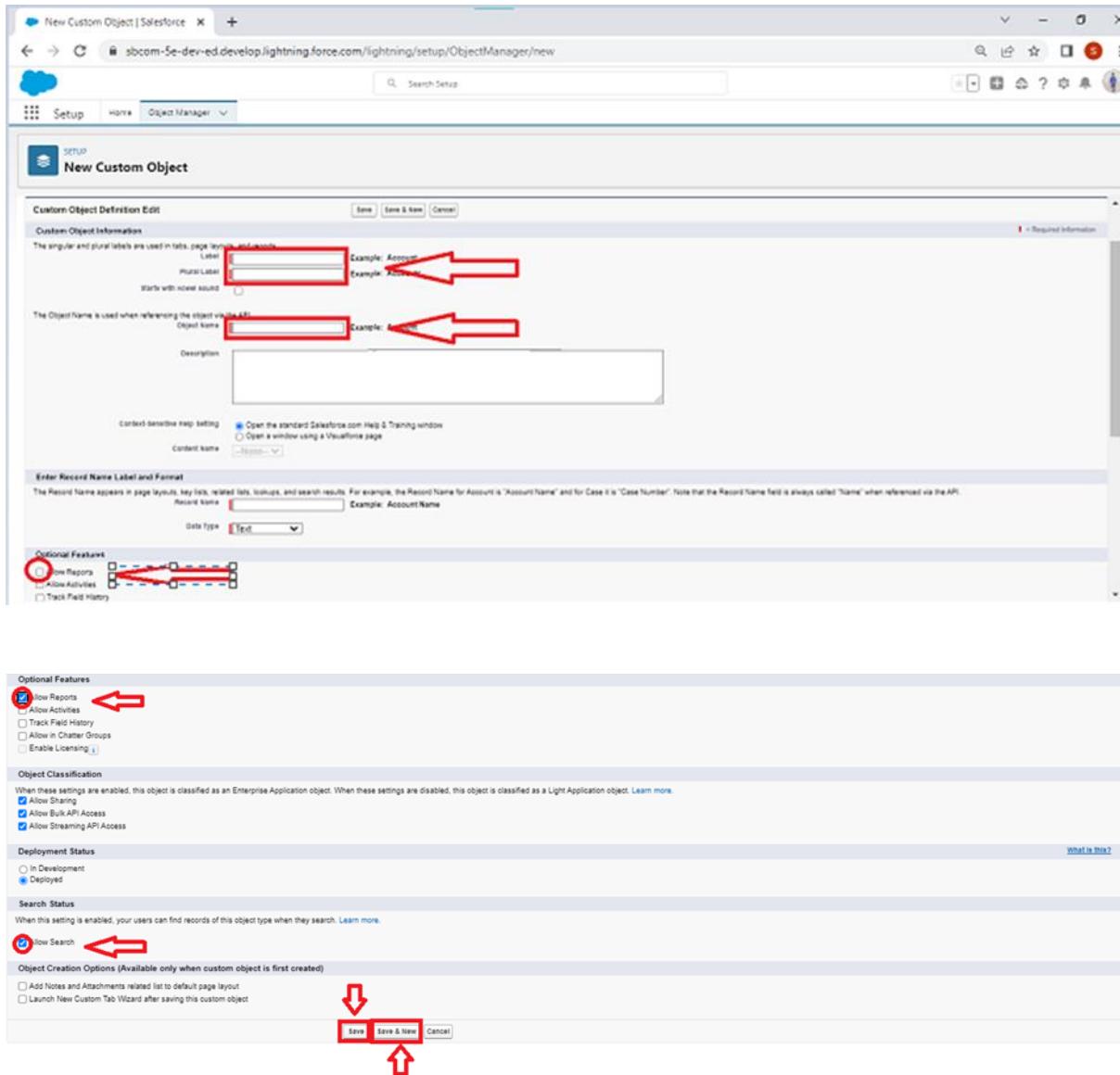


To create an object:

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



2. On Custom object defining page:
3. Enter the label name, plural label name, click on Allow reports, Allow search.



4. Click on Save.

1.Create Fabrication Object:

To create an object:

- From the setup page >> Click on Object Manager >> Click on Create >> Click on Custom Object.
 - Enter the label name>> Fabrication
 - Plural label name >> Fabrications
 - Enter Record Name Label and Format
 - Record Name >> Fabrication Name
 - Data Type >> Text
- Click on Allow reports and Track Field History,Allow Activities
- Allow search >> Save.

2.Create Shed-Work Object:

To create an object:

1. From the setup page >> Click on Object Manager >> Click on Create >> Click on Custom Object.
 1. Enter the label name >> Shed-Work
 2. Plural label name >> Shed Works
 3. Enter Record Name Label and Format
 - Record Name >> Shed Work Name
 - Data Type >> Text
2. Click on Allow reports and Track Field History,Allow Activities
3. Allow search >> Save.

3.Create Pipe Lining Object:

To create an object:

1. From the setup page >> Click on Object Manager >> Click on Create >> Click on Custom Object.
 1. Enter the label name >> Pipe Lining
 2. Plural label name >> Pipe Linings
 3. Enter Record Name Label and Format
 - Record Name >> Pipe Lining Name
 - Data Type >> Text
2. Click on Allow reports and Track Field History,Allow Activities
3. Allow search >> Save.

4.Create Worker Object:

To create an object:

1. From the setup page >> Click on Object Manager >> Click on Create >> Click on Custom Object.
 1. Enter the label name >> Worker
 2. Plural label name >> Workers
 3. Enter Record Name Label and Format
 - Record Name >> Worker Name
 - Data Type >> Text
2. Click on Allow reports and Track Field History,Allow Activities
3. Allow search >> Save.

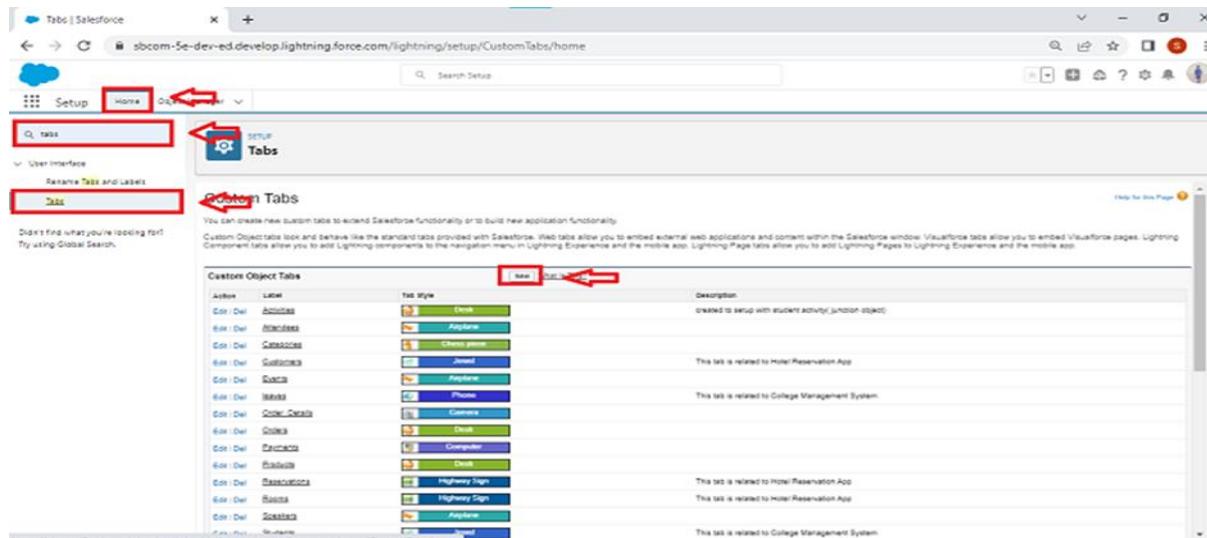
STEP 4: Milestone 3- Tabs

What is Tab : A tab is like a user interface that is used to build records for objects and to view the records in the objects.

1.Creating a Custom Tab:

To create a Tab:(Fabrication)

1. Go to setup page >> type Tabs in Quick Find bar >> click on tabs >> New (under custom object tab)



1. Select Object(Fabrication) >> Select the tab style >> Next (Add to profiles page) keep it as default >> Next (Add to Custom App) uncheck the include tab .
2. Make sure that the Append tab to users' existing personal customizations is checked.
3. Click save

2.Creating Remaining Tabs:

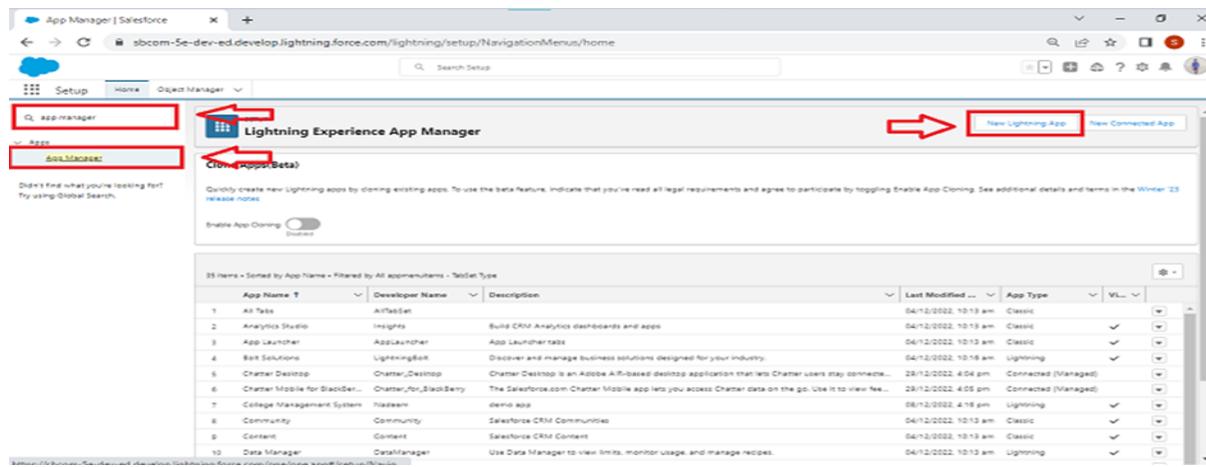
1. Now create the Tabs for the remaining Objects, they are “Shed-Work, Pipe lining, Worker”.
2. Follow the same steps as mentioned in Activity -1 .

STEP 5: Milestone 4 : The Lightning App:

1.Create a Lightning App

To create a lightning app page:

1. Go to setup page >> search “app manager” in quick find >> select “app manager” >> click on New lightning App.



The screenshot shows the Salesforce App Manager interface. At the top, there are three search bars: 'app manager', 'Pages', and 'App Manager'. Below them is a section titled 'Lightning Experience App Manager' with a note about cloning existing apps. On the right side of this section is a red arrow pointing to a blue 'New Lightning App' button. The main area displays a table of existing apps, with one row highlighted in yellow. The columns in the table are: App Name, Developer Name, Description, Last Modified, and App Type. The table lists various apps like All Tasks, Analytics Studio, App Launcher, etc.

App Name	Developer Name	Description	Last Modified	App Type
All Tasks	AlTaskSet	Build CRM Analytics dashboards and apps	04/12/2022, 10:13 am	Classic
Analytics Studio	Insights	Build CRM Analytics dashboards and apps	04/12/2022, 10:13 am	Classic
App Launcher	AppLauncher	App Launcher Beta	04/12/2022, 10:13 am	Classic
Best Solutions	LightningBeta	Discover and manage business solutions designed for your industry.	04/12/2022, 10:18 am	Lightning
Chatter Desktop	Chatter/Desktop	Chatter Desktop is an Adobe API-based desktop application that lets Chatter users stay connected...	28/12/2022, 4:04 pm	Connected (Managed)
Chatter Mobile for BlackBerry	Chatter/For BlackBerry	The Salesforce.com Chatter Mobile App lets you access Chatter data on the go. Use it to view Not...	28/12/2022, 4:05 pm	Connected (Managed)
College Management Systems	Academis	demo App	08/12/2022, 4:16 pm	Lightning
Community	Community	Salesforce CRM Communities	04/12/2022, 10:13 am	Classic
Content	Content	Salesforce CRM Content	04/12/2022, 10:13 am	Classic
Data Manager	DataManager	Use Data Manager to view limits, monitor usage, and manage recipes.	04/12/2022, 10:13 am	Lightning

2. Fill the app name in app details and branding as follow

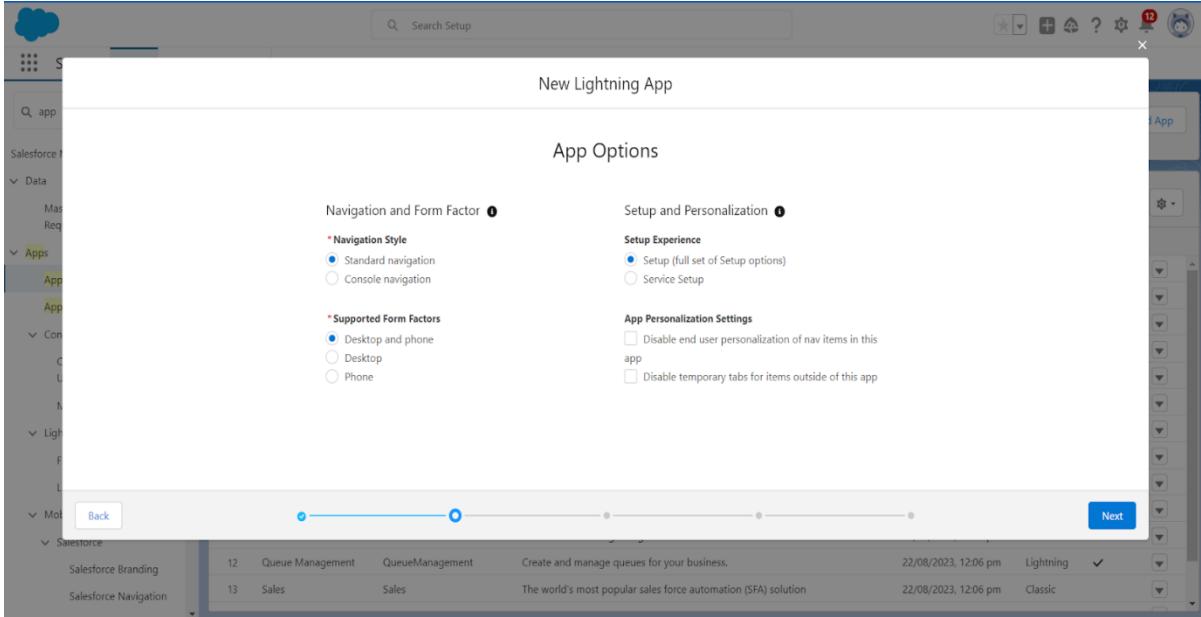
App Name : Engineering Works

Developer Name : This will auto populated

Image : optional (if you want to give any image you can otherwise not mandatory)

Primary color hex value : keep this default.

