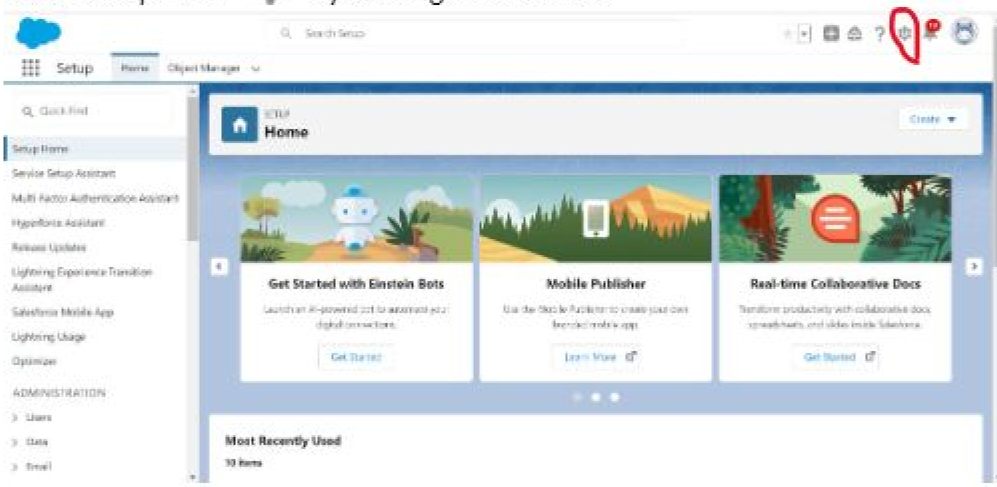
Salesforce

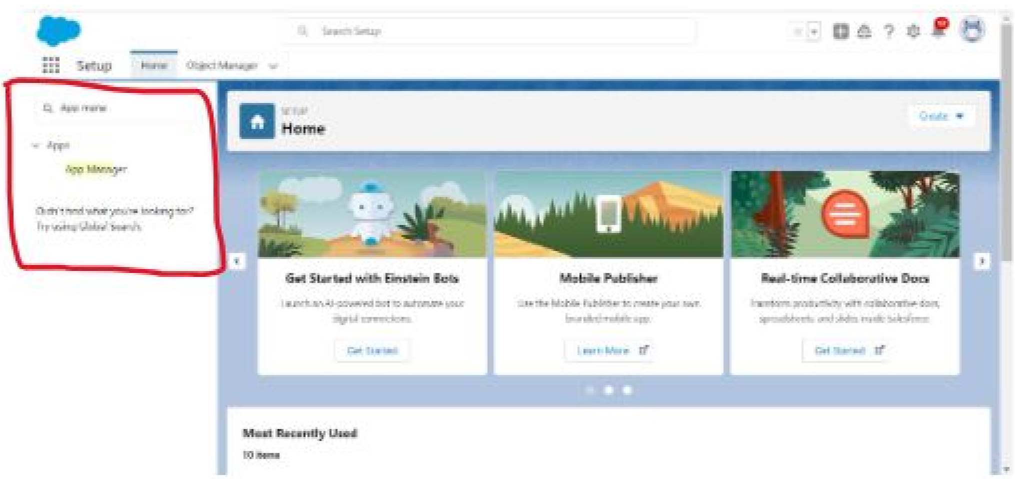
Day-01

1. To create an app in salesforce

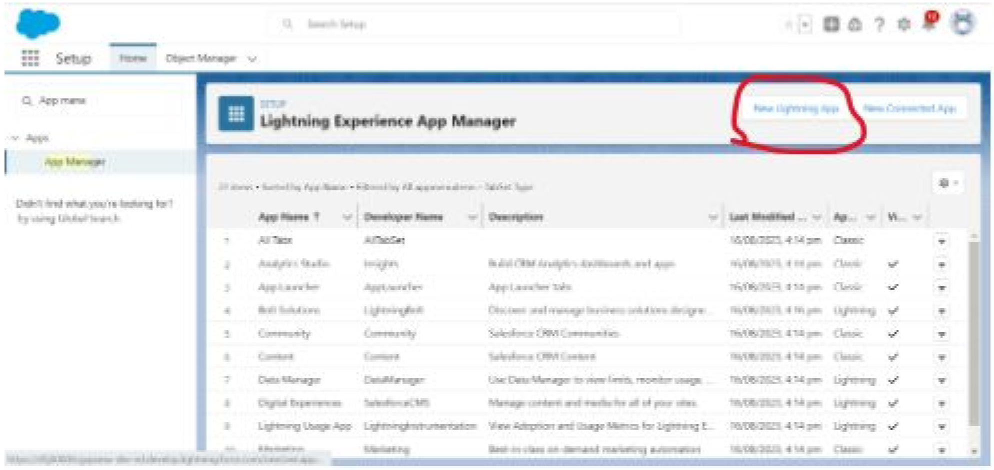
- Go to setup from by clicking on this icon.



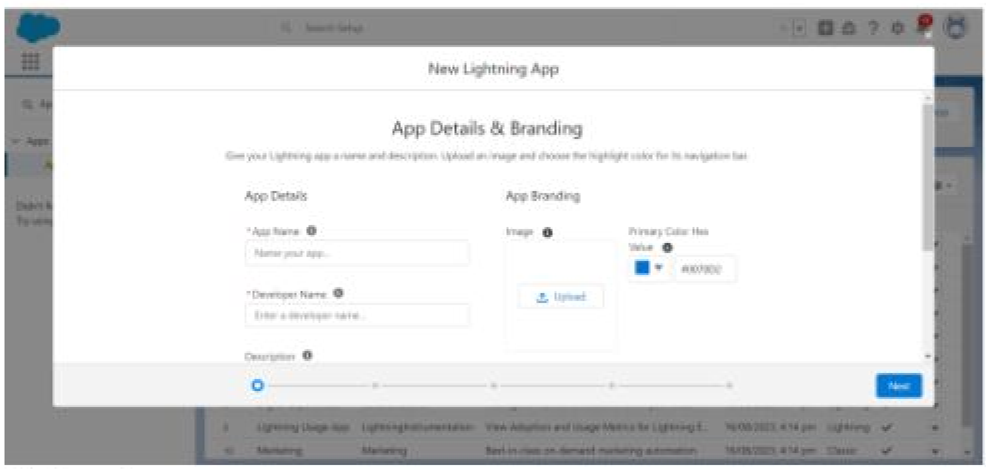
- Click on Quick search box and type **App manager.**



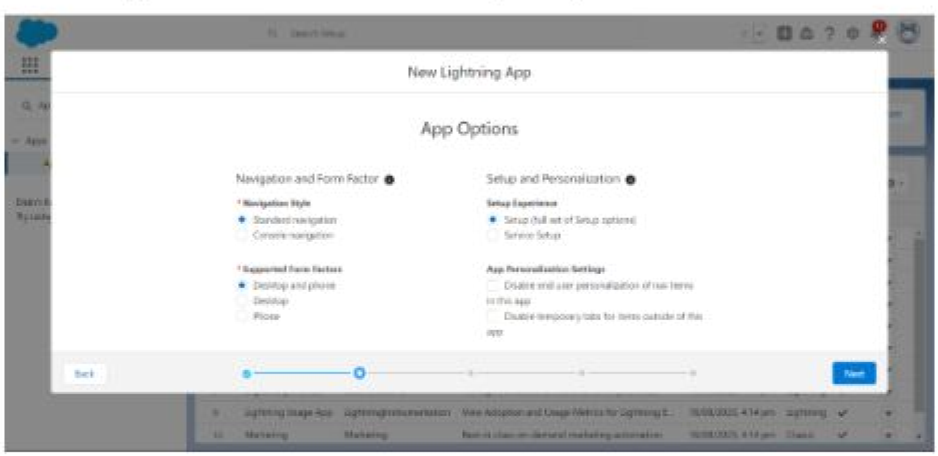
- Open App manager by clicking on it.
- Click on **New Lightning App** on right hand side of the screen.



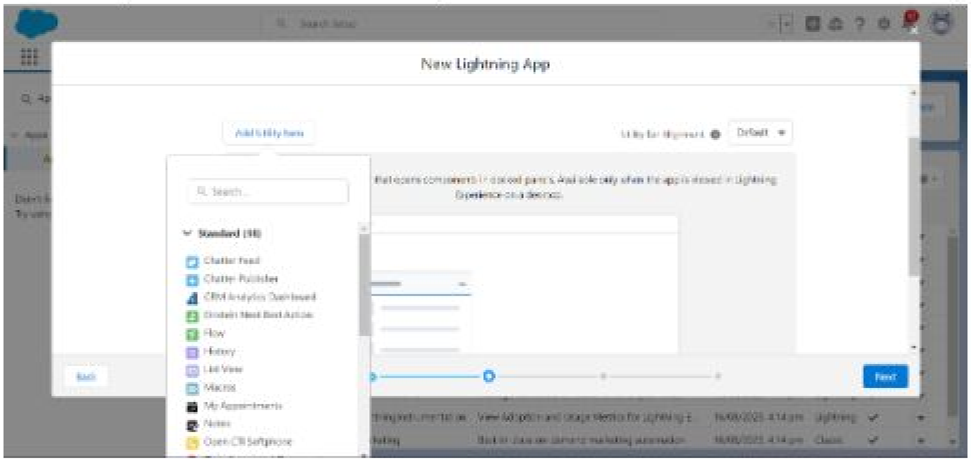
- Enter app details like name, developer name, and photos.



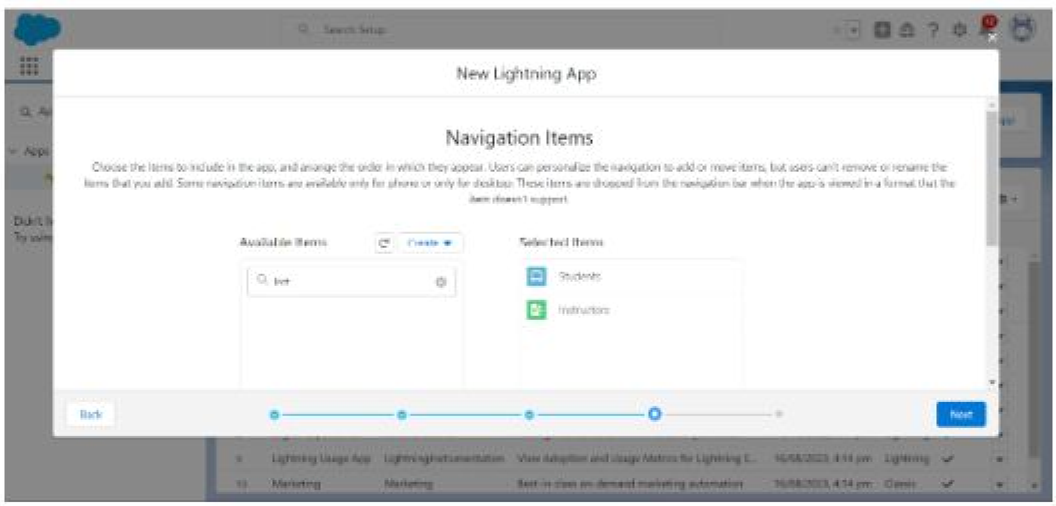
- Click next.
- Choose navigation style **Standard navigation** or **console navigation** as per requirements.
- Select setup experience **Setup (full set of setup options).**
- Select supported form factors **desktop and phone.**



- Click on next.
- Add utility item **like chatter feed (this is shown bottom of the frontend app).**

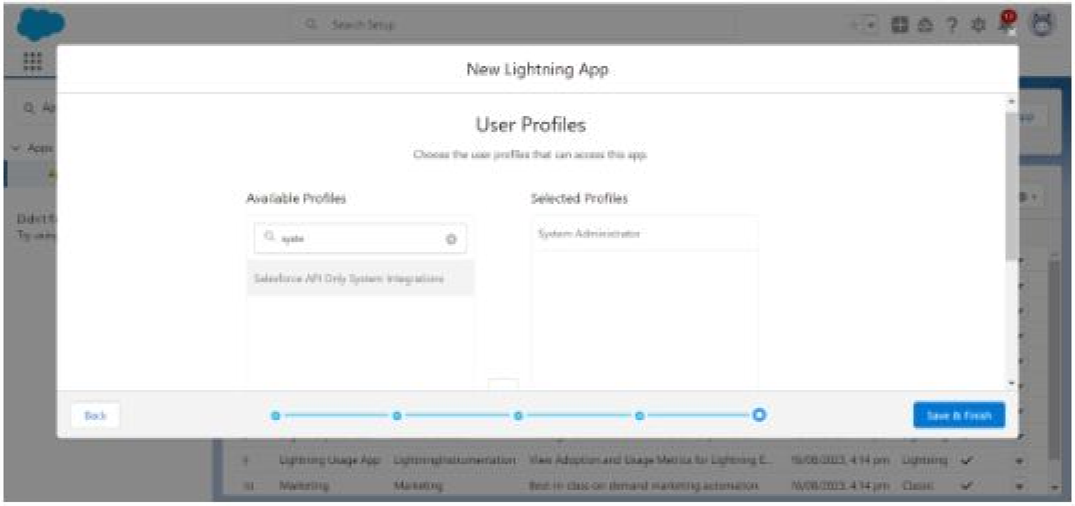


- Click next.
- In next window add available items like created custom object from other app can be added example: - students, instructor. We can select or we can keep blank, and we can create later.



- Click on next.

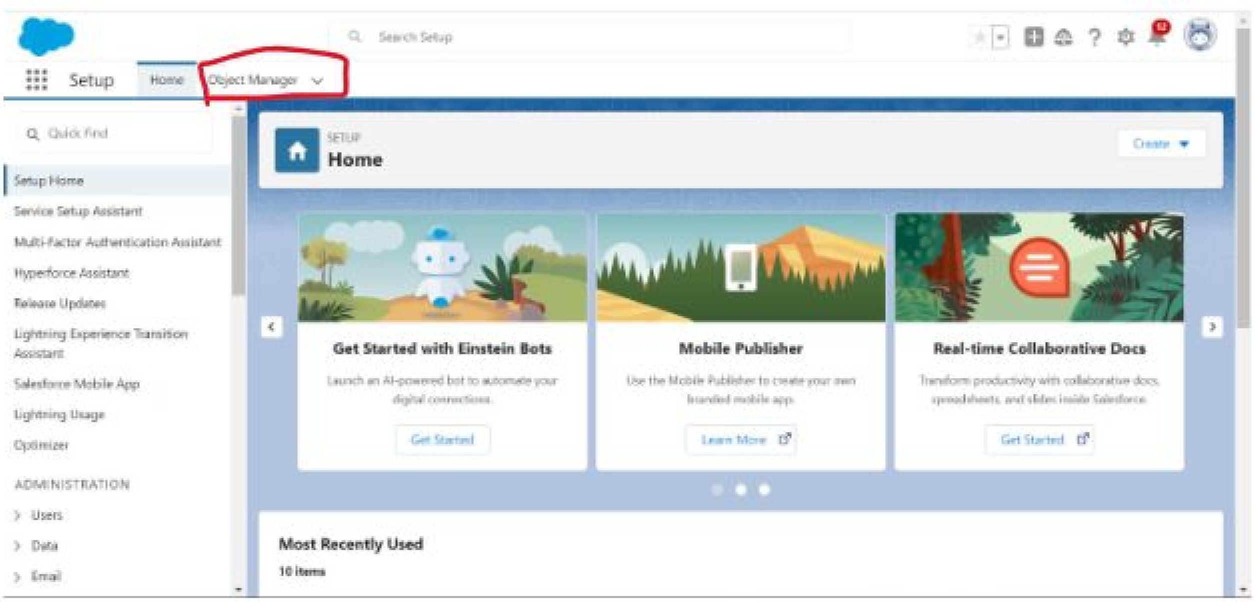
- Next, we have to select user profile it depends on project but always choose system administrators.



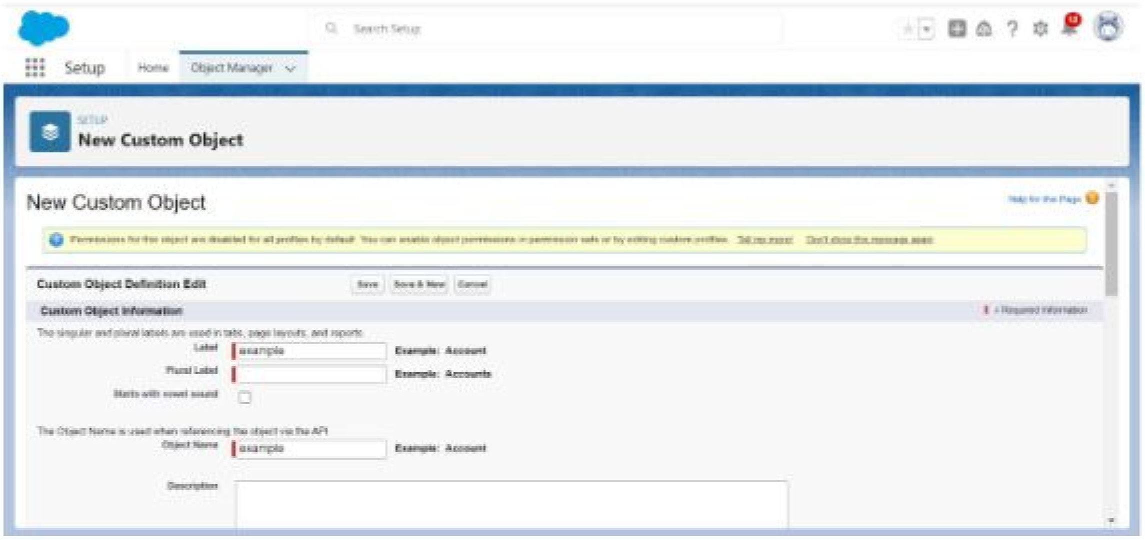
- Click on save & finish.
- New app will be created.

2. To create custom Objects

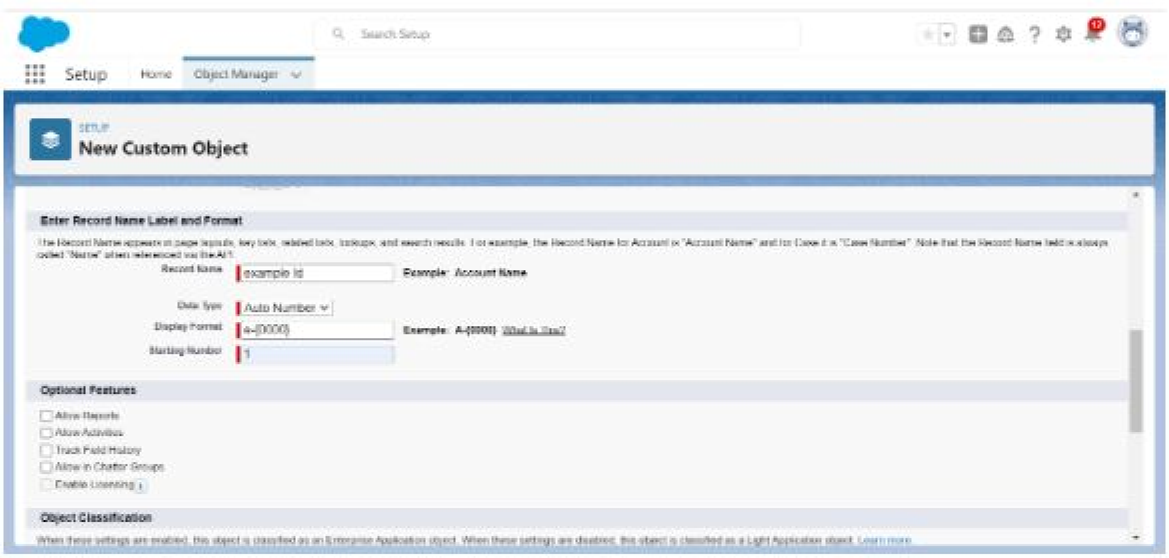
- Click on this icon and open step up.
- Click on **object manager.**



- Click on create and from drop down select **custom object**.
- Enter label, plural label, description.

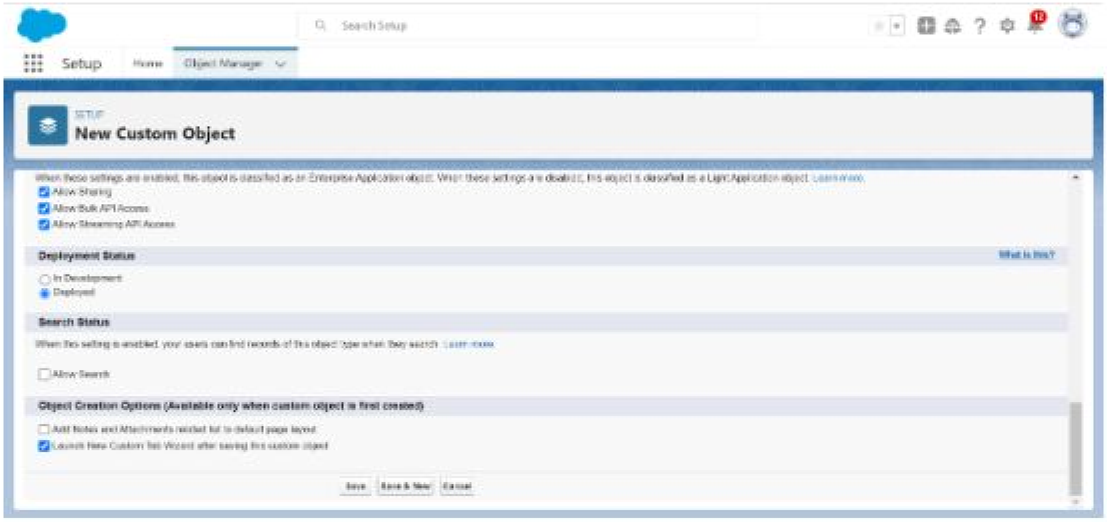


- Enter record name label and format like IDs and use below format.

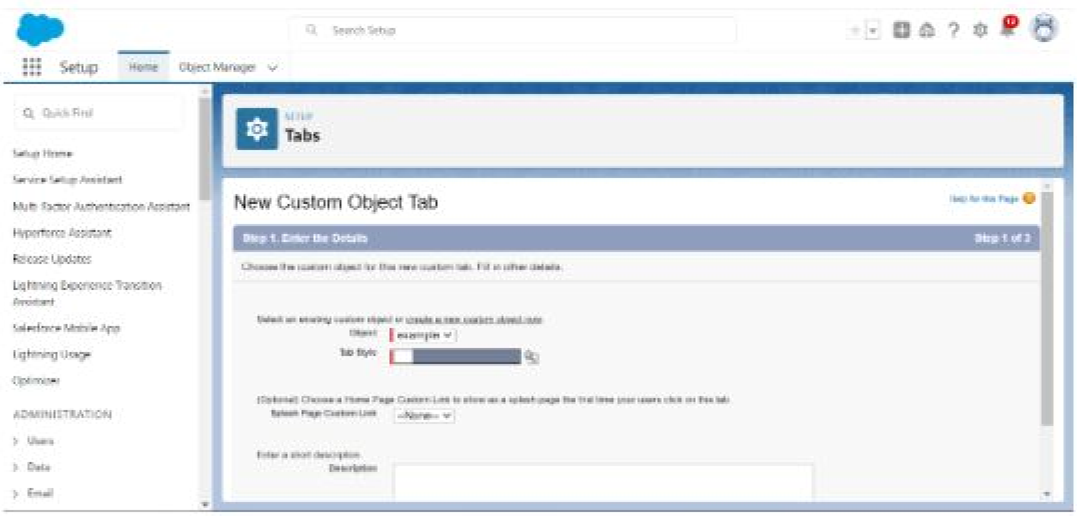


- Check this all boxes.

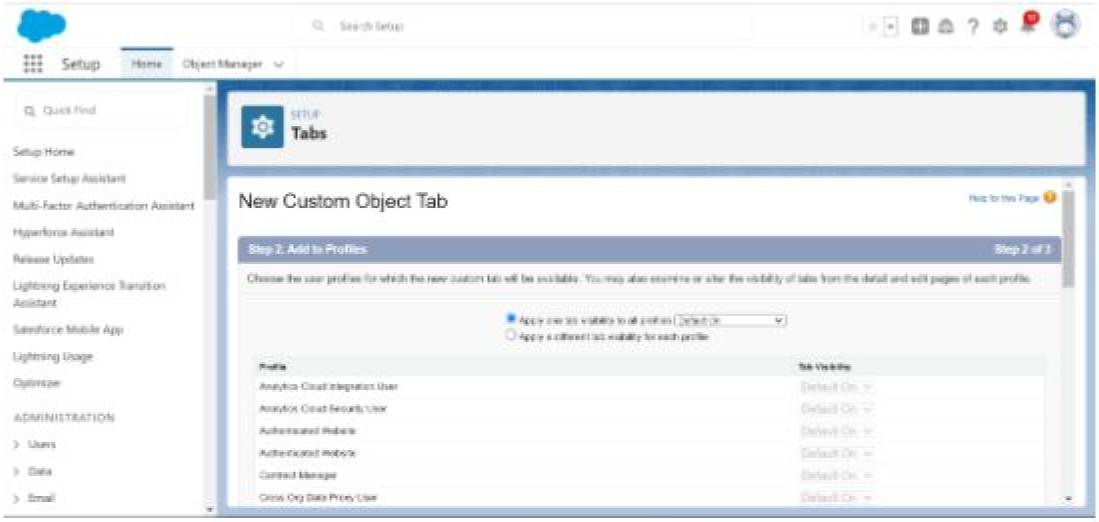
- Always check box **Launch New Custom Tab Wizard after saving this custom object.**



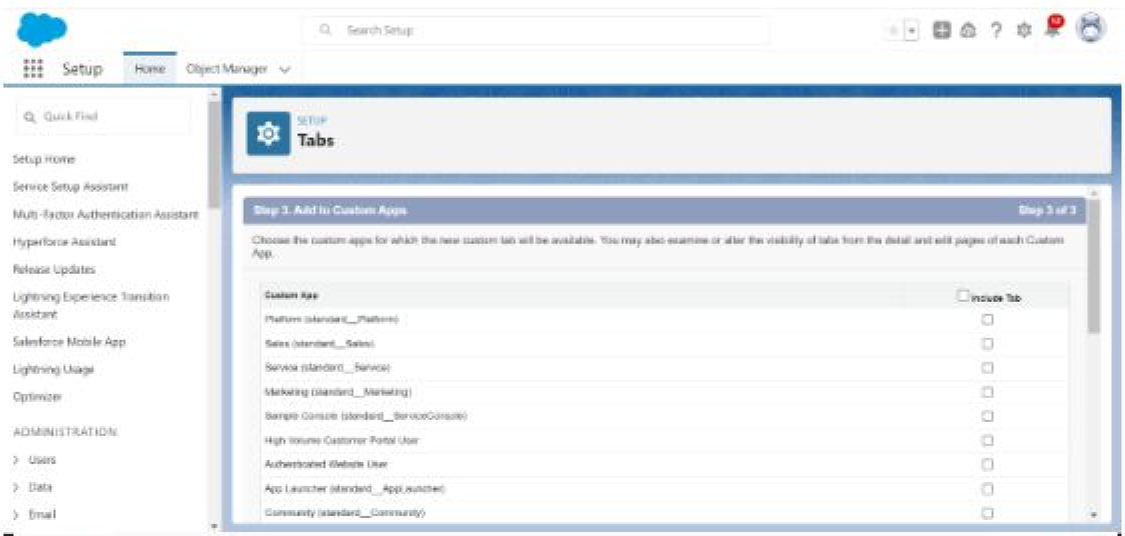
- Click on save new custom object will be created.
- Now next Tab page will be open. Tab should be created to show the custom object on frontend.

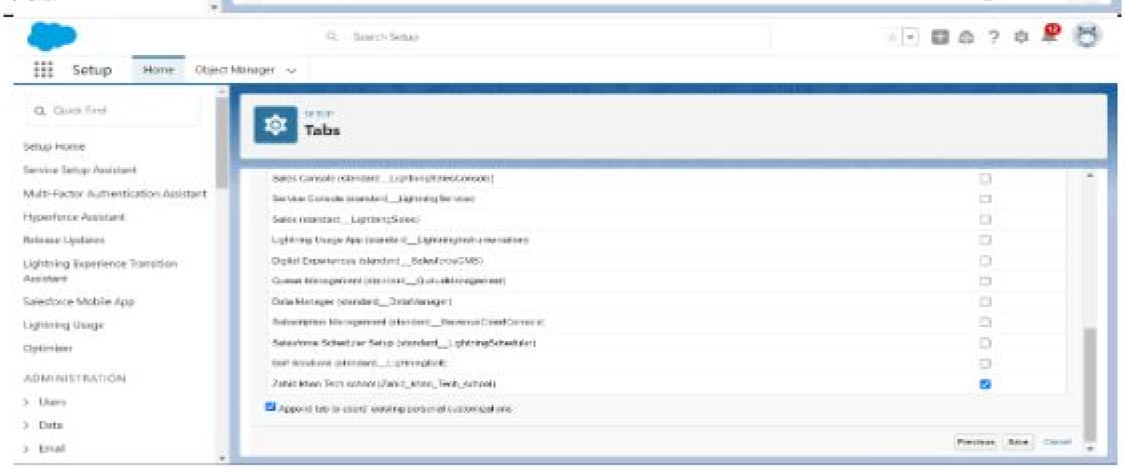


- Select table style by clicking on it.
- Click on next.
- Now select profile. For now, select Apply one tab visibility to all profiles.

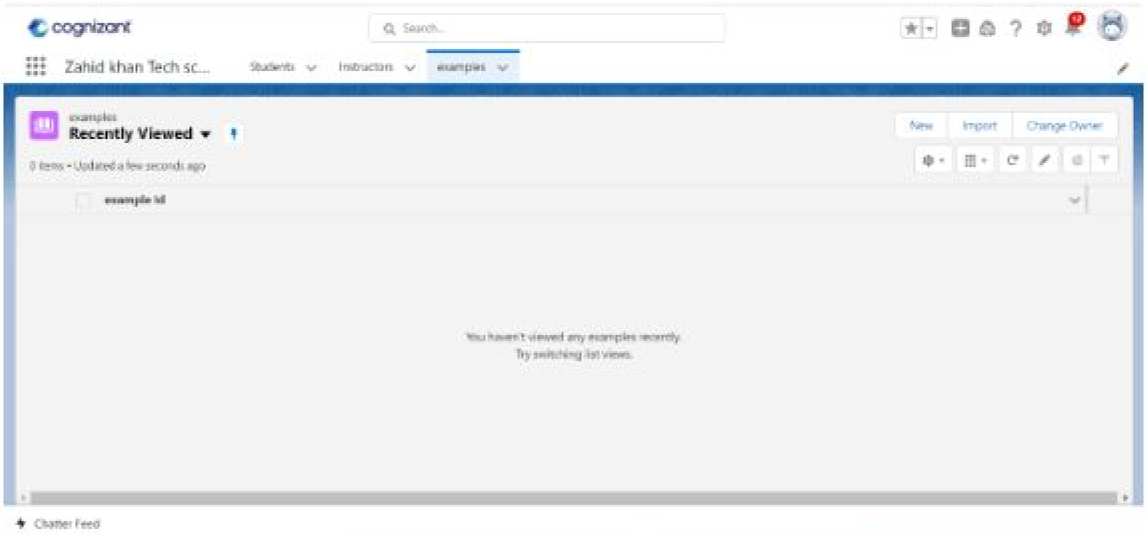


- Click on next.
- Now check the box in which we want to add this custom app. For now, I want to add the custom app to "Zahid khan tech school". So select this app or any custom app in which you want to add.





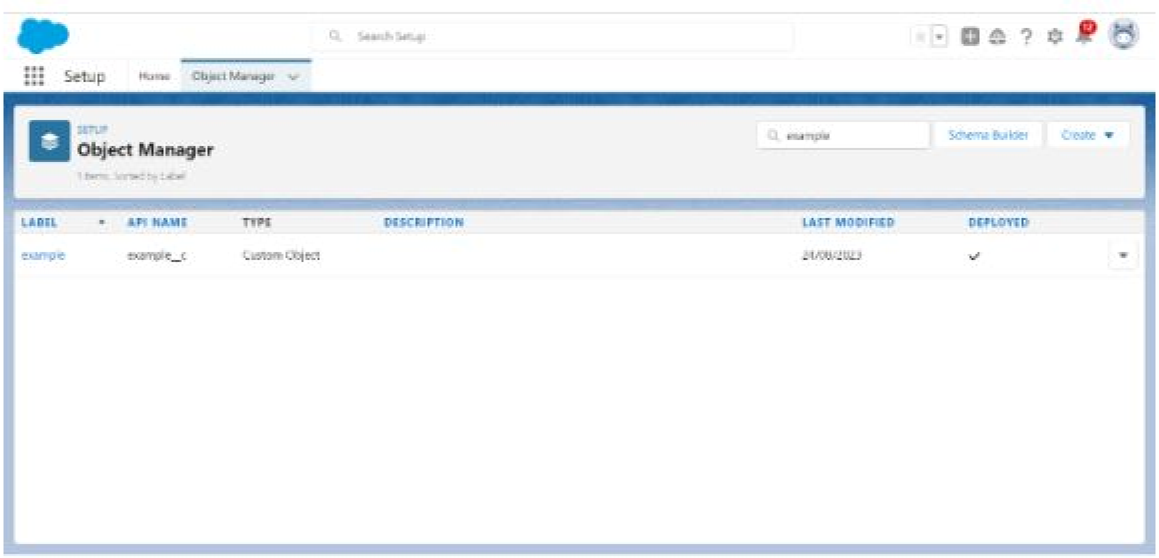
- Now click on save.
- Go to the app by clicking on app launcher and refresh the page you will see the **examples** custom object in your app.



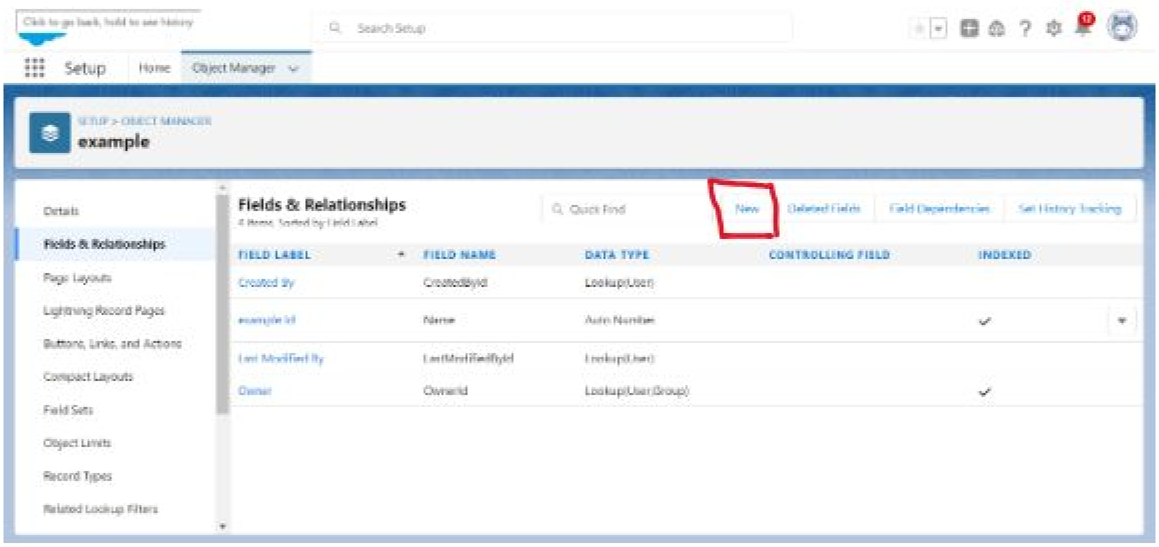
Day-2

3. To create fields for custom object

- Click on this icon and open step up.
- Now click on object manager.
- Search for custom object from quick find.

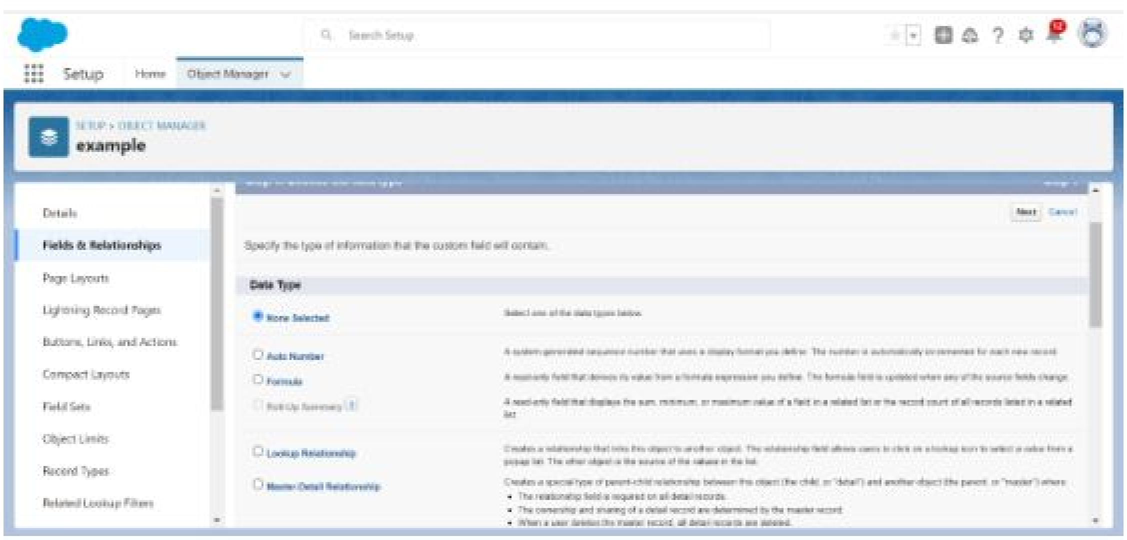


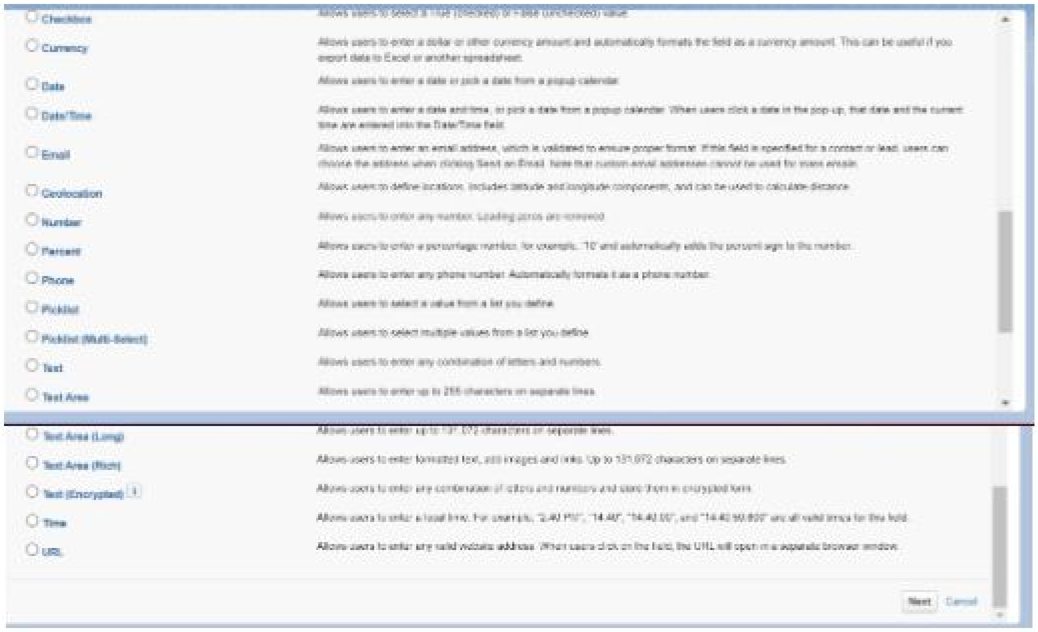
- Click on **example object.**
- Now click on Filed & relationships.
- Click on new.



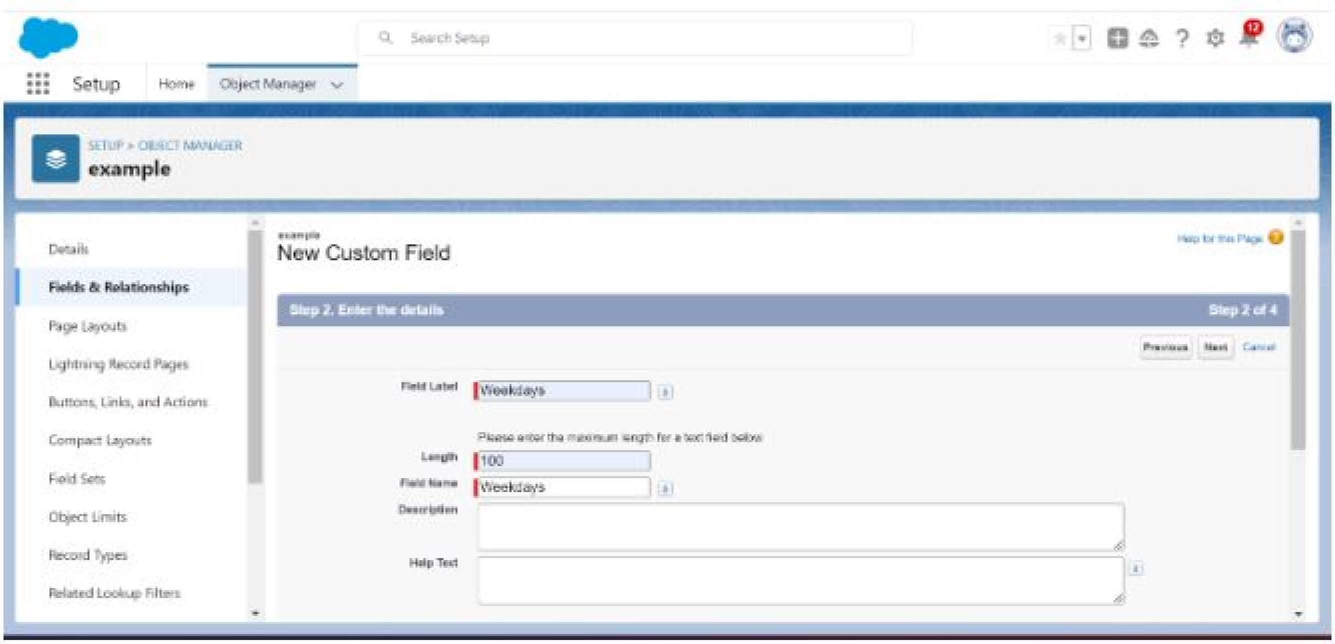
- Next choose the field type.

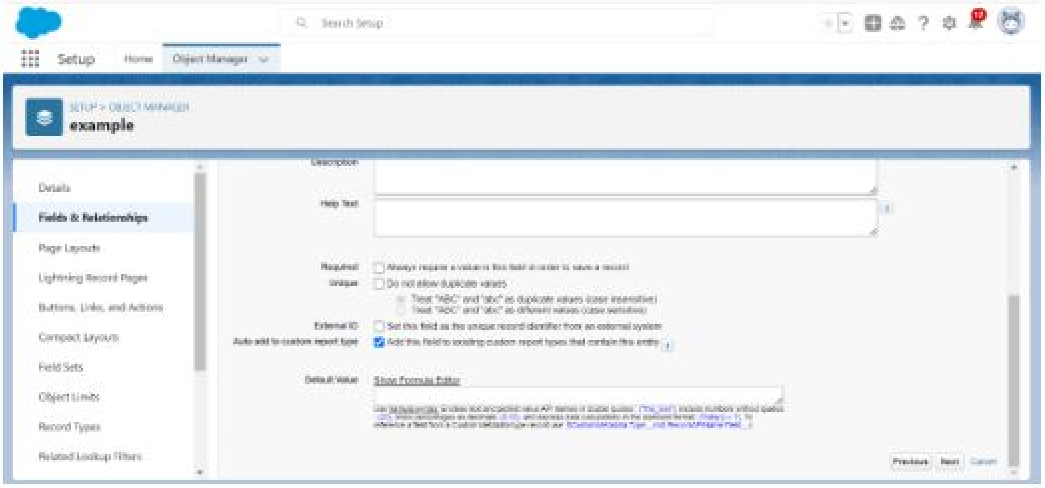
- There are numbers of field available. Which is given below.



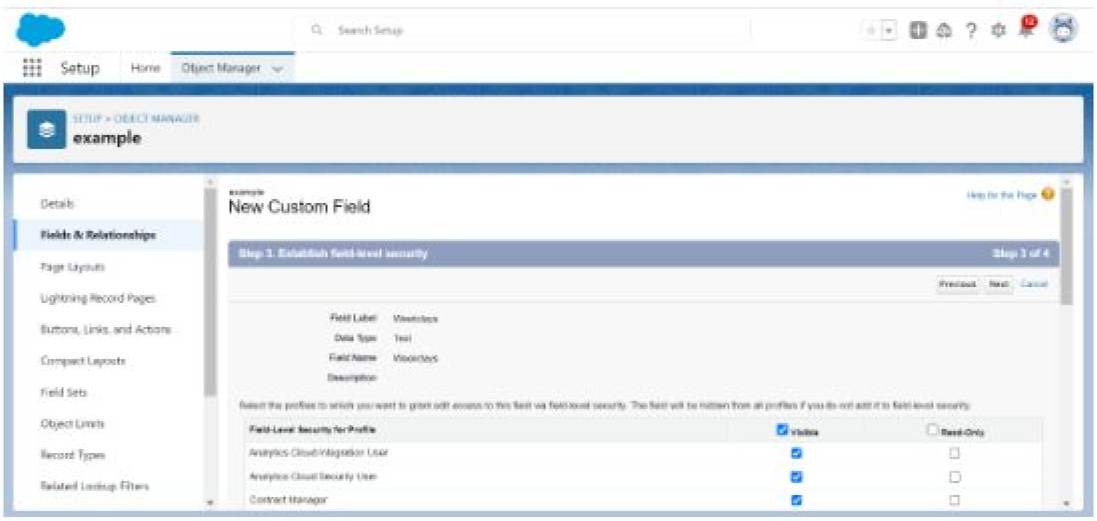


- Choose any one data type and click on next.
- Now enter details of the of the field like Field label, length, Helping text,
  Check box **Required box** if value is required for this filed.
  Check **Unique box** if value of this filed should be unique.

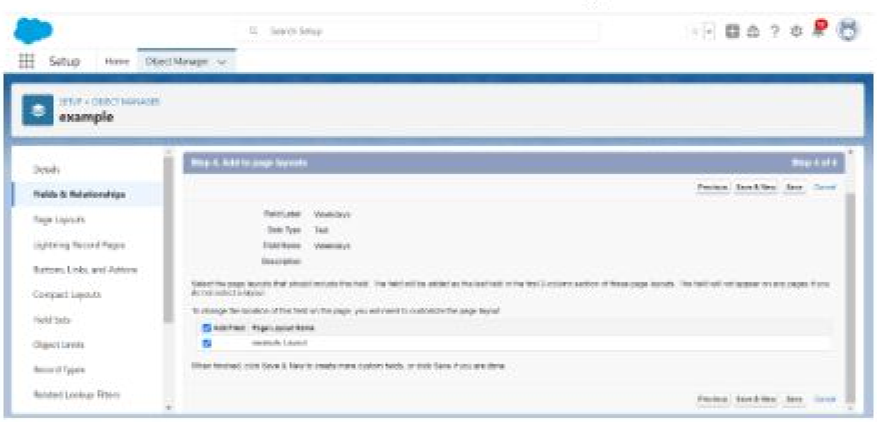




- Click on next.
- Now select filed level security for now we are selecting visible all by checking box.



- Click on next.
- After that click on save. If we want to add more field just click on save& new.



- Now we can check by launching our app through App launcher.

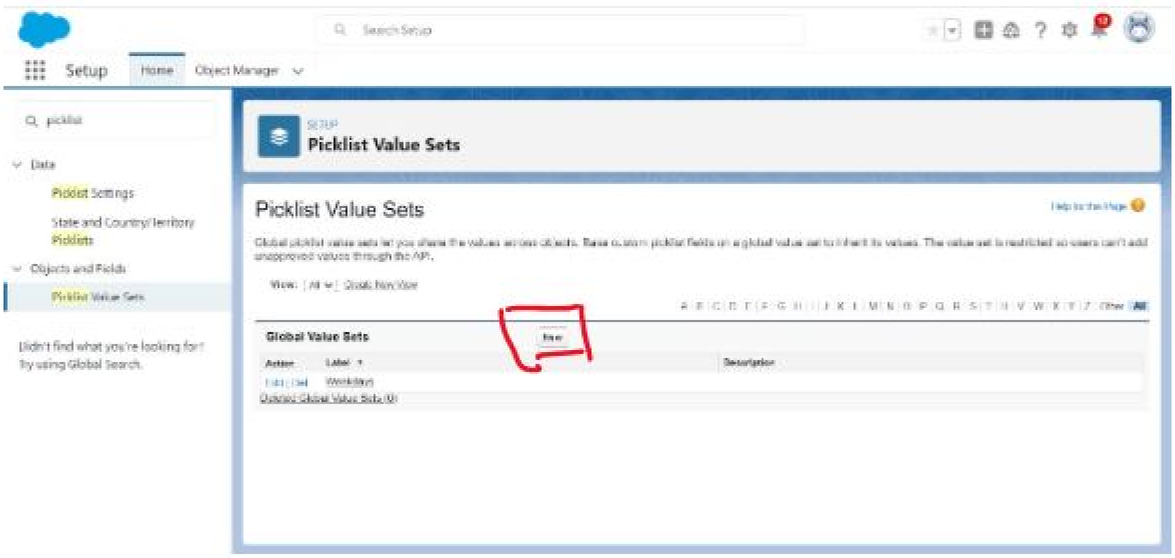
Day-03

4. Global Picklist.

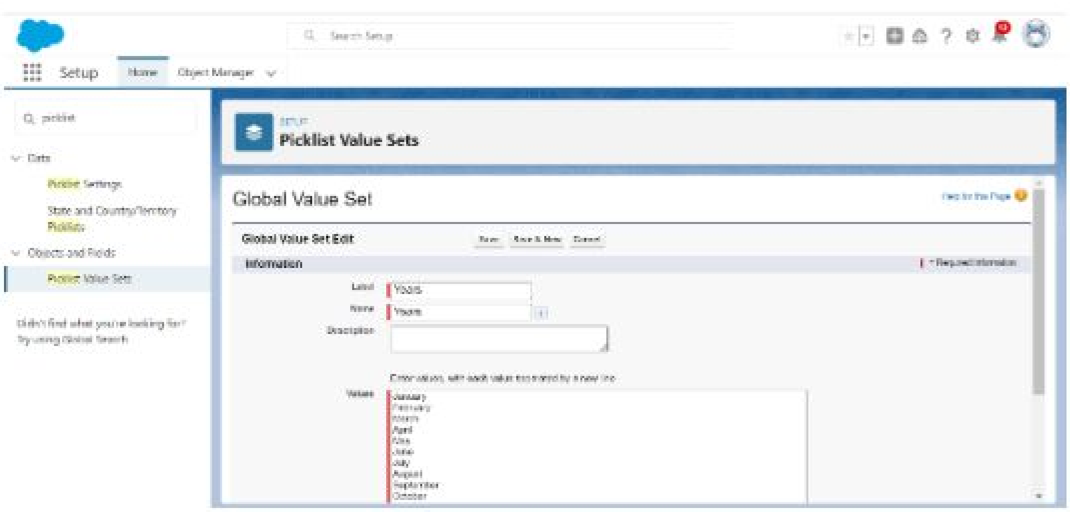
Definition: - Global Picklist is a universal picklist means we can create once and can be used 'n' number of field of any objects.

Following steps used for creating global picklist.

- Click on this icon and open step up.
- Click on Quick find and search for **Picklist value set**.
- Click on new.



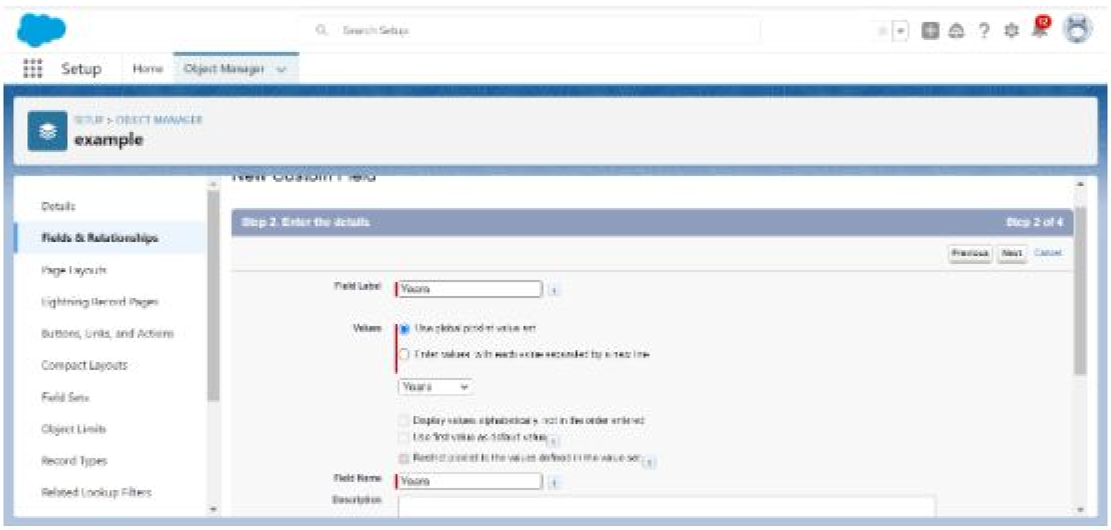
- Now enter the **Label** and **Name** and enter value for examples I am using years name.



- Now click on save. I want to make more global picklist just click on save & new.
- Global picklist created now we can use this in different objects.

How to use global picklist in example custom object.

- Go to **object manager**.
- Search for by custom object name like example.
- Click on field & relationships.
- click on new.
- Now select picklist data type.
- Click on next.
- Enter label name and always select **Use global picklist value set.**
- From drop down select global picklist which is created.



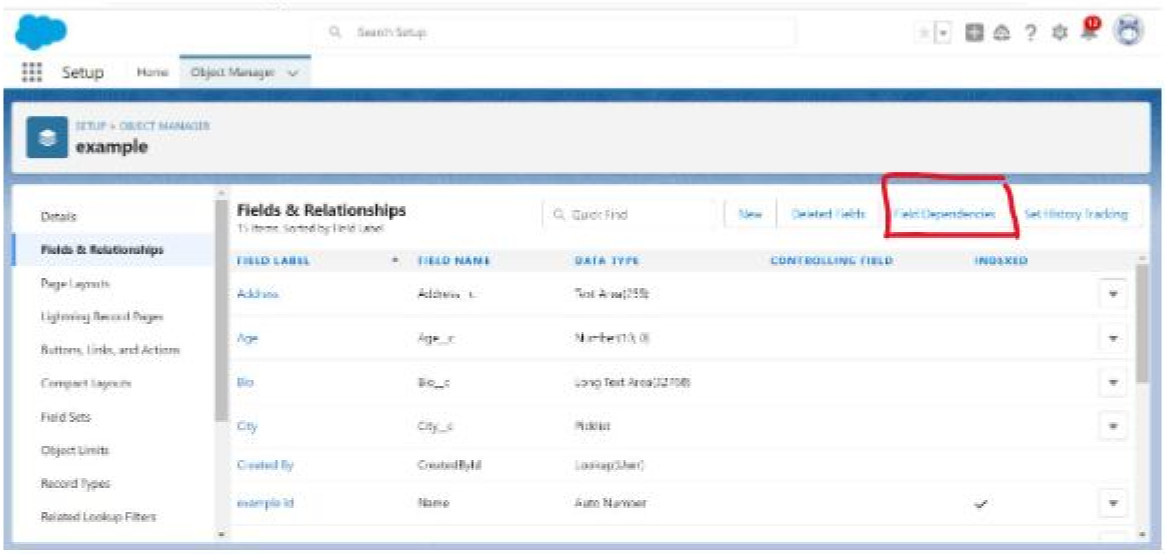
- Click on next.
- Now select field-level security. For now, check visible checkbox.
- Click on next.
- Now click on save.
- Now go to app from App launcher we will find picklist on frontend.

5. Create field dependencies.

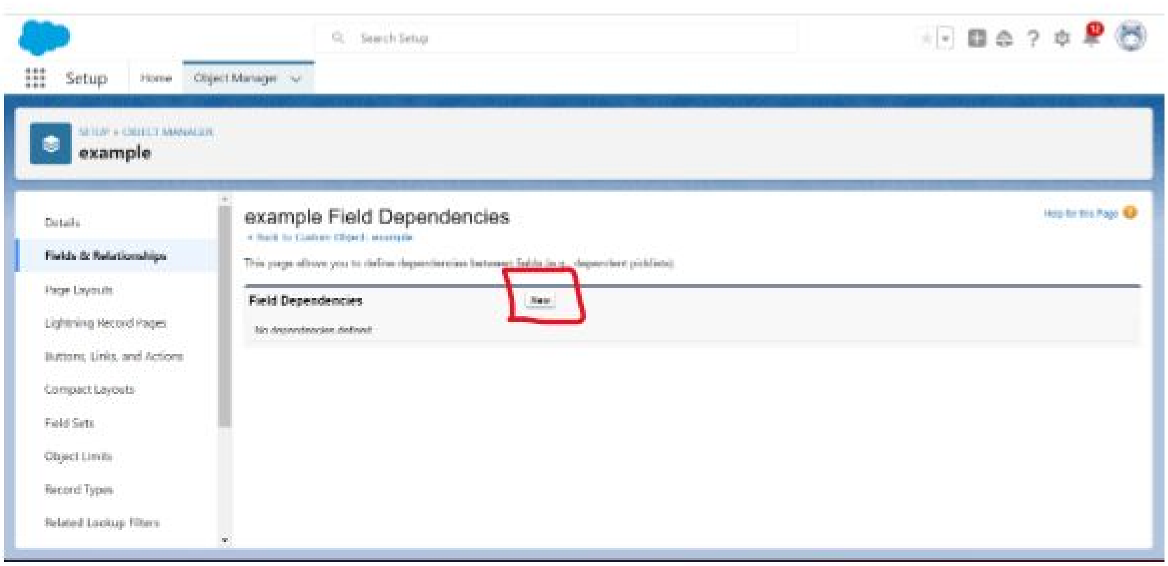
Definition: - Field dependencies can be make using picklist to picklist or checkbox to picklist. In which one field is dependent on another field.

Following steps used for creating Field dependencies. (Picklist to picklist)

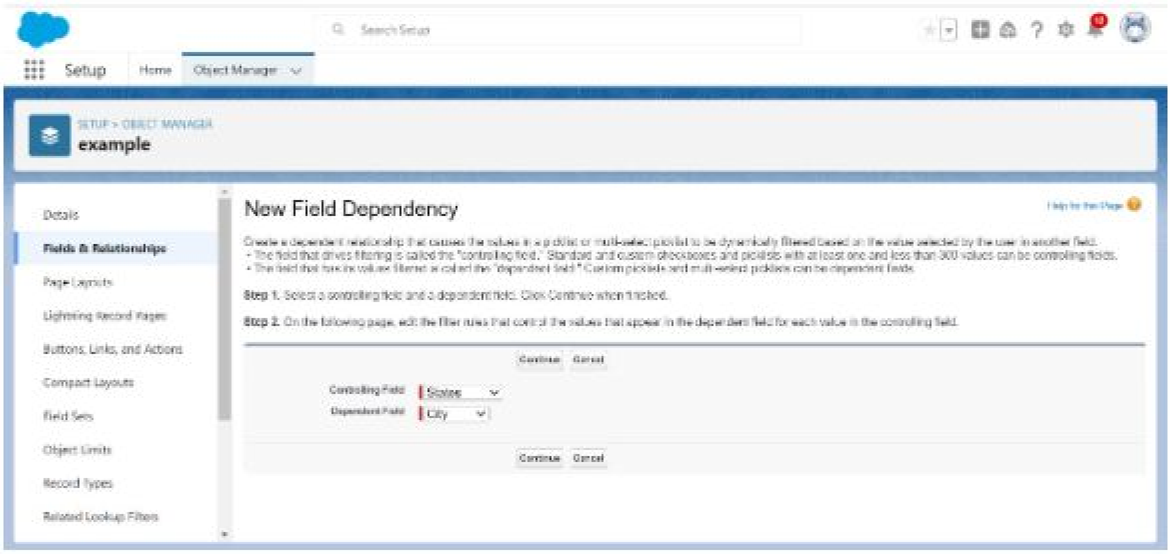
- Click on this icon and open step up.
- Click on **Object manager** and search for custom object in which you want to make Field dependencies.
- Now click on Field & relationship.
- Now click on field dependencies.



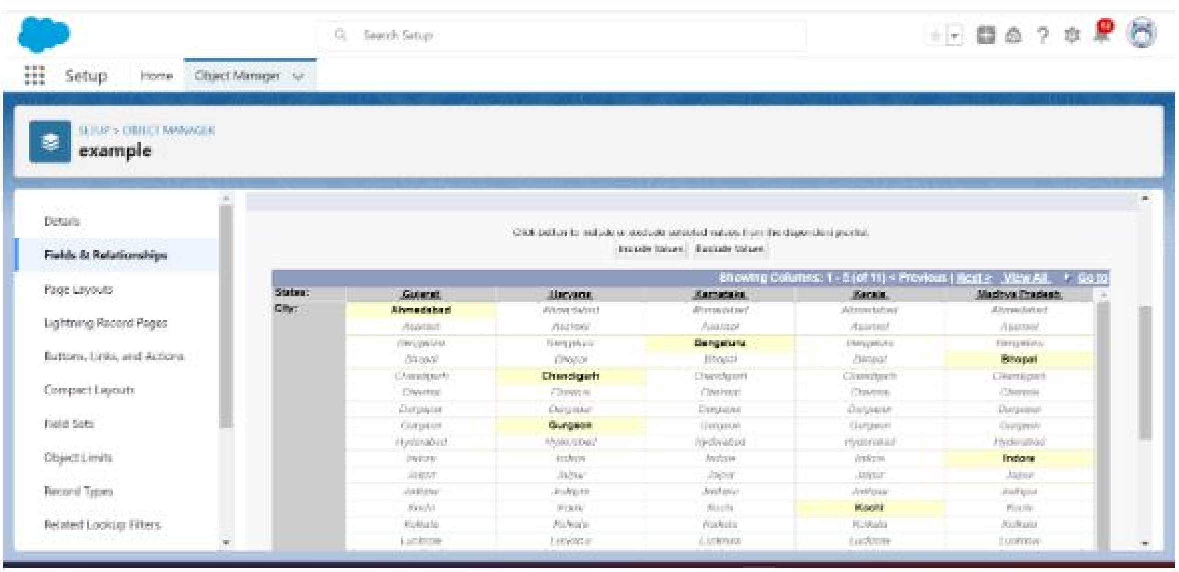
- Click on new.



- Now choose **Controlling field** "The field after selecting this next filed option will be open." (For Ex. I am choosing **state** field as controlling field)
  Now choose **Depended field** "The filed which is open after selecting the option which is set in controlling field. (For Ex. I am choosing **City** field as controlling field).



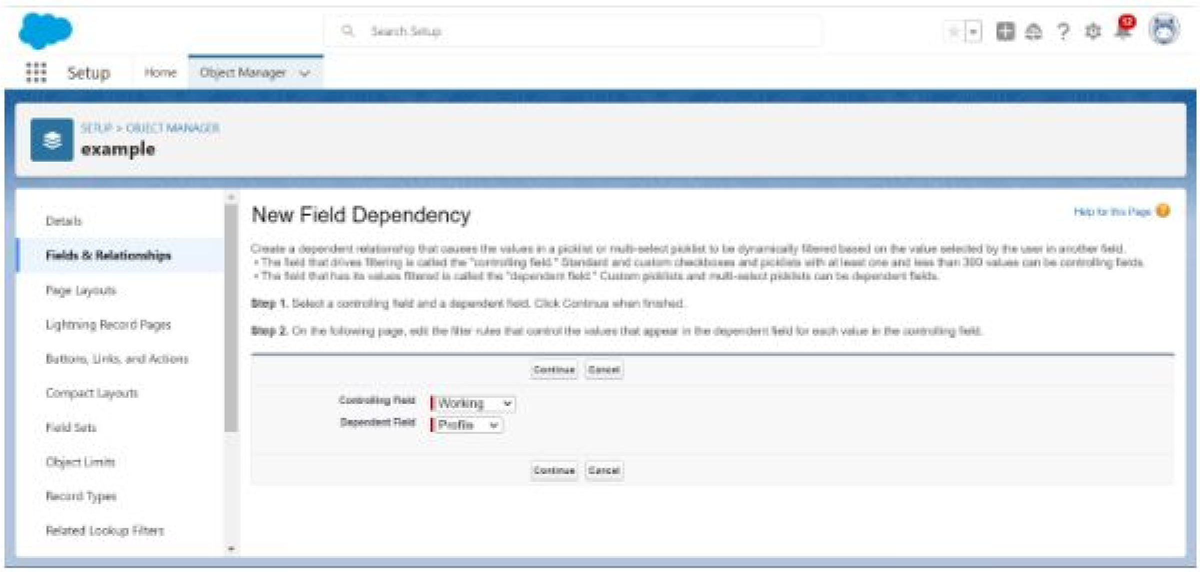
- Click on continue.
- Now select the value means after selecting a particular option which depended on field option should show. (For ex. If I select Gujarat the only city of Ahmedabad will open)
- After selection all option click on **Includes value**.



- After selecting all related options click on save.

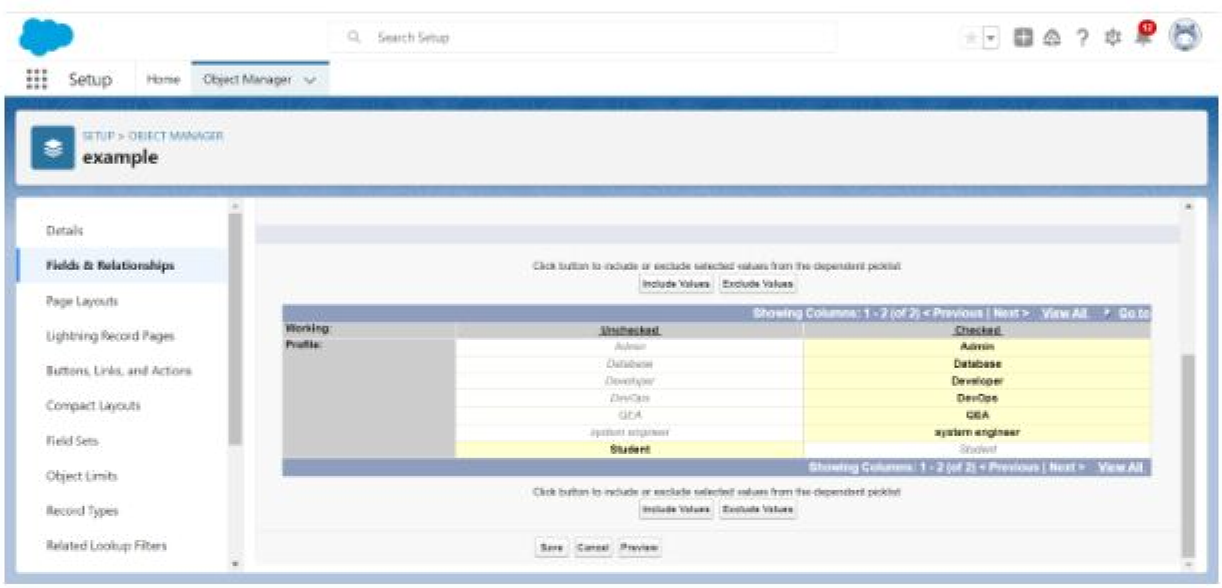
<u>Following steps used for creating Field dependencies. (checkbox to picklist)</u>

- Click on filed dependencies.
- Click on new.
- Now select controlling field checkbox (ex. working).
- Select dependent field picklist (ex. Profile)



- Now select what should be open after checking the box as shown in figure.

- Click on includes values.



- Now click on save.

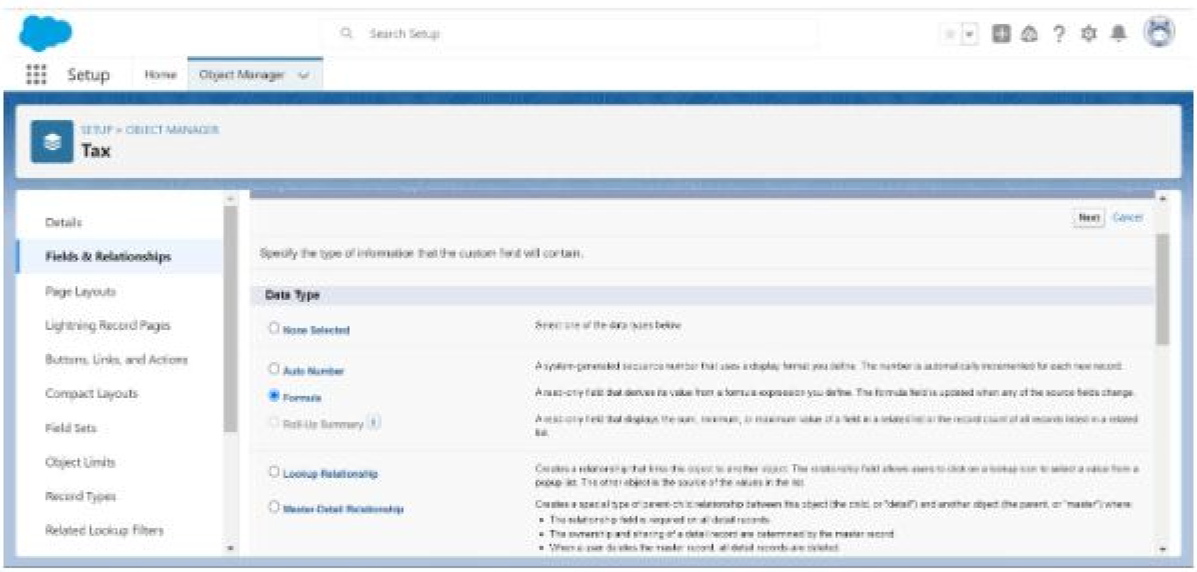
Day-04

6. Formula field

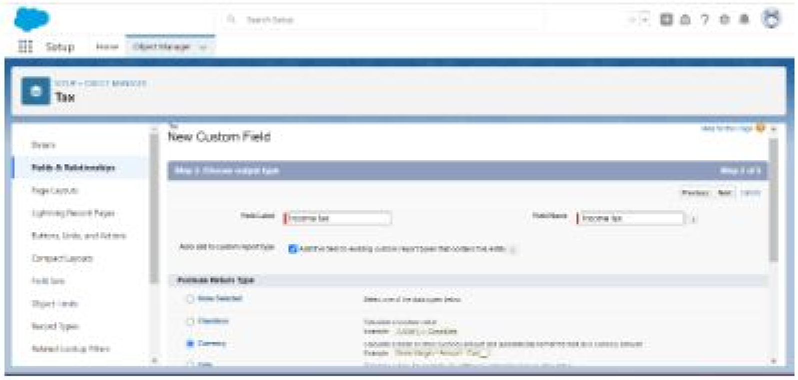
- Formula field is used to give some mathematical conditions on a particular field. (For ex. We have a salary field, and we want to calculate bonus for this we can use formula field.).
- It is read only field and populate value based on expression.

Following steps used for creating Formula field.

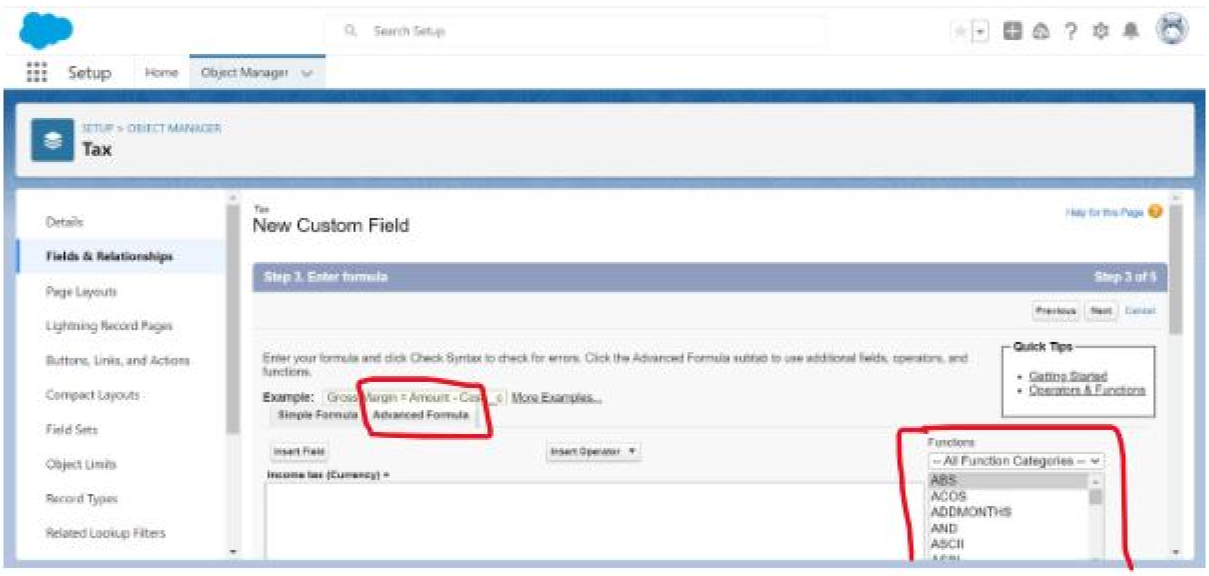
- Click on this icon and open step up.
- Click on **Object manager** and search for custom object (ex. Tax object) .
- Click on Field & relationship.
- Now click on new.
- Select field type formula.



- Click on next.
- Now enter field label and choose formula return type. (For ex. We enter income tax as field name and currency for return type.) we are selecting currency because the salary field used currency data type.

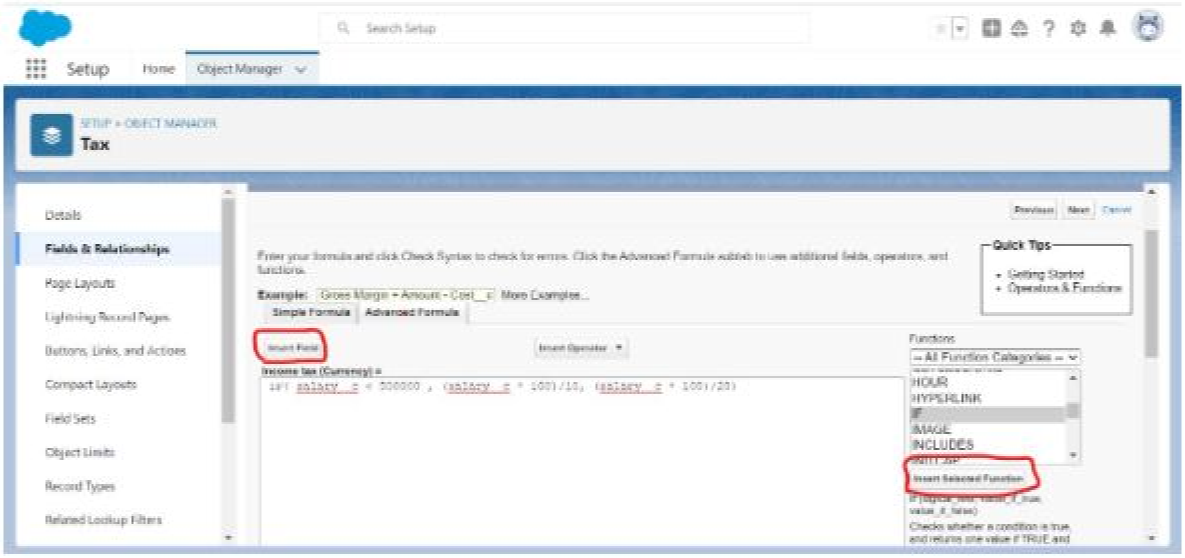


- Click on next.
- ow click on advance formula tab.
- From function we can choose any logical or mathematical function according to our needs.

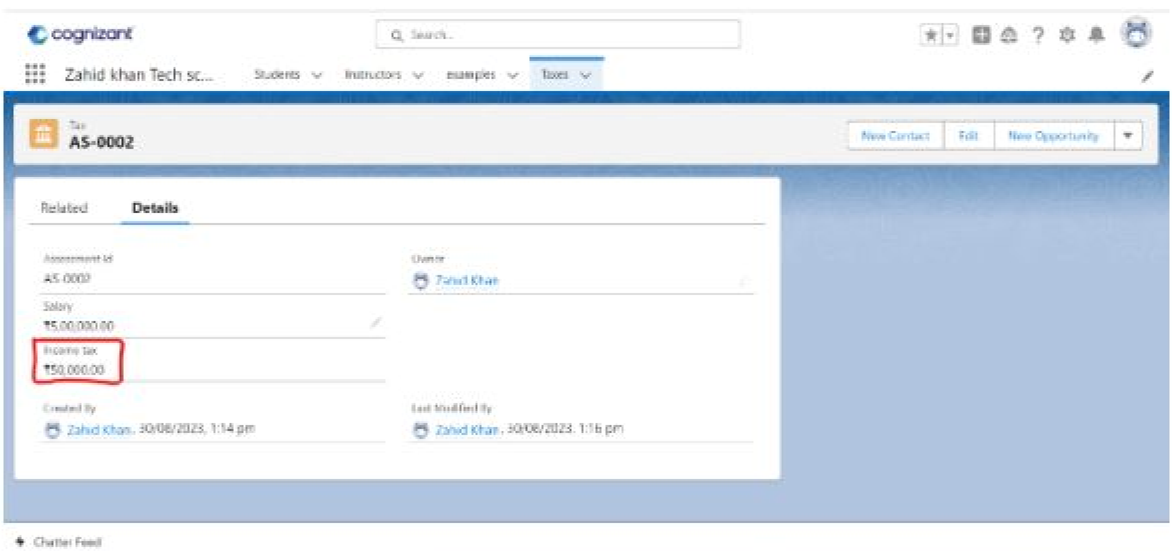


- Now choose the function and click on insert selected function. click on insert field which you want to use for formula calculations.
  (For example: - here we are choosing salary field and IF function to calculate tax.)
  Syntax: - IF(logical_test, value_if_true, value_if_false)

Insert salary with condition field in place of logical_test and value for true and false.

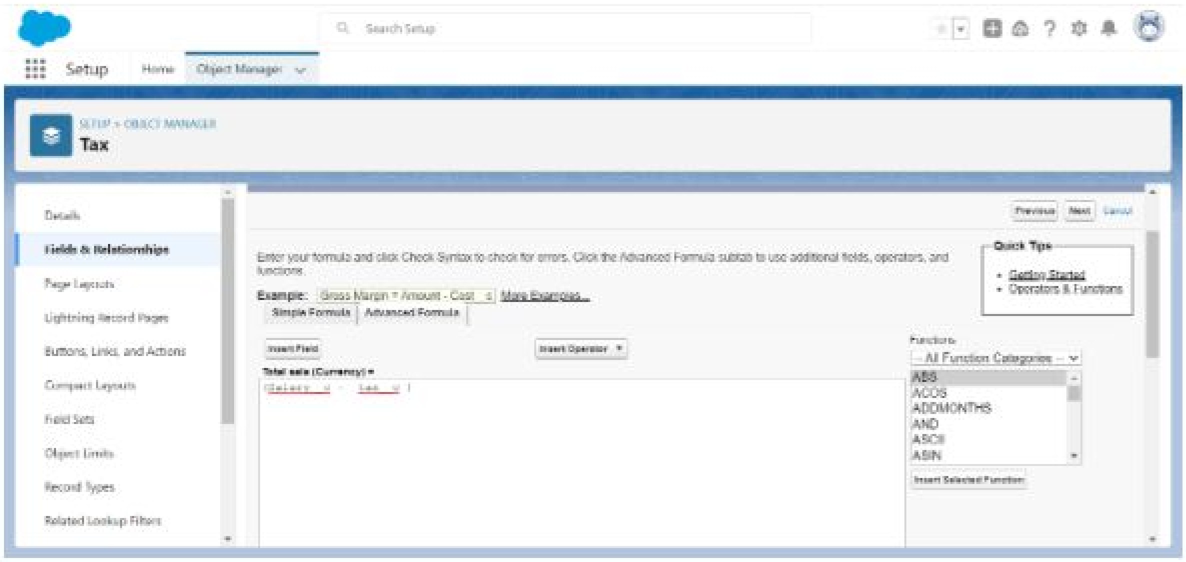


- Now click on check syntax and check the box **Treat blank fields as zeroes.**
- Click on next.
- Click on visible check box and next.
- Click on save.
- Now go to front-end app and check.

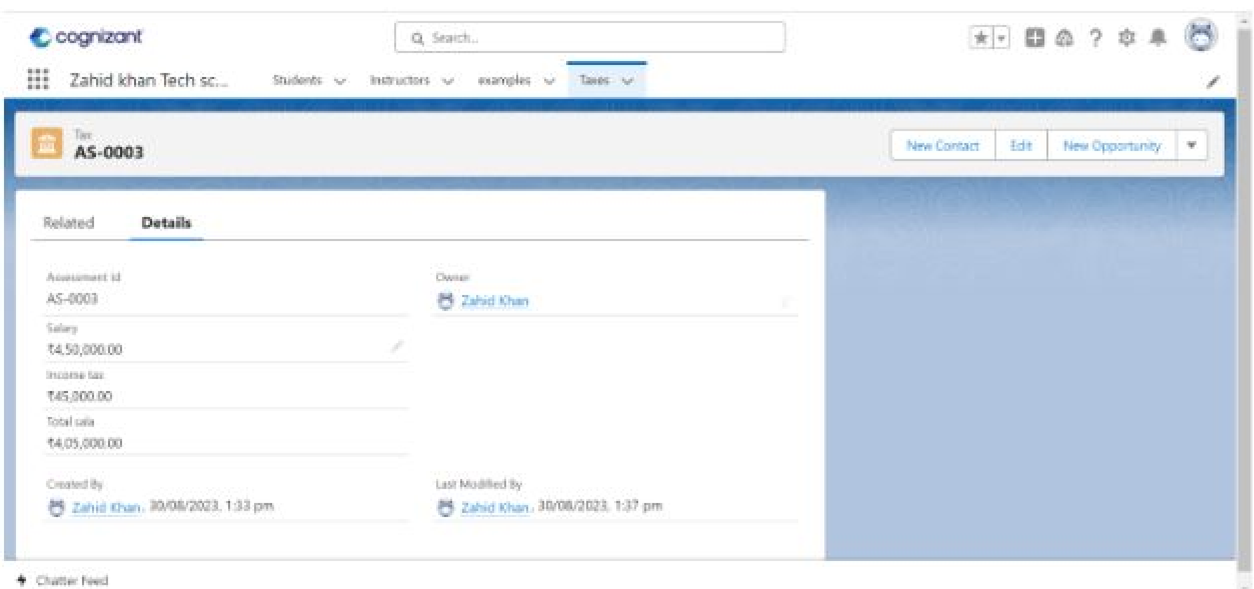


- Now create another formula field name as Total salary.
- Go to Field & relationship of tax abject and click on new.
- Now choose formula as field type.
- Click on next.
- Enter field label and field name as Total salary.
- Check currency as formula filed type.

- Click on next.
- Click on insert filed and choose both salary field and income tax field and minus both for calculate total salary.



- Click on visible check box and next.
- Click on save.
- Now go to front-end app and check.

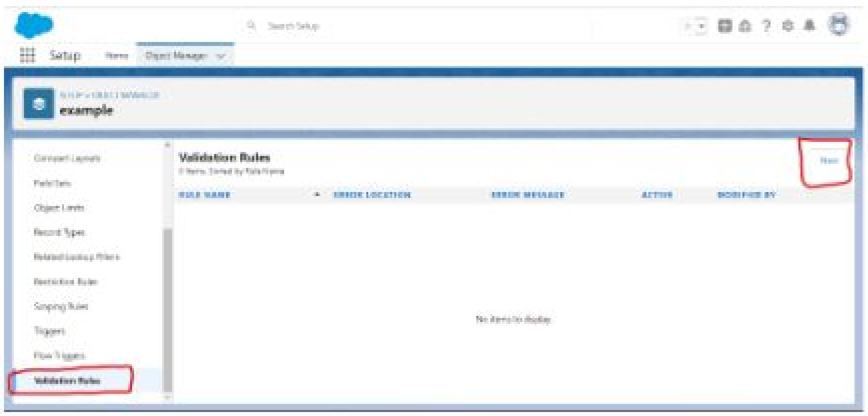


Validation Rule

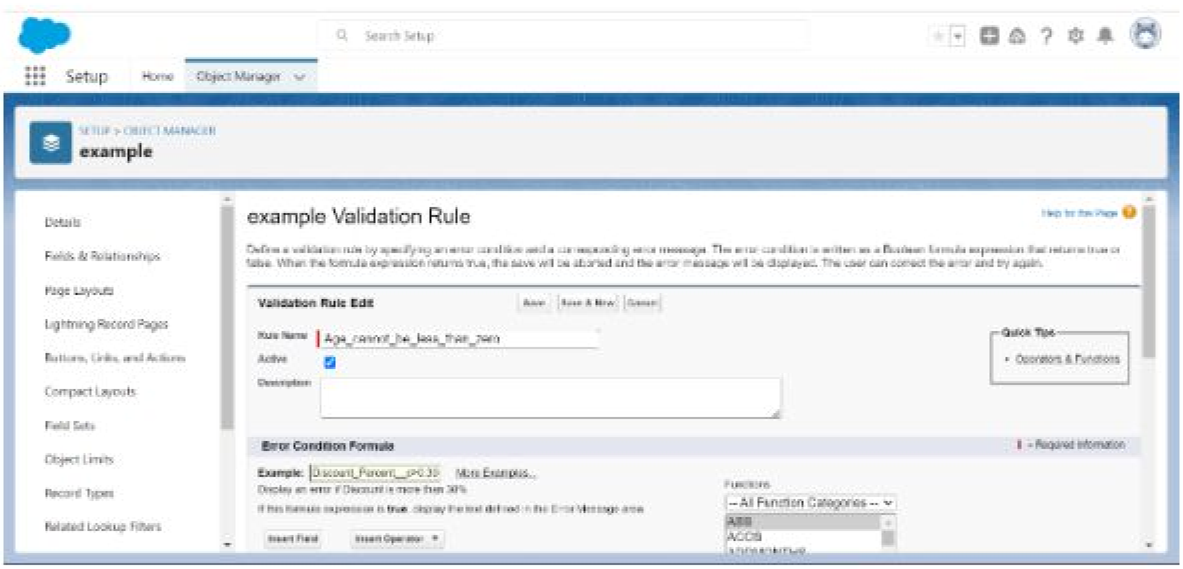
Validation rules restrict record creation & updating based on conditions. Validation work with number only.

Following steps used for creating Validation Rule.

- Click on this icon and open step up.
- Click on **Object manager** and search for custom object (ex. example object).
- Click on validation rules option from side menu.
- Then click on new to create new validation rules.

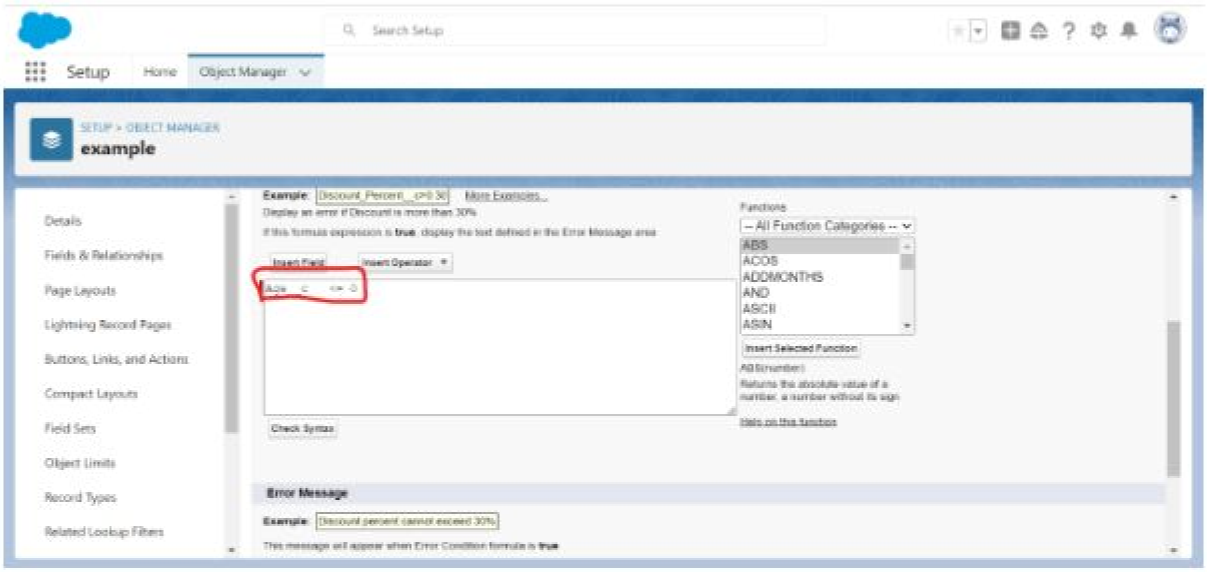


- Make validation rules for **Age field**.
- Enter the Rule name and check the active check box.



- Click on insert field to insert **age field.**

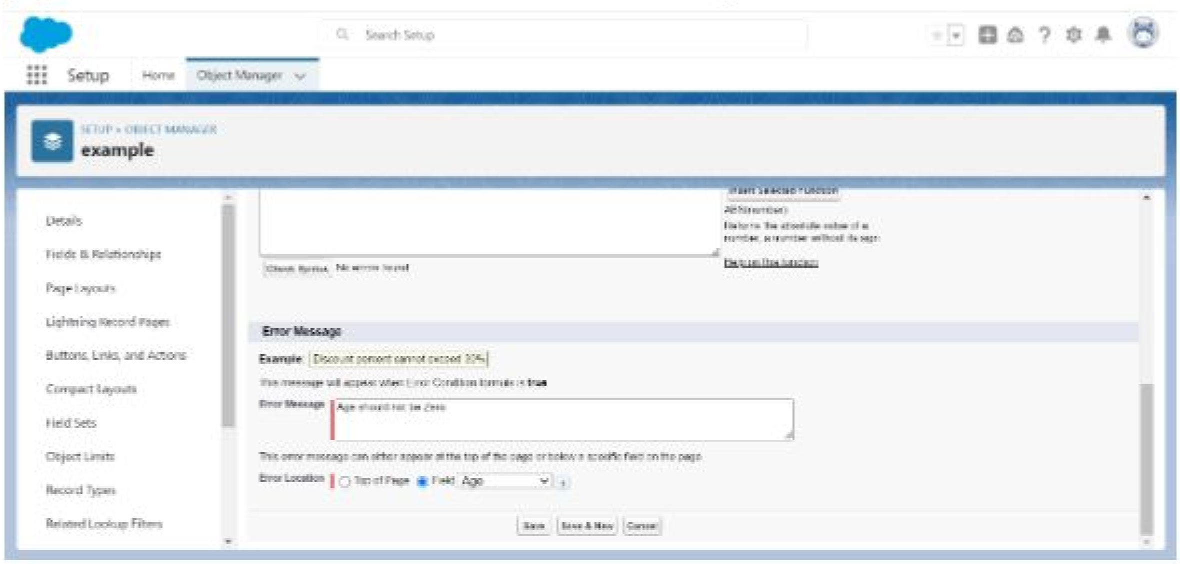
- Now make conditions for error (Age cannot less than or equal to 0). As show in screen shot.



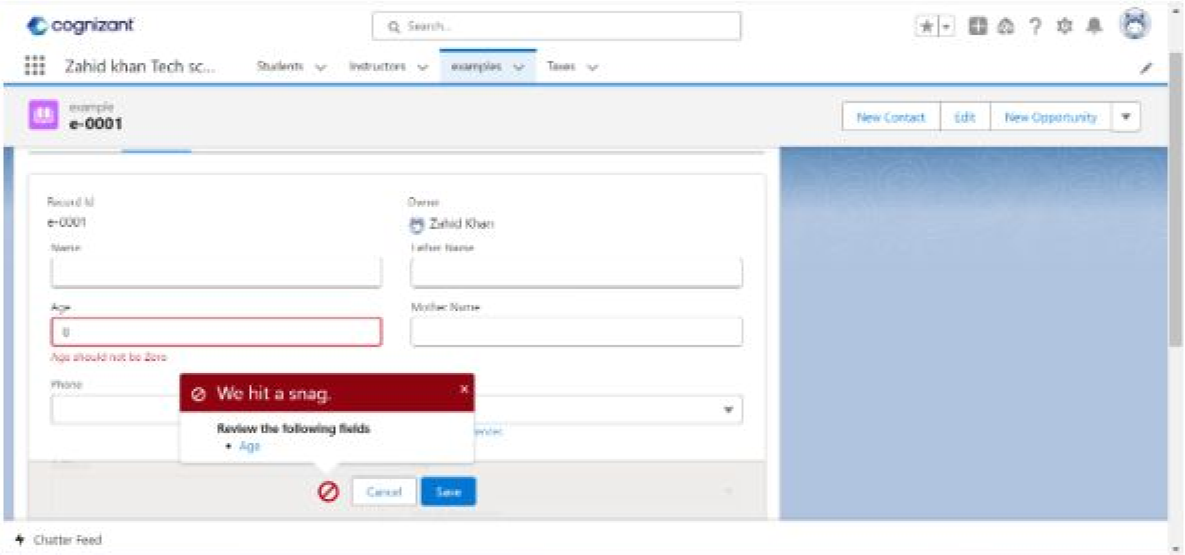
- Click on check syntax for checking the error.

- Now enter the error message which is to be displayed when condition failed.

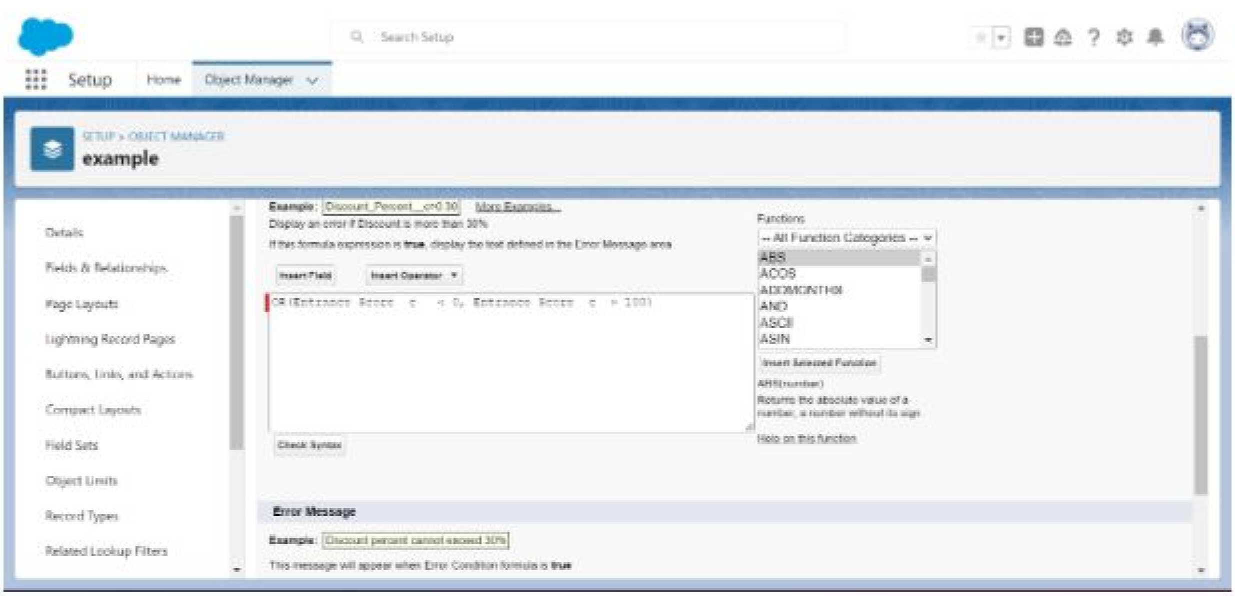
- We must choose error location where error message should be displayed on top of the page or in field. Here we choose field and field will be age.



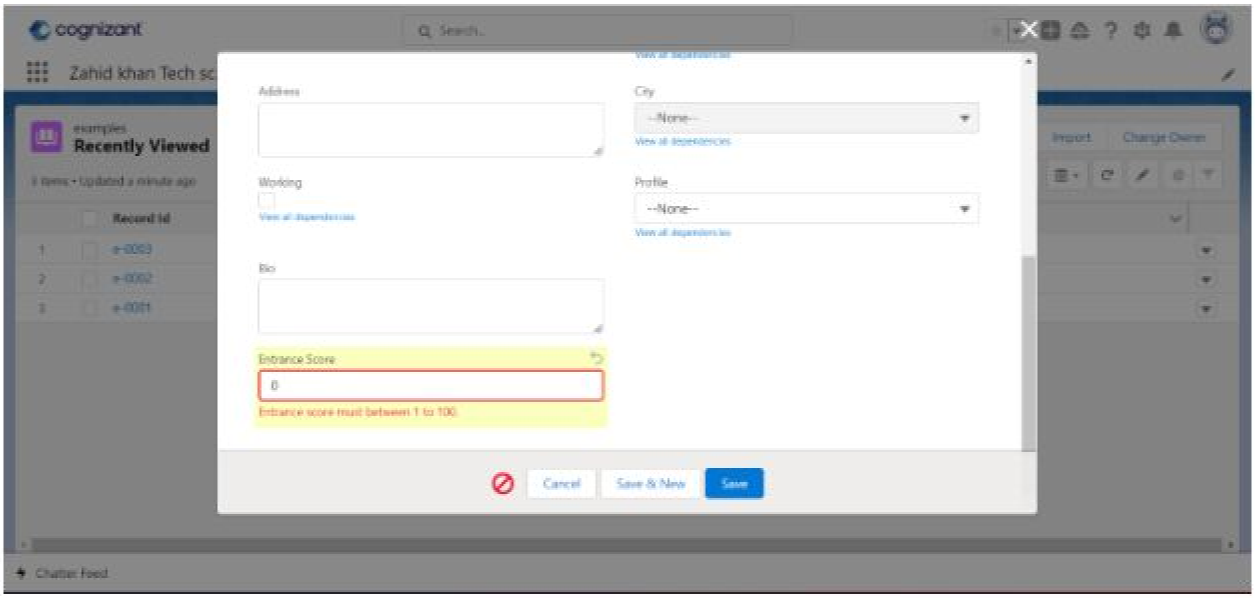
- click on save.
- Go to front-end and check the result.



- Now creating 2nd validation rule for same object but different field like for Entrance score field. The condition is Entrance score should be between 1 to 100.
- Select validation rule from side menu and click on new.
- Enter rule name and check the box of active.
- Now enter the validation rule as per screen shot.



- Enter the error message and error location.
- Click on save and see the result on front-end.



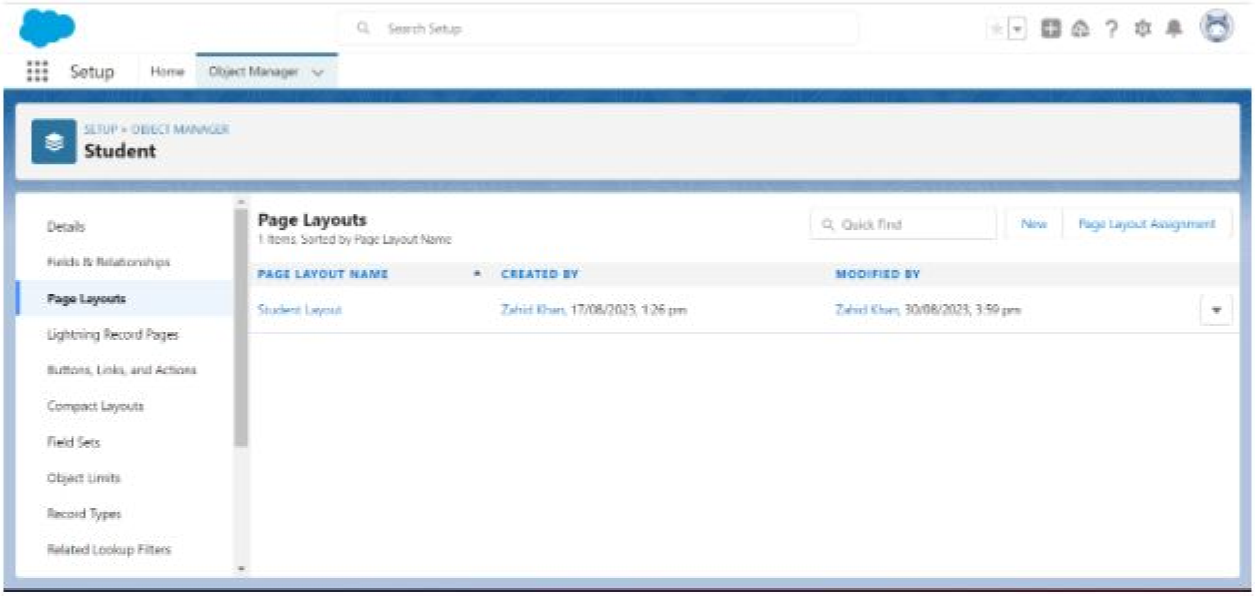
Page Layout

Page layouts manage field and sections.

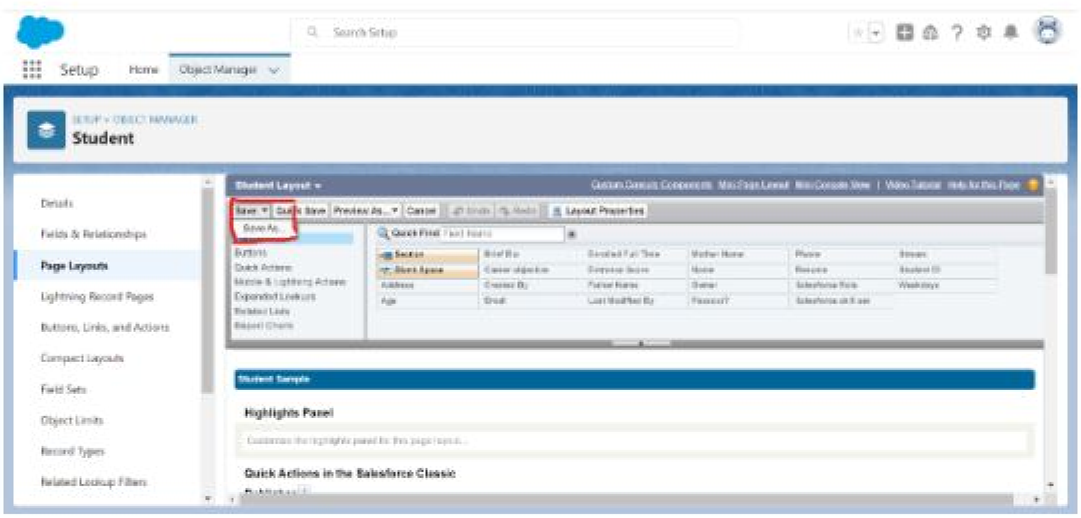
Steps to create page layout.

- Click on this icon and open step up.
- Click on **Object manager** and search for custom object (ex. student object).
- Click on page layout option from the right-hand side menu.

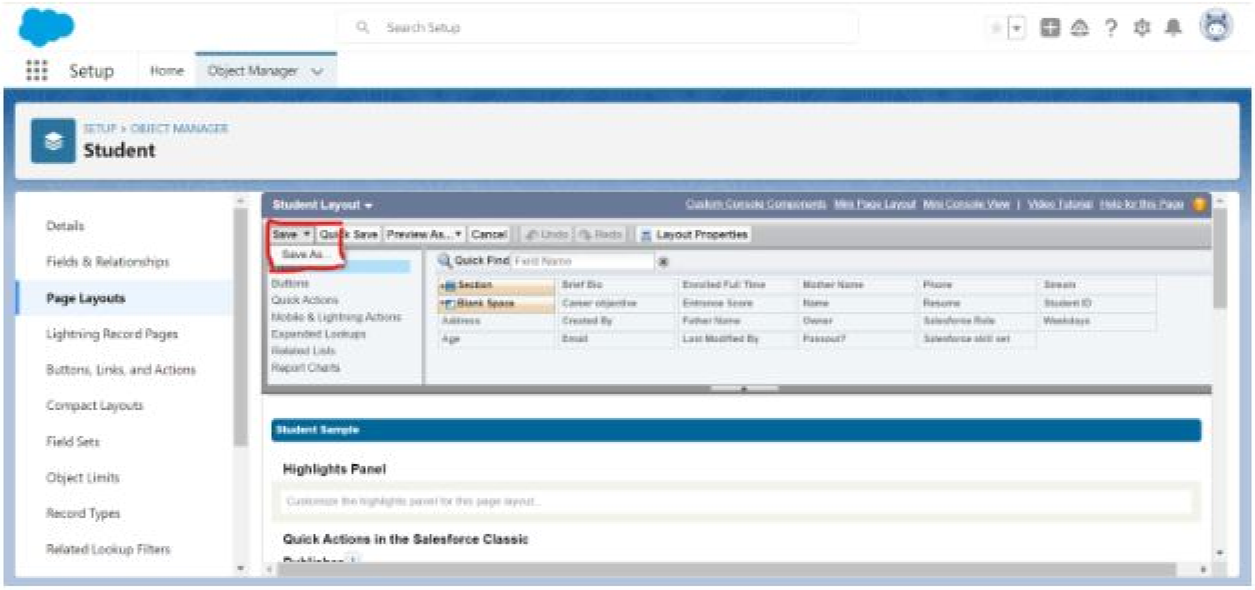
- Click on student layout.



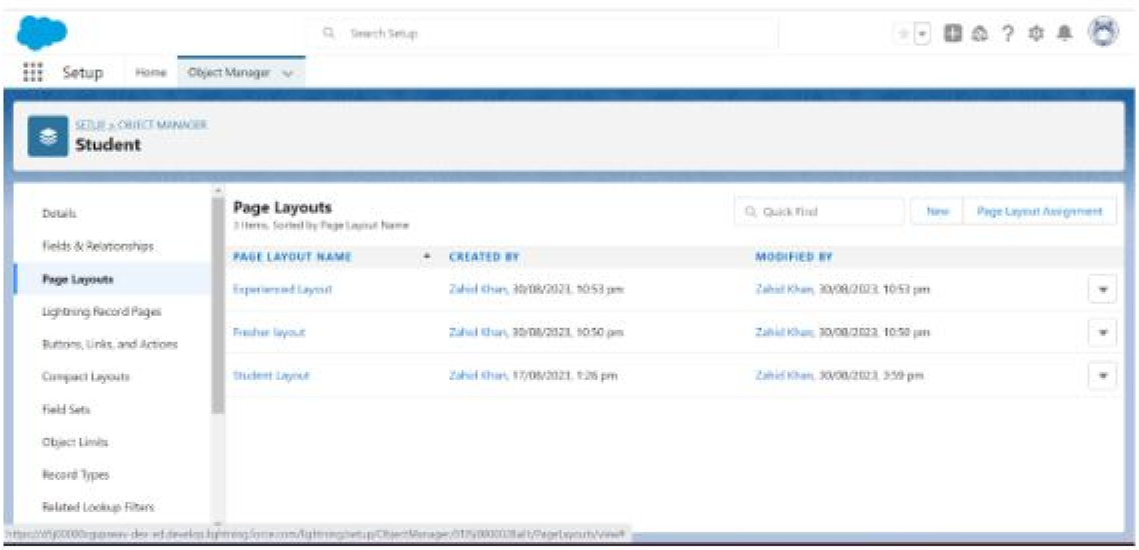
- Now creating two-page layouts by cloning the student layout. The 1st clone layout is fresher and 2nd for experienced.
- To clone the layout, click on student layout and click on save arrow and select save as.



- Now enter the page layout name (ex. Fresher layout) and click on save.

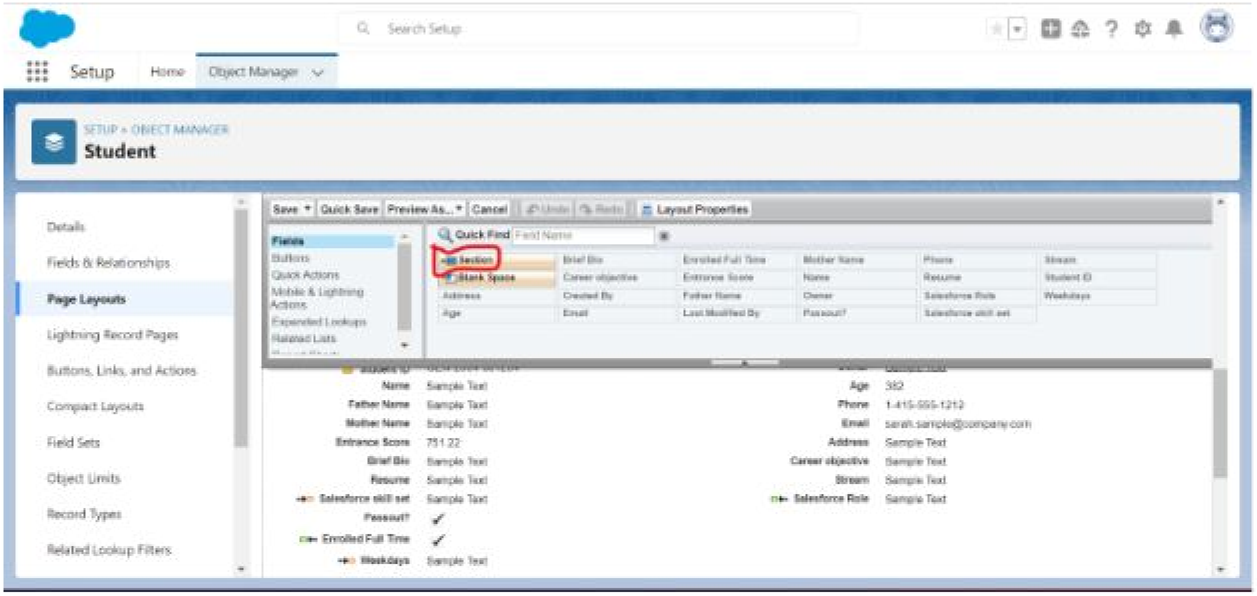


- After clicking on save clone fresher layout page will be created.
- Now repeat the step number same for creating clone Experienced layout page.
- Now both fresher and experienced layout is created,

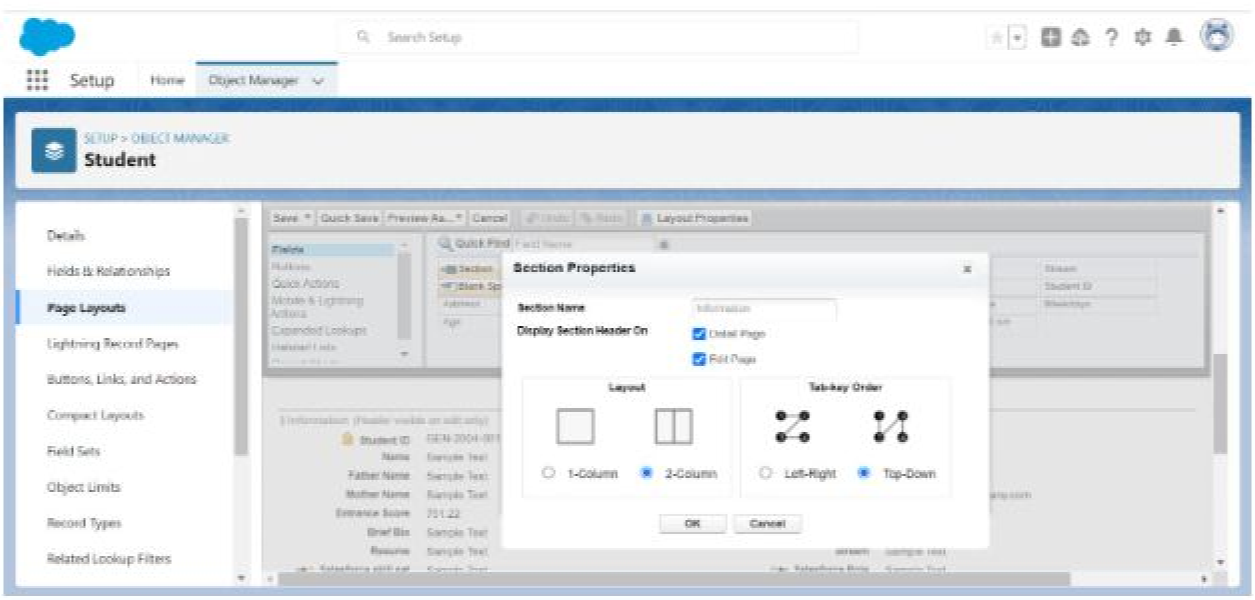


<u>Steps to create sections in page layout.</u>

- To create sections of the fresher layout, click on fresher layout.
- To create sections for different field we must select **sections** from quick find.

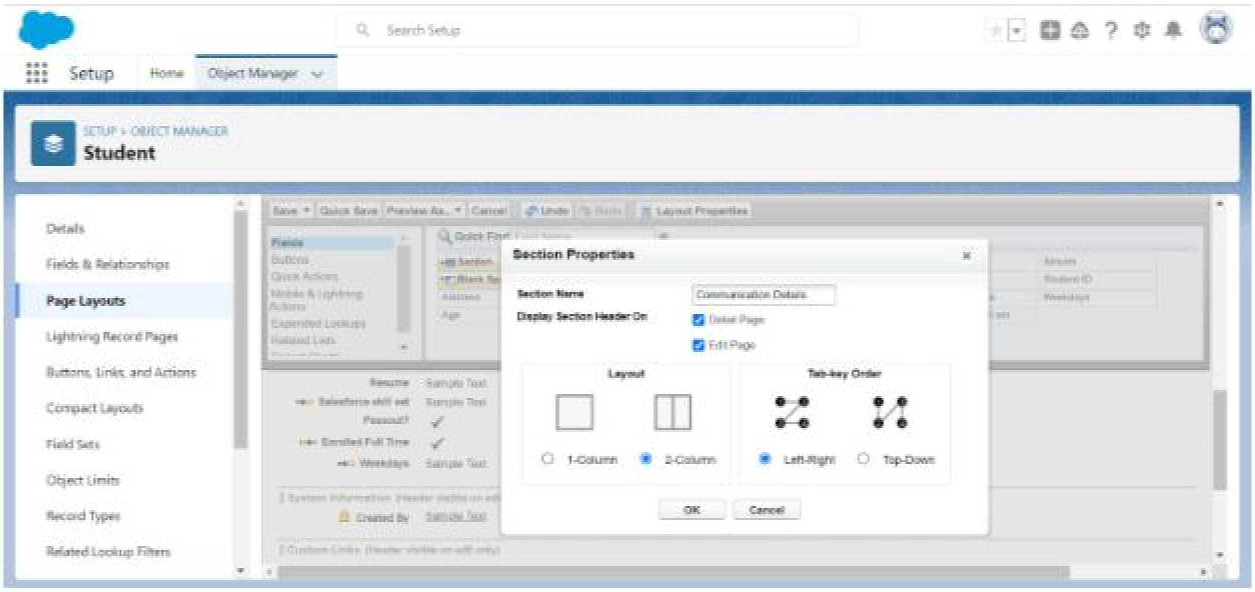


- To create sections for different field like information, communication, qualification, salesforce skills and professional information.
- First, we create information field which is already in layout, but we can edit by clicking on setting on right hand side. Information name can't be change and check details page and edit page of display section headers on. Layout should be 2 column and tab-key order top-down.

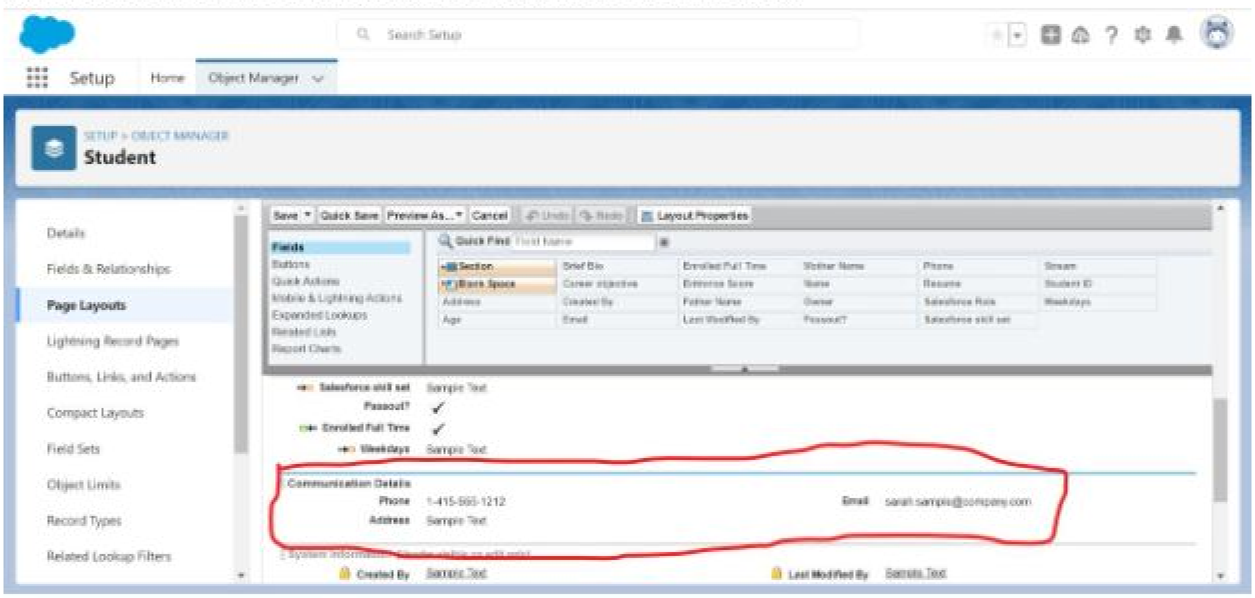


- Under information sections only name, age, father name, mother name consist.

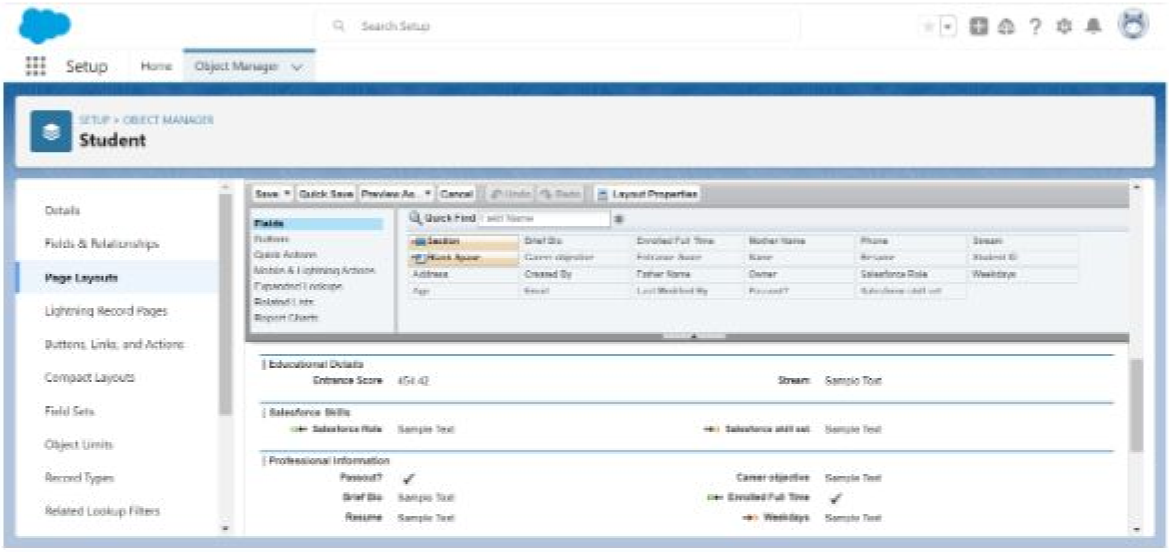
- Secondly, create communication section, for this select sections and drag below information section.



- Communication section consist of Phone, email, address field. Select these filed from information filed and drag them into communication section.



- Similarly create education information, salesforce skills and professional information.
- Click on save.



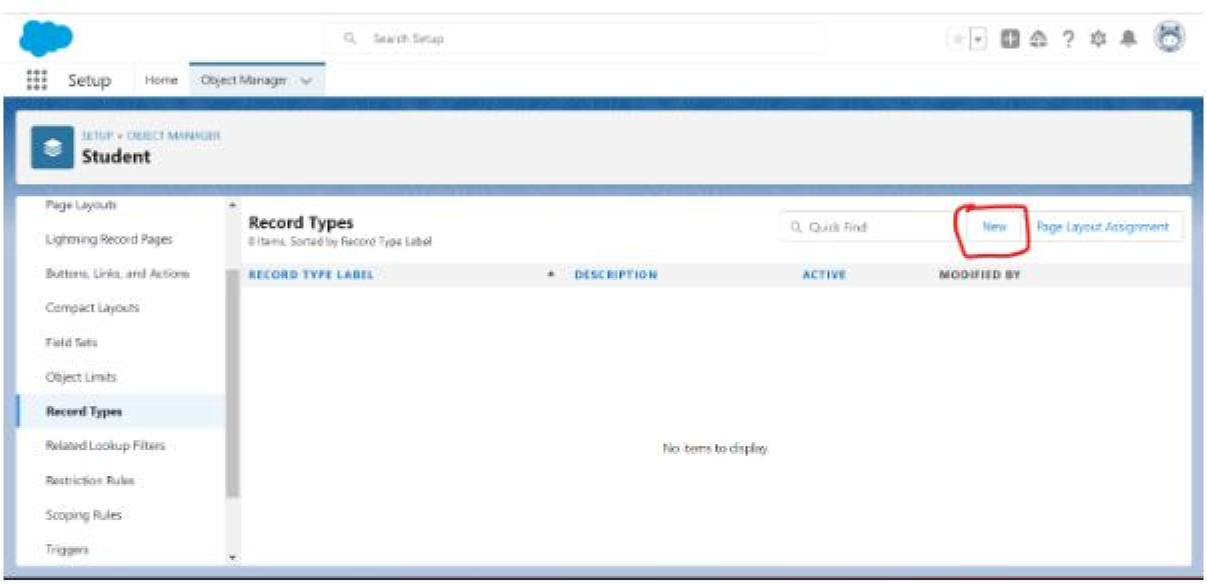
- now create same for experienced layout.

Record Type

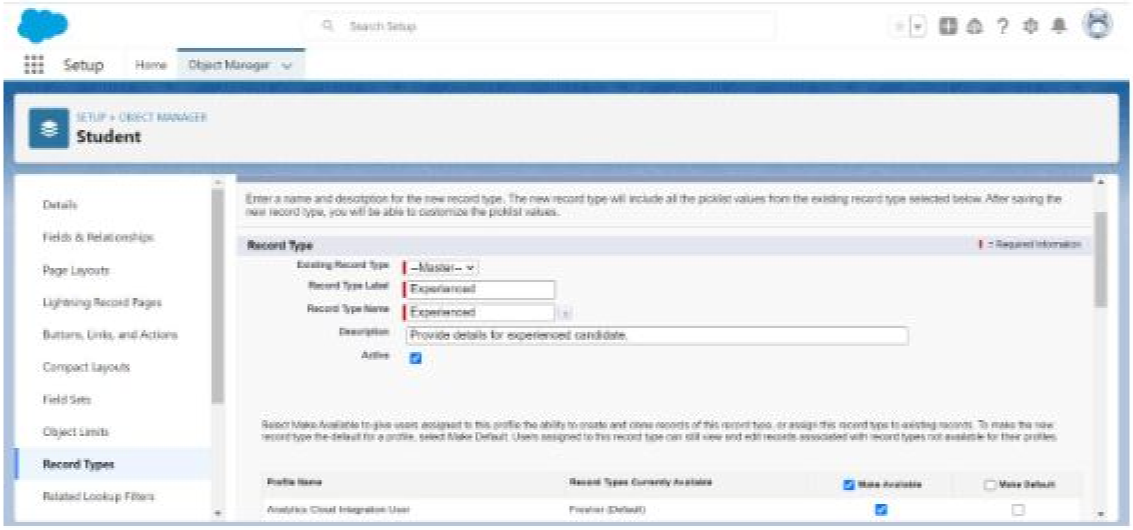
After creating page layout so it needs to be control for front-end so we can do this using Record type. Record type is used to show the clone layout (ex. fresher & experienced layout) in front-end. we can also control picklist using record type.

Steps to create record type.

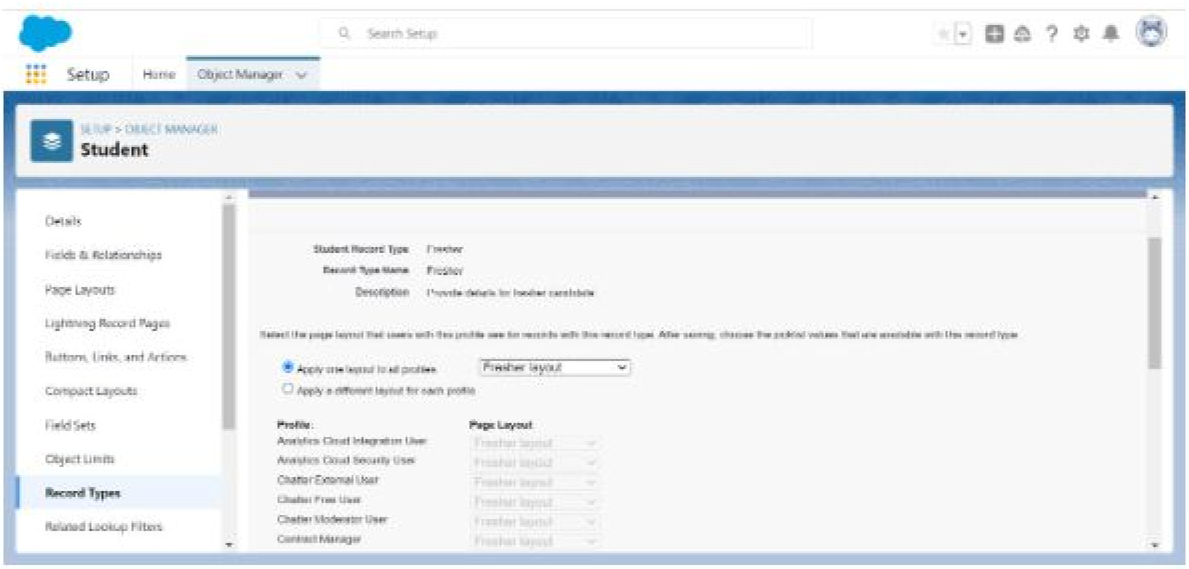
- Go to object manager and search for student custom object.
- Now open the student object and click on **record type** from the left side menu.
- Now click on new.



- Now enter details like record type level, record type name and description and check the box of make available for profile name.



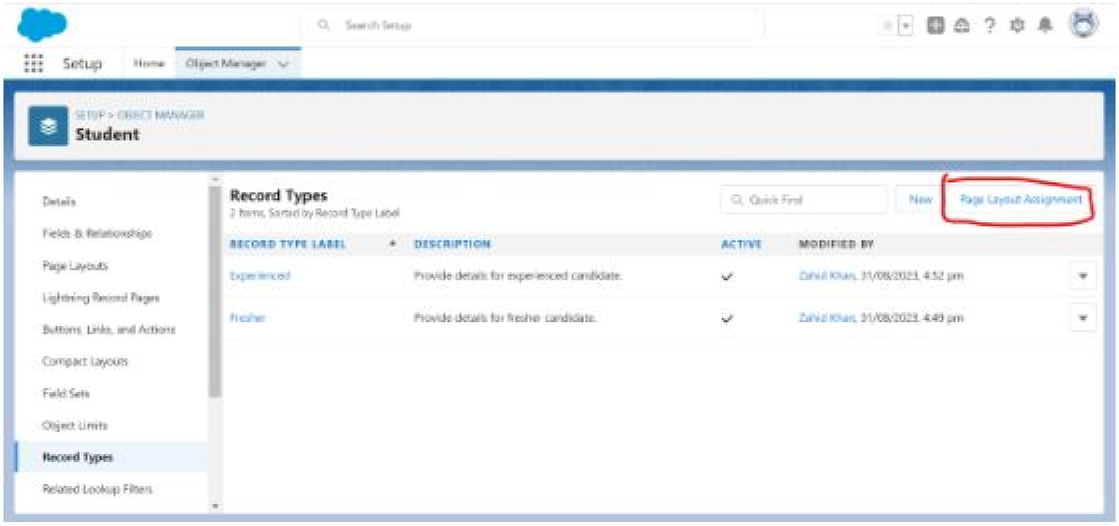
- Click on next.
- Now select the layout.



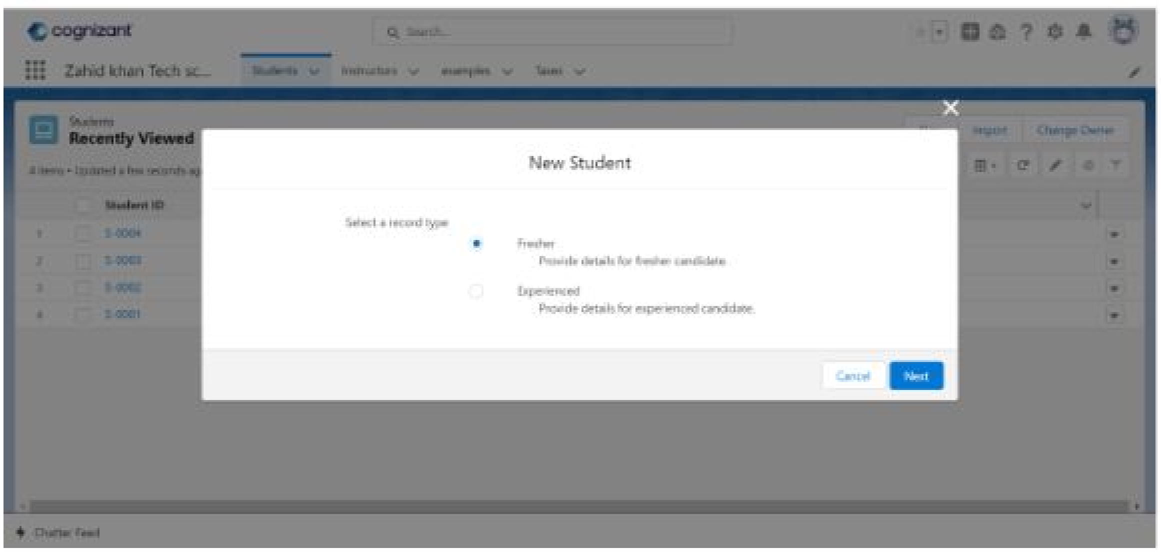
- Click on save.

- Now similar create record type for experience layout.

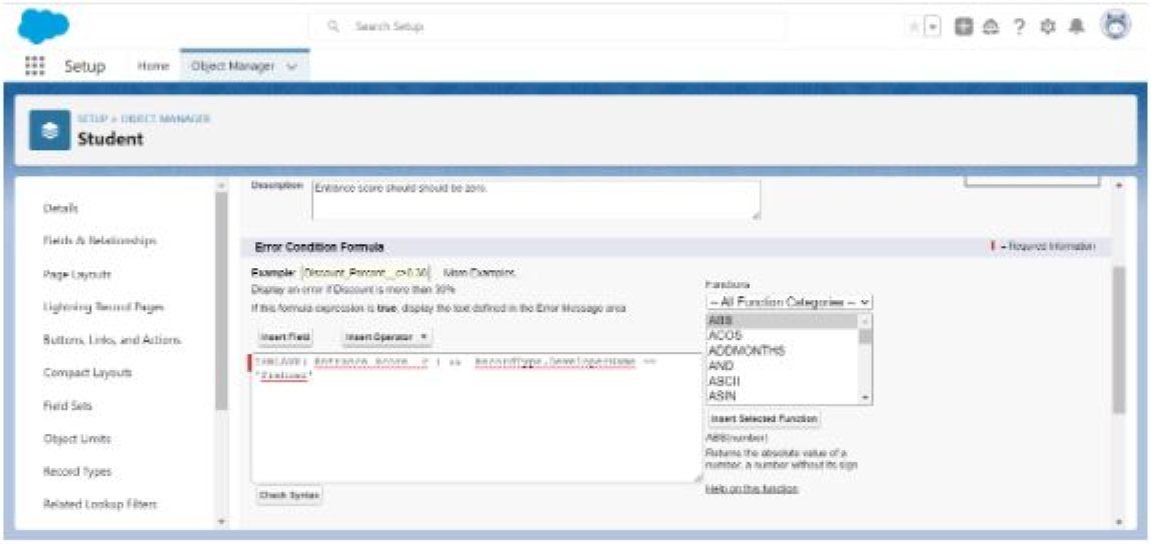
- Later, if we want to change the layout of record type just click on page layout assignment.



- now go to front-end and check.



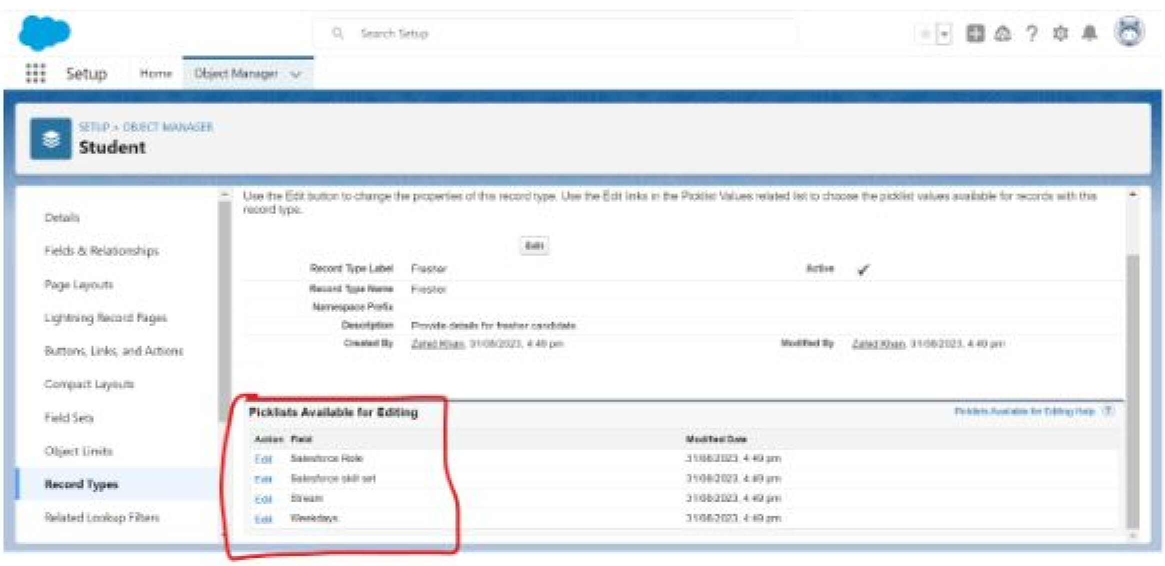
- When we enter the details for experienced it's through error of entrance score and that field is not present there, so we must do record type check in validation rule.
- Go to validation rule of student object and click on **Entrance_score_Not_Equal_to_zero.** From validation rule and edit this as below.



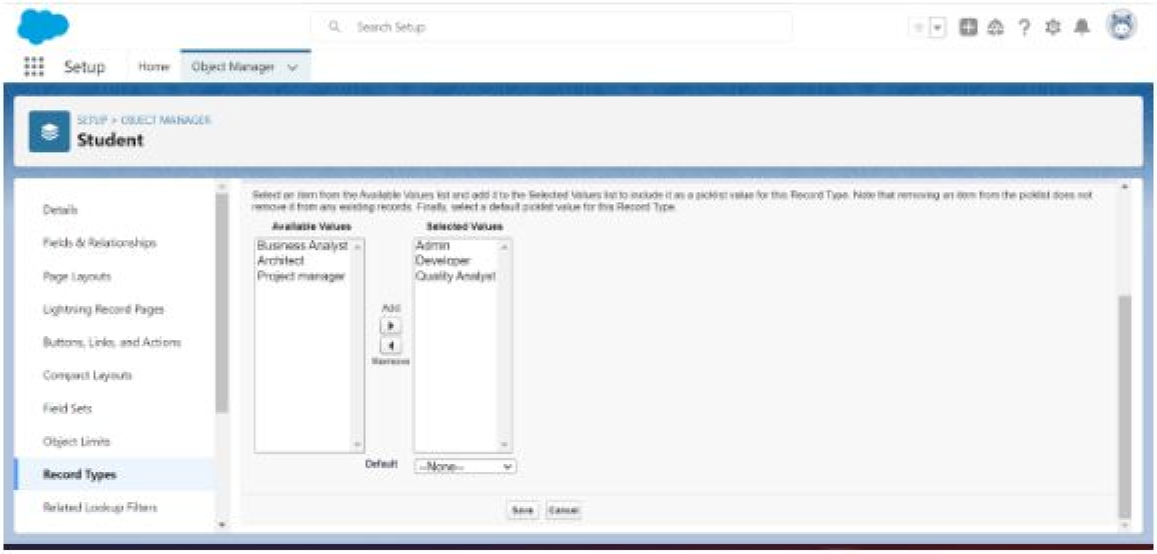
- now using this formula only validation rule will apply on fresher layout not in experienced layout.

Steps to control picklist using record type.

- Go to **Record type** of student layout and click on fresher layout.
- click on edit against the salesforce role inside picklist available for edit.



- Now select the value which is visible under student layout in front-end like admin, developer and quality analyst.

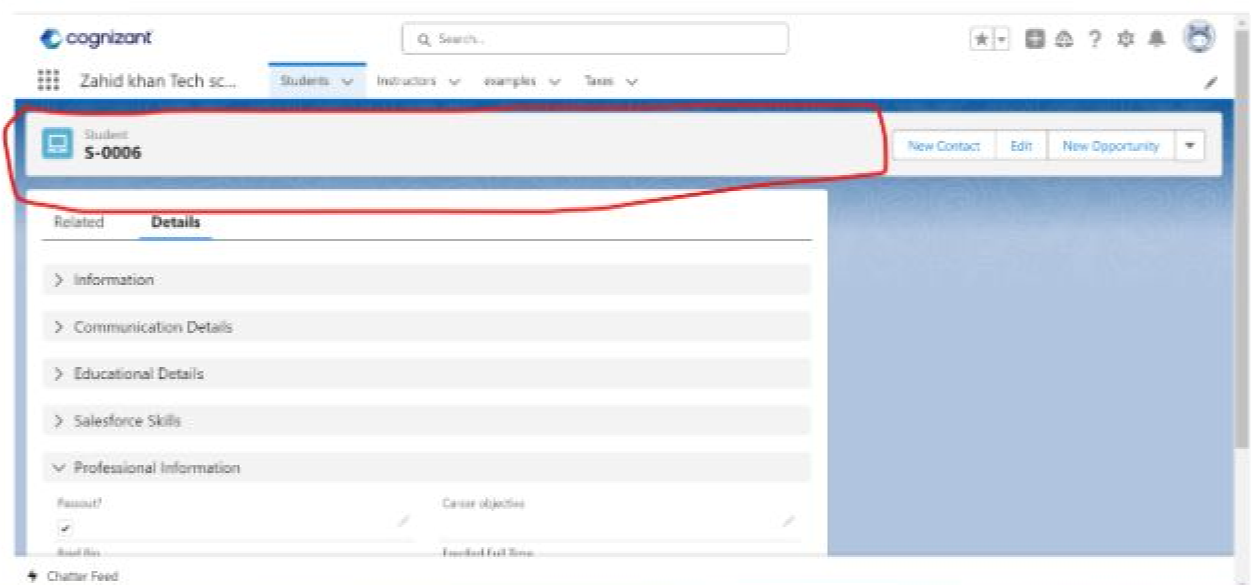


- now click on save.

- Similar create picklist for experienced layout in same way.

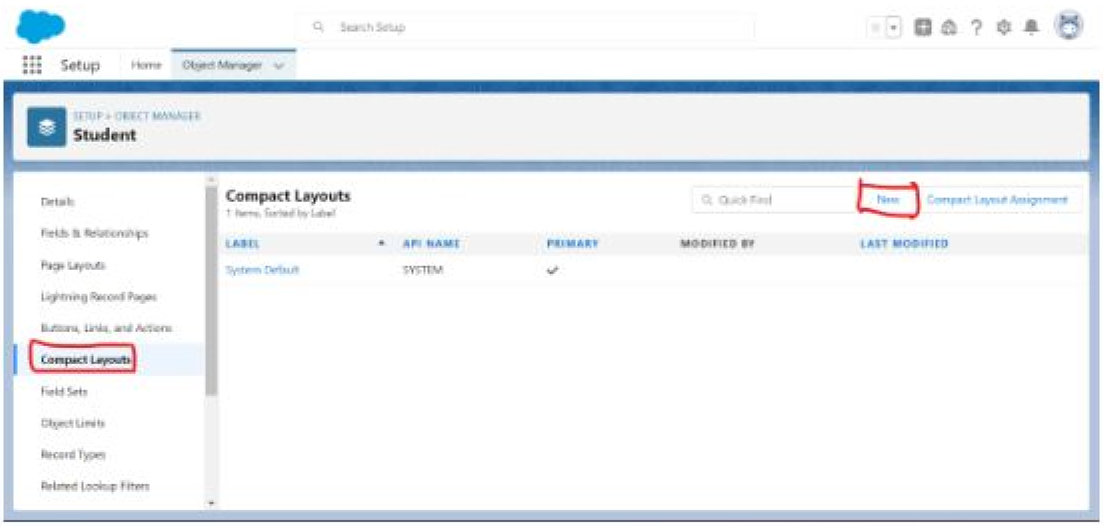
<u>Compact Layout</u>

- Its show the selected field in record header.
- Red mark is the place for compact layout.
- Compact layout means selected field like information, communication details will show in red mark place which is shown in below figure.

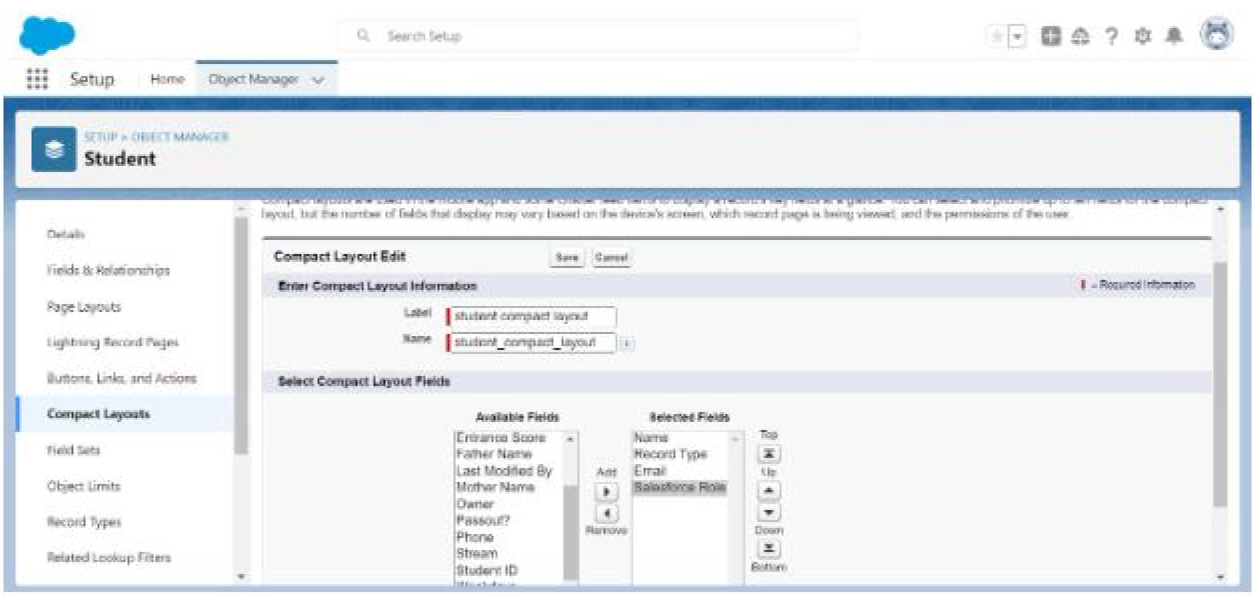


Steps to create compact layout.

- Click on this icon and open step up.
- Click on **Object manager** and search for student object.
- Select compact layout option from left side menu.
- Then click on new.

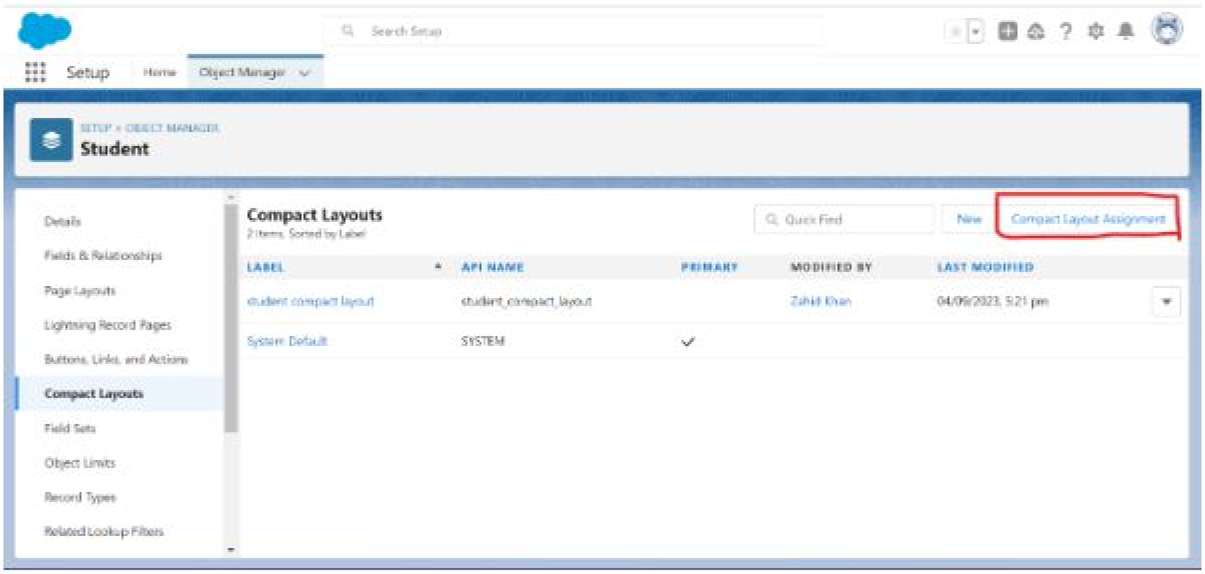


- Enter label name under **compact layout information**.
- Now select the field from **compact field layout**.



- Now click on save.

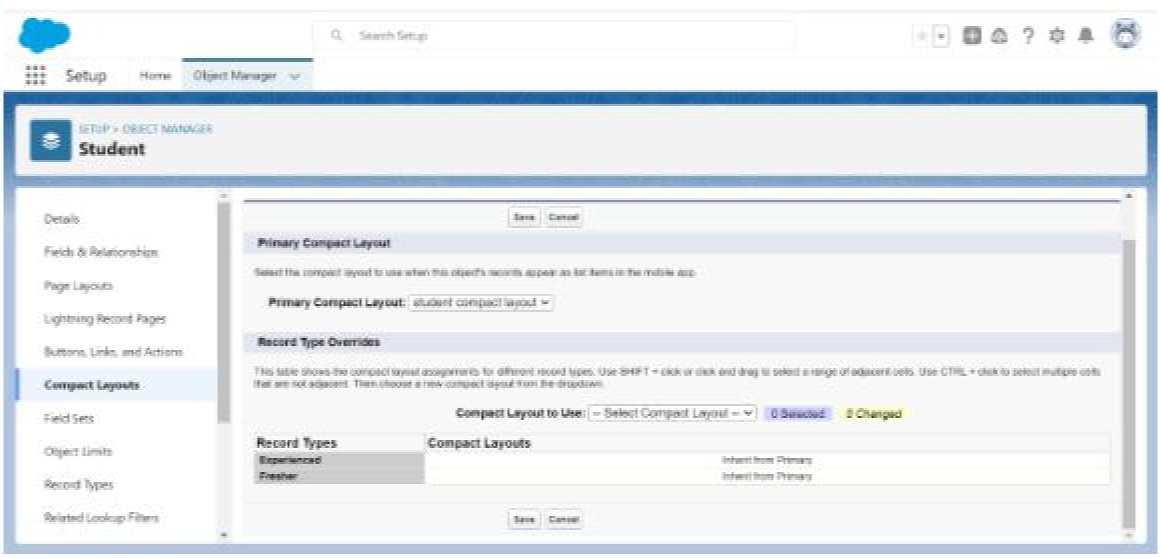
- Now again click on compact layout from left side menu.
- click on **compact layout assignment**.



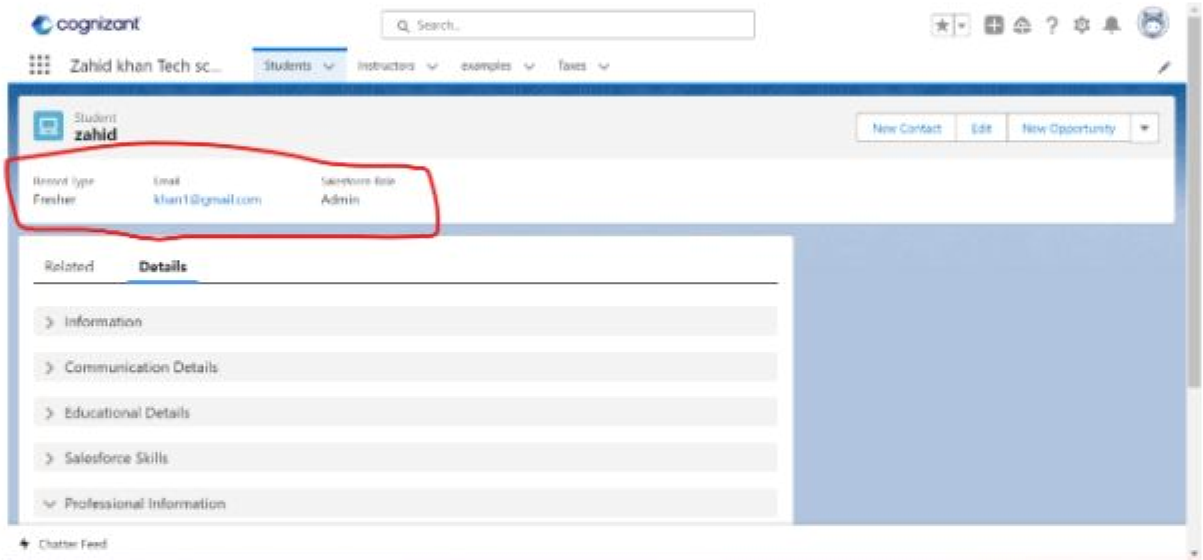
- Select **primary compact layout** is **student compact layout** which Is created.

- Now select **compact layout to use** is **student compact layout**.

- Now click on save.



- Go to front-end and check.



Day-05

Relationship

Relationships are two types.

- One to many.
- Many to many.
- Whenever create look-up or master-details we need to create on child object, and they will look up to parent. (For ex: - students(child) and class (parent)).

One to many relationships.

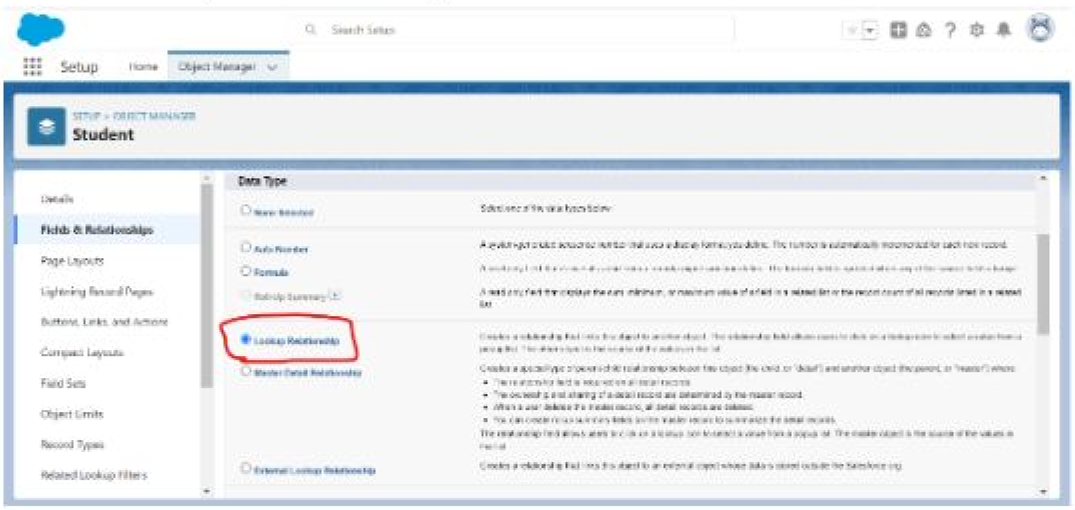
- Lookup relationships.
- Master-details relationships.

Lookup relationships

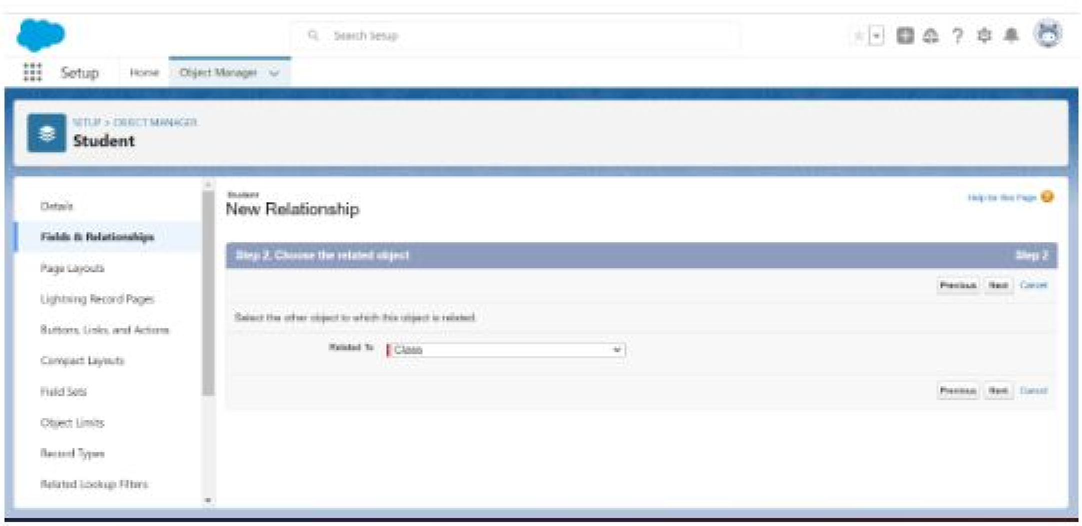
- creates relationships that links one object to another object.
- The relationship field allows users to click on a lookup icon to select a value from the popup list.
- The other is the source of the values in the list.
- Loosely coupled relationships. Its mean if we delete parent record so the dependent or child records can't be deleted.
- Look-up relationship always created from child and need to select parent object.

Steps to create lookup relationship.

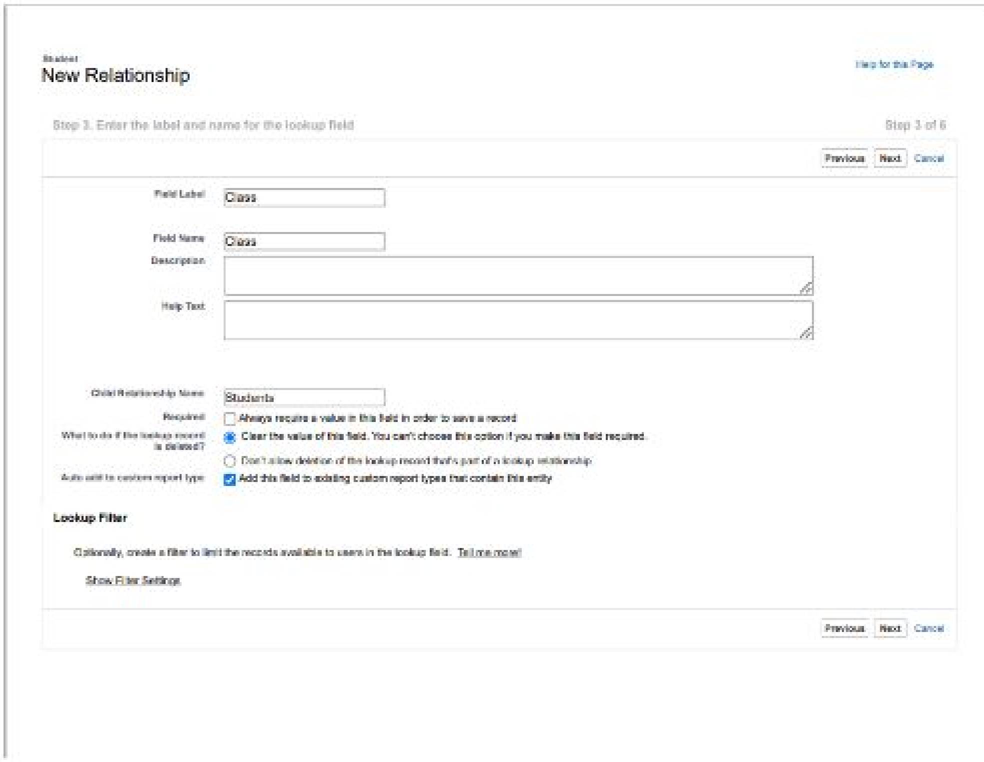
- Click on this icon and open step up.
- Create a custom object named as Class(parent).
- Type record name as class and data type will be text **Enter Record Name Label and Format.**
- Click on save to create new object.
- Now create 2 field [course duration(text), fees(currency)].
- Now go to student object (child).
- Click on field and relationship.
- Click on new.
- Select look-up from the data type.



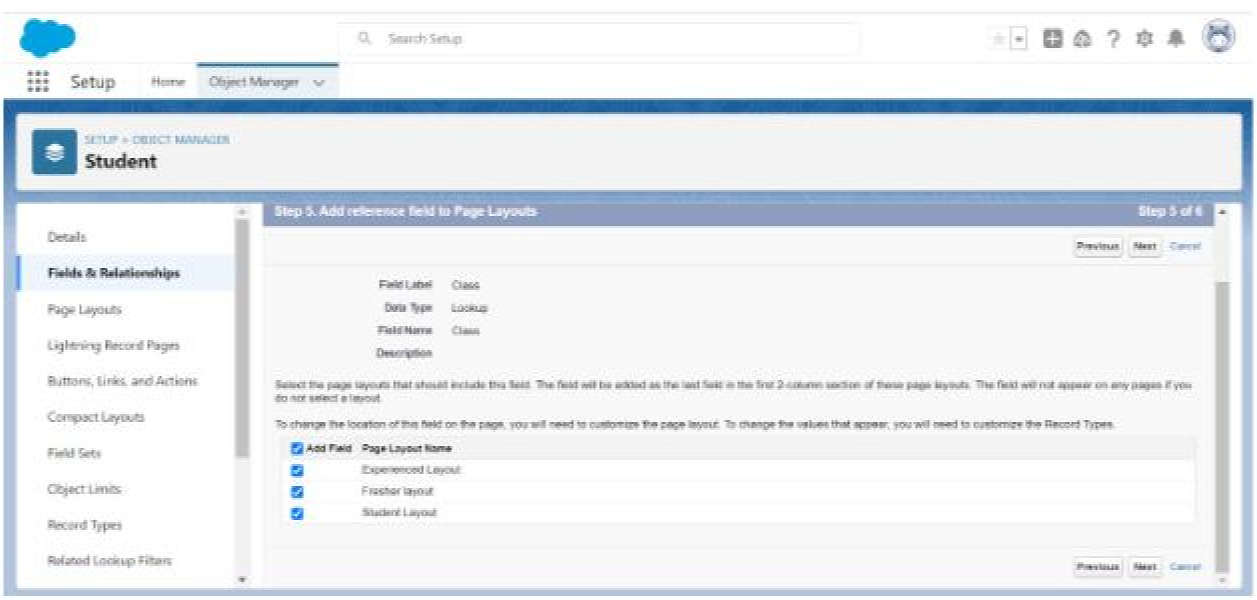
- Click on next.
- Now select **class object (parent)** in **related to** field.



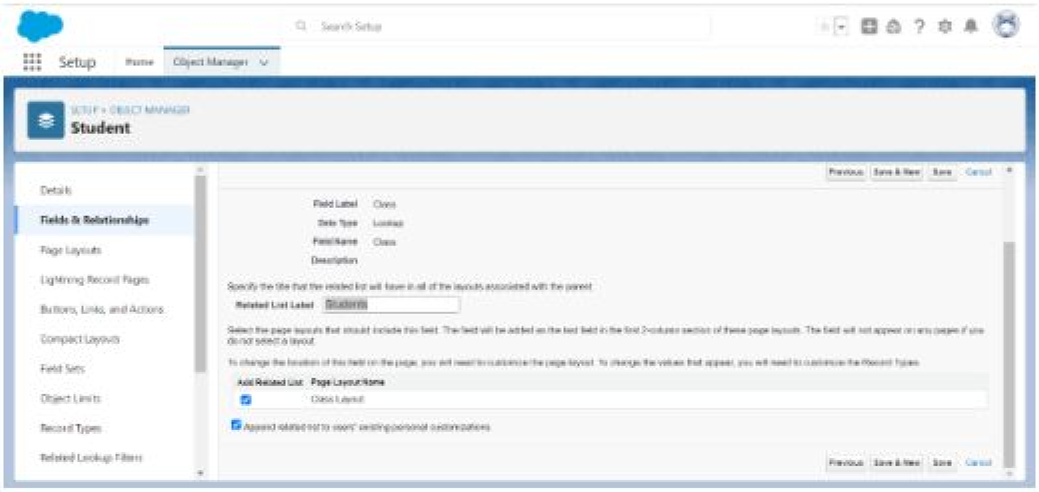
- Click on next.



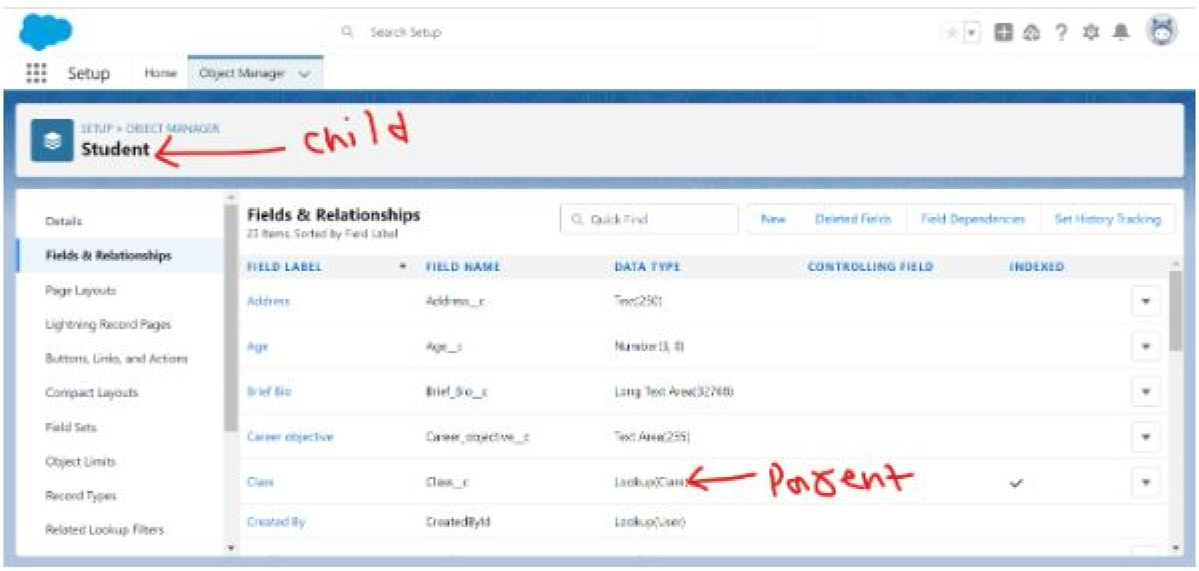
- Click on next.
- Checkbox to visible all and click on next.
- Add page-layout name for all three layouts.



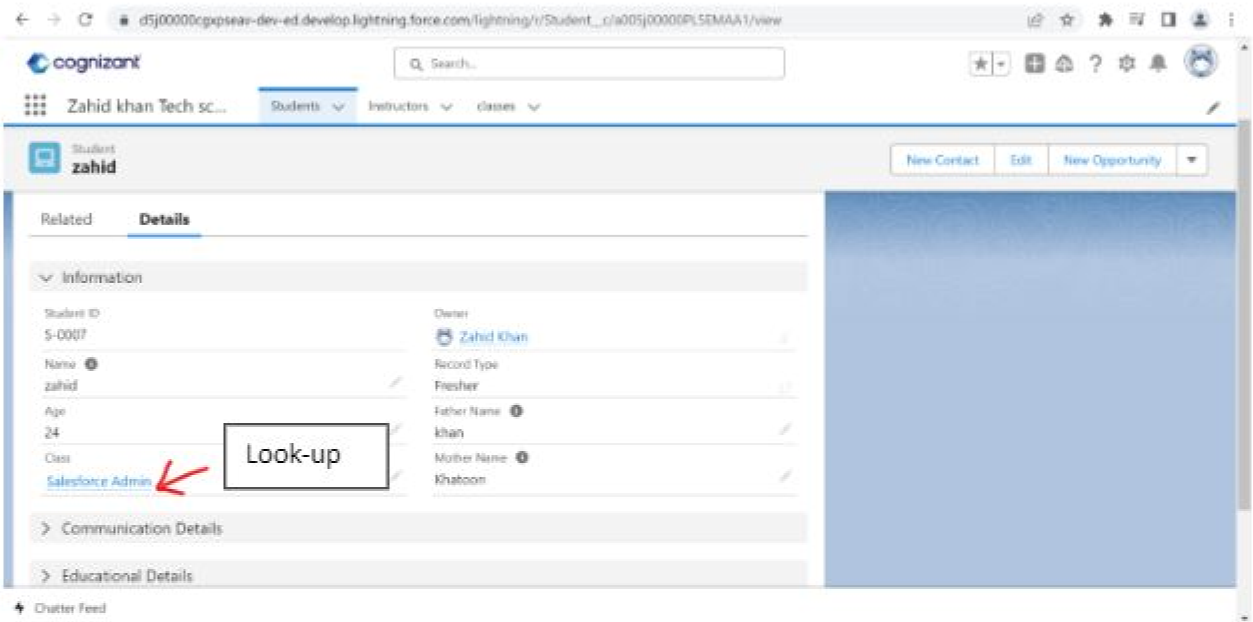
- Click on next.
- On next page you will get option to change related list label.



- click on save.



- Now go to front-end and check the result.



Master-Detail Relationship

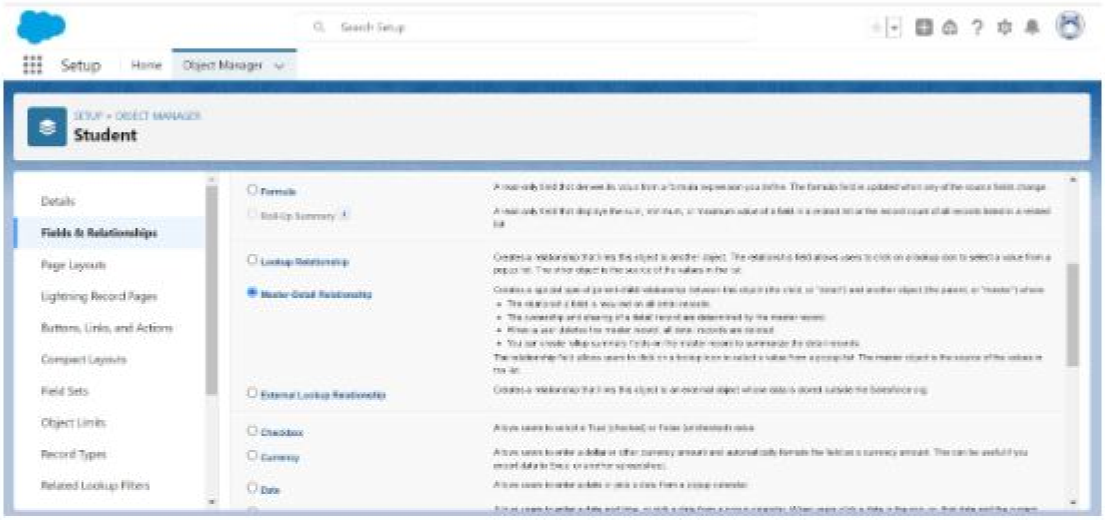
Creates a special type of parent-child relationship between two objects.

One is known as child/detail where we create master-detail relationships field, and another is knowing as parent/master.

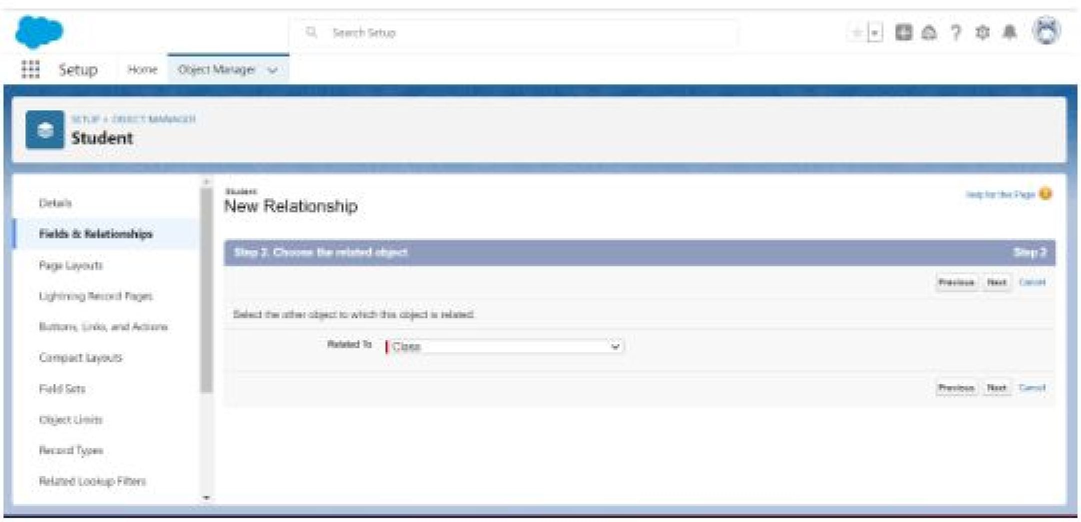
- Required on all detail records.
- Ownership and sharing of a detail record is determined by the master record.
- If user deletes the master record than all detail records are deleted.
- One can create rollup summary fields on the master records so that detail records can be summarized.
- Tightly coupled relationship.

Steps to convert the look-up relationship to master-detail relationship.

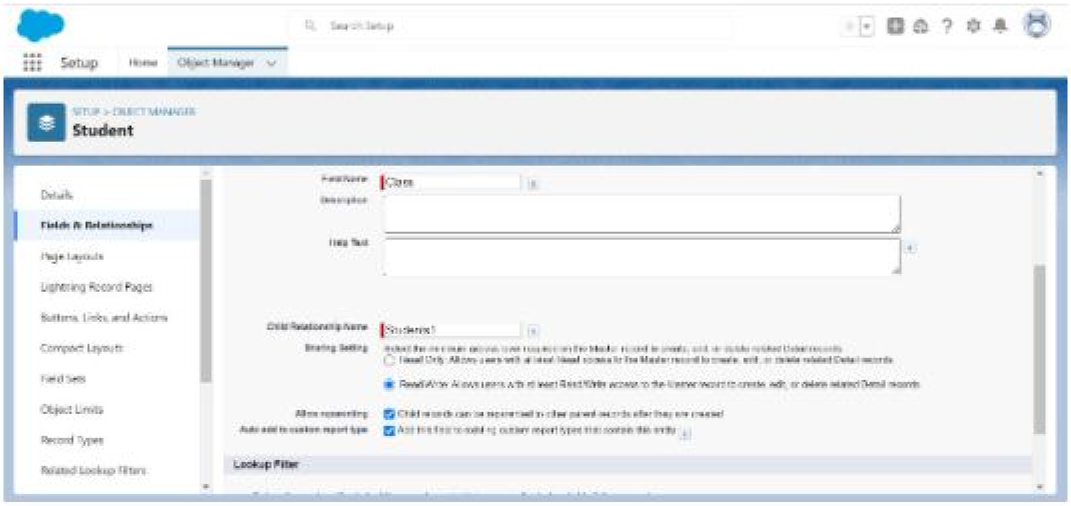
- Go to student object and click on new to create new field.
- Now choose master-detail from data type.



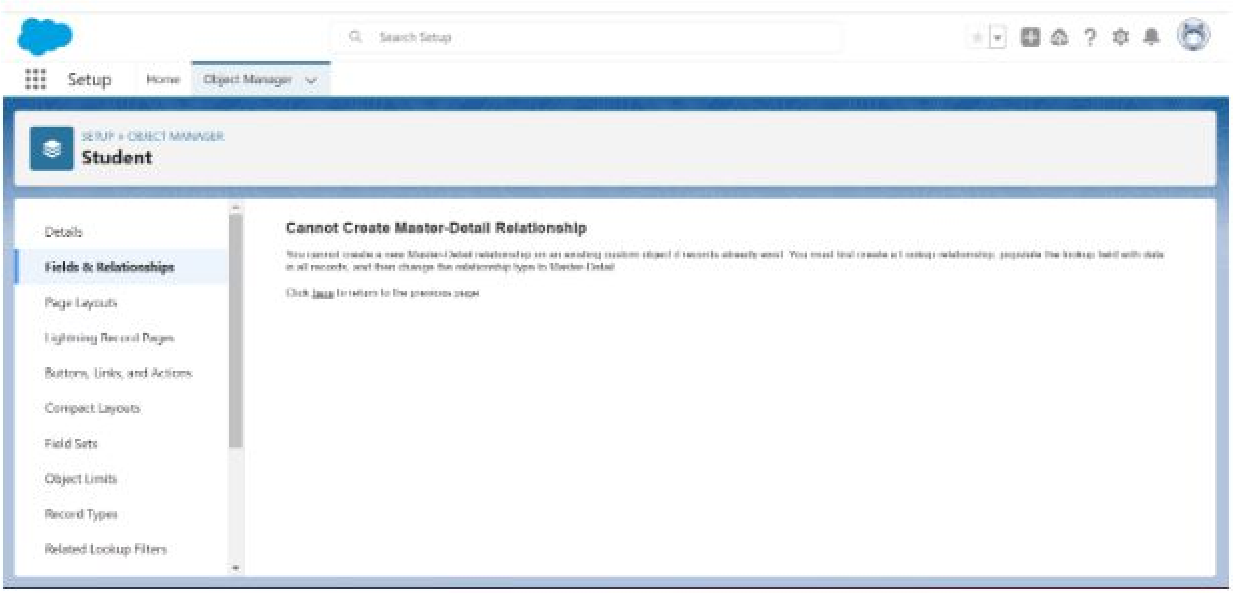
- Click on next.
- Now choose parent object (i.e., class object) in **Related field** to.



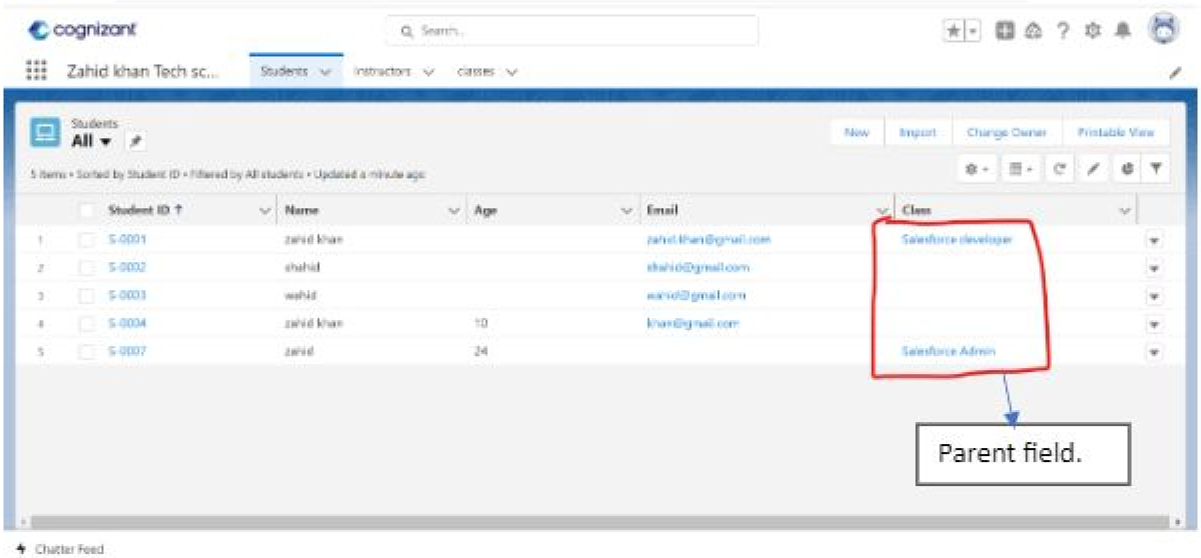
- click on next.
- If we want to change anything from child record so we must select allow **repeating option.**



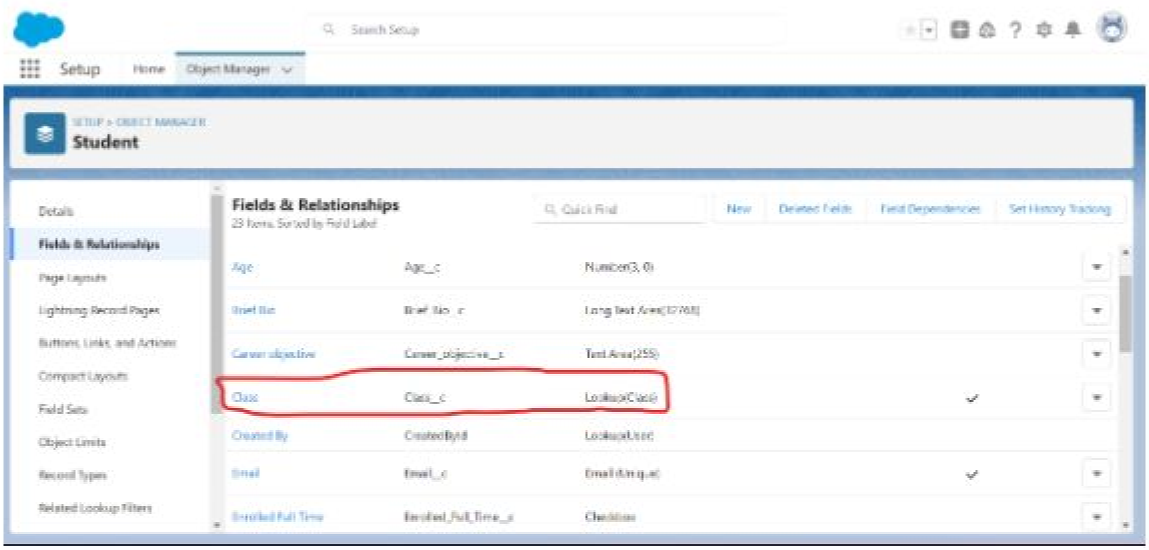
- Click on next.
- Visible checkbox already checked because it's a required field.
- Click on next.
- Now when we click save button, we got error that we cannot create master-detail relationship because some records already created in students object(child).
  To solve this error, we have 2 options.
  I. Do not create any records in child object (students object) before creating master-detail relationship.
  II. You must first create a Lookup relationship, populate the lookup field with data in all records, and then change the relationship type to Master-Detail.