3. Then click Next >> (App option page) Set Navigation Style as Standard Navigation >> Next.



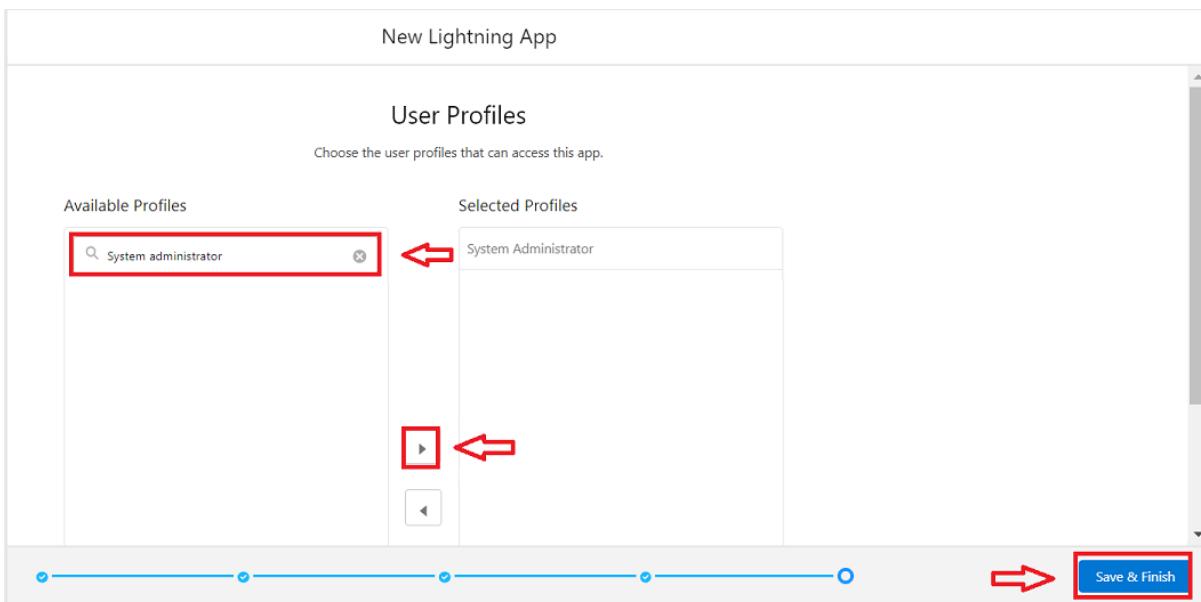
4. (Utility Items) keep it as default >> Next.

5. To Add Navigation Items:

Available Items	Selected Items
Accounts	Home
Alert Settings	Fabrications
All Sites	Shed Works
Alternative Payment Methods	Pipe Linings
Analytics	
App Launcher	
Appointment Categories	
Appointment Invitations	

Search for the item in the (Fabrications, Shed Works, Pipe Linings, Workers) from the search bar and move it using the arrow button >> Next >> Next.

6. To Add User Profiles:



Search profiles (System administrator) in the search bar >> click on the arrow button >> save & finish.

STEP 6: Milestone 5 : Fields:

1. Creation of fields for the Fabrication object

To create fields in an object:

1. Go to setup >> click on Object Manager >> type object name(Fabrication) in search bar >> click on the object.

LABEL	API NAME	TYPE	DESCRIPTION	LAST MODIFIED	DEPLOYED
Fabrication	Fabrication__c	Custom Object	Regrading Fabrication Work	08/02/2024	✓

2. Now click on “Fields & Relationships” >> New

SETUP > OBJECT MANAGER

Fabrication

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

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Amount	Amount_c	Formula (Currency)		
Area	Area_c	Formula (Number)		
Breadth	Breadth_c	Number(16, 2)		
Cost per meter	Cost_per_meter_c	Number(15, 3)		
Created By	CreatedBy	Lookup(User)		
cutting Type	cutting_Type_c	Picklist		
Email	Email_c	Email		
Fabrication Name	Name	Text(80)		✓

3. Select Data Type as a “Text”

SETUP > OBJECT MANAGER

Fabrication

Details

Fields & Relationships

Page Layouts

Lightning Record Pages

Buttons, Links, and Actions

Compact Layouts

Field Sets

Object Limits

Record Types

Related Lookup Filters

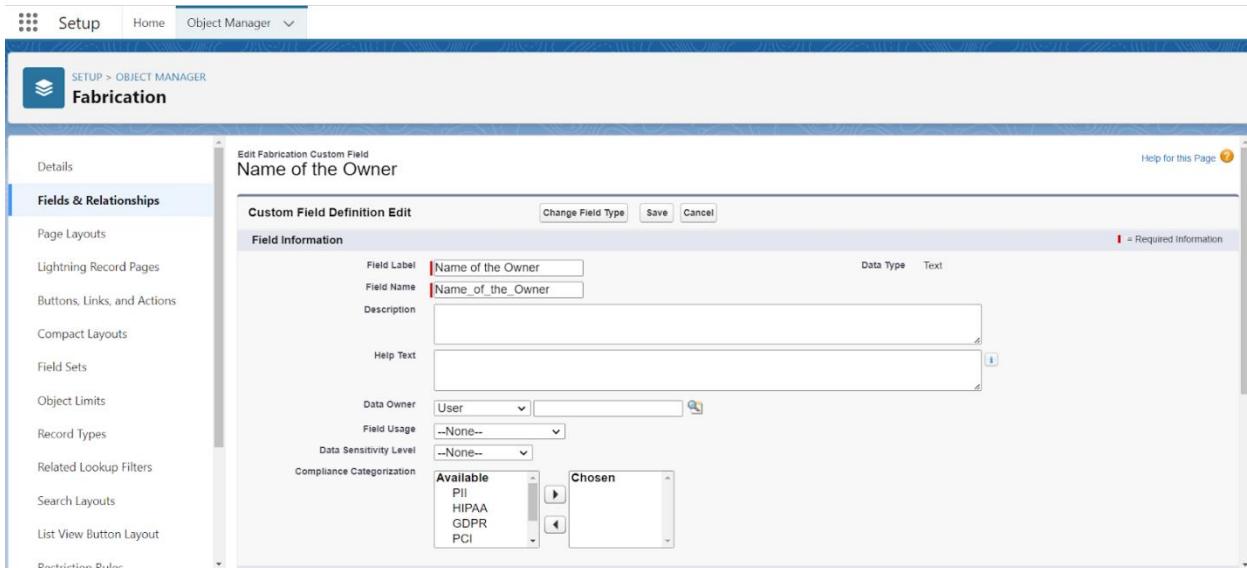
Search Layouts

List View Button Layout

Restriction Rules

<input type="radio"/> Date	Allows users to enter a date or pick a date from a popup calendar.
<input type="radio"/> Date/Time	Allows users to enter a date and time, or pick a date from a popup calendar. When users click a date in the pop-up, that date and the current time are entered into the Date/Time field.
<input type="radio"/> Email	Allows users to enter an email address, which is validated to ensure proper format. If this field is specified for a contact or lead, users can choose the address when clicking Send an Email. Note that custom email addresses cannot be used for mass emails.
<input type="radio"/> Geolocation	Allows users to define locations. Includes latitude and longitude components, and can be used to calculate distance.
<input type="radio"/> Number	Allows users to enter any number. Leading zeros are removed.
<input type="radio"/> Percent	Allows users to enter a percentage number, for example, '10' and automatically adds the percent sign to the number.
<input type="radio"/> Phone	Allows users to enter any phone number. Automatically formats it as a phone number.
<input type="radio"/> Picklist	Allows users to select a value from a list you define.
<input type="radio"/> Picklist (Multi-Select)	Allows users to select multiple values from a list you define.
<input checked="" type="radio"/> Text	Allows users to enter any combination of letters and numbers.
<input type="radio"/> Text Area	Allows users to enter up to 255 characters on separate lines.
<input type="radio"/> Text Area (Long)	Allows users to enter up to 131,072 characters on separate lines.
<input type="radio"/> Text Area (Rich)	Allows users to enter formatted text, add Images and links. Up to 131,072 characters on separate lines.
<input type="radio"/> Text (Encrypted) <small>(i)</small>	Allows users to enter any combination of letters and numbers and store them in encrypted form.
<input type="radio"/> Time	Allows users to enter a local time. For example, "2:40 PM", "14:40", "14:40:00", and "14:40:50.600" are all valid times for this field.
<input type="radio"/> URL	Allows users to enter any valid website address. When users click on the field, the URL will open in a separate browser window.

4. Click on next



5. Fill the Above as following:

- Field Label: Name of the Owner
- Field Name : Name_of_the_Owner
- Length : 125
- Required :check box
- Click on Next >> Next >> Save and new.

To create another fields in an object:

1. Go to setup >> click on Object Manager >> type object name(Fabrication) in search bar >> click on the object.
2. Now click on “Fields & Relationships” >> New
3. Select Data type as a “Text” and Click on Next
4. Fill the Above as following:
 - Field Label : Name of Company
 - Field Name : Name_of_Company
 - Click on Next >> Next >> Save and new.

To create another fields in an object:

5. Go to setup >> click on Object Manager >> type object name(Fabrication) in search bar >> click on the object.
6. Now click on “Fields & Relationships” >> New
7. Select Data type as a “Number” and Click on Next
8. Fill the Above as following:
 - Field Label: Length
 - Field Name : Length
 - Length : 16
 - Decimal Value : 2
 - Required :check box
 - Click on Next >> Next >> Save and new.

To create another fields in an object:

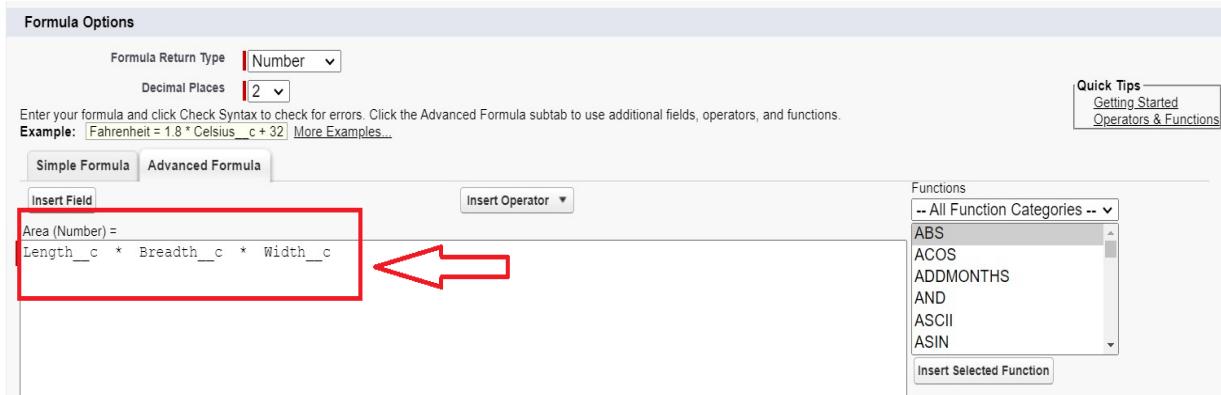
9. Go to setup >> click on Object Manager >> type object name(Fabrication) in search bar >> click on the object.
10. Now click on “Fields & Relationships” >> New
11. Select Data type as a “Number” and Click on Next
12. Fill the Above as following:
 - Field Label: Breadth
 - Field Name : Breadth
 - Length : 16
 - Decimal Value : 2
 - Required :check box
 - Click on Next >> Next >> Save and new.

To create another fields in an object:

13. Go to setup >> click on Object Manager >> type object name(Fabrication) in search bar >> click on the object.
14. Now click on “Fields & Relationships” >> New
15. Select Data type as a “Number” and Click on Next
16. Fill the Above as following:
 - Field Label: Width
 - Field Name : Width
 - Length : 16
 - Decimal Value : 2
 - Required :check box
 - Click on Next >> Next >> Save and new.

To create another fields in an object:

17. Go to setup >> click on Object Manager >> type object name(Fabrication) in search bar >> click on the object.
18. Now click on “Fields & Relationships” >> New
19. Select Data type as a “Formula” and Click on Next
20. Fill the Above as following:
 - Field Label: Area
 - Field Name : Area
 - Formula Return Type : Select Number
 - Enter Formula : Length_c * Breadth_c * Width_c (Insert this fields using “Insert Field” Option)



- Click on Next >> Next >> Save and new.

To create another fields in an object:

21. Go to setup >> click on Object Manager >> type object name(Fabrication) in search bar >> click on the object.
22. Now click on “Fields & Relationships” >> New
23. Select Data type as a “Number” and Click on Next
24. Fill the Above as following:
 - Field Label: Cost per Meter
 - Field Name : Cost_per_meter
 - Set the Default value to ‘2’
 - Click on Next >> Select the read only checkbox
 - Click on Next >> Save and new.

To create another fields in an object:

25. Go to setup >> click on Object Manager >> type object name(Fabrication) in search bar >> click on the object.
26. Now click on “Fields & Relationships” >> New
27. Select Data type as a “Number” and Click on Next
28. Fill the Above as following:
 - Field Label: Quantity
 - Field Name : Quantity
 - Length : 16
 - Decimal Value : 2
 - Required :check box
 - Click on Next >> Next >> Save and new.

To create another fields in an object:

29. Go to setup >> click on Object Manager >> type object name(Fabrication) in search bar >> click on the object.
30. Now click on “Fields & Relationships” >> New
31. Select Data type as a “Formula” and Click on Next
32. Fill the Above as following:
 - Field Label: Amount
 - Field Name : Amount
 - Formula Return Type : Select Currency
 - Enter Formula : Area_c * Cost_per_meter_c * Quantity_c(Insert this fields using “Insert Field” Option)
 - Click on Next >> Next >> Save and new.

To create another fields in an object:

33. Go to setup >> click on Object Manager >> type object name(Fabrication) in search bar >> click on the object.
34. Now click on “Fields & Relationships” >> New
35. Select Data type as a “Picklist” and Click on Next
36. Fill the Above as following:
 - Field Label: Material Type
 - Field Name : Material_Type
 - Values : Select Enter values, with each value separated by a new line
 - Enter this values in box :
Iron
Aluminum
Metal
Wood
Steel
 - Click on Next >> Next >> Save and new.

To create another fields in an object:

37. Go to setup >> click on Object Manager >> type object name(Fabrication) in search bar >> click on the object.
38. Now click on “Fields & Relationships” >> New
39. Select Data type as a “Currency” and Click on Next
40. Fill the Above as following:
 - Field Label: Final Price
 - Field Name : Final_Price
 - Click on Next >> Next >> Save and new.

To create another fields in an object:

41. Go to setup >> click on Object Manager >> type object name(Fabrication) in search bar >> click on the object.
42. Now click on “Fields & Relationships” >> New
43. Select Data type as a “Email” and Click on Next
44. Fill the Above as following:
 - Field Label: Email
 - Field Name : Email
 - Click on Next >> Next >> Save.

2.Creation of fields for the Shed-Work object:

- 1.Go to setup >> click on Object Manager >> type object name(Shed-Work) in search bar >> click on the object.
2. Now click on “Fields & Relationships” >> New
3. Select Data type as a “Text” and Click on Next
4. Fill the Above as following:
 - Field Label : Name of the Company
 - Field Name : gets auto generated
 - Click on required check box
 - Click on Next >> Next >> Save and new.

To create another fields in an object:

1. Go to setup >> click on Object Manager >> type object name(Shed-Work) in search bar >> click on the object.
2. Now click on “Fields & Relationships” >> New
3. Select Data type as a “Text” and Click on Next
4. Fill the Above as following:
 - Field Label : Name of the Owner
 - Field Name : Name_of_Owner
 - Click on required check box
 - Click on Next >> Next >> Save and new.

To create another fields in an object:

5. Go to setup >> click on Object Manager >> type object name(Shed-Work) in search bar >> click on the object.
6. Now click on “Fields & Relationships” >> New
7. Select Data type as a “Number” and Click on Next
8. Fill the Above as following:
 - Field Label: Height
 - Field Name : Height
 - Length : 16
 - Decimal Value : 2

- Required :check box
- Click on Next >> Next >> Save and new.

To create another fields in an object:

9. Go to setup >> click on Object Manager >> type object name(Shed-Work) in search bar >> click on the object.

10. Now click on “Fields & Relationships” >> New
11. Select Data type as a “Number” and Click on Next

12. Fill the Above as following:

- Field Label: Breadth
- Field Name : Breadth
- Length : 16
- Decimal Value : 2
- Required :check box
- Click on Next >> Next >> Save and new.

To create another fields in an object:

13. Go to setup >> click on Object Manager >> type object name(Shed-Work) in search bar >> click on the object.

14. Now click on “Fields & Relationships” >> New
15. Select Data type as a “Number” and Click on Next

16. Fill the Above as following:

- Field Label: Width
- Field Name : Width
- Length : 16
- Decimal Value : 2
- Required :check box
- Click on Next >> Next >> Save and new.

To create another fields in an object:

17. Go to setup >>click on Object Manager >> type object name(Shed-Work) in search bar >> click on the object.

18. Now click on “Fields & Relationships” >> New
19. Select Data type as a “Formula” and Click on Next

20. Fill the Above as following:

- Field Label: Area
- Field Name : Area
- Formula Return Type : Select Number
- Enter Formula : Height_c * Breadth_c * Width_c (Insert this fields using “Insert Field” Option)

To create another fields in an object:

21. Go to setup >> click on Object Manager >> type object name(Shed-Work) in search bar >> click on the object.
22. Now click on “Fields & Relationships” >> New
23. Select Data type as a “Formula” and Click on Next
24. Fill the Above as following:
 - Field Label: Area Sheet
 - Field Name : Area_Sheet
 - Formula Return Type : Select Number
 - Enter Formula : Height_c * Breadth_c (Insert this fields using “Insert Field” Option)

To create another fields in an object:

25. Go to setup >> click on Object Manager >> type object name(Shed-Work) in search bar >> click on the object.
26. Now click on “Fields & Relationships” >> New
27. Select Data type as a “Number” and Click on Next
28. Fill the Above as following:
 - Field Label: Cost per Meter
 - Field Name : Cost_per_meter
 - Set the Default value to ‘2’
 - Click on Next >> Select the read only checkbox
 - Click on Next >> Save and new.

To create another fields in an object:

29. Go to setup >> click on Object Manager >> type object name(Shed-Work) in search bar >> click on the object.
30. Now click on “Fields & Relationships” >> New
31. Select Data type as a “Number” and Click on Next
32. Fill the Above as following:
 - Field Label: Quantity
 - Field Name : Quantity
 - Length : 16
 - Decimal Value : 2
 - Required :check box
 - Click on Next >> Next >> Save and new

To create another fields in an object:

33. Go to setup >> click on Object Manager >> type object name(Shed-Work) in search bar >> click on the object.

34. Now click on “Fields & Relationships” >> New

35. Select Data type as a “Number” and Click on Next

36. Fill the Above as following:

- Field Label: Cost per meter sheet
- Field Name : Cost_per_meter_sheet
- Set the Default value to ‘2’
- Click on Next >> Select the read only checkbox
- Click on Next >> Save and new.

To create another fields in an object:

37. Go to setup >> click on Object Manager >> type object name(Shed-Work) in search bar >> click on the object.

38. Now click on “Fields & Relationships” >> New

39. Select Data type as a “Formula” and Click on Next

40. Fill the Above as following:

- Field Label: Amount
- Field Name : Amount
- Formula Return Type : Select Currency
- Enter Formula : Area_c * Cost_per_meter_c * Quantity_c(Insert this fields using “Insert Field” Option)
- Click on Next >> Next >> Save and new.

To create another fields in an object:

41. Go to setup >> click on Object Manager >> type object name(Shed-Work) in search bar >> click on the object.

42. Now click on “Fields & Relationships” >> New

43. Select Data type as a “Formula” and Click on Next

44. Fill the Above as following:

- Field Label: Amount Sheet
- Field Name : Amount_Sheet
- Formula Return Type : Select Currency
- Enter Formula : Cost_per_meter_sheet_c * Area_Sheet_c * Quantity_c(Insert this fields using “Insert Field” Option)
- Click on Next >> Next >> Save and new.

To create another fields in an object:

45. Go to setup >> click on Object Manager >> type object name(Shed-Work) in search bar >> click on the object.

46. Now click on “Fields & Relationships” >> New

47. Select Data type as a “Picklist” and Click on Next
48. Fill the Above as following:
 - Field Label: Material Type
 - Field Name : Material_Type
 - Values : Select Enter values, with each value separated by a new line
 - Enter this values in box :
Iron
Metal
Steel
- Click on Next >> Next >> Save and new.

To create another fields in an object:

49. Go to setup >> click on Object Manager >> type object name(Shed-Work) in search bar >> click on the object.
50. Now click on “Fields & Relationships” >> New
51. Select Data type as a “Picklist” and Click on Next
52. Fill the Above as following:
 - Field Label: Material Type Sheet
 - Field Name : Material_Type_Sheet
 - Values : Select Enter values, with each value separated by a new line
 - Enter this values in box :
Plastic
Metal
Rubber
- Click on Next >> Next >> Save and new.

To create another fields in an object:

53. Go to setup >> click on Object Manager >> type object name(Shed-Work) in search bar >> click on the object.
54. Now click on “Fields & Relationships” >> New
55. Select Data type as a “Currency” and Click on Next
56. Fill the Above as following:
 - Field Label: Final Price
 - Field Name : Final_Price
- Click on Next >> Next >> Save and new.

To create another fields in an object:

57. Go to setup >> click on Object Manager >> type object name(Shed-Work) in search bar >> click on the object.
58. Now click on “Fields & Relationships” >> New

59. Select Data type as a “Email” and Click on Next
60. Fill the Above as following:
 - Field Label: Email
 - Field Name : Email
 - Click on Next >> Next >> Save.

3.Creation of fields for the Pipe Lining object:

- 1.Go to setup >> click on Object Manager >> type object name(Pipe Lining) in search bar >> click on the object.
2. Now click on “Fields & Relationships” >> New
3. Select Data type as a “Text” and Click on Next
4. Fill the Above as following:
 - Field Label : Name of the Company
 - Field Name : gets auto generated
 - Click on required check box
 - Click on Next >> Next >> Save and new.

To create another fields in an object:

1. Go to setup >> click on Object Manager >> type object name(Pipe Lining) in search bar >> click on the object.
2. Now click on “Fields & Relationships” >> New
3. Select Data type as a “Text” and Click on Next
4. Fill the Above as following:
 - Field Label : Name of the Owner
 - Field Name : Name_of_Owner
 - Click on required check box
 - Click on Next >> Next >> Save and new.

To create another fields in an object:

5. Go to setup >> click on Object Manager >> type object name(Pipe Lining) in search bar >> click on the object.
6. Now click on “Fields & Relationships” >> New
7. Select Data type as a “Number” and Click on Next
8. Fill the Above as following:
 - Field Label: Height
 - Field Name : Height
 - Length : 16
 - Decimal Value : 2
 - Required :check box
 - Click on Next >> Next >> Save and new.

To create another fields in an object:

9. Go to setup >> click on Object Manager >> type object name(Pipe Lining) in search bar >> click on the object.

10. Now click on “Fields & Relationships” >> New

11. Select Data type as a “Number” and Click on Next

12. Fill the Above as following:

- Field Label: Width
- Field Name : Width
- Length : 16
- Decimal Value : 2
- Required :check box
- Click on Next >> Next >> Save and new.

To create another fields in an object:

13. Go to setup >> click on Object Manager >> type object name(Pipe Lining) in search bar >> click on the object.

14. Now click on “Fields & Relationships” >> New

15. Select Data type as a “Number” and Click on Next

16. Fill the Above as following:

- Field Label: Diameter
- Field Name : Diameter
- Length : 16
- Decimal Value : 2
- Required :check box
- Click on Next >> Next >> Save and new.

To create another fields in an object:

17. Go to setup >> click on Object Manager >> type object name(Pipe Lining) in search bar >> click on the object.

18. Now click on “Fields & Relationships” >> New

19. Select Data type as a “Formula” and Click on Next

20. Fill the Above as following:

- Field Label: Area
- Field Name : Area
- Formula Return Type : Select Number
- Enter Formula : PI() * Height_c * Diameter_c (Insert this fields using “Insert Field” Option)

To create another fields in an object:

21. Go to setup >> click on Object Manager >> type object name(Pipe Lining) in search bar >> click on the object.
22. Now click on “Fields & Relationships” >> New
23. Select Data type as a “Number” and Click on Next
24. Fill the Above as following:
 - Field Label: Cost per Meter
 - Field Name : Cost_per_meter
 - Set the Default value to ‘2’
 - Click on Next >> Select the read only checkbox
 - Click on Next >> Save and new.

To create another fields in an object:

25. Go to setup >> click on Object Manager >> type object name(Pipe Lining) in search bar >> click on the object.
26. Now click on “Fields & Relationships” >> New
27. Select Data type as a “Number” and Click on Next
28. Fill the Above as following:
 - Field Label: Quantity
 - Field Name : Quantity
 - Length : 16
 - Decimal Value : 2
 - Required :check box
 - Click on Next >> Next >> Save and new

To create another fields in an object:

29. Go to setup >> click on Object Manager >> type object name(Pipe Lining) in search bar >> click on the object.
30. Now click on “Fields & Relationships” >> New
31. Select Data type as a “Formula” and Click on Next
32. Fill the Above as following:
 - Field Label: Amount
 - Field Name : Amount
 - Formula Return Type : Select Currency
 - Enter Formula : Area_c * Cost_per_meter_c * Quantity_c(Insert this fields using “Insert Field” Option)
 - Click on Next >> Next >> Save and new.

To create another fields in an object:

33. Go to setup >> click on Object Manager >> type object name(Pipe Lining) in search bar >> click on the object.
34. Now click on “Fields & Relationships” >> New
35. Select Data type as a “Picklist” and Click on Next

36. Fill the Above as following:

- Field Label: Material Type
- Field Name : Material_Type
- Values : Select Enter values, with each value separated by a new line
- Enter this values in box :
Iron
Metal
Aluminum
- Click on Next >> Next >> Save and new.

To create another fields in an object:

37. Go to setup >> click on Object Manager >> type object name(Pipe Lining) in search bar >> click on the object.

38. Now click on “Fields & Relationships” >> New
39. Select Data type as a “Currency” and Click on Next
40. Fill the Above as following:
 - Field Label: Final Price
 - Field Name : Final_Price
 - Click on Next >> Next >> Save and new.

To create another fields in an object:

41. Go to setup >> click on Object Manager >> type object name(Pipe Lining) in search bar >> click on the object.
42. Now click on “Fields & Relationships” >> New
43. Select Data type as a “Email” and Click on Next
44. Fill the Above as following:
 - Field Label: Email
 - Field Name : Email
 - Click on Next >> Next >> Save

3.Creation of fields for the Pipe Lining object

- 1.Go to setup >> click on Object Manager >> type object name(Pipe Lining) in search bar >> click on the object.
2. Now click on “Fields & Relationships” >> New
3. Select Data type as a “Text” and Click on Next
4. Fill the Above as following:
 - Field Label : Name of the Company
 - Field Name : gets auto generated
 - Click on required check box
 - Click on Next >> Next >> Save and new.

To create another fields in an object:

1. Go to setup >> click on Object Manager >> type object name(Pipe Lining) in search bar >> click on the object.
2. Now click on “Fields & Relationships” >> New
3. Select Data type as a “Text” and Click on Next
4. Fill the Above as following:
 - Field Label : Name of the Owner
 - Field Name : Name_of_Owner
 - Click on required check box
 - Click on Next >> Next >> Save and new.

To create another fields in an object:

5. Go to setup >> click on Object Manager >> type object name(Pipe Lining) in search bar >> click on the object.
6. Now click on “Fields & Relationships” >> New
7. Select Data type as a “Number” and Click on Next
8. Fill the Above as following:
 - Field Label: Height
 - Field Name : Height
 - Length : 16
 - Decimal Value : 2
 - Required :check box
 - Click on Next >> Next >> Save and new.

To create another fields in an object:

9. Go to setup >> click on Object Manager >> type object name(Pipe Lining) in search bar >> click on the object.
10. Now click on “Fields & Relationships” >> New
11. Select Data type as a “Number” and Click on Next
12. Fill the Above as following:
 - Field Label: Width
 - Field Name : Width
 - Length : 16
 - Decimal Value : 2
 - Required :check box
 - Click on Next >> Next >> Save and new.

To create another fields in an object:

13. Go to setup >> click on Object Manager >> type object name(Pipe Lining) in search bar >> click on the object.

14. Now click on “Fields & Relationships” >> New
15. Select Data type as a “Number” and Click on Next
16. Fill the Above as following:
 - Field Label: Diameter
 - Field Name : Diameter
 - Length : 16
 - Decimal Value : 2
 - Required :check box
 - Click on Next >> Next >> Save and new.

To create another fields in an object:

17. Go to setup >> click on Object Manager >> type object name(Pipe Lining) in search bar >> click on the object.
18. Now click on “Fields & Relationships” >> New
19. Select Data type as a “Formula” and Click on Next
20. Fill the Above as following:
 - Field Label: Area
 - Field Name : Area
 - Formula Return Type : Select Number
 - Enter Formula : PI() * Height_c * Diameter_c (Insert this fields using “Insert Field” Option)

To create another fields in an object:

21. Go to setup >> click on Object Manager >> type object name(Pipe Lining) in search bar >> click on the object.
22. Now click on “Fields & Relationships” >> New
23. Select Data type as a “Number” and Click on Next
24. Fill the Above as following:
 - Field Label: Cost per Meter
 - Field Name : Cost_per_meter
 - Set the Default value to ‘2’
 - Click on Next >> Select the read only checkbox
 - Click on Next >> Save and new.

To create another fields in an object:

25. Go to setup >> click on Object Manager >> type object name(Pipe Lining) in search bar >> click on the object.
26. Now click on “Fields & Relationships” >> New
27. Select Data type as a “Number” and Click on Next
28. Fill the Above as following:
 - Field Label: Quantity

- Field Name : Quantity
- Length : 16
- Decimal Value : 2
- Required :check box
- Click on Next >> Next >> Save and new

To create another fields in an object:

29. Go to setup >> click on Object Manager >> type object name(Pipe Lining) in search bar >> click on the object.
30. Now click on “Fields & Relationships” >> New
 31. Select Data type as a “Formula” and Click on Next
 32. Fill the Above as following:
 - Field Label: Amount
 - Field Name : Amount
 - Formula Return Type : Select Currency
 - Enter Formula : Area_c * Cost_per_meter_c * Quantity_c(Insert this fields using “Insert Field” Option)
 - Click on Next >> Next >> Save and new.