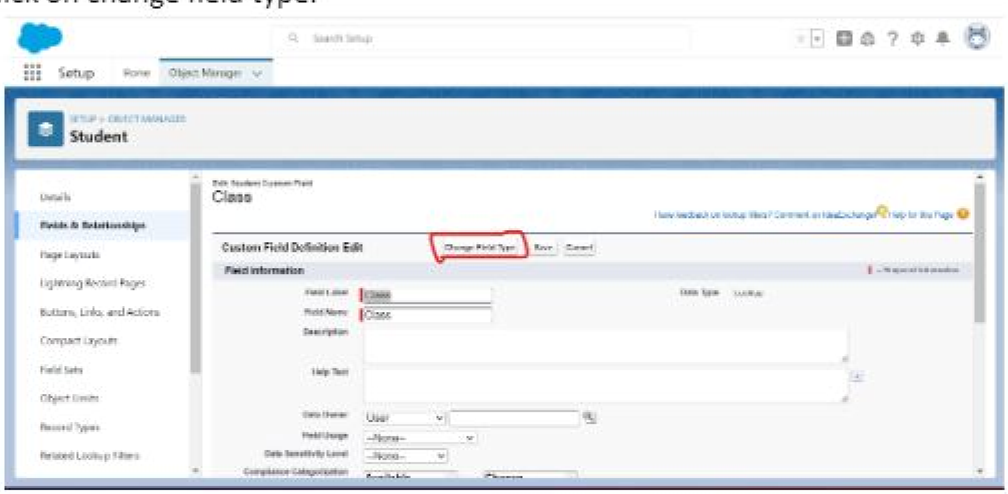
- To convert the lookup relationship into master-detail relationship. All records have parent object.



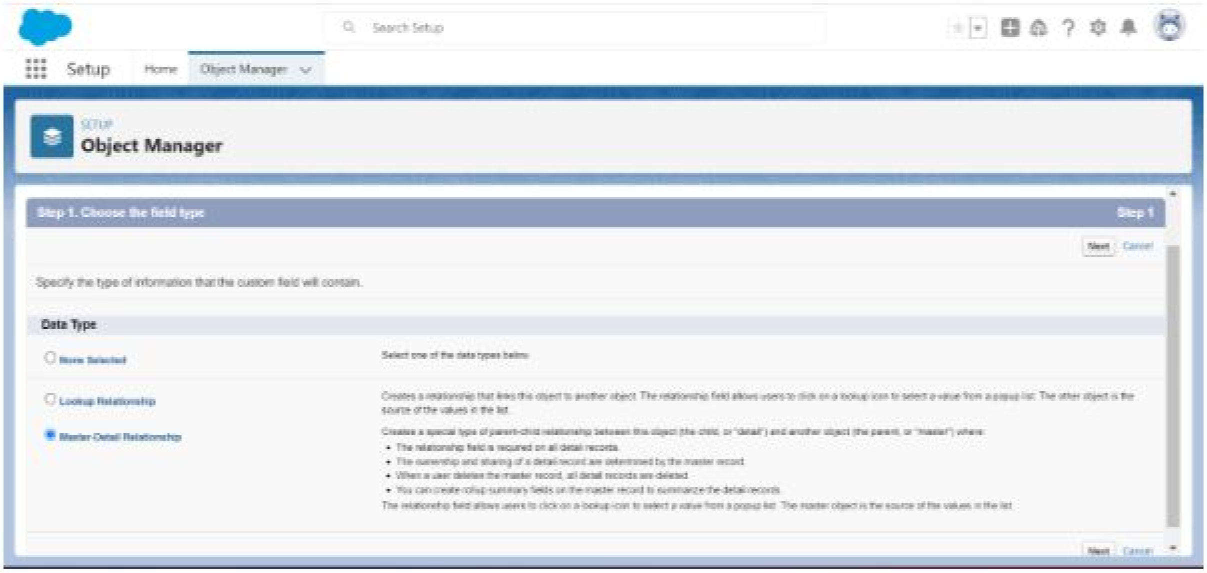
- now go to student object and edit the class field which is created previously.



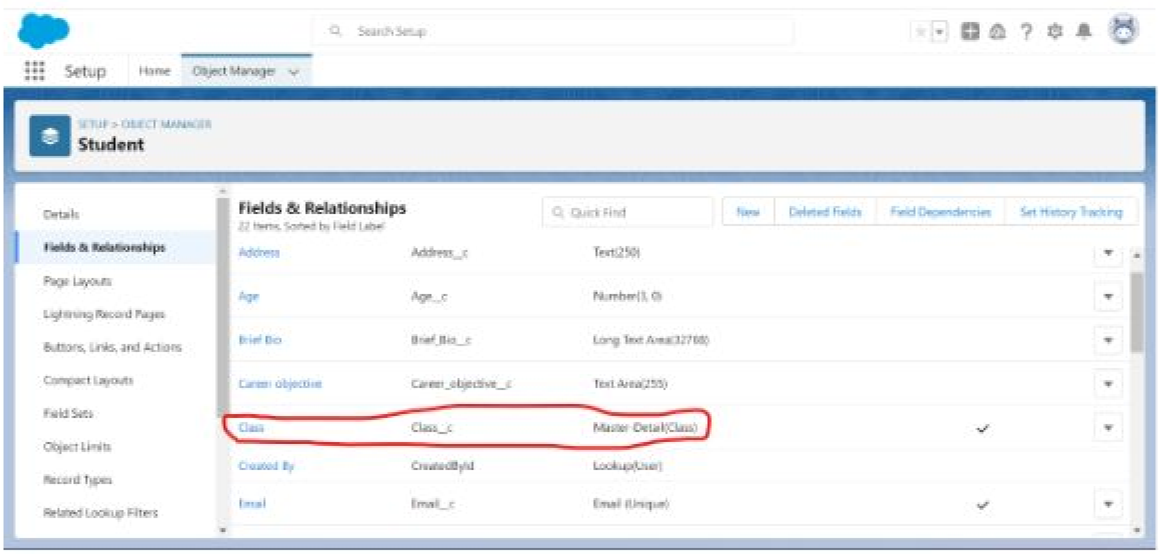
- Now click on change field type.



- Now change the field type from look-up relationship to master-detail relationship.



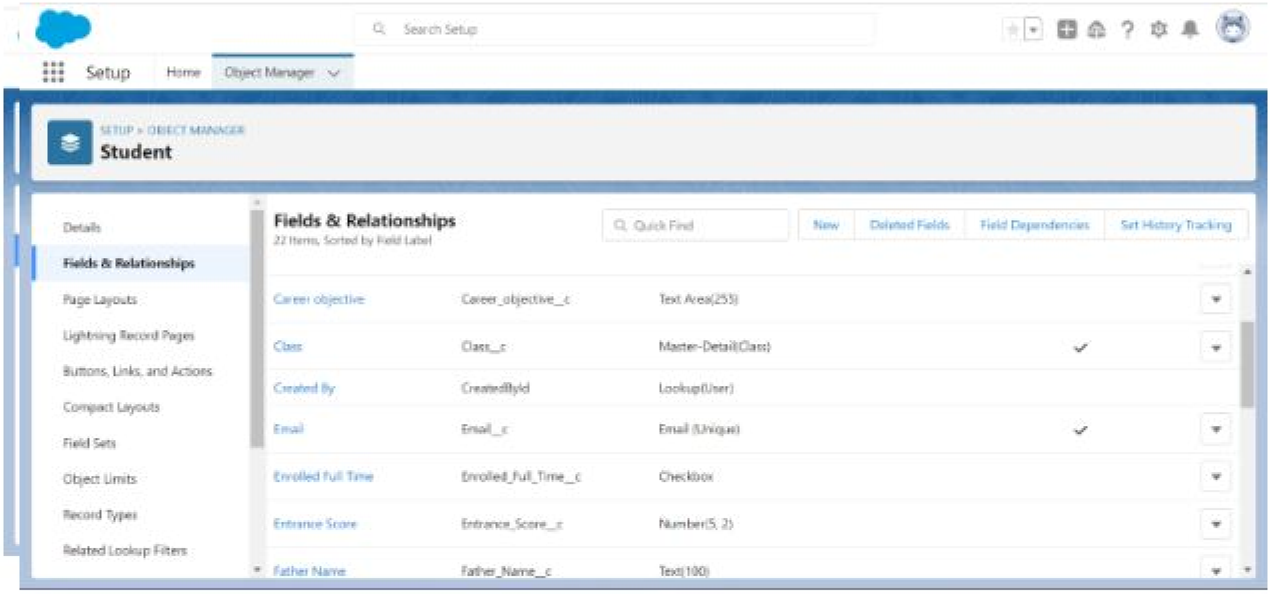
- Now click on next and click on save.
- Now look-up relationship is now changed with master-detail relationship.



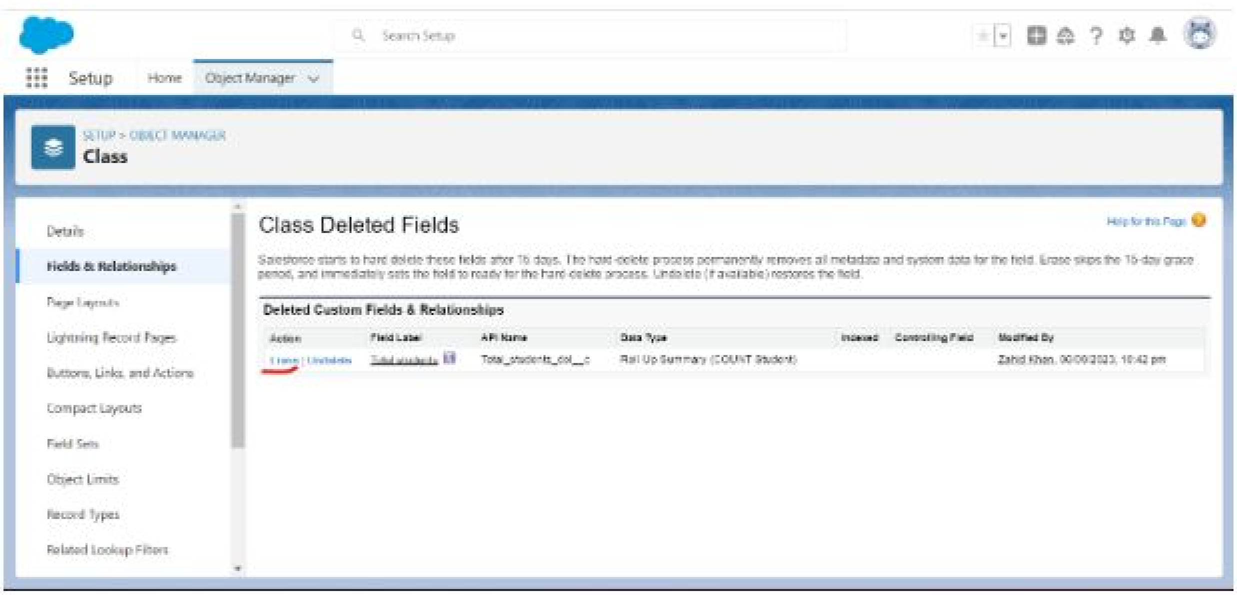
- Now go to students records in front-end and check.

<u>Steps to convert the master-detail relationship to look-up relationship.</u>

- To convert the master-detail relationship to look-up relationship firstly, delete the all Roll-up summary field from Class object(parent) and also erased the roll-up summary field from delete filed session.

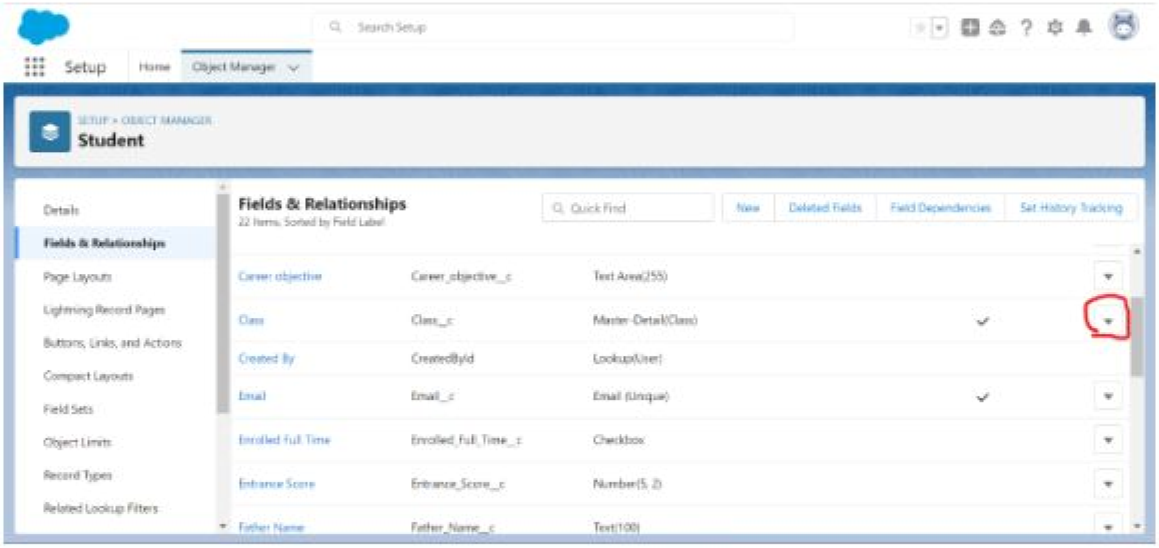


- To delete permanently click on erased.

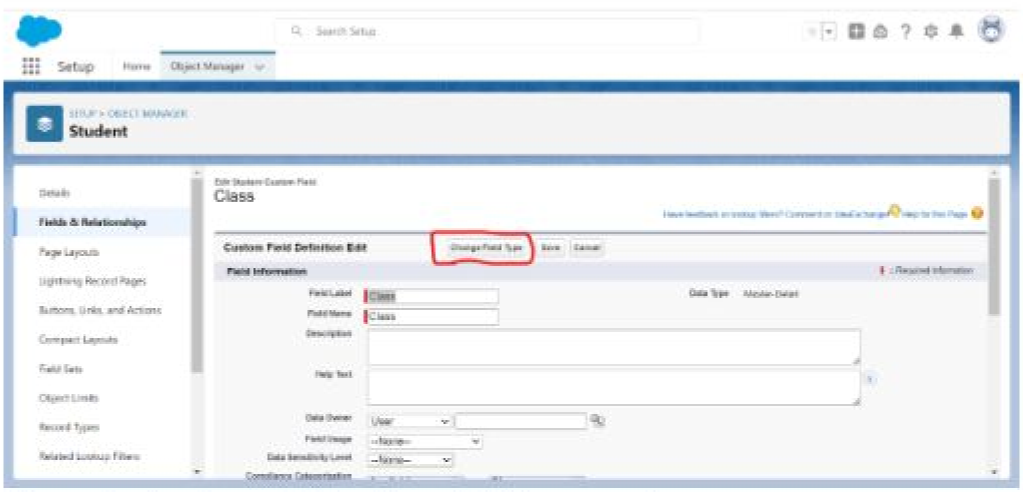


- Now go to child object (student object).

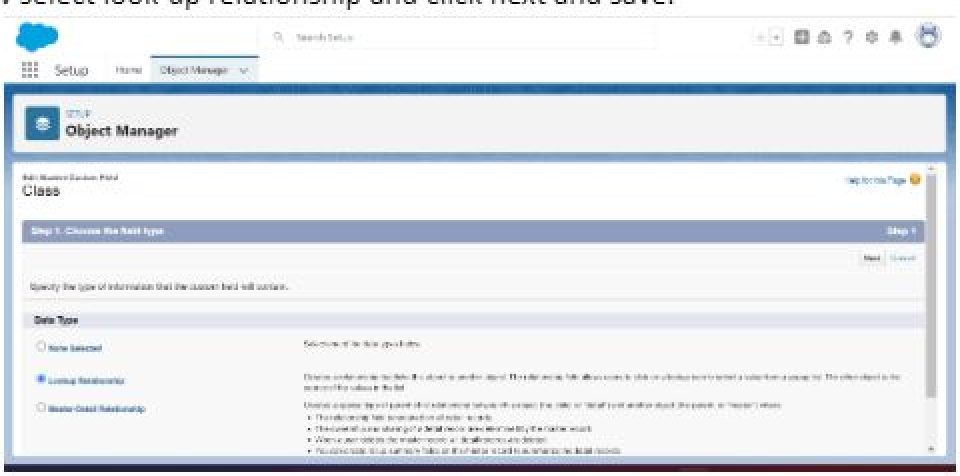
- Click on field & relationship. Click on drop down in parent object (class object) and click on edit.



- now click on change field type.



- Now select look-up relationship and click next and save.



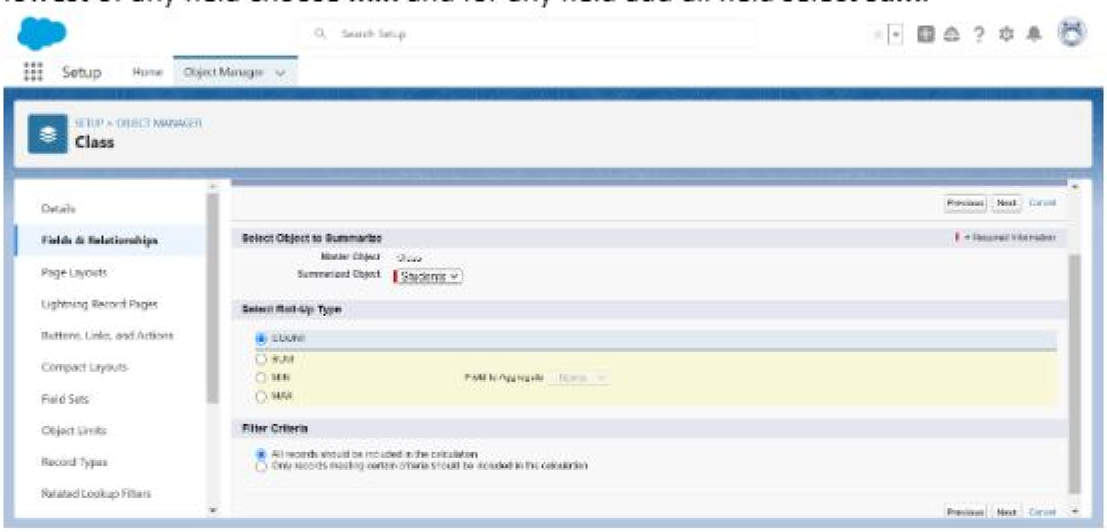
- Now master-detail is converted into look-up relationship.

Rollup Summary Field

- A read only field that displays the sum, minimum or maximum value of a field in a related list.
- This field also can count all available records available in related list.
- Rollup summary fields always created on parent object.

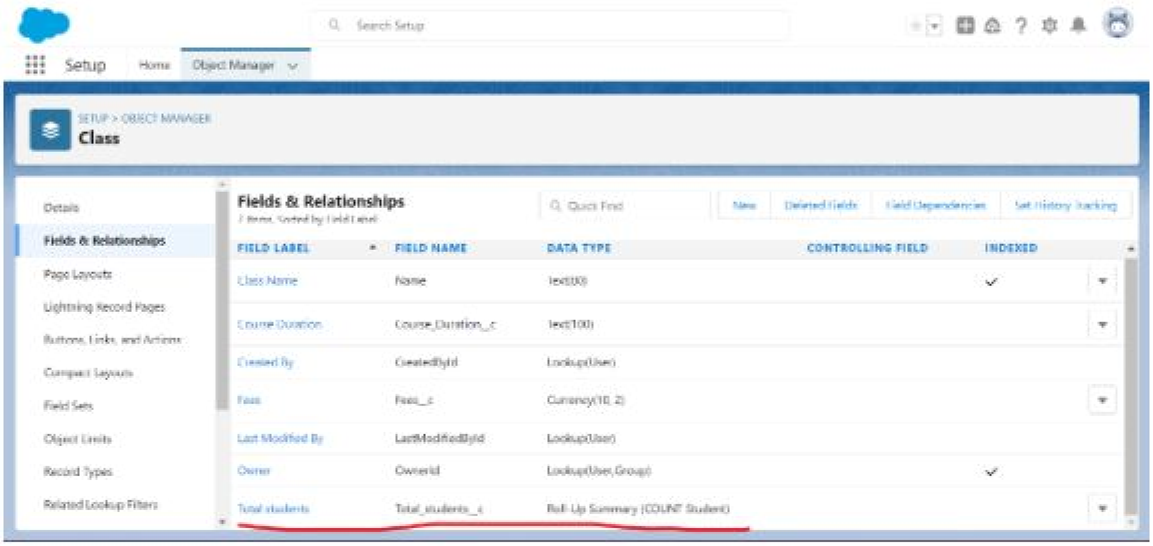
Steps to create Rollup summary.

- Go to object manager from set-up and search for class object (parent object).
- Now click on fields & relationships.
- Click on new.
- Select Rollup summary field from the data type.
- Click on next.
- Enter Field label and field name.
- Click on next.
- Now select student from the select object to summarize to object.
- Now select Roll-up type. Here we are selecting total of the student object records, so we choose **count.** if we need to calculate highest of any field so we choose **max**, for lowest of any field choose **min** and for any field add all field select **sum**.

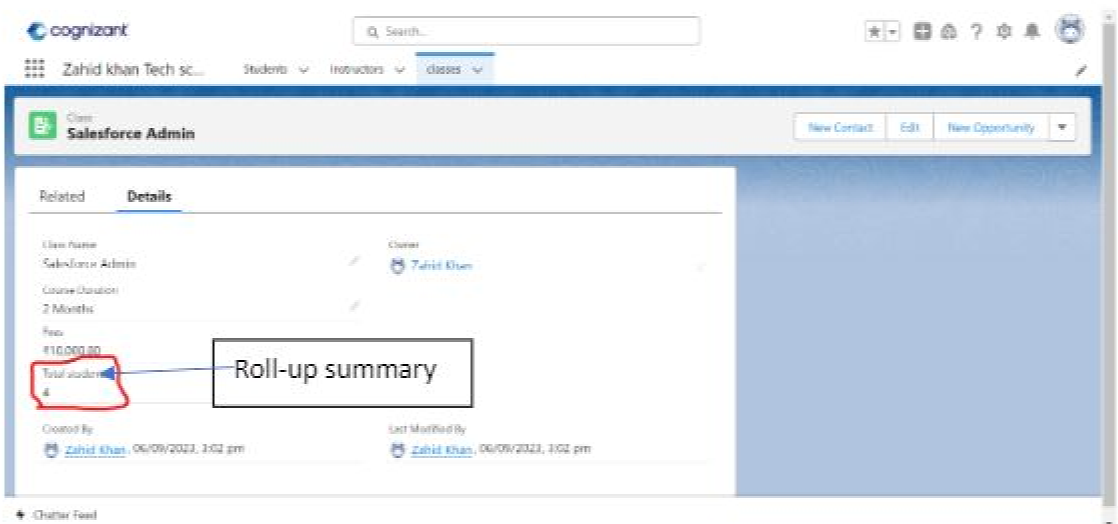


- we also apply field criteria. But for now, we are choosing **All records should be included.**
- Click on next.
- Checkbox visible box.
- Click on next. Click on save.

- Now roll-up summary field in created.



- Now go to front-end and check class object(parent).

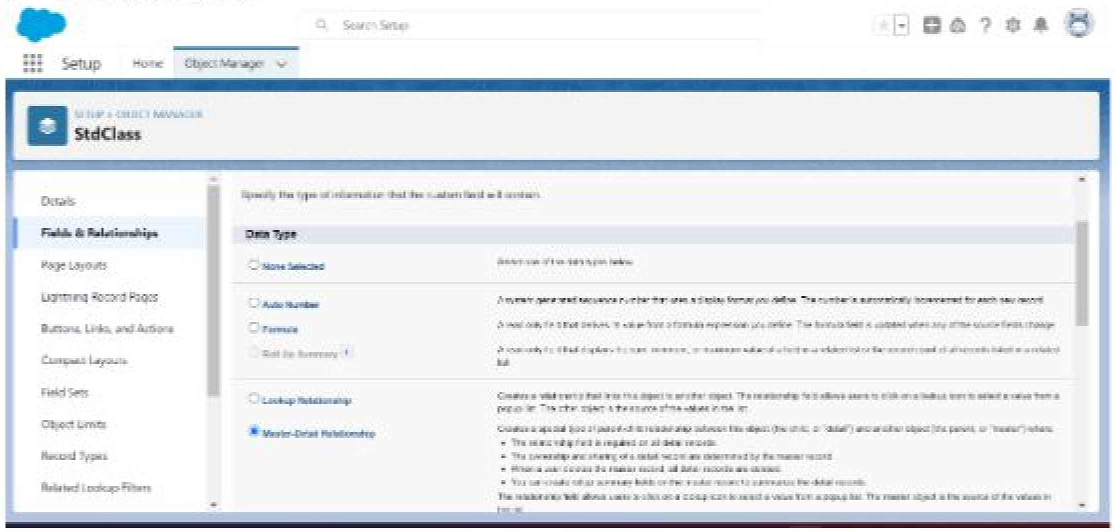


Many to many relationships.

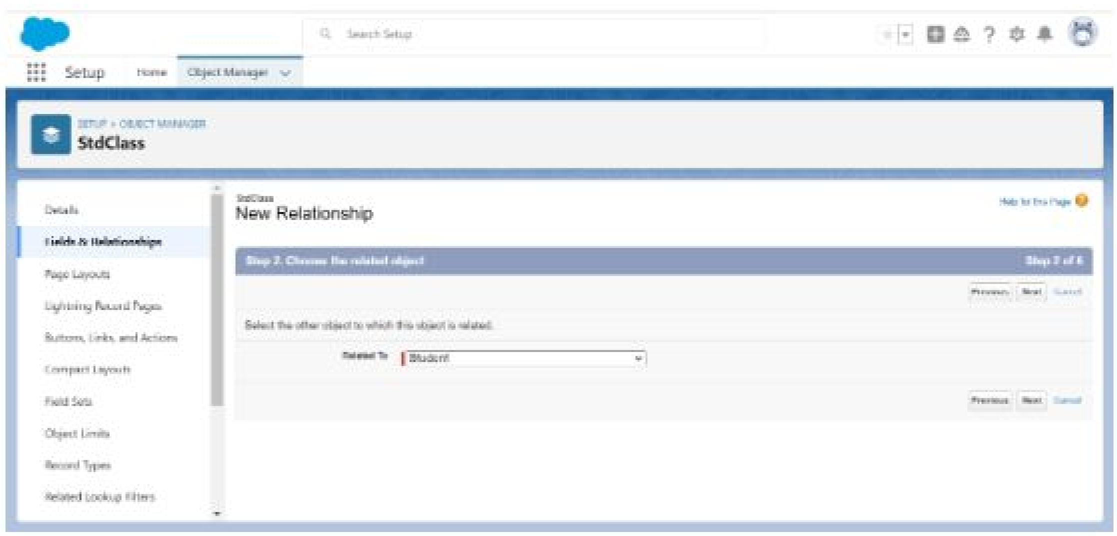
- It can be accomplished by junction object.

Steps to create many to many relationships.

- To create many to many relationships firstly, we need to create a junction object (i.e., stdClass object).
- Now go to field & relationship of stdClass object.
- Now we have to create two master-details relationship one for student object and 2nd for class object.

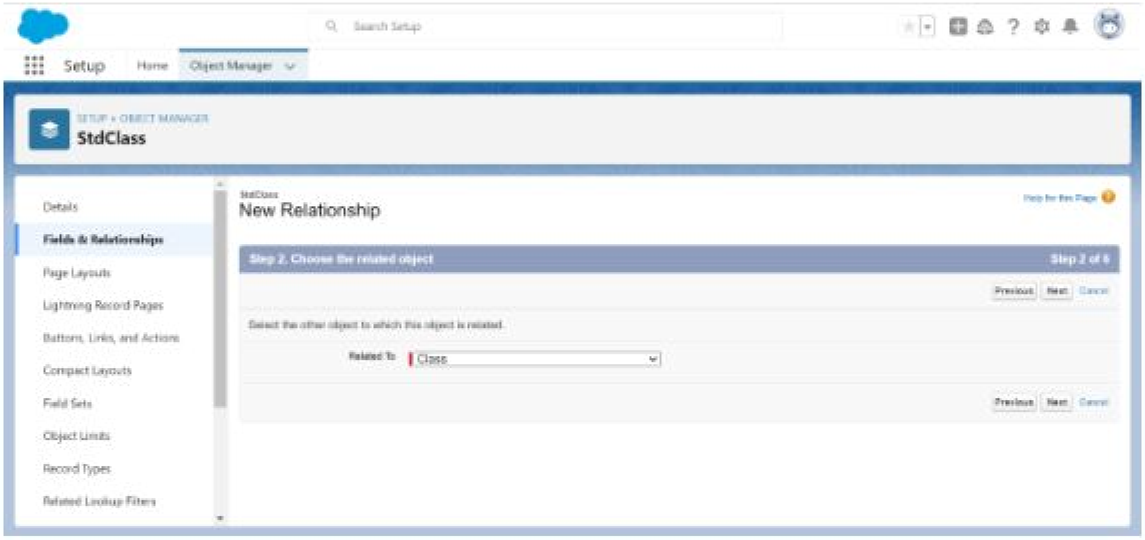


- Click on next.
- Select student in **Related to** drop down.



- Now click next, next and save.

- Secondly, create one more master-detail relationship for class. for this select class in **related to** drop down.



- Click on next and enter field label and field name next and save.
- Now go to front-end and check result.

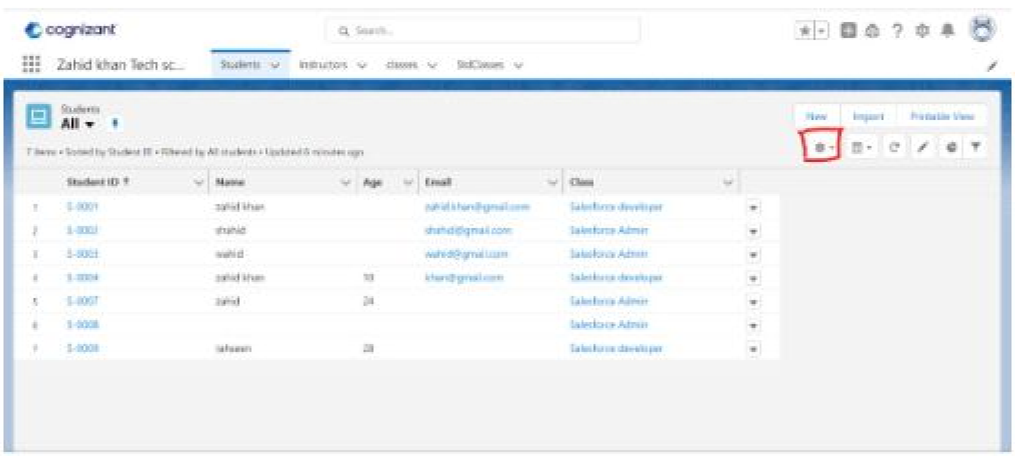
Day-06

List view

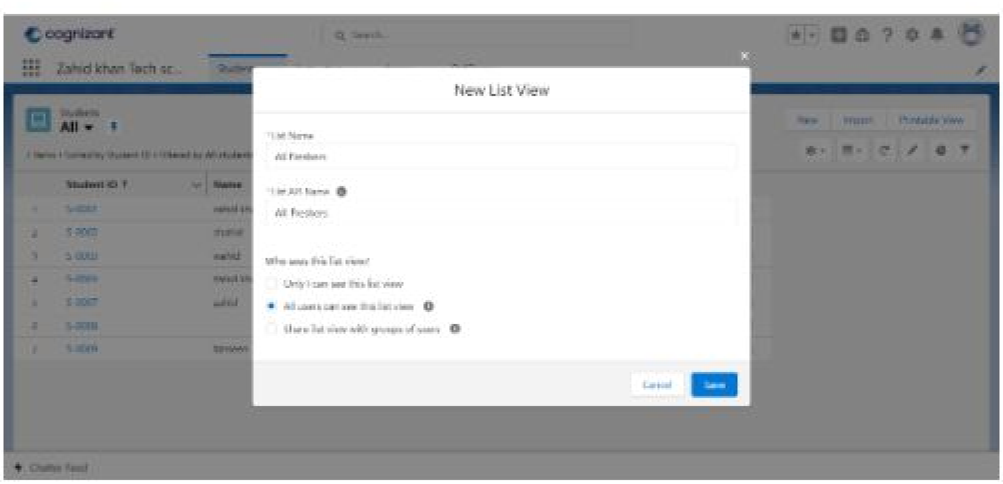
- List view shows list of records available under object.
- We can choose which field to display in the list view.
- We can also apply sharing and filters on list view.

Steps to create list view.

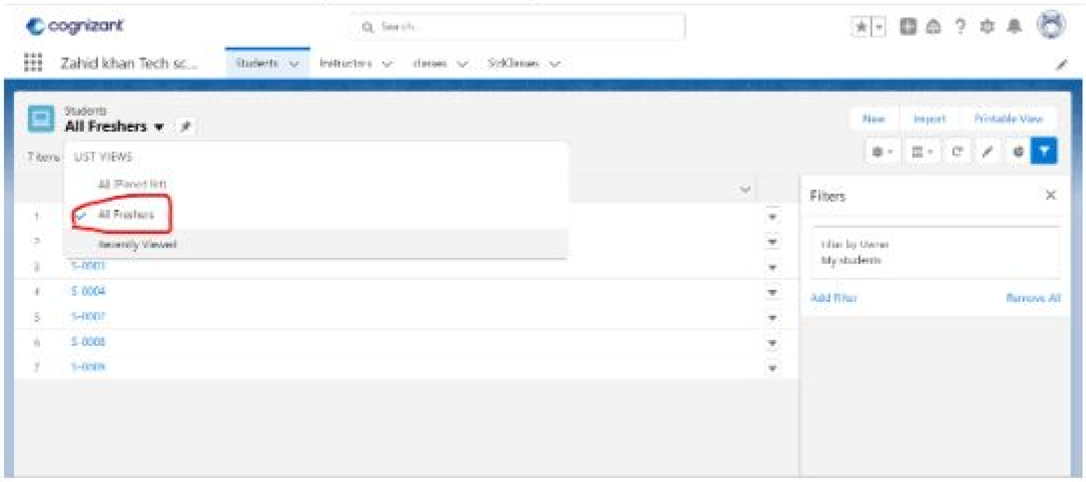
- Firstly, go the front-end of your app.
- Now select the object in which you want to make list view. (We are taking student object for now.)
- Now click on student object tab in front-end.
- Now click  on this icon which is available on right hand side.



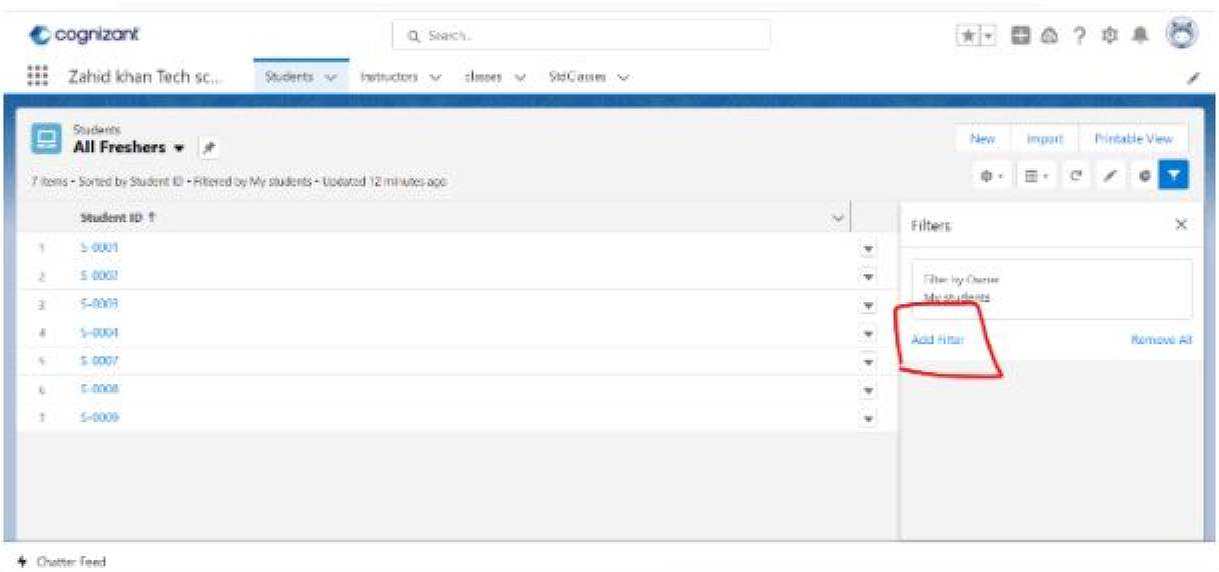
- Now select **New** from drop down menu from settings icon.
- Now enter List name (i.e., Freshers). List API name automatic populated.
- Select **all users can see this list view**.



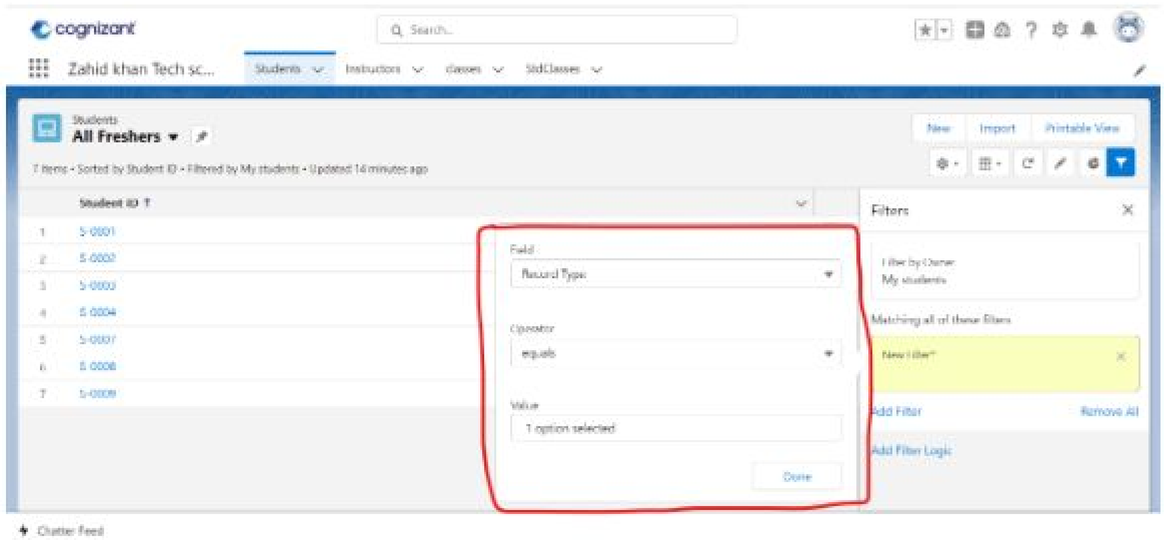
- click on save.
- Now new list is created (i.e., All Freshers).



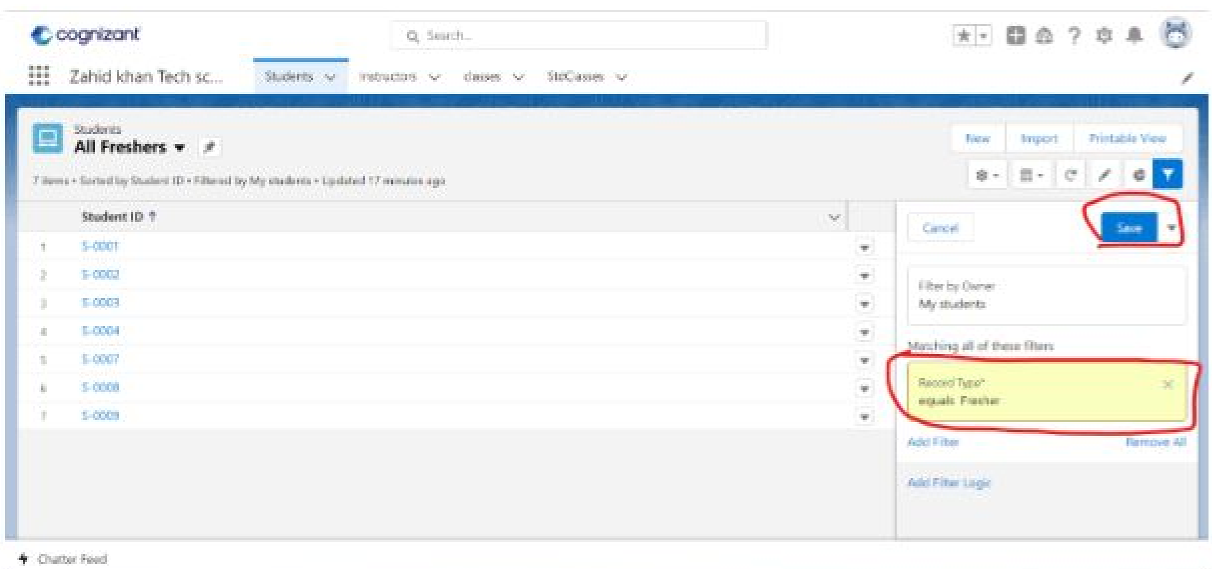
- Now we have to add filter so that when we click on All freshers list its shows only fresher application.
- For this click on Add filter which is available on right side.



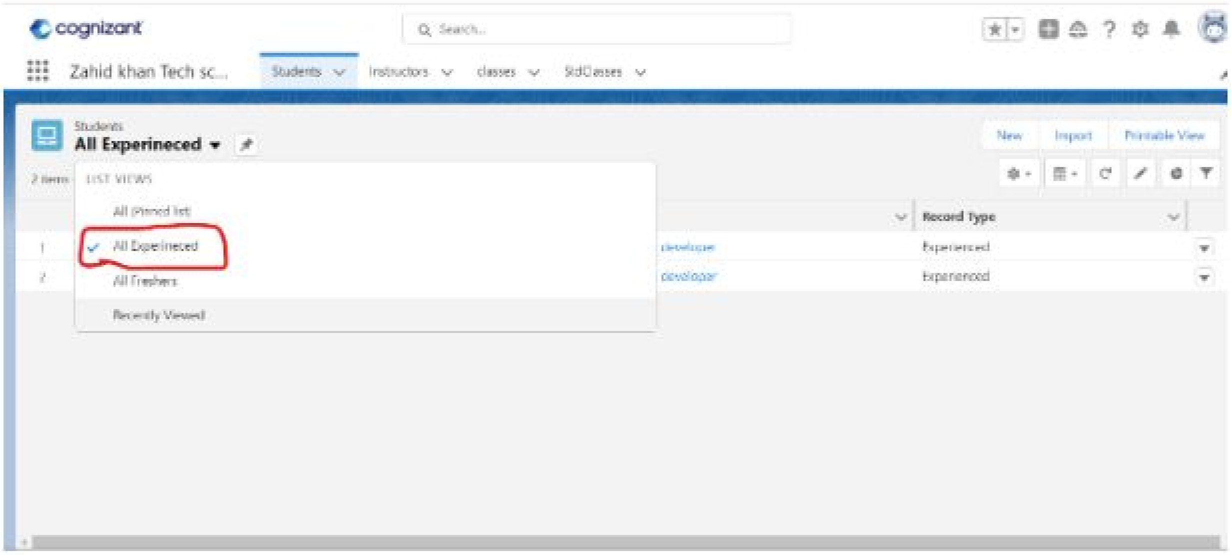
- Now enter field in which filter will apply for this example we select record type because we want to show all application of freshers. Operator is **Equal** and value is fresher.



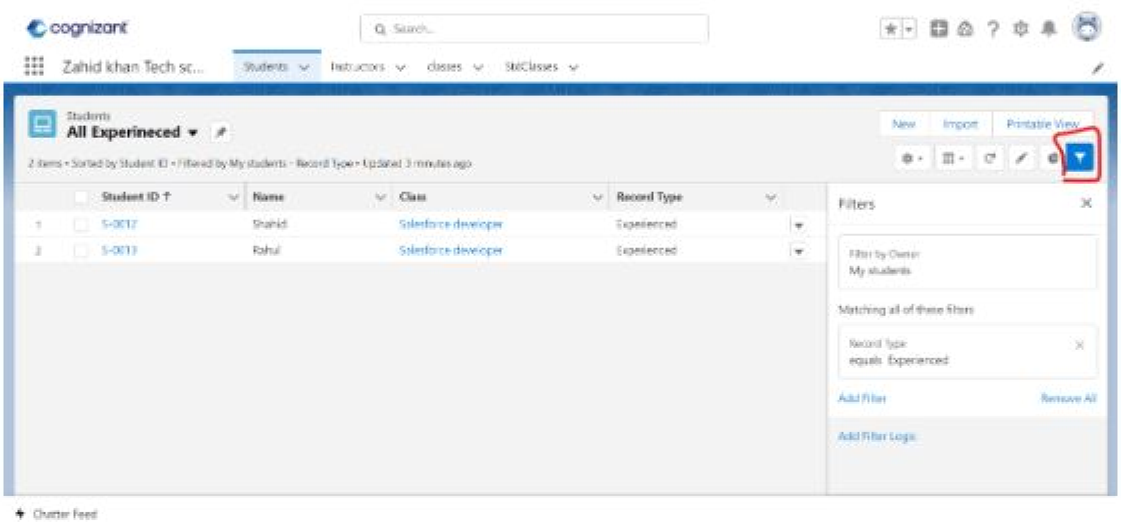
- Now click on done.
- Click on save.



- Now when we click on fresher its show only fresher application.
- Similarly create list view for experienced application.



- if you want to open that filter option then click on cup icon at right corner.

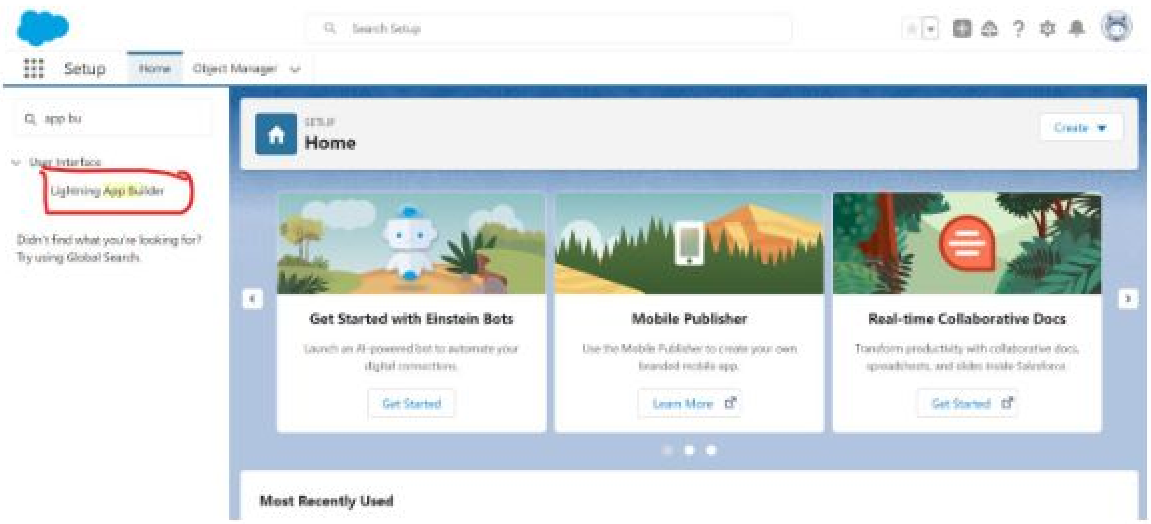


Lighting pages

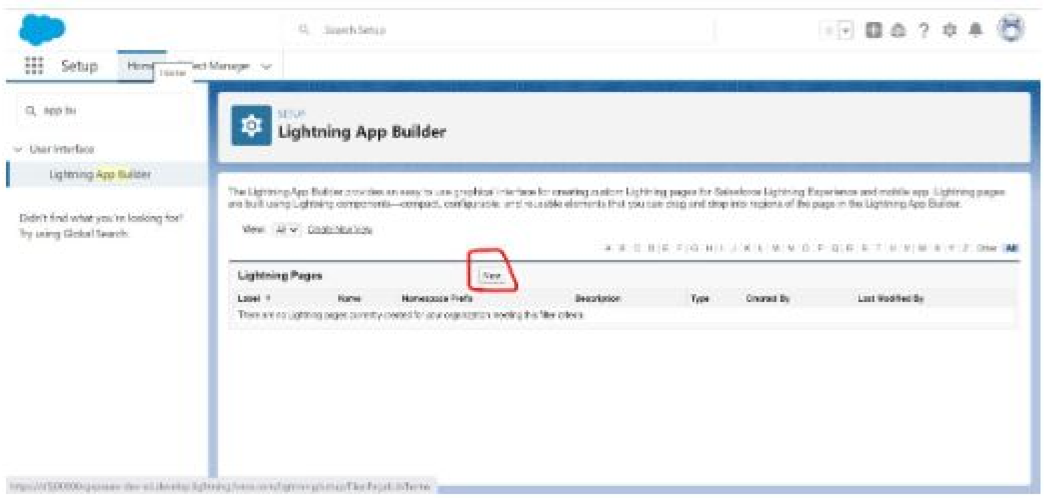
- Lighting pages is used to create home page, record page and app pages for any app.

Step to create home page.

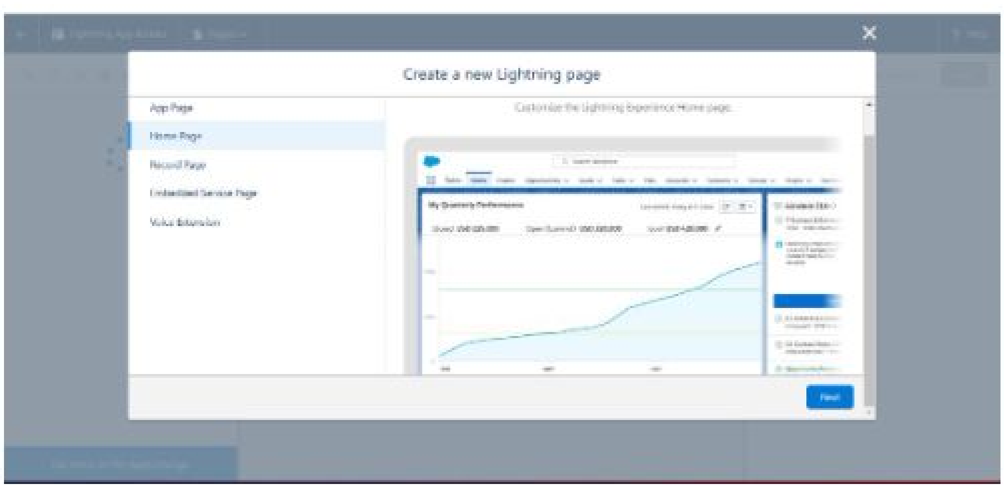
- Firstly, go to setup.
- At home, enter **Lighting App builder** in quick search.



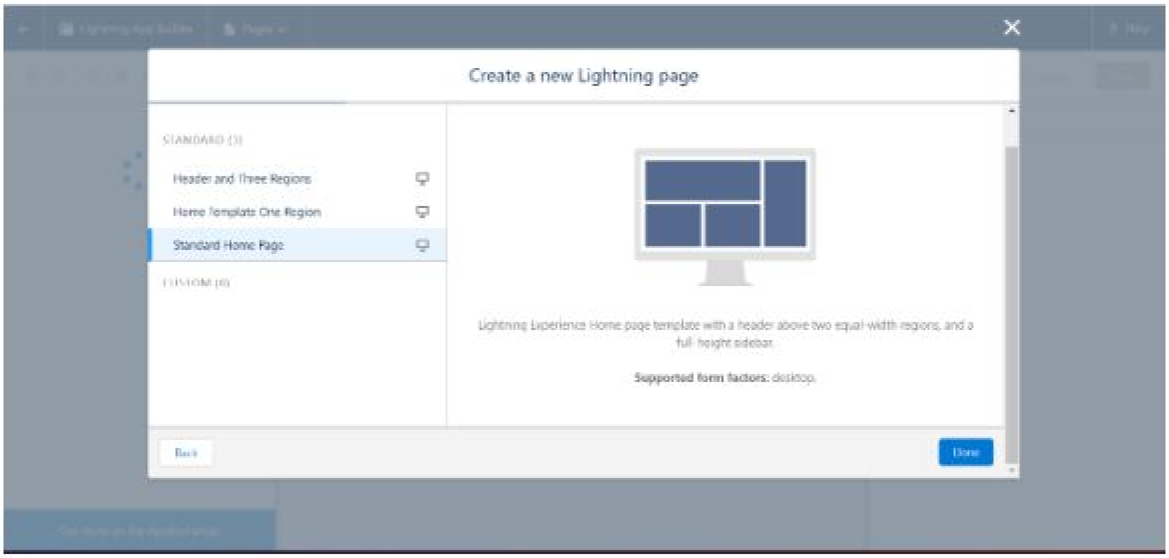
- click on that.
- After that click on new.



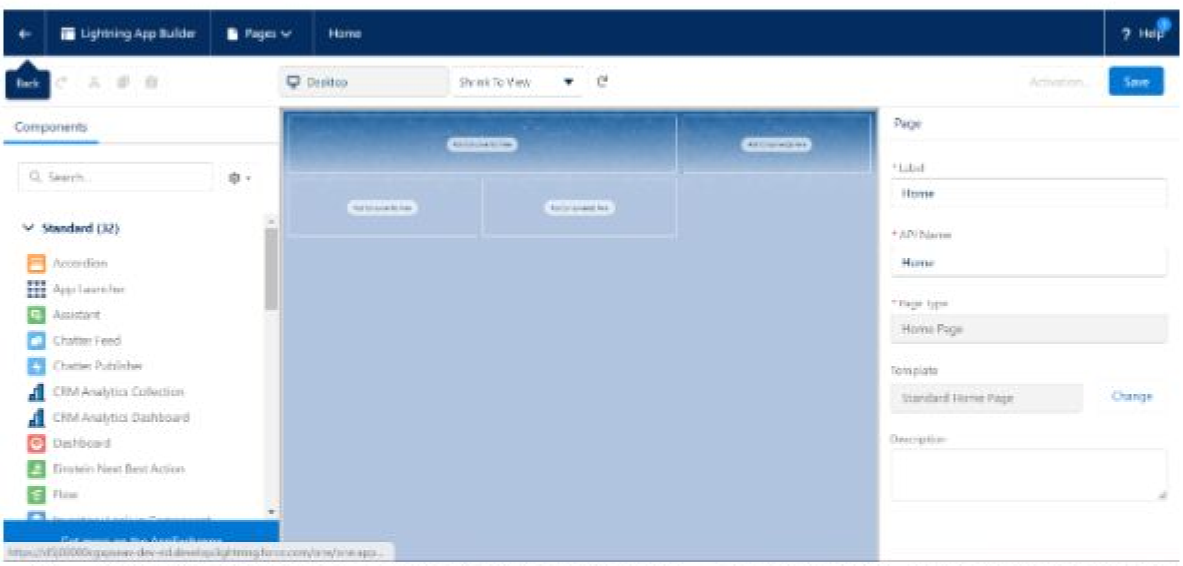
- After that click on home page and click on next.



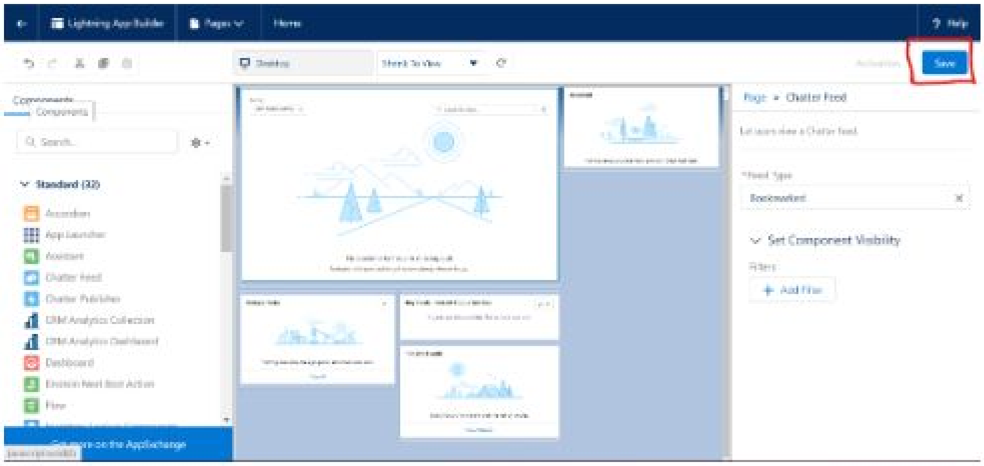
- Now enter label (i.e., Home).
- After that select Templates and click on done.



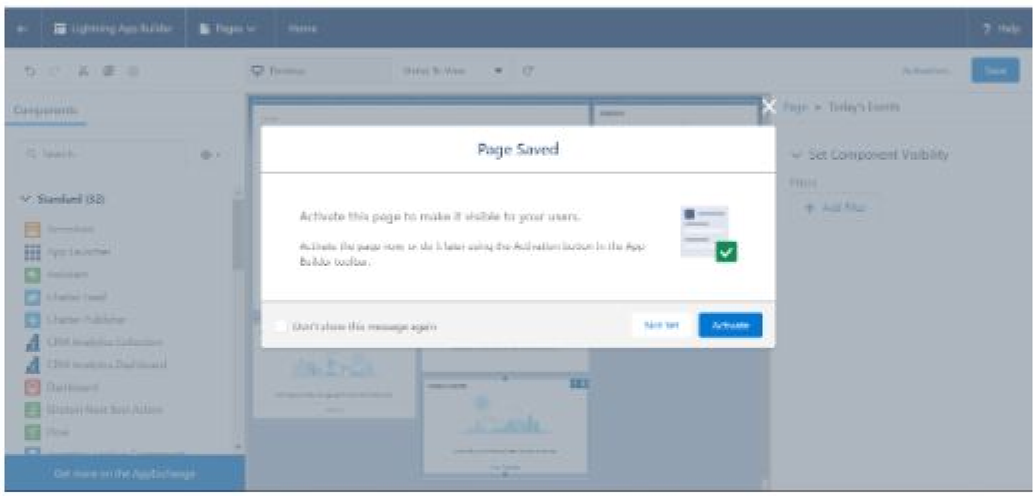
- Below image show lighting page in which we can add components.



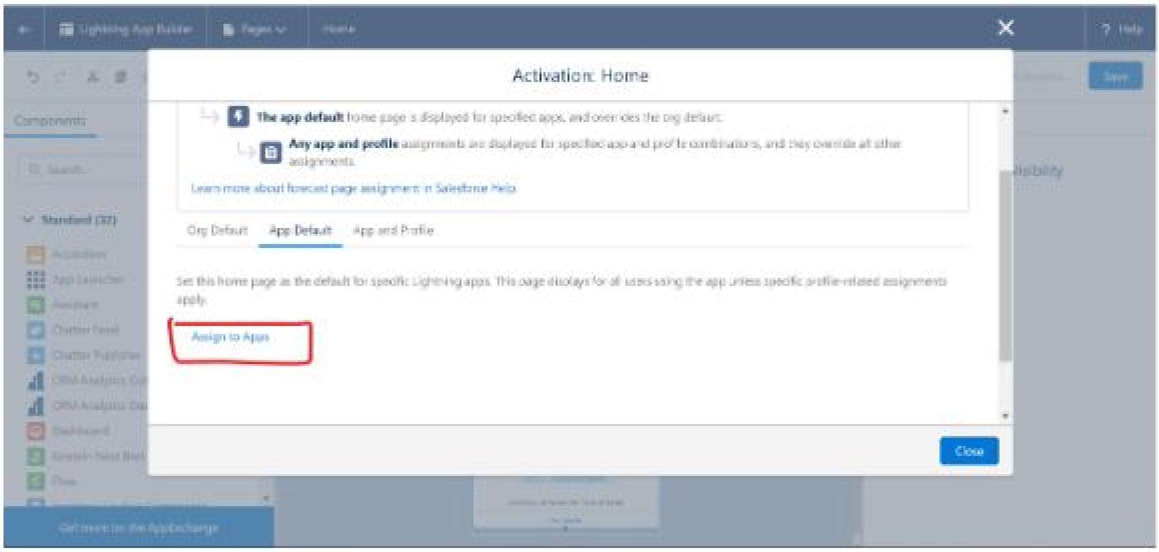
- Now let's add component from left hand side menu. just select the component and drag to the add component box in blank lighting page (i.e., we select Assistance component from left hand side components menu.
- This way we can add components.
- Now click on save.



- After that click on activate.

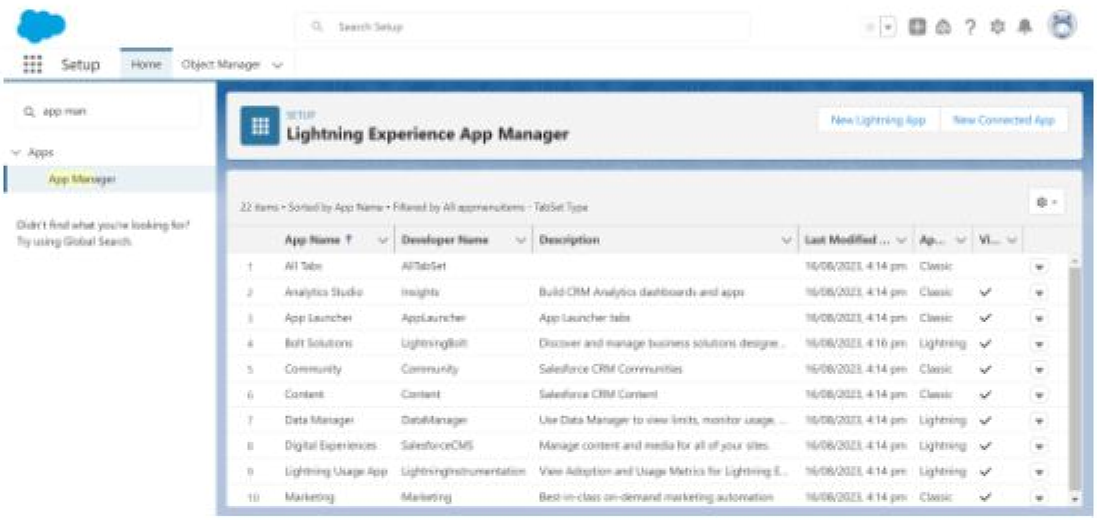


- After that we have 3 options **org defaults**, **App default**, and **App and profile**.
   I. If we want to add these lighting page to default org, then we will choose **org defaults.**
   II. If we want to add this page in particular org, then we need to choose **App default.**
   III. If we want to add this page to any particular page with different profile, then we need to choose **App and profile**.
- Here, we are selecting App default because we have to assign home page to our app.
- Click on App default after that click on **assign to apps**.

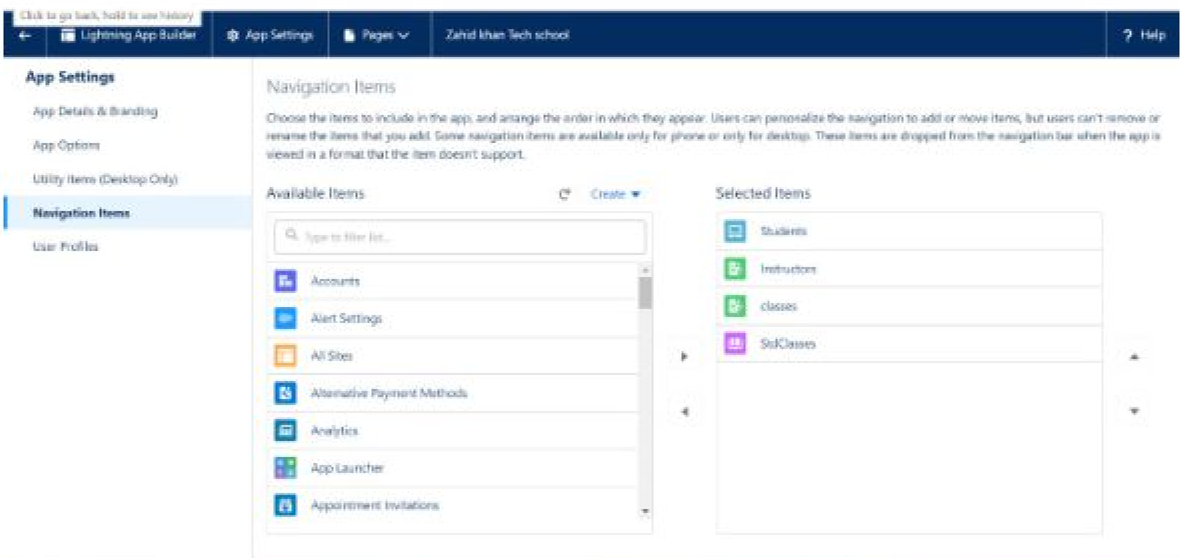


- Now choose app name.

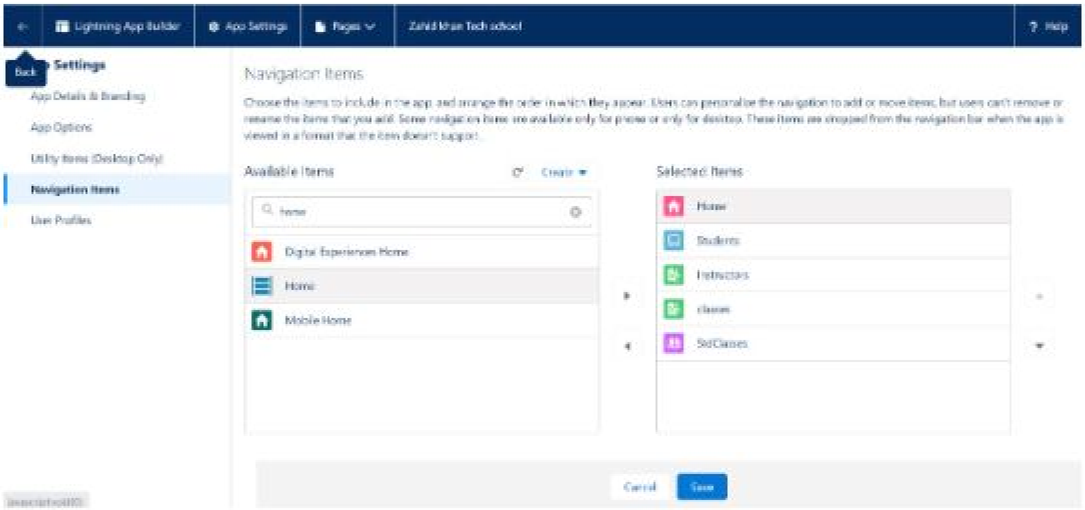
- Click on next.
- Now click on save.
- Now enter this newly created page to the app manager. For this again go to home and search for **app manager** in quick box.
- Now click on app manager.



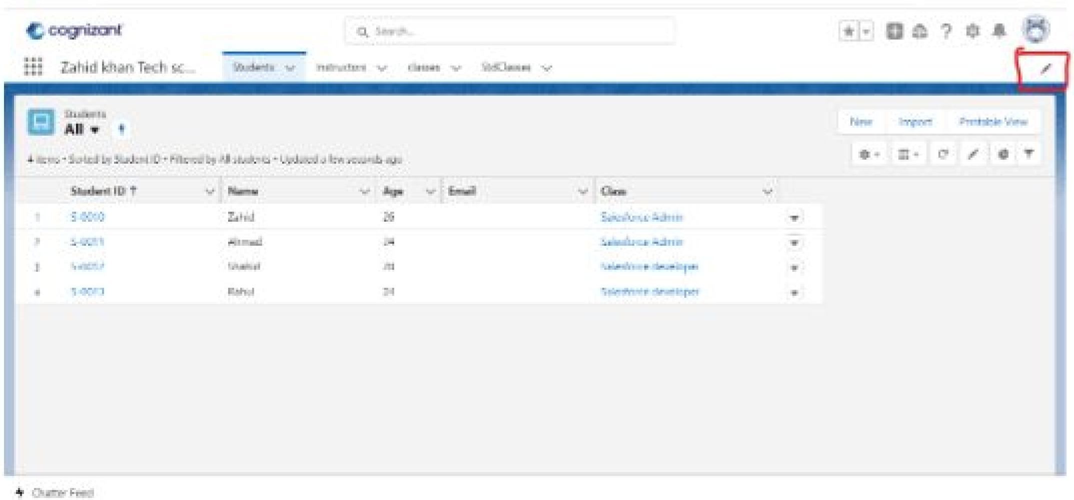
- Search for the app (i.e., Zahid kha tech school). And click on arrow and select edit to edit the page.
- now click on navigation items.



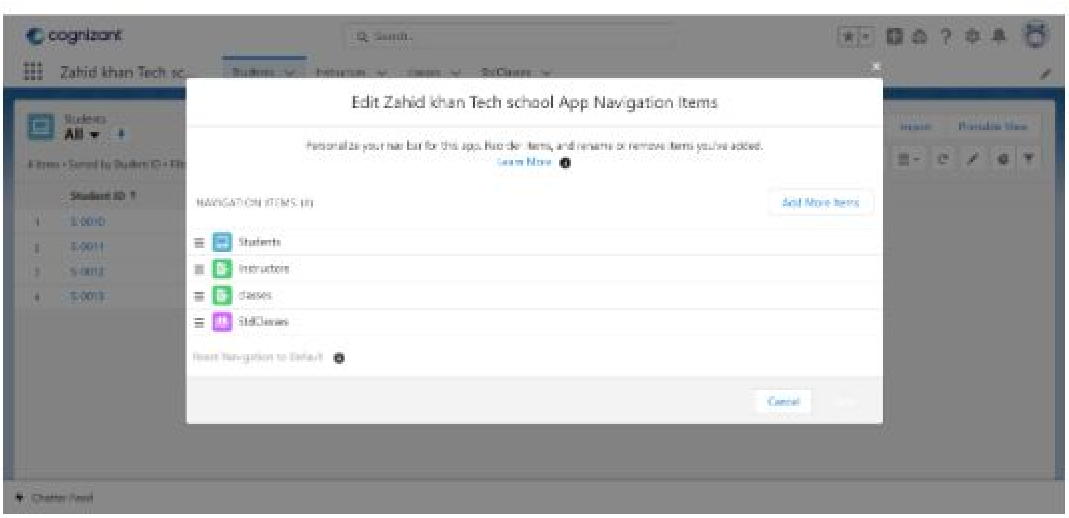
- After that search for home page which is created and insert that page using the arrow and make the home page on 1st tab and save.



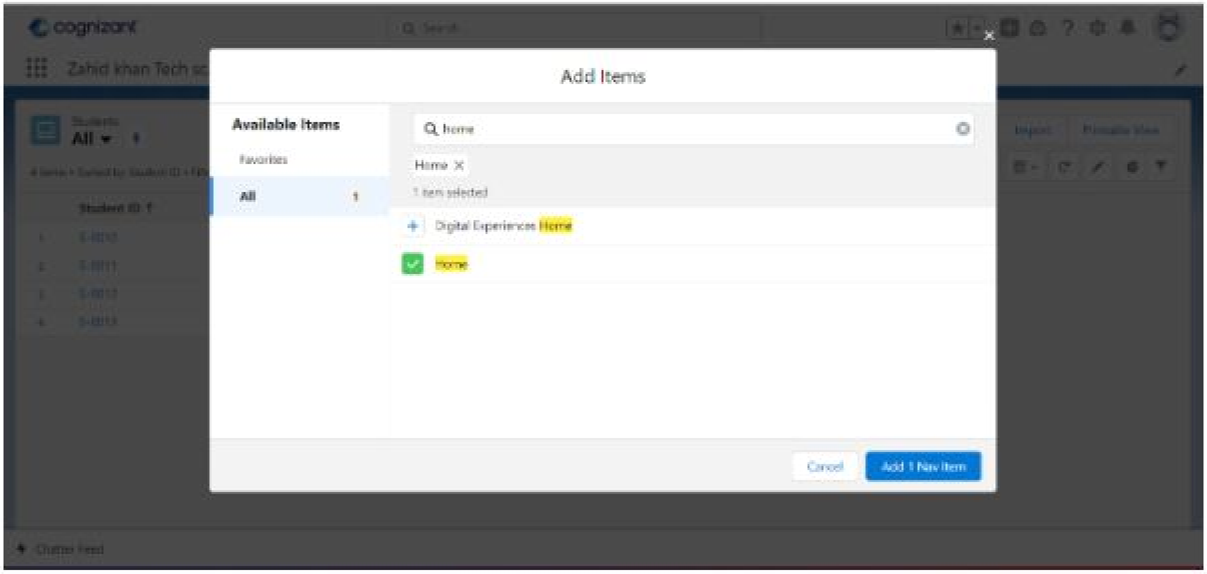
- Now go to front-end of the page.
- After that click on pencil icon on right hand side. Now click on **Add more items**.



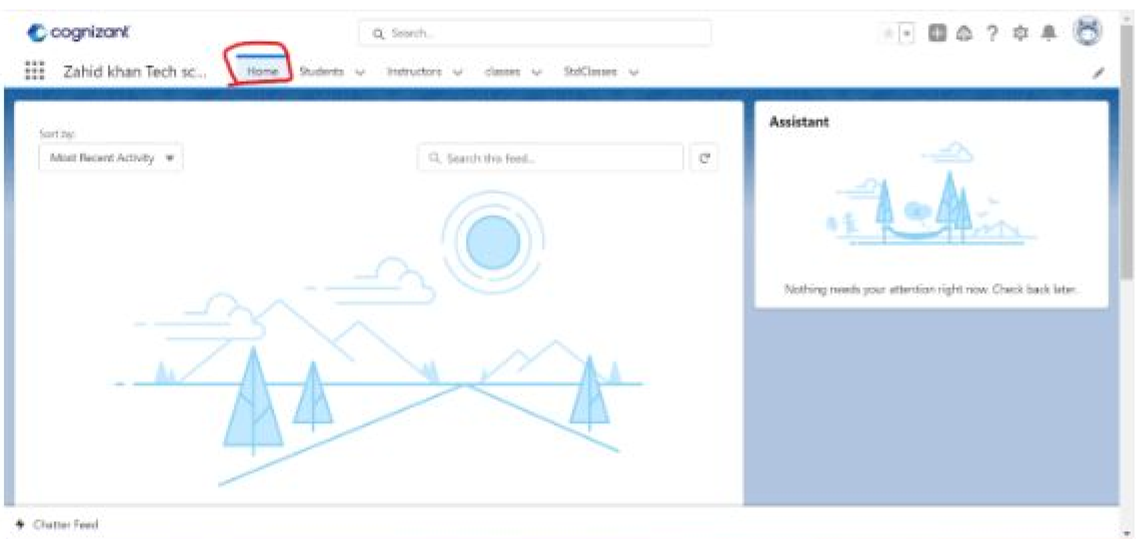
- click on Add more items.



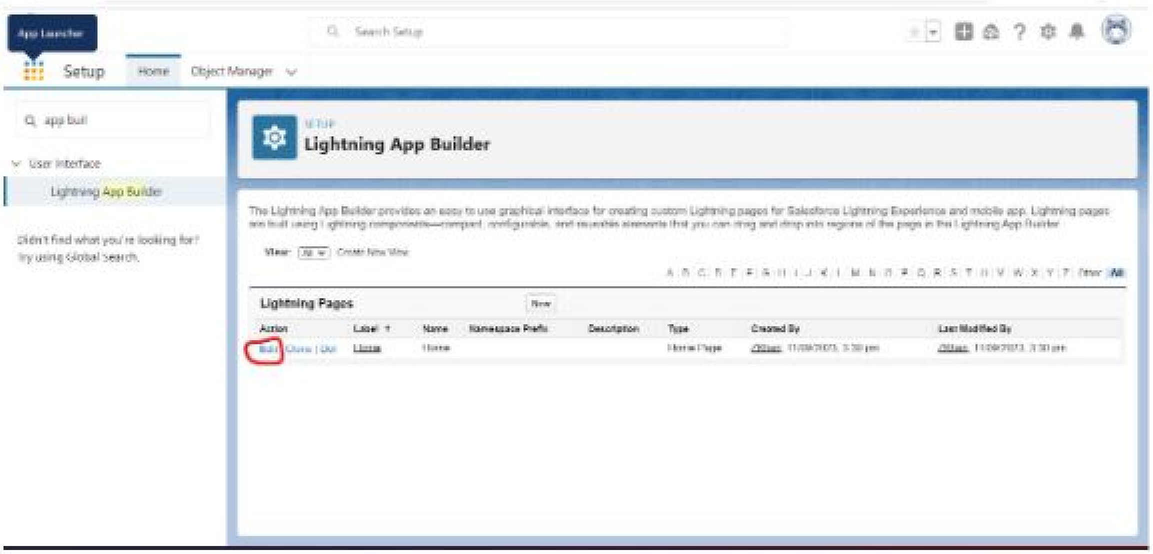
- Now click on All and search for home which is created.
- After that select Home and click on **Add 1 nav Item**.



- Now click on save.
- Now home page added in front-end of app.

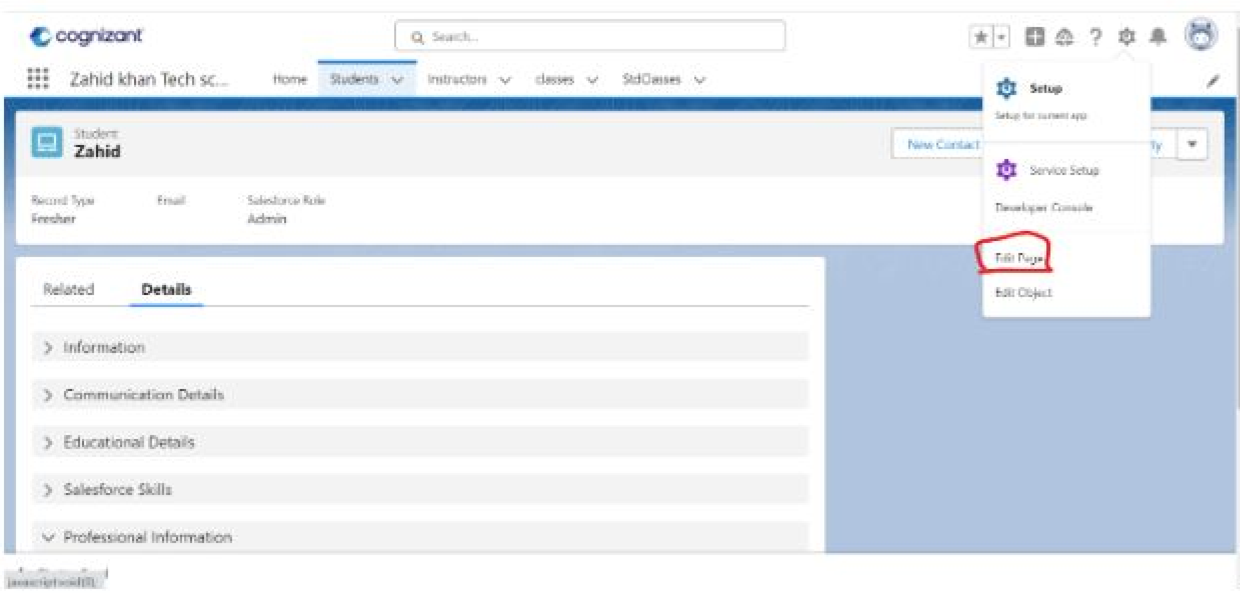


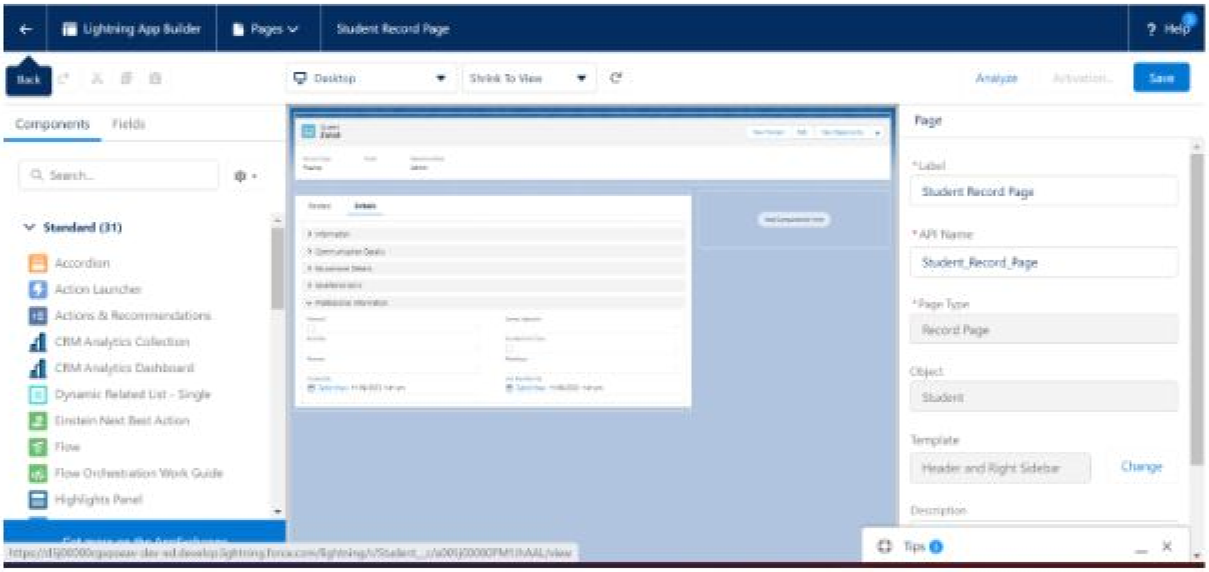
- If you want to edit the created lighting app then go to setup and search for lighting app builder, then click on it after that click on edit button.



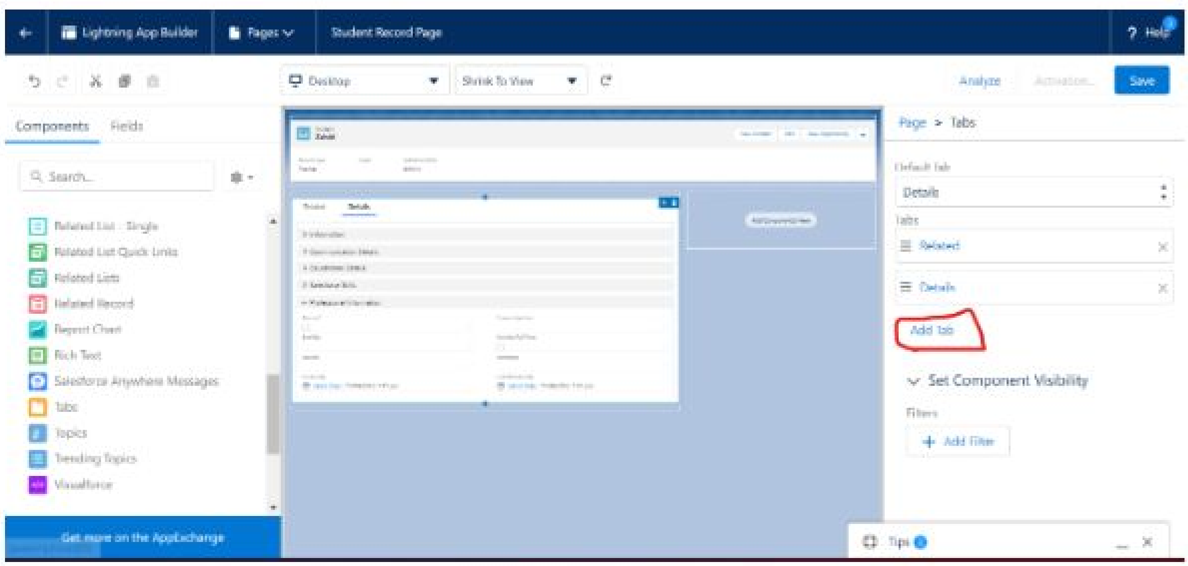
Steps to edit record page:

- To edit the record page of any object. Firstly, go to the front-end, then click on the object which records want to edit and open any records.
- Now click on icon which in on right side the page.
- After that click on **Edit page** from the drop-down menu.
- After that lighting page of that object will open. For example, we are taking student object here.

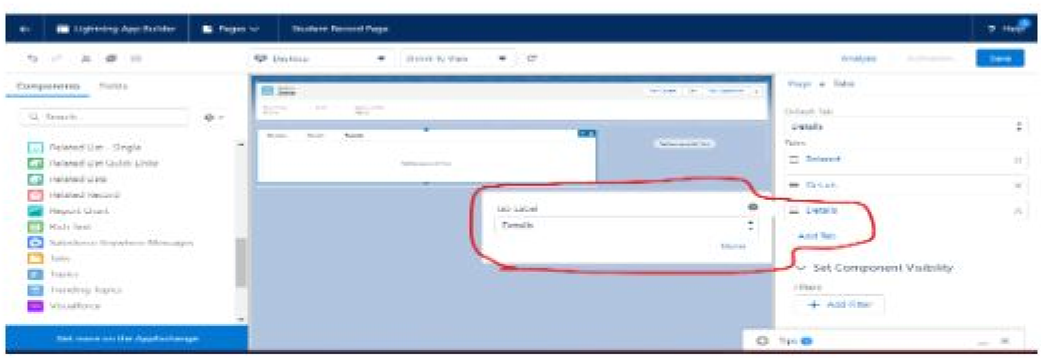


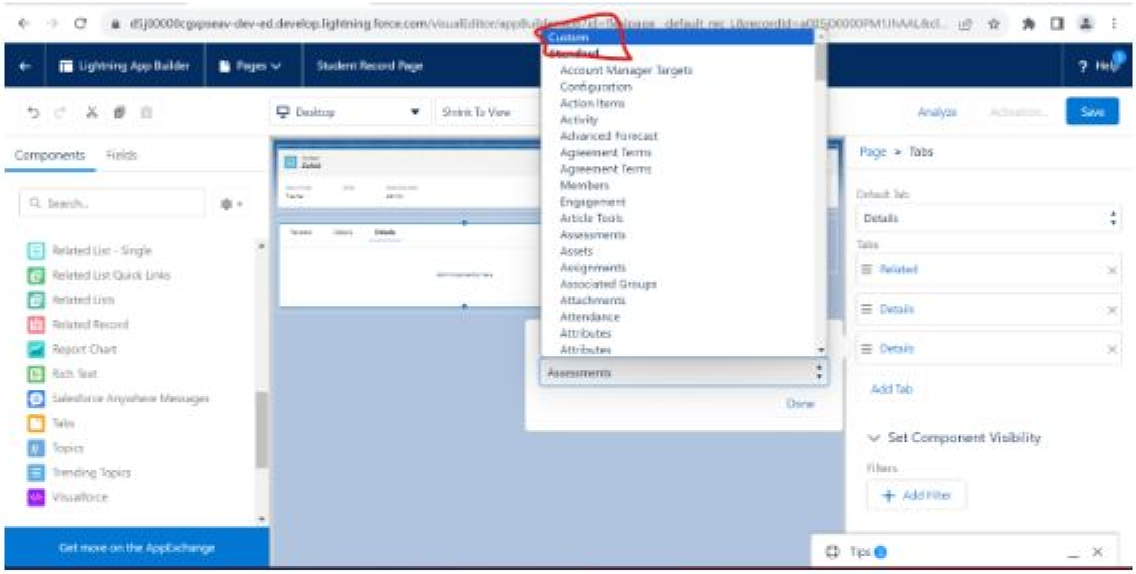


- now we can add any components and field from right side menu. We can also create new tab besides **related, details** tab.
    I. For example. We are creating Eligibility tab beside details tab. For this click on **add tab** from right side menu.