To create another fields in an object:

33. Go to setup >> click on Object Manager >> type object name(Pipe Lining) in search bar >> click on the object.
34. Now click on “Fields & Relationships” >> New
 35. Select Data type as a “Picklist” and Click on Next
 36. Fill the Above as following:
 - Field Label: Material Type
 - Field Name : Material_Type
 - Values : Select Enter values, with each value separated by a new line
 - Enter this values in box :
 - Iron
 - Metal
 - Aluminum
 - Click on Next >> Next >> Save and new.

To create another fields in an object:

37. Go to setup >> click on Object Manager >> type object name(Pipe Lining) in search bar >> click on the object.
38. Now click on “Fields & Relationships” >> New
39. Select Data type as a “Currency” and Click on Next
40. Fill the Above as following:

- Field Label: Final Price
- Field Name : Final_Price
- Click on Next >> Next >> Save and new.

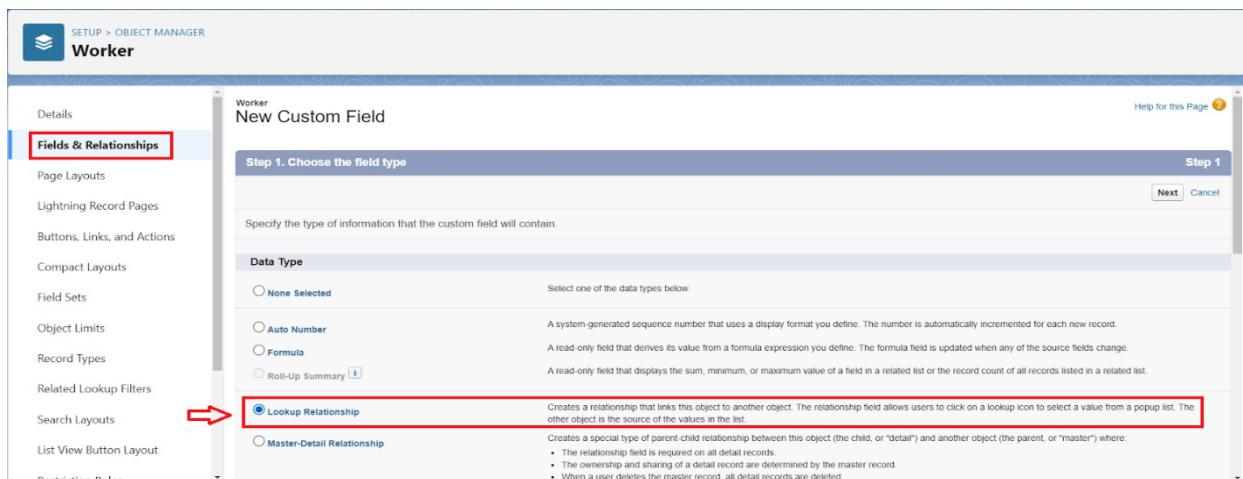
To create another fields in an object:

41. Go to setup >> click on Object Manager >> type object name(Pipe Lining) in search bar >> click on the object.
42. Now click on “Fields & Relationships” >> New
43. Select Data type as a “Email” and Click on Next
44. Fill the Above as following:
 - Field Label: Email
 - Field Name : Email
 - Click on Next >> Next >> Save

5.Creation of Lookup fields:

Creation of Lookup Field on Worker Object :

1. Go to setup >> click on Object Manager >> type object name(Worker) in the search bar >> click on the object.



2. Now click on “Fields & Relationships” >> New
3. Select lookup relationship
4. Select the related object “Fabrication” and click next.
5. Field Name : Fabrication
6. Field label : Auto generated
7. Next >> Next >> Save.

Creation of Lookup Field on Worker Object :

1. Go to setup >> click on Object Manager >> type object name(Worker) in the search bar >> click on the object.
2. Now click on “Fields & Relationships” >> New
3. Select lookup relationship
4. Select the related object “Shed-Work” and click next.
5. Field Name : Shed-Work
6. Field label : Auto generated
7. Next >> Next >> Save.

Creation of Lookup Field on Worker Object :

1. Go to setup >> click on Object Manager >> type object name(Worker) in the search bar >> click on the object.
2. Now click on “Fields & Relationships” >> New
3. Select lookup relationship
4. Select the related object “Pipe Lining” and click next.
5. Field Name : Pipe Lining
6. Field label : Auto generated
7. Next >> Next >> Save.

STEP 6:Milestone 6: Creation of Page Layouts:

Here we have to create Four Page Layouts (For Drilling, For Welding, For Cutting, For Folding)

1.To create a Page Layout in Fabrication Object for Drilling:

1. Go to the setup page >> click on object manager >> From drop down click edit for Fabrication object.
2. Click on the Page Layouts >> click New.

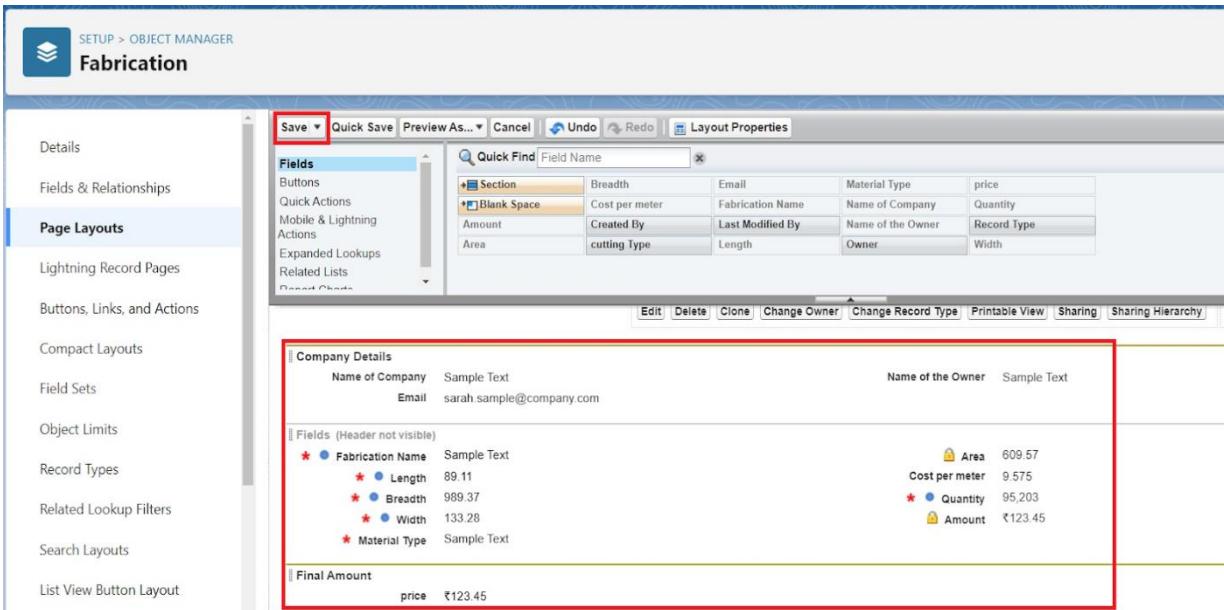
Page Layouts		
5 Items, Sorted by Page Layout Name		
PAGE LAYOUT NAME	CREATED BY	MODIFIED BY
Cutting PL	Paila Bhargavi, 05/02/2024, 4:30 pm	Paila Bhargavi, 12/02/2024, 3:08 pm
Drilling PL	Paila Bhargavi, 05/02/2024, 4:24 pm	Paila Bhargavi, 12/02/2024, 3:08 pm
Fabrication Layout	Paila Bhargavi, 05/02/2024, 11:45 am	Paila Bhargavi, 12/02/2024, 3:08 pm

3. Enter details as
- Page Layout Name : Drilling Page Layout
 - Click on Save

As an option, you may select an existing layout to clone. If you create a page layout users.

Existing Page Layout	--None--
Page Layout Name	Drilling PL

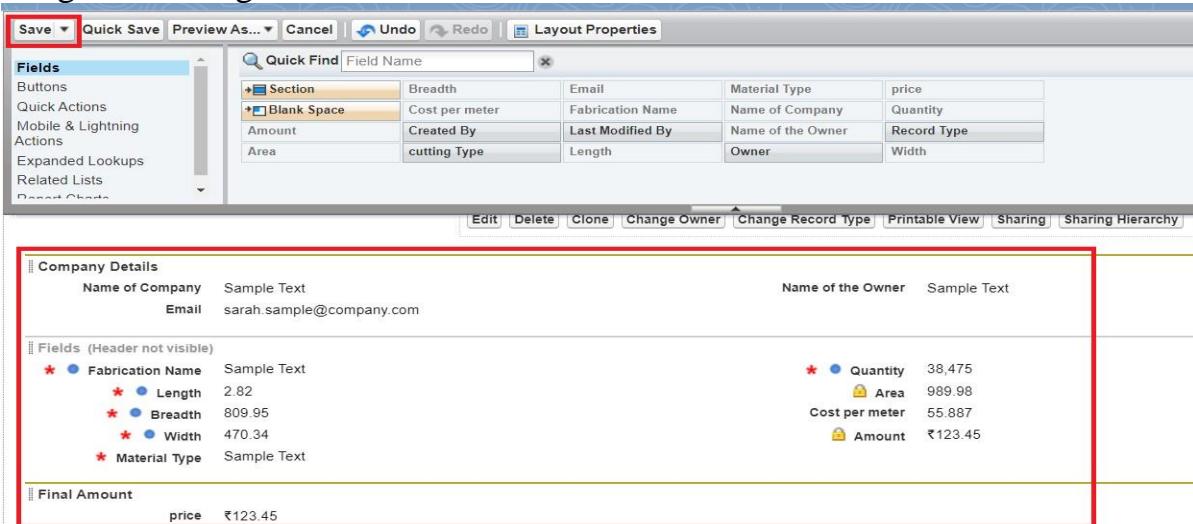
4. Drag and Arrange the field as shown below



5. Click Save.

2. To create a Page Layout in Fabrication Object for Welding:

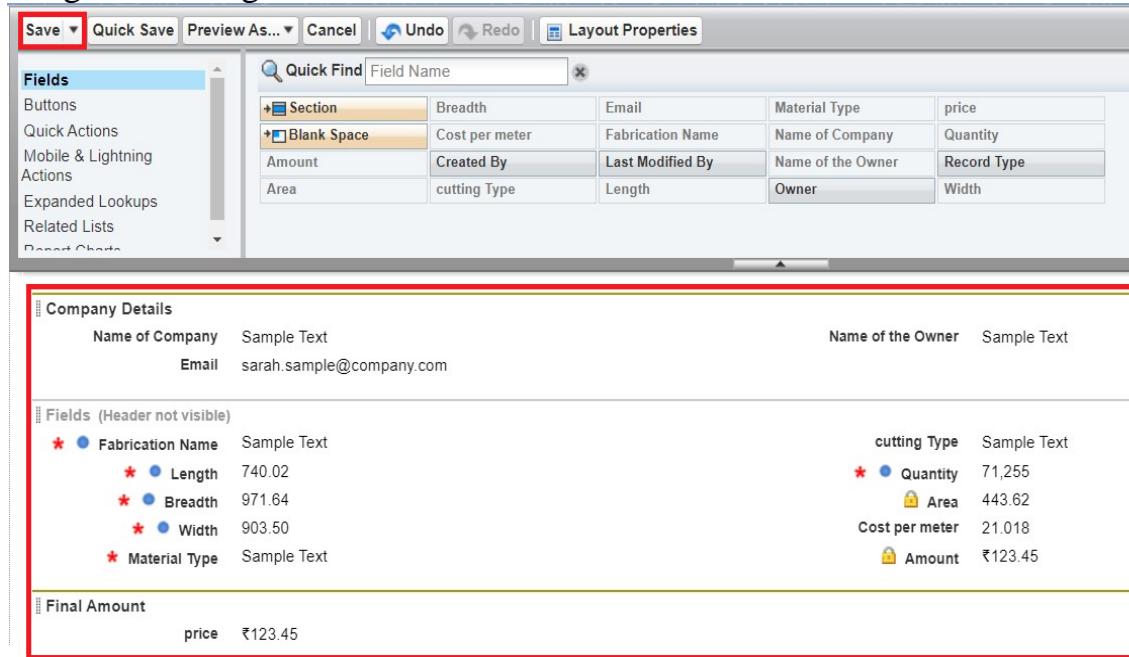
1. Go to the setup page >> click on object manager >> From drop down click edit for Fabrication object.
2. Click on the Page Layouts >> click New.
3. Enter details as
 - Page Layout Name : Welding Page Layout
 - Click on Save
4. Drag and Arrange the field as shown below



5. Click Save.

3.To create a Page Layout in Fabrication Object for Cutting:

1. Go to the setup page >> click on object manager >> From drop down click edit for Fabrication object.
2. Click on the Page Layouts >> click New.
3. Enter details as
 - Page Layout Name : Cutting Page Layout
 - Click on Save
4. Drag and Arrange the field as shown below



5. Click Save.

4.To create a Page Layout in Fabrication Object for Folding:

1. Go to the setup page >> click on object manager >> From drop down click edit for Fabrication object.
2. Click on the Page Layouts >> click New.
3. Enter details as
 - Page Layout Name : Folding Page Layout
 - Click on Save
4. Drag and Arrange the field as shown below

The screenshot shows a Salesforce layout editor interface. At the top, there are buttons for Save, Quick Save, Preview As..., Cancel, Undo, Redo, and Layout Properties. A 'Fields' sidebar on the left lists various options like Buttons, Quick Actions, etc. A 'Quick Find' search bar is at the top right. The main area contains a table with columns for Section, Blank Space, and various fields such as Breadth, Email, Material Type, price, etc. Below this is a toolbar with Edit, Delete, Clone, Change Owner, Change Record Type, Printable View, Sharing, and Sharing Hierarchy. The main form area is divided into sections: 'Company Details' (Name of Company: Sample Text, Email: sarah.sample@company.com), 'Fields (Header not visible)' (Fabrication Name: Sample Text, Length: 42.47, Breadth: 597.13, Width: 776.42, Material Type: Sample Text), and 'Final Amount' (price: ₹123.45). A large red box surrounds the entire body of the form.

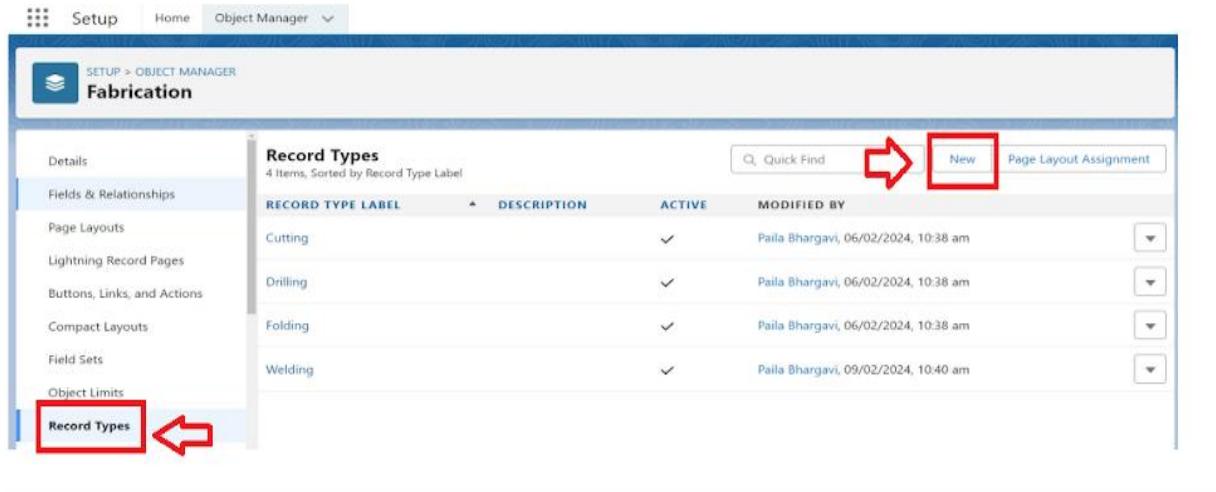
1. Click Save

STEP 7:Milestone 7: Creation of Record Types:

For the Fabrication Object we have to create 4 Record Types (Drilling, Welding, Cutting, Folding)

1.To create a Record Types in Fabrication Object:

1. Go to the setup page >> click on object manager >> From drop down click edit for Fabrication object.
2. Click on the Record Types >> click New.