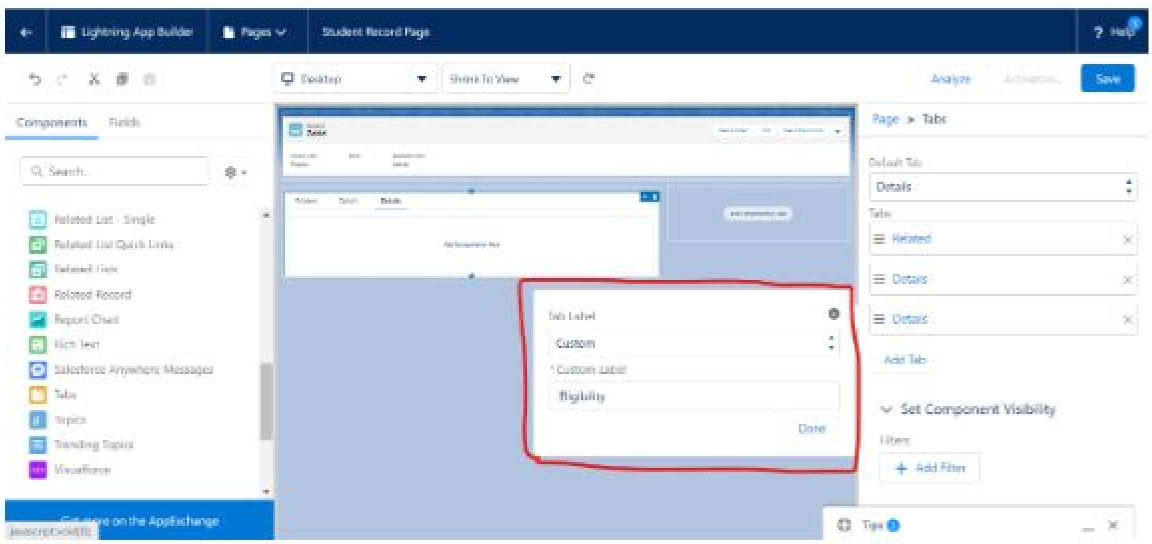


    II. Now click on the name of tab and from menu select custom.



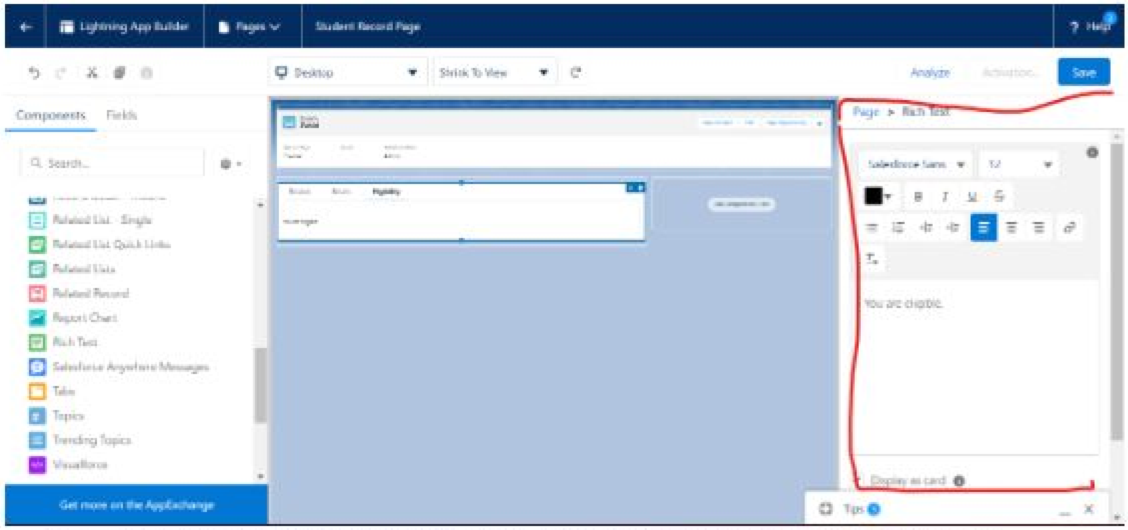


III. after clicking on custom. Enter label name and click on done.



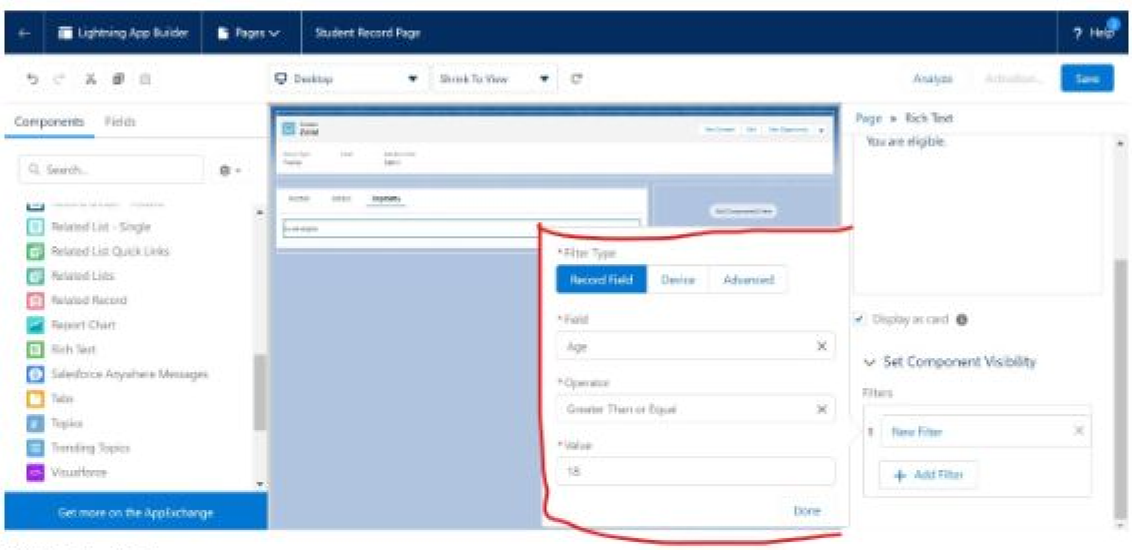
IV. Now new tab in created and we can enter any components in this tab. For example, we are adding rich text from right side menu and place it inside the newly created **eligibility** tab.

V. After that enter any text from right side.



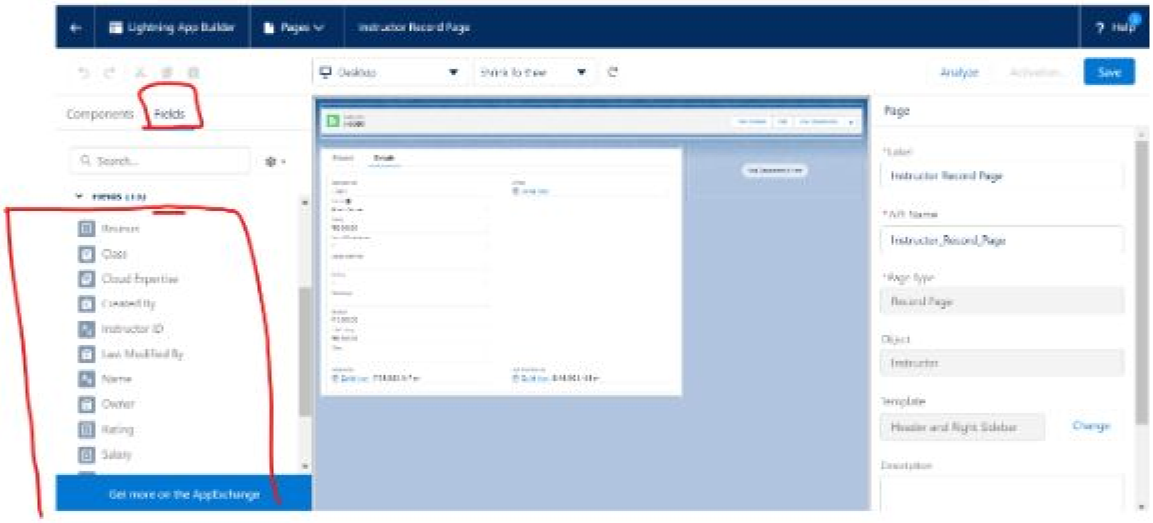
VI. After saving this text will be shown on student object inside every records.

VII. We can also add some filter based on that this tab will be visible. For example, I make a filter that if age is equal to or greater than 18 then this text inside eligibility tab will be visible. Filter should me apply by clicking on Rich text field inside Eligibility tab.

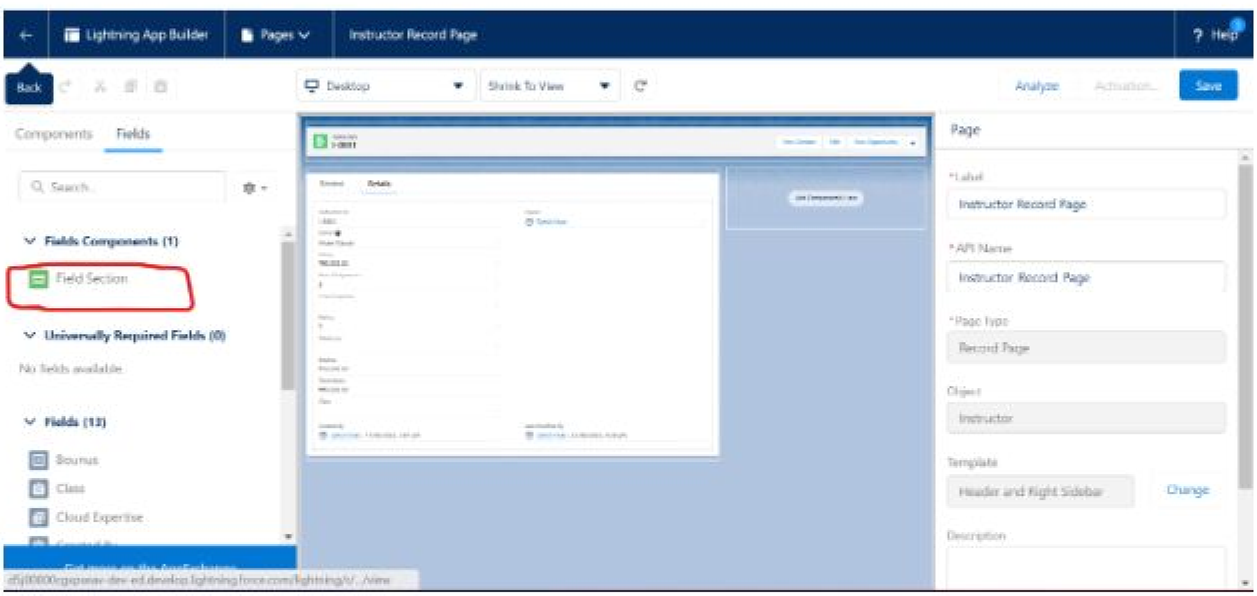


- Now click on save.
- After that click on activate.
- Now click on **App default**.
- After that click on assign as App default and select app i.e., Zahid khan tech school app. And click on next.
- Now select Form factor for both **Desktop and phone**. And click on next.
- Now click on save.
- Now go to front end and check.

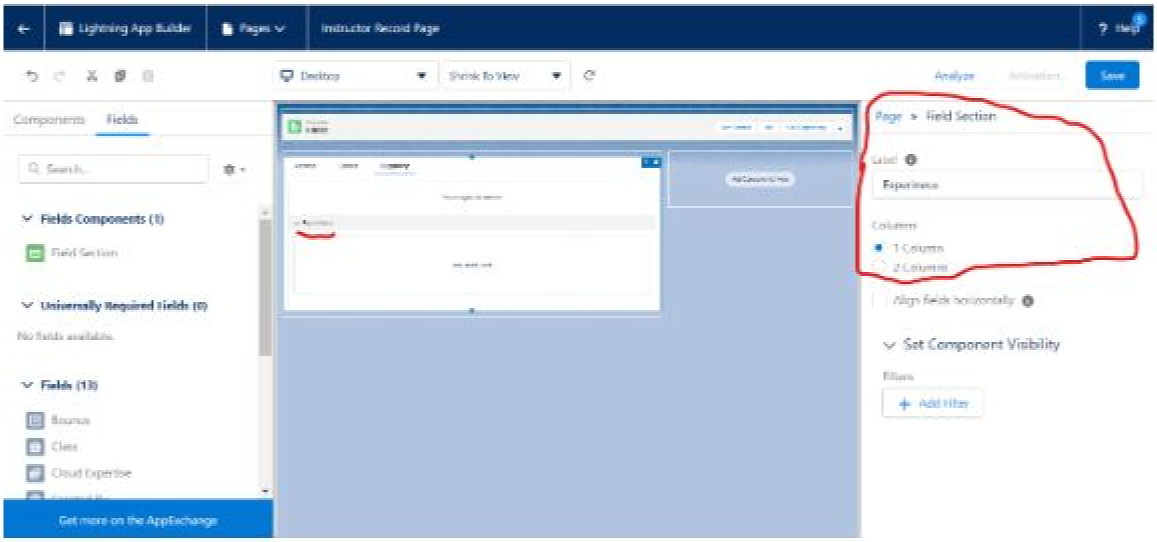
- We can also add field in any object by editing its lighting page by clicking field option on right side.



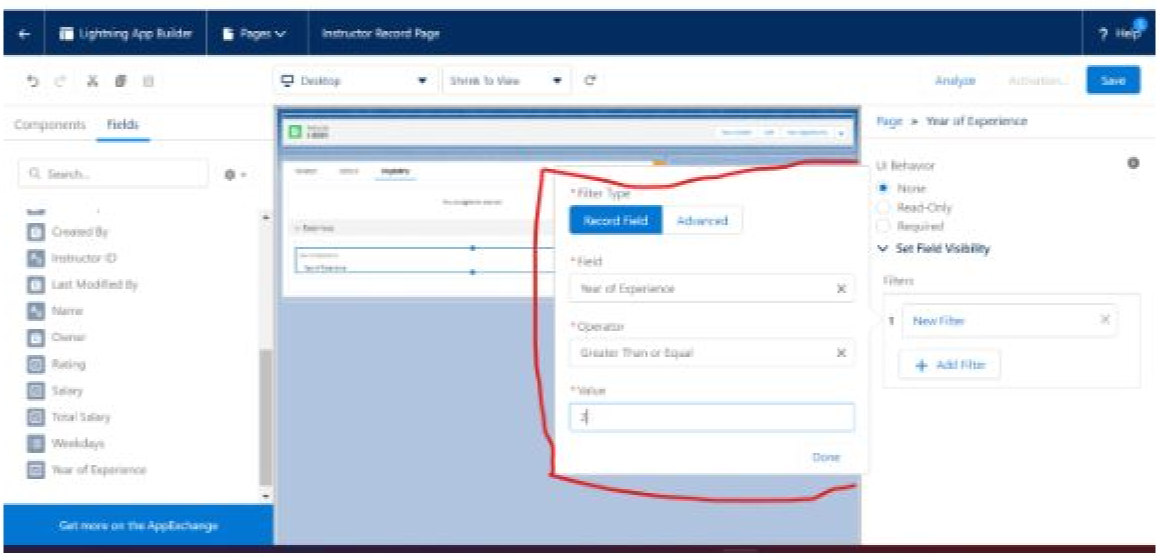
- We can also add different session (like we did from page layout) from field component and add the filed which is to display inside that section.



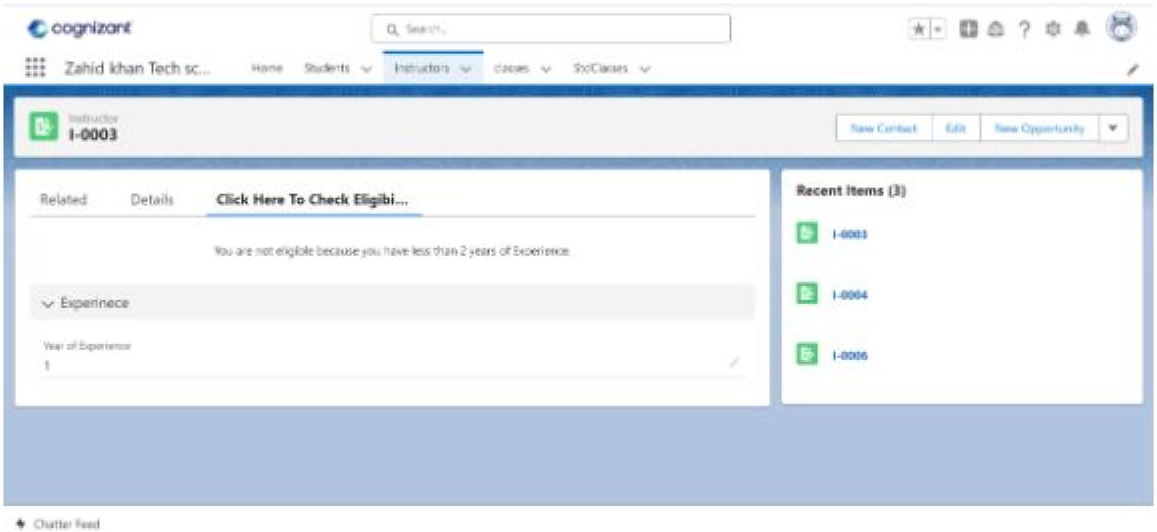
- For example, we are adding few sections inside **eligibility** tab in instructor object.
- Click on field on right hand side and click on section field and drag it inside eligibility tab and rename the section as experience.



- now click on field from right hand side and drag year of experience field inside the experience section.
- We can also add filter for this field based on that this section will visible under the set filed visibility.

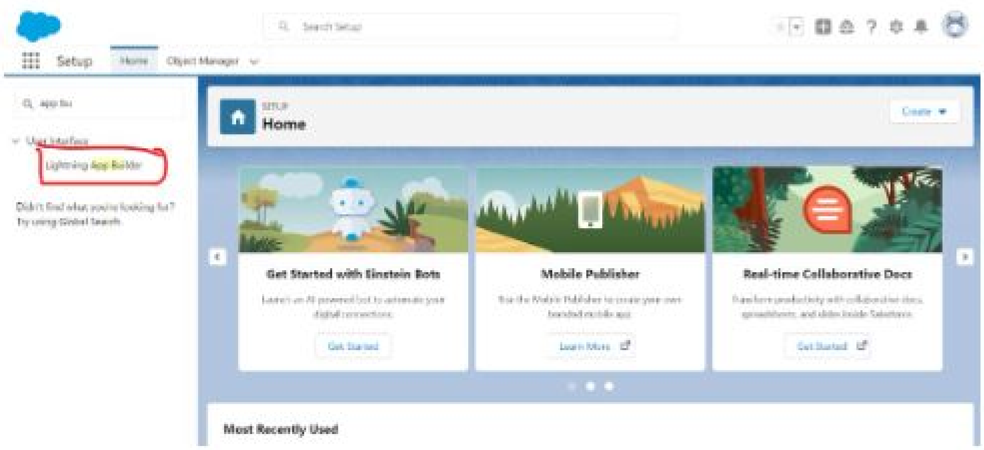


- Now click on save and check result on front-end.

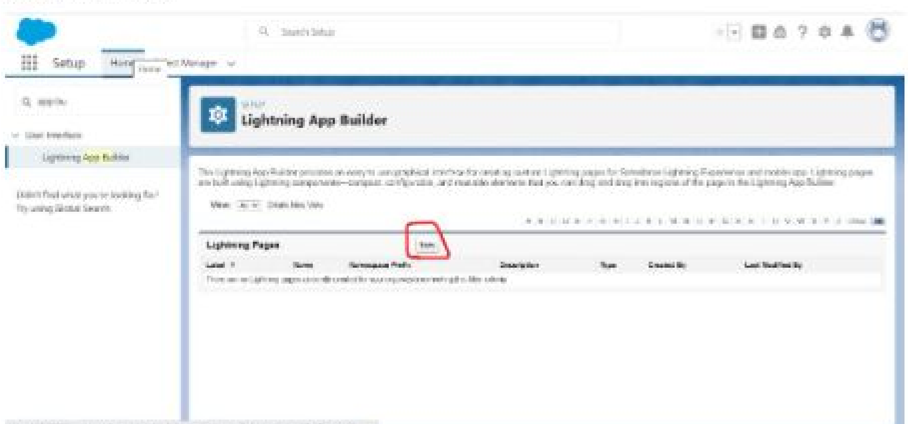


Steps to make App page:

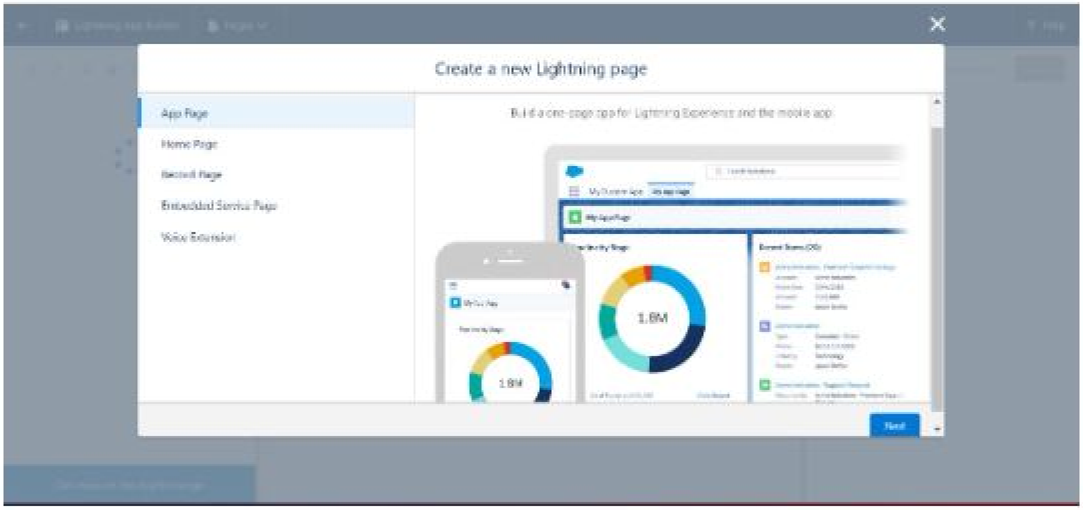
- Firstly, go to setup.
- At home, enter **Lighting App builder** in quick search.



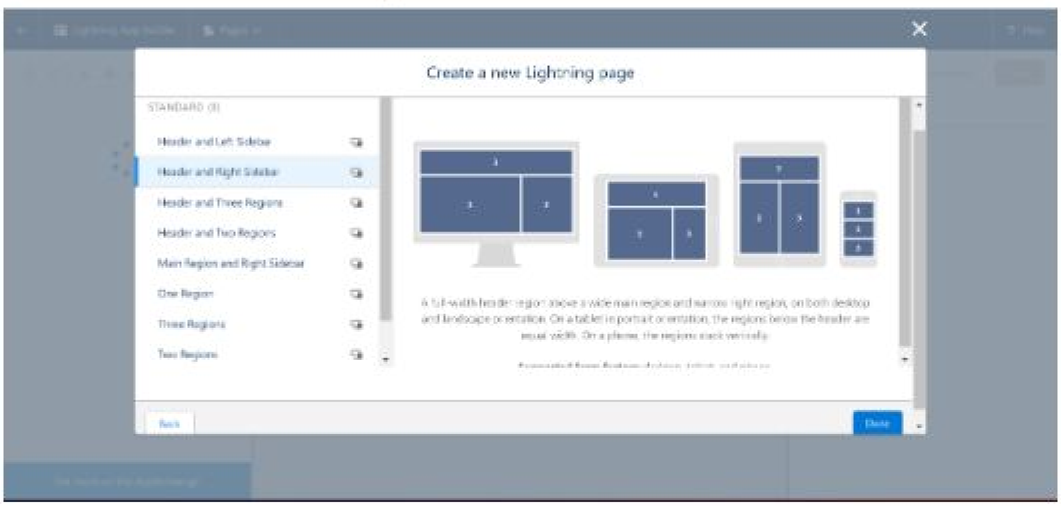
- click on that.
- After that click on new.



- now click on App page and then next.

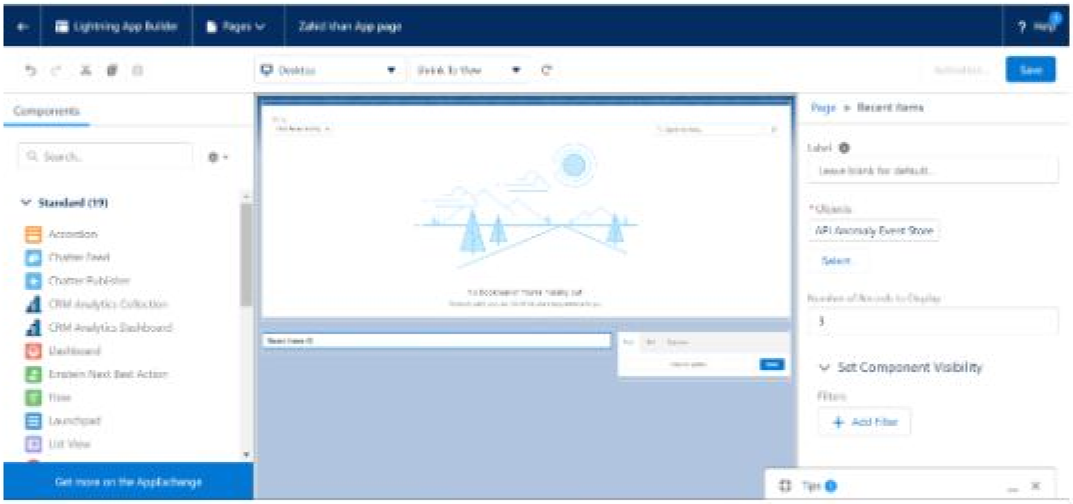


- enter label name. and select templates. And click on done.

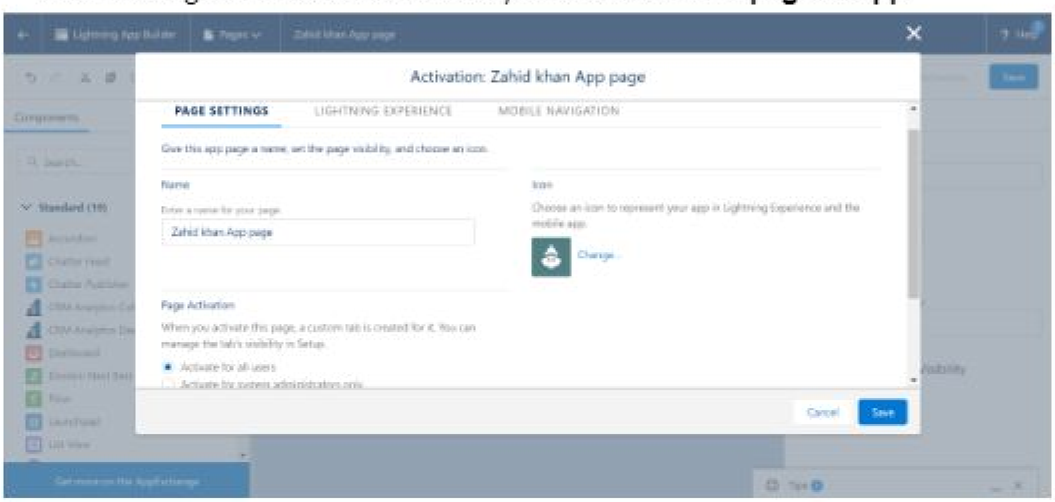


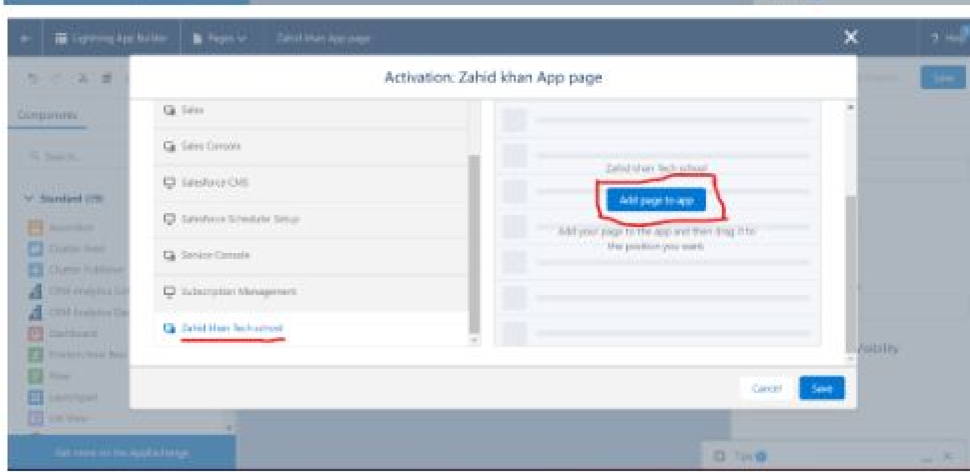
- App page is look like home page. But the different is that in home page we have one in Application but in App page we can have many in one application.
- In app page similarly we add components from left hand side.

    I. In this example we add Chatter feeder, recent items and chatter publisher from components.

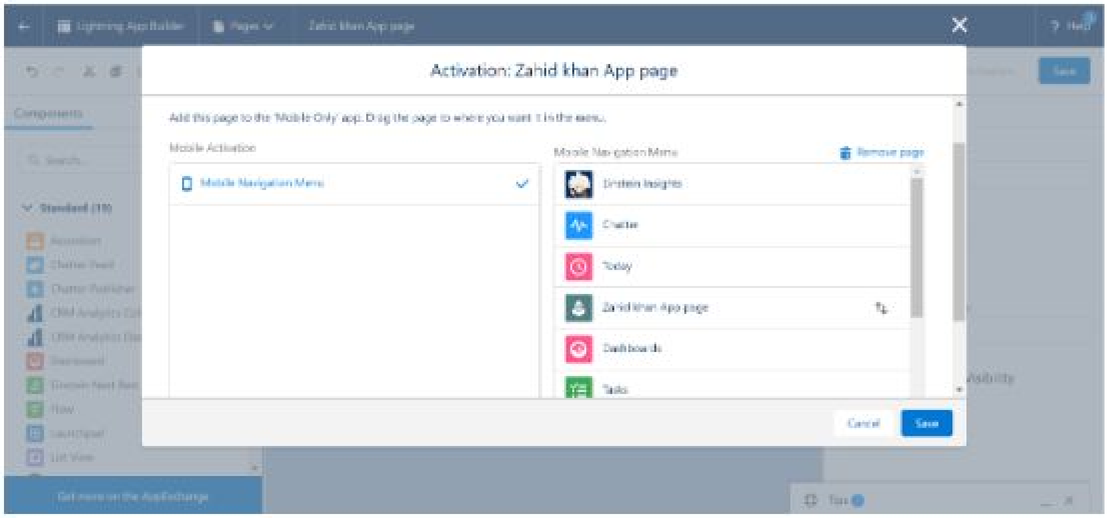


- Now click on save.
- After that click on activate.
- Now **Page Setting** under which we get option that **activate for all user or active for system administrators only**.
- next option we got **Lighting Experience** under which we have to choose App (we are choosing Zahid khan tech school). And click on **add page to app**.

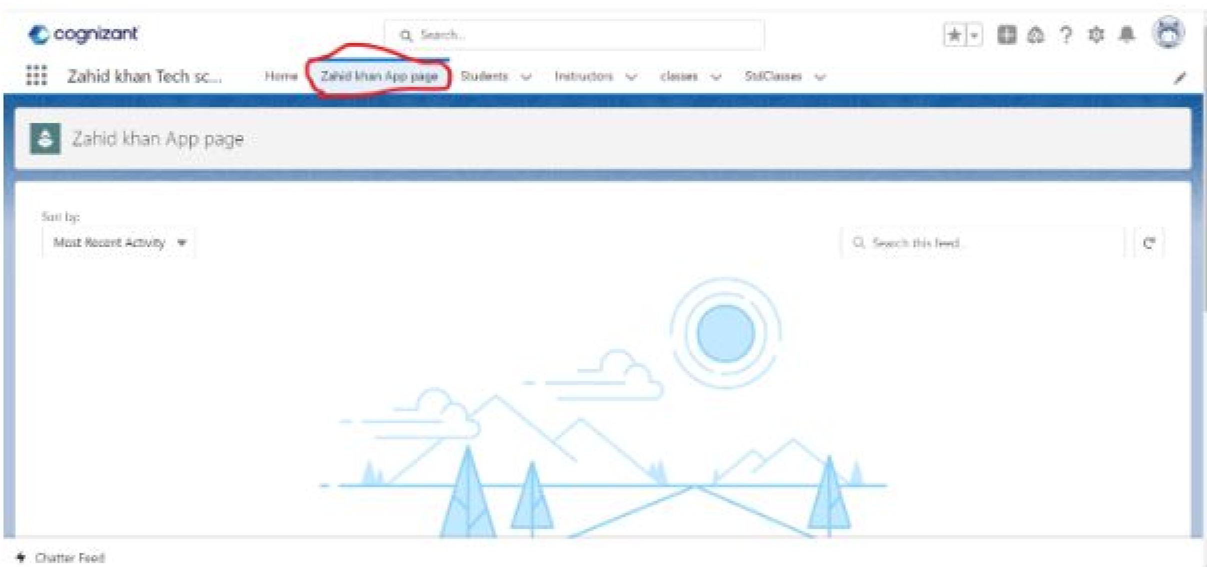




- Third option we get Mobile navigation.in which we have to click on add page to app and we can drag the App to any position.



- Now click on save. This way we assign an App page to an application.
- Now go back to the Zahid khan Tech school app and check the result.



Day-07

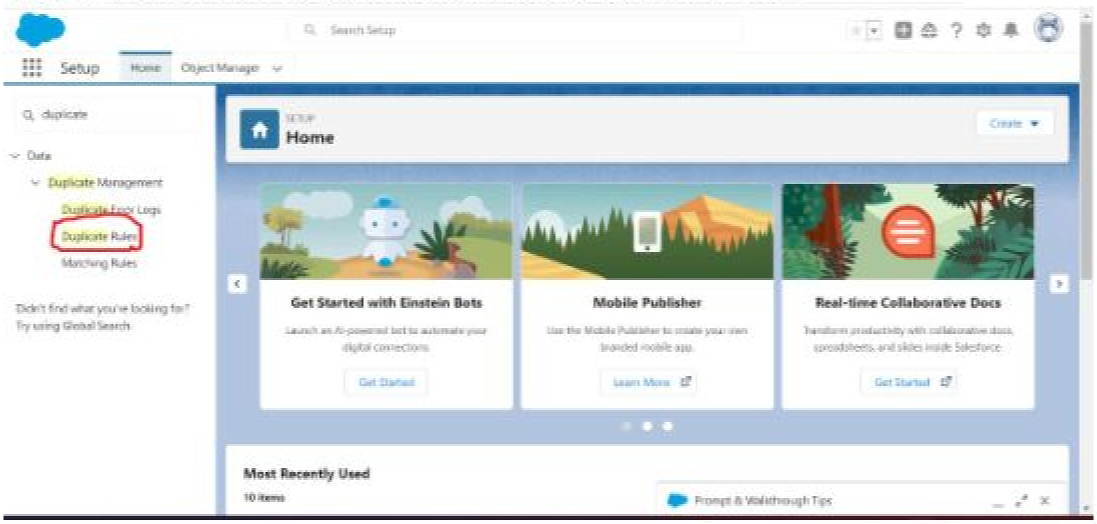
Duplicate Rule & Matching Rule

Duplicate Rule: - duplicate rule prevent creation of duplicate records. It shows either warning or block record creation and updating in case of duplicates. We can create reports on duplicate records as well.

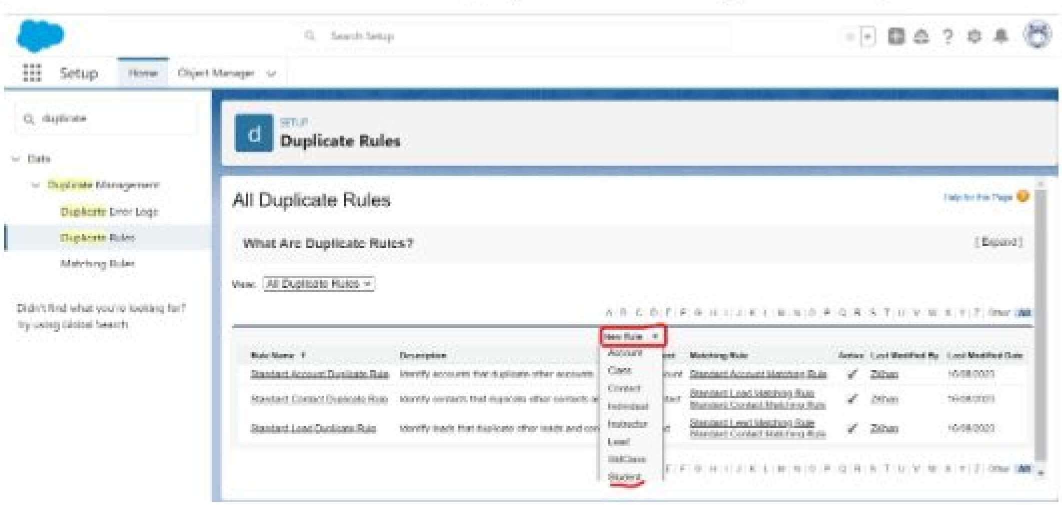
Matching Rule: - Here we need to set the criteria for duplicate check.

Steps to make Duplicate Rule for Records:

- Click on this icon and open step up.
- Now click on home and Type **duplicate Rules**. And click on it.



- On next window we got 3 duplication rules already it is standard duplicate rule. We can also create custom duplicate rule.
- To create duplicate rule, click on new Rule drop down and select the object in which new duplicate rule need to create. For example, we are choosing student object.

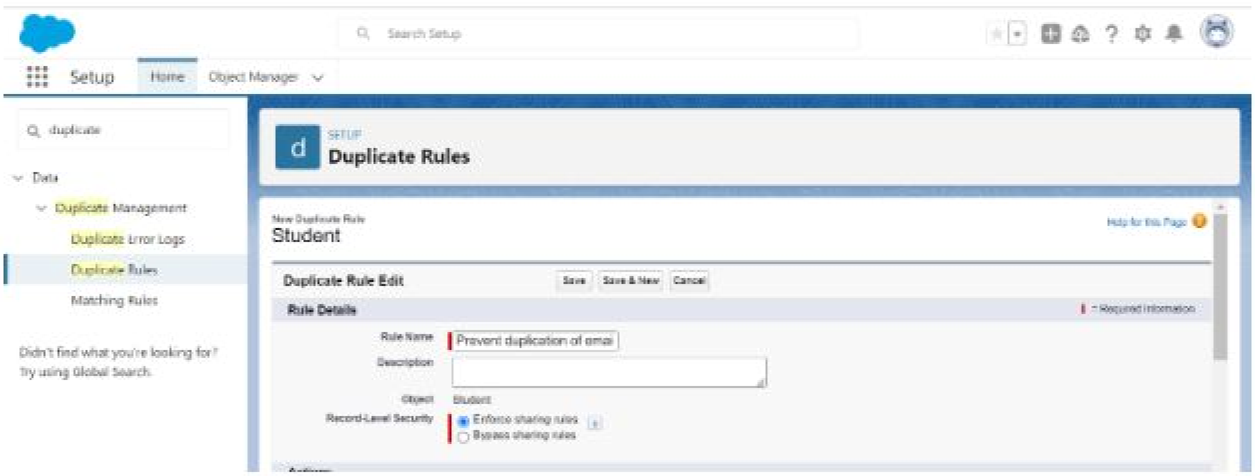


- On next page we have section for Rule details to enter Rule name, description, and Record-level security.

  In record level security we have 2 options Enforce sharing rule, Bypass sharing rule.

  I. **Enforce sharing rule:** - This will compare the records on some specific assign role. Who have access of records.

  II. **Bypass sharing rule:** - This will compare all the records regardless of user access.

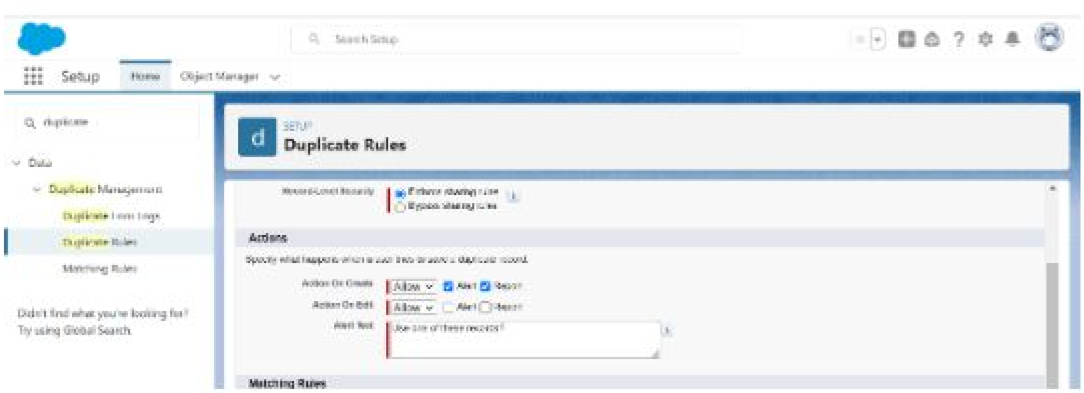


- after that we have a next section called Actions. In which we have three options Action on create, action on edit and alter text.

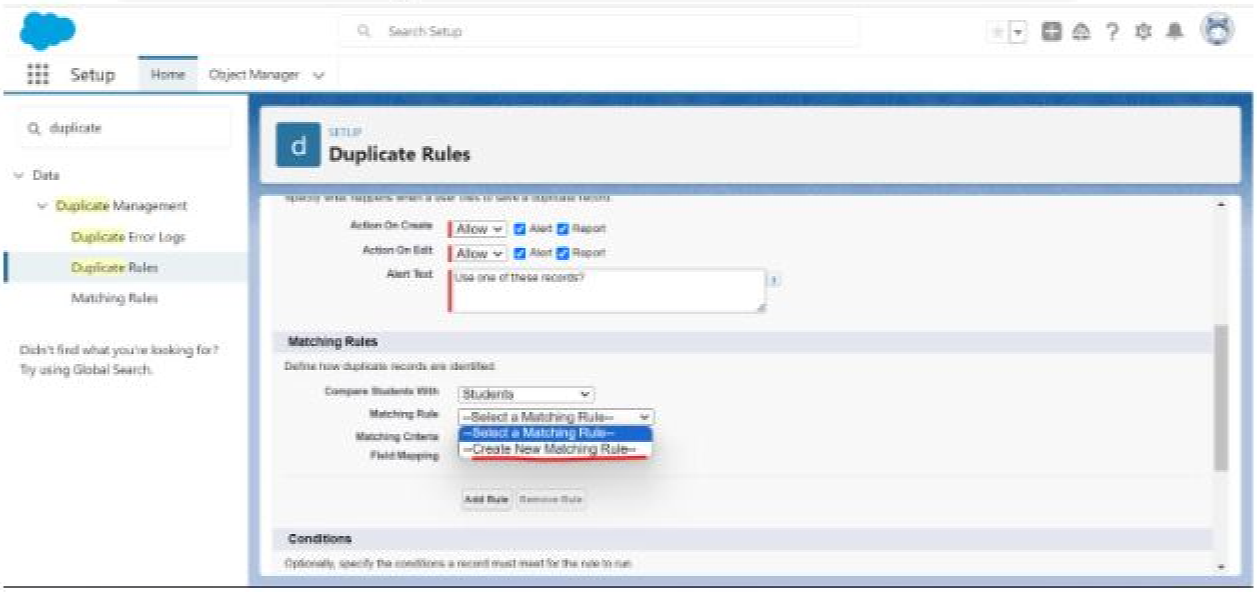
  I. In action on create, we have 2 options in drop down **Allow** (means if duplicate value is created then its just give warning and submit the information.) and 2nd is **block** (if duplicate value created it gives error and block to submit the form). And with Allow we have 2 check box alert and report always check this box when selecting Allow.

  II. In action on edit, we have same option as action on create Allow and Block. Allow give warning and submit form and block give error and block the submission of form until correct the duplicate value. And with Allow we have 2 check box alert and report always check this box when selecting Allow.

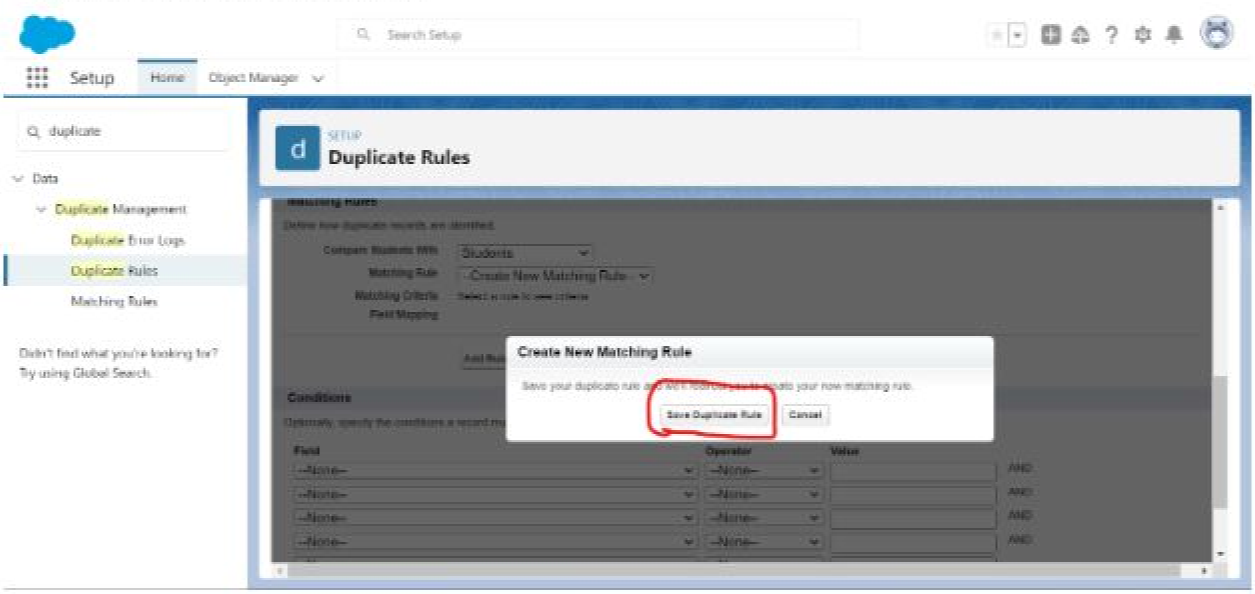
  III. Now enter Alter text which you want to display when duplicate value will occur.



- Now we have next option **Matching rule** in which we have to create a rule to avoid the duplication of record. In this section we have three options compare student with Students (which is already selected), next is matching rule drop down in which we have to select create new **matching rule.**

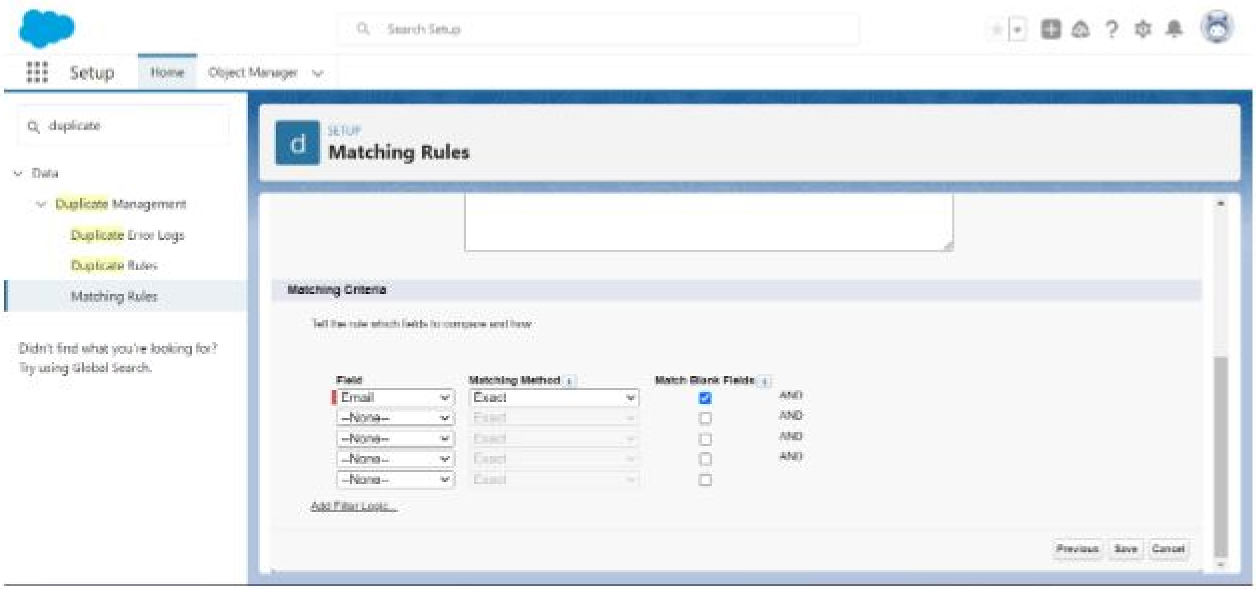


- we have one more option called conditions but its optional.
- When we click on **create new matching rule** its show pop up **saves duplicate rule** and redirect to matching rule page.

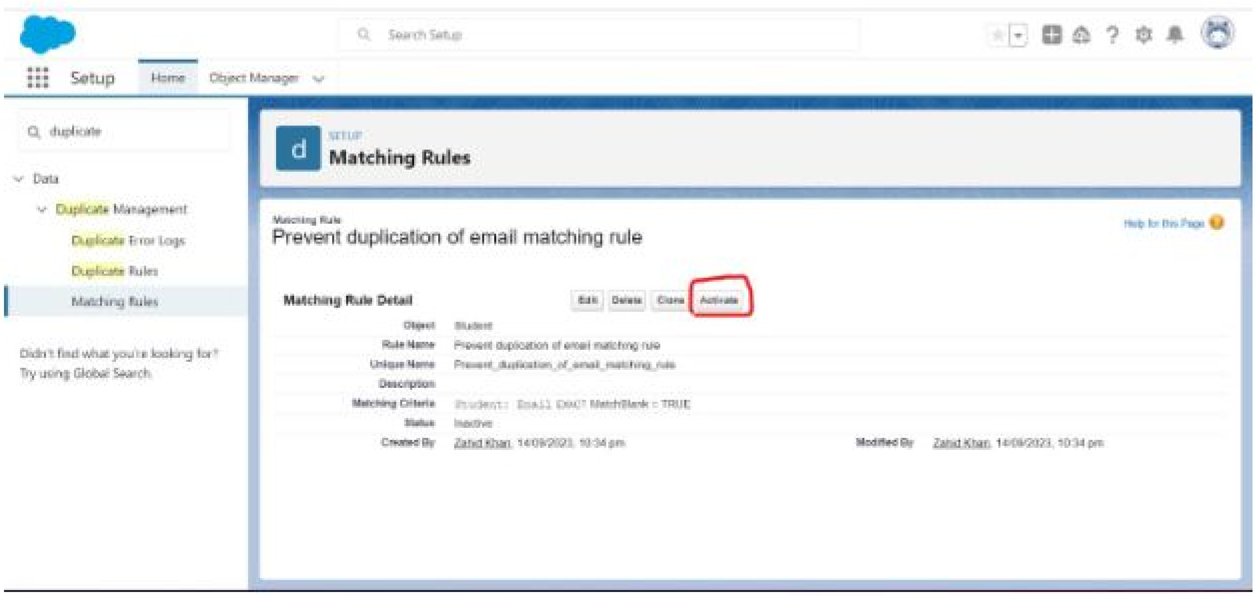


- on next page we got 2 option Rule details and matching criteria. Rule details already pre-filed we have to set matching criteria. For example, we add email filed duplication rule.

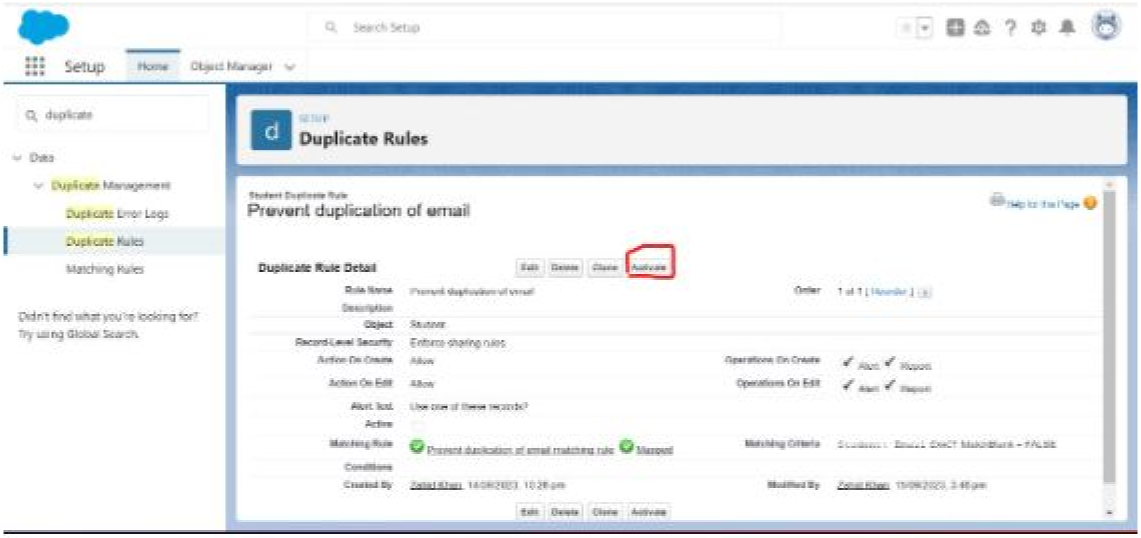
- in matching criteria, we have 3 options fields, matching method, and match blank field. Match black field means like if one blank field is created and try to make another blank field so it's given error.



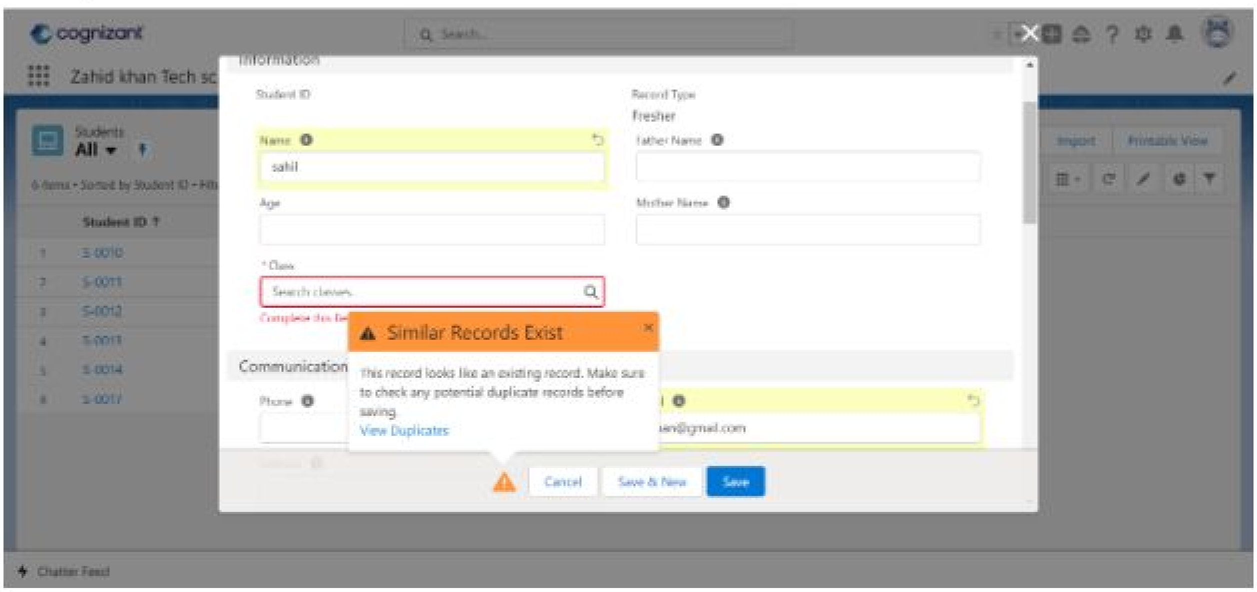
- now click on save.
- After that click on activate so that this matching rule will active.



- Now it activates.
- After that go to duplicate rule again and click on activate to active the duplicate rule also.



- now go to front-end and check the result.



- it gives warning message for duplicate email and allow us to submit the form because we are selecting allow. If we select block, then duplicate rule will prevents us from submitting the form.

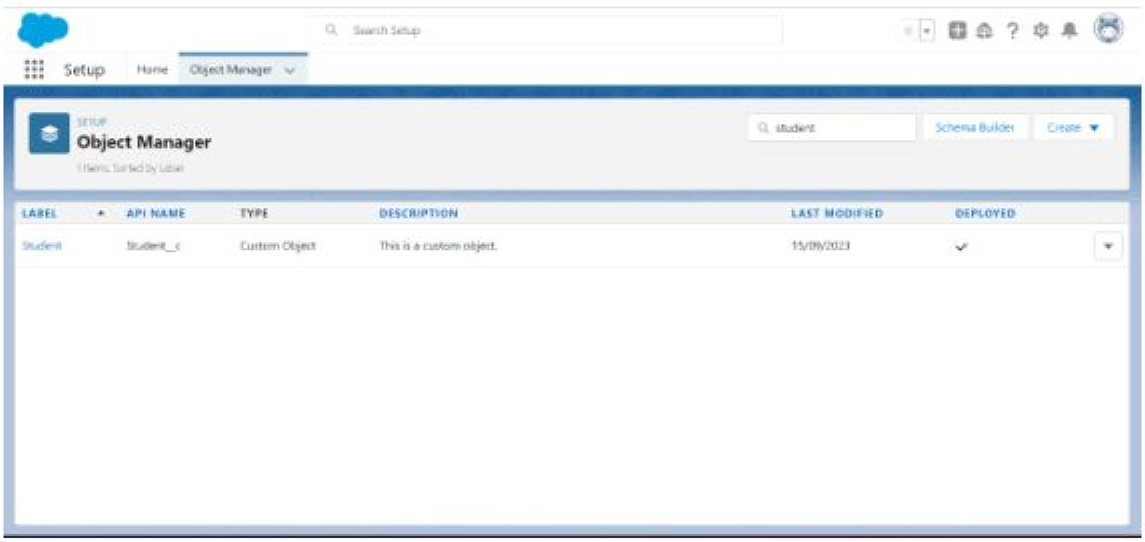
Activities

Activities has 4 options.

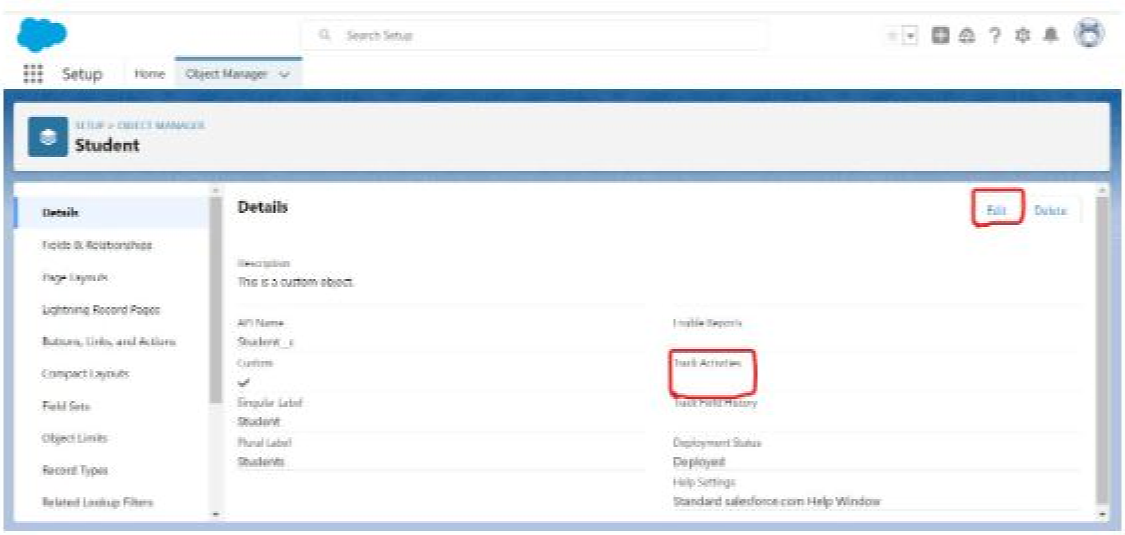
I. Task
II. Call
III. Event
IV. Email

Steps to add activities tab in custom object:

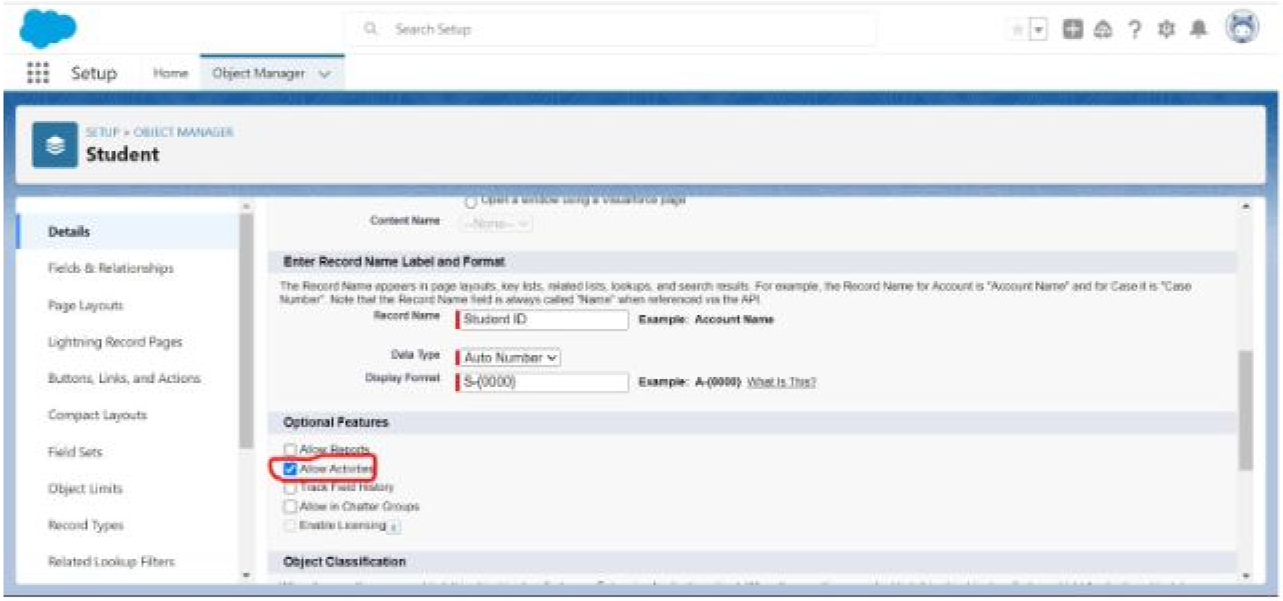
- 1st go the object manager and search for custom object in which we want to add activities tab (i.e., student object).



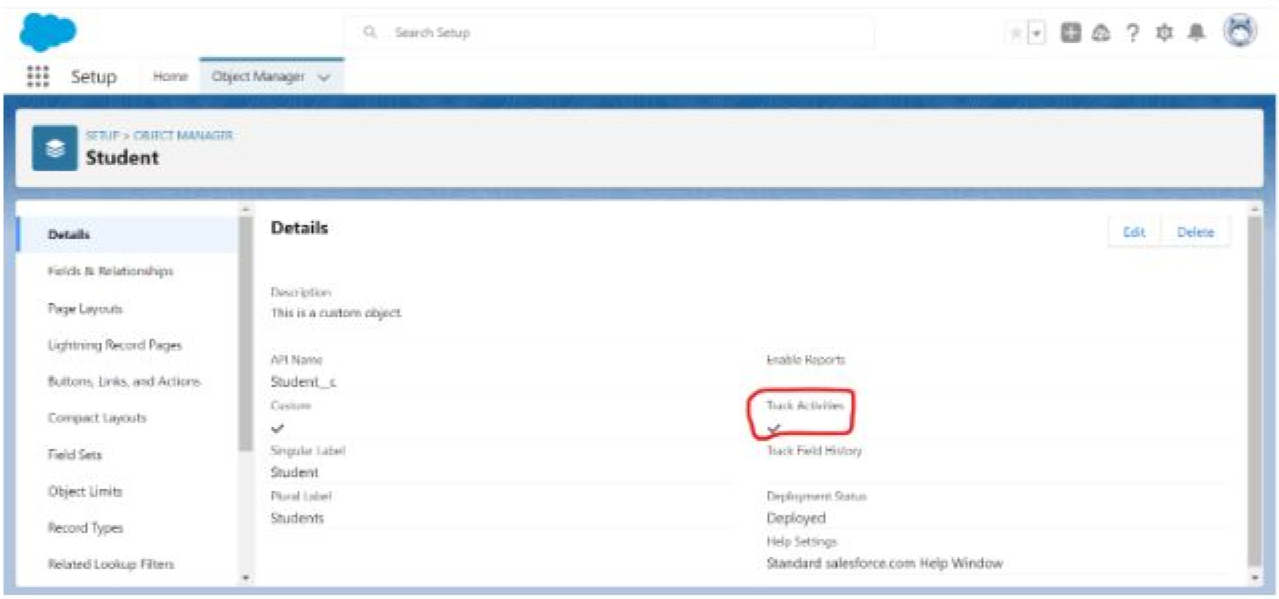
- Click on student object. Task activities will not check to enable activities in students records this box should be checked. For this click on edit.



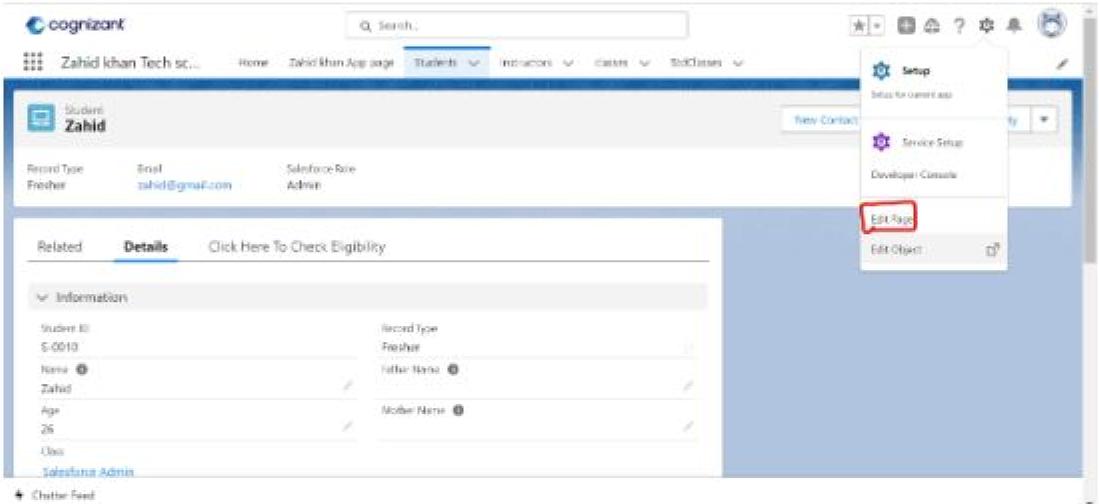
- On next page go to optional features and check the box of allow activities.



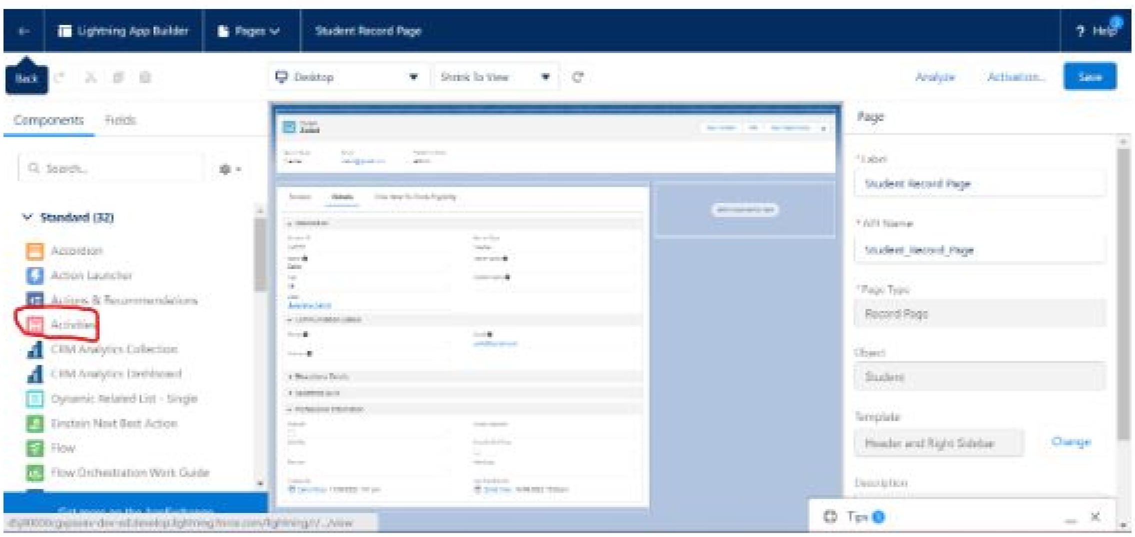
- Now click on save. Now task activities will check.

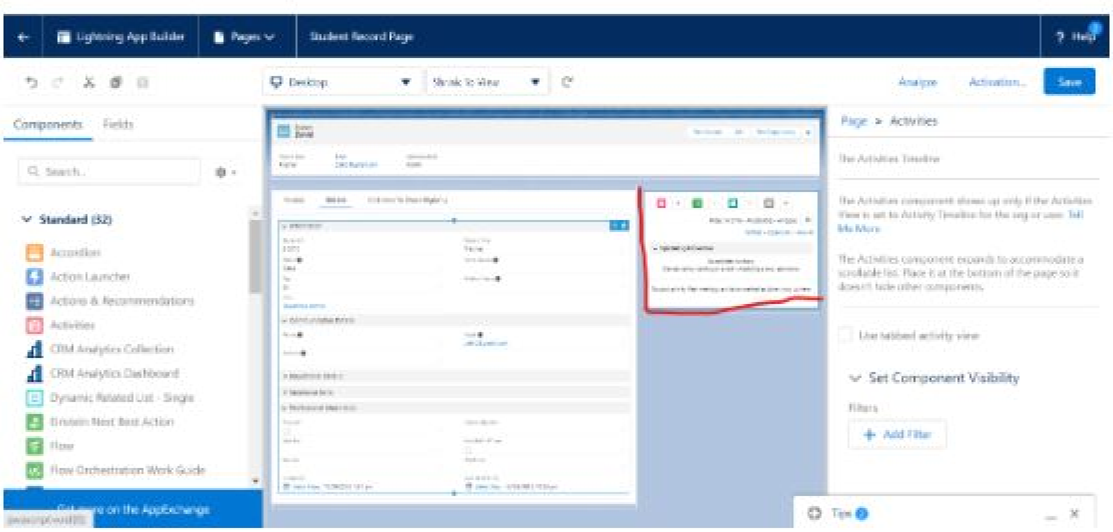


- Sometimes it will add automatically in record and if is not add automatically then we need to add activities by editing record page.
- Now go to front-end click on student object and open any record. After that click on **setup icon** on right side of the screen and click on **edit page** to open lighting page of student object so that we can add **activities**.

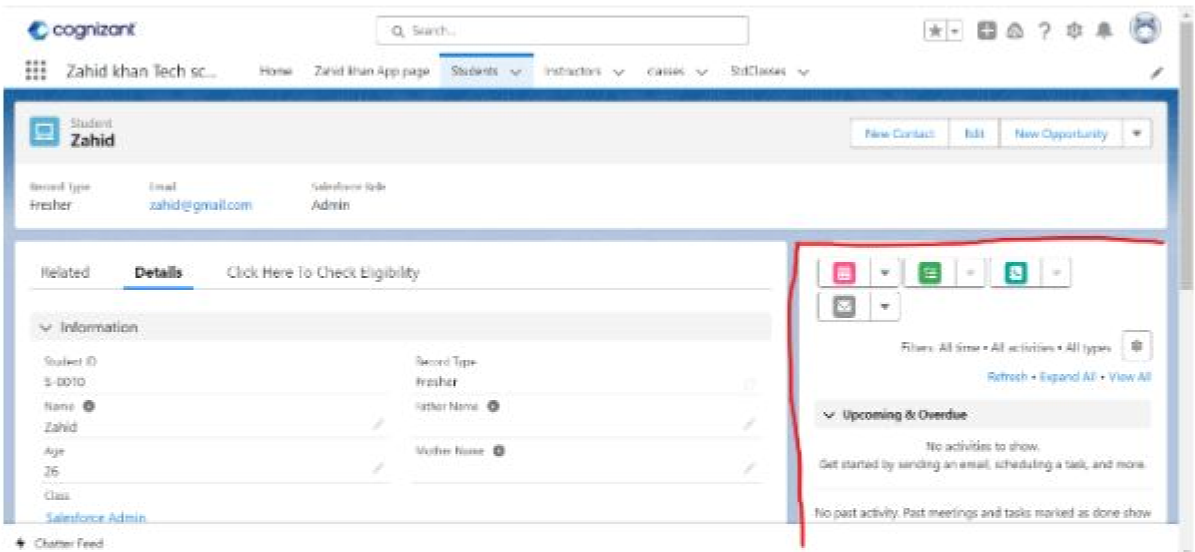


- Now select activities from left side of the side menu and drag it to the student record page. And click on save.





- We can also activity tab in lighting page. for this 1st drag the tab in lighting page than drag activities tag under tab. After that rename the tab as **activity**.
- Now go to front-end and check that activities tab will add in student records.

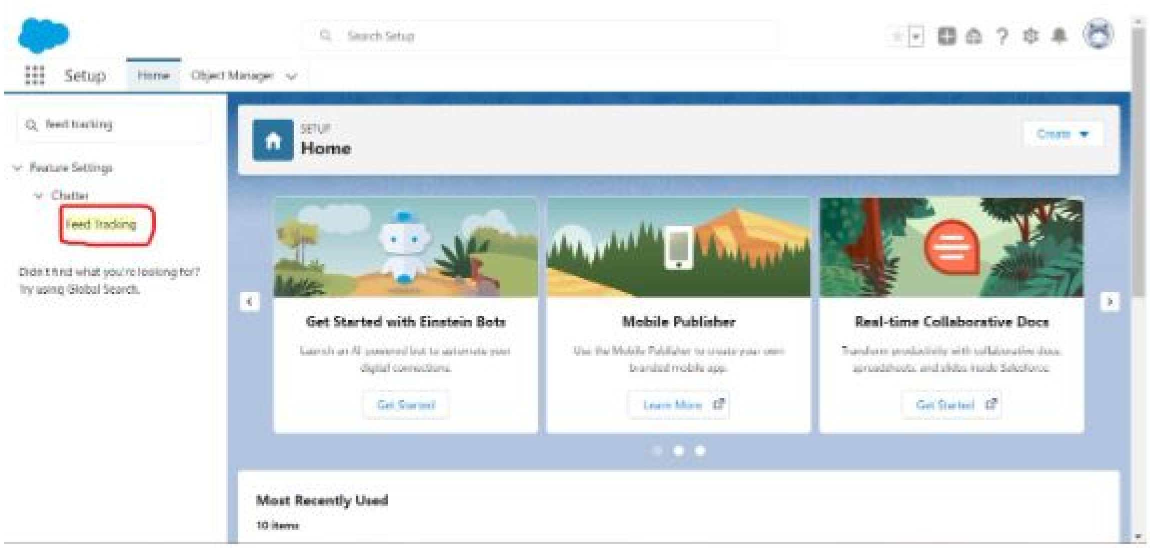


Feed tracking

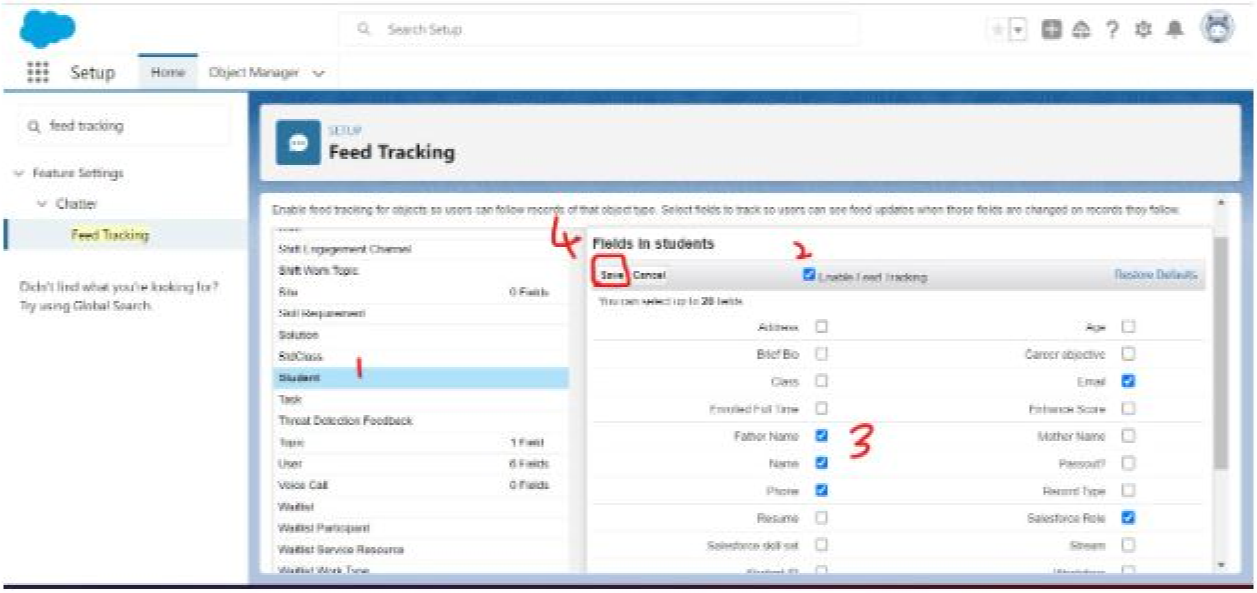
- Feed tracking enables to track changes of selected fields and related fields as well.
- Changes are shown in the chatter component.
- It shows old value, new value and who changed.
- We select up-to 20 field for tracking field of any object.

Steps to enable feed tracking:

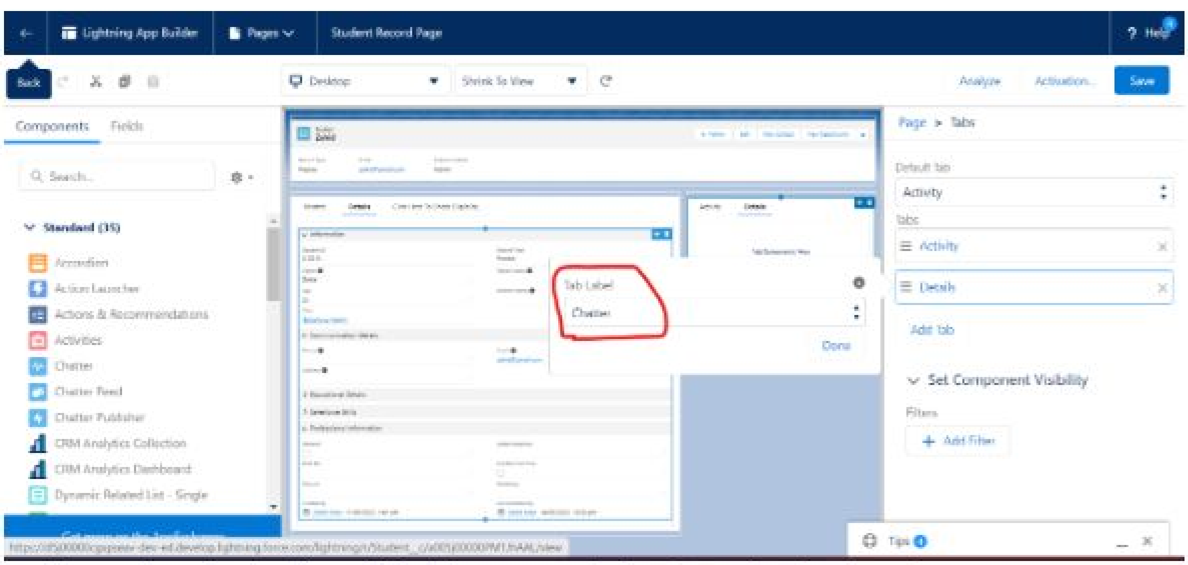
- 1st click on setup and go to home and search for **feed tracking** in quick search.



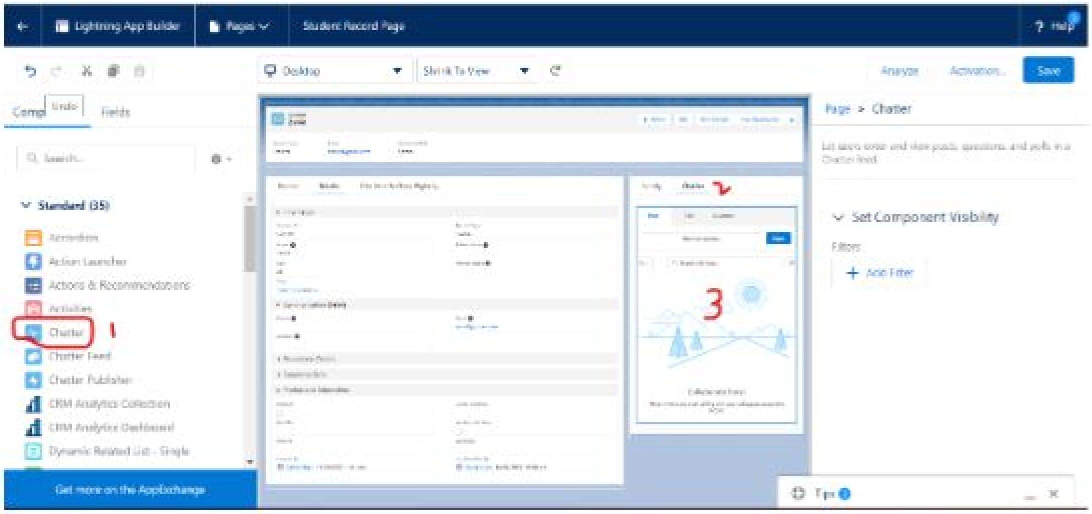
- Now click on feed tracking. Feed tracking page will open which consist of all the object. We can enable feed tracking for any object (for example, we want to enable feed tracking of few fields of student object).
- For enable student field check box of **enable field tracking**. After that select field in which field want to track. And click on save.



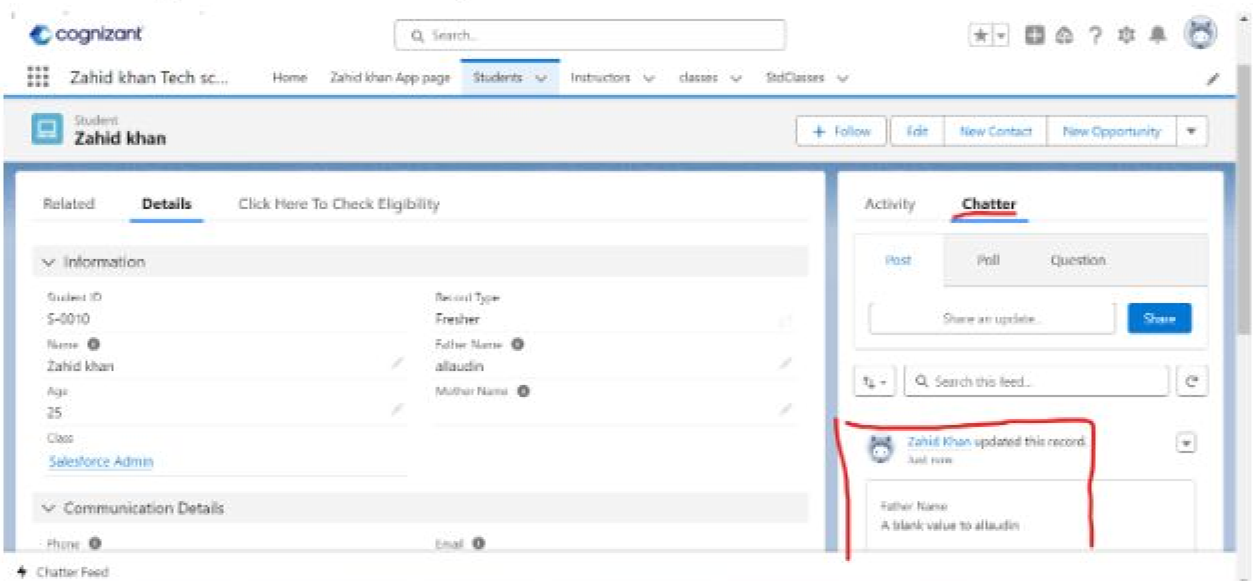
- Now go to front-end and check chatter is available or not in any student object. If not the open any student record click on setup icon on top right side and click on edit page to launch the lighting record page to add the chatter for feed tracking.
- 1st click on **activity** tab and add new tab **chatter**. And click on done.



- Now select chatter from left side menu and drag it to the chatter tab.



- Now click on save.
- Now go to front-end and check that chatter is added beside activity.
- Now if we change any field for which feed tracking is enable then it shows the details. Who change this? and what changes?

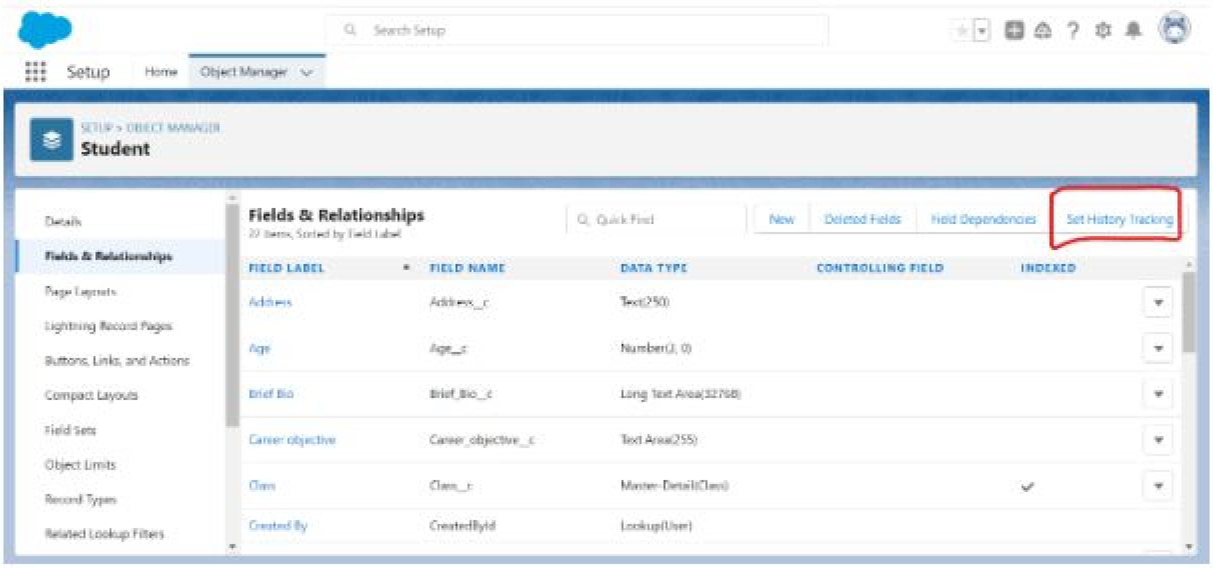


Field history tracking

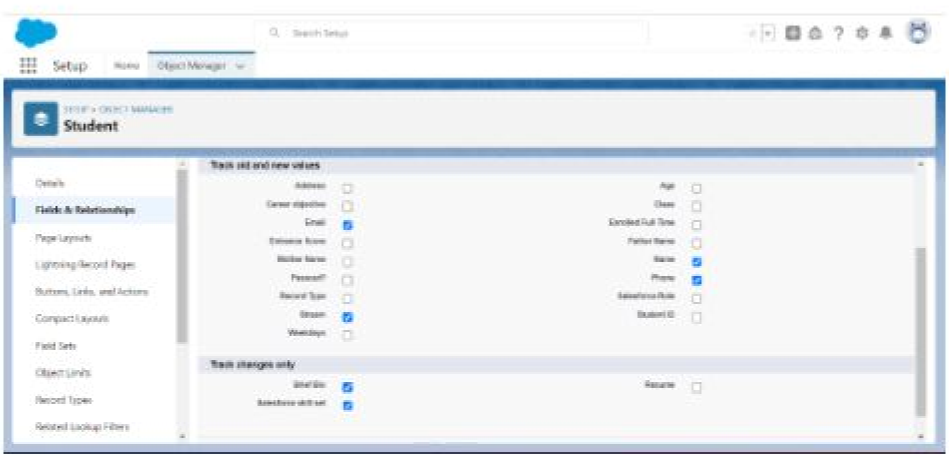
- field history tracking enables to track changes of selected fields.
- Changes are shown in the history related list.
- It shows old value, new value and who changed.

Steps to enable field history tracking:

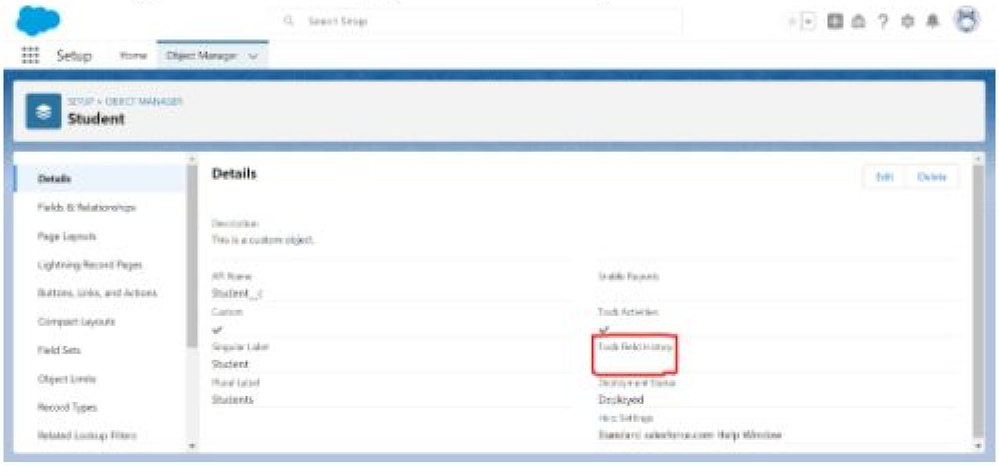
- We can enable field history tracking for any custom object. Here we are enabling this for student object.
- For this 1st click on set up and click on object manager. Search for student object and click on this to open student object after that click on fields & relationships.
- After that click on **set history tracking**.