3. Enter the details : For Record Types
 - Existing Record Types : Master
 - Record Type Label : Drilling
 - Record Type Name : Drilling
 - Active : Tick checkbox
4. Click on Next
5. In Assign Page Layout
 - Apply one layout to all profiles : Select Drilling Page Layout



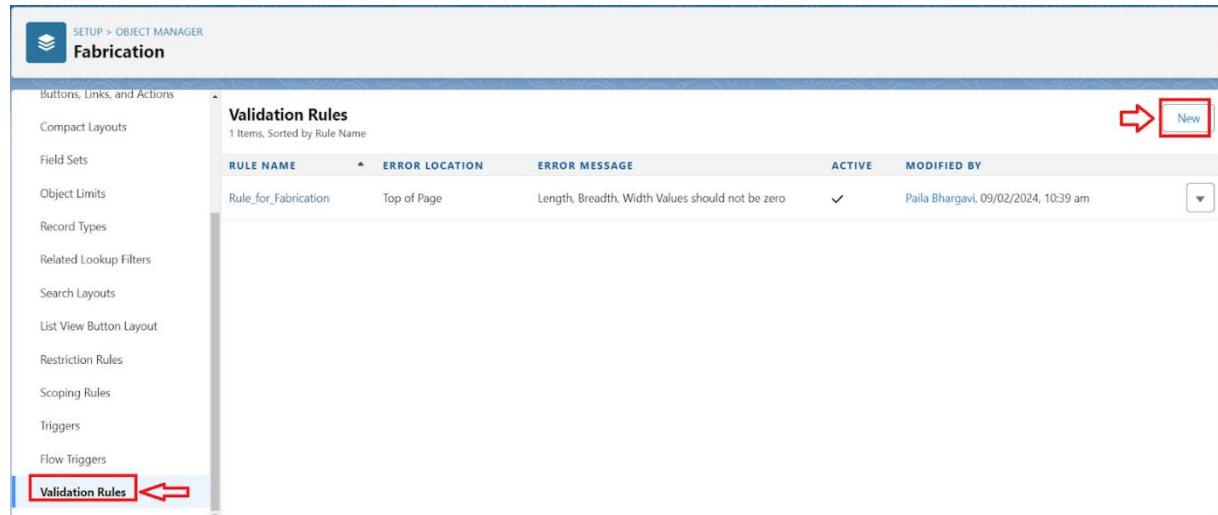
6. Click on Save

Similarly, Create the Record Types on Welding Page Layout, Cutting Page Layout and Folding Page Layout

STEP 8:Milestone 8: Validation rule;

1.To create a validation rule to an Fabrication Object:

1. Go to the setup page >> click on object manager >> From drop down click edit for Fabrication object.
2. Click on the validation rule >> click New.



3. Enter the Rule name as “Rule_for_fabrication”.
4. Insert the Error Condition Formula as :
OR(Length_c == 0, Breadth_c == 0, Width_c == 0, Quantity == 0)

Validation Rule Edit

Save Save & New Cancel

Rule Name: **Rule_for_Fabrication**

Active:

Description: This rule will not allow field values to be '0'.

Error Condition Formula

Example: **Discount_Percent__c>0.30** More Examples..

Display an error if Discount is more than 30%

If this formula expression is **true**, display the text defined in the Error Message area

Insert Field Insert Operator ▾

OR(Length__c == 0, Breadth__c == 0, Width__c == 0, Quantity__c == 0)

Functions

-- All Function Categories -- ▾

- ABS
- ACOS
- ADDMONTHS
- AND**
- ASCII
- ASIN

Insert Selected Function

ABS(number)
Returns the absolute value of a number, a number without its sign

Help on this function

Check Syntax

5. Enter the Error Message as “Length, Breadth, Width and Quantity Values should not be zero”, select the Error location as Top of Page and click Save.

Error Message

Example: **Discount percent cannot exceed 30%**

This message will appear when Error Condition formula is **true**

Error Message: **Length, Breadth, Width, Quantity Values should not be zero**

This error message can either appear at the top of the page or below a specific field on the page

Error Location: **Top of Page** **Field**

- Create the Validation Rule for Shed-Work and Pipe Lining Object Similarly by following the Activity 1 Steps.

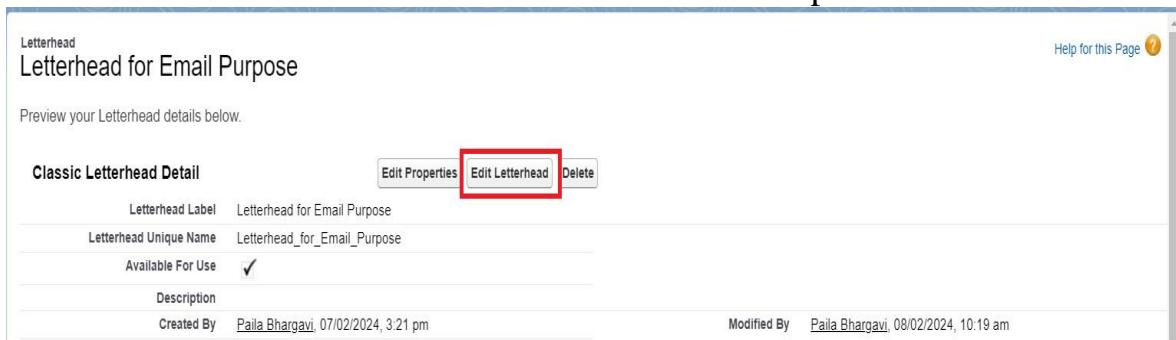
STEP 9:Milestone 9 : Email Templates

1.Upload Logo into Salesforce:

1. Go to the setup page >> In quick find box search for Salesforce Branding>> Click on Edit.
2. In Loading Page Logo >> Choose File >> Select the image and click open >> Click on Save

2.Creationof Letterhead for Email purpose:

1. Go to the setup page >>In quick find box search for Classic Letterheads >> Click on New Letterhead.
2. Check Available for use box.
3. Letterhead Label : Letterhead for Email Purpose
4. Letterhead Unique Name : Auto-populated
5. Click on Save >> Now click on Letterhead for Email Purpose then Edit Letterhead.



6. Click on select logo >> Now select the logo and click save.

3.Create Email Template:

To create Email Template:

1. Go to setup in quick find box enter email template >> click on classic Email Template.

2. Click on >> New Email Template==>HTML (using Classic Letterhead)
Folder : Unfiled public Classic Email templates

Click on available for use

3. Email Template Name is “Bill Template”

4. Template Unique Name : Auto populated

5. Subject : “Fabrication Template”

6. Email body :

Hello

{ !Fabrication__c.Name_of_the_Owner__c }{ !Shed_Work__c.Name_of_the_Owner__c }{ !Pipe_Lining__c.Name_of_Owner__c } ,

I hope everything is going well in { !Fabrication__c.Name_of_Company__c }

{ !Shed_Work__c.Name_of_Company__c }{ !Pipe_Lining__c.Name_of_Company__c }

Company. I have been attached the required items for the work to be done. Please verify them.

length =

{ !Fabrication__c.Length__c }{ !Shed_Work__c.Height__c }{ !Pipe_Lining__c.Height__c },

breadth = { !Fabrication__c.Length__c }{ !Shed_Work__c.Breadth__c }, width =

{ !Fabrication__c.Width__c }{ !Shed_Work__c.Width__c }{ !Pipe_Lining__c.Width__c },

area = { !Fabrication__c.Area__c }{ !Shed_Work__c.Area__c }{ !Pipe_Lining__c.Area__c },

The Final Price =

{ !Fabrication__c.price__c }{ !Shed_Work__c.Price__c }{ !Pipe_Lining__c.Price__c }.

Thanks & Regards,
Engineering Works.

7. Save

Similarly Create an Email Template for Shed-work Object and Pipe Lining Object.

4.Create Email Alert:

1. Go to setup in quick find box enter email Alert >> New Email Alert

2. Description : Email Alert for Fabrication Object

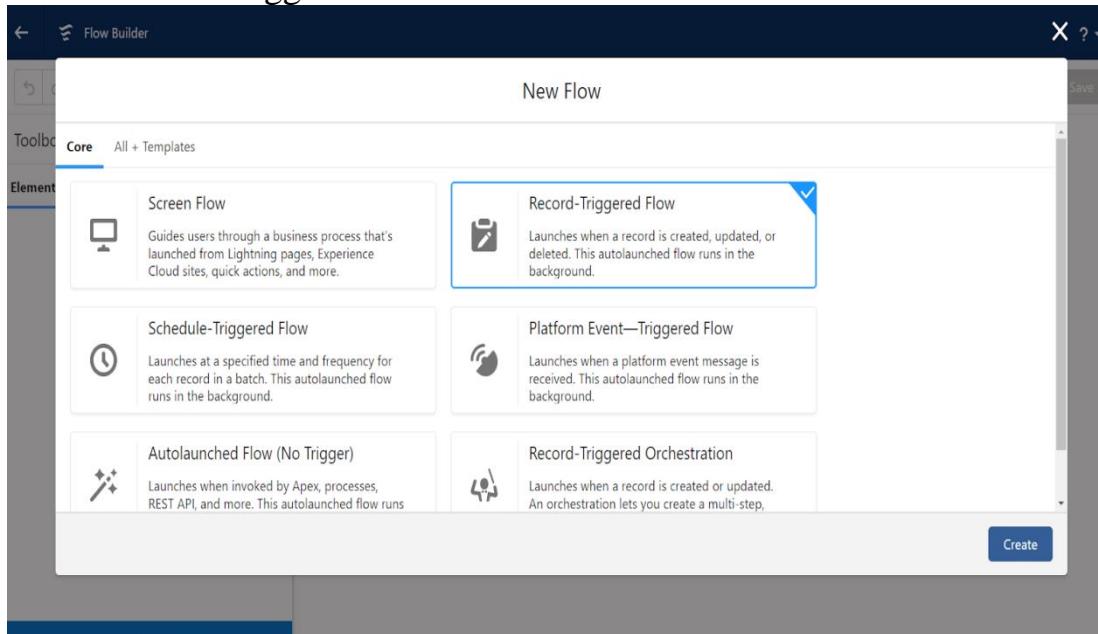
Unique Name : Auto-Populated

- Object : Fabrication
- Email Template : select the template that is for fabrication Object
- Recipients : User: Integration User, User : System Administrator, user : Security User
3. Click Save
Similarly create for Pipe-Lining and Shed-Work objects

STEP 10; Milestone 10 : FLOWS:

1.Create Flow to calculate Final Price on Fabrication Object based on Material Type:

1. Go to setup >> type Flow in quick find box >> Click on the Flow and Select the New Flow.
2. Select the record Triggered flow.Click on create.



3. Under Object select "Fabrication". Click on A record is created or updated.

Select Object

Select the object whose records trigger the flow when they're created, updated, or deleted.

* Object

Fabrication

Configure Trigger

* Trigger the Flow When:

- A record is created
- A record is updated
- A record is created or updated
- A record is deleted

4. Set Entry Conditions : None
5. Select Actions and Related Records

Select Object

Select the object whose records trigger the flow when they're created, updated, or deleted.

* Object

Fabrication

Configure Trigger

* Trigger the Flow When:

- A record is created
- A record is updated
- A record is created or updated
- A record is deleted

Set Entry Conditions

Specify entry conditions to reduce the number of records that trigger the flow and the number of times the flow is executed. Minimizing unnecessary flow executions helps to conserve your org's resources.

If you create a flow that's triggered when a record is updated, we recommend first defining entry conditions. Then select the **Only when a record is updated to meet the condition requirements** option for When to Run the Flow for Updated Records.

Condition Requirements

None

* Optimize the Flow for:

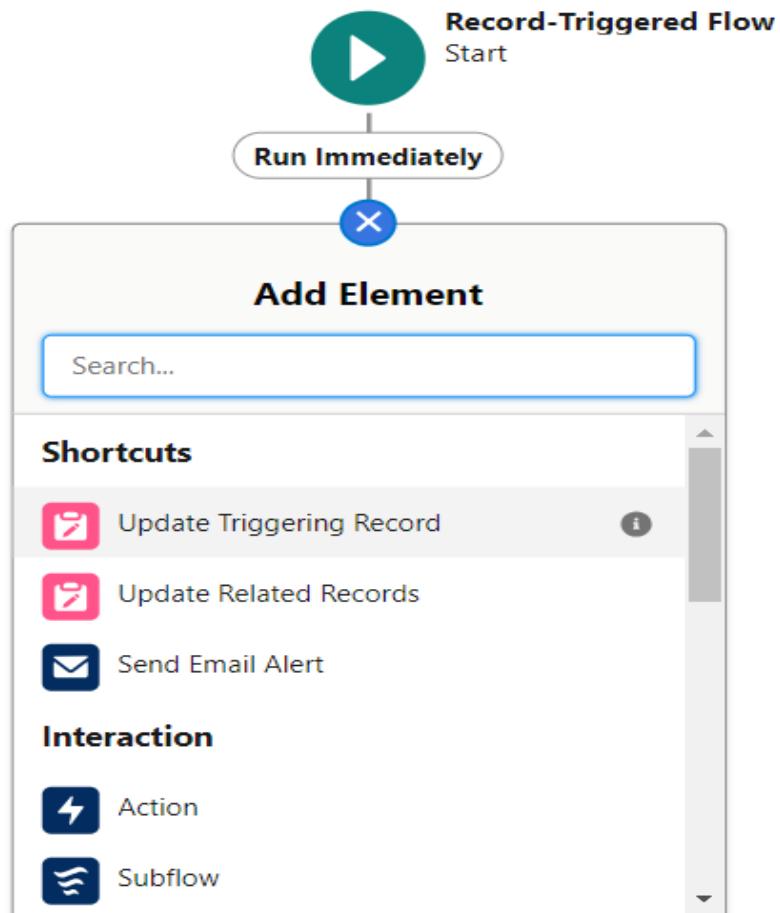
Fast Field Updates

Update fields on the record that triggers the flow to run. This high-performance flow runs *before* the record is saved to the database.