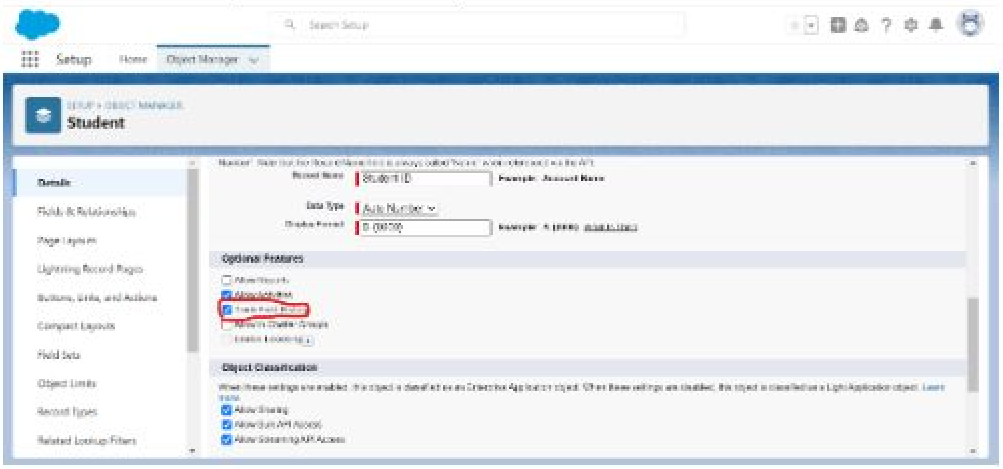
- On next page we will get list of fields of **track old and new value** and **another track change** (these field are text area long or text area rich field) only.
- Now select the field and click on save.



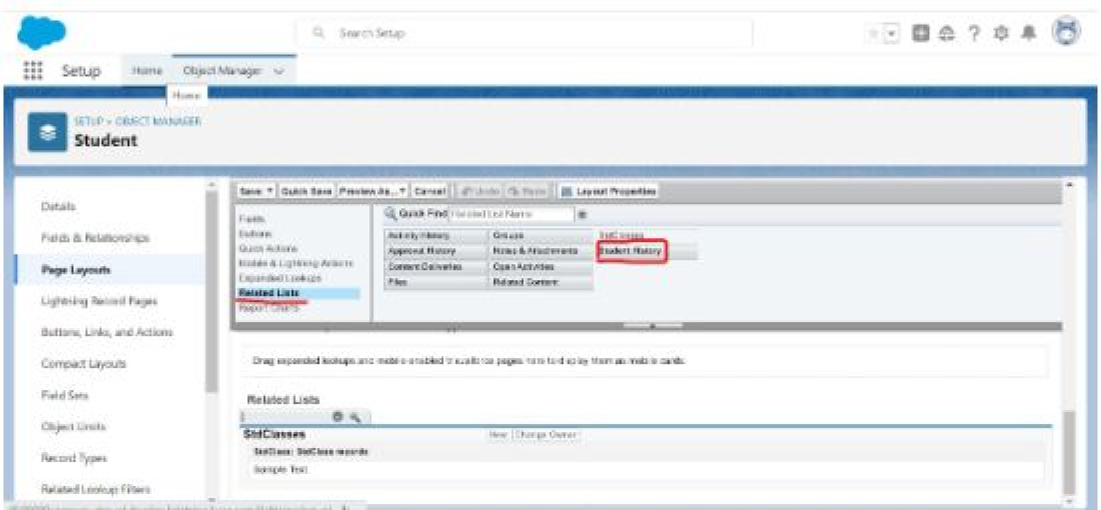
- After that go to the details page of student object and enable the **track filed history**.



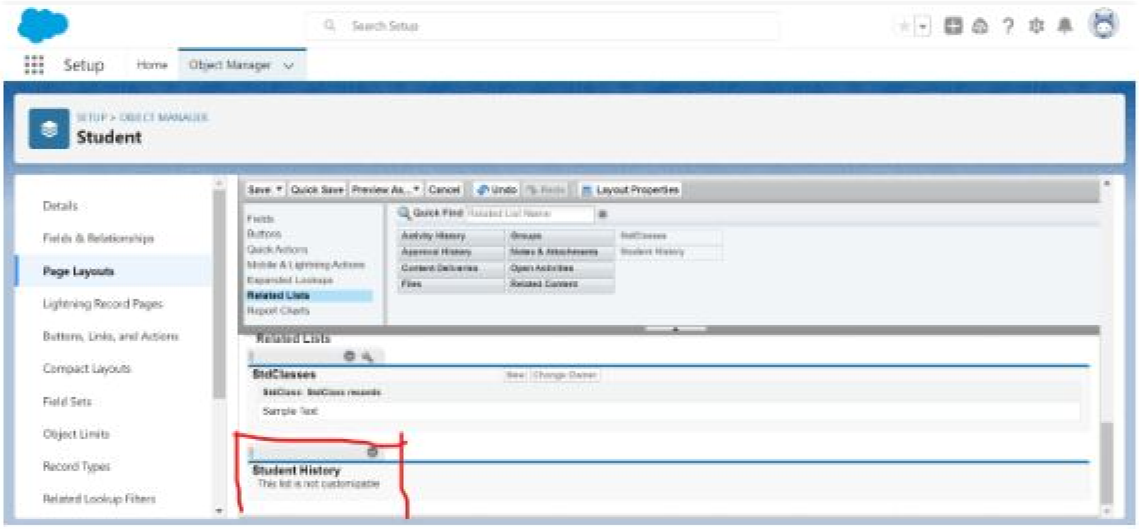
- Click on edit on right side. Under optional field check the box of Track field History.



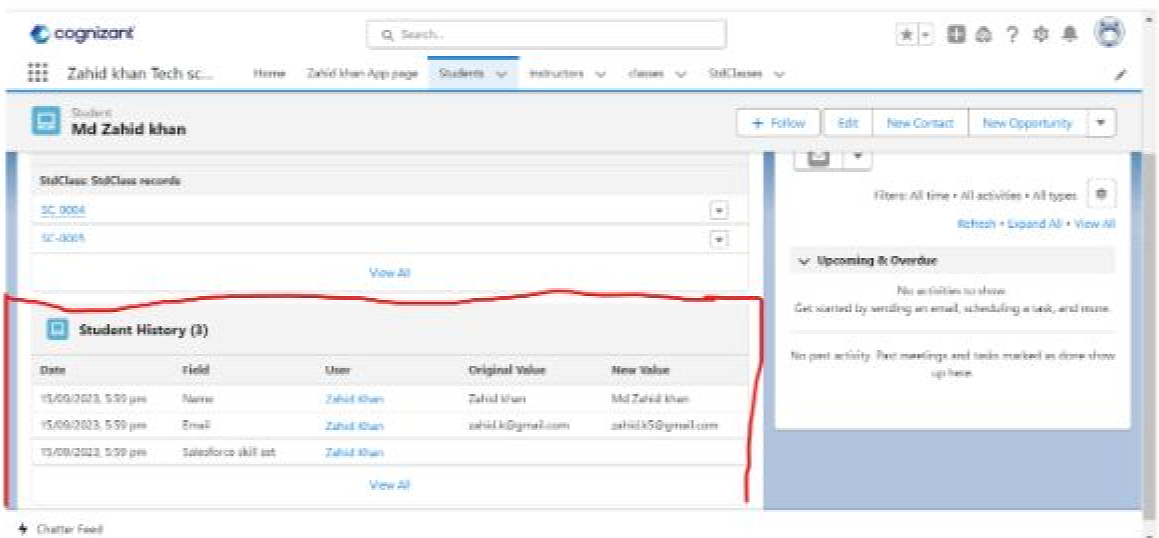
- Now click on save.
- After that go to page layout of student object. We have to enable History page for both fresher and experience layout. 1st clicks on fresher layout. Now click on **related list** we will get an option **student History.**



- After that drag the student history below the stdClasses under related list.



- now click on save.
- Now similarly also place the student history in experienced layout and student layout.
- Now go to front-end open click on student object after that open any records and click on related tab that there is a student history option.
- Now if I change the filed which I selected in set history tracking then I will show in **student history** tab.

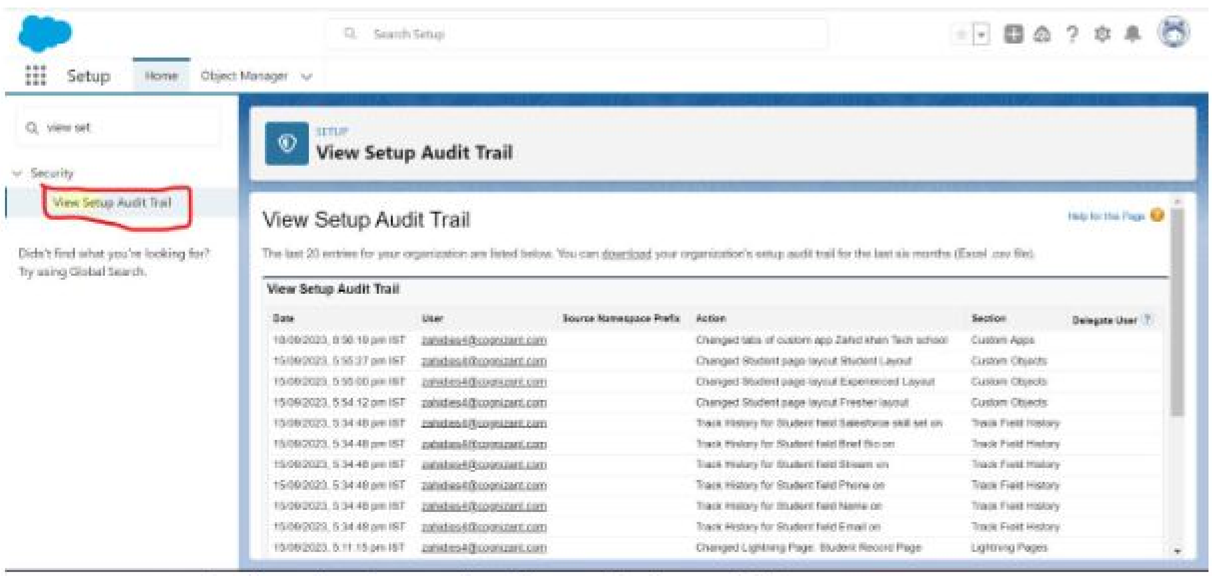


View Steup Audit Trials

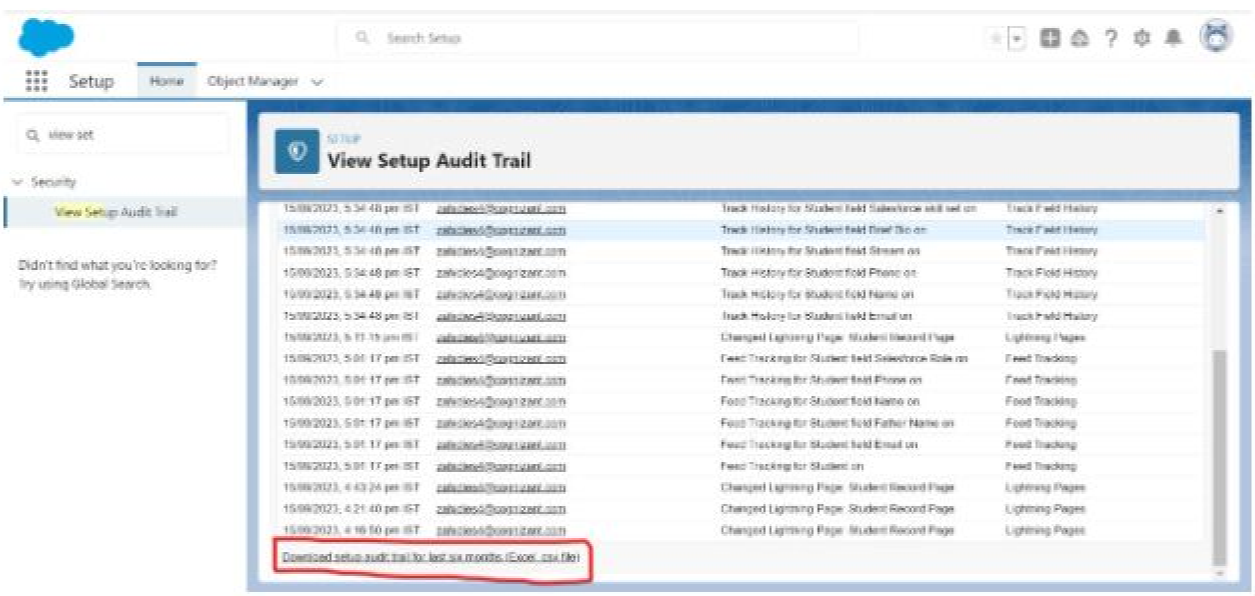
- Setup audit trail shows a list of changes done by users in the org in different components.
- One can download past 6 months changes.

Steps to show the Setup audit trails:

- Go to set up click on home and in quick search type view setup audit trails.
- After that click on it you will see all the records who changes which filed with date and time.



- we can also download records of 6 months in excel file.



Day-08

Reports on standard object

What is Report?

- Report is a list of records related to objects that meet the criteria defined.
- One can filter, group, and do math's on reports.
- One can display reports graphically through chart.
- Every report is stored in a folder.
- Report folders determines how one can access reports to view, edit, or manager.
- Report folders can be public, hidden, or shared.

Report builder:

- Here you can create a report.
- You need to select a record type.
- Select fields to display in report.
- Apply filters.
- Group report based on rows and columns.
- Run reports.
- Save reports.

Filters:

There are 4 types of filters.

- Standard filter
  Show me & created date.
- Field filter
  Specific to field.
- Filter logic
  Boolean condition to control filed filters.
- Cross filter
  Filter a report by child object using with or without condition.

Report Format:

- Tabular
  Make a list (same as list view).
- Summary
  Group & summarize.
- Matrix

Group & summarize by Row and column.

- Joined
  Report on multiple report types.

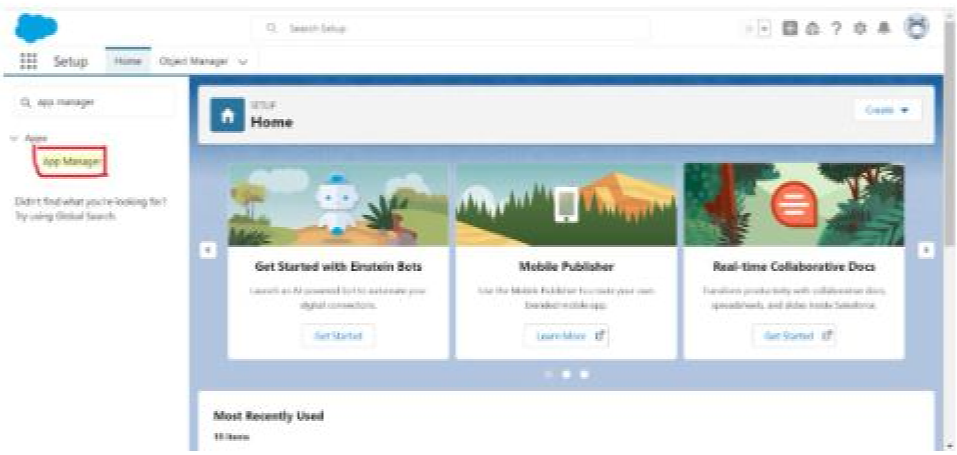
Report folders:

As every report is stored in a folder, so:

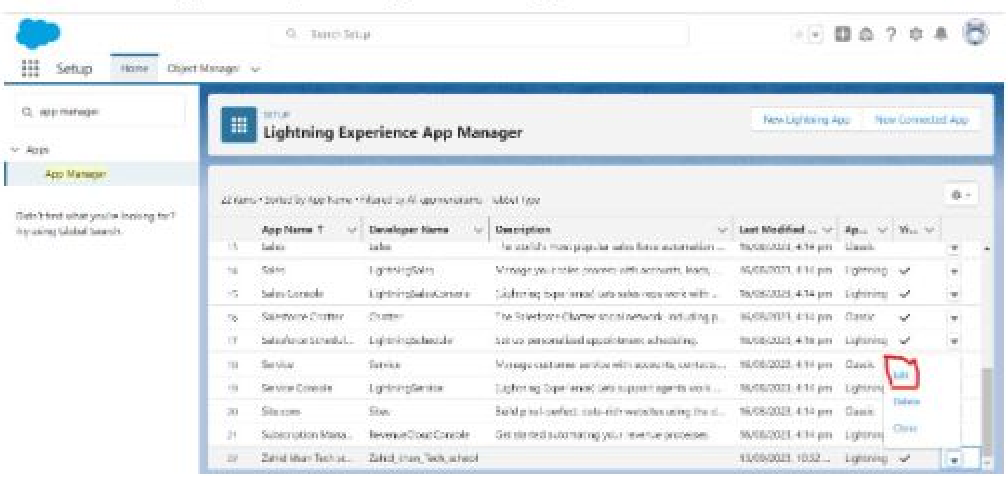
- Report folder determines how one can access reports to view, edit, or manage.
- Report folders can be public, hidden, or shared.
- We can control access of contents of the folder based on roles, permissions, public groups, territories, and license types.

Steps to create Tabular report using standard object:

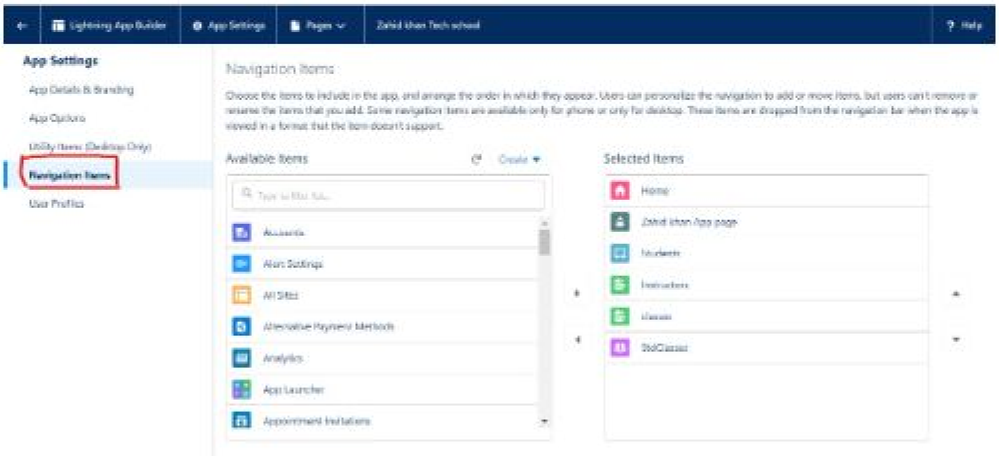
- To make report in our App using standard object. We have to add **Report** and **Dashboard** tab in our app.
- To add Report and Dashboard click on setup after that click on **Quick Find** and type App manager.



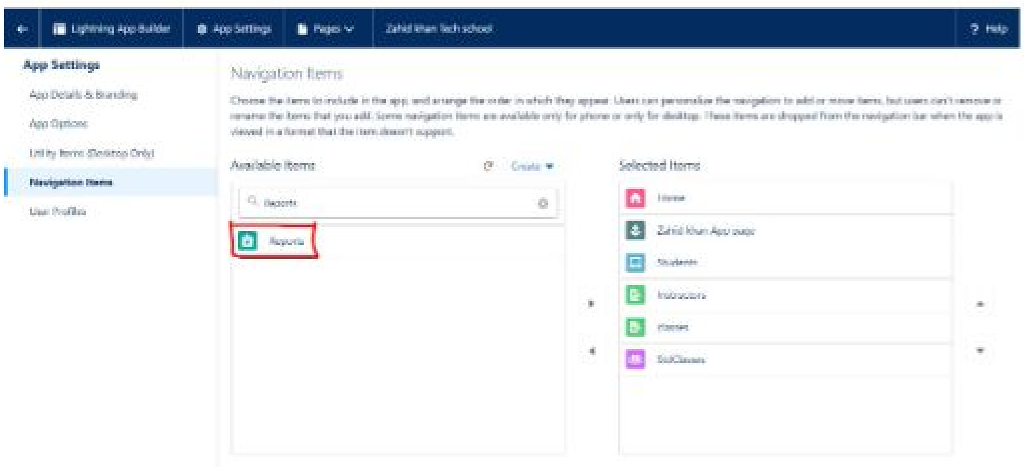
- After that click on App manager and go to our App **Zahid khan Tech school** and click on edit.



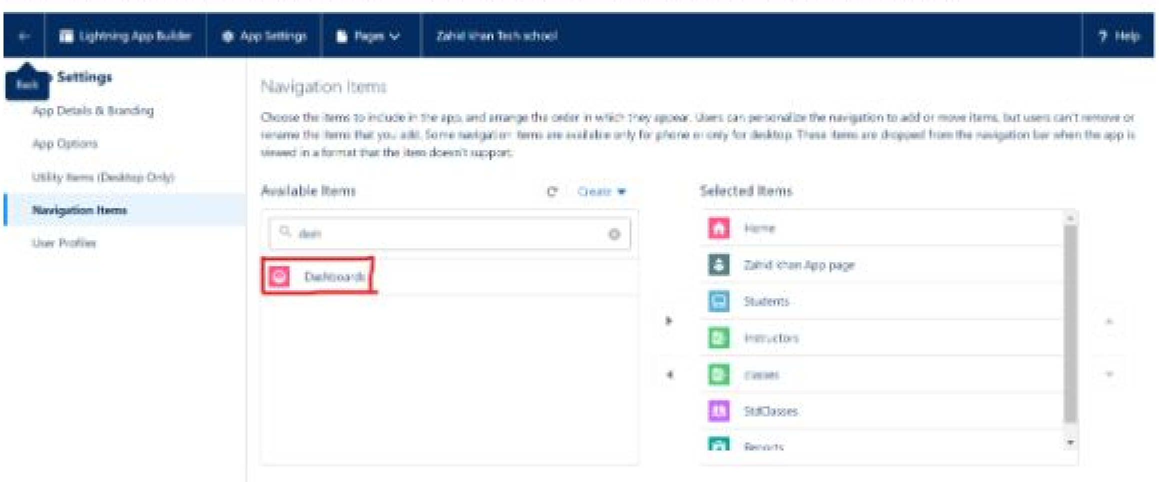
- After that click on navigation item.



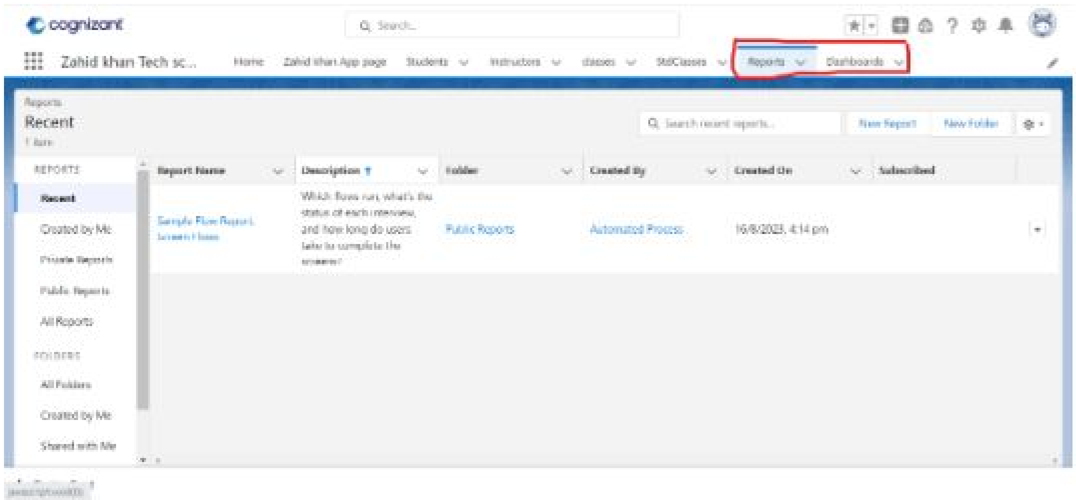
- 1st search **Report** in Available items and insert **Report** in selected Items.



- Now search for Dashboard in available items and insert in selected items.



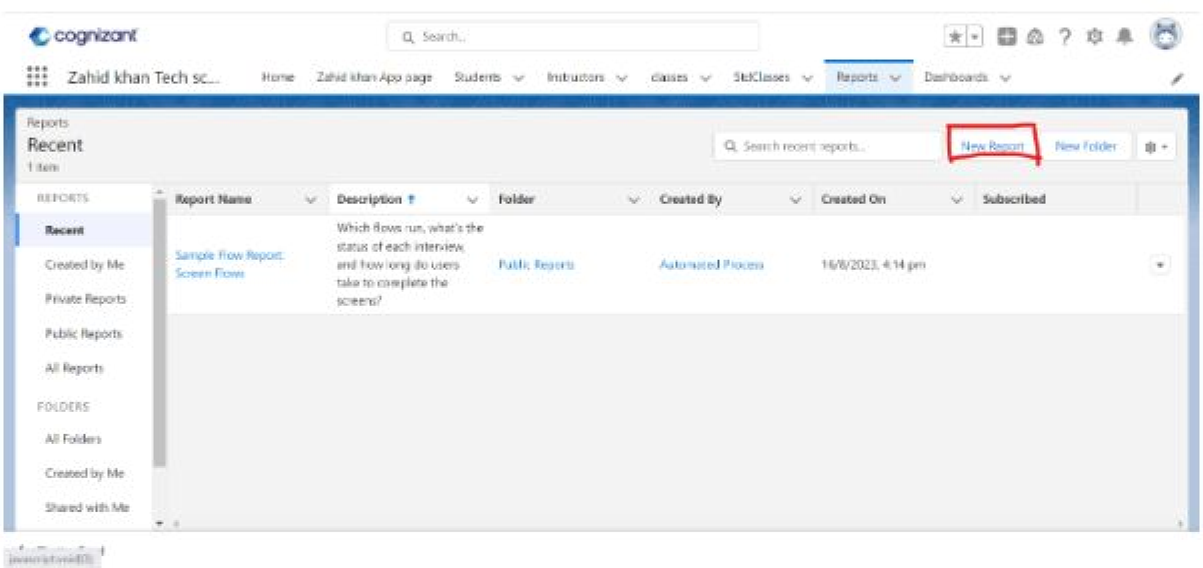
- Now click on save. Now go to App and check.



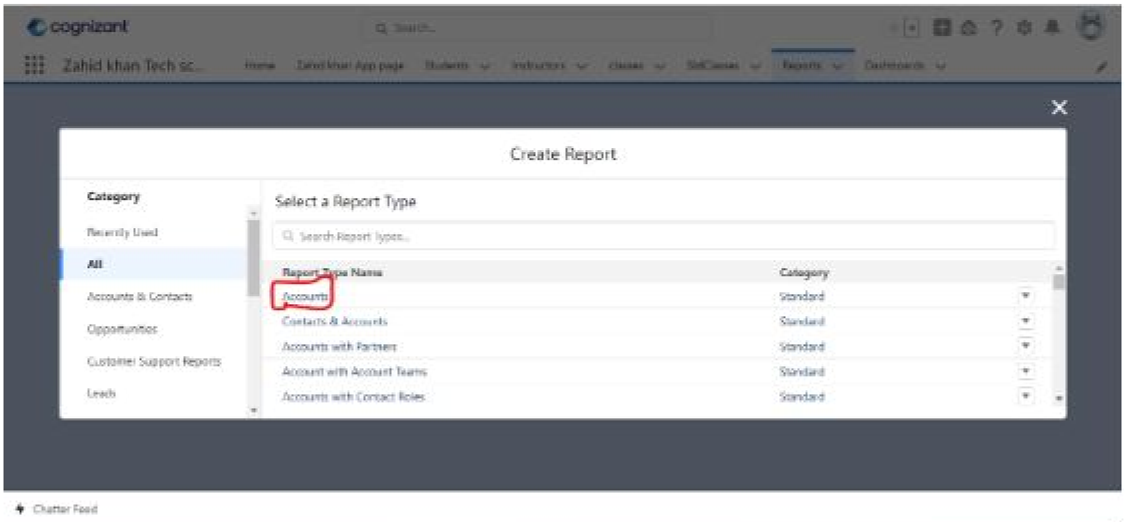
<u>Tabular Report</u>

<u>Steps to creating tabular report:</u>

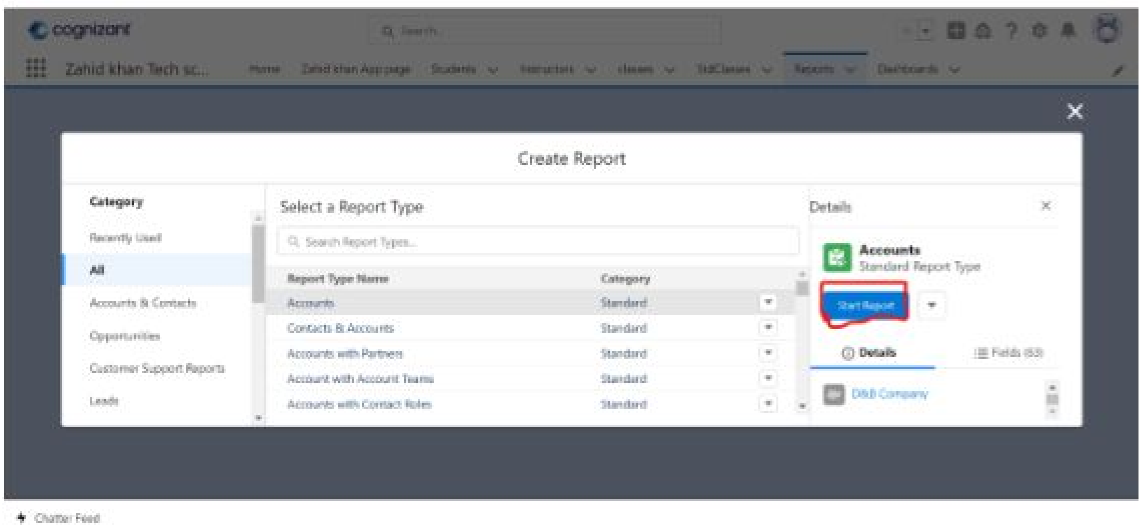
- For creating Tabular report of standard object. We have to click **on New Report**.



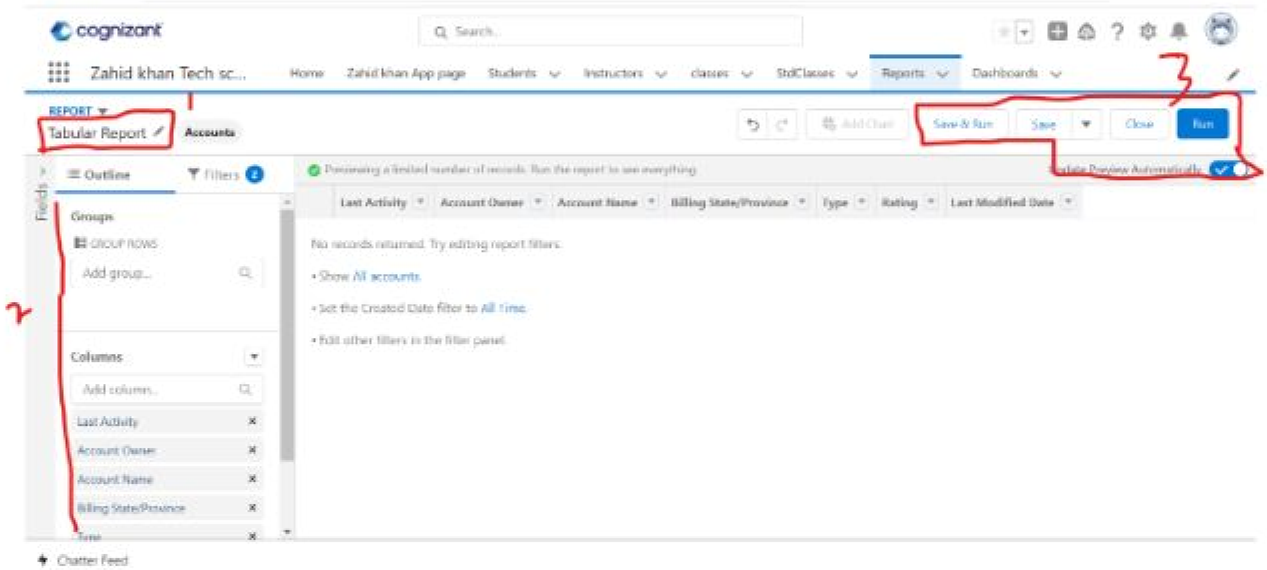
- After that select record type. Here we are creating report of Account. So, select **Account**.



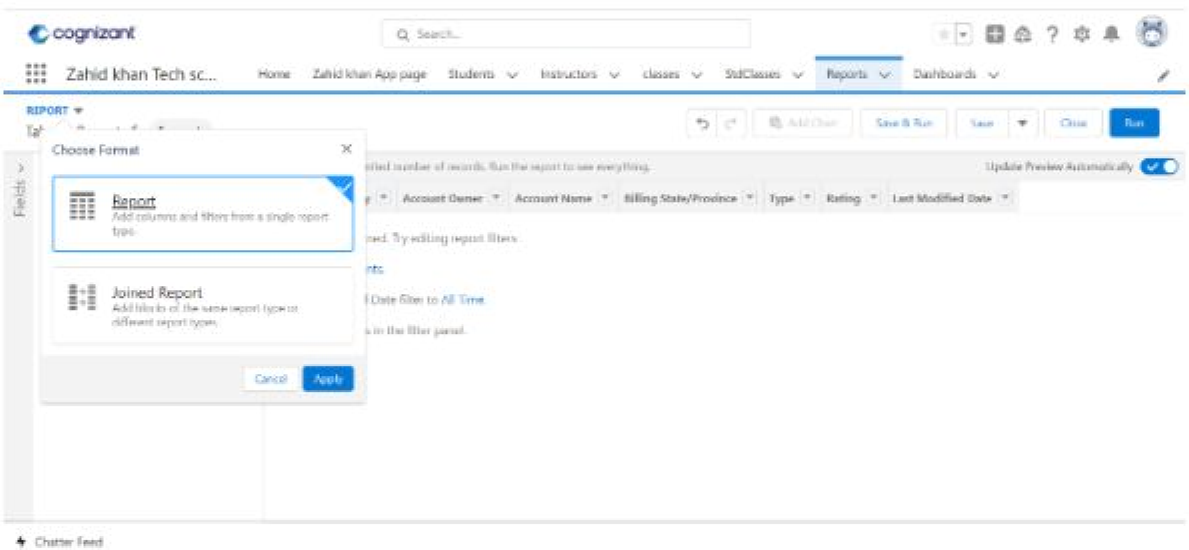
- After that click on **Start Report**.



- Pencil button is used to rename the reports.
- On left side on side bar, we have 2 options outline and Filter. In outline Groups is used for summary Report type and column is use for tabular report. In filter we can apply all 4 filter as mentioned above.
- From **Column** we can insert any column in report by searching its name. and always on Update Preview automatically.
- Save&Run button is used to save as well as run the report. Close is used to close the report without saving and Run is used to Run the report after save.

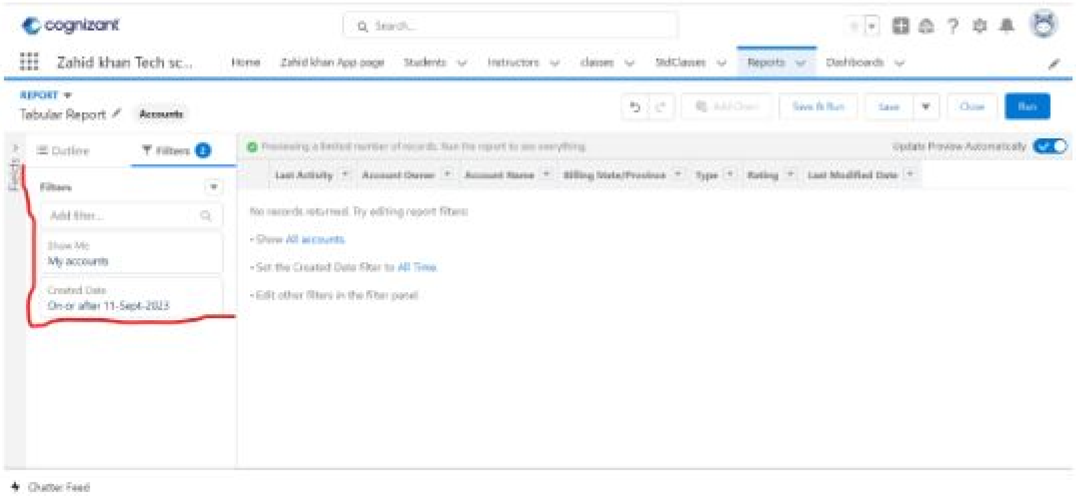


- We can see Report text at top of the page when we click on it we got 2 option Reports and joined reports. Reports option is for tabular, summary, and matrix report. And joined report options is used for joined reports.

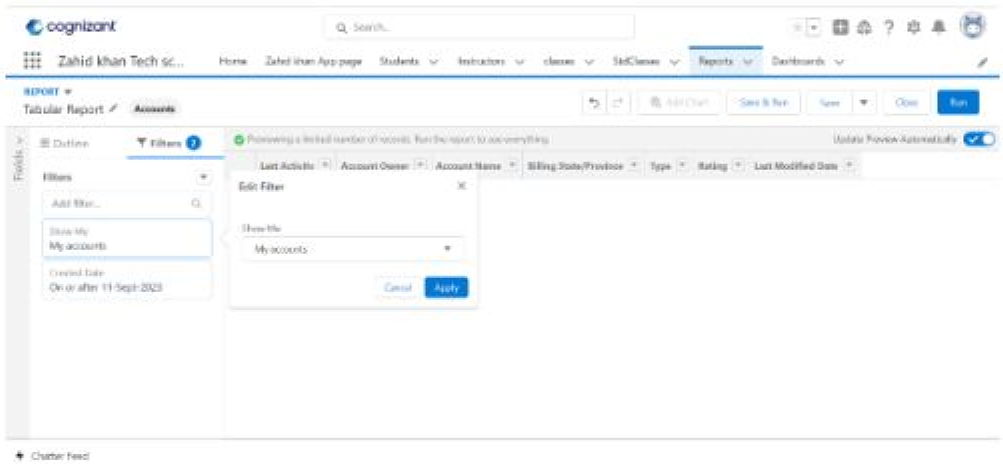


- **1st type filter-** now click on filter we got 2 options by default **show me** and **created date** this is standard filter.

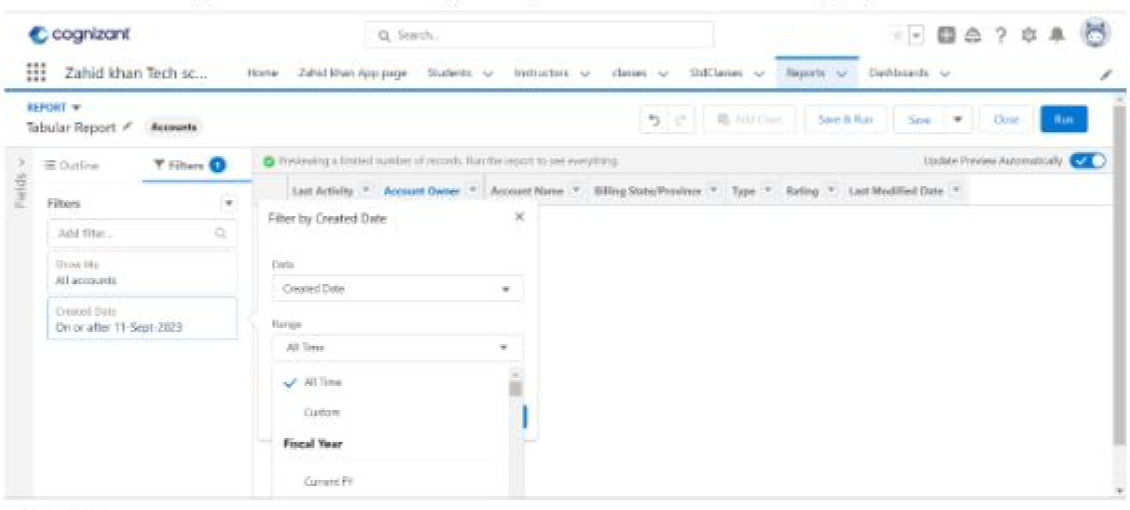
- When we click on show me, we got 4 options by default My accounts, My team's account, All accounts and filter by scope



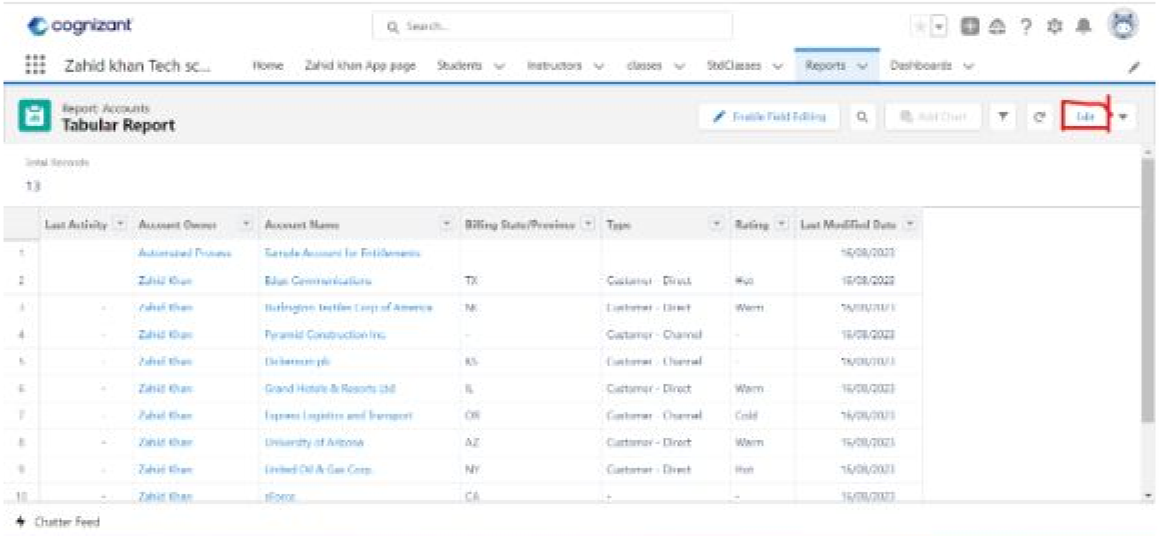
- In show me we have to select all accounts because we want to show all accounts records on report. And click on apply.



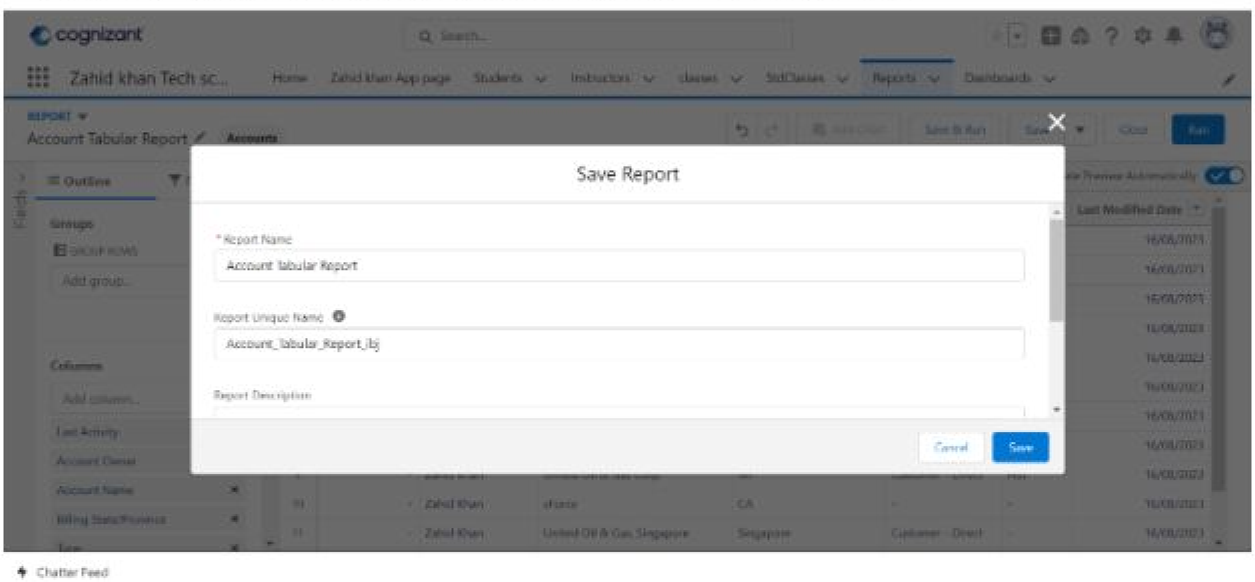
- In created on we got option to show created date based on choosing date but for now we are choosing All time from Range drop down. And click on apply.



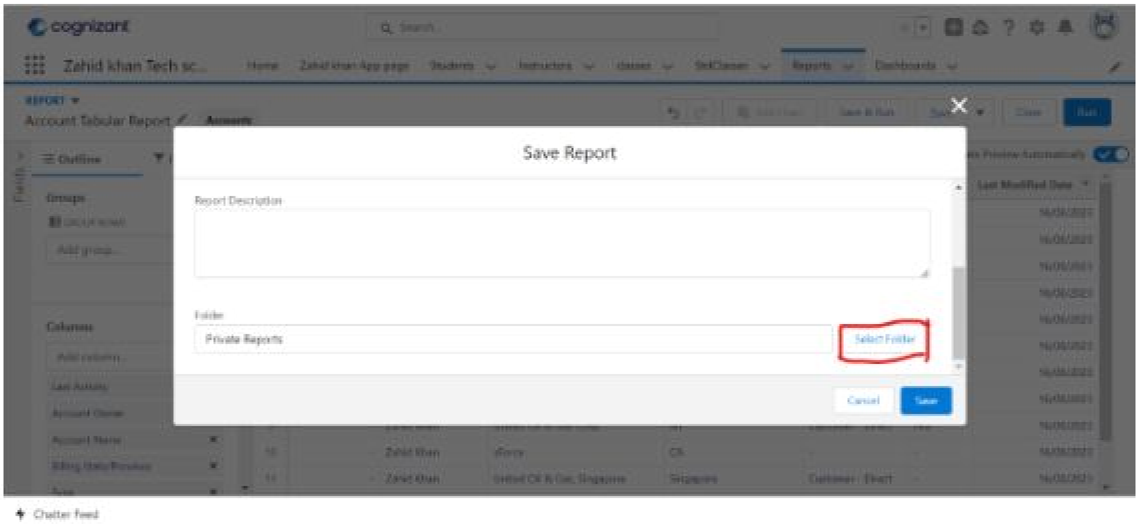
- Now click on Run we will see all number of records. For edit the records again click on edit.



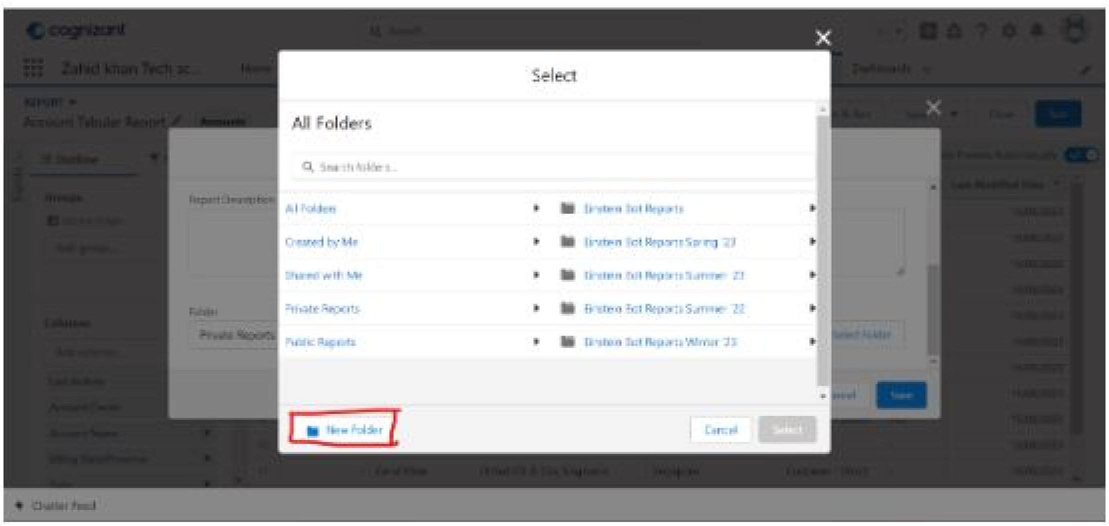
- Now click on **save** on right hand side to add the report in folder because every record should be added in a report folder. After that enter Report name which is already filled then press Tab then Report unique name will be automatically filled.



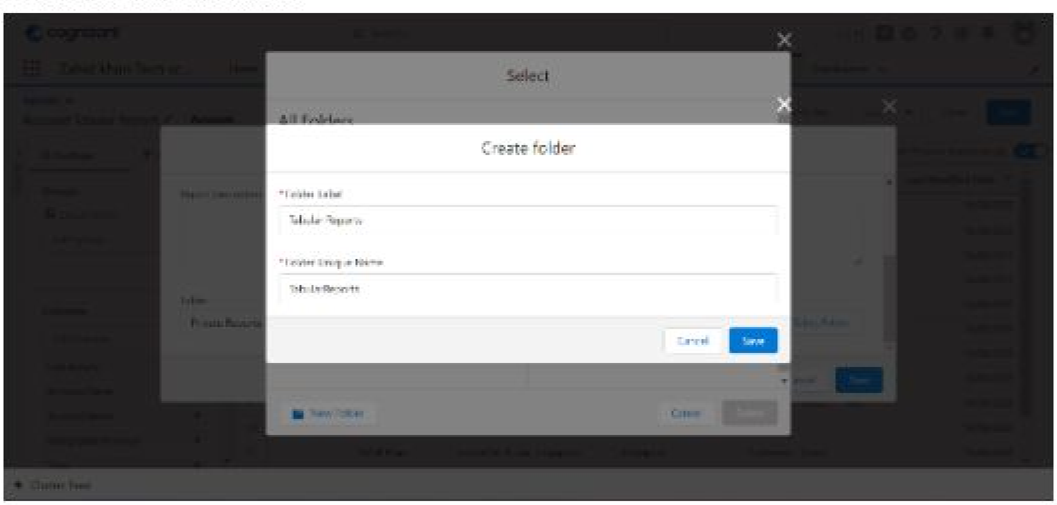
- Scroll down on save report page we will see a **Folder** drop down which is set to Private Reports but its good practice to save records in own folder. For creating a saving a report in own folder click on select folder option.



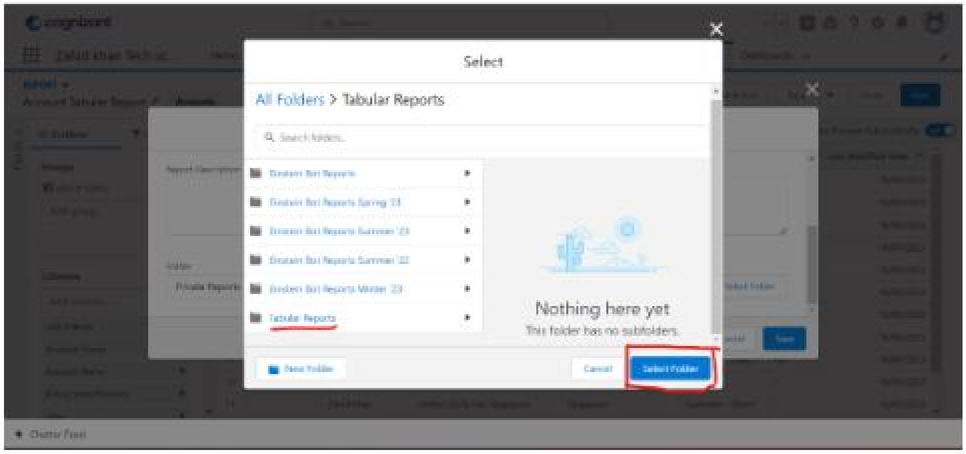
- now click on new folder option at bottom left side and make a folder named as Tabular reports. We will use this folder for all tabular reports.



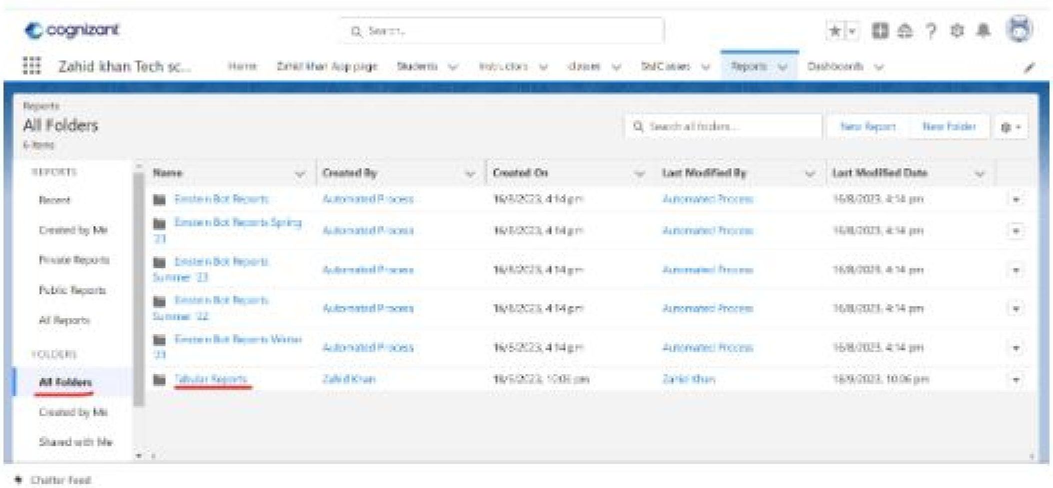
- After that enter the folder label and press tab button then unique folder label will be filled. And click on save.



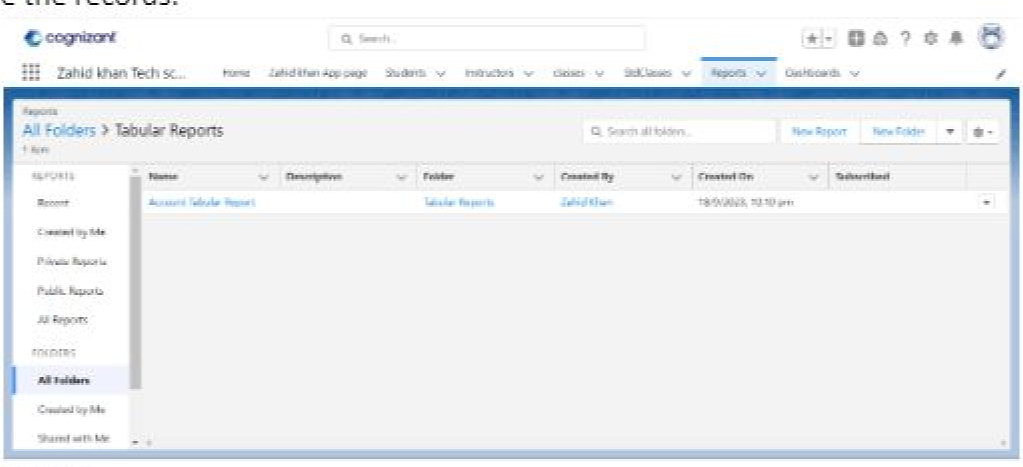
- Now Tabular Reports folder is created select this folder and click on select folder button.



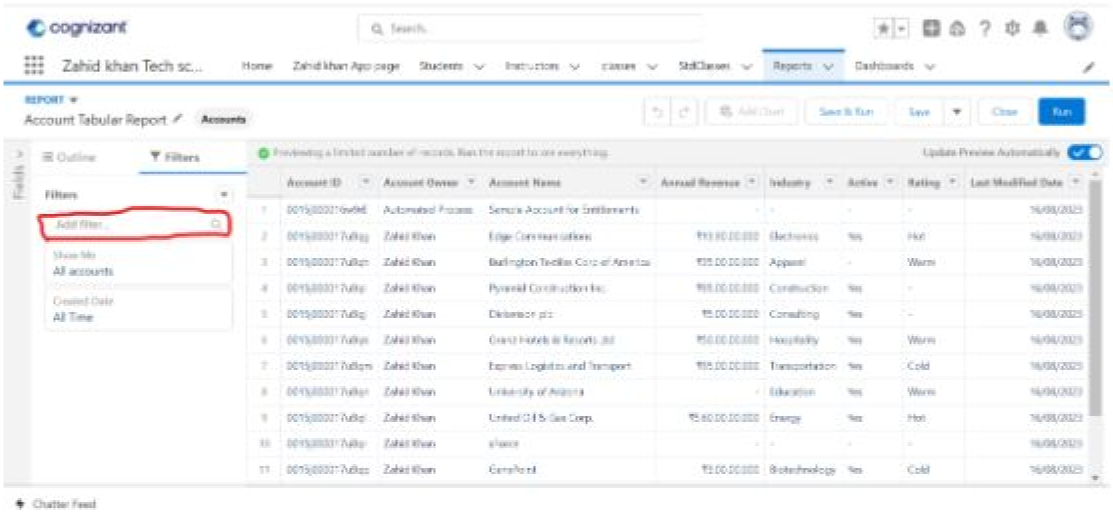
- After that click on save. Now our Account reports is saved in Tabular reports folder.
- Now click on close and go to first page of the reports.
- Now click on All folder. After that click on Tabular Reports folder.



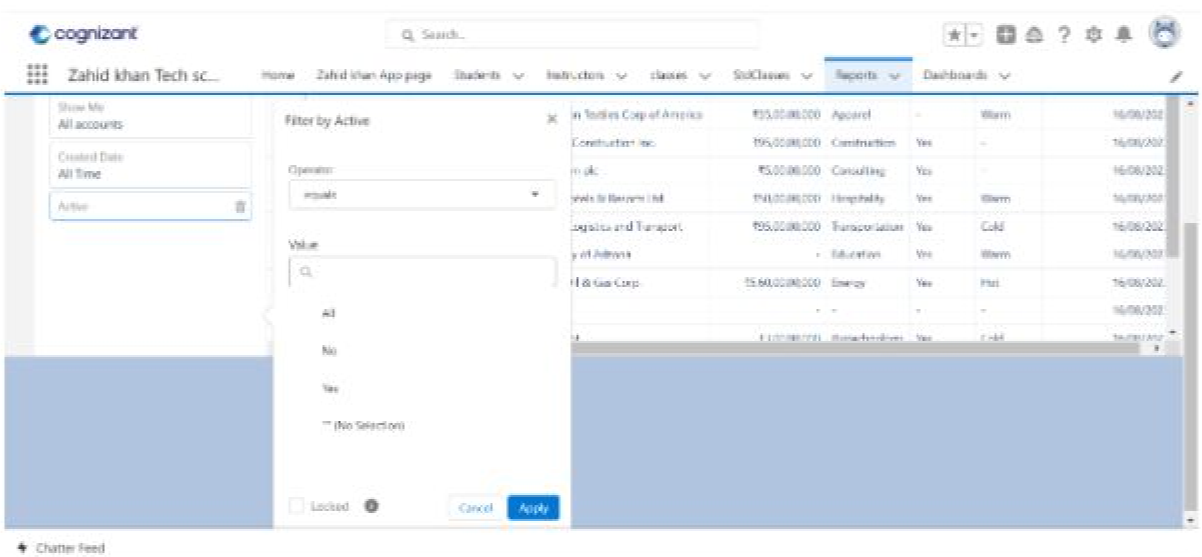
- In tabular folder we will see the Account tabular report which we created. If I open it, I will see the records.



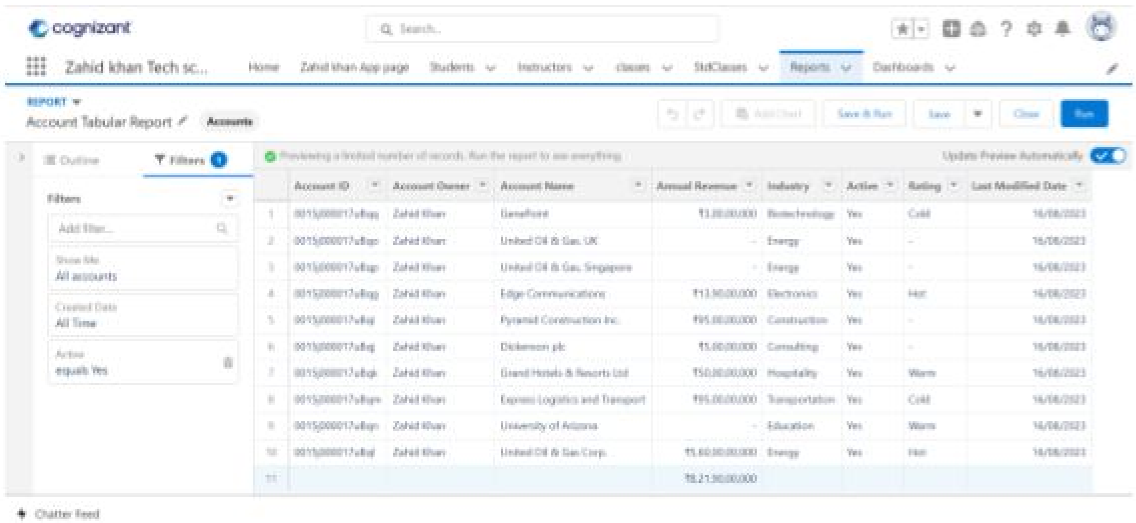
- **2nd type filter-** Now we apply **Specific field filter** (custom filter) to the report. For example, we are applying custom filter for active if active is yes then its show only those records.
- For custom filter open reports from folder and click on edit. After that click on filters on left hand side.



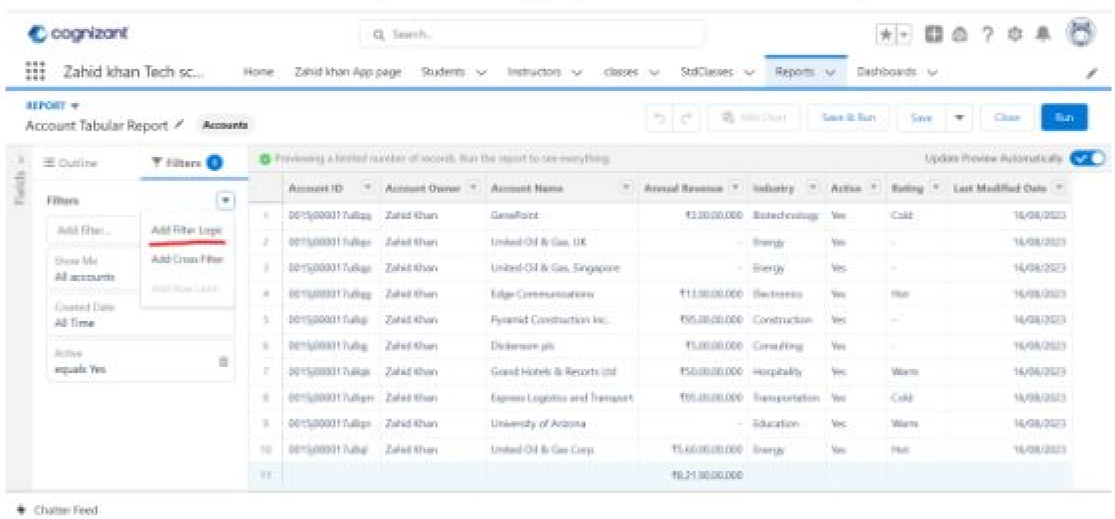
- After that search Active in **add filter** search box. And click on active then we get operator and value yes, no, all. select yes and click on apply.



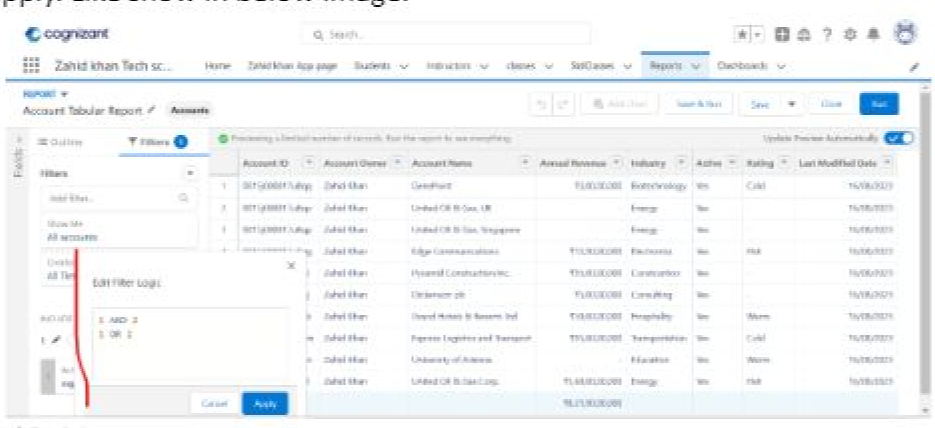
- Now which Active is yes will show in reports. It’s also called specific field filter.
- After that click on save and run the reports.



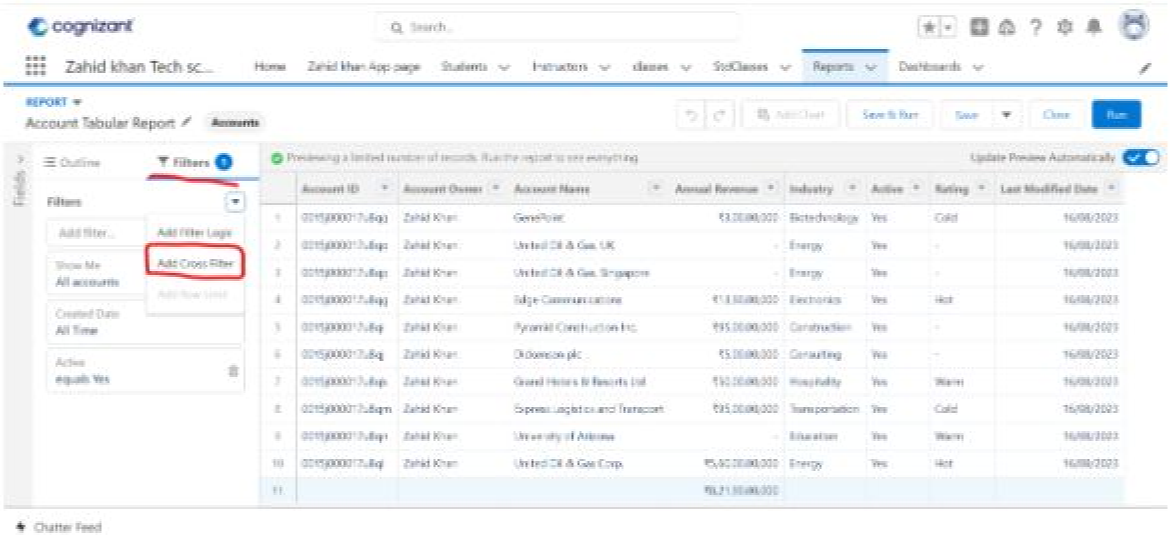
- **3rd type filter-** For Apply the **Filter logic** first set 2 Specific filter (custom filter) then click on arrow beside the Filters option and apply AND or OR Boolean operation.



- We can apply AND or OR Boolean operation between more than 2 custom filter. And click on apply. Like show in below image.

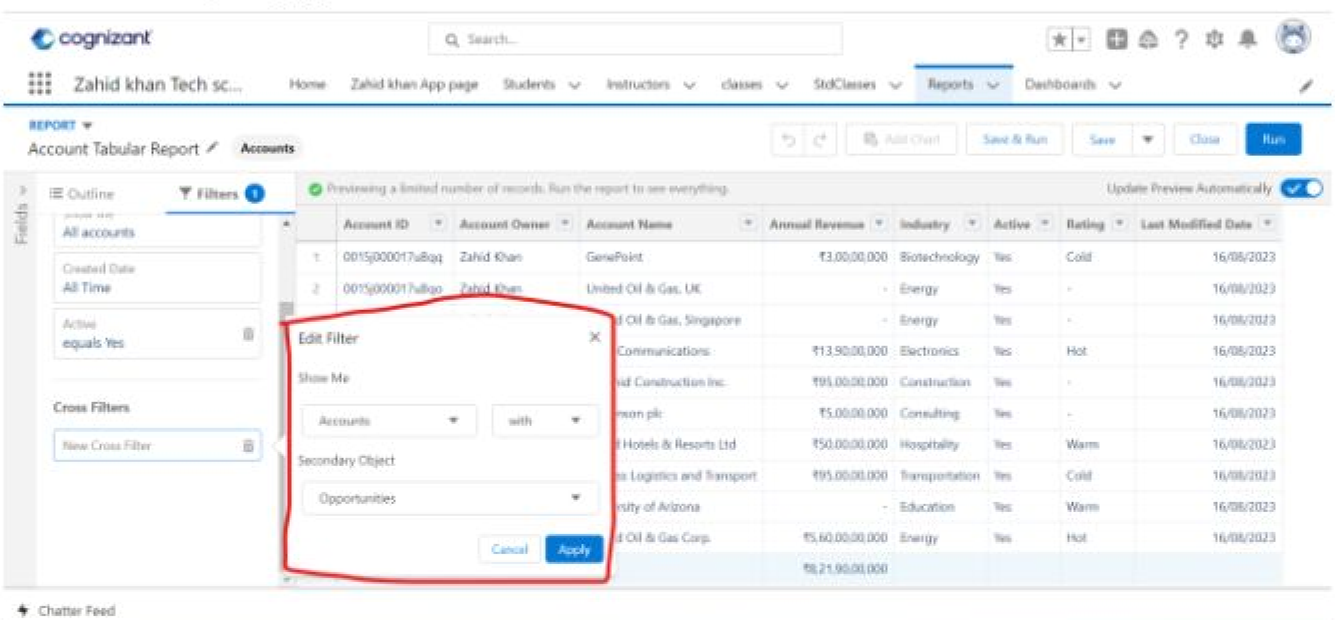


- we can apply 4th type of filter called **cross filter**. For this open reports from folder after that click on edit then click on filter from left hand side menu and click on arrow beside filter and choose add cross filter.

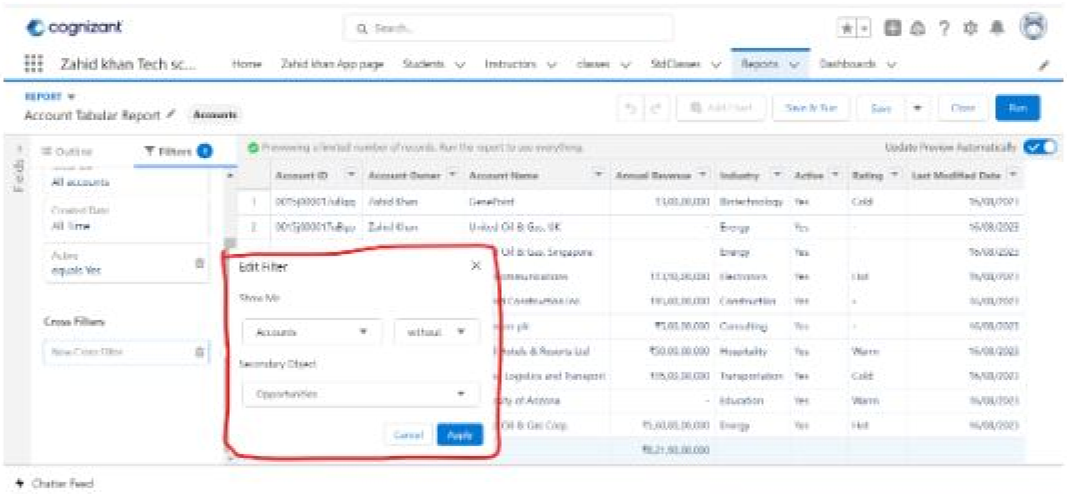


- As we know cross filter work with and without child object. For example, in below image we have records of account then need to select with or without and lastly secondary object (child object). For example, we are selecting with and secondary object opportunities. It means that only those reports will be shown which contain opportunities. If we select without so its show reports of account which does not contain opportunities.

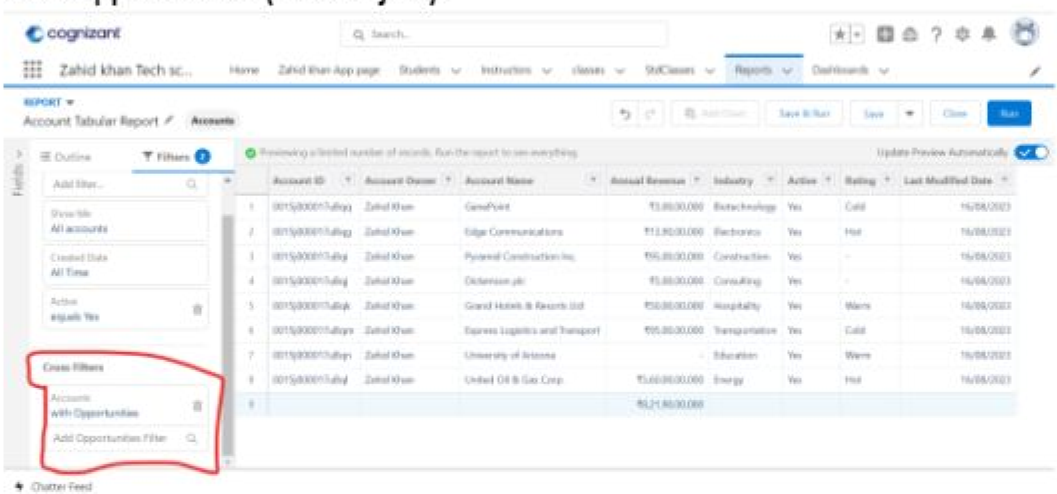
  I. **with**



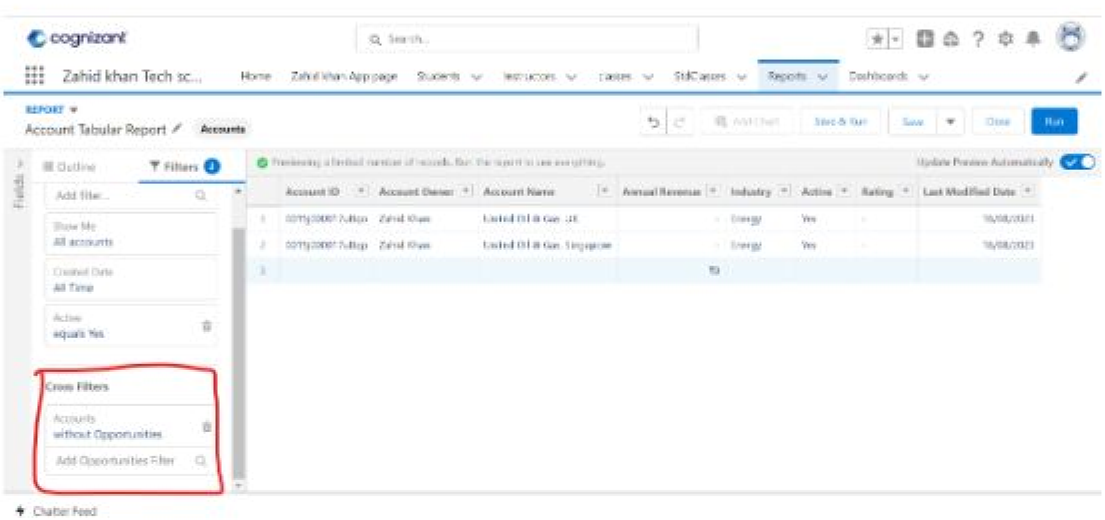
II. Without



- **With opportunities (child object).**



- **Without opportunities (child object).**

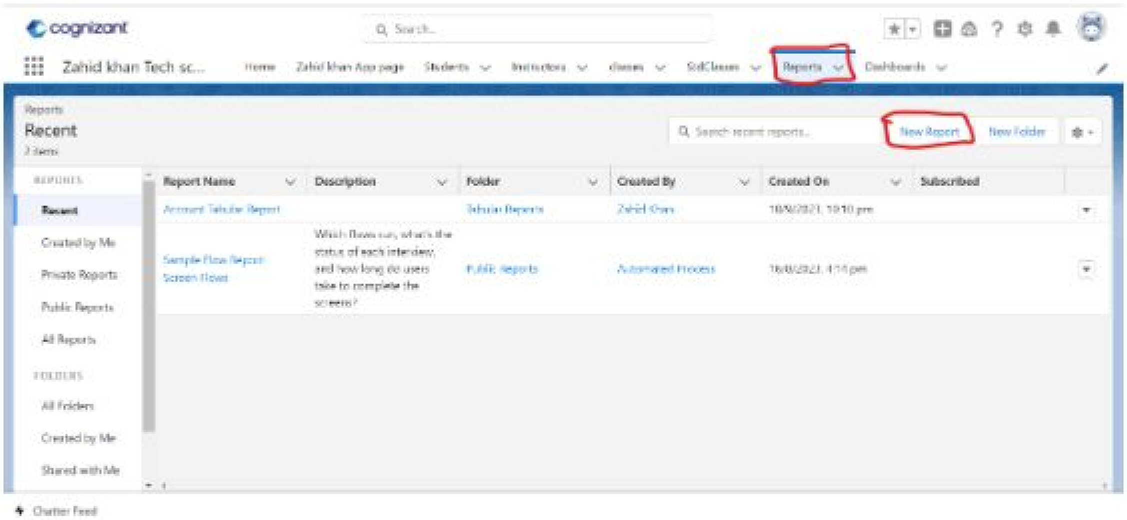


Summary report

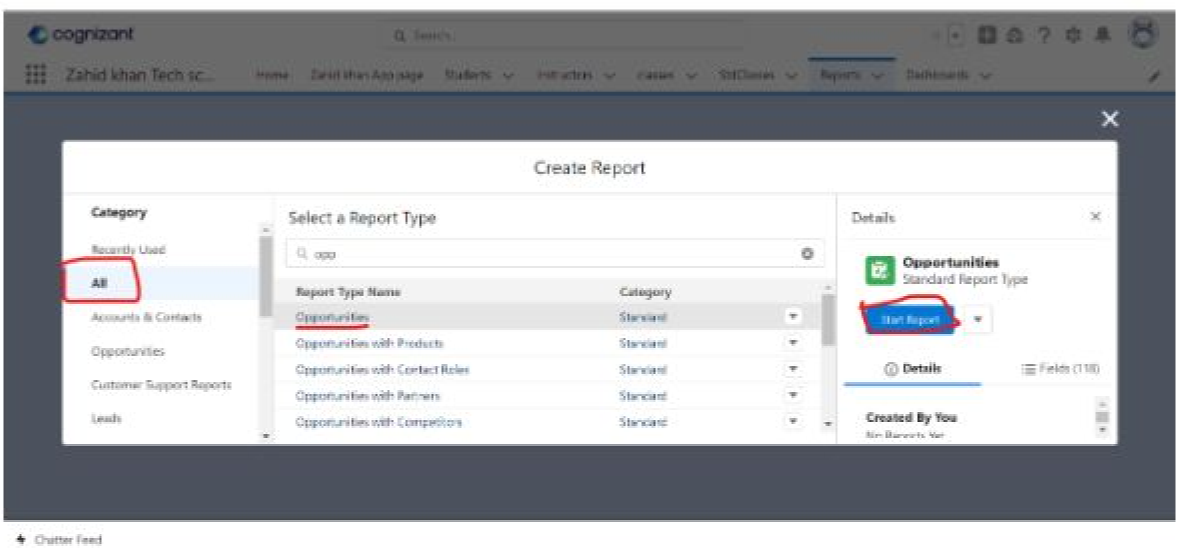
- Summary reports only based on Row and column.

Steps to create summary reports:

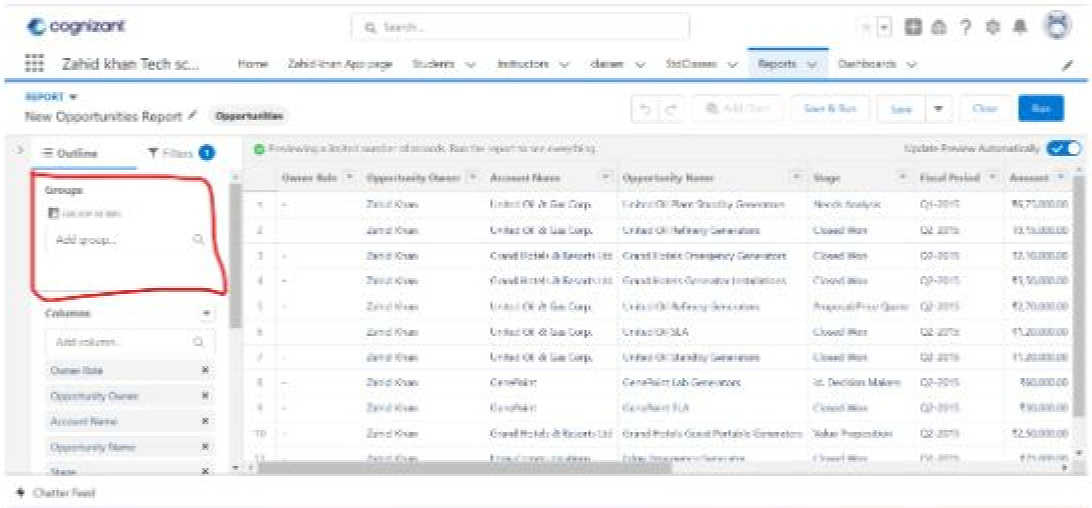
- Go to App front-end and click on reports tab after that click on new report.



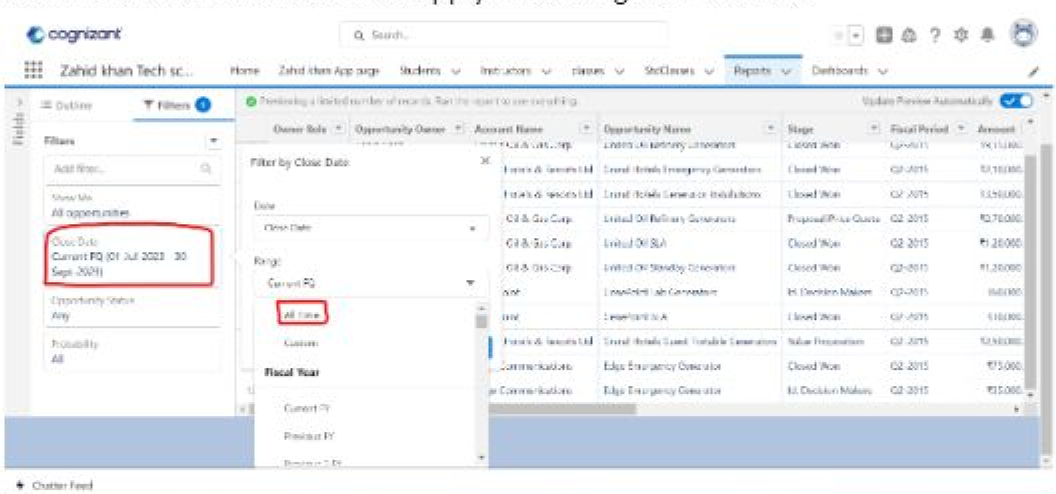
- Now click on All from left side menu and search for Report type. For example, here we are making summary reports of opportunities record type. After that click on start report.



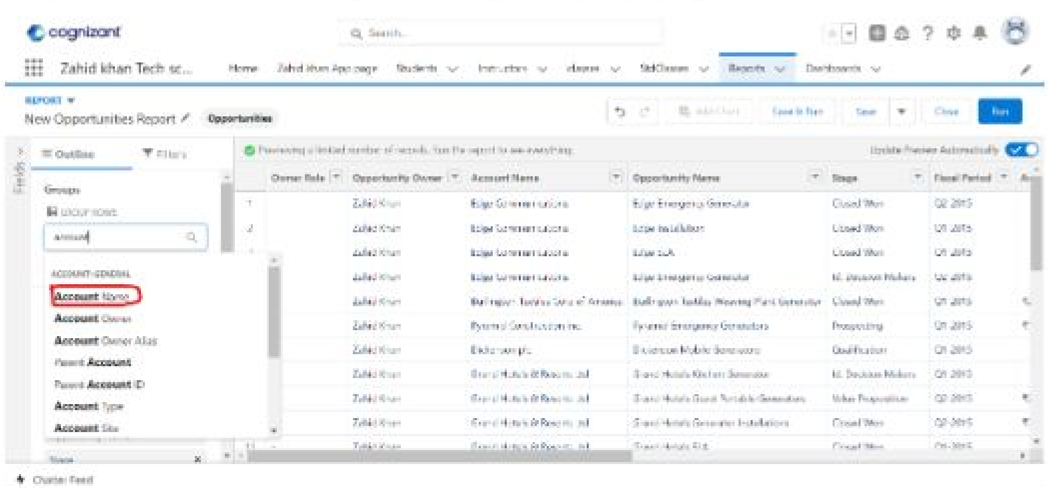
- Now summary report is based on grouping, so we have to focused on Group session. We can group the report using any column in our reports using **add group** search box.



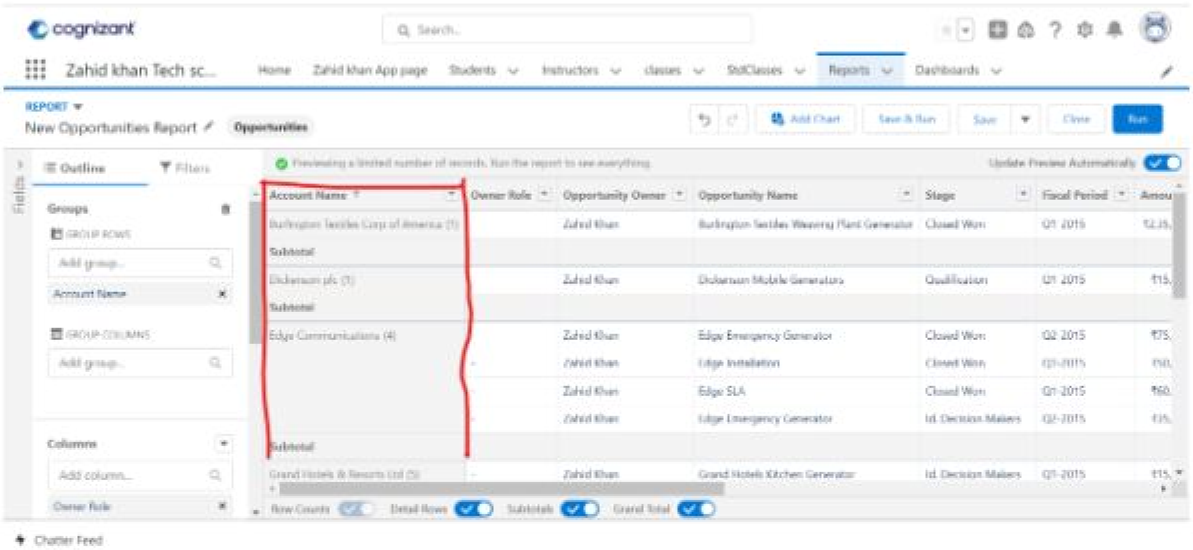
- before apply grouping go to filters and change the Close date to All time so that we can see all the records. And click on apply. Now we got all records.



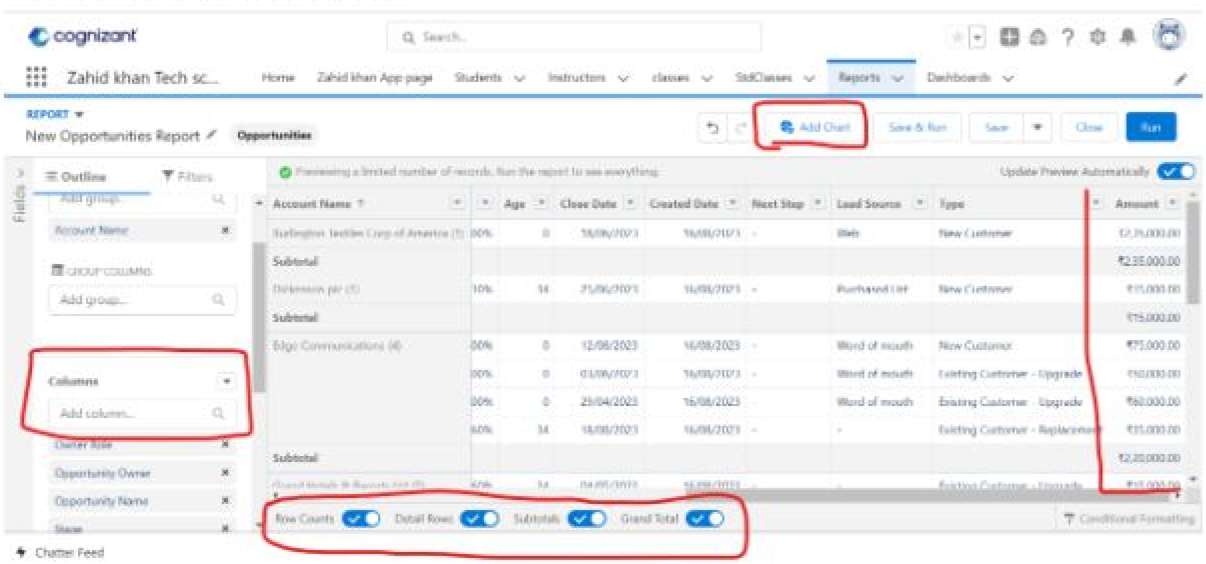
- After that we can apply grouping in summary reports using **Groups** session. For example, we are using **Account name** for group reports.



- After grouping in summary reports using account name, we will see the multiple reports for one account name instead of repeating the account name for all records.

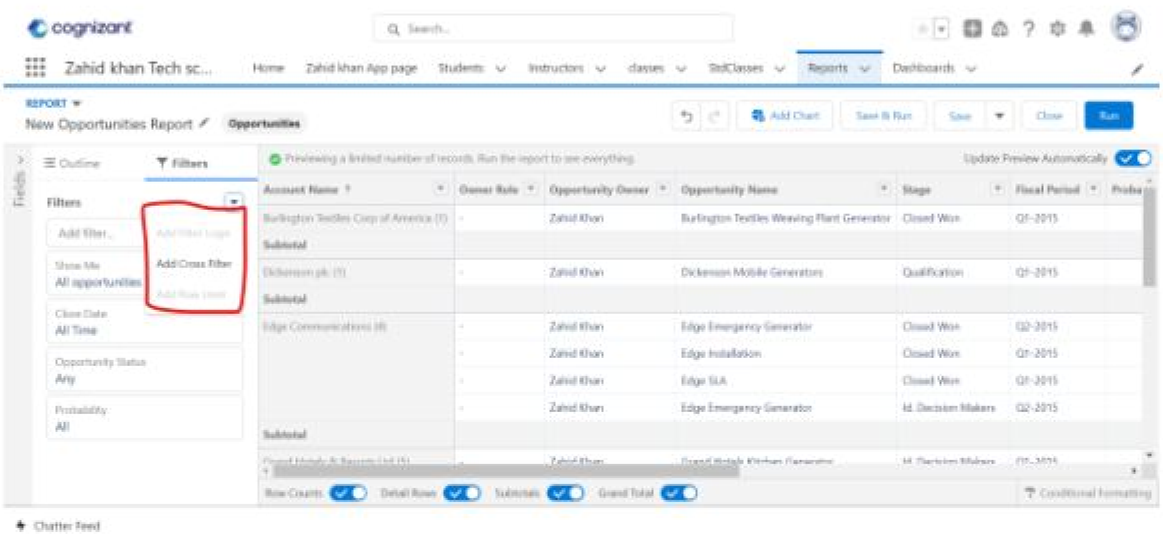


- Amount column in reports in not showing subtotal correctly so remove the amount and enter again by searching amount in column section and add it. After that we will see amount subtotal.
- We can also see the **Add chart** option which is not available in tabular reports.
- At bottom of the reports, we have options subtotal and grand total toggle button. If we want this, then we can on it or disable.

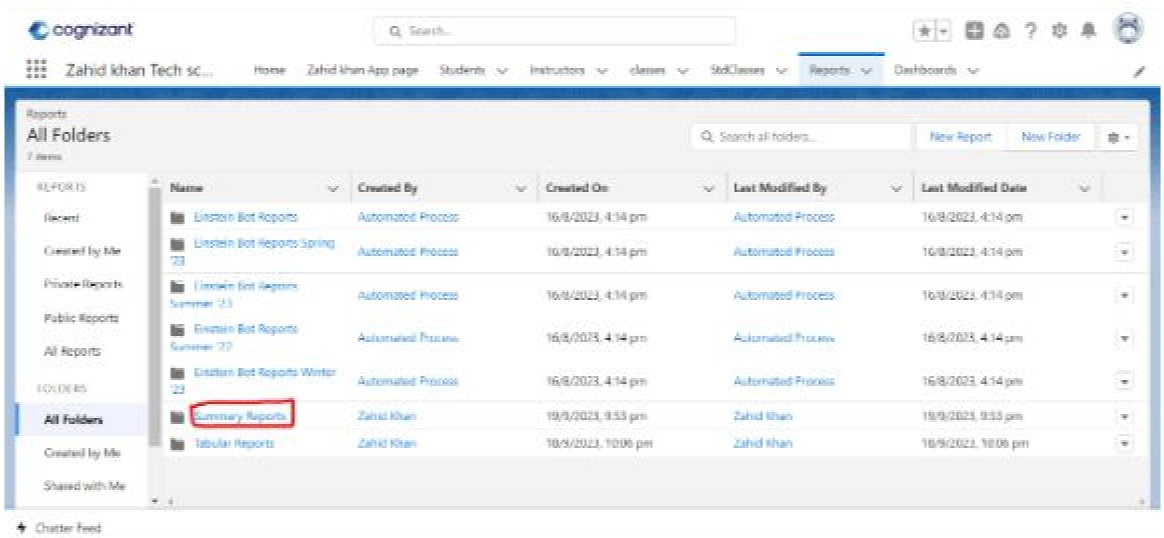


- Rest of things are same as tabular reports we can apply all 4 types of filters using filter section from left hand side.

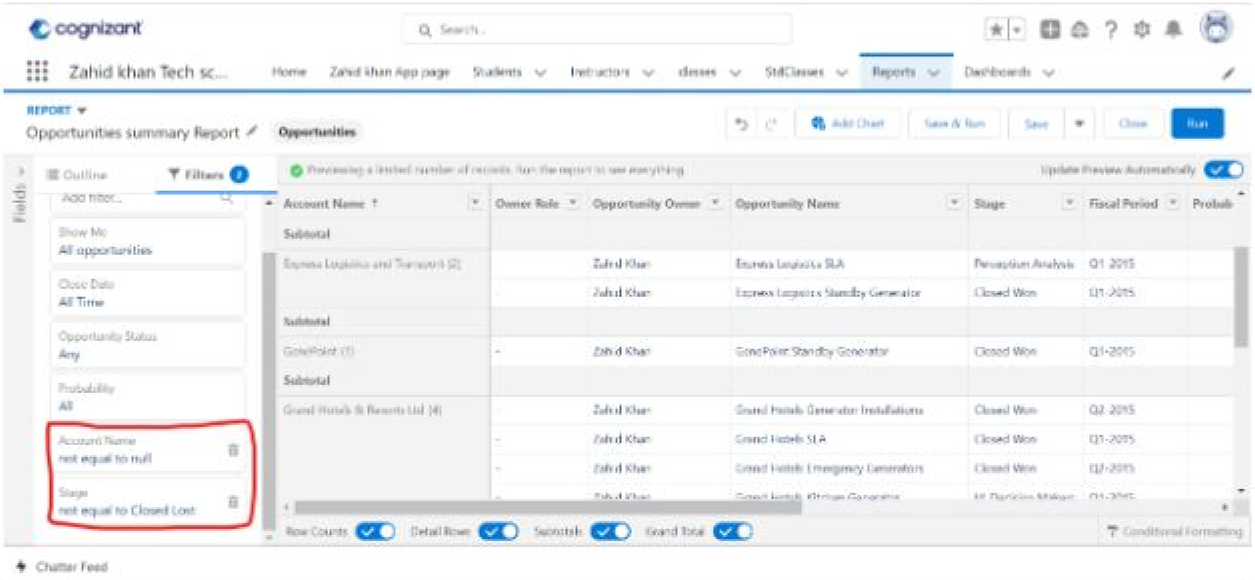
- In filter section, we will not see the add logic filter because we are not applying any custom filter. After applying we are able to apply the logic filter. We have one more option in filter to limit the row.



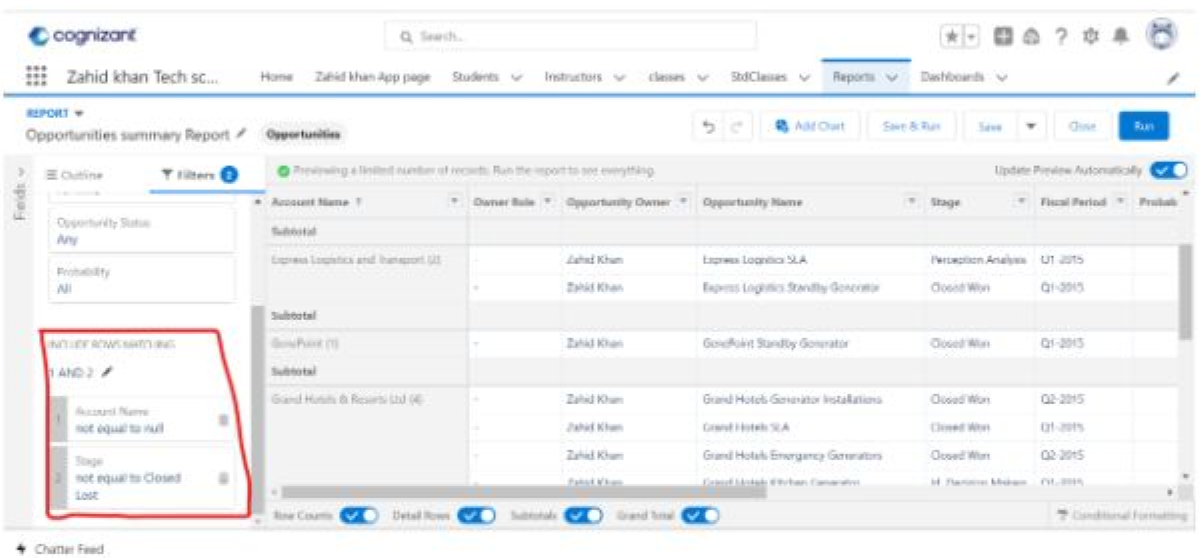
- After making reports now save the reports by creating a folder same as tabular reports name the folder as Summary reports. All the summary reports we can save inside this folder.



- Now we are applying Field specific filter (custom filter). For apply custom filter we have to search field from **Add filter.** For example, we are making custom filter for **Account name is not Null** and **Stage is not closed lost**. So that reports will show only those data which satisfy these criteria.

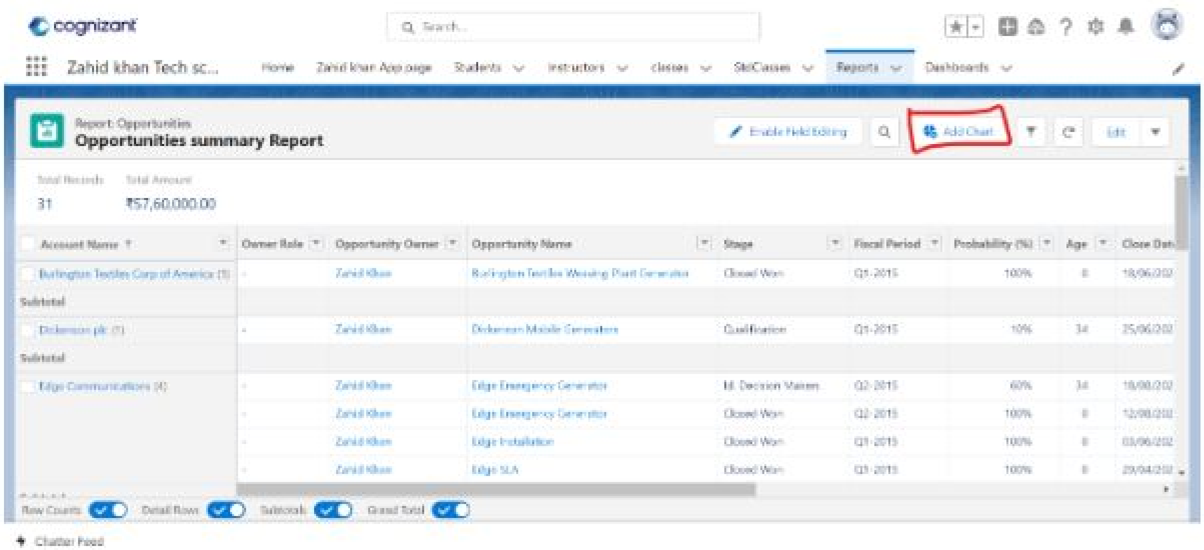


- Now after applying custom filter, we are able to see the Add logic filter option. For example, we are going to add logic filter like Account Name and Stage should be True. So, we are going to add AND operation. This is how we can apply logic filter.
- in same way we can apply cross filter like tabular reports.
- Now to save the records click on save.

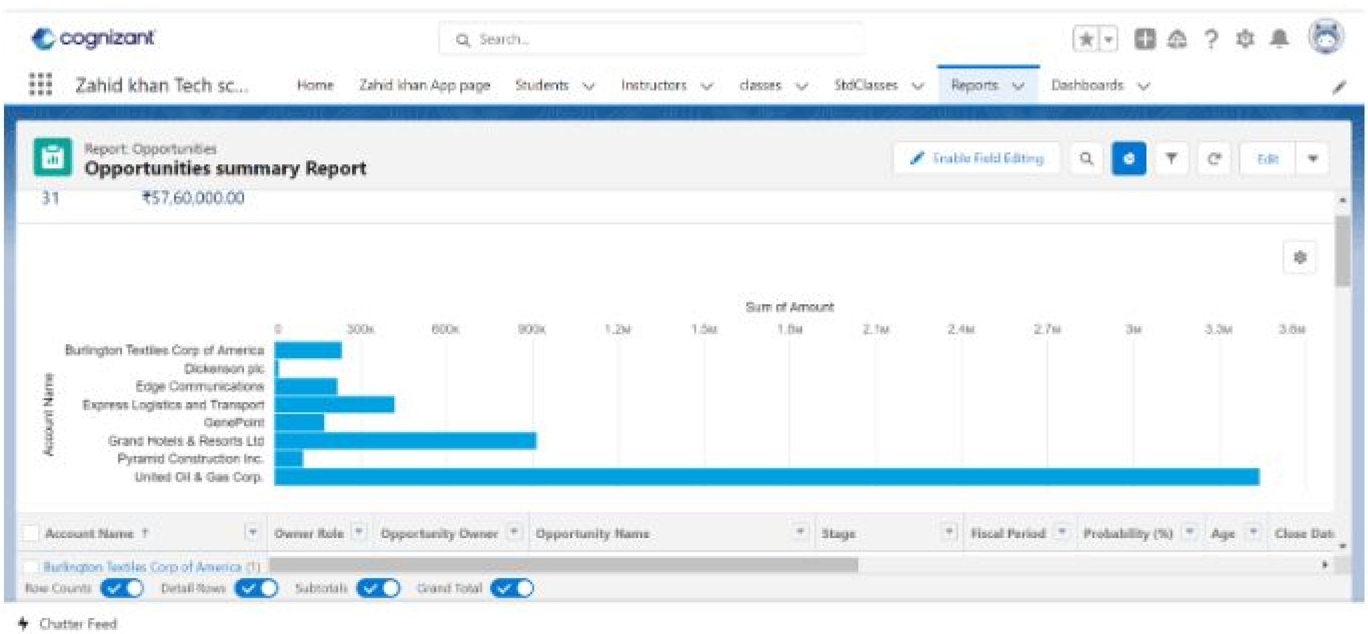


Steps to Add chart in summary Reports:

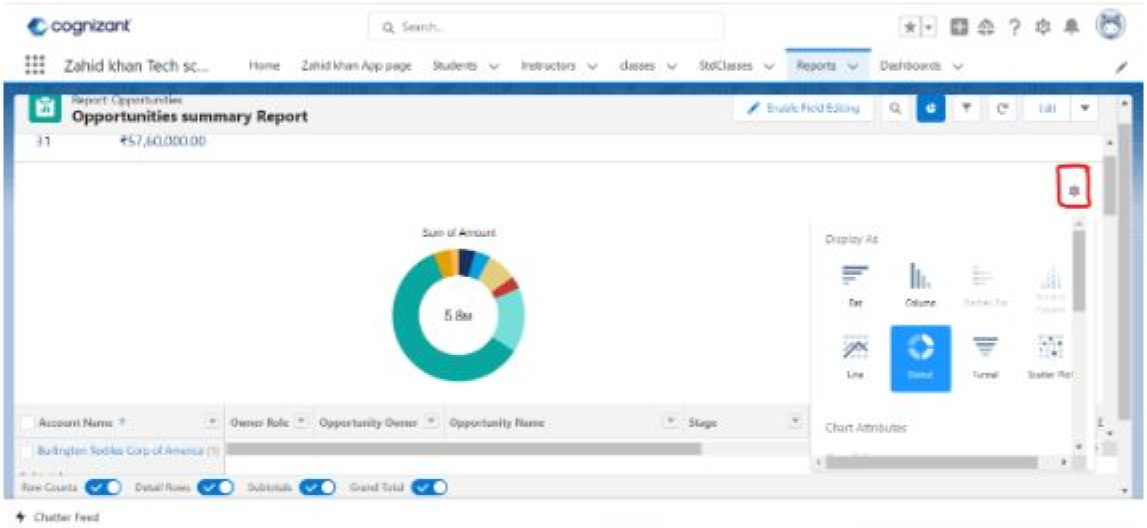
- As we know that we can add chart in summary and matrix reports only.
- For adding chart in summary report. Open the records from summary folder in which you want to add chart. And click on Add chart.



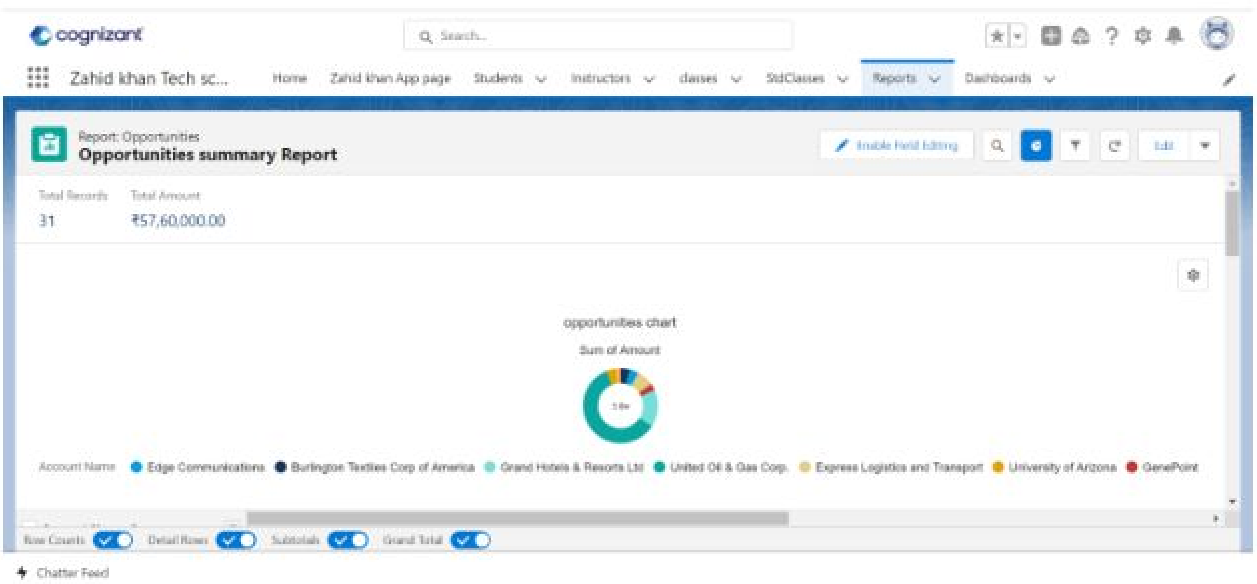
- After clicking on Add chart we will see the chart will appear on the page along with reports.



- By clicking on setting icon on chart we will add different types of charts.



- Inside this setting icon we have an options chart attribute. In which we add chart title, value, sliced by, and legend position to right and bottom. We can adjust these based on project requirements.
- Now click on save to save the reports with chart. After that click on run to see the results.

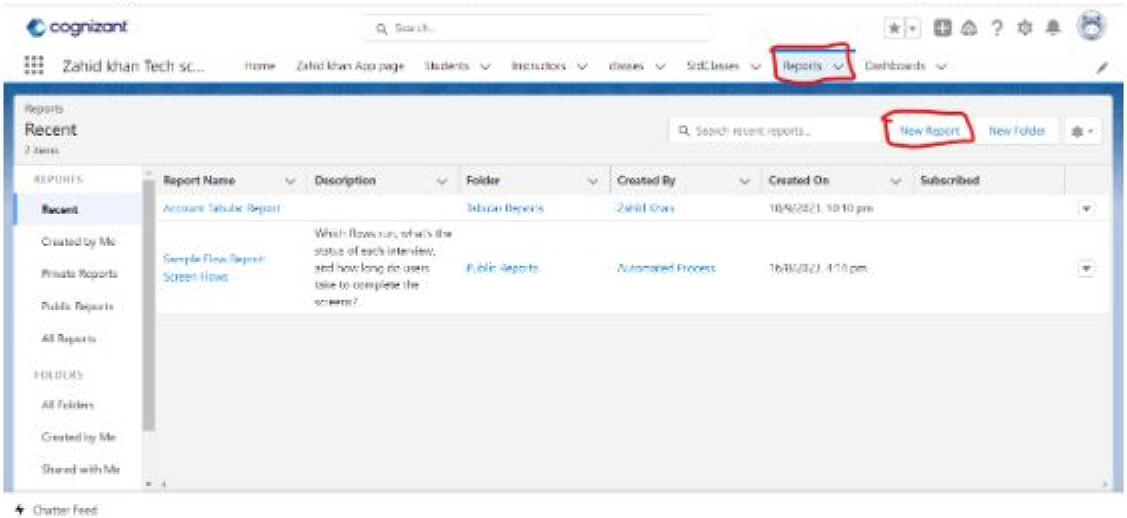


Matrix reports

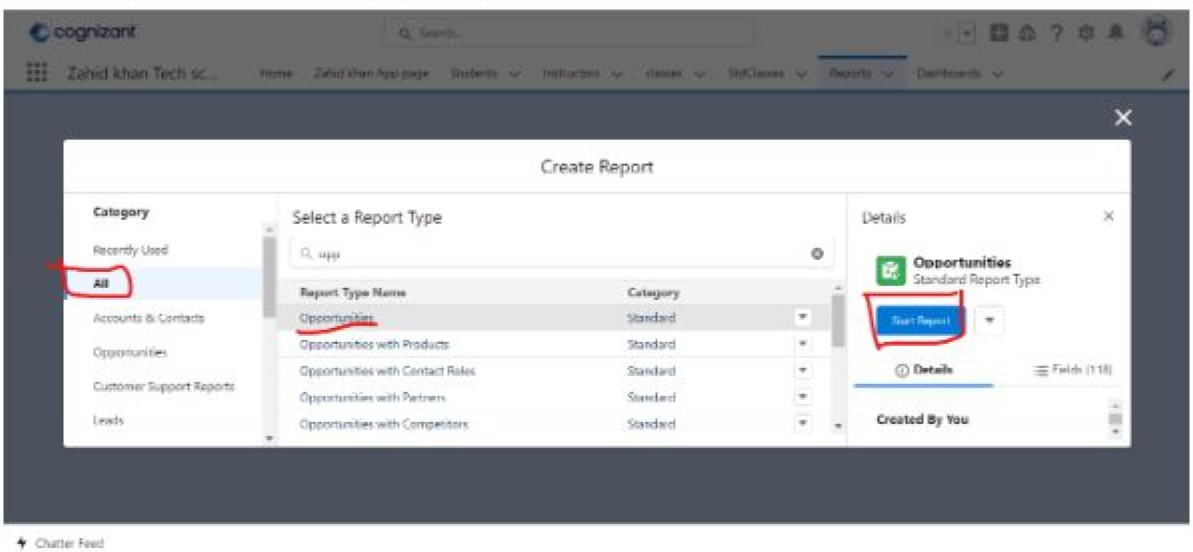
- Matrix reports based on Rows and column.

Steps to create matrix reports:

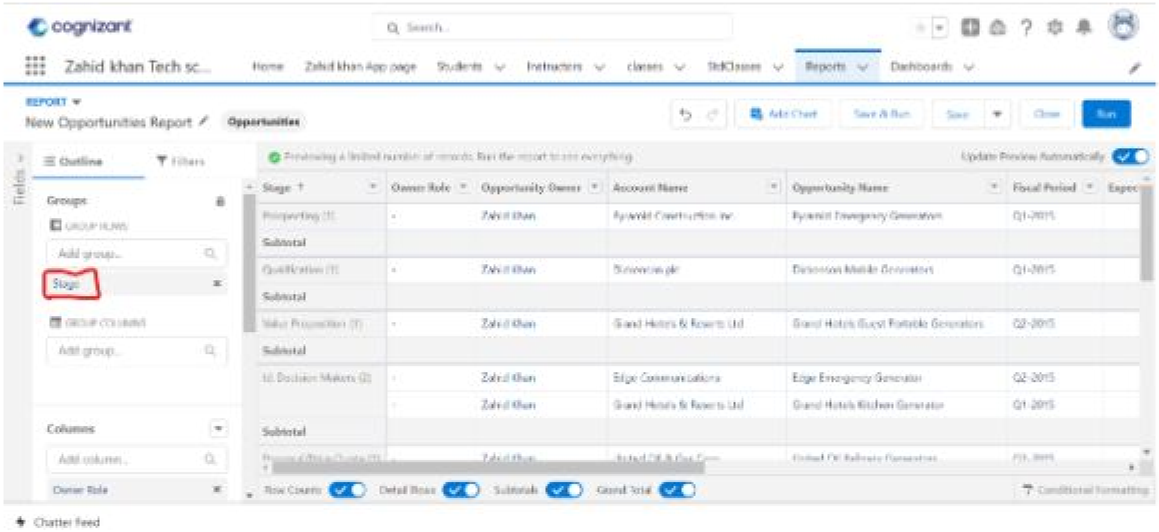
- Go to App front-end and click on reports tab after that click on new report.



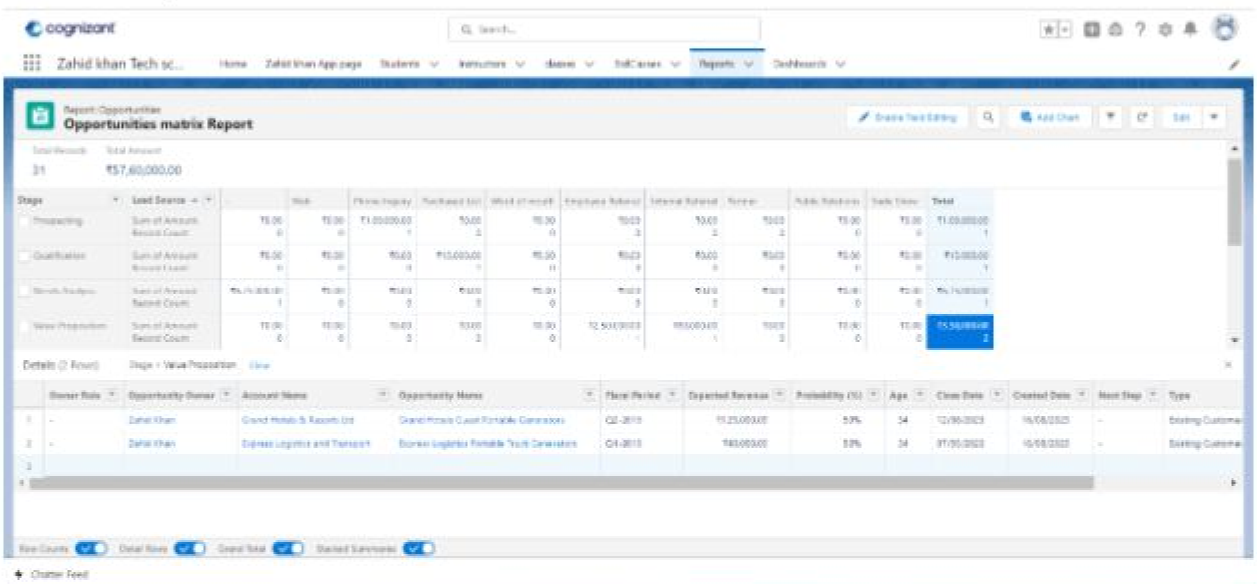
- After that click on all and search for report type. Here we are choosing opportunities for report type. After that click on start reports.



- After that go to filter and in close date choose All time to show that all data in reports.
- Now go to outline and add group rows by entering Add group name in Group session. For example, we are group row using **Stage**. So, the reports is grouping using stage.



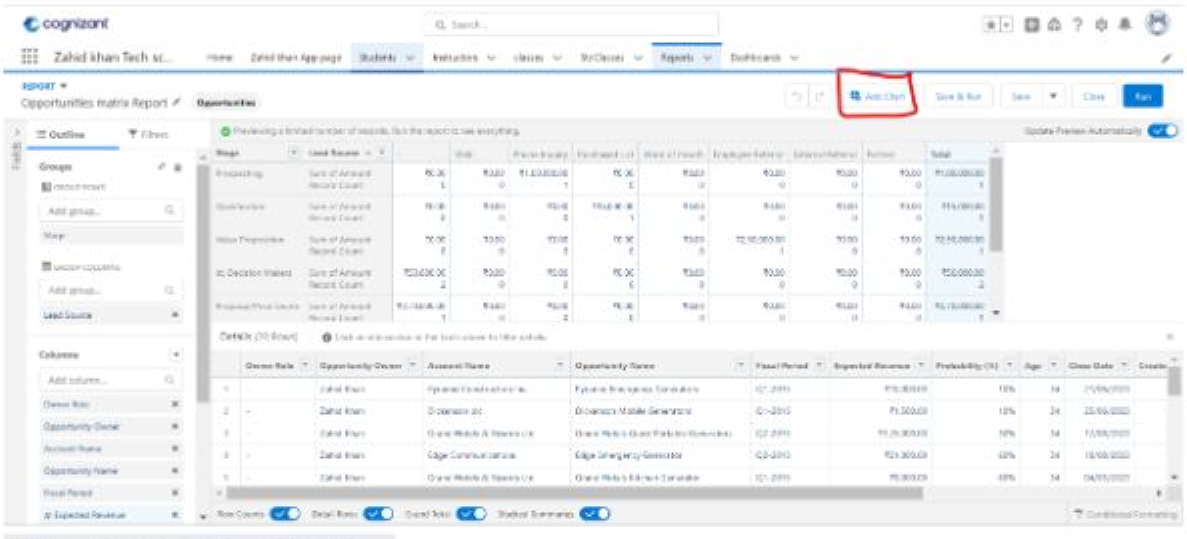
- After adding group row, we have to add group column inside group session to create matrix reports. For example, we are entering lead source.
- Now save the reports in matrix folder by creating it and run the report. This is how matrix report look like.



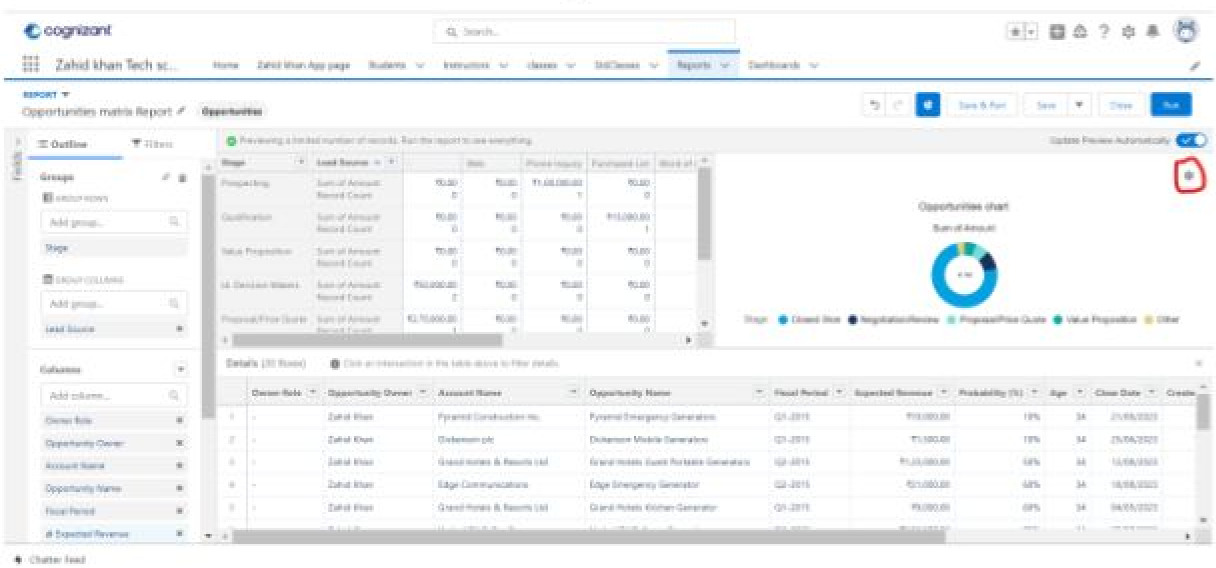
- By clicking on cell of Stage we can see the related reports details.

Steps to create chart in matrix Reports:

- We can add chart for matrix report same as summary report.
- Open the reports from matrix folder and click on edit. After that click on Add chart option on top



- By click on setting icon beside chart we can add any chart. Inside this we have same option as summary chart title, value, sliced by Stage or Lead source because we have both in reports and legend position.
- Matrix chart will show beside the matrix reports. Now save the records and click on Run.



- We can add anything related to chart using this setting icon.

Day-09

Reports on custom object

- To make reports on custom object we have to understand about reports type.
- We have to enable reports type in custom object.

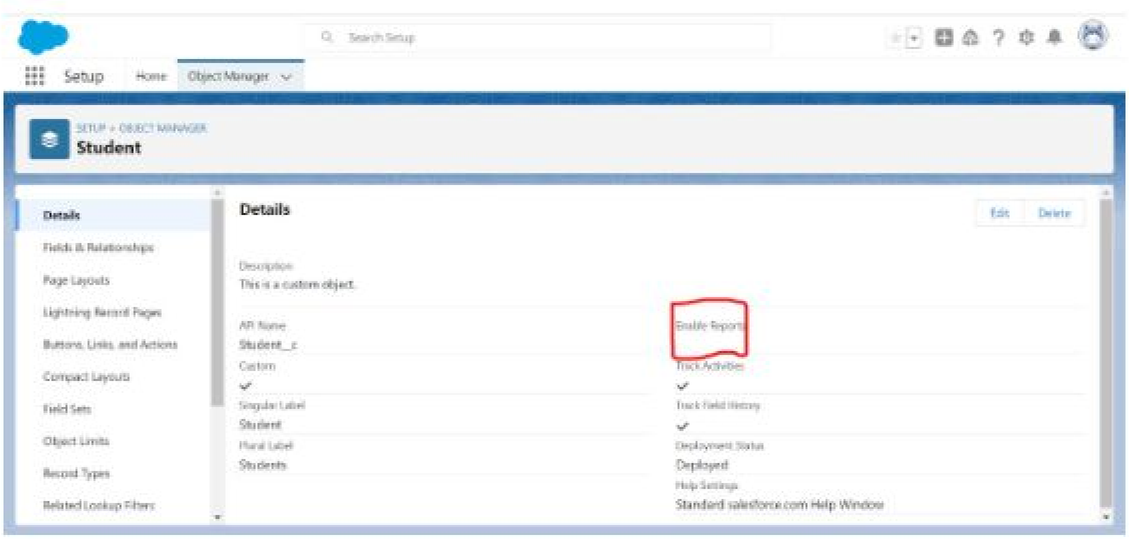
Report types

- Report type is like a template for reports.
- Report type determines which fields and records are available for use, when one is creating a report.
- This is based on relationships between a primary object and its related objects.
- For example, account with contact report type, account is primary report and contact as related object.
- Reports display those record that meet the criteria defined in report types.
- For example, when we create new report and searching for record type of custom object so it will not available because report types of custom object is not active.
- While creating report we got 2 options.
    1. Primary object with related objects.
    2. Primary object with or without related object.

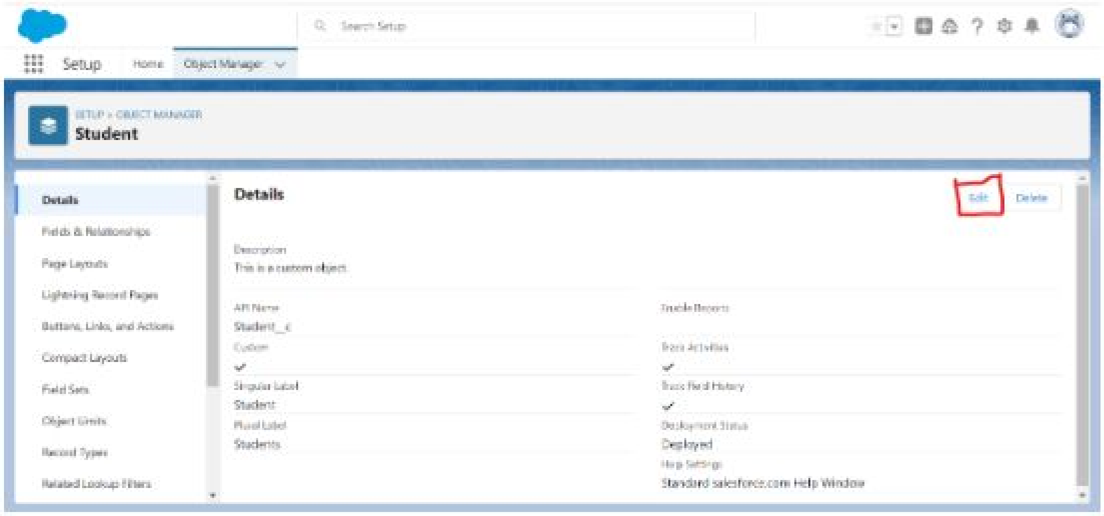
Steps to enable reports custom object:

Before making reports on custom object, we have to **enable reports** on that object. For example: we are enabling reports of student object.

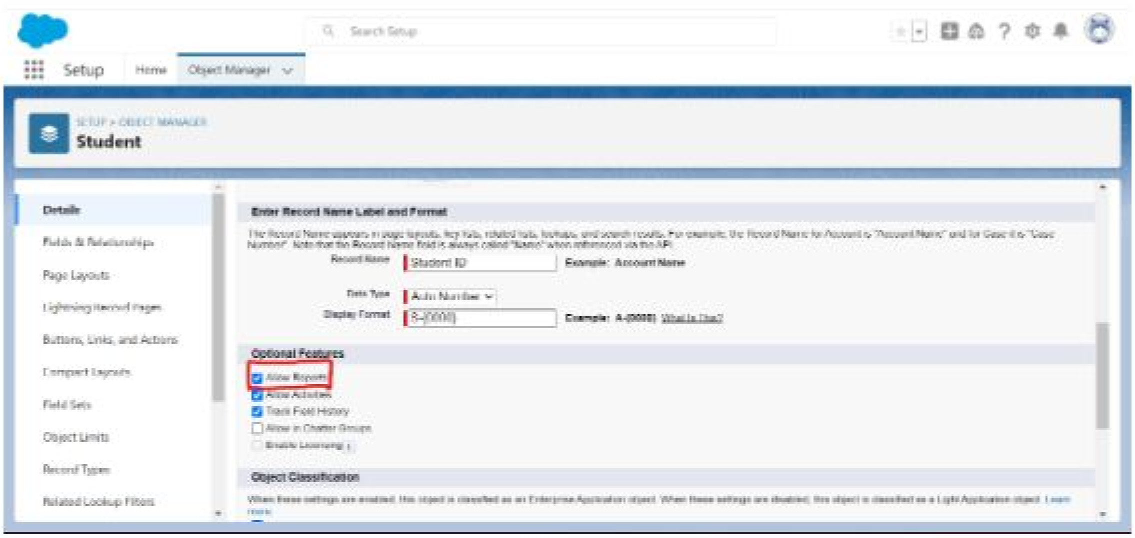
- Go to setup and click on object manager after that search for student object (custom object). And open student object. We will see in detail that **Enable reports** is not active, so we need to active this.



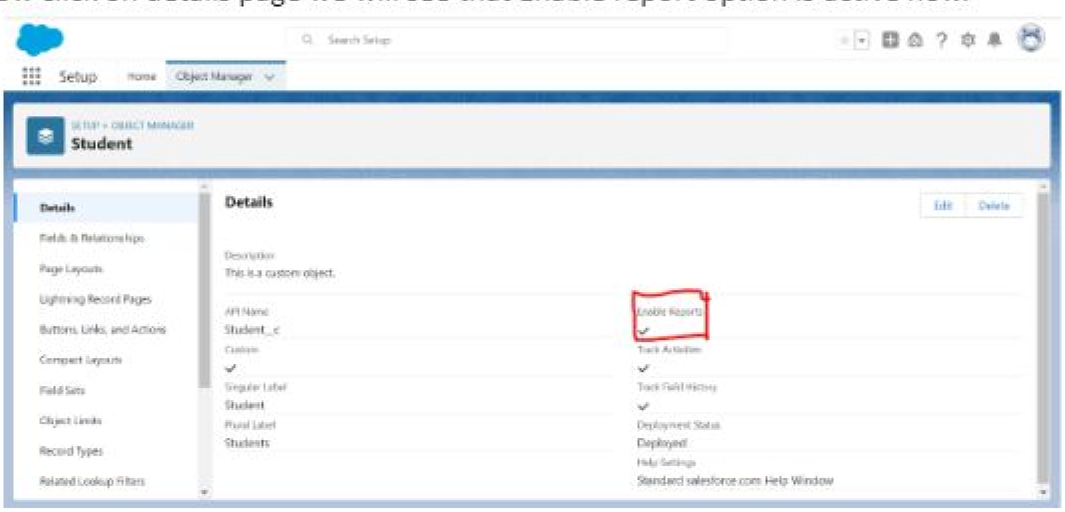
- For active enable reports click on Edit.



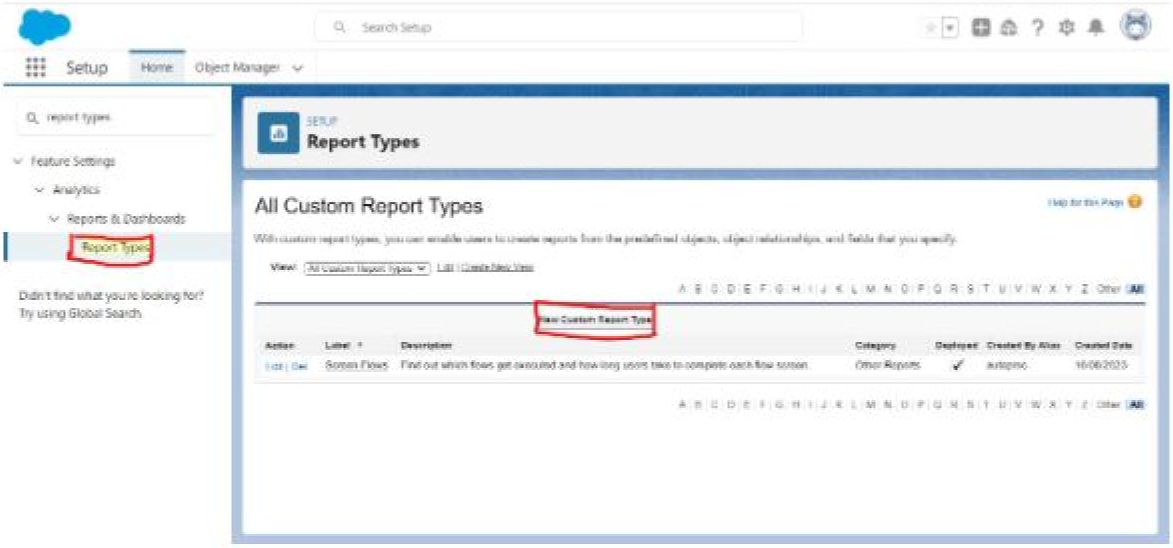
- In optional features select **Enable report** option. And click on save.



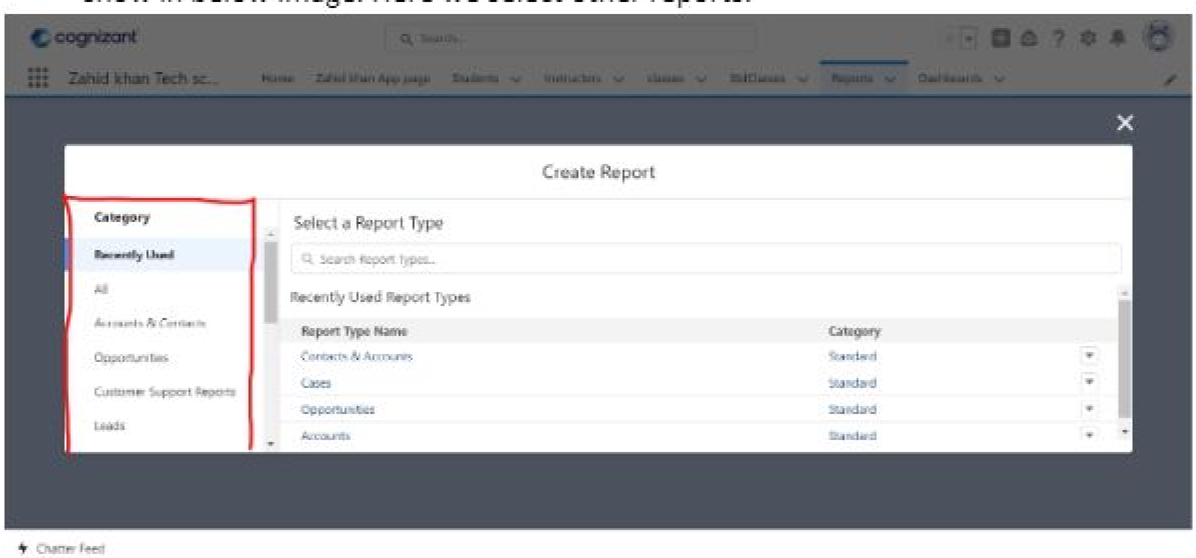
- Now click on details page we will see that Enable report option is active now.



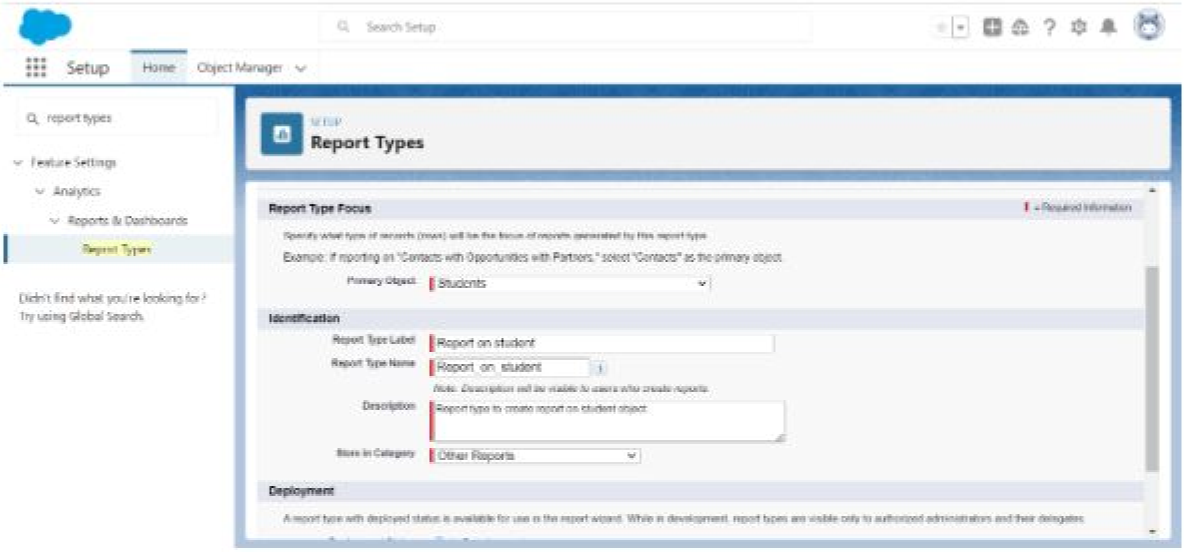
- now go to Home and search **Report Types** in Quick search box. After that click on Report Types. After that click on New Custom Report Types.



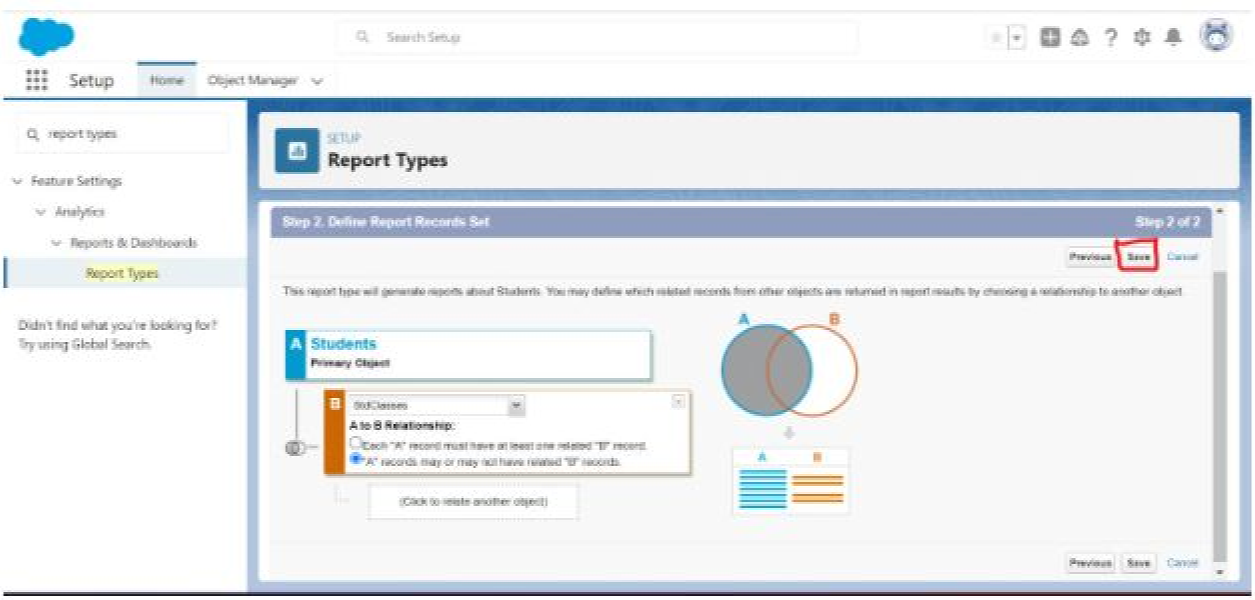
- After that we got 3 options **Report type focus**, **Identification**, and **deployment**.
    I. In Report Type focus we have to select the object (i.e., student object) for which we want to create report from primary object drop down.
    II. In identification enter Report type label, report type name, description, and store in category. Store in category means we have to select the category in which the custom object (i.e., student object) will store as show in below image. Here we select other reports.



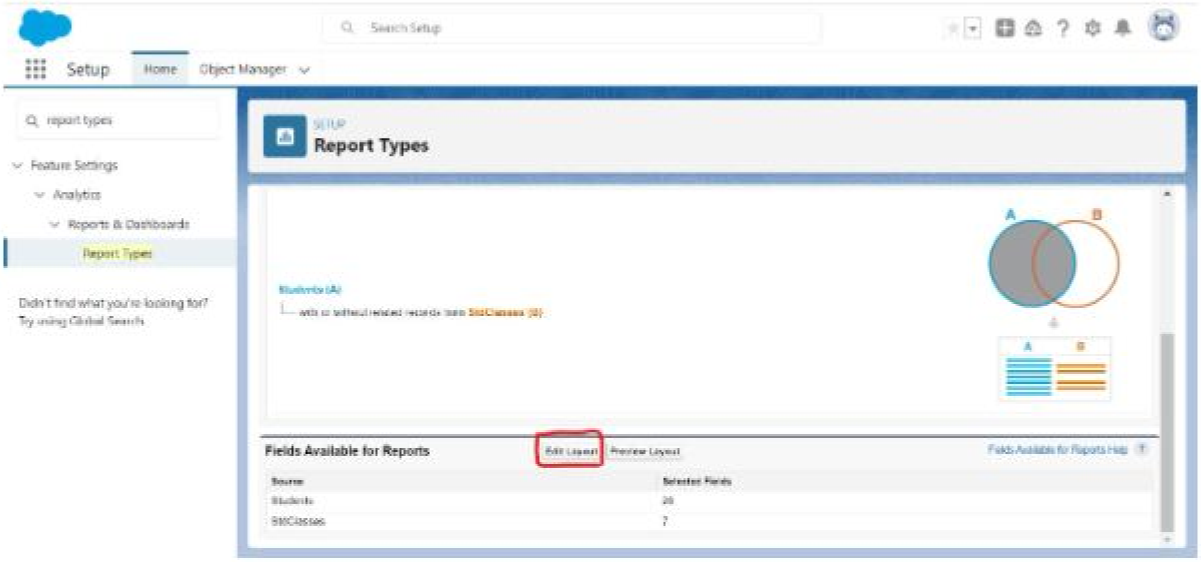
    III. In development we have to select development or deployed. Here we are selecting development.



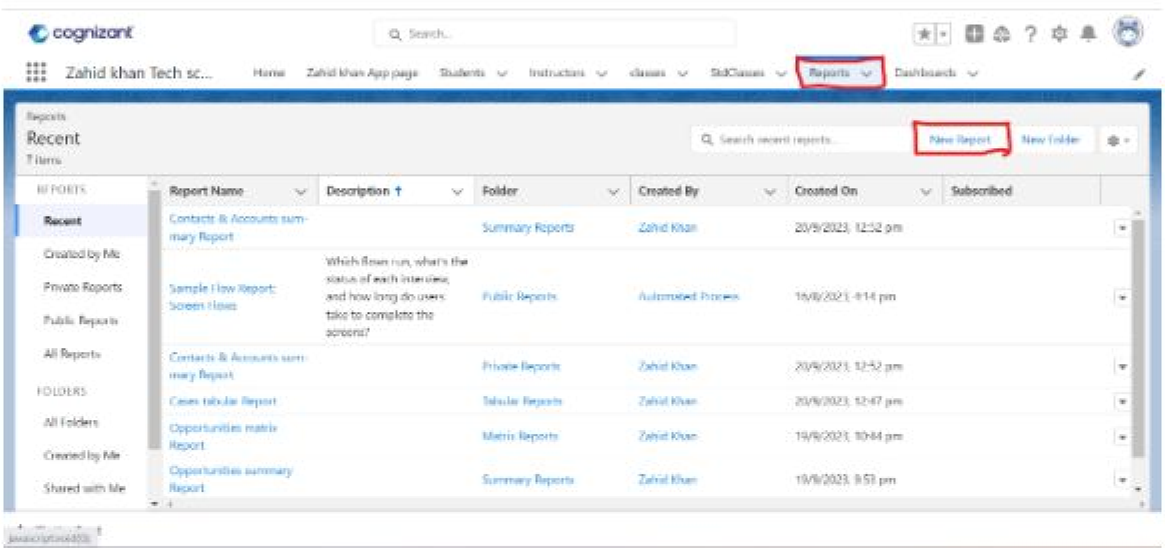
- now click on next. On next page we got define report records set. Which means **This report type will generate reports about Students. You may define which related records from other objects are returned in report results by choosing a relationship to another object.** In below image A is primary object and B is a secondary object. In B object we got 2 options, 1st Each A record must have at least one related B record. 2nd A record may or may not have related B record.
- Here we are selecting stdClassses as B object and select 2nd option. So all students record will available in reports. After that click on save.



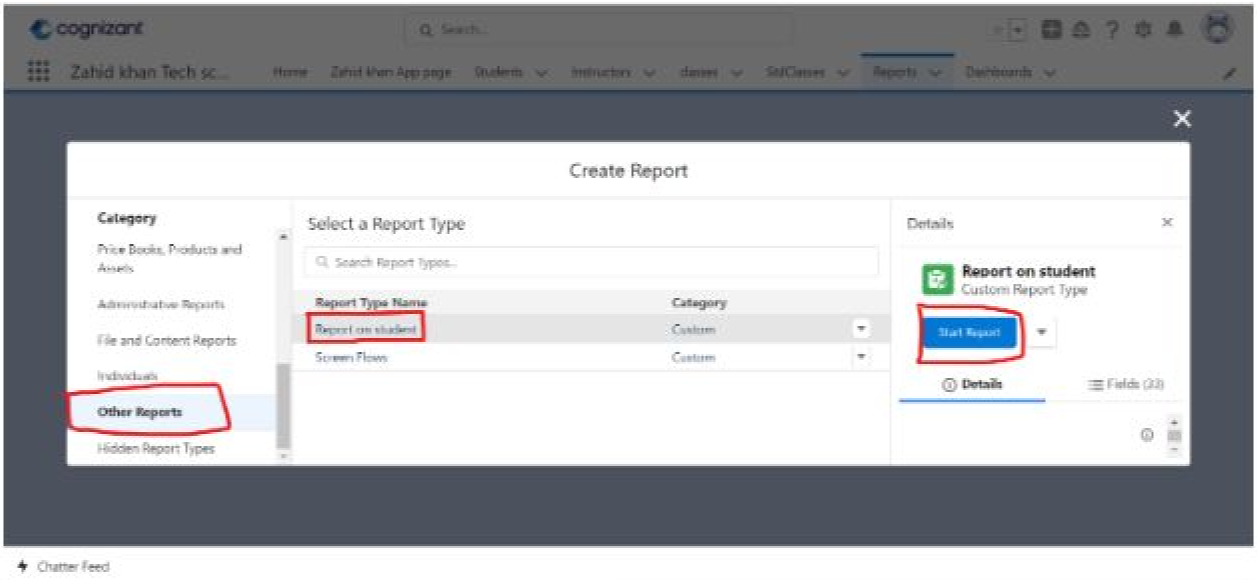
- After saving the page we will see how many fields in student object and in stdClasses object. If we want to add or remove any field, click on edit layout.



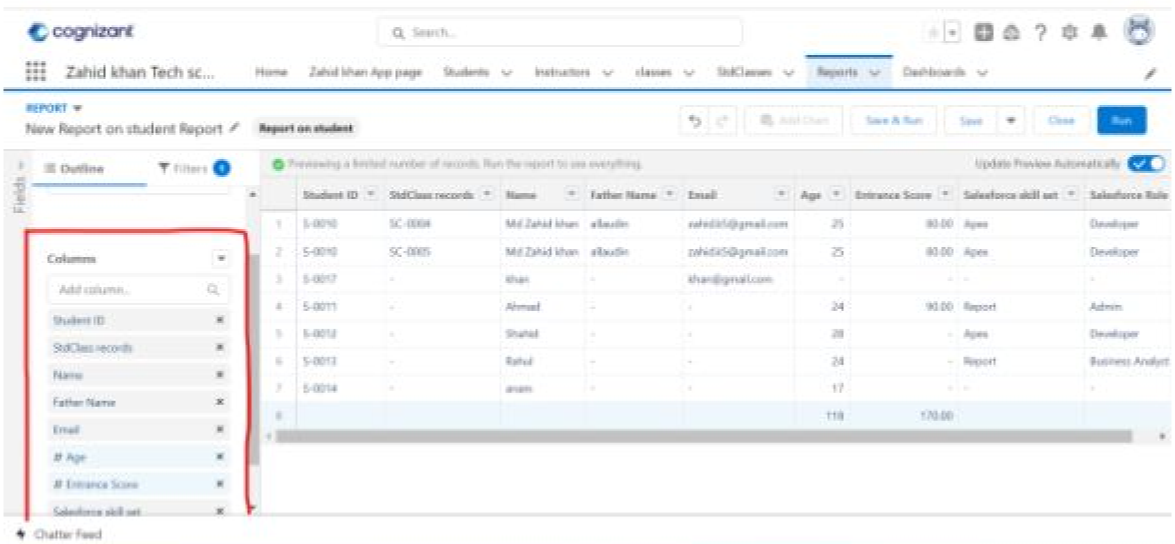
- on edit layout page we can see all the field if we want to remove or add any field so we can do in this page. We have edit properties button. By using this we can edit the name of any field.
- Now report types of student object (custom object) is created.
- Go to front-end and click on Report tab and click on New Report.



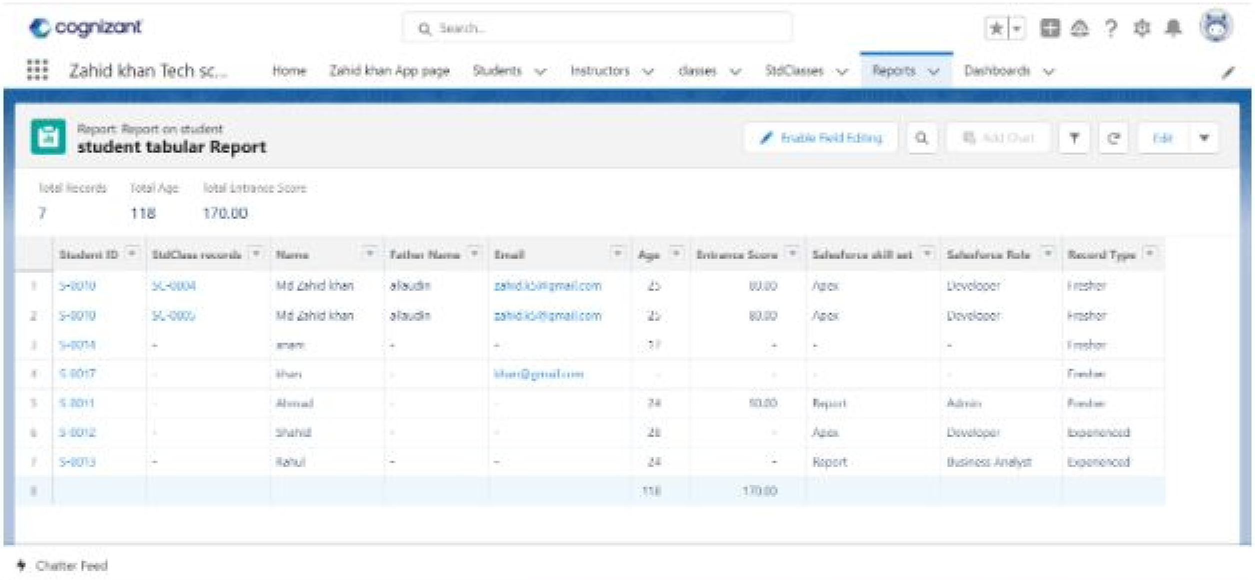
- After that click on other reports in category because we are saving student object in other category.
- Now we will see our custom report type name inside the other category.
- Now click on Report on student and click on start Report same as standard object records.



- Here we are creating tabular report for student object. Now add field from column section.

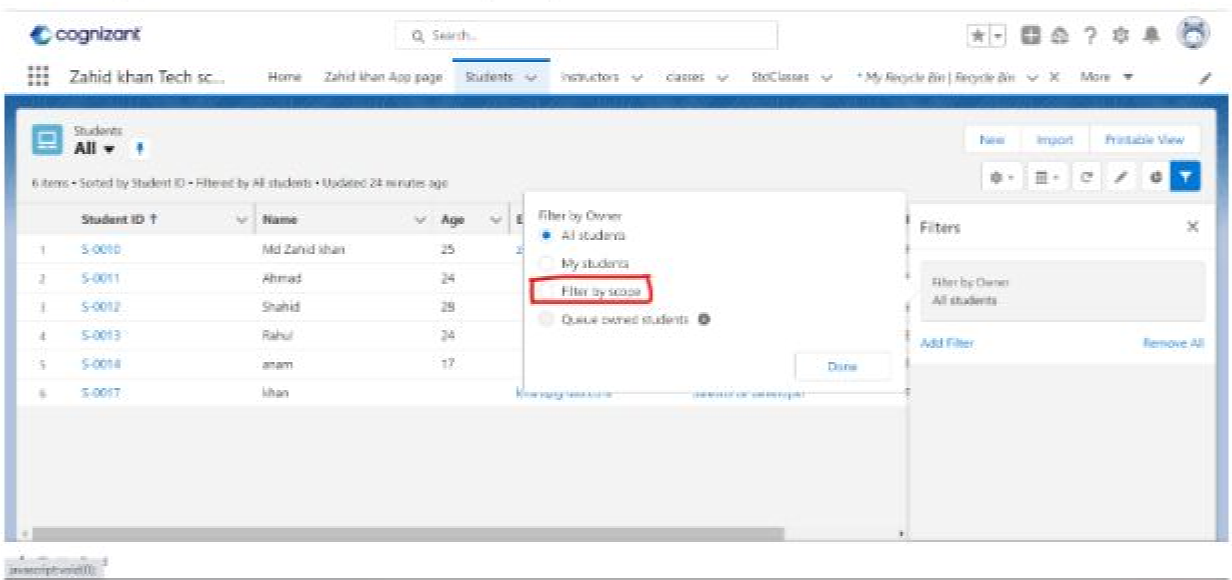


- We can apply all 4 types filter same as standard object report. Now click on save and save the report in tabular report folder which is created during standard object report creation. After that click on Run.
- Like standard object report we can create all 4 types of records for custom object.



Scoping Rule for Filter by scope

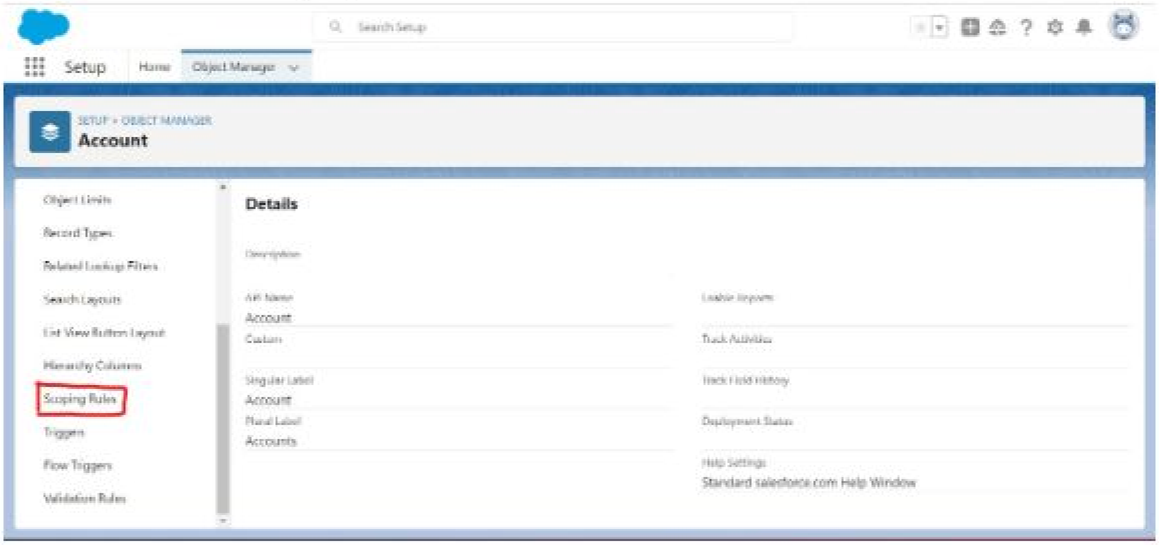
- We can see the option Filter by scope in list view filter. And in standard filter of report, we can see the Filter by scope.



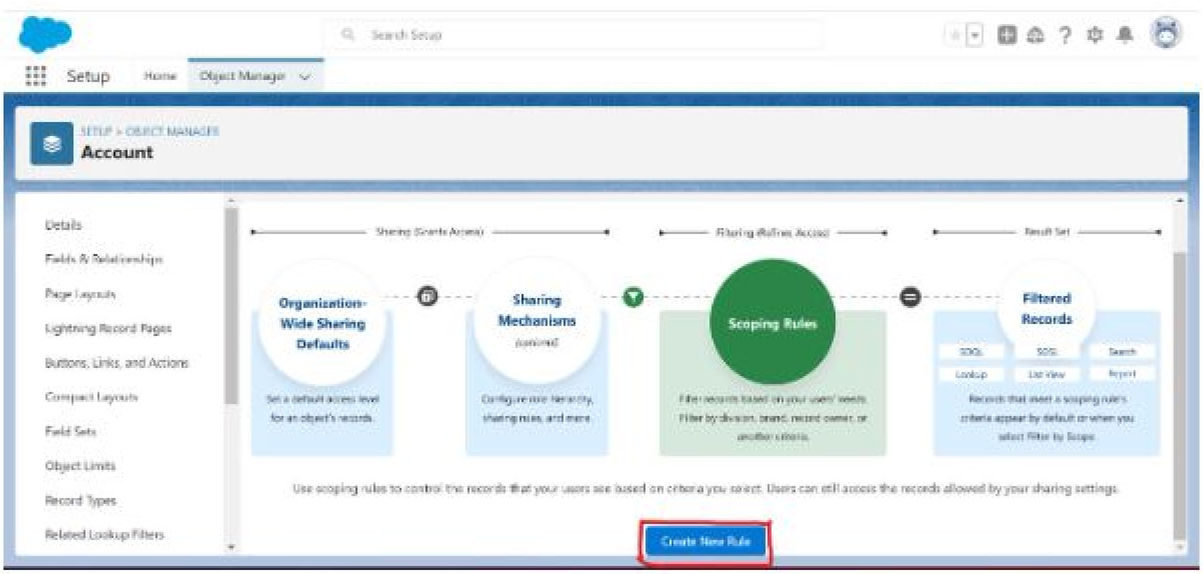
- To use filter by scope we have to set the scoping rule for that object standard or custom object.
- Here we are taking the example of Account object to set scoping Rule. Using we way we can set the scoping rule for all object.

Step to set scoping rule for Account object:

- Go to setup-up click on object manager and search for account object. now click on this and open it.
- After that click on scoping rule from left hand side menu.



- After the click on scoping rule and click on Create new Rule button.

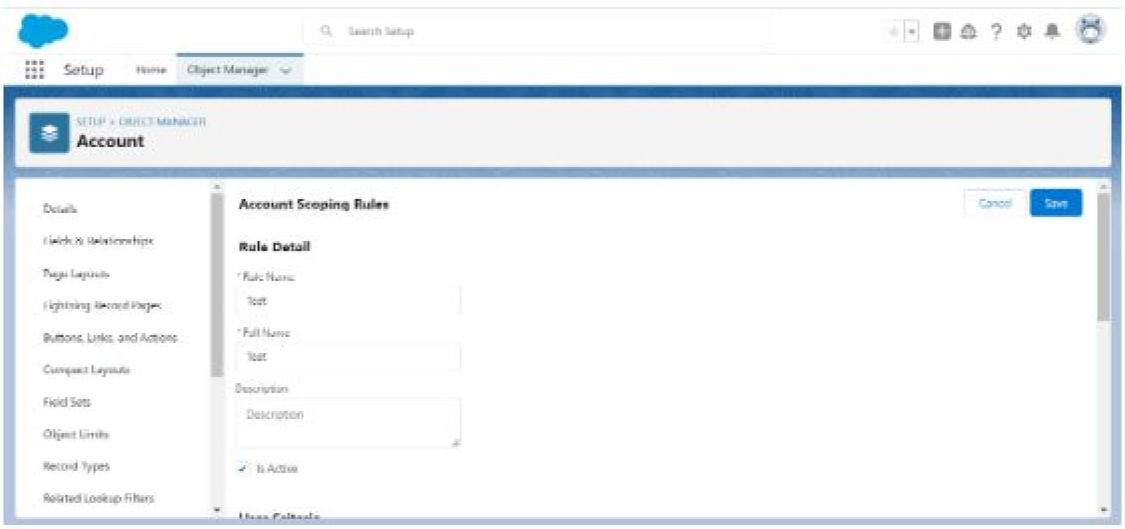


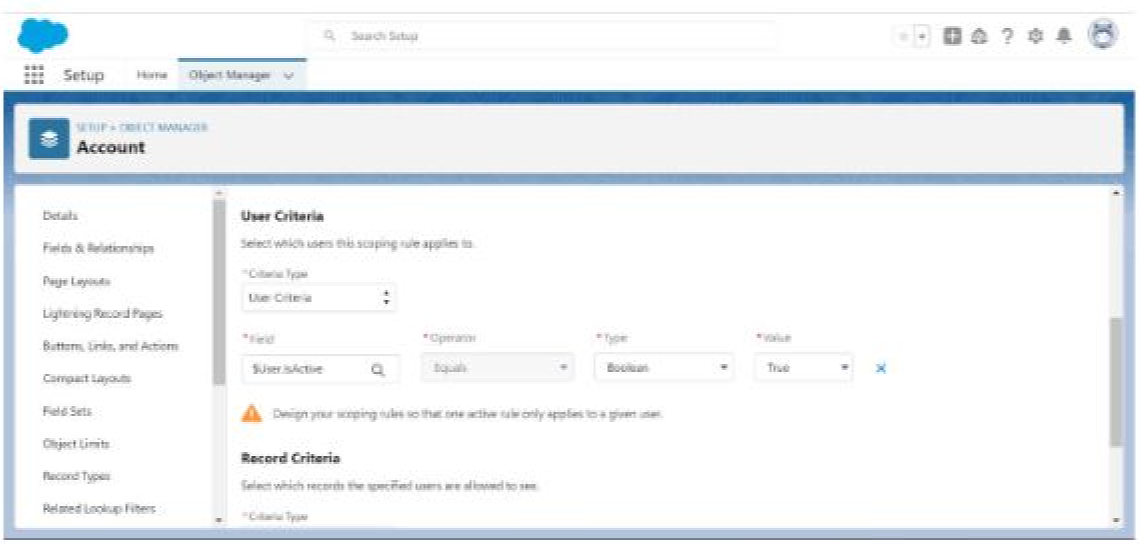
- After that new screen will open in which we got 3 section Rule Details, user criteria, and record criteria.

I. In Rule details section, we have to enter Rule name, full name, description, and a check box for **Is Active** this check box should be checked if we want to active and if unchecked so its de-activate.

II. In user criteria, we have 2 option user criteria and permission criteria. we have to choose criteria type as **user criteria** and the field name from the list we can choose any field. Then need to choose **operator**, **Type** and **value** based on requirement. Here we are choosing Active, operators as **Equal**, type **Boolean**, and value is **True**.

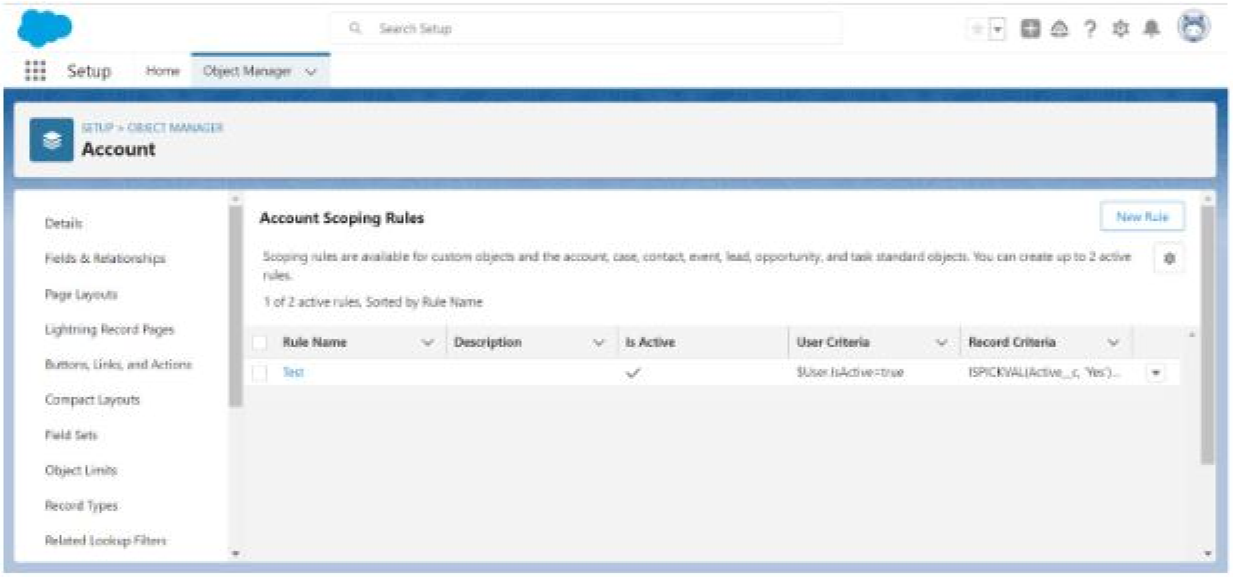
III. Next is record criteria, choose criteria type is **Record Field**, next choose any field from that object in which we want to add criteria, then operators, type, and value. In Type we have 2 option **picklist and field reference**. Here we are choosing **Active** in Field, Type is **picklist** and value is **Yes**.



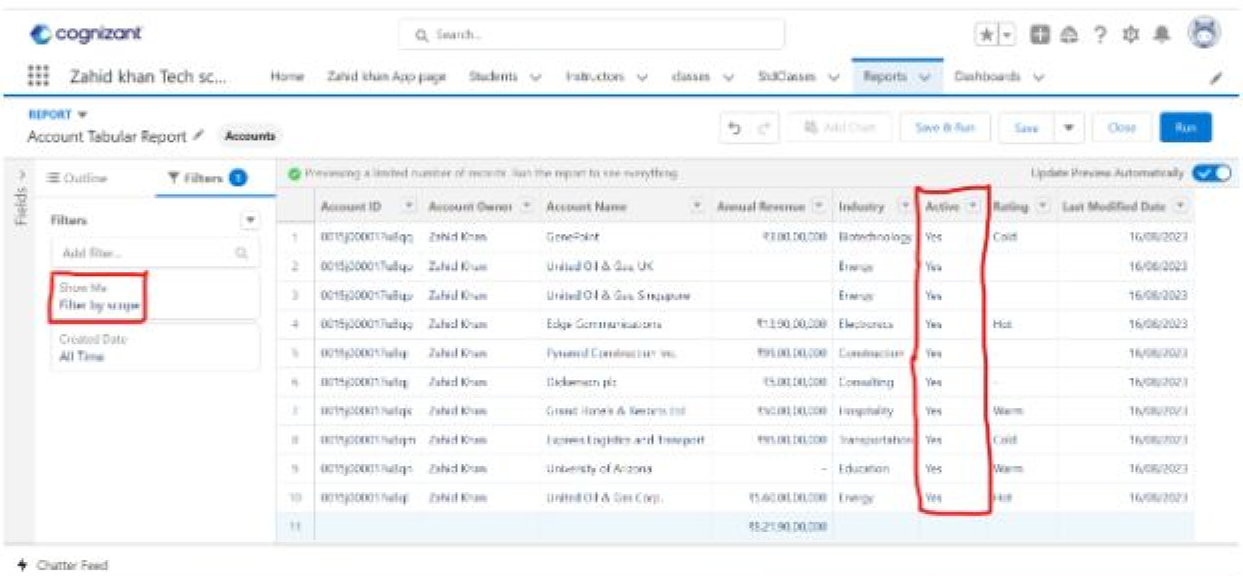


- Now click on save.

- Now scoping rule is created, if that rule will match then this record will show in filter.



- Now go to account report and select the filter by scope option from standard filter. Then only Active Yes field will be visible in report.

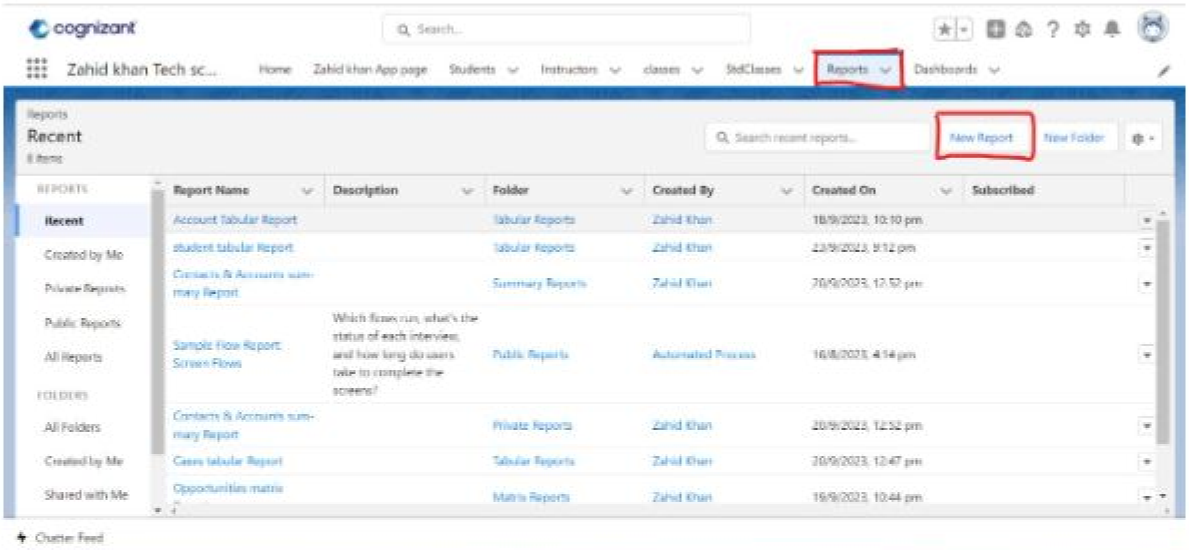


Joined Report

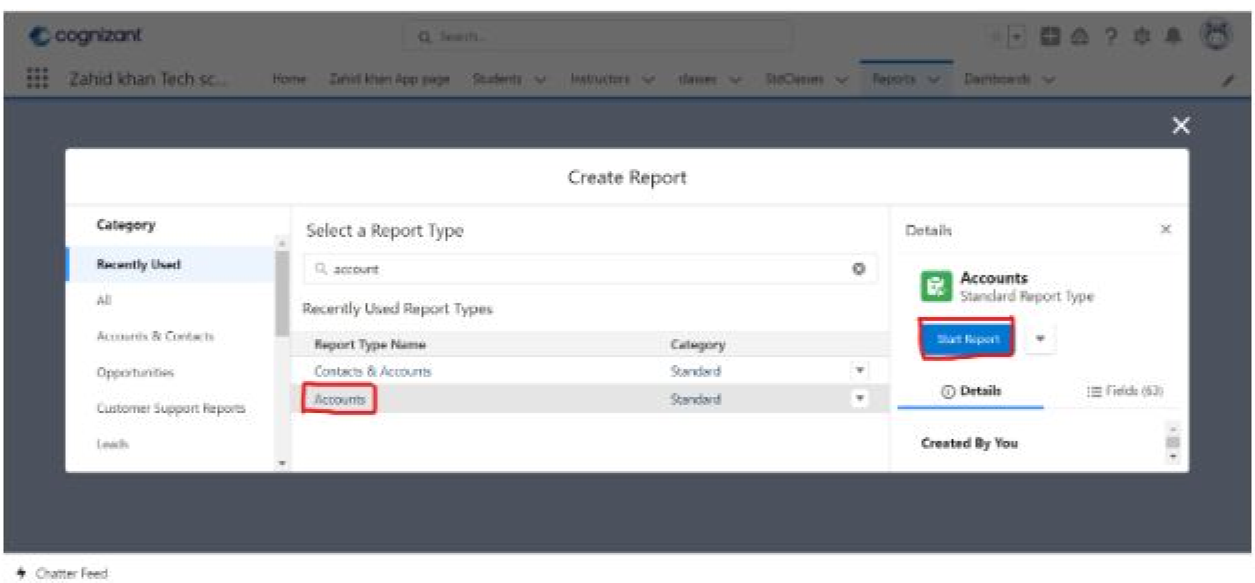
- This is 4th type of report.

Steps to create Joined Report:

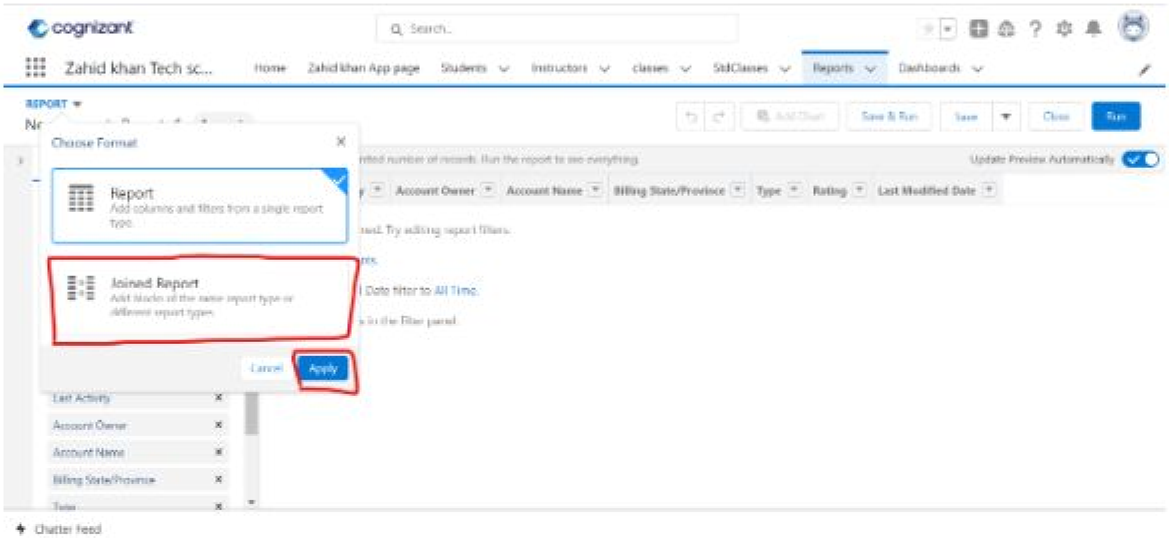
- Go to report tab on front-end and click on report, after that click on new Report.



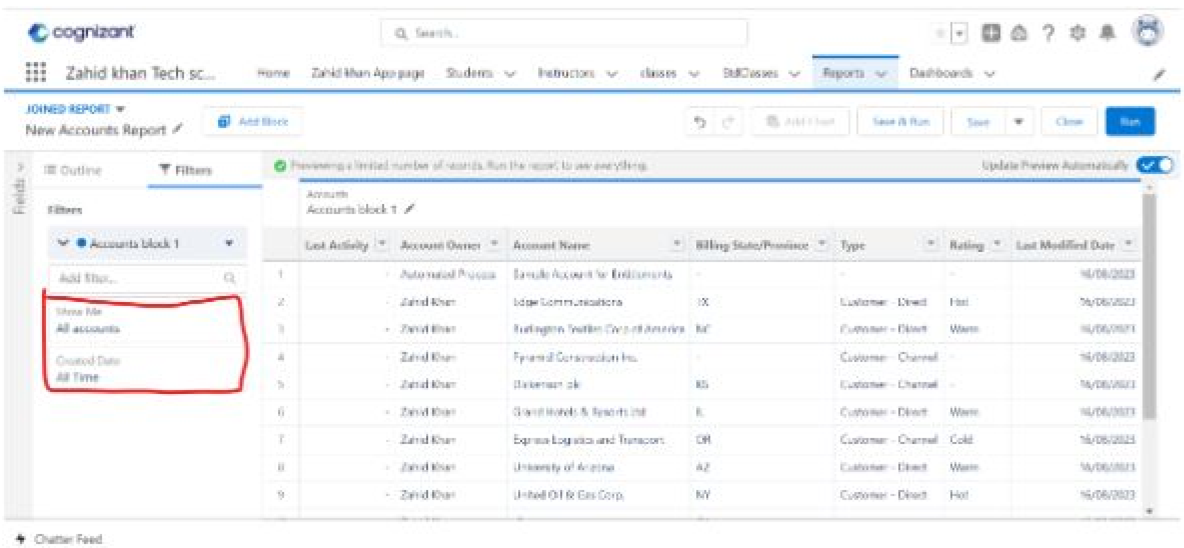
- After that select Report types, here we are choosing standard object(account). We can make joined report for custom object as well. From custom object report we have to make report type first using above steps.
- After that click on start Report.



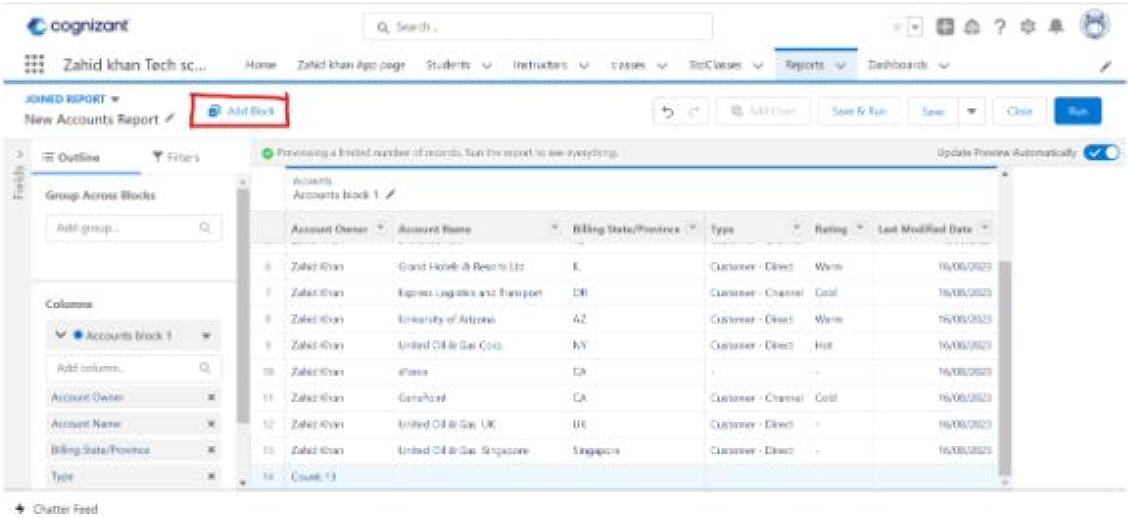
- Now we can see a Report option on top of the screen just click on that and select joined report option. And click on apply. Report option is used to make tabular, summary and matrix reports.