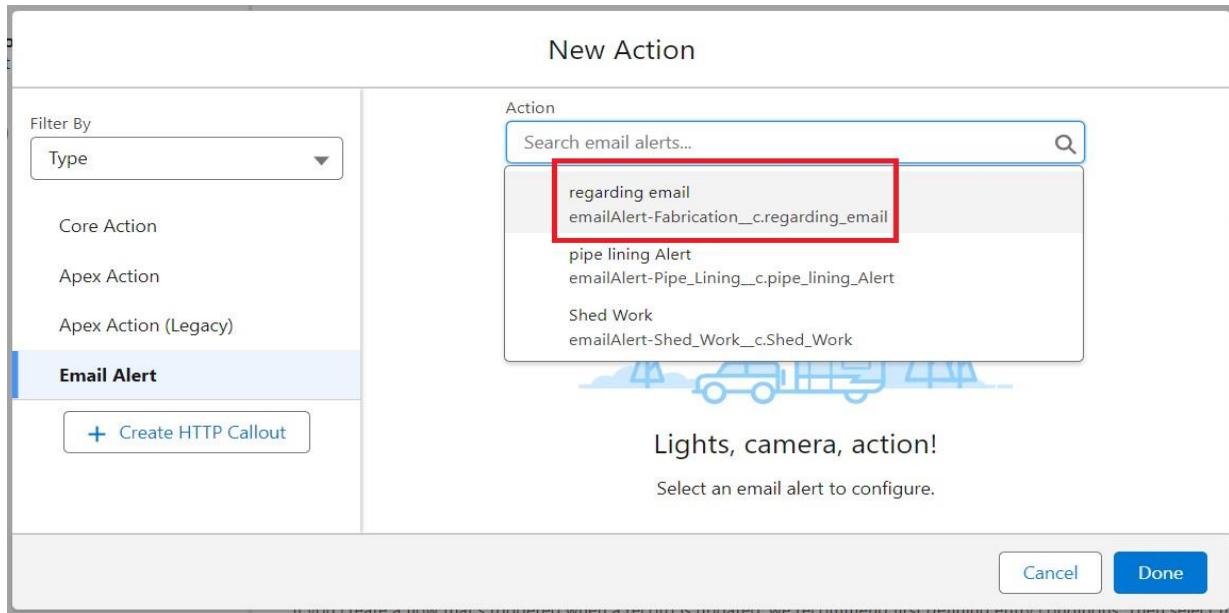
Actions and Related Records

Update any record and perform actions, like send an email. This more flexible flow runs *after* the record is saved to the database.

6. Under record trigger flow click on “+” icon and select Send Email Alert.



7. In New Action Select Fabrication Template.



8. Label : Mail
9. API Name : Mail
10. Record ID : {\$Record.Id}

New Action

Filter By: Type

Action: regarding email

Core Action: Apex Action: Apex Action (Legacy): Email Alert

* Label: Mail * API Name: Mail

Description:

Set Input Values for the Selected Action

Aa * Record ID ⓘ

(!\$Record.Id)

Cancel Done

11. Click Done.
12. Under record trigger flow click on “+” icon and select Decision

For New Decision :

- Label : Material
- Api Name : Material

For Outcome Details :

- Label : Iron Material
- Outcome API Name : Iron_Material
- Condition Requirements to Execute Outcome : Condition Requirements to Execute Outcome
- Resource : { !\$Record.Material_Type__c }
- Operator : Equals
- Value : Iron

In the Outcome Order click ‘+’ Icon and create another four outcomes for Aluminum, Metal, Wood, Steel(for each outcome keep the respective value)

- For Aluminum >> Value : Aluminum
- For Metal >> Value : Metal
- For Wood >> Value : Wood
- For Steel >> Value : Steel

The Outcome Details will be seen like below :

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

OUTCOME ORDER	OUTCOME DETAILS						
<input style="border: 2px solid red; border-radius: 50%; width: 20px; height: 20px; vertical-align: middle;" type="button" value="+"/>	* Label <input style="border: 2px solid red; width: 200px; vertical-align: middle;" type="text" value="Iron Material"/> * Outcome API Name <input style="border: 2px solid red; width: 200px; vertical-align: middle;" type="text" value="Iron_Material"/> Condition Requirements to Execute Outcome <input style="width: 150px; vertical-align: middle;" type="button" value="All Conditions Are Met (AND)"/> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 5px;">Resource</td> <td style="padding: 5px;">Operator</td> <td style="padding: 5px;">Value</td> </tr> <tr> <td style="padding: 5px;"><input style="border: 2px solid red; width: 150px; vertical-align: middle;" type="text" value="\$Record > Material Type"/></td> <td style="padding: 5px;">Equals</td> <td style="padding: 5px;">Iron</td> </tr> </table> <input style="width: 150px; border: 1px solid #ccc; border-radius: 5px; padding: 5px; margin-top: 10px;" type="button" value="+ Add Condition"/> When to Execute Outcome <input style="font-size: small; vertical-align: middle;" type="button" value="?"/> <ul style="list-style-type: none"> <input checked="" type="radio"/> If the condition requirements are met <input type="radio"/> Only if the record that triggered the flow to run is updated to meet the condition requirements 	Resource	Operator	Value	<input style="border: 2px solid red; width: 150px; vertical-align: middle;" type="text" value="\$Record > Material Type"/>	Equals	Iron
Resource	Operator	Value					
<input style="border: 2px solid red; width: 150px; vertical-align: middle;" type="text" value="\$Record > Material Type"/>	Equals	Iron					
Default Outcome							

13. Under Iron Material click on “+” icon and select Update Related Record.

- Label : For Iron
- API Name : For_Iron
- How to Find Records to Update and Set Their Value : Select Use the fabrication record that triggered the flow
- Set Filter Conditions : None—Always Update Record
- Set Field Values for the Fabrication Record
Field :Final_price__c
- For Value click on New resource

New Update Records													
* Label <input style="border: 2px solid red; width: 200px; vertical-align: middle;" type="text" value="For Iron"/>	* API Name <input style="border: 2px solid red; width: 200px; vertical-align: middle;" type="text" value="For_Iron"/>												
Description													
<input checked="" type="radio"/> Use the fabrication record that triggered the flow <input type="radio"/> Update records related to the fabrication record that triggered the flow <input type="radio"/> Use the IDs and all field values from a record or records collection <input type="radio"/> Specify conditions to identify records, and set fields individually													
Set Filter Conditions Condition Requirements to Update Record <input style="width: 150px; border: 1px solid #ccc; border-radius: 5px; padding: 5px;" type="button" value="None—Always Update Record"/> Set Field Values for the Fabrication Record Field <input style="border: 2px solid red; width: 200px; vertical-align: middle;" type="text" value="price__c"/>													
<input style="width: 150px; border: 1px solid #ccc; border-radius: 5px; padding: 5px;" type="button" value="New Resource"/> Global Variables <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 5px;"><input type="checkbox"/> \$Api</td> <td style="padding: 5px;">></td> </tr> <tr> <td style="padding: 5px;"><input type="checkbox"/> \$Flow</td> <td style="padding: 5px;">></td> </tr> <tr> <td style="padding: 5px;"><input type="checkbox"/> \$Organization</td> <td style="padding: 5px;">></td> </tr> <tr> <td style="padding: 5px;"><input type="checkbox"/> \$Profile</td> <td style="padding: 5px;">></td> </tr> <tr> <td style="padding: 5px;"><input type="checkbox"/> \$Record Fabrication__c</td> <td style="padding: 5px;">></td> </tr> <tr> <td style="padding: 5px;"><input type="checkbox"/> \$Record_Prior Fabrication__c</td> <td style="padding: 5px;">></td> </tr> </table> Enter value or search resources... <input style="width: 150px; vertical-align: middle;" type="text"/>		<input type="checkbox"/> \$Api	>	<input type="checkbox"/> \$Flow	>	<input type="checkbox"/> \$Organization	>	<input type="checkbox"/> \$Profile	>	<input type="checkbox"/> \$Record Fabrication__c	>	<input type="checkbox"/> \$Record_Prior Fabrication__c	>
<input type="checkbox"/> \$Api	>												
<input type="checkbox"/> \$Flow	>												
<input type="checkbox"/> \$Organization	>												
<input type="checkbox"/> \$Profile	>												
<input type="checkbox"/> \$Record Fabrication__c	>												
<input type="checkbox"/> \$Record_Prior Fabrication__c	>												

- In Resource Type : Select Formula
- API Name : IronCost

Data Type : Number

Decimal Places : 2

Formula : { !\$Record.Amount__c } * 2

New Resource

* API Name
IronCost

Description

* Data Type
Number

Decimal Places
2

* Formula

Insert a resource... All Functions Insert a function... Select an Operator...

`(!$Record.Amount_c) * 2`

[Cancel](#) [Done](#)

- Click Done

14. After clicking Done, it would look like

New Update Records

* Label
For Iron

* API Name
For_Iron

Description

Use the fabrication record that triggered the flow
 Update records related to the fabrication record that triggered the flow
 Use the IDs and all field values from a record or record collection
 Specify conditions to identify records, and set fields individually

Set Filter Conditions

Condition Requirements to Update Record
None—Always Update Record

Set Field Values for the Fabrication Record

Field	Value
price_c	# IronCost

+ Add Field

15. Under Aluminum Material click on “+” icon and select Update Related Record.

- Label : For Aluminum
- API Name : For_Aluminum
- How to Find Records to Update and Set Their Value : Select Use the fabrication record that triggered the flow

- Set Filter Conditions : None—Always Update Record
- Set Field Values for the Fabrication Record
 - Field :Final_price__c
- For Value click on New resource
- In Resource Type : Select Formula
- API Name : AluminumCost

Data Type : Number

Decimal Places : 2

Formula : { !\$Record.Amount__c } * 1.8

- Click Done

16. Under Metal Material click on “+” icon and select Update Related Record.

- Label : For Metal
- API Name : For_Metal
- How to Find Records to Update and Set Their Value : Select Use the fabrication record that triggered the flow
- Set Filter Conditions : None—Always Update Record
- Set Field Values for the Fabrication Record
 - Field :Final_price__c
- For Value click on New resource
- In Resource Type : Select Formula
- API Name : MetalCost

Data Type : Number

Decimal Places : 2

Formula : { !\$Record.Amount__c } * 1.6

- Click Done

17. Under WoodMaterial click on “+” icon and select Update Related Record.

- Label : For Wood
- API Name : For_Wood
- How to Find Records to Update and Set Their Value : Select Use the fabrication record that triggered the flow
- Set Filter Conditions : None—Always Update Record
- Set Field Values for the Fabrication Record
 - Field :Final_price__c
- For Value click on New resource
- In Resource Type : Select Formula
- API Name : WoodCost

Data Type : Number

Decimal Places : 2

Formula : { !\$Record.Amount__c } * 1.4

- Click Done

18. Under Steel Material click on “+” icon and select Update Related Record.

- Label : For Steel
- API Name : For_Steel
- How to Find Records to Update and Set Their Value : Select Use the fabrication record that triggered the flow
- Set Filter Conditions : None—Always Update Record
- Set Field Values for the Fabrication Record
 - Field :Final_price__c
- For Value click on New resource
- In Resource Type : Select Formula
- API Name : SteelCost

Data Type : Number

Decimal Places : 2

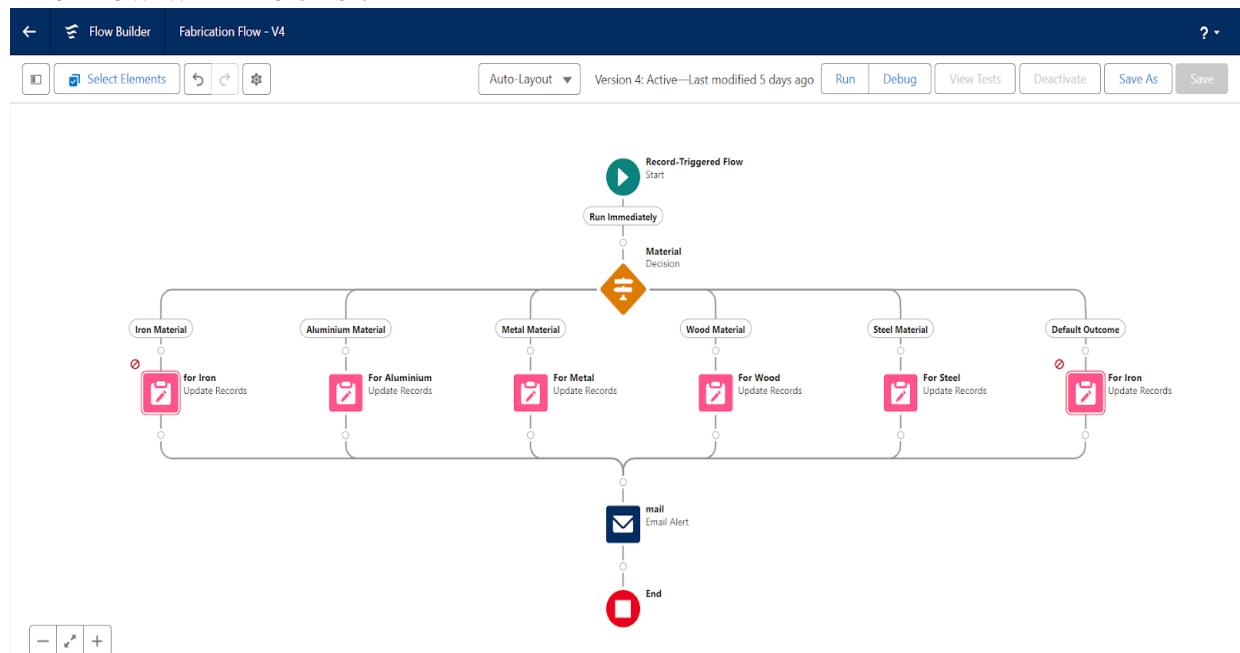
Formula : { !\$Record.Amount__c } * 1.2

- Click Done

19. Click on Save

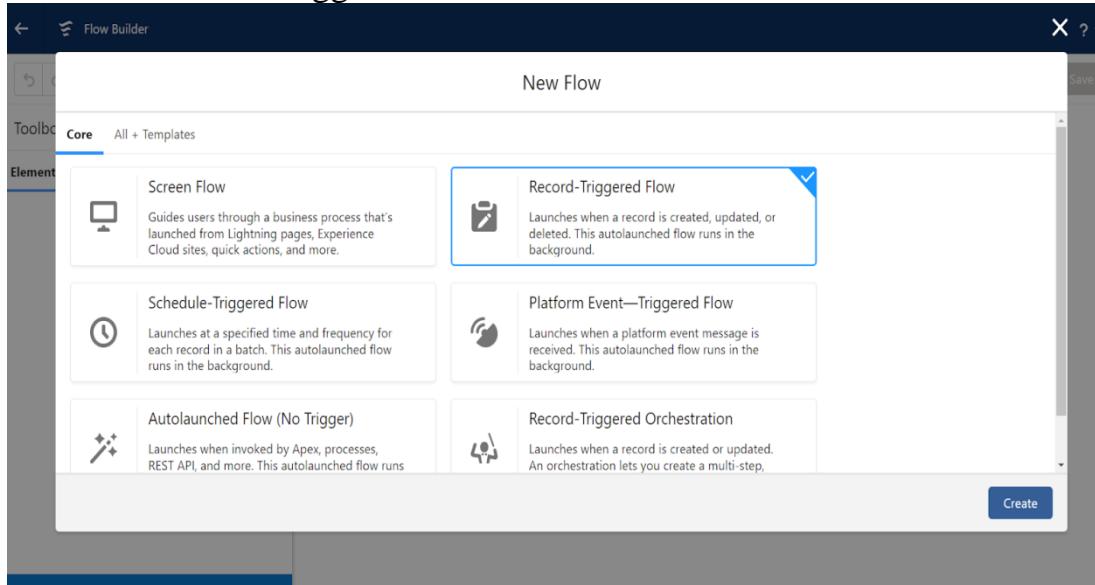
- Flow Label : Fabrication Flow
- Flow API Name : Fabrication_Flow
- Click Save and then active

20. The Flow will like this :

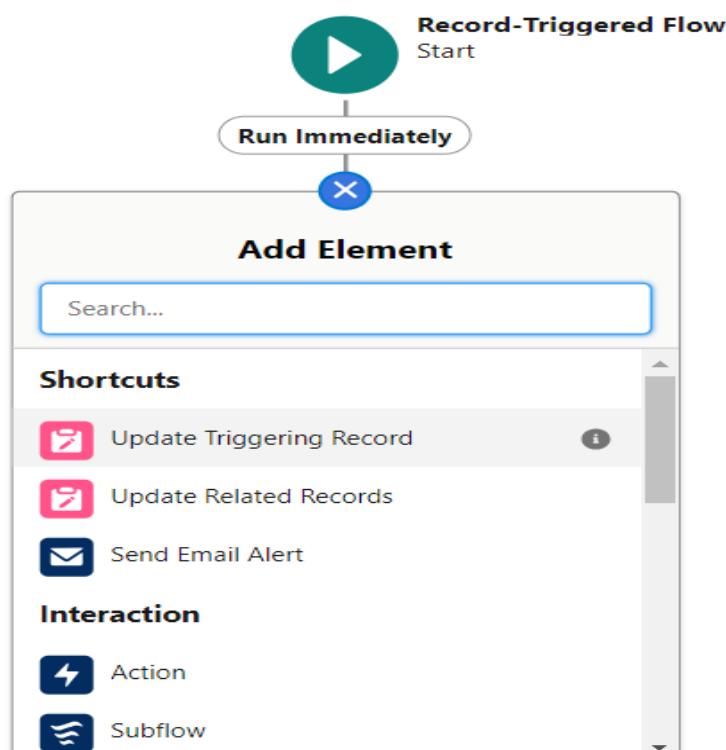


2.Create Flow to calculate Final Price on Shed Work Object based on Material Type:

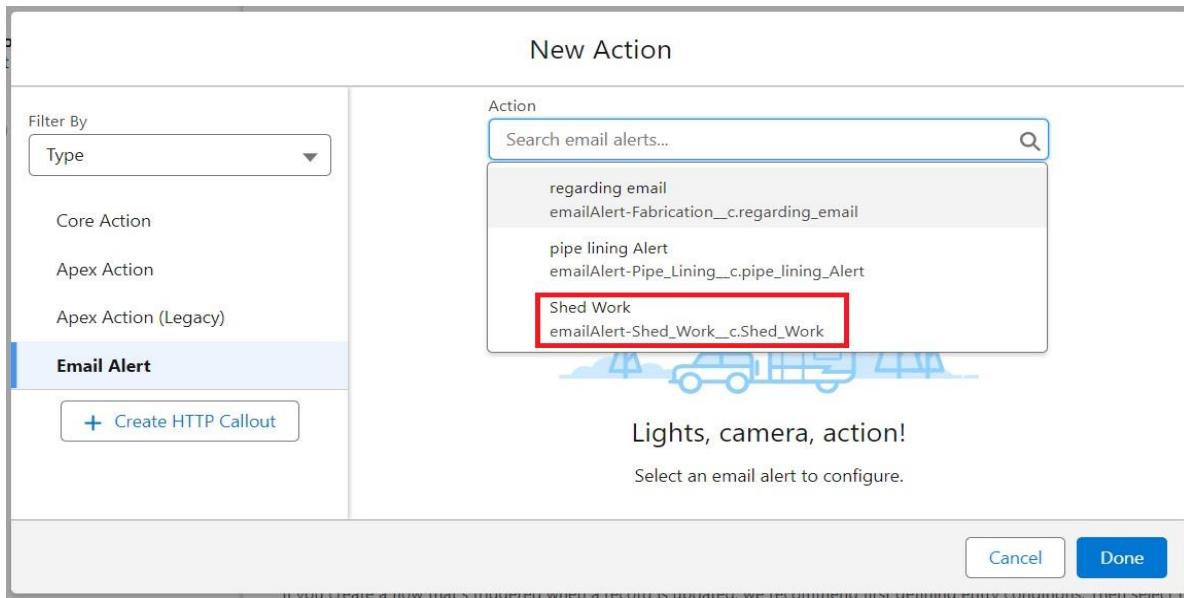
1. Go to setup >> type Flow in quick find box >> Click on the Flow and Select the New Flow.
2. Select the record Triggered flow.Click on create.



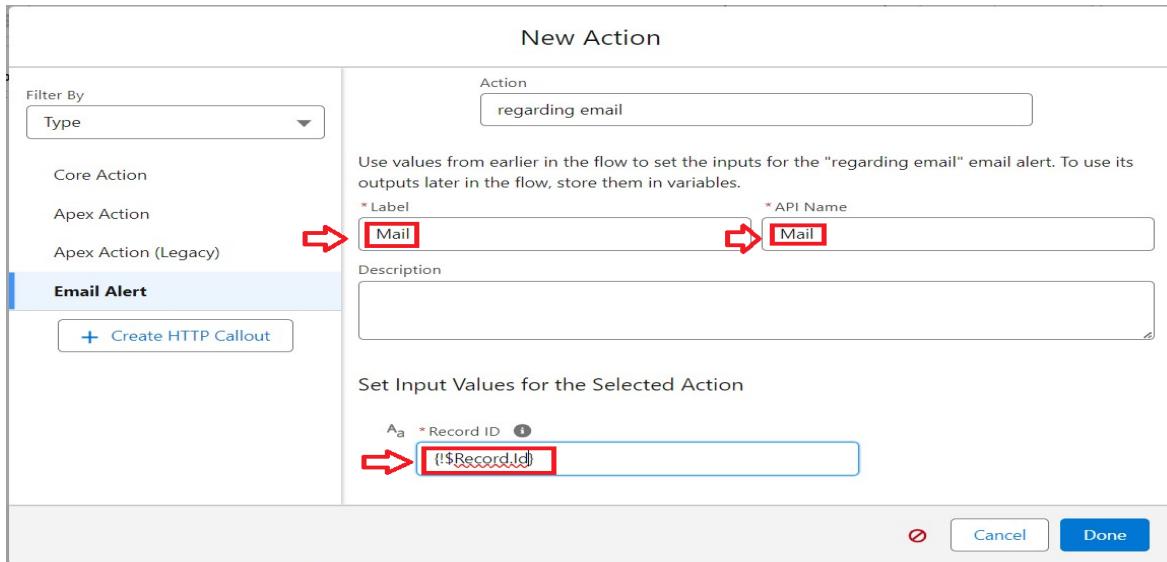
3. Under Object select “Shed Work”. Click on A record is created or updated.
4. Set Entry Conditions : None
5. Select Actions and Related Records
6. Under record trigger flow click on “+” icon and select Send Email Alert.



7. In New Action Select Fabrication Template.



8. Label : Mail
 9. API Name : Mail
 10. Record ID : { !\$Record.Id }



11. Click Done.
 12. Under record trigger flow click on “+” icon and select Decision
 For New Decision :
 - Label : Material
 - Api Name : Material
 For Outcome Details :
 - Label : Iron Material
 - Outcome API Name : Iron_Material

- Condition Requirements to Execute Outcome : Condition Requirements to Execute Outcome
- Resource : { !\$Record.Material_Type__c }
- Operator : Equals
- Value : Iron

In the Outcome Order click ‘+’ Icon and create another four outcomes for Metal1, Steel(for each outcome keep the respective value)

- For Metal1 >> Value : Metal
- For Steel >> Value : Steel

The Outcome Details will be seen like below :

* Label * API Name

material **material**

Description

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

OUTCOME ORDER	OUTCOME DETAILS
metal1	* Label metal1 * API Name metal1 Condition Requirements to Execute Outcome All Conditions Are Met (AND)
Iron	
Steel	

Default Outcome

Resource **\$Record > Material Type** Operator Equals Value **Metal**

+ Add Condition

13. Under Iron Material click on “+” icon and select Update Related Record.

- Label : For Iron
- API Name : For_Iron
- How to Find Records to Update and Set Their Value : Select Use the Shed-Work record that triggered the flow
- Set Filter Conditions : None—Always Update Record
- Set Field Values for the Fabrication Record
 - Field :Final_price__c
- For Value click on New resource
- In Resource Type : Select Formula
- API Name : IronCost

Data Type : Number

Decimal Places : 2

Formula : { !\$Record.Amount__c } * 2

- Click Done

14. After clicking Done, it would look like

Edit Update Records
For Metal1 (For_Metal1)

* Label * API Name

Description

* How to Find Records to Update and Set Their Values
 Use the shed-work record that triggered the flow
 Update records related to the shed-work record that triggered the flow
 Use the IDs and all field values from a record or record collection
 Specify conditions to identify records, and set fields individually

Set Filter Conditions
Condition Requirements to Update Record
None—Always Update Record ▾

Set Field Values for the Shed-Work Record
Field Value

15. Under Metal1 Material click on “+” icon and select Update Related Record.

- Label : For Metal1
- API Name : For_Metal1
- How to Find Records to Update and Set Their Value : Select Use the fabrication record that triggered the flow
- Set Filter Conditions : None—Always Update Record
- Set Field Values for the Fabrication Record
 - Field :Final_price__c
 - For Value click on New resource
 - In Resource Type : Select Formula
 - API Name : Metal1_Cost

Data Type : Number

Decimal Places : 2

Formula : { !\$Record.Amount__c } * 1.8

- Click Done

16. Under Steel Material click on “+” icon and select Update Related Record.

- Label : For Steel
- API Name : For_Steel

- How to Find Records to Update and Set Their Value : Select Use the fabrication record that triggered the flow
 - Set Filter Conditions : None—Always Update Record
 - Set Field Values for the Fabrication Record
 - Field :Final_price__c
 - For Value click on New resource
 - In Resource Type : Select Formula
 - API Name : SteelCost
- Data Type : Number
 Decimal Places : 2
 Formula : { !\$Record.Amount__c } * 1.5
- Click Done

17. The flow for rods has been completed in shed-work. Now, lets write the flow for sheet of the shed based on material type

18. Click the ‘+’ Icon which is between decision and Email alert then select select Decision

19. For New Decision :

- Label : Sheet Material
- Api Name : Sheet_Material

For Outcome Details :

- Label : Metal2 Material
- Outcome API Name : Metal2_Material
- Condition Requirements to Execute Outcome : Condition Requirements to Execute Outcome
- Resource : { !\$Record.Material_Type__c }
- Operator : Equals
- Value : Metals

In the Outcome Order click ‘+’ Icon and create another four outcomes for Rubber, Plastic(for each outcome keep the respective value)

- For Rubber >> Value : Rubber
- For Plastic >> Value : Plastic

The Outcome Details will be seen like below :

The screenshot shows the 'Sheet Material' flow configuration. At the top, there are fields for 'Label' (Sheet Material) and 'API Name' (Sheet_Material). Below these is a 'Description' field with a large text area. Under the heading 'Outcomes', it says 'For each path the flow can take, create an outcome. For each outcome, specify the conditions that must be met for the flow to take that path.' A table titled 'OUTCOME ORDER' lists three outcomes: 'Metal2' (selected), 'Rubber', and 'Plastic'. To the right of the outcomes is a 'OUTCOME DETAILS' section. It includes fields for 'Label' (Metal2), 'API Name' (Metal2), and a dropdown for 'Condition Requirements to Execute Outcome' set to 'All Conditions Are Met (AND)'. Below this is a 'Resource' condition row with '\$Record > Material Type for Sh...' as the resource, 'Equals' as the operator, and 'Metal' as the value. There is also a '+ Add Condition' button.

20. Under Iron Material click on “+” icon and select Update Related Record.

- Label : For Metal2
- API Name : For_Metal2
- How to Find Records to Update and Set Their Value : Select Use the Shed Work record that triggered the flow
- Set Filter Conditions : None—Always Update Record
- Set Field Values for the Fabrication Record
Field :Final_price__c
- For Value click on New resource
- In Resource Type : Select Formula
- API Name : Metal2Cost

Data Type : Number

Decimal Places : 2

Formula : { !\$Record.Amount__c } * 1.8

- Click Done

21. Click Done

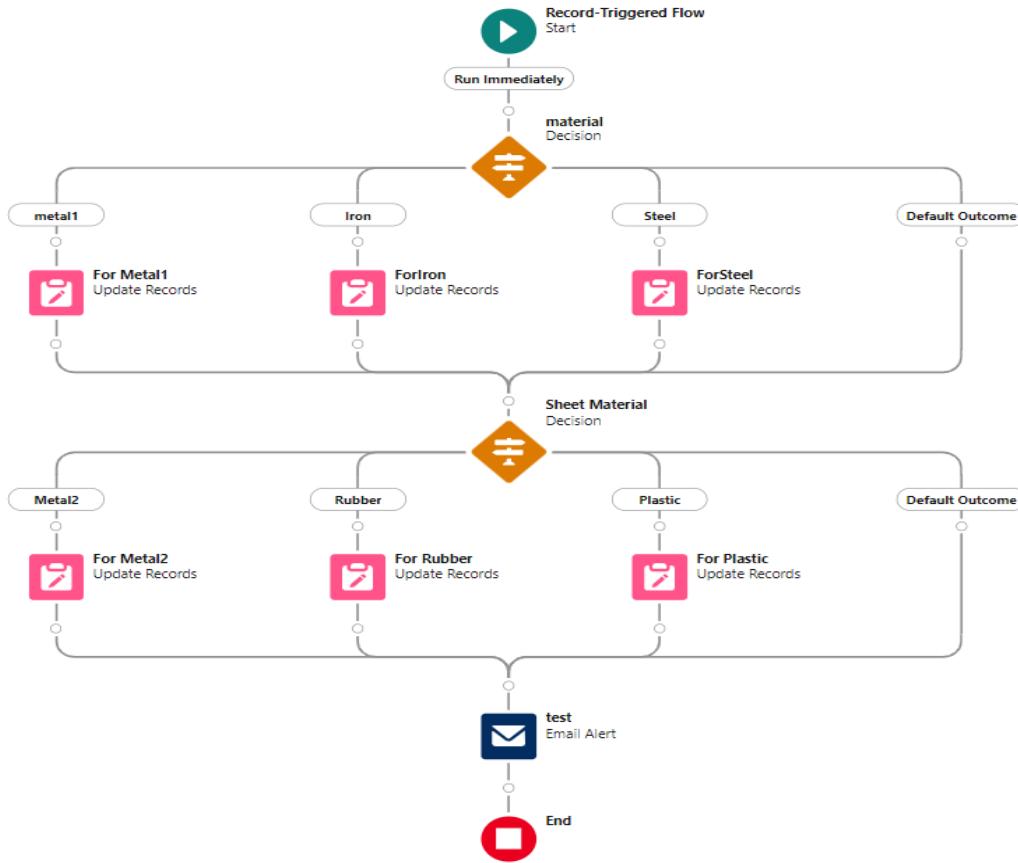
22. Under Rubber Material click on “+” icon and select Update Related Record.