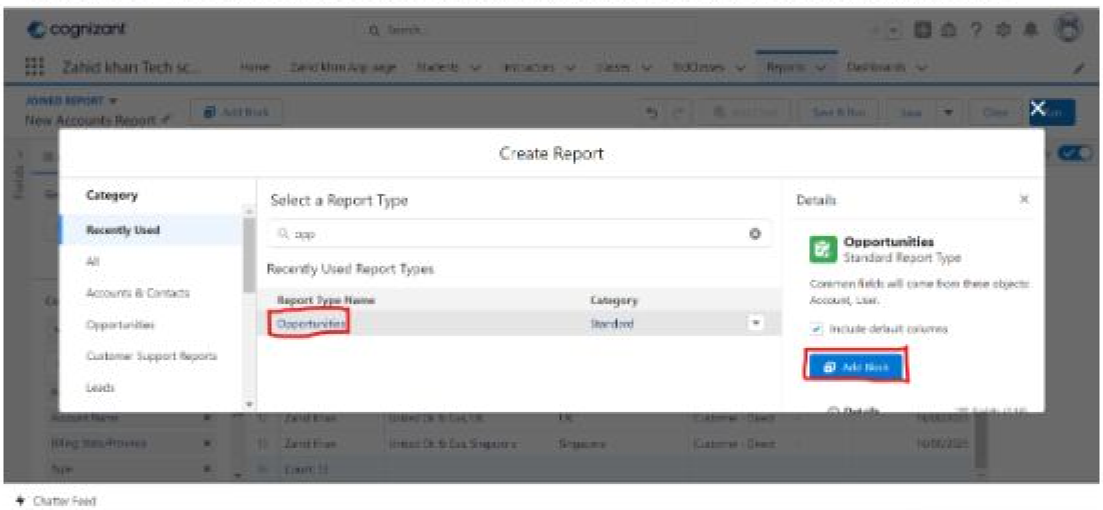
- Now go to filter and apply standard filter. Select show me All account to show all records and created date All time.



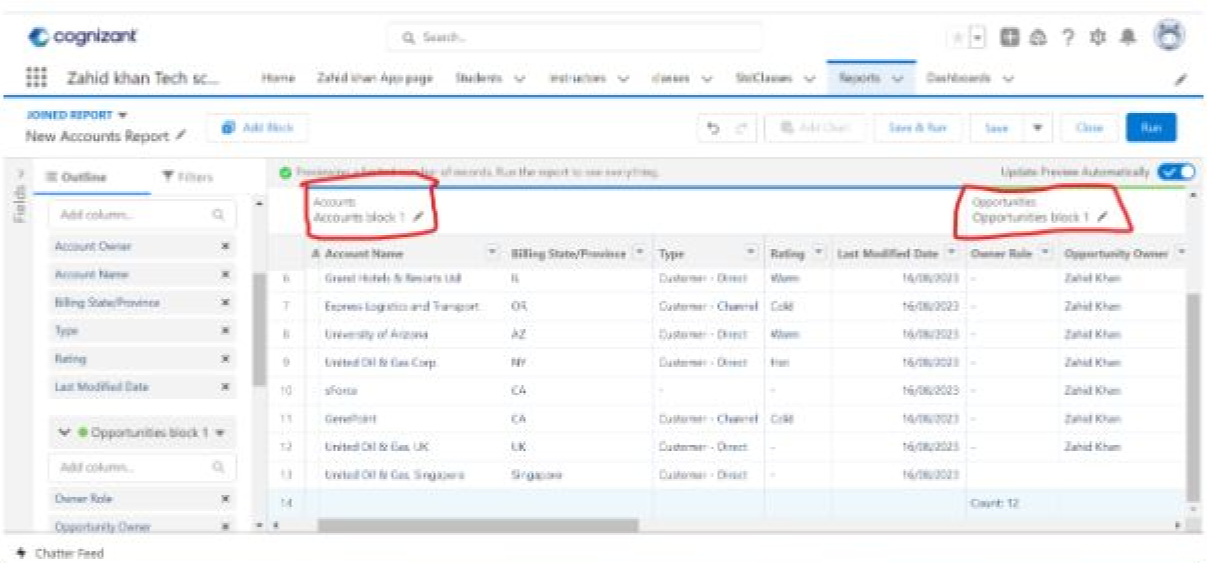
- We can apply all types of filters same as another types of report.
- Now click on **Add Block** button beside report name so that we can add another report types. i.e., Opportunities record type.



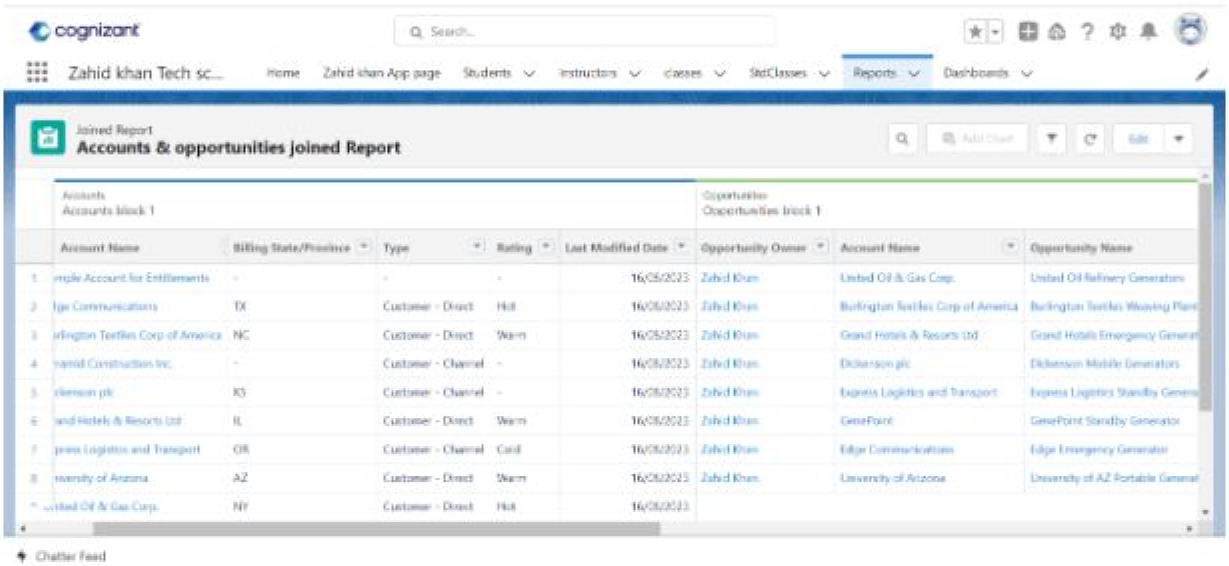
- now enter another Report type (i.e., opportunities). And click on Add block.



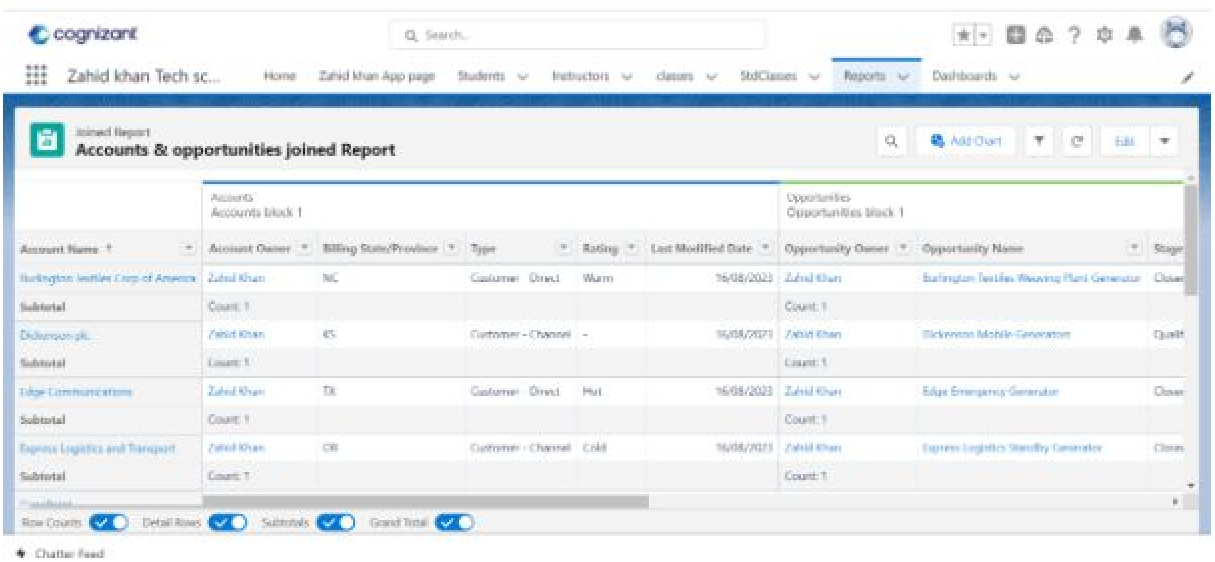
- Now we can see both reports on report page.



- We can apply standard, custom and logic filter on both report types (i.e., account & opportunities).
- Now save the report in joined folder by making it and run the report. We can see the report as shown below.



- We can also make Summary report for both the Report types. For example: we are making summary report by **account name**. as shown in below image we can see the summary report for both Report types.



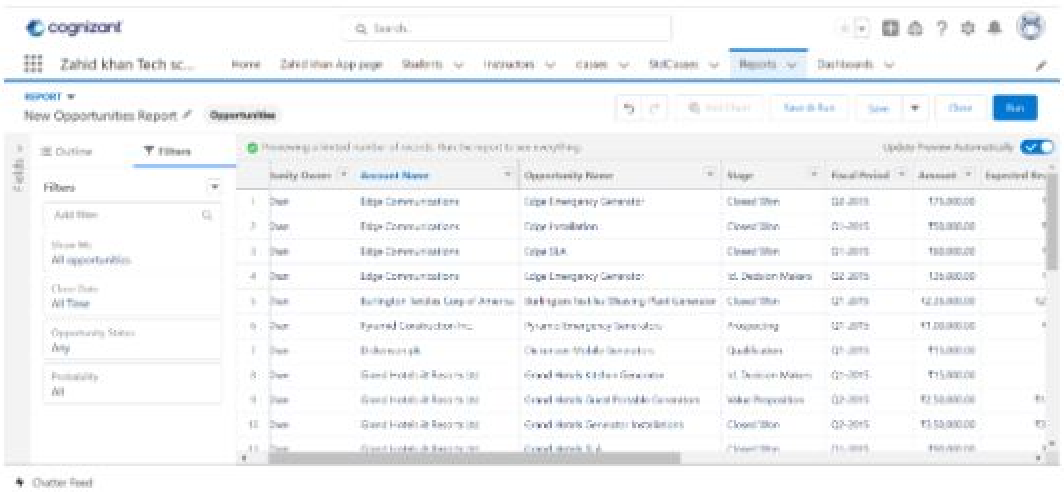
- We can the report with those blocks which has some common fields.
- We can also Add chart after making summary report with joined report.

Bucket field

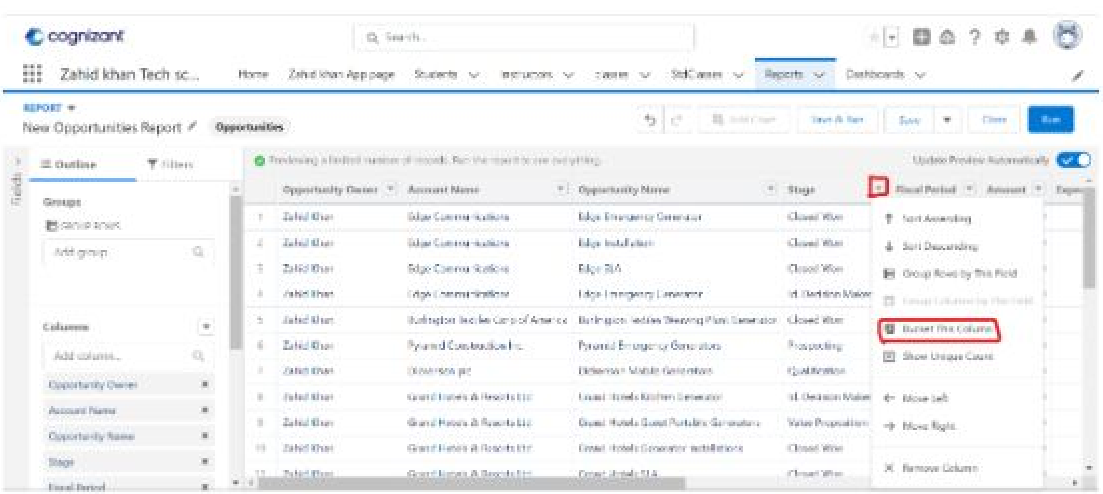
- Bucket field is used to grouping the report based on records on report.
- For example, in opportunities report there are 2 common records **closed won** and **closed lost** in stage column. if in opportunities **closed won** and **closed lost** are open so they grouped together and if the opportunities other than closed won and closed lost, so they grouped together.
- Its mean we have to create 2 bucket field 1 for closed won and closed lost and 2nd for open. If this like requirement, then we have to create bucket field.

Steps to create bucket field(picklist):

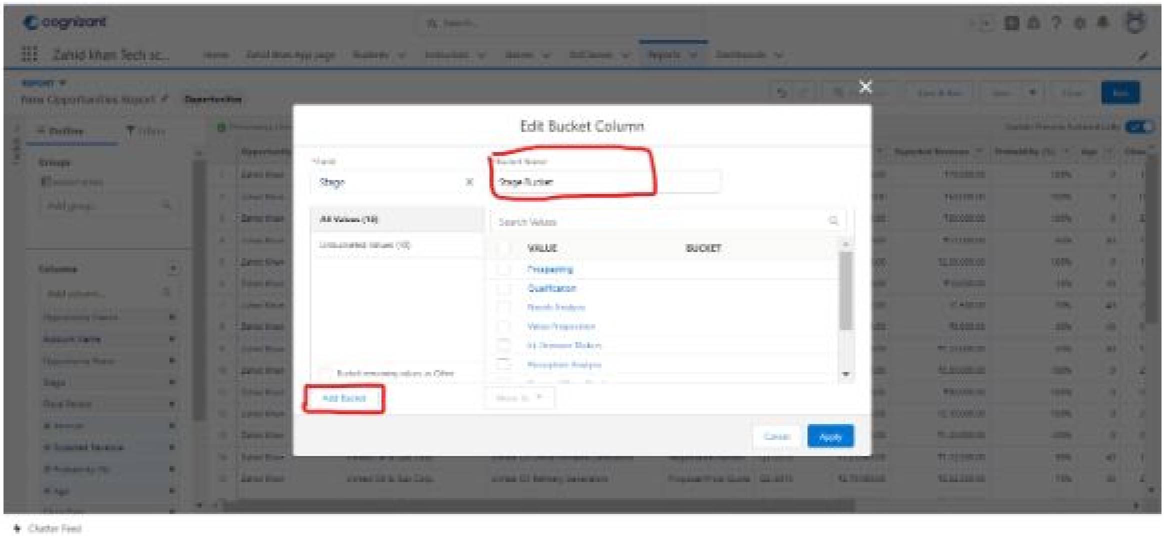
- 1st make a report on that object in which we want to make bucket field. For example, we are making report on opportunities.



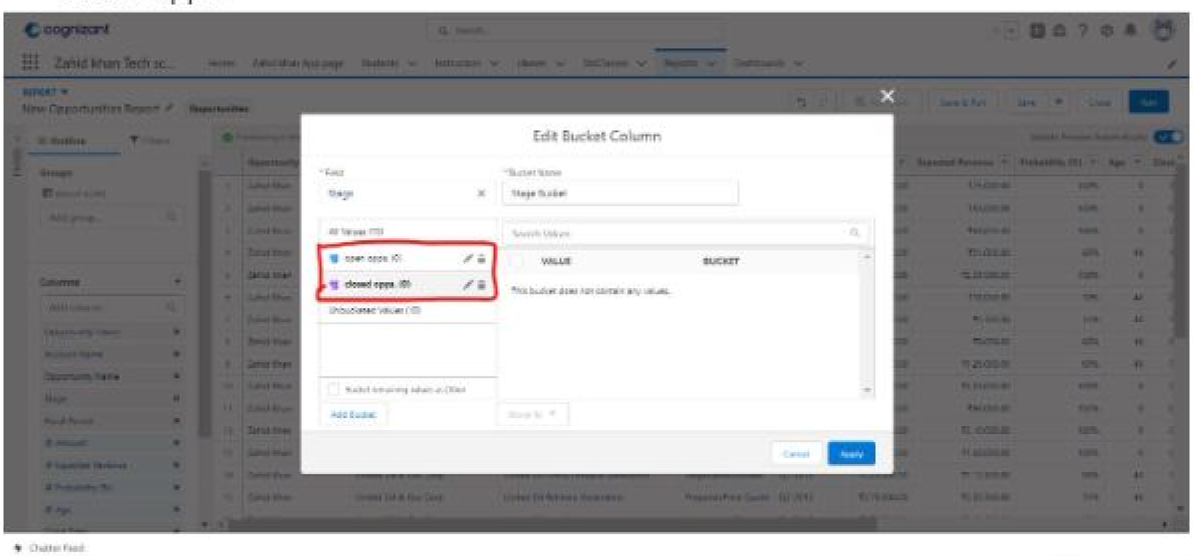
- Now our requirement is that make bucket field for stage column based on closed won and close lost.
- click on drop down arrow with the stage column and click on bucket this column.



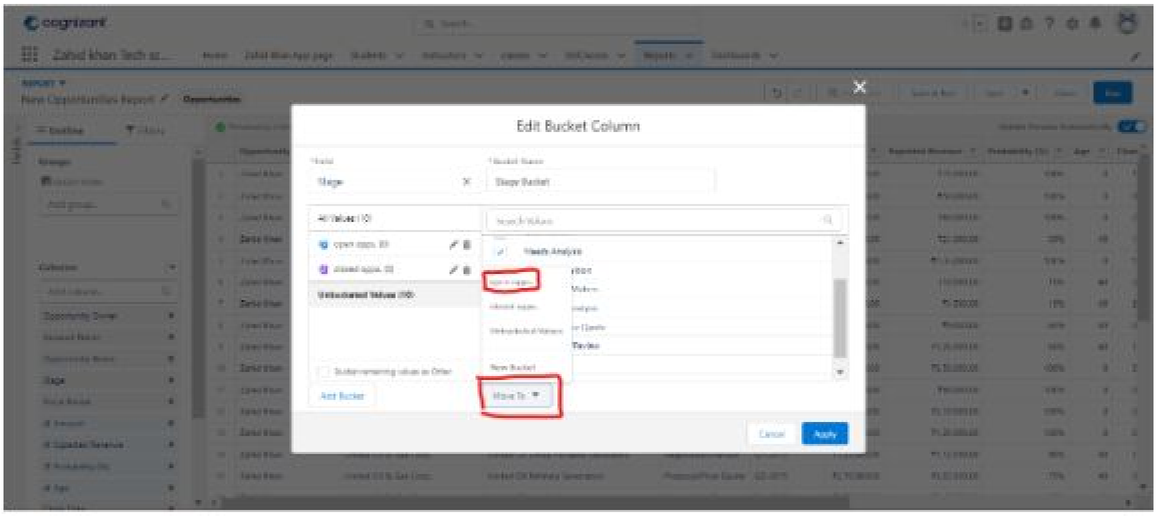
- After that enter the bucket name. after that click on Add bucket.



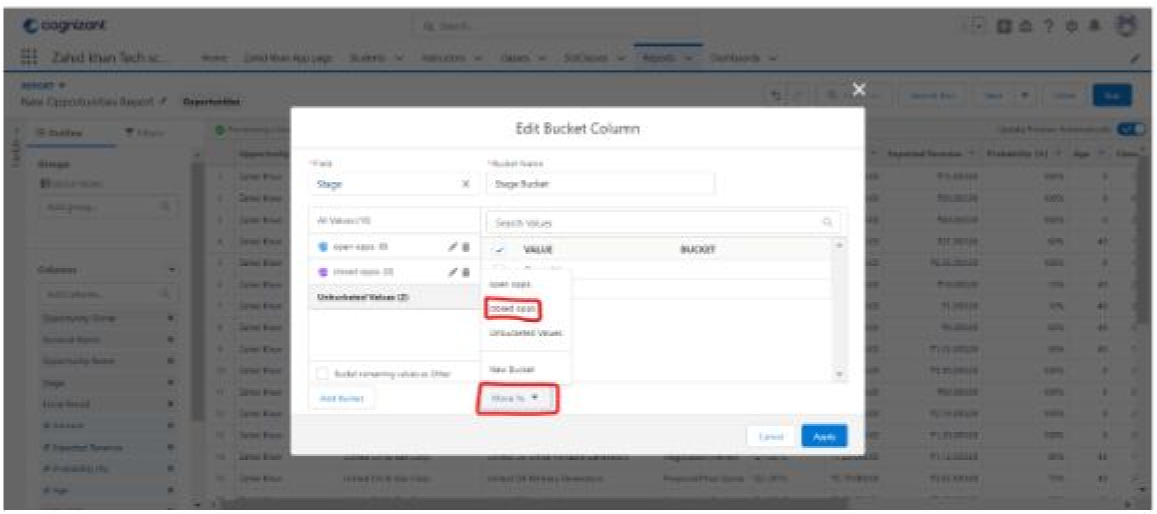
- Make 2 bucket one for open opps, one for closed won and closed lost named as closed Opps.



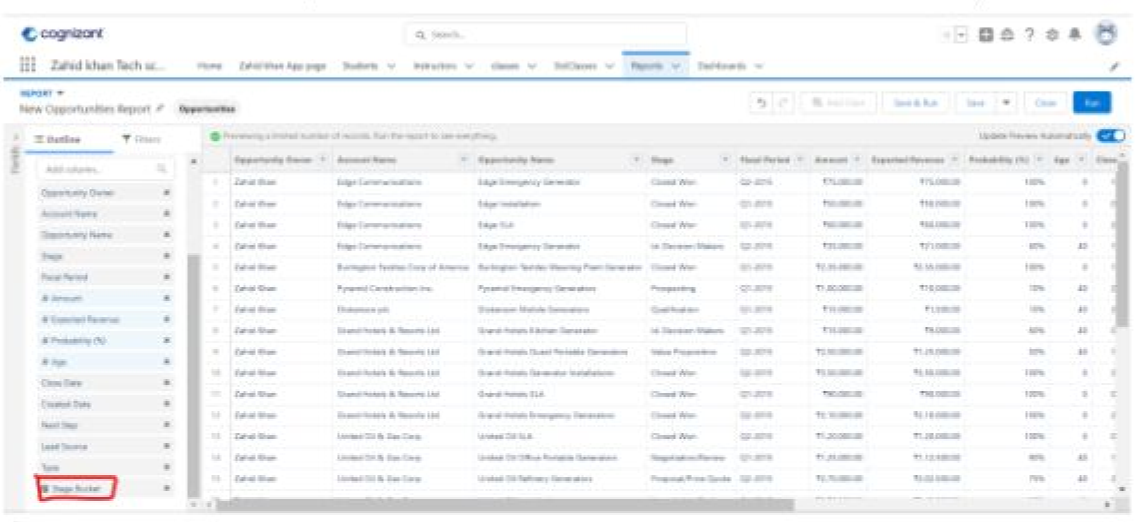
- now click on unchecked value and move only closed won and closed lost to Closed Opps. Bucket and other should be move to open Opps.
- To move the All field except closed won and closed lost to open Opps. Click on unchecked value after that check all the field which we want to move and click on **Move To** button on bottom and choose the Open Opps. Folder in so that all field will move to open Opps.



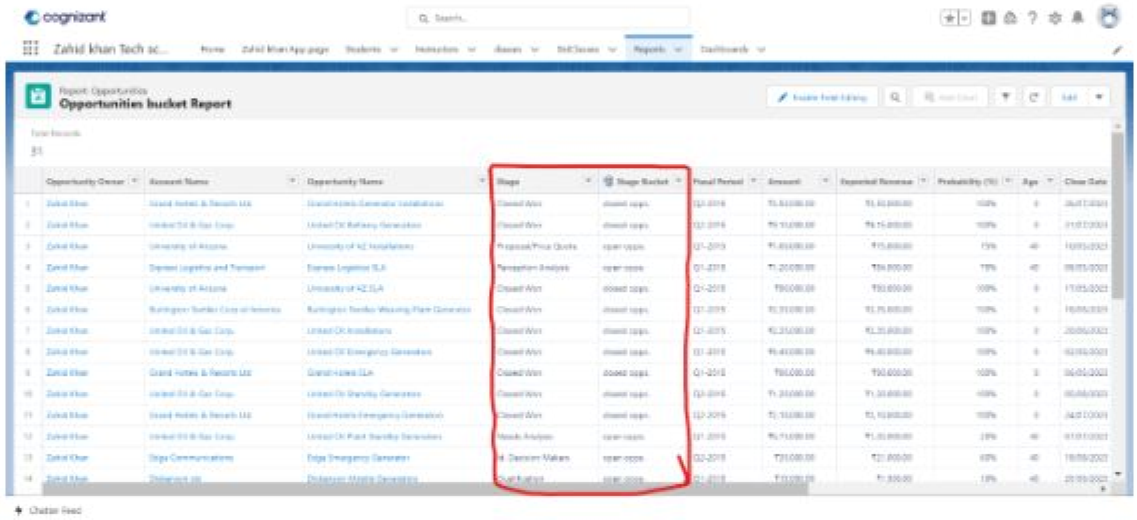
- Same way moves closed won and closed lost to close Opps.



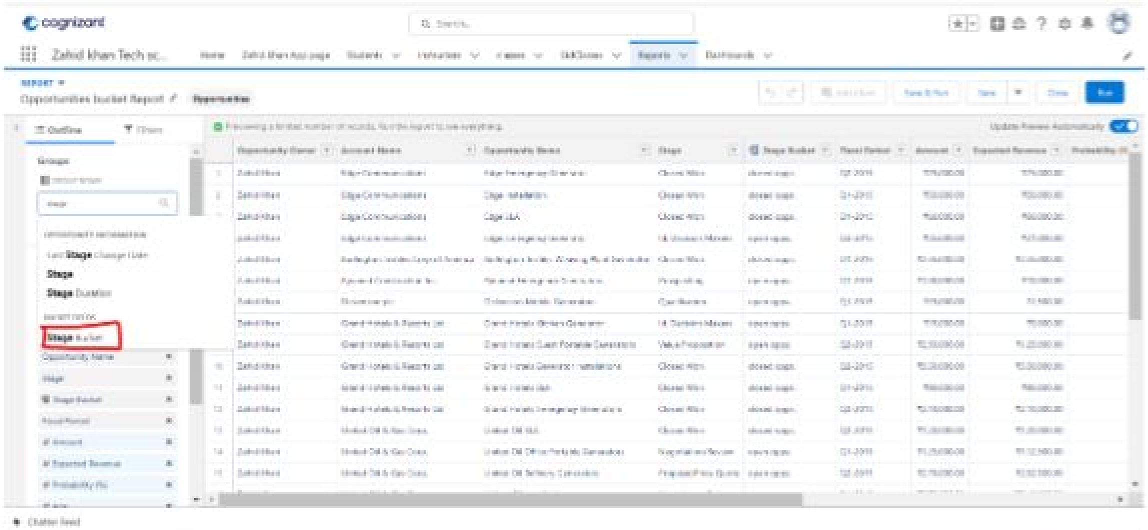
- After that click on apply.
- Now we will see a stage Bucket column name bucket at the end of the Reports.



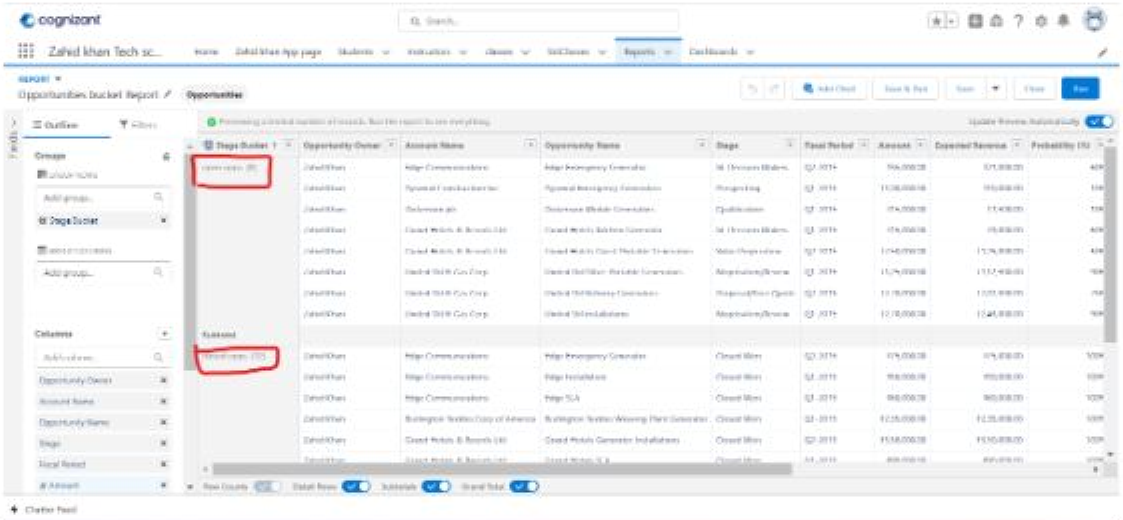
- Now we will see only from stage closed won and closed lost in closed Opps. Bucket and all others field from stage shown in open Opps.



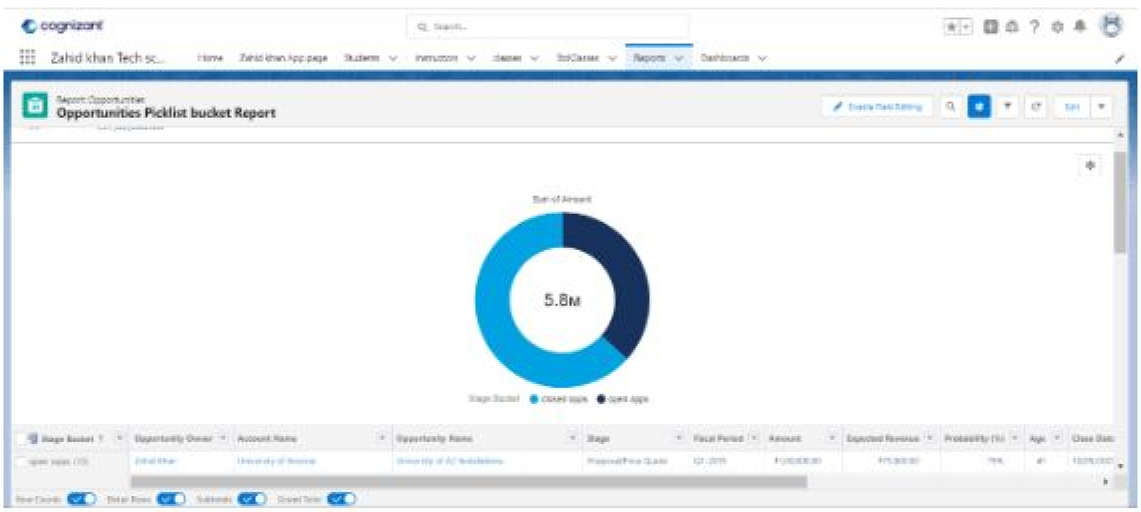
- Now we will use this **Stage Bucket** field for group. Click on Group row inside Outline left hand side bar. And search for **Stage Bucket**.



- After clicking on stage bucket grouping will be done on the basis of this bucket.



- Like this we can create custom grouping field and create summary report. We can also add chart to this report by clicking on Add chart.

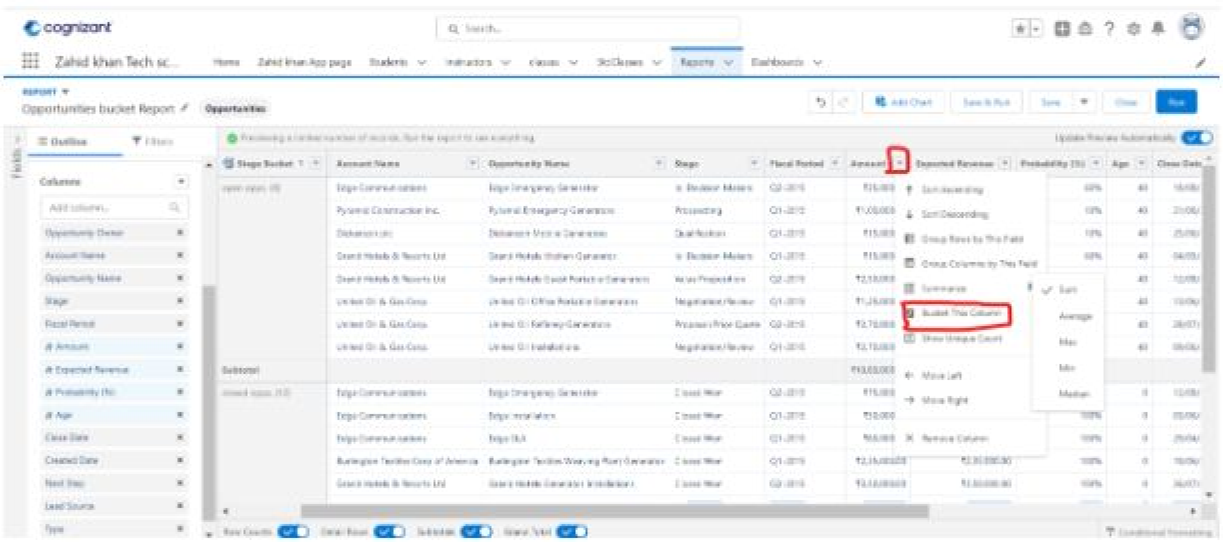


Bucket filed for numerical value:

- We can create bucket filed for numerical value and picklist. Before we see how to create for picklist now, we will see how to create bucket field for numerical value.
- We are creating bucket field for amount column and create 3 bucket 1st- 0 to 50000, 2nd – 50001 to 100000 and 3rd <100000.

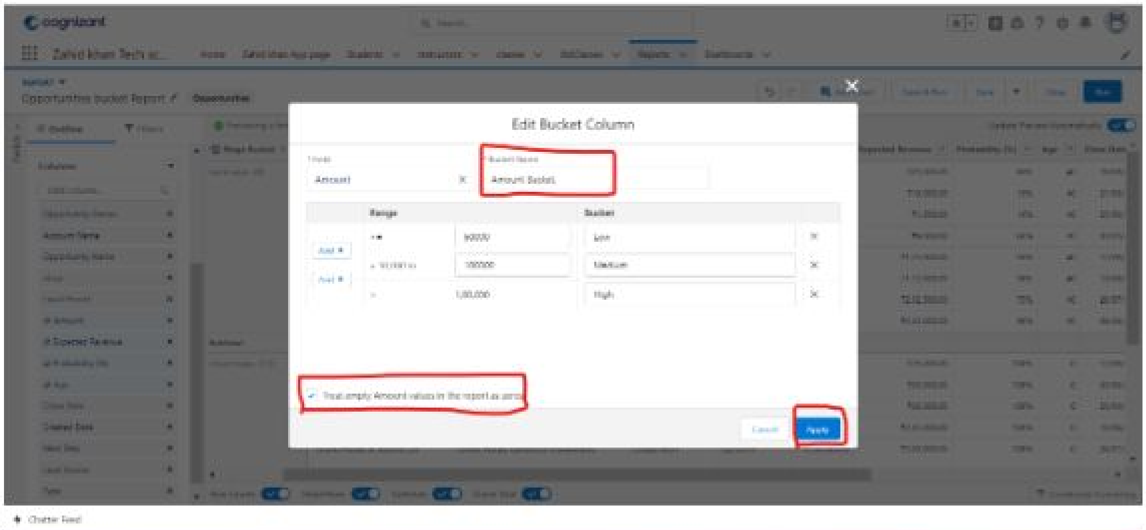
Steps to create bucket field (for numerical value):

- Go to same summary report for opportunities and click on **Amount** column. After that click on the drop arrow with Amount column and click on **bucket this column**.

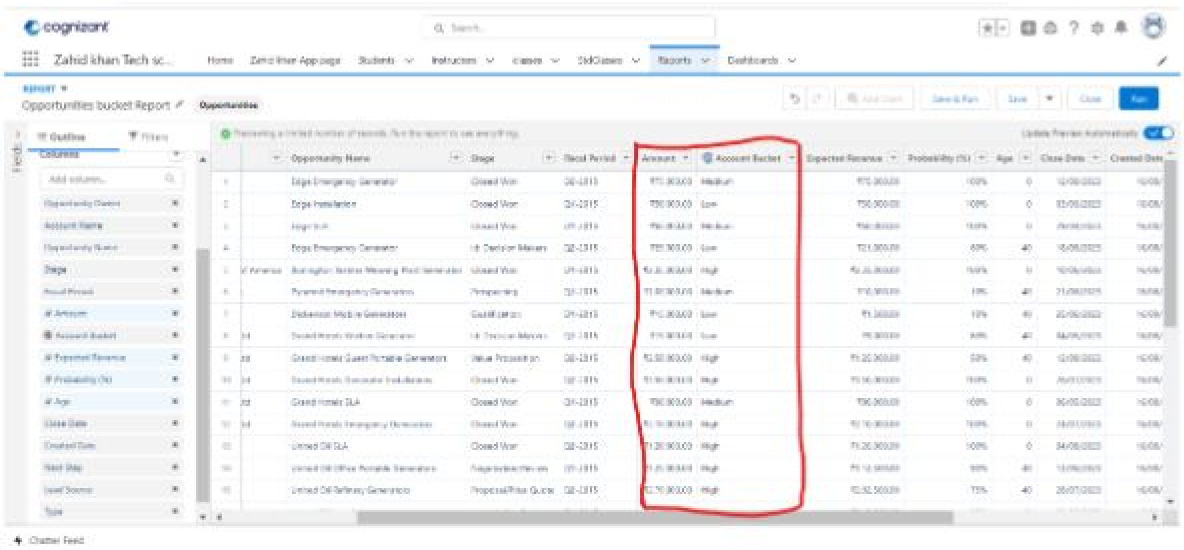


- Now enter the bucket name. for example, name the bucket as amount bucket. Name of the bucket depends on the project requirement.
- After that enter the 1st amount which is 0 to 50000 so its should be **=**>50000 and enter the bucket name as Low.
- Again enter 2nd amount which is 50000 to 100000 so it's written as >50000 to 100000 and enter bucket name as medium.
- Again enter 3rd amount which is >100000 so it's written as > 100000 and enter bucket name as high.

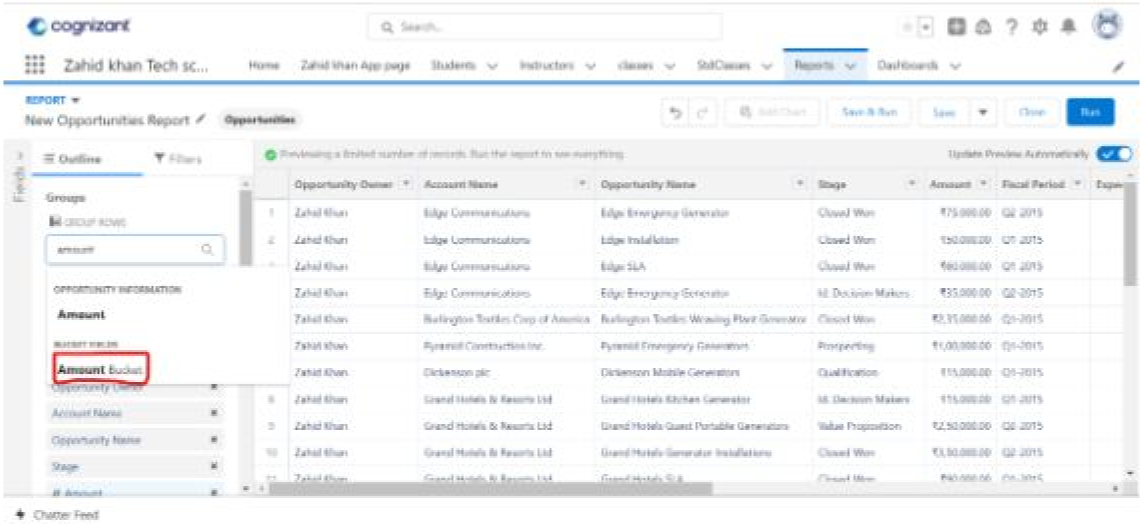
- And check the box that treats Empty column as Zero. After that click on apply.



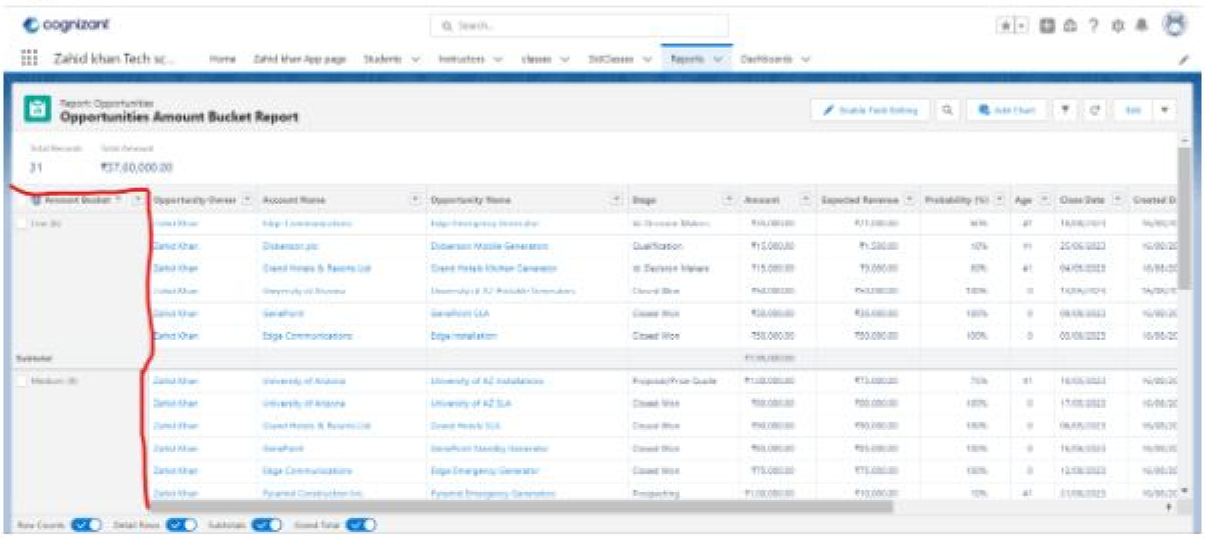
- Now we will see that **Account bucket** is created.



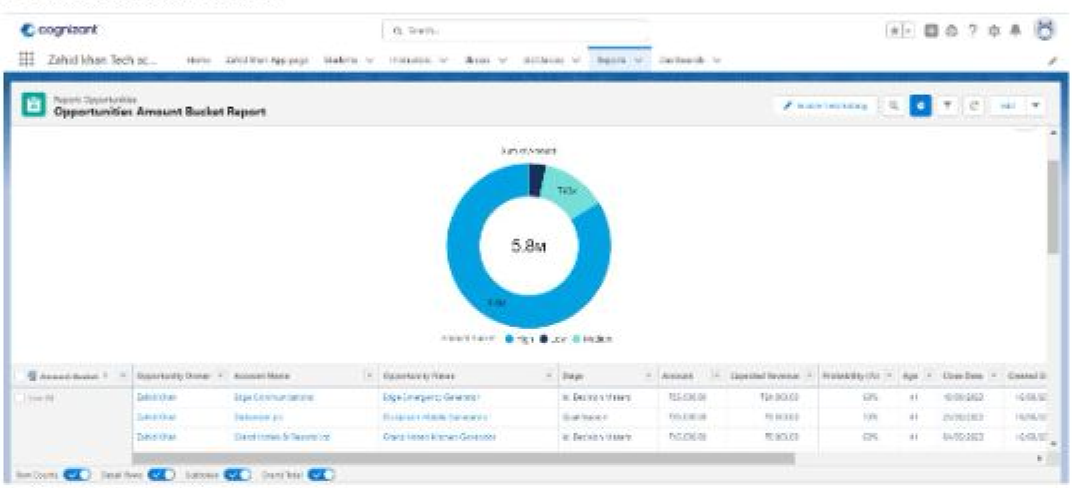
- Now we will use this **Account Bucket** field for grouping. Click on Group rows inside Outline left hand side bar. And search for **Account Bucket**



- now we will see that Report is summarized based on **Amount Bucket**. Low, Medium, High.



- We can also add Chart.

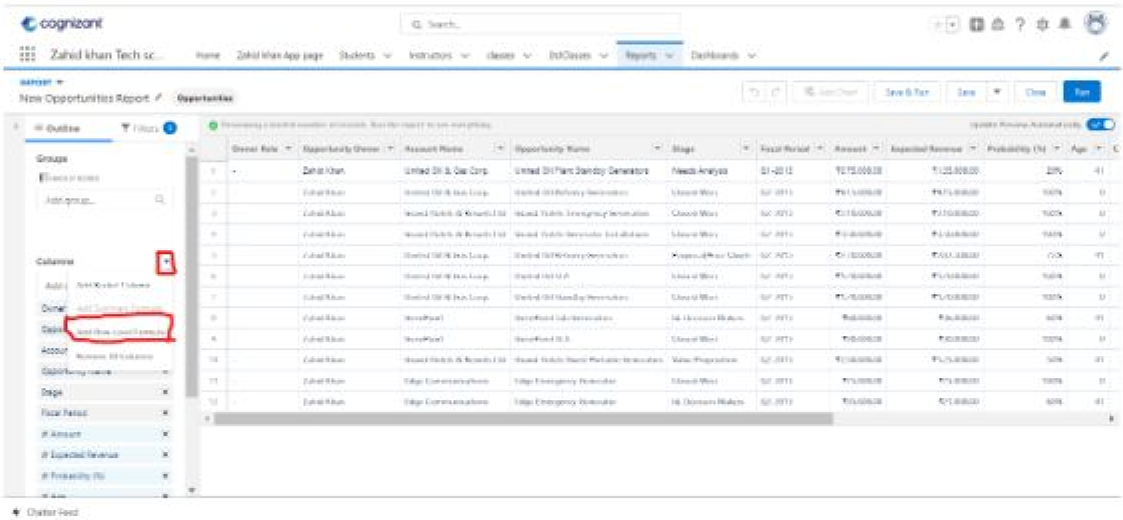


Row-level Formula

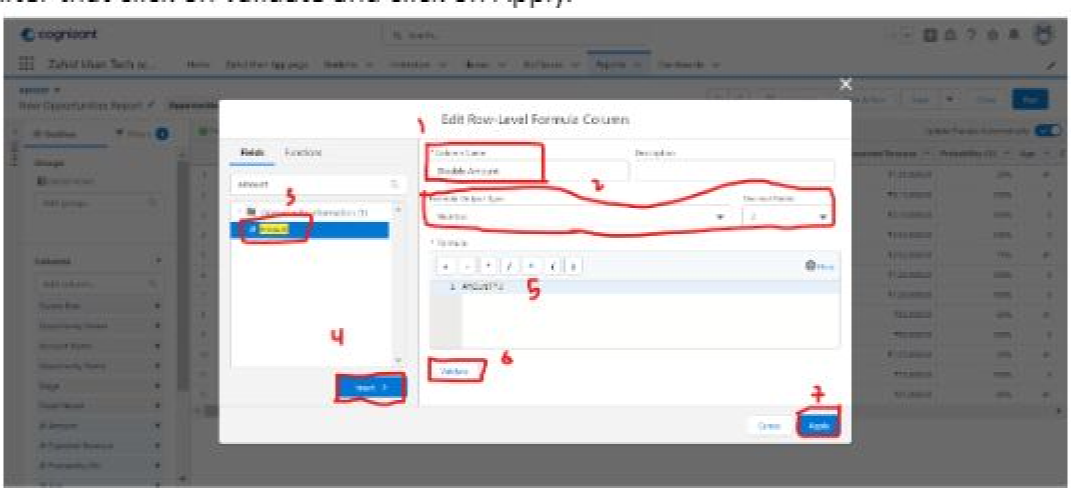
- Row-level Formula is similar to Formula Field.
- row-level Formula and bucket field only available in Report. It would be available under actual Object. Its for reporting purpose only.

Steps to create Row-level Formula in report:

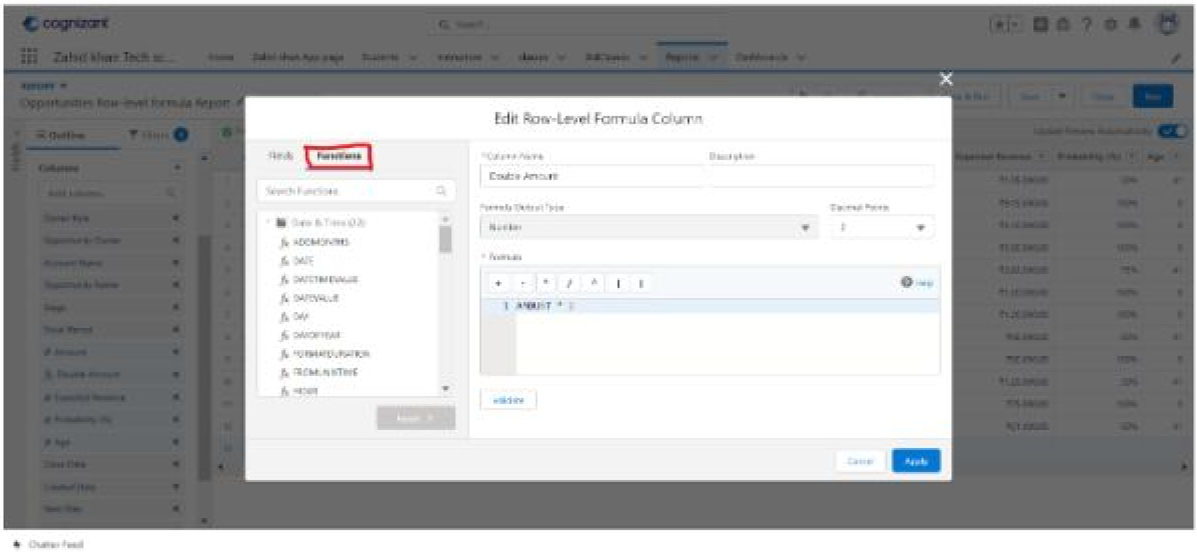
- create a new Report on opportunities. Save the report in a folder.
- Now for Apply the Row-level Formula click on drop-down arrow beside the columns on left hand side menu. And click on **Add Row-level Formula**.



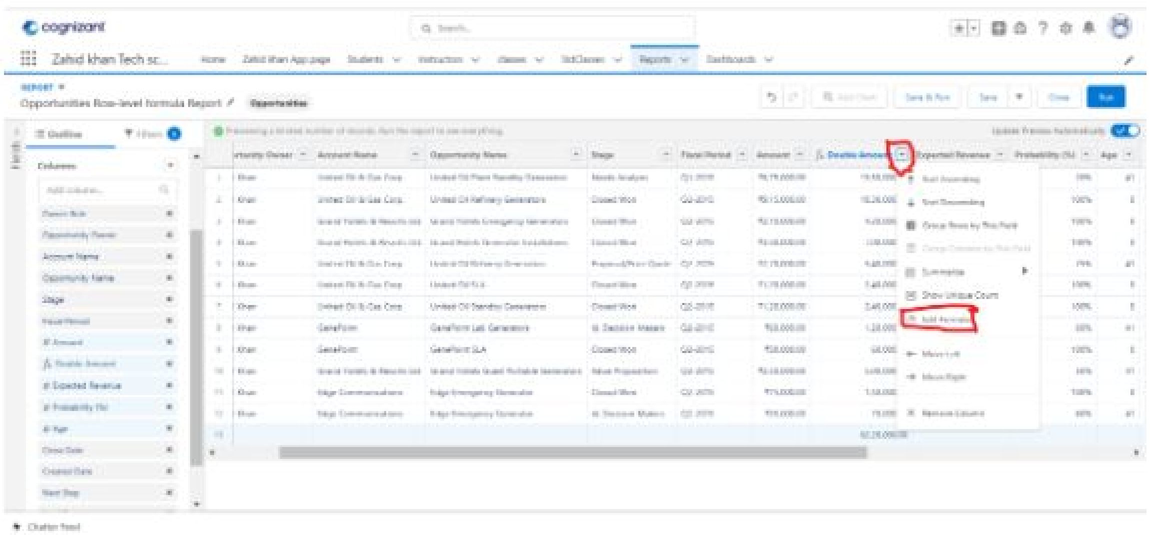
- After that new pop-up will open, we have to enter the name of the column, description, Formula output type (in which we got 4 options number, text, date/time, date). And decimals.
- After that we have to Add the formula by inserting the field. For example, we are going to multiply the Amount with 2. So, for this select Field (Amount) from Search filed option and insert it and multiply it with 2.
- After that click on validate and click on Apply.



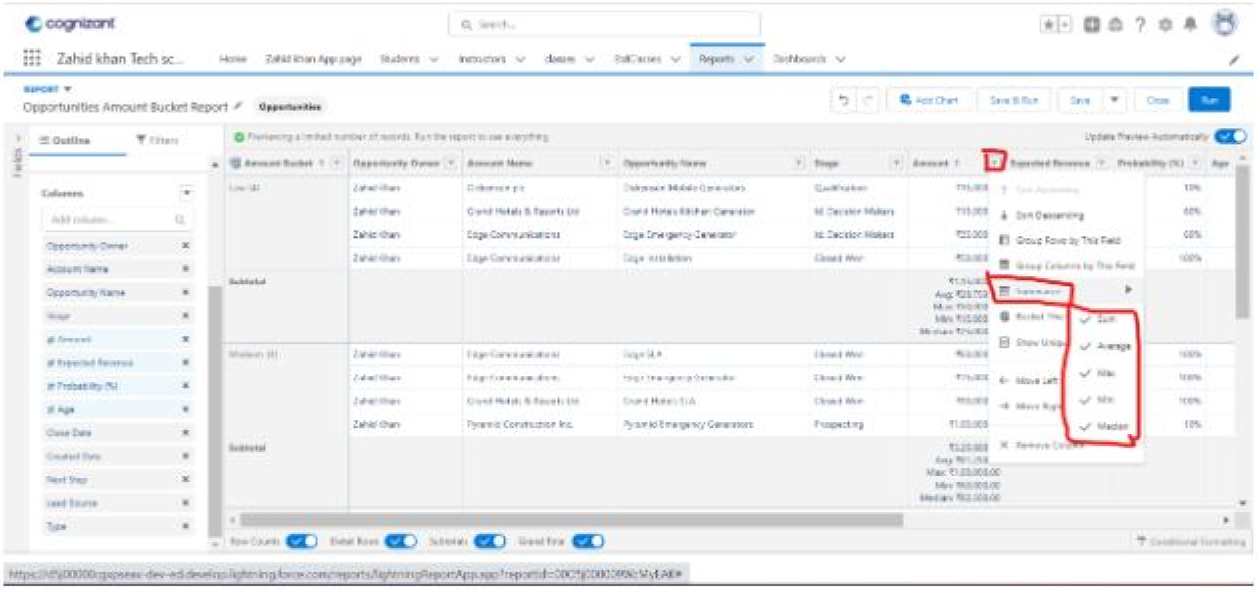
- We can also apply Function to the formula.



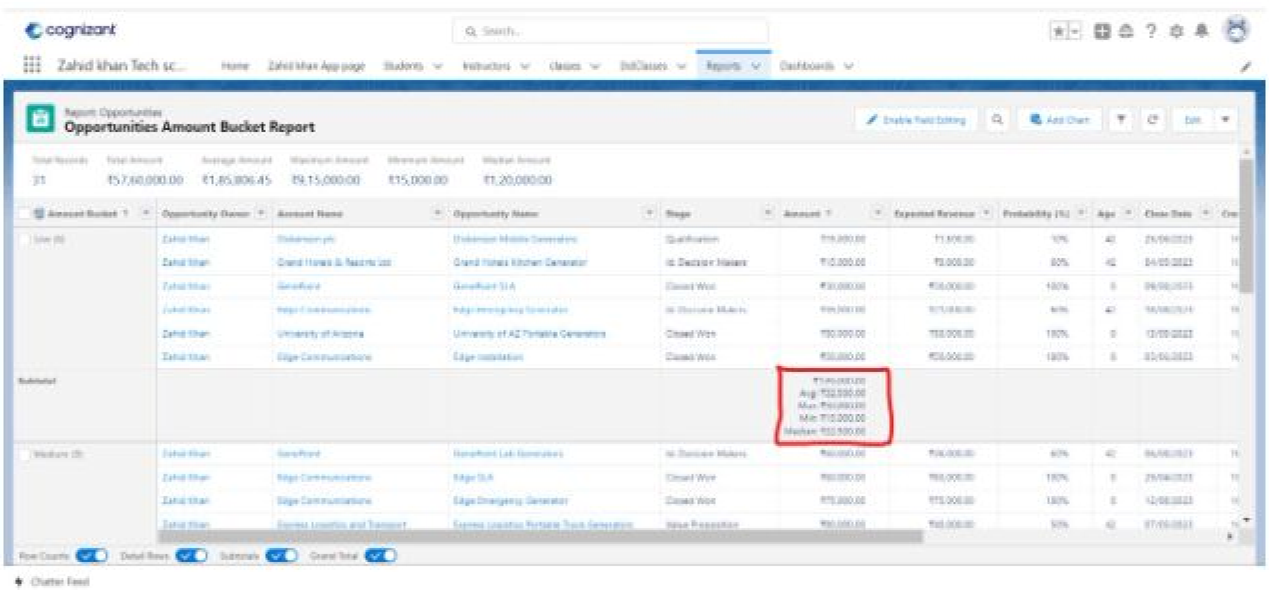
- If we want to edit the formula field, then just click on drop-down arrow beside the created row-level formula and click on edit.



- we can also calculate average, max, min, median of any numerical value. For example, we will calculate all these for amount column.
- To do so click on the drop drown Arrow beside the Amount column and click on summarize after that click on the Arrow we will find option for average, sum, max, min, median.



- After applying this and save the report and click on Run.



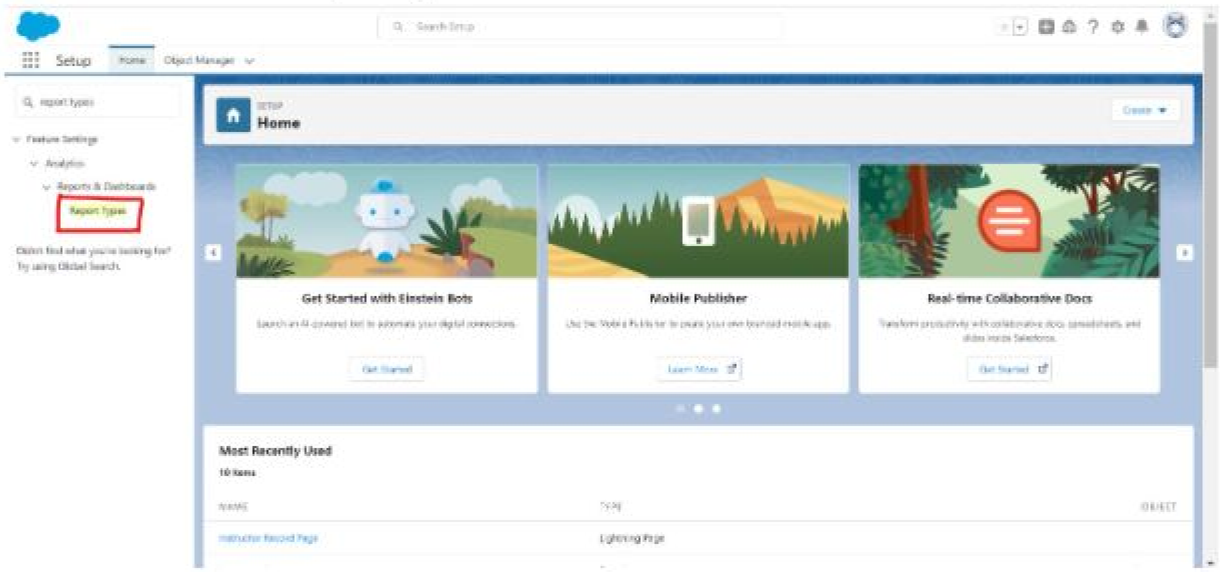
Day-10

Reports on Duplicate Records

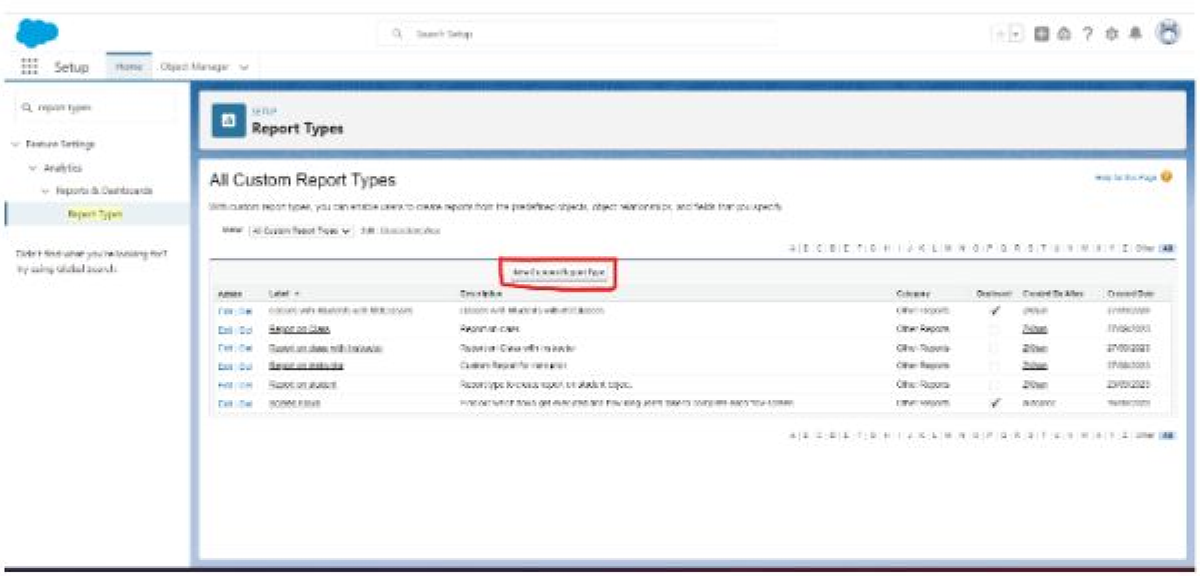
- If there are any duplicate records in our org so it will be visible in duplication records.

Steps to create Reports on duplication:

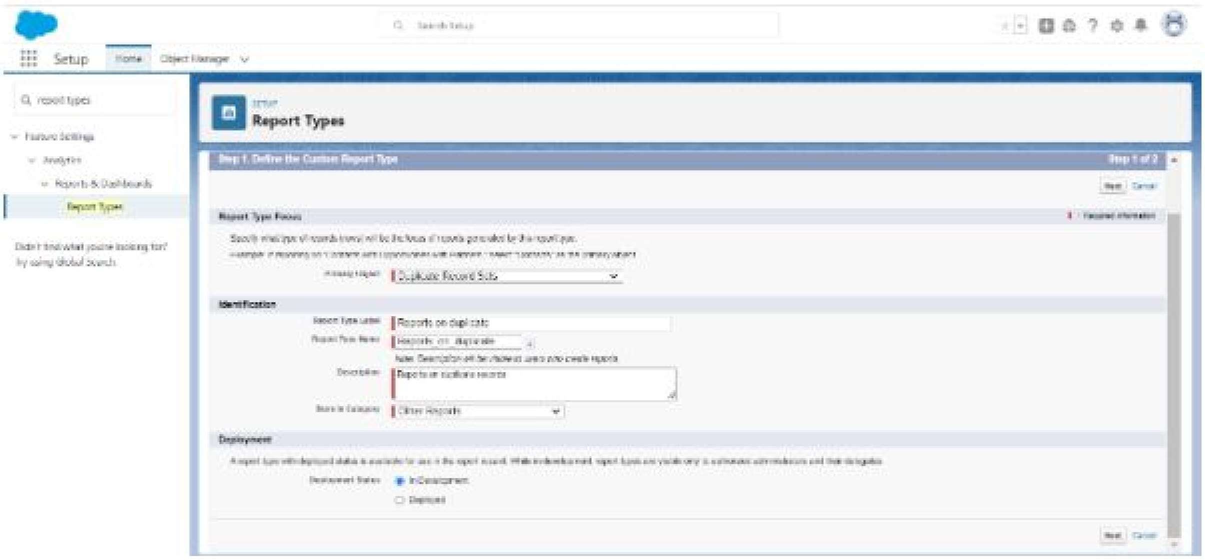
- Go to the set-up and click on Home.
- After that search for **Report Types** in Quick search.



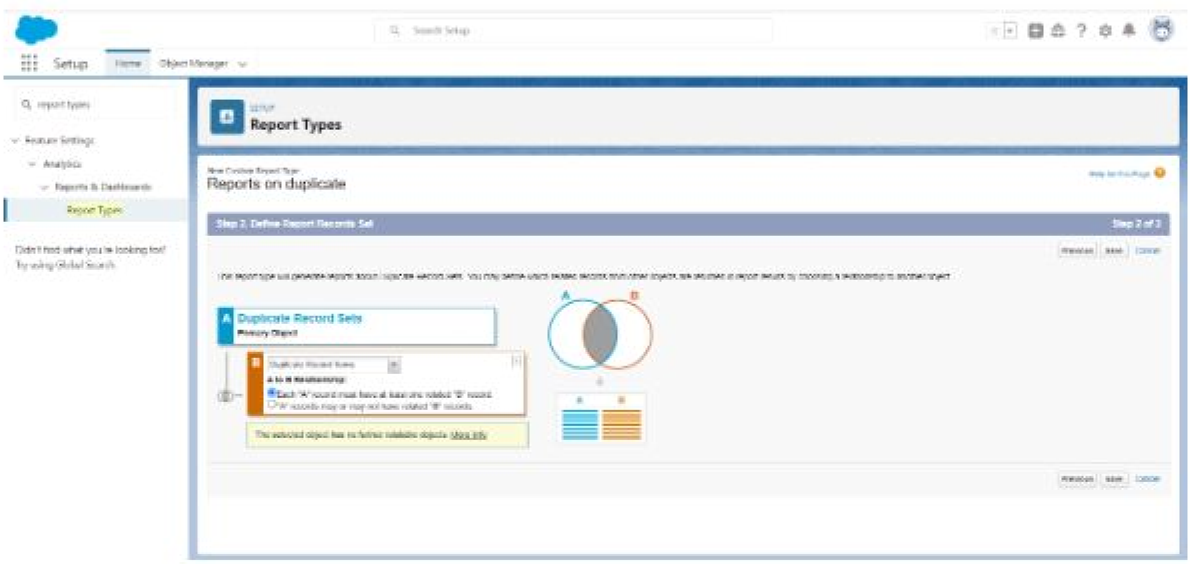
- Now click on Report Types. After that click on **New custom Report Type**.



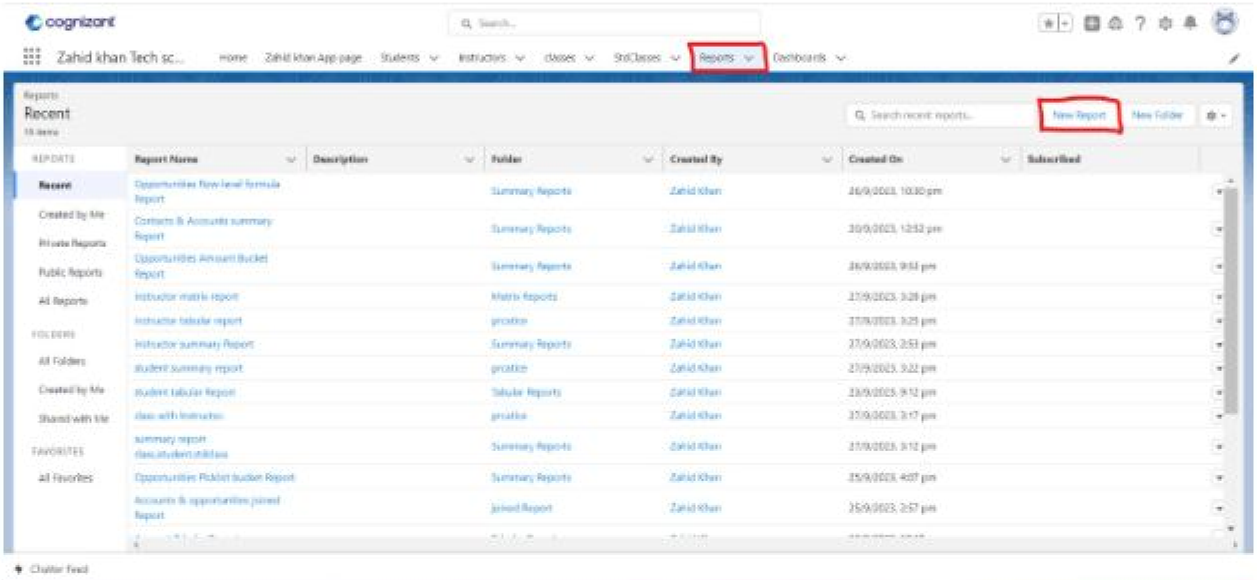
- After that select **Duplicate report sets** in primary object. Enter report type label, description, select other records in store in category. Select **In development** in deployment status.
- After that click on next.



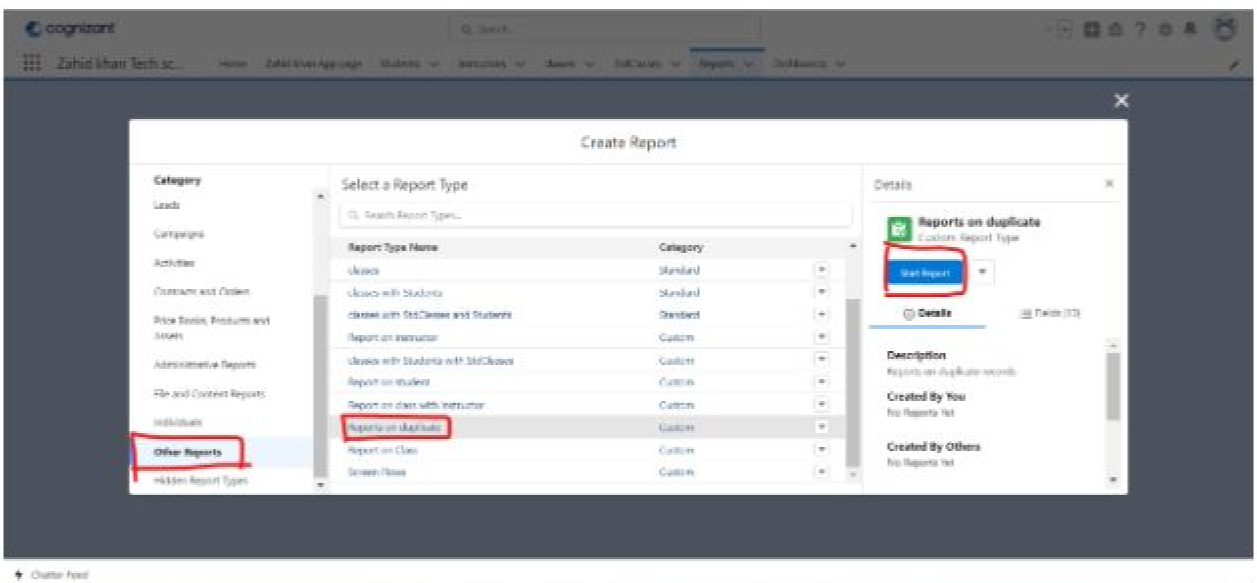
- After that select **Duplicate records items** in B and select **Each A record must have at least one related B record**. And click on save.



- Now go to Front-end of the App and click on **Report** Tab. After that click on **New Report** to create a Report.



- After that click on **other reports** and select Reports on duplicate which we make in Report types section and click on **start Report** button.



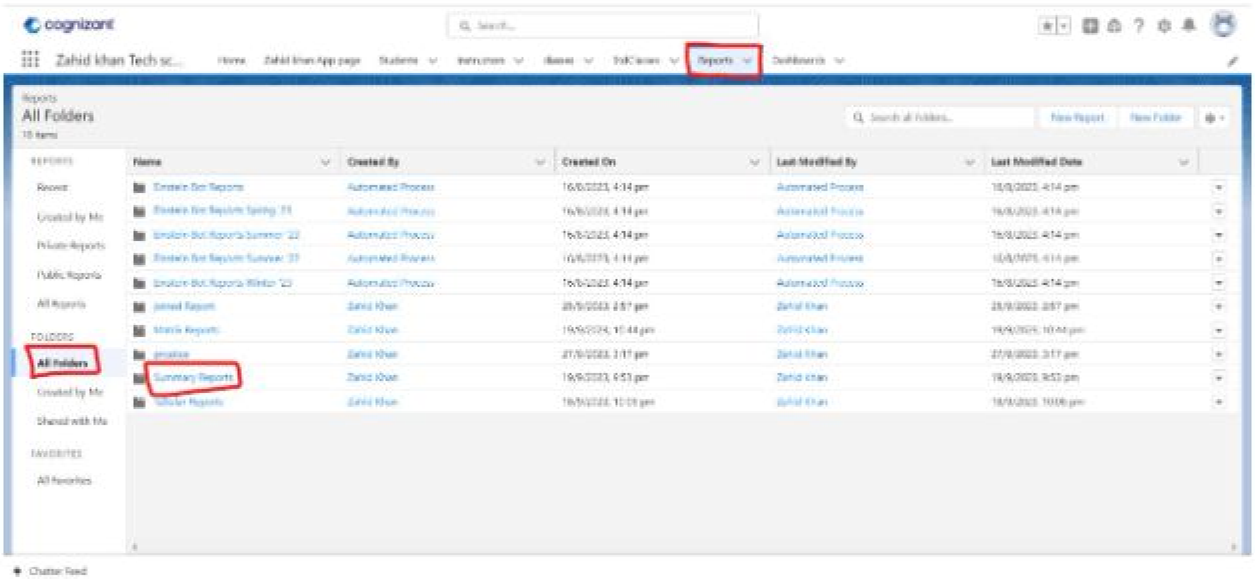
- If there are any duplicate report in our org so it will show in these reports.
- We can create tabular, summary, matrix reports on duplication records in org. we can also apply chart for this report.

Export Reports

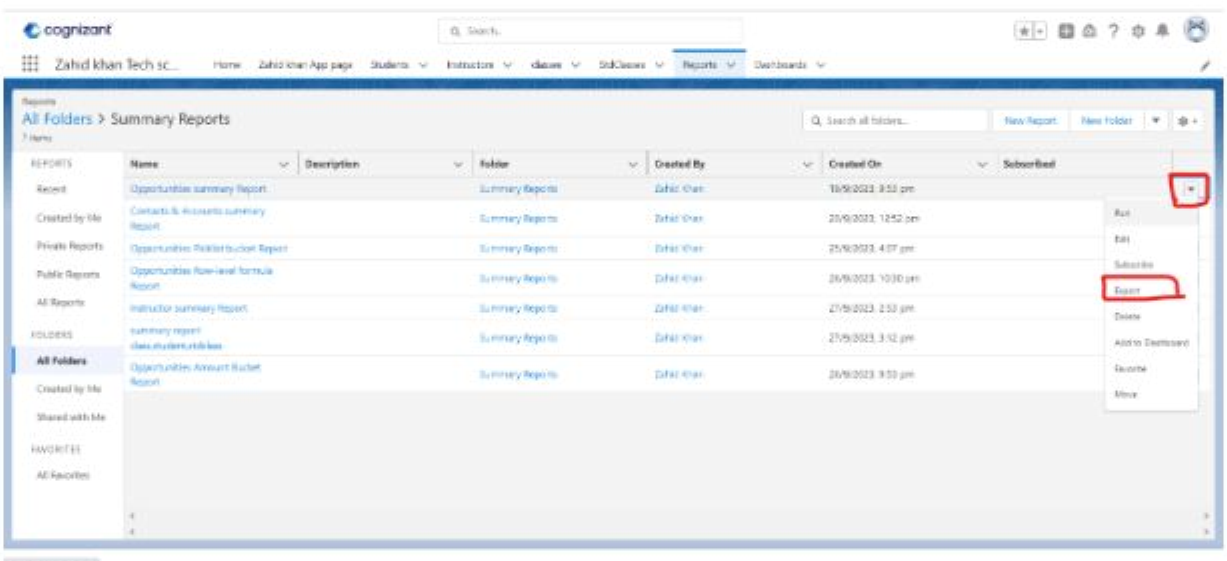
- What ever Report we created will export or download these reports in our local system.

Steps to Export Reports in Local system:

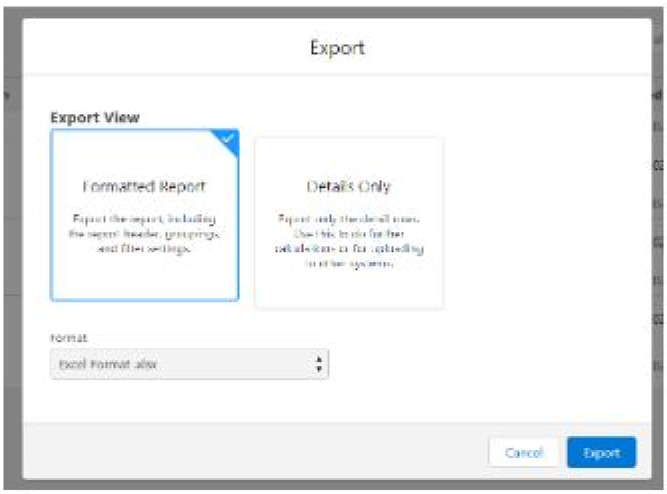
- To export any report, click on Report tab in Front-end. After that click on All folder and select the folder of the report which contain the report and after that select the report which we want to export in our system.
- For example, we are selecting summary of the Account. For this we have to go to summary report folder.

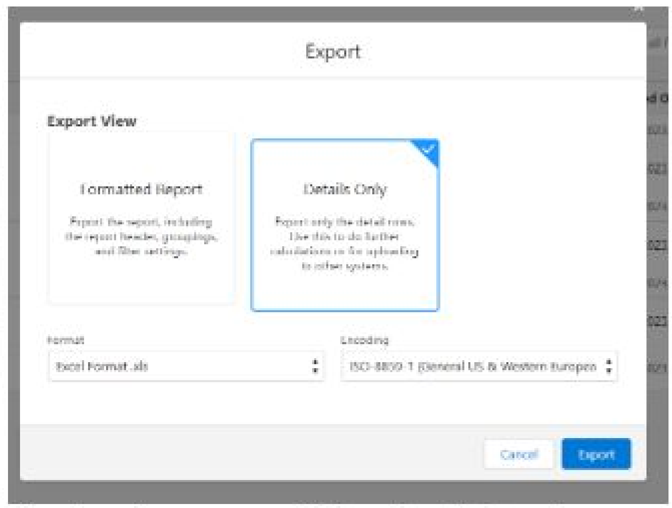


- After that we want to export opportunities Report in our system. So, click on drop-down arrow in the line of the respective Report and click on Export.



- After that we got 2 options.
   I. **Formatted Report:** if we select the formatted report so the report will download with all headers, grouping and filters. The format of this report is come with only 1 option **.xlsx**.
   II. **Details Only:** if we select the details only so the report will download with only row records. The format of this report is come with 3 formats i.e., .**xls**, .**xlsx**, .**csv.** We have to also choose encoding. Download this report if we have a requirement to share this report with other system.





- After selecting anyone option click on Export. So that the reports will download in local system.

Dashboards

- Dashboard can't be created without report.

What is Dashboard?

- A dashboard is a visual display of key metrics and trends records in your org.
- Source of dashboard is reports.
- You can place one report in multiple dashboards components on a single dashboard.
- Having multiple reports on a single dashboard page makes it a powerful visual display tool.

Dashboard folders.

Like reports, dashboard is stored in a folder, so:

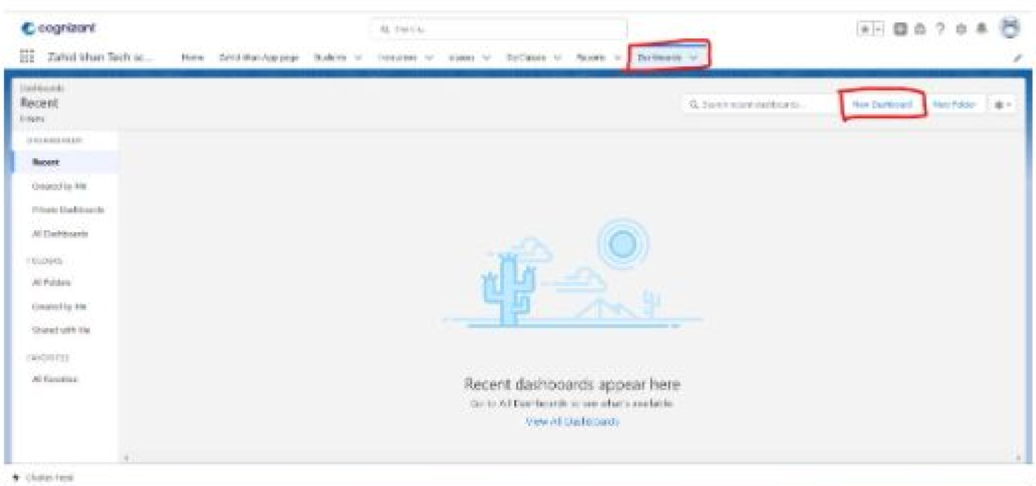
- Dashboard folder controls who have access to its content.
- If one has to access to folder, then only one can access its dashboards.
- However, to view the dashboard components, one need access to underlying reports as well.

Important about Dashboard:

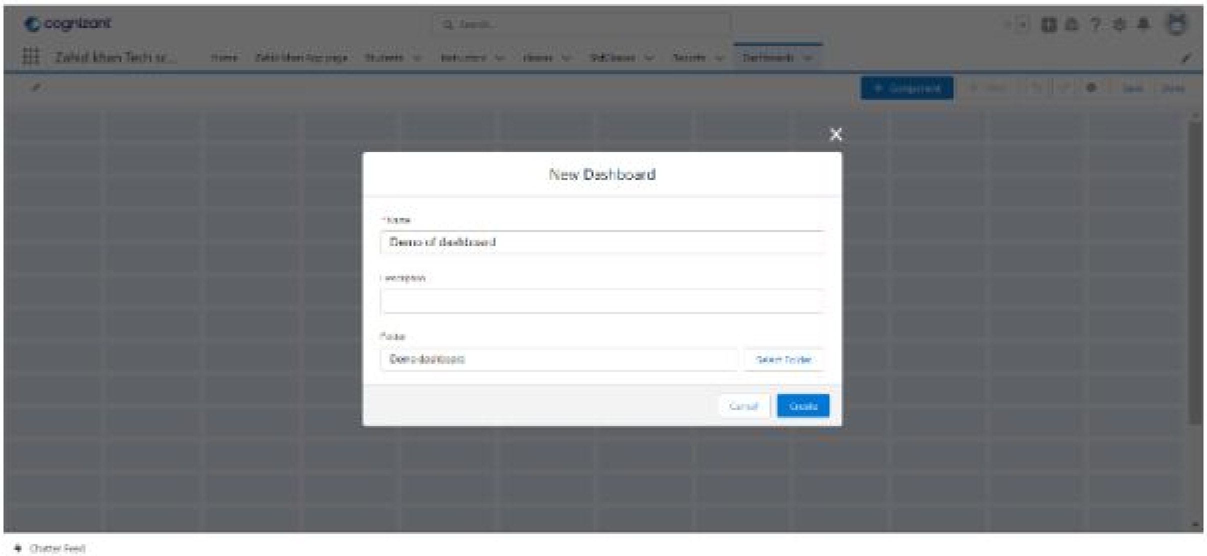
- Each dashboard has a running user.
- Running user's security setting determine which data to display in dashboard.
- If running user is a specific user then all dashboard viewers see data security setting of that user, regardless of their own security settings.
- Dynamic dashboards are those for which running user is always logged in user. Here, each user views the dashboard as per their own security settings.

Steps to create Dashboard:

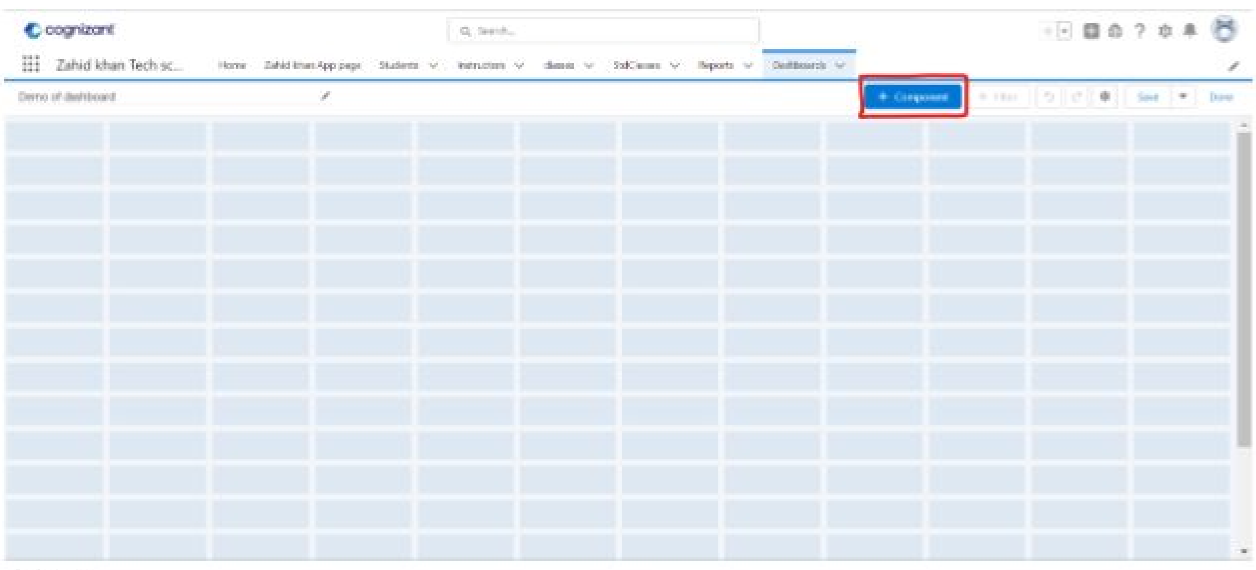
- Go to front-end of the Org. and click on dashboard tab. After that click on **New Dashboard**.



- After that we got a pop-up in which we have to enter Name, description, and choose folder. Note: we will not be able to make dashboard for that report which is in private folder.
- Here we make a folder named as Demo dashboard.
- After that click on Create.

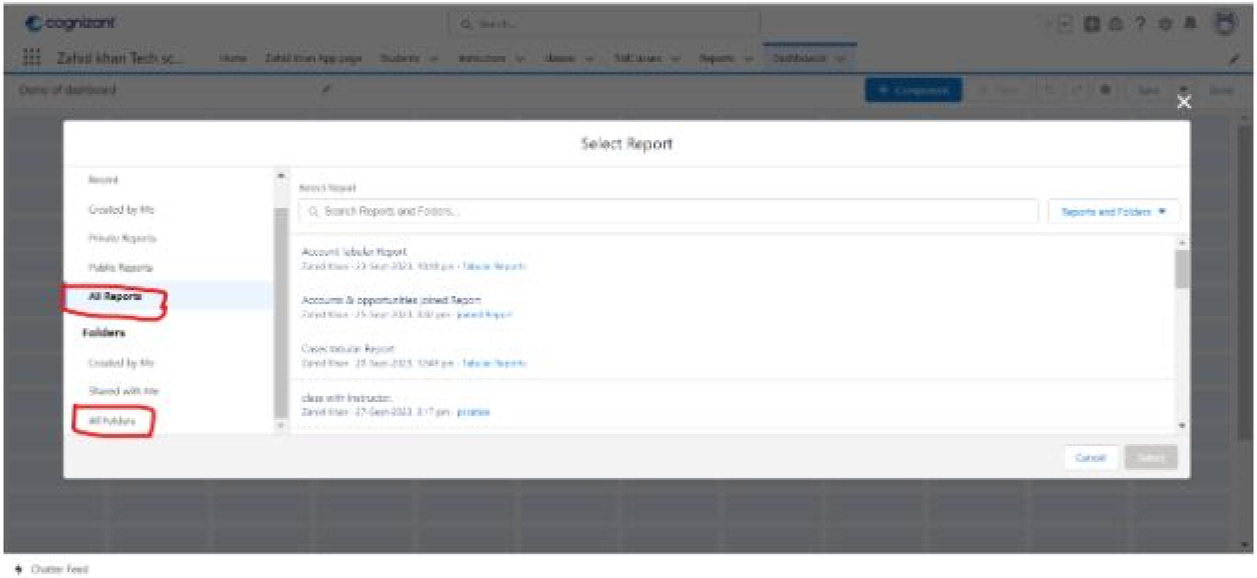


- After that click on +component option top of the page to add the report in this dashboard.