- Label : For Rubber
- API Name : For_Rubber
- How to Find Records to Update and Set Their Value : Select Use the Shed Work record that triggered the flow
- Set Filter Conditions : None—Always Update Record
- Set Field Values for the Fabrication Record
Field :Final_price__c
- For Value click on New resource
- In Resource Type : Select Formula
- API Name : Rubber_Cost

Data Type : Number
Decimal Places : 2
Formula : { !\$Record.Amount__c } * 1.8

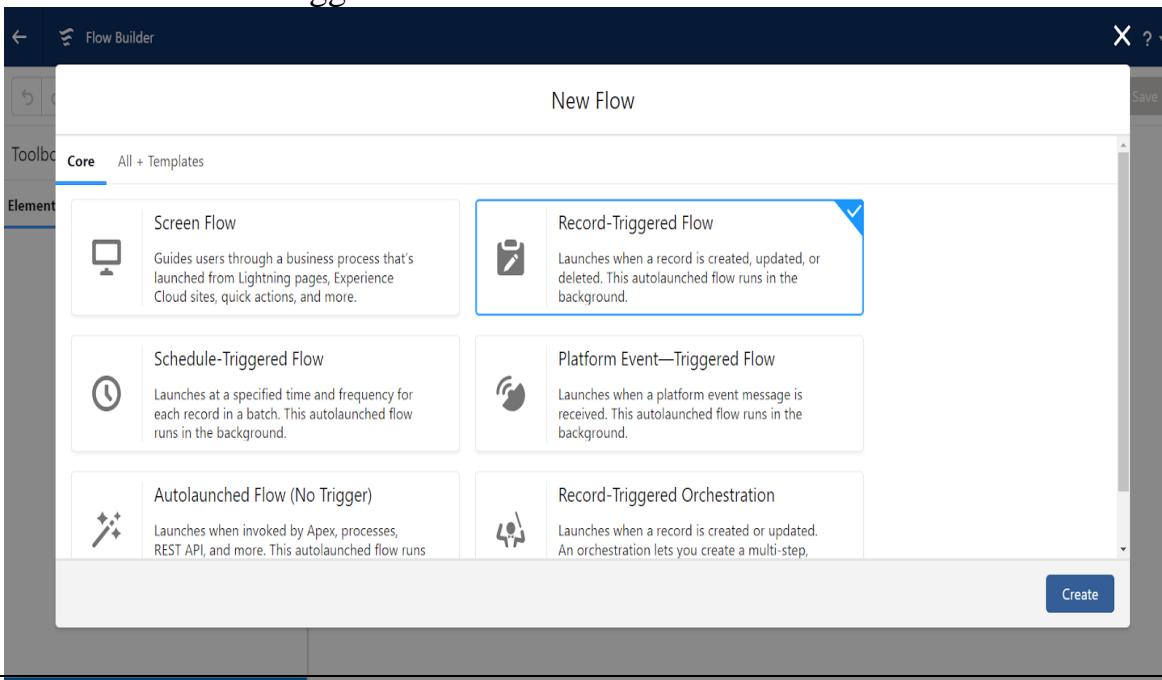
- Click Done

23. Under Plastic Material click on “+” icon and select Update Related Record.
- Label : For Plastic
 - API Name : For_Plastic
 - How to Find Records to Update and Set Their Value : Select Use the Shed Work record that triggered the flow
 - Set Filter Conditions : None—Always Update Record
 - Set Field Values for the Fabrication Record
 - Field :Final_price__c
 - For Value click on New resource
 - In Resource Type : Select Formula
 - API Name : PlasticCost
- Data Type : Number
Decimal Places : 2
Formula : { !\$Record.Amount__c } * 1.5
- Click Done
24. Click on Save
- Flow Label : Shed Work Flow
 - Flow API Name : Shed_Work_Flow
 - Click Save and then Actiavte
25. The Shed Work Flow would look like this:

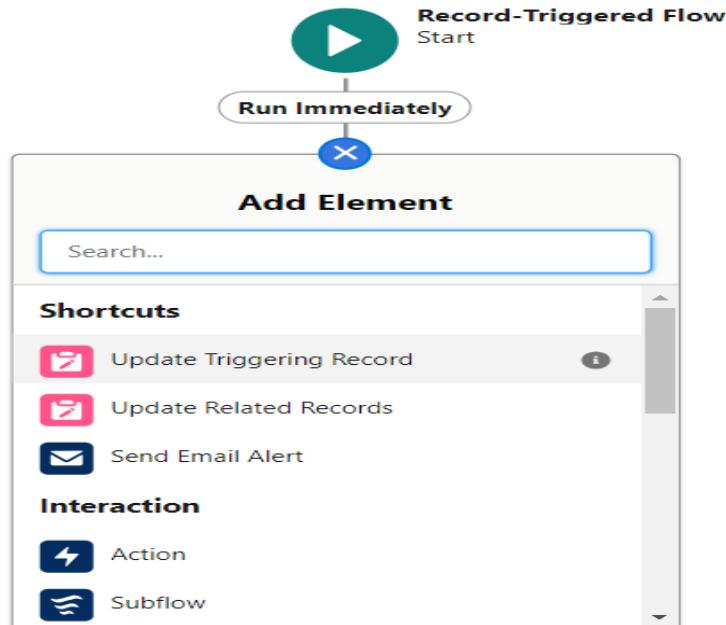


3.Create Flow to calculate Final Price on Pipe Lining Object based on Material Type:

26. Go to setup >> type Flow in quick find box >> Click on the Flow and Select the New Flow.
27. Select the record Triggered flow.Click on create.

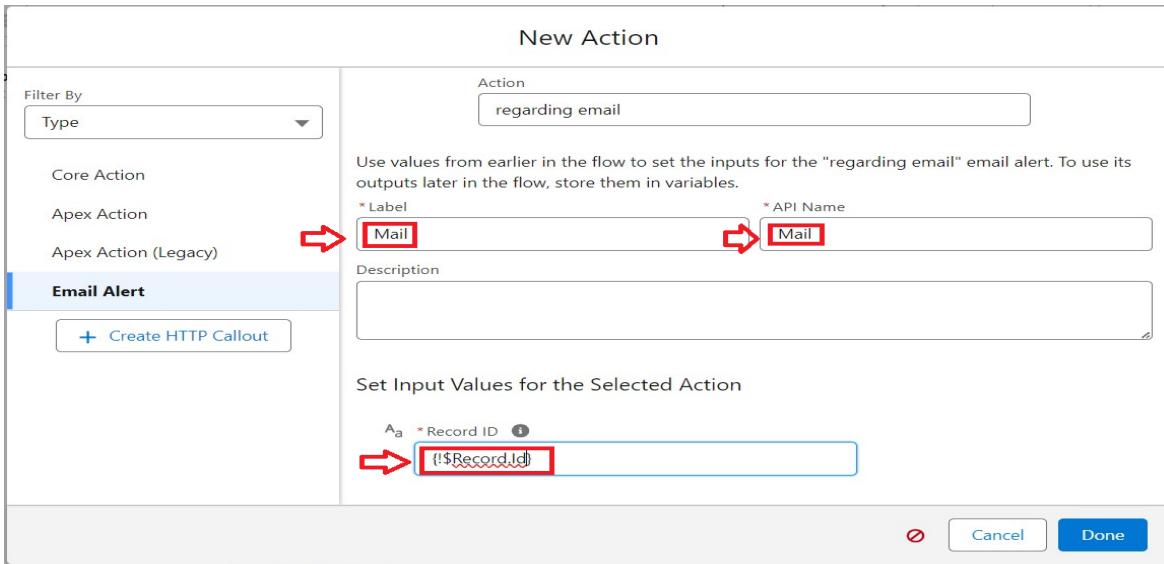


28. Under Object select “Pipe Lining”. Click on A record is created or updated.
29. Set Entry Conditions : None
30. Select Actions and Related Records
31. Under record trigger flow click on “+” icon and select Send Email Alert.



32. In New Action Select Pipe Lining Template.

33. Label : Mail
34. API Name : Mail
35. Record ID : {\$Record.Id}



36. Click Done.
37. Under record trigger flow click on “+” icon and select Decision

For New Decision :

- Label : Material
- Api Name : Material

For Outcome Details :

- Label : Iron Material
- Outcome API Name : Iron_Material
- Condition Requirements to Execute Outcome : Condition Requirements to Execute Outcome
- Resource : { !\$Record.Material_Type__c }
- Operator : Equals
- Value : Iron

In the Outcome Order click ‘+’ Icon and create another four outcomes for Aluminum, Metal(for each outcome keep the respective value)

- For Aluminum >> Value : Aluminum
- For Metal >> Value : Metal

The Outcome Details will be seen like below :

* Label * API Name

Description

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

OUTCOME ORDER	OUTCOME DETAILS							
<input type="button" value="Iron"/>	* Label <input type="text" value="Iron"/> * Outcome API Name <input type="text" value="Iron"/>	<input type="button" value="Delete Outcome"/>						
<input type="button" value="aluminium"/>								
<input type="button" value="Metal"/>								
Condition Requirements to Execute Outcome <input type="button" value="All Conditions Are Met (AND)"/>								
Default Outcome								
<table border="1"> <thead> <tr> <th>Resource</th> <th>Operator</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td><input type="button" value="\$Record > Material Type X"/></td> <td>Equals</td> <td>Iron</td> </tr> </tbody> </table> <input type="button" value="+ Add Condition"/>			Resource	Operator	Value	<input type="button" value="\$Record > Material Type X"/>	Equals	Iron
Resource	Operator	Value						
<input type="button" value="\$Record > Material Type X"/>	Equals	Iron						

38. Under Iron click on “+” icon and select Update Related Record.

- Label : For Iron
- API Name : For_Iron
- How to Find Records to Update and Set Their Value : Select Use the Pipe Lining record that triggered the flow
- Set Filter Conditions : None—Always Update Record
- Set Field Values for the Fabrication Record
 - Field :Final_price__c
 - For Value click on New resource
 - In Resource Type : Select Formula
 - API Name : IronCost

Data Type : Number

Decimal Places : 2

Formula : { !\$Record.Amount__c } * 2

- Click Done

39. Click Done

40. Under Aluminum click on “+” icon and select Update Related Record.

- Label : For Aluminum
- API Name : For_Aluminum
- How to Find Records to Update and Set Their Value : Select Use the Pipe Lining record that triggered the flow
- Set Filter Conditions : None—Always Update Record
- Set Field Values for the Fabrication Record

Field :Final_price__c

- For Value click on New resource
- In Resource Type : Select Formula
- API Name : Aluminum_Cost

Data Type : Number

Decimal Places : 2

Formula : { !\$Record.Amount__c } * 1.8

- Click Done

41. Under Steel Material click on “+” icon and select Update Related Record.

- Label : For Metal
- API Name : For_Metal
- How to Find Records to Update and Set Their Value : Select Use the Pipe Lining record that triggered the flow
- Set Filter Conditions : None—Always Update Record
- Set Field Values for the Fabrication Record

Field :Final_price__c

- For Value click on New resource
- In Resource Type : Select Formula
- API Name : MetalCost

Data Type : Number

Decimal Places : 2

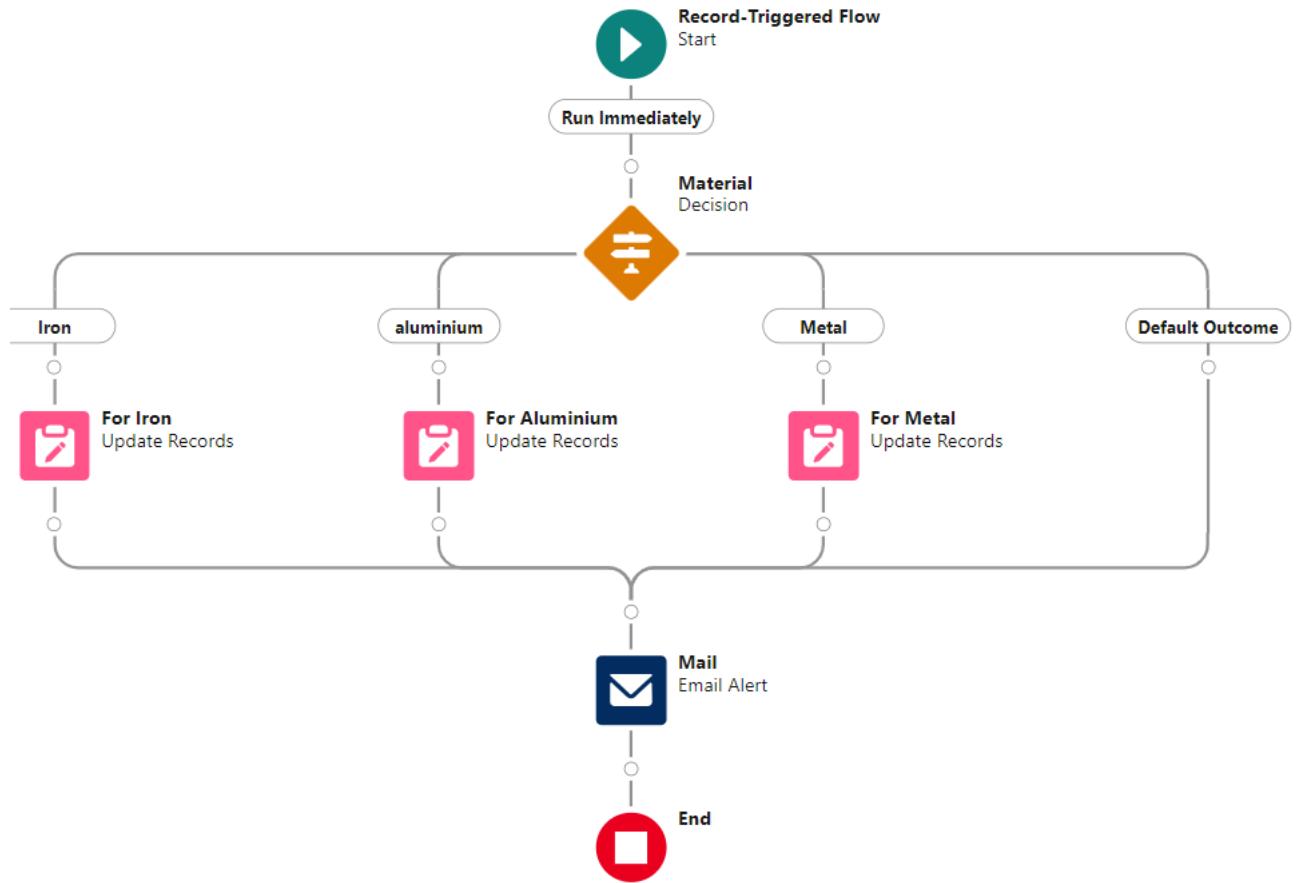
Formula : { !\$Record.Amount__c } * 1.5

- Click Done

42. Click on Save

- Flow Label : Pipe Lining Flow
- Flow API Name : Pipe_Lining_Flow
- Click Save

43. The Flow will like this :



STEP 11:Milestone 11 : Conclusion:

This Engineering Works Project automates the calculation of area whenever a record is created or updated, utilizing parameters such as length, breadth, and width, as well as quantity and cost per meter. The final amount is then determined based on the area and material type.