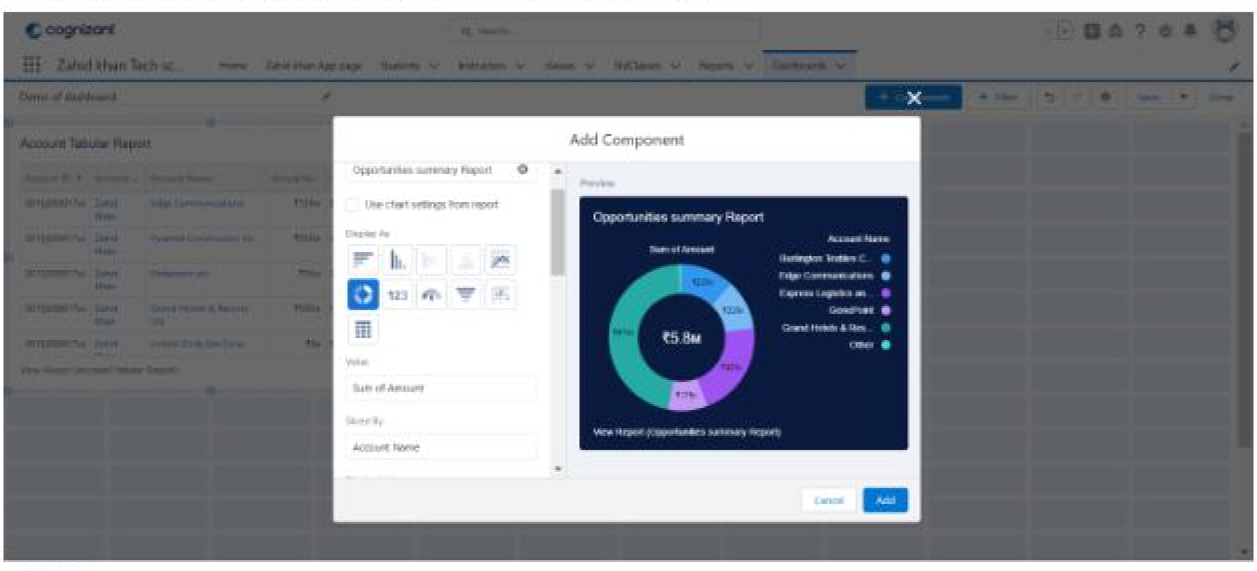


- When we click on **+component** All reports will be visible. If we want to show all reports together then we have to click on All Reports option from left hand side. If we want to choose reports from folder so we have to click on All folder from left hand side.
- We can place all report like, tabular, summary, matrix and joined.

- For tabular report table will add in dashboard. For summary, matrix and joined chart will be Added in Dashboard.

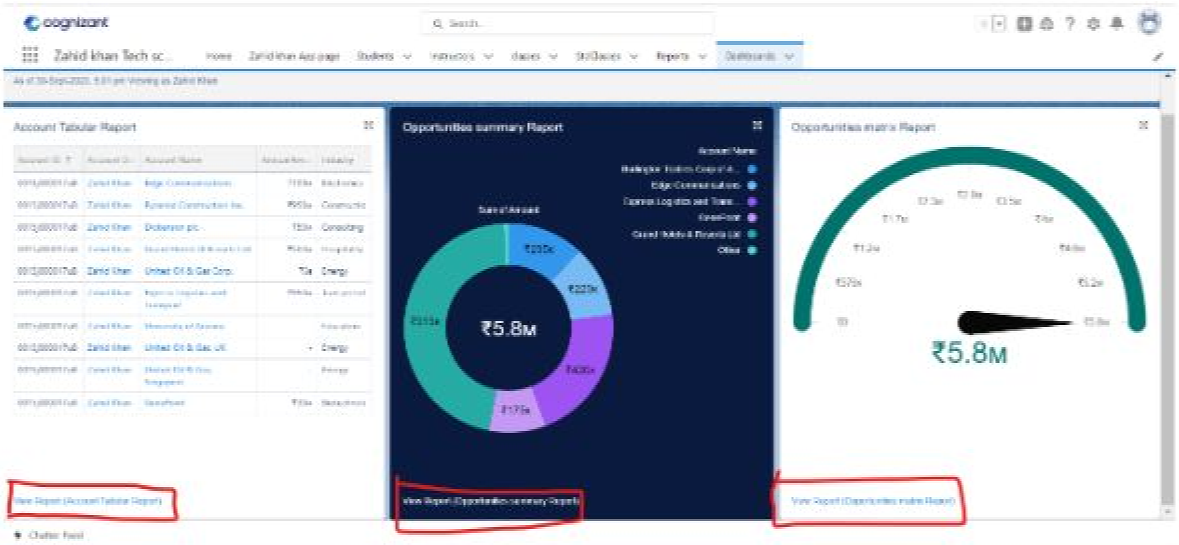


- Here we are selecting All folder and added some reports from tabular, summary, matrix and joined folder to the dashboard.
- After selecting a click on select and then click on Add.
- For summary, matrix, joined report we will select chart here.
- We got lots of option to customize our report chart.

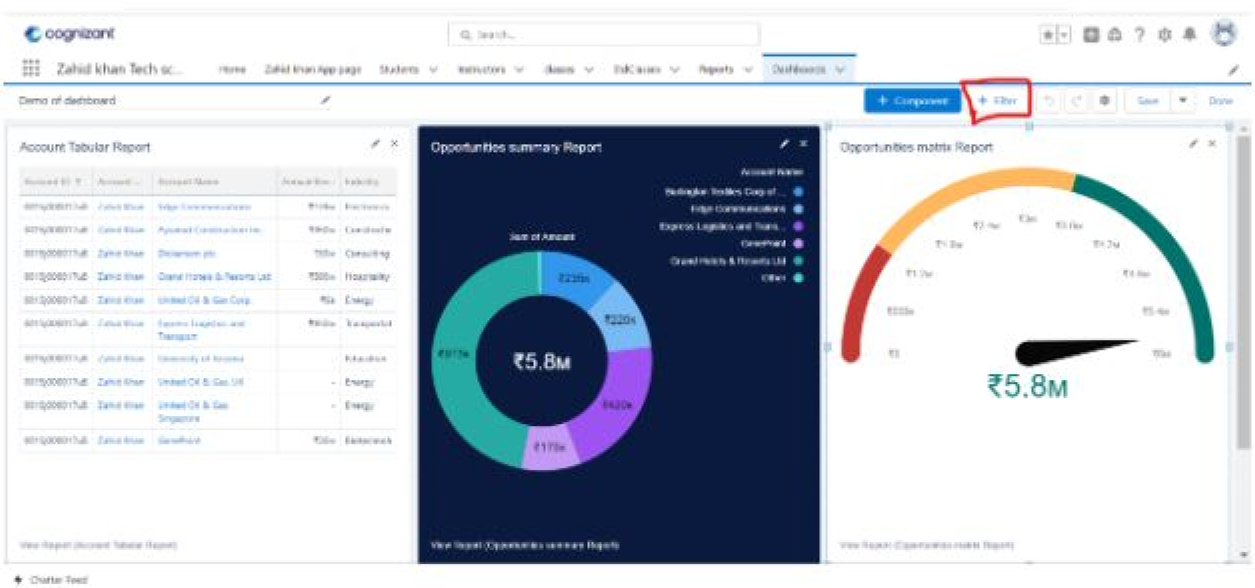


- Click on Add to add this chart on dashboard canvas.

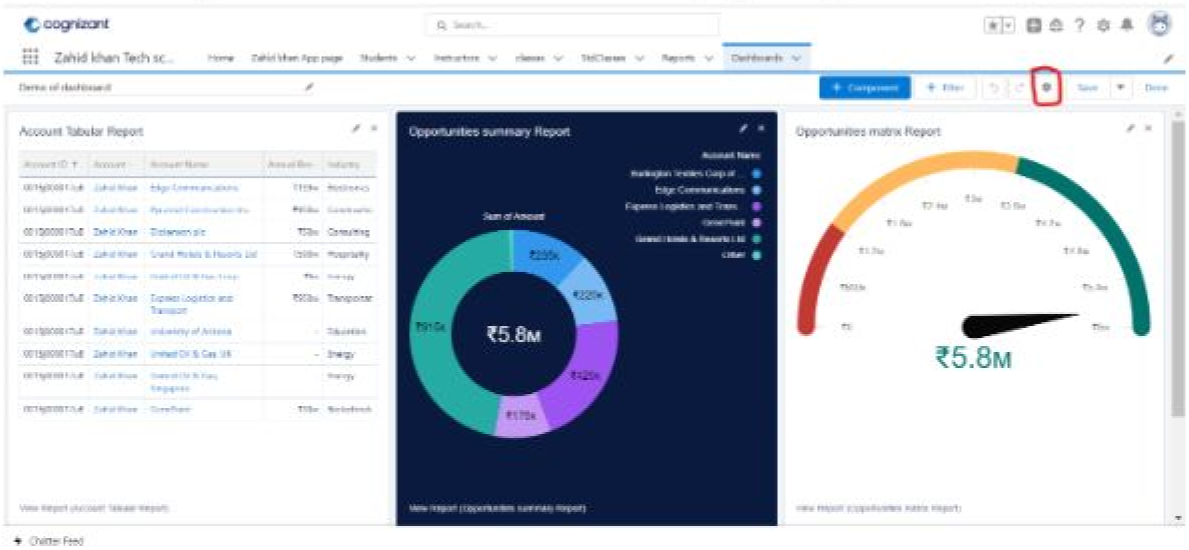
- After Adding all chart click on save and done.
- After that we will see our dashboard inside the folder which we created.
- We have also a report link at below of the chart on dashboard if we click on that click so it will redirect us to the Report.



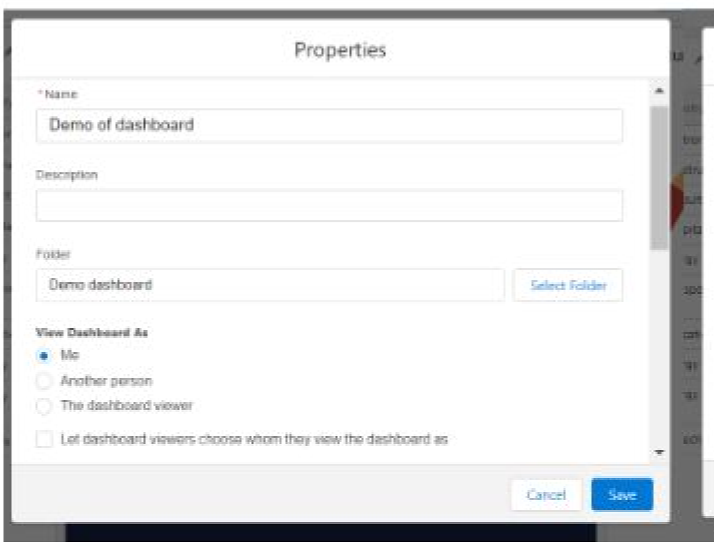
- We have a Refresh option to refresh the chart if we make any changes in report, Edit button and subscribe button in which we have download, delete, save as and new dashboard option.
- We can also Apply filter in our dashboard.

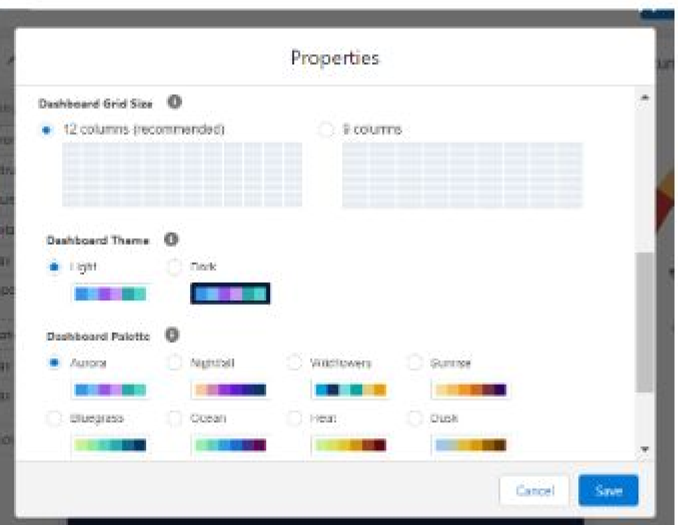


- Click on setting icon beside save button. We will see page configuration of dashboard.



- After that we got a properties pop-up in which name of the dashboard is available, description, Folder, view dashboard as like, Me, another person (we have to select the user), The dashboard viewers (best option), dashboard Grid Size like 12 column or 9 columns. Dashboard theme like light or dark and dashboard palette.



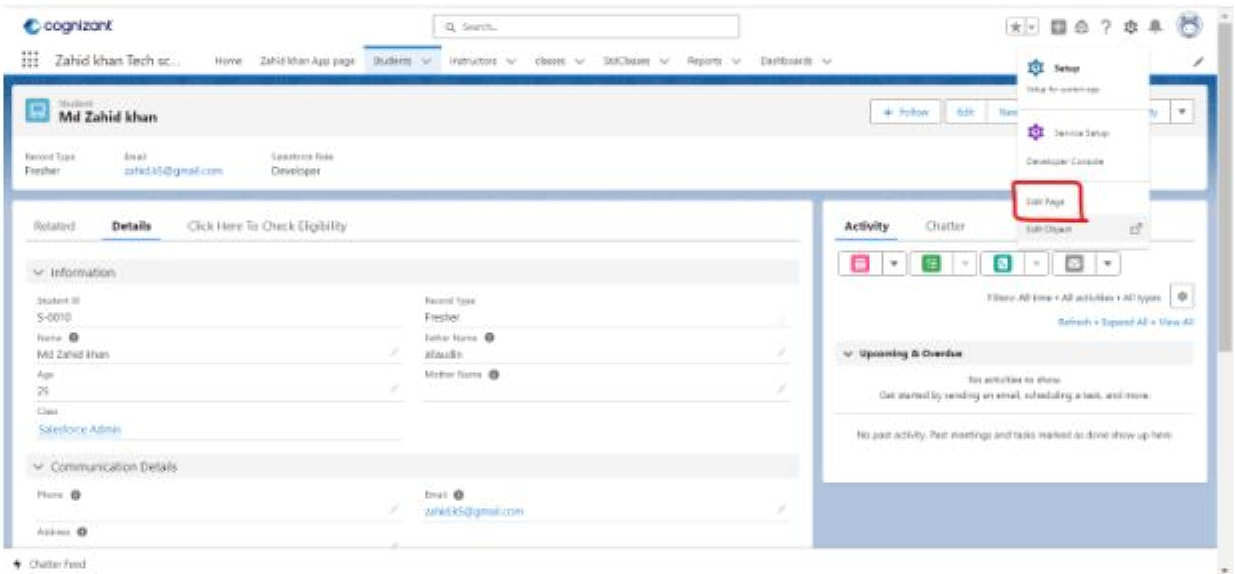


Reports and dashboard on Lighting page

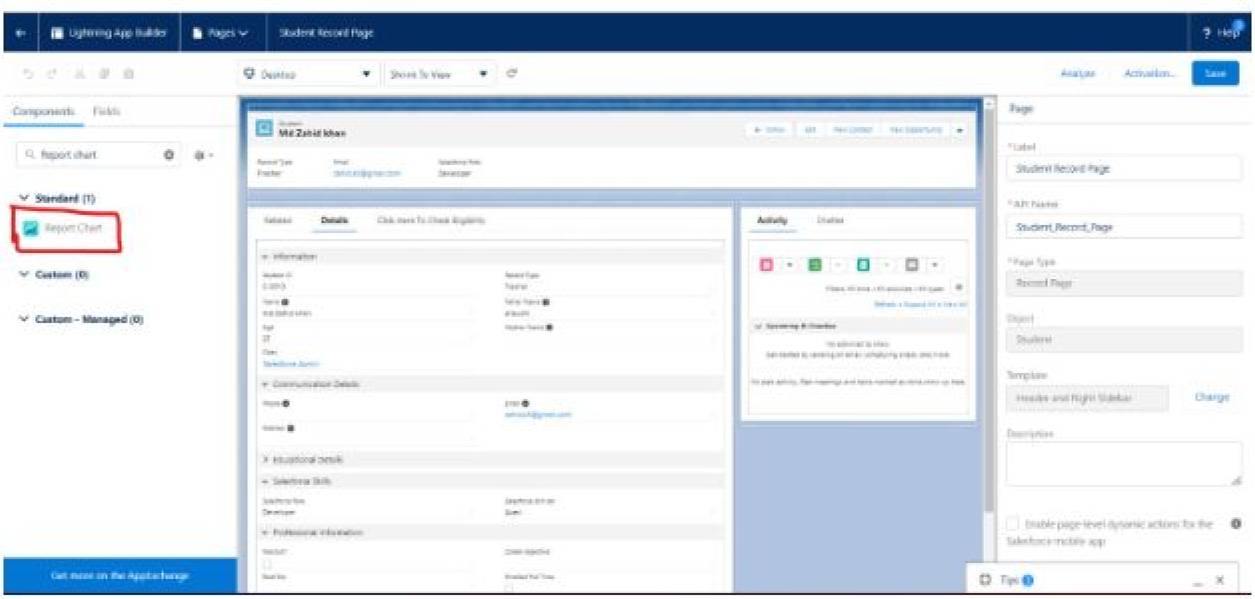
- As we know that there are three types of lighting page Home, Record and App page.
- We can add reports chart in our home, record, and App page.

Steps to place Report chart on Record page:

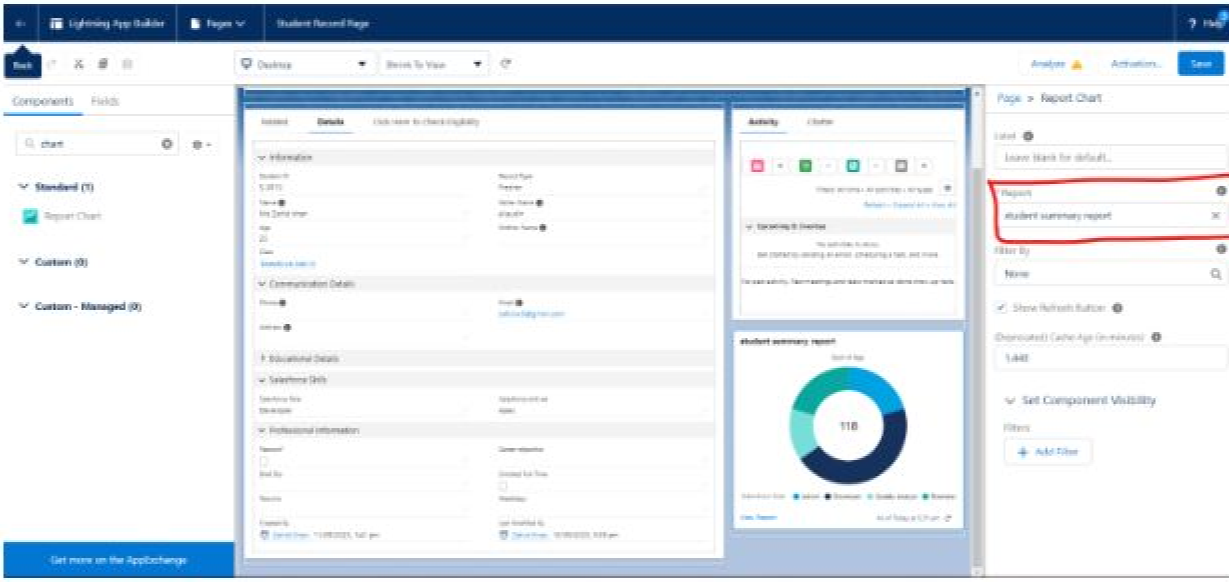
- Previously we were created Report on student object, so we are going to place Report chart on student record page.
- Click on student page on front-end and open any record. After that click on set-up icon on top and select Edit page.



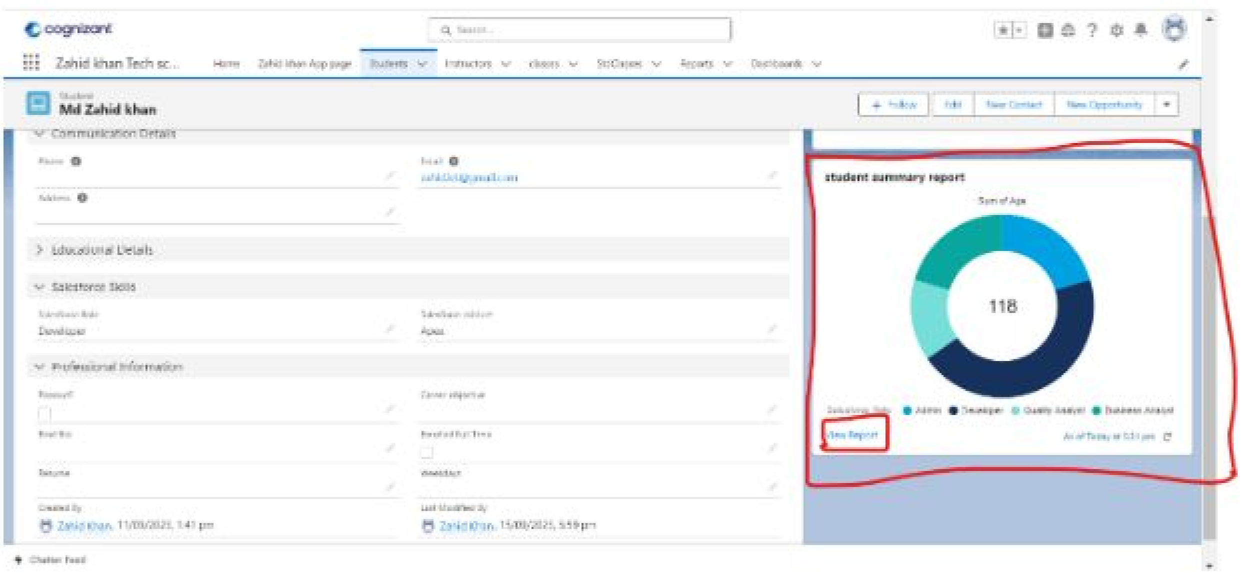
- After that search for Report Chart. And drag it to below of Activity page.



- Now select student summary reports in Report field at right hand side.

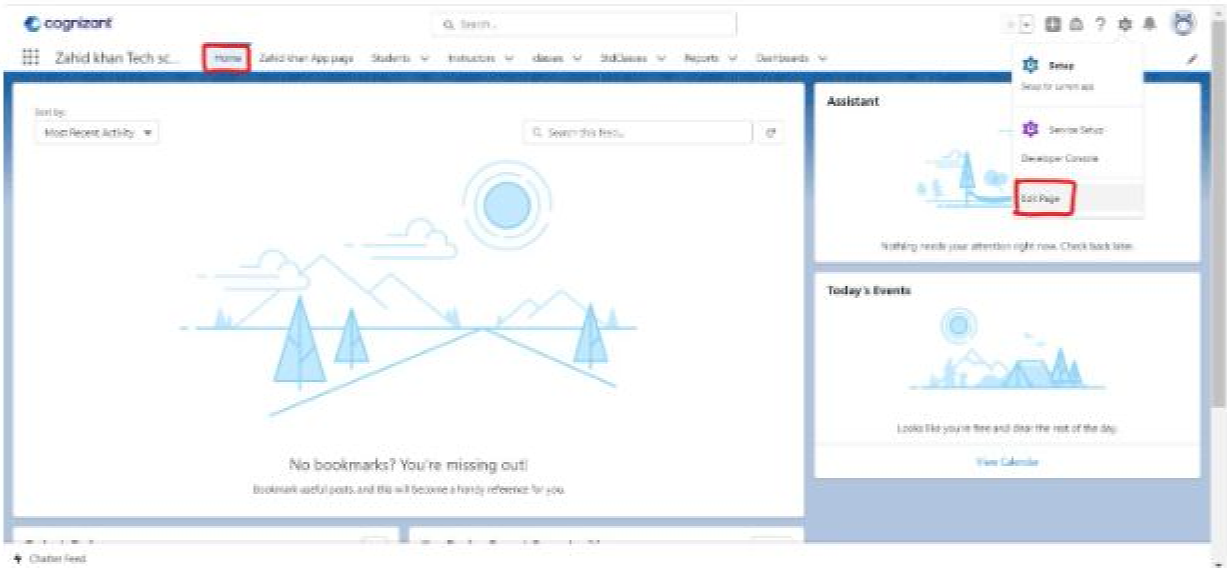


- After that click on save. Now go to front-end and check that the chart of student report will be visible in all records of student object.
- If we click on View Report so it will redirect us to the respective report page.

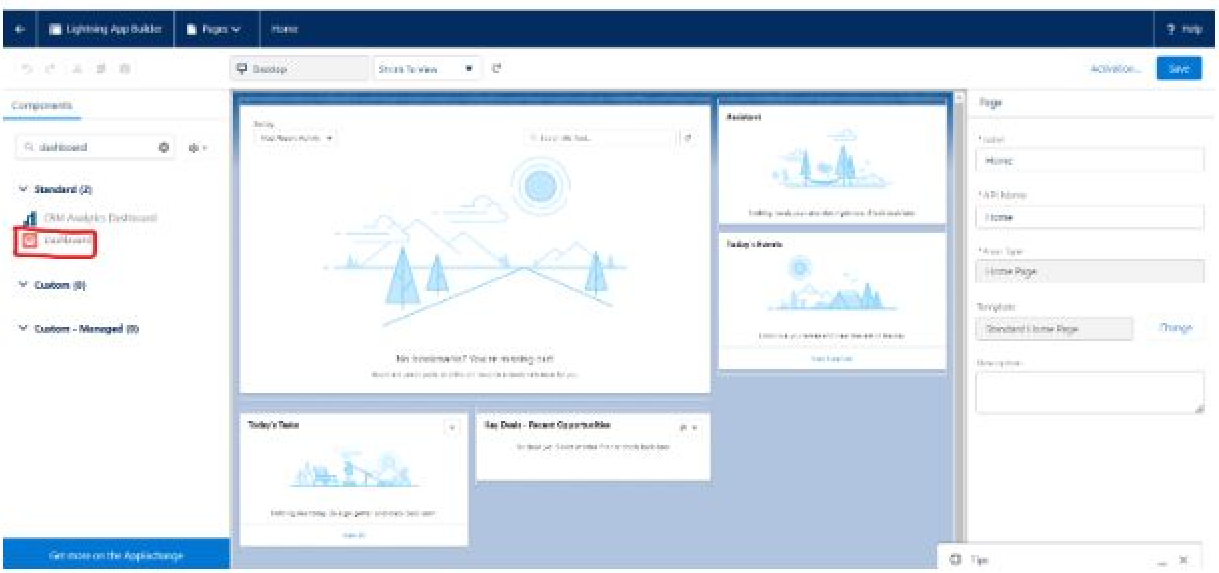


Steps to place dashboard and report in home lighting page:

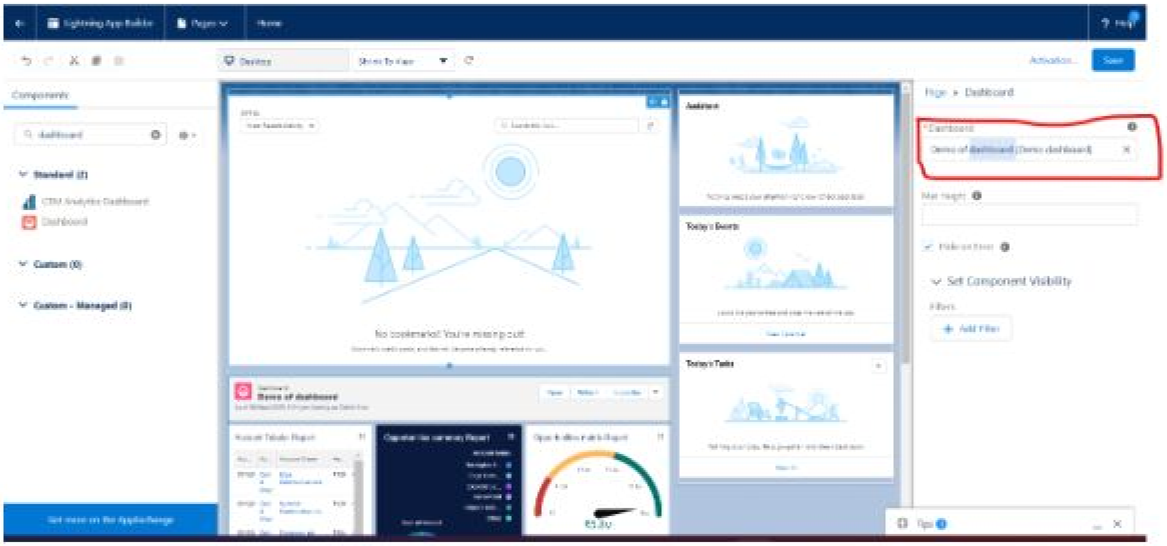
- Click on Home tab which we created previously after that click on setup and click on Edit page.



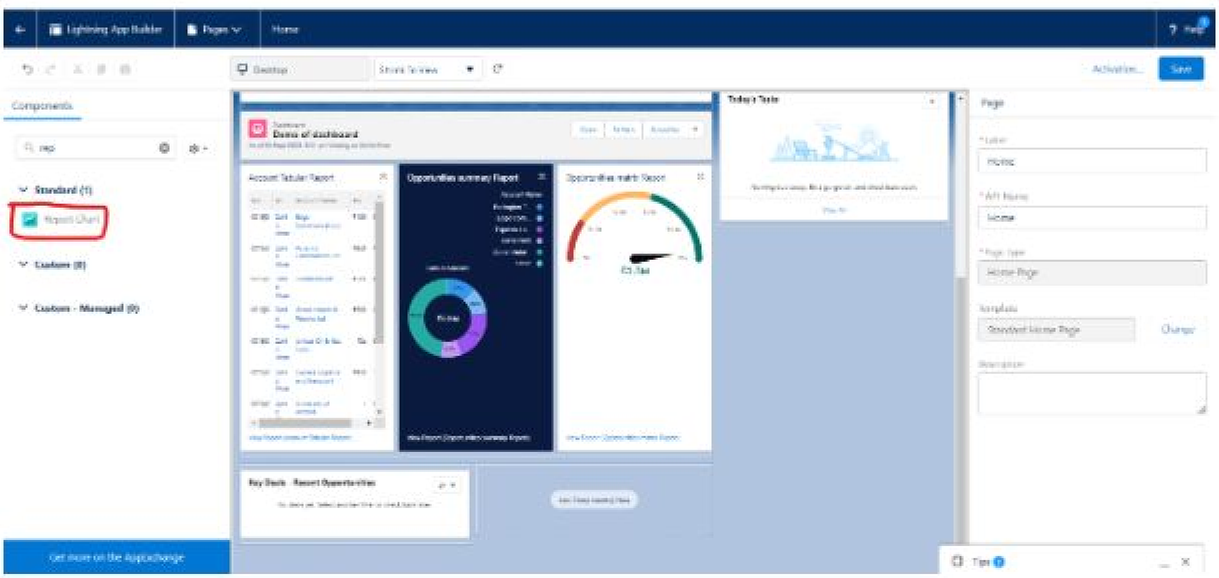
- After that search for **Dashboard** on left hand side search bar.



- Drag it to the home page. And select the Dashboard folder from Right hand side. Currently we have only one folder so its showing one dashboard only.



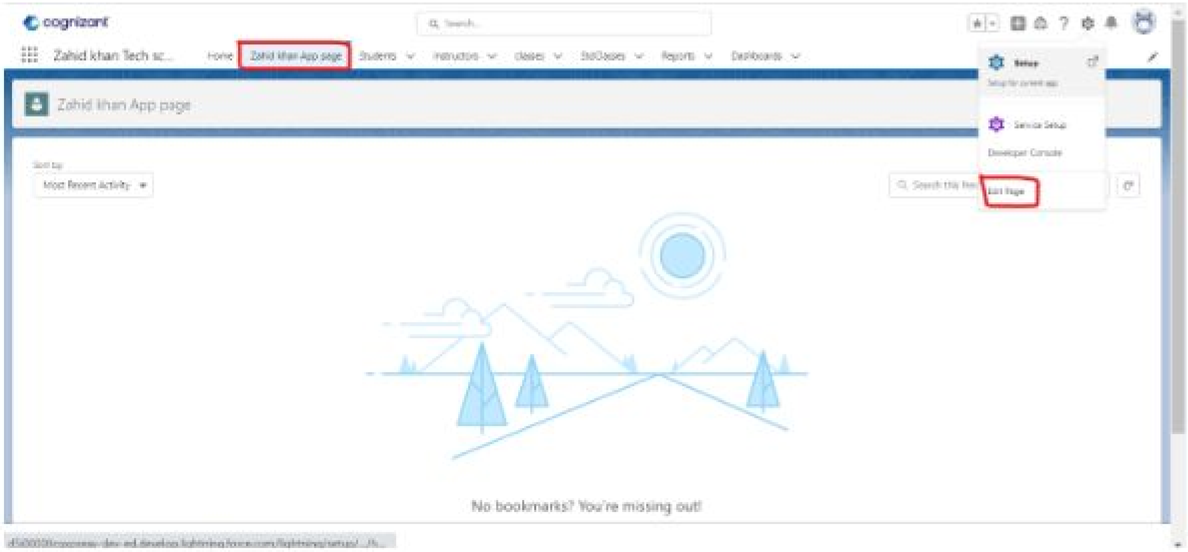
- We can also add **report** on home page. For this search for report Chart and drag it to the home page. We can select any report from Report field from right hand side.



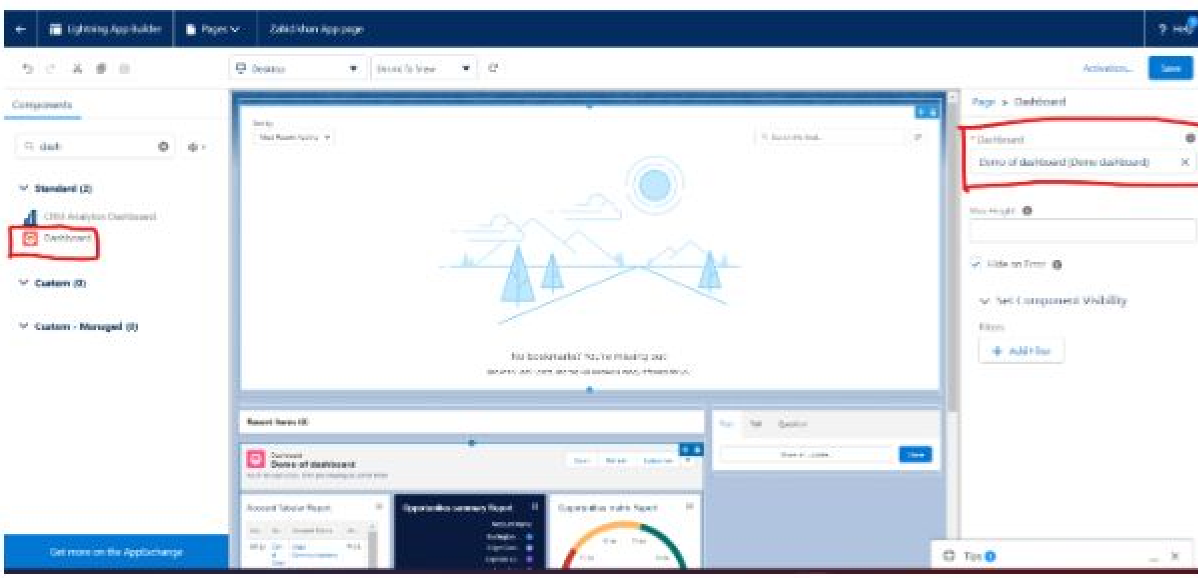
- Now click on save.
- Go to Front-end and check.

<u>Steps to create Report and dashboard in App page:</u>

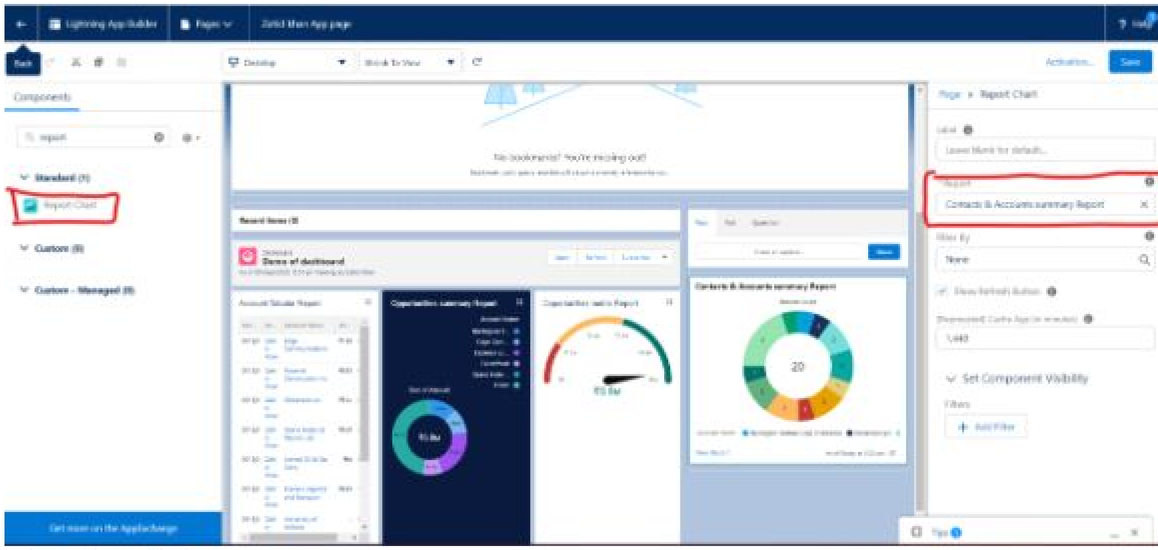
- Like home and record page we can add dashboard and report in App page.
- Click on App page on front-end of the page and after that click on set-up icon and click on edit page.



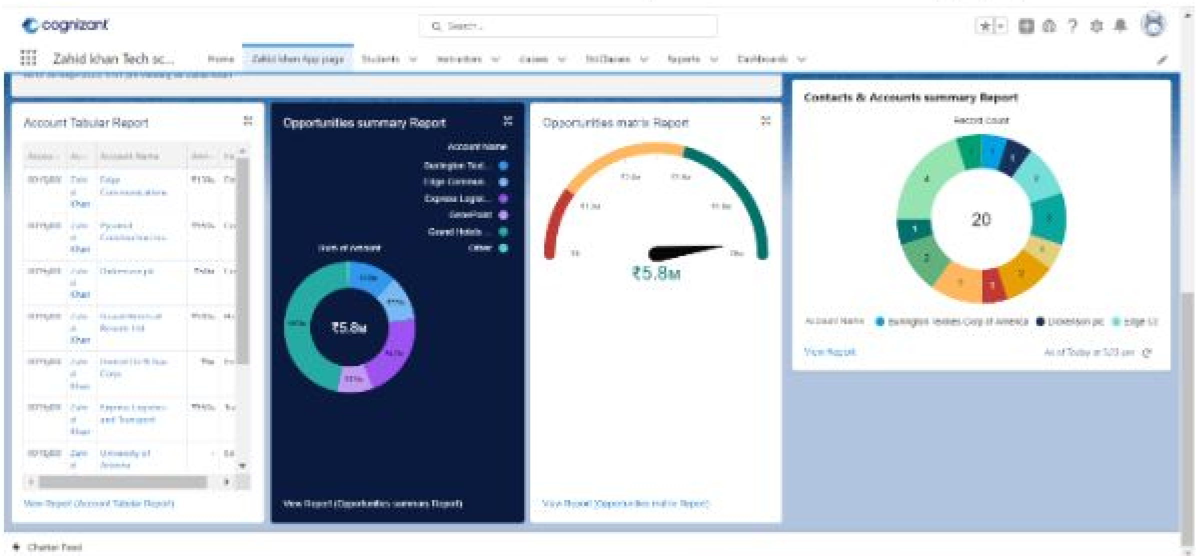
- After that search for dashboard and place it inside the App page. Then select the dashboard folder from right hand side.



- For insert the report search for report chart and drag it inside the app page. After that select the report from right hand side.



- After that click on save.
- Go to front-end and check the dashboard and report will be visible in App page.

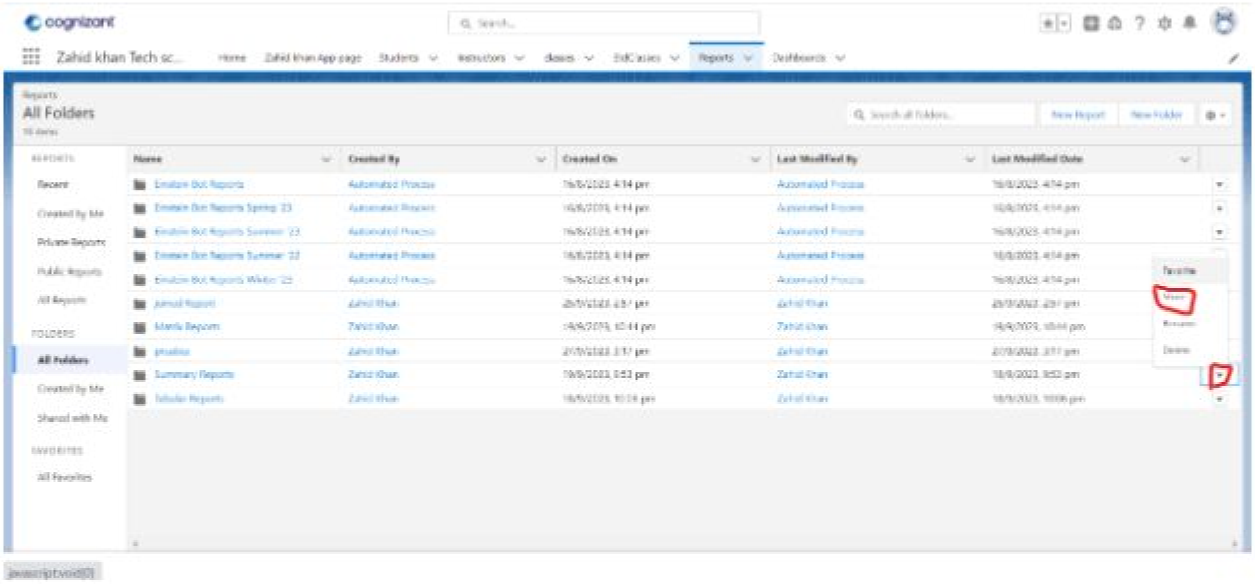


Share Report and Dashboard

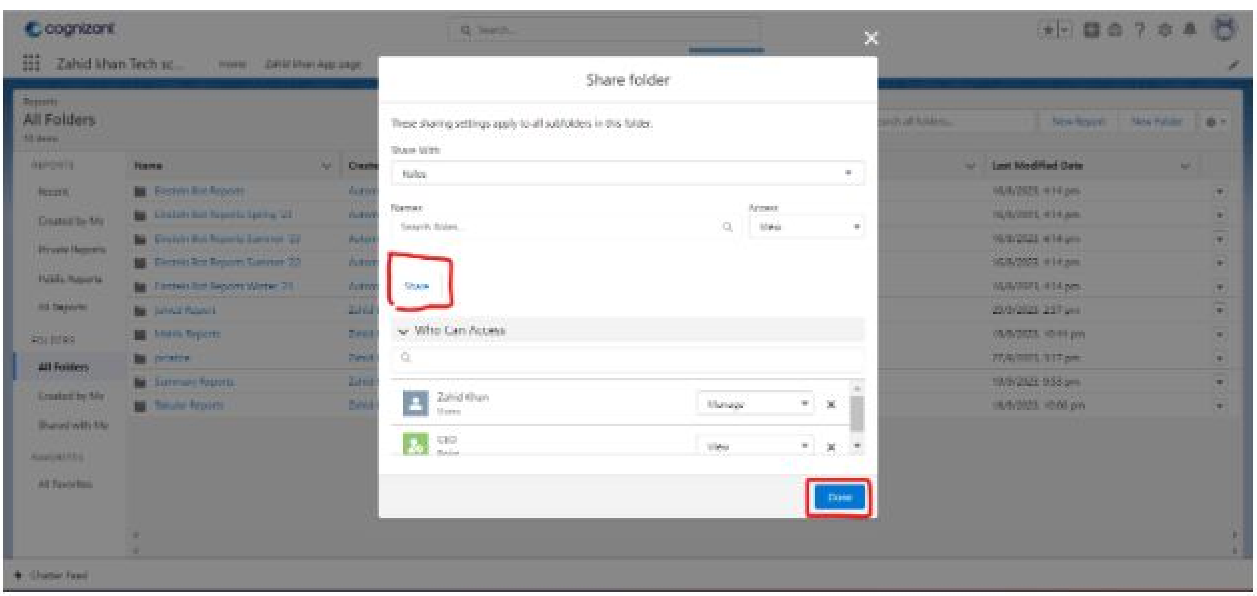
- Sharing the reports and dashboard between users.
- In report and dashboard, we can share Folder not individual report or dashboard.

Steps to share report and dashboard:

- Go to Report tab on Front-end after that click on **All folders** to show the available folder. After that open any folder (which you want to share). For example, we are taking summary report folder. After that click on drop-down arrow along with the folder.
- After that click on share option. So, that we can share complete folder with another user.

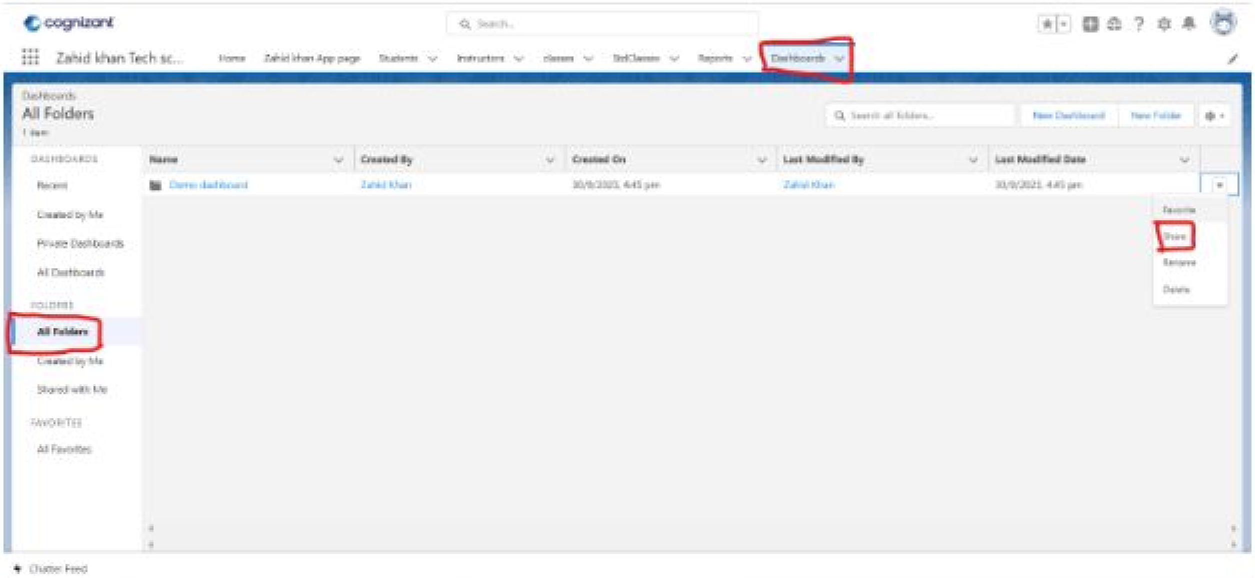


- After clicking on share one pop-up will open in which we have to select the user with share this report, Names, Access like, view, manage, edit. After that click on share button so that user will add below. At last, click on done so this report will share with respective users.

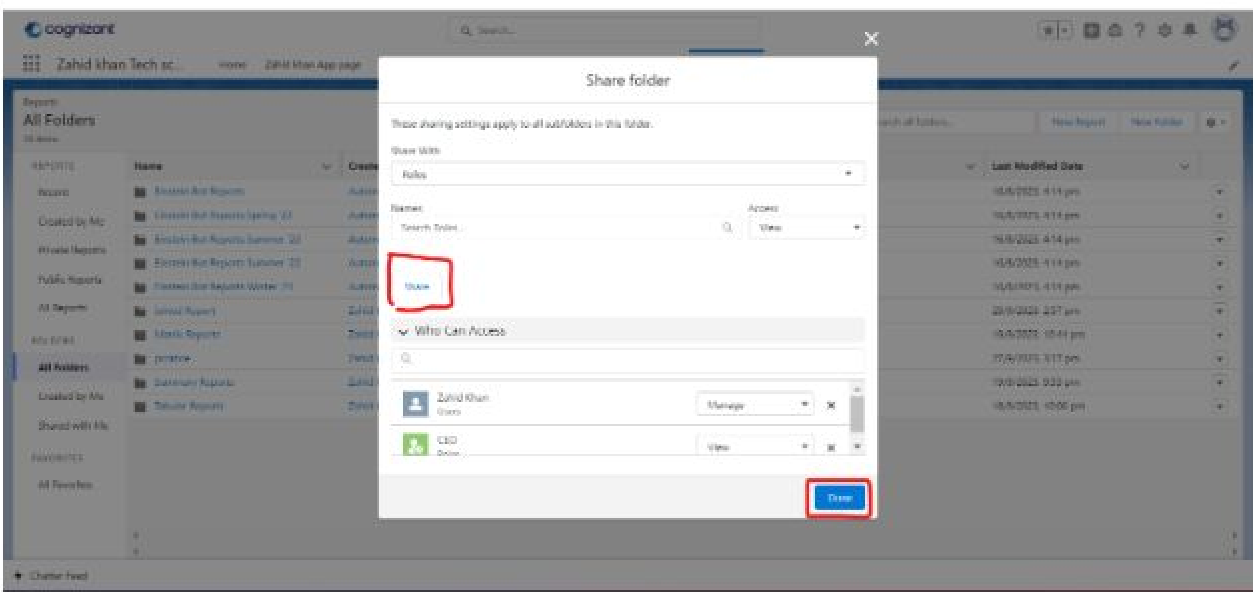


<u>Steps to share dashboard:</u>

- Go to Dashboard tab on Front-end after that click on **All folders** to show the available folder. After that open any folder (which you want to share). For example, we are taking Demo dashboard folder. After that click on drop-down arrow along with the folder.
- After that click on share option. So, that we can share complete folder with another user.



- After clicking on share one pop-up will open in which we have to select the user with share this report, Names, Access like, view, manage, edit. After that click on share button so that user will add below. At last, click on done so this report will share with respective users.



Day-11

Introduction:

- Data security is important because you need to control what a user or group of user can see in the org or app.
- Salesforce provides layered sharing model.
- You can easily assign different data sets to different group of users.
- You can control access to your whole org, any specific object, fields, and records.

Level of data Access:

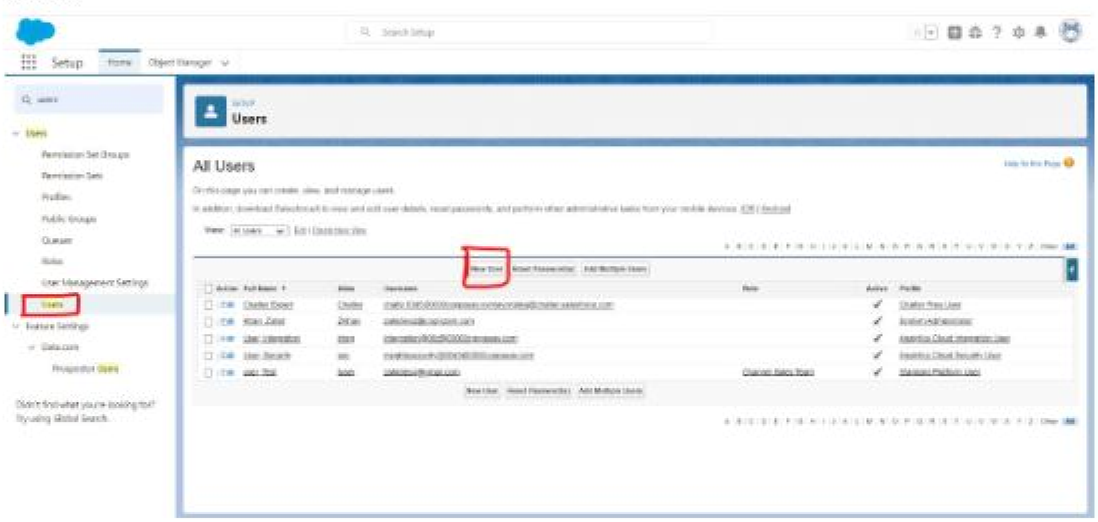
- Organization
- Objects
- Fields
- Records

Organization:

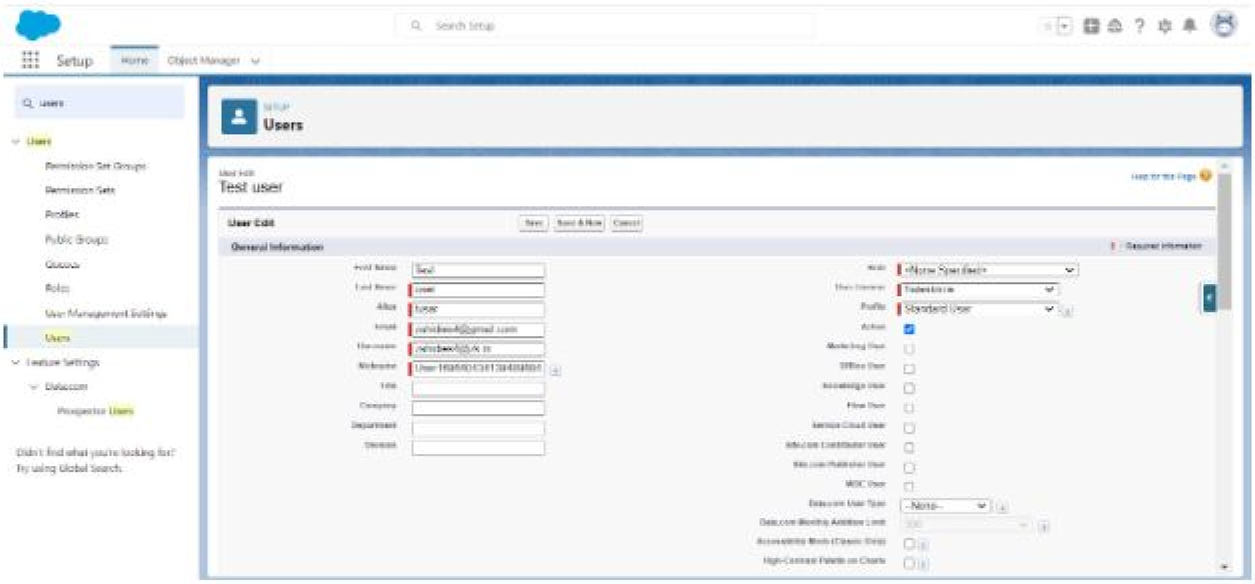
- Maintain a list of authorized users.
- Set password policies.
- Limit login to certain hours and locations.
    I. Limit IP addresses from which users can log in.
    II. Limit the times at which users can log in.

Steps to create User in Org.

- We can create no. of user in our org and control the access like what they can see and what they can do. In developer edition we can create max. 2 users in free trail license.
- To create a user, go to setup and search for **Users** and click on it. After that click on **new Users**.

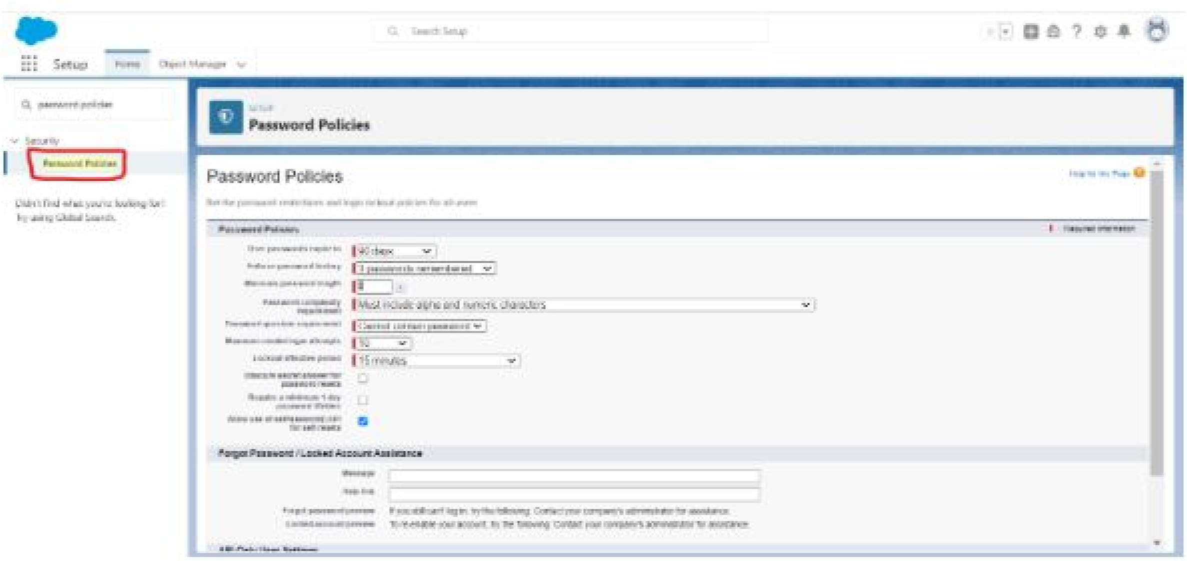


- After that enter first name, last name, username, email select role, select role, select user license as **salesforce** and profile as **standard users** the details & check the box **generate new password and notify user immediately** and click on save new users will be created.



Steps to set password policies:

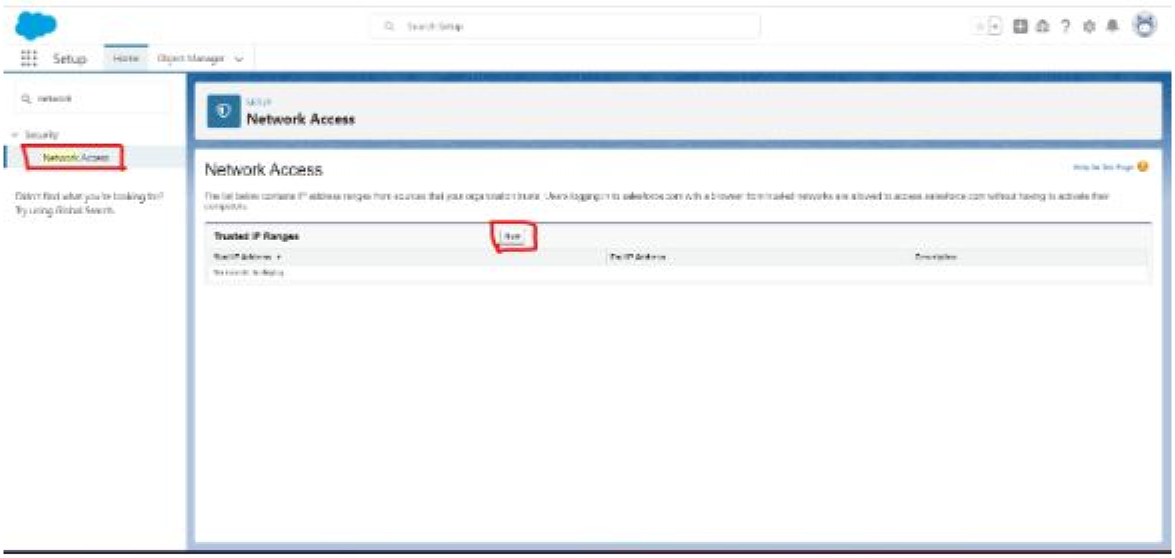
- Go to set up and click on home after that search for password policies in Quick search. And click on this.



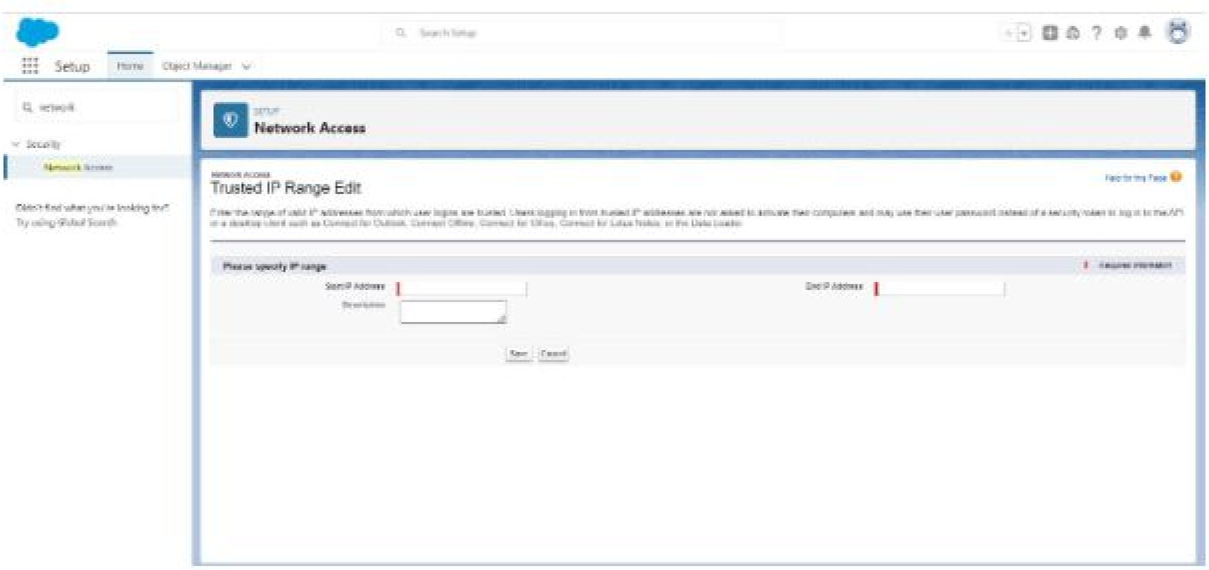
- Now we have to select the Options based on requirement and save. So that policies will set.
- This password policy will control the whole org.

Steps to Limit IP address and locations:

- Go to set up and search for **network access** in Search box. And click on it. After that click on new.



- We have to enter that range of Ip address start and end Ip address.
- Now enter that start and end Ip address and click on save.



Object level security:

- You can control level permissions for both standard and custom objects.
- You can set permissions for a particular object.
- You can give permissions to view, create, edit, and delete any records of that object.
- You can control object permissions using profiles and permissions sets.

Field level security:

- You can restrict access to certain fields in salesforce, even if user has object level access.
- You can make a filed visible to a particular user and can hide that from another user.
- You can give read and edit permission to a field, if you don't give both then that field will not be visible.
- Field level security can be controlled using profiles and permissions sets.

Profiles

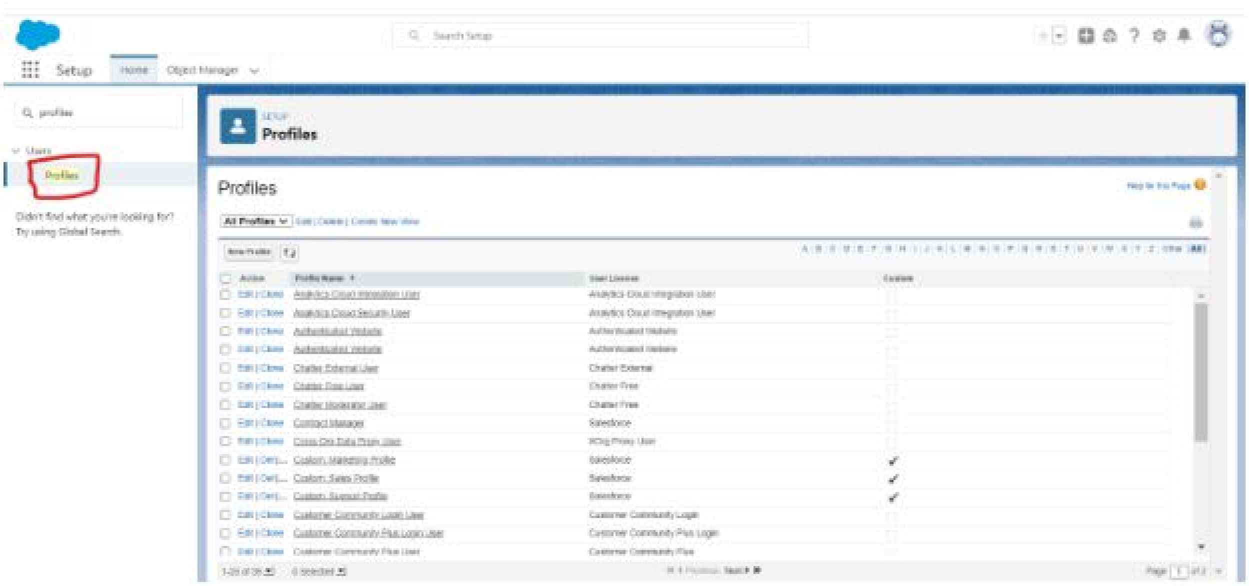
- We can control the access of objects and fields using profiles.
- A profile setting determines which data the user can see, and permissions determine what the user can do with that data.
- A profile can be assigned to many users, but a user can have only one profile at a time.
- To create new profile, you need to clone existing profile.

What can be controlled through profile?

- Assigned App & Assigned connected Apps.
- Object settings.
- App permissions.
- Apex class & Visual force page access.
- External data source access.
- Named credentials access.
- Flow access.
- Custom permissions & custom metadata type.
- Custom settings definitions.
- System permissions.

<u>Steps to search about profiles:</u>

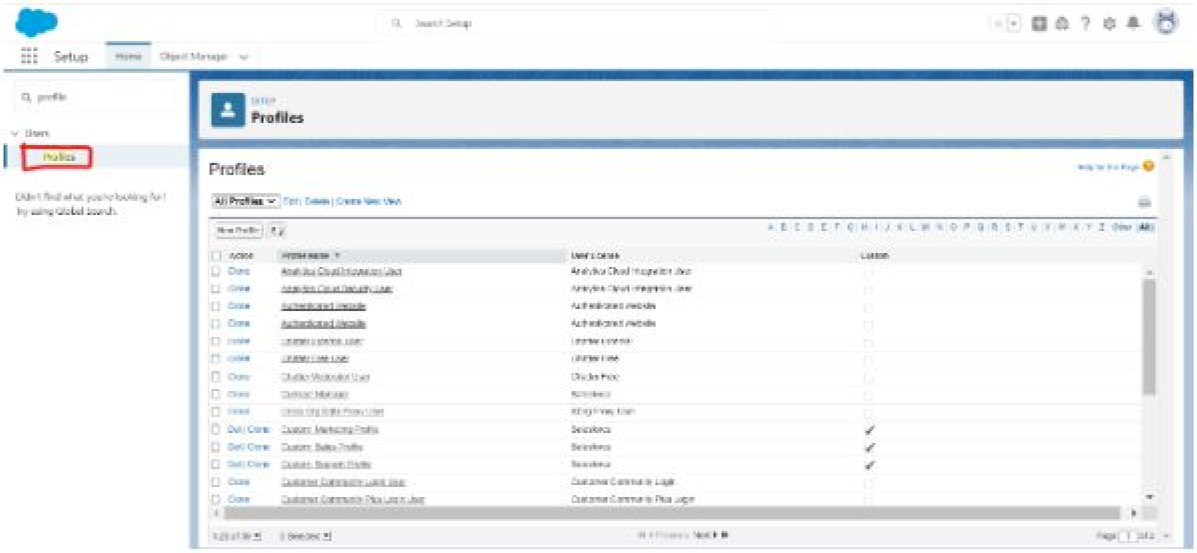
- Go to set up and click on home after that search for profiles in quick search box and click on it.



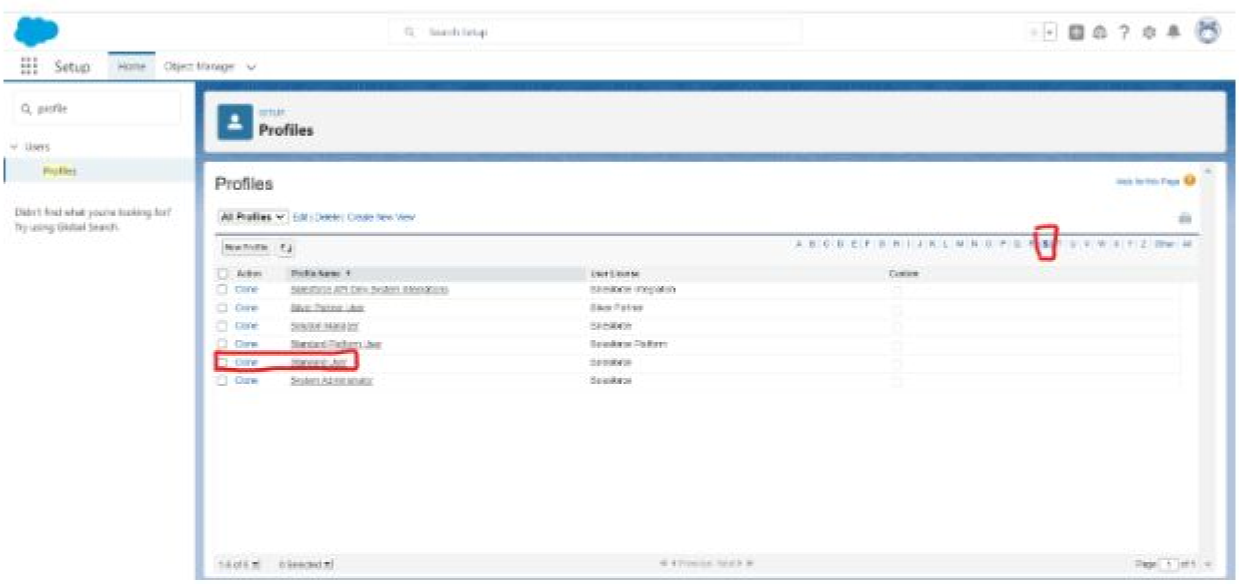
- In this page we can see all the available profile which is created in this org.
- When we have requirement to create a profile, we create **standard user** profile by cloning standard user. Because it has all permissions.

Steps to create new profile:

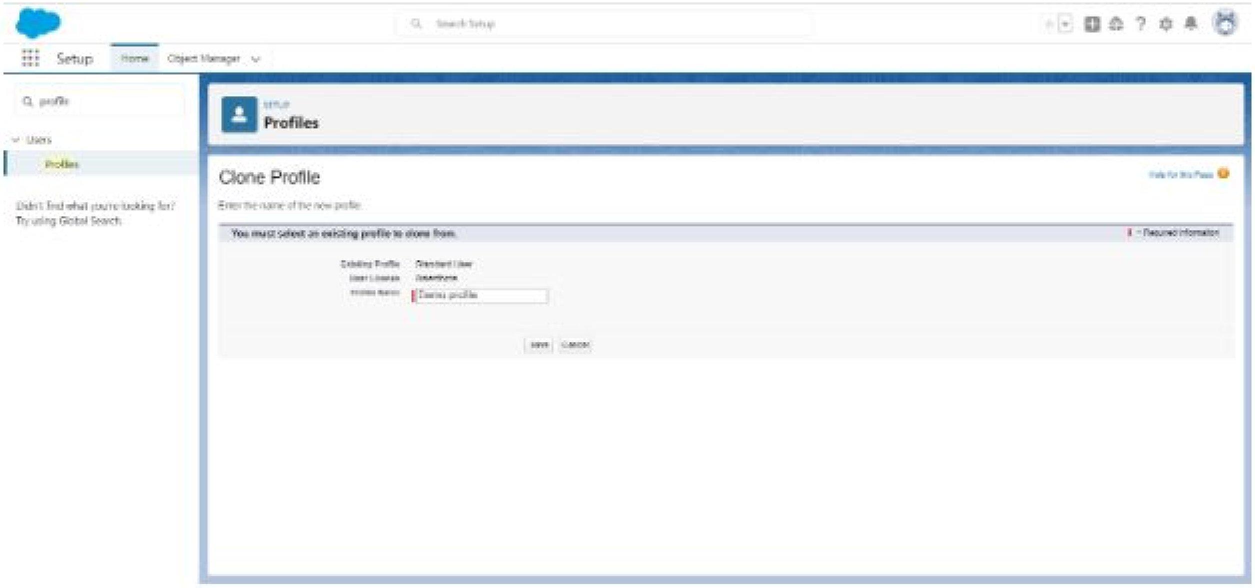
- Go to set-up and search profiles in Quick box. After that click on it.



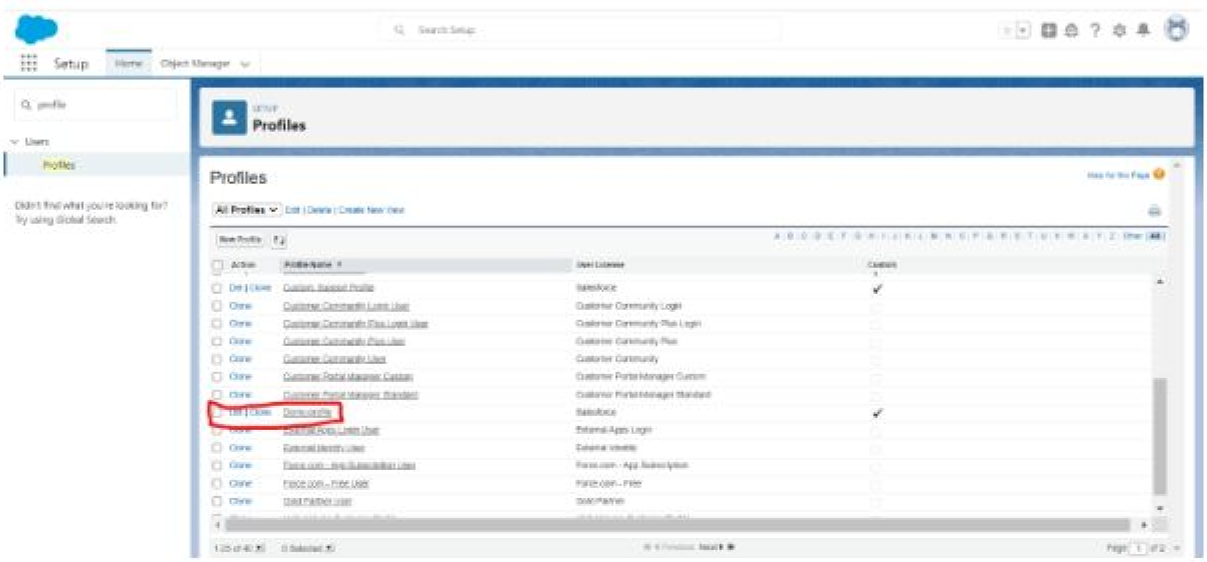
- After that click on S alphabet and search for **Standard users**. And click on Clone. When we want to create any profile just **clone** standard user don't edit any profile which is available.



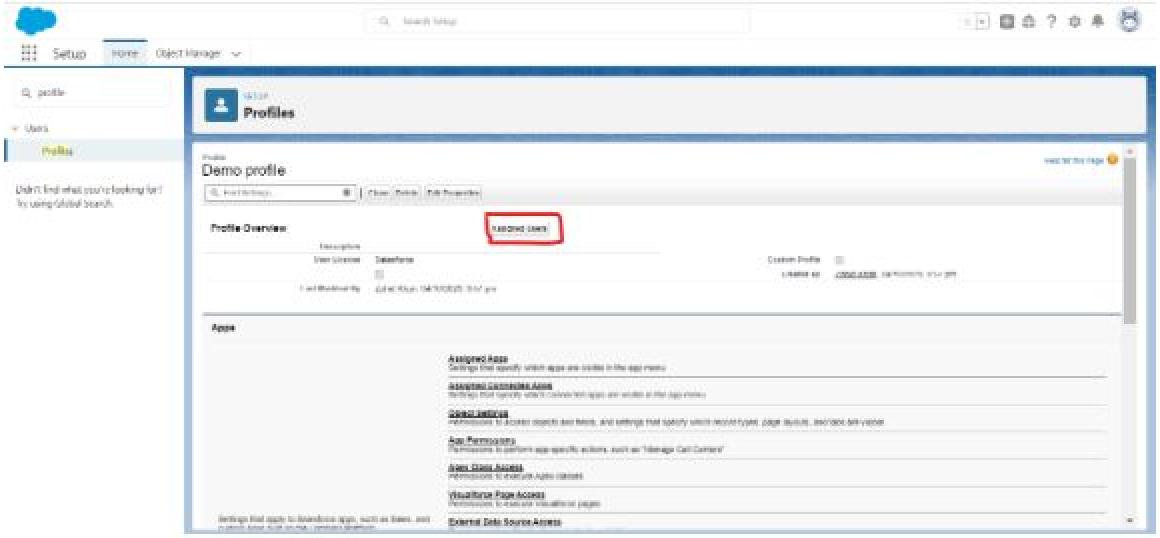
- After that enter profile name. and click on save.



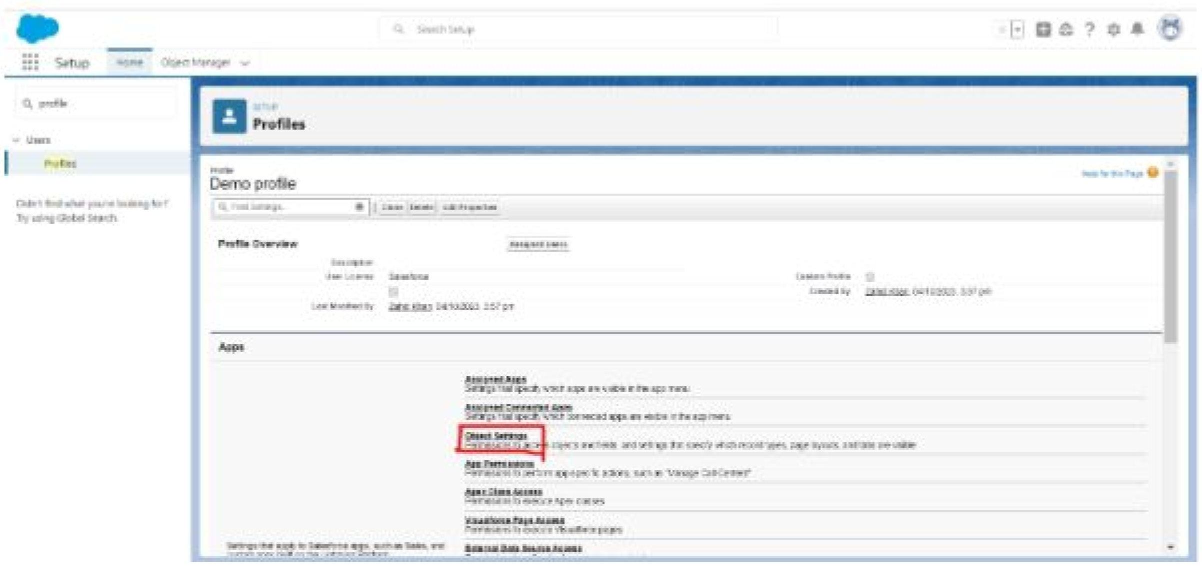
- Now new profile is created. Click on profile again and search on list we will see created profile i.e., **Demo profiles**.



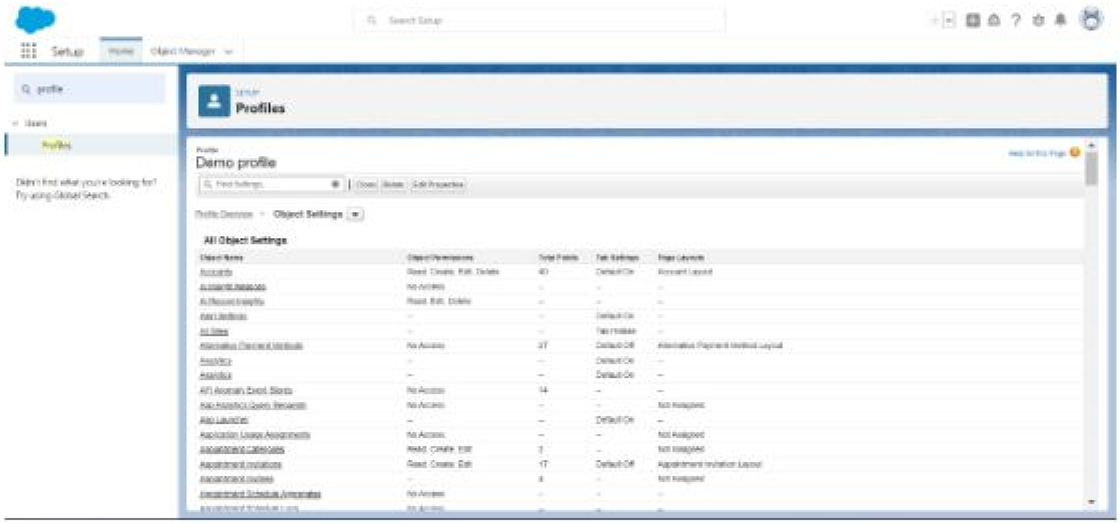
- Now click on Demo profiles. So, that we can see all permission inside this profile. And when this profile assigns to any user that user get all permission which is in that profile. When we click on **assigned user** button, we can see all user which is assigned to that particular profile.



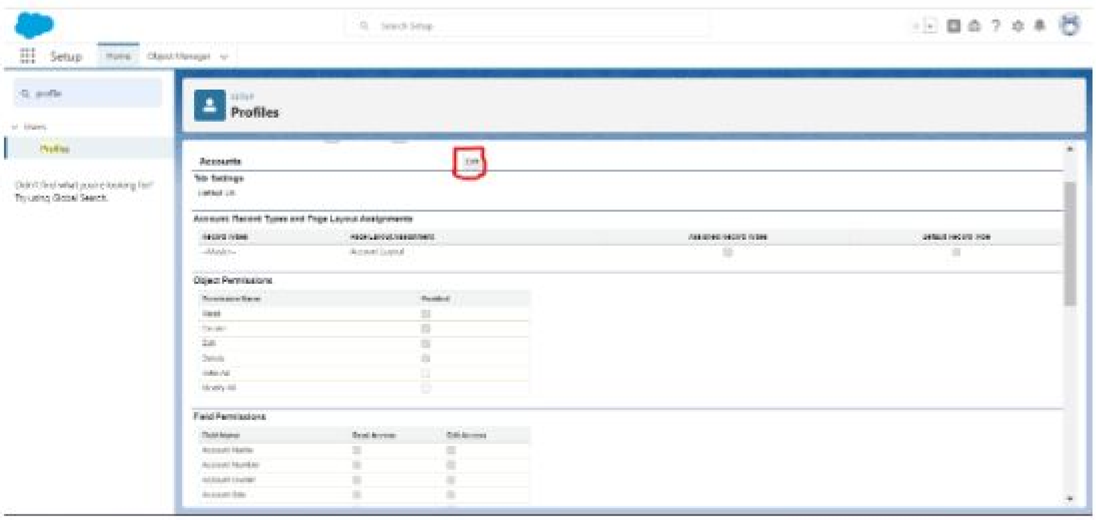
- now we can edit the read, write, edit, delete access of any object for this profile. We can Control the access of any of these setting. For example, we are edit object settings of newly created profile i.e., demo profile. For this click on click on object setting.



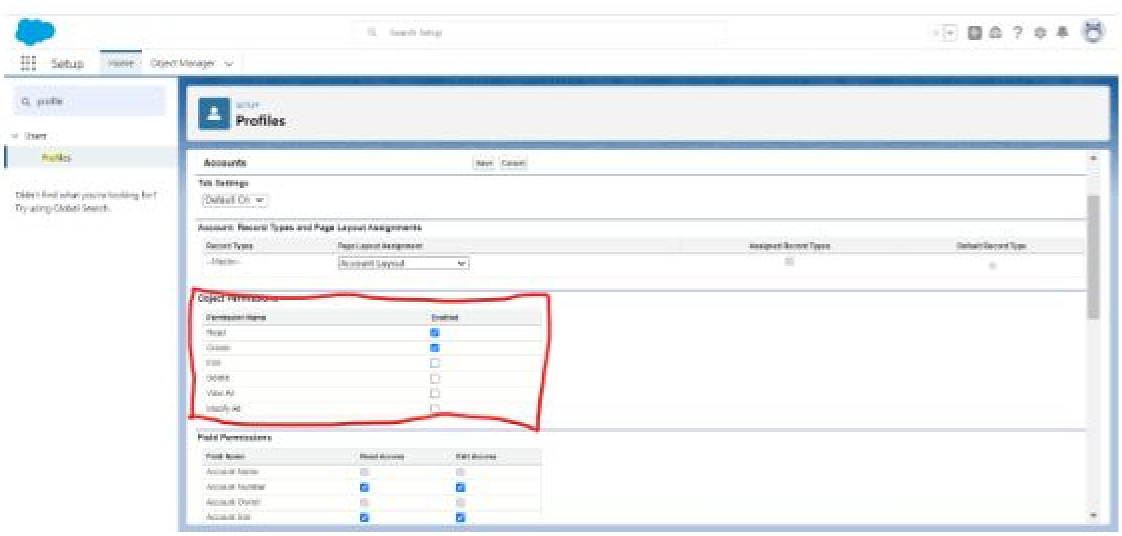
- After that we get list of all objects in our org. Here, we are selecting Account object for and modify few permissions.



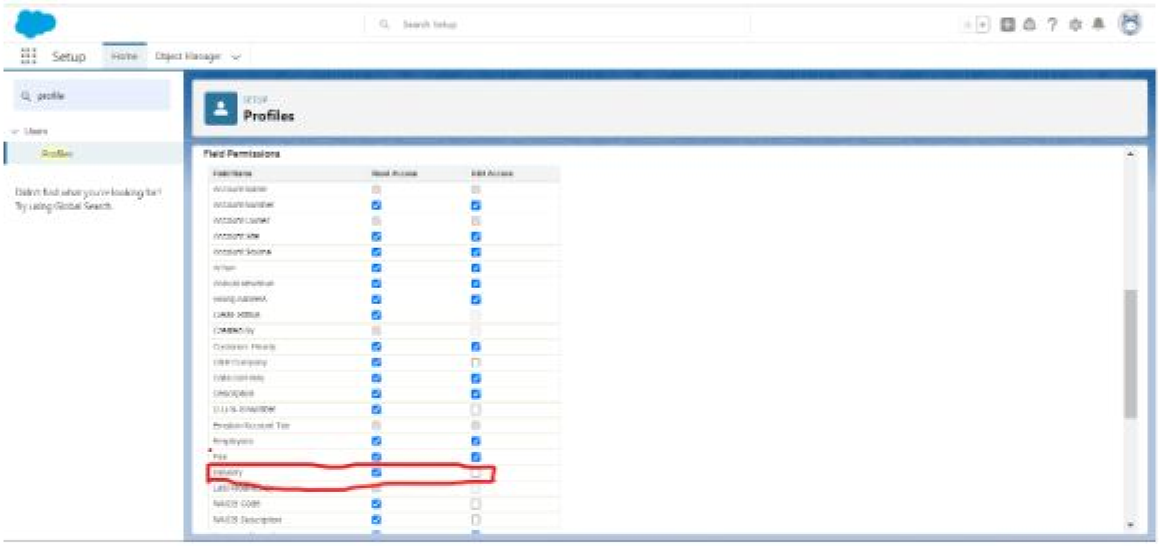
- After that click on edit button to edit the object permission and field permission.



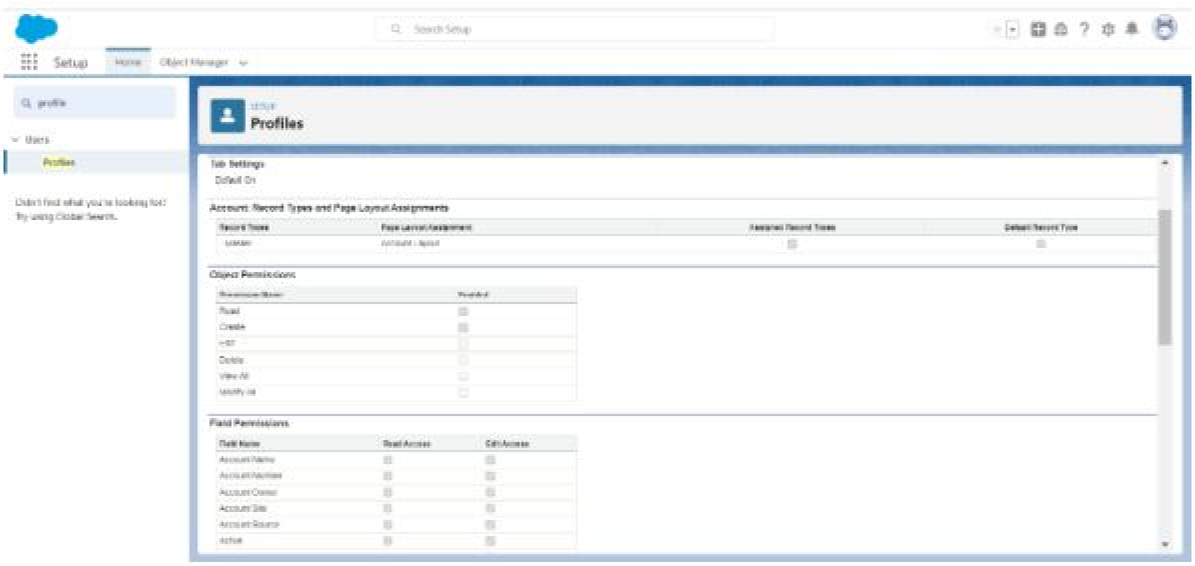
- Now we uncheck the box of edit and delete because we don't want to give this access of account object for this profile. Only create and read access give this profile.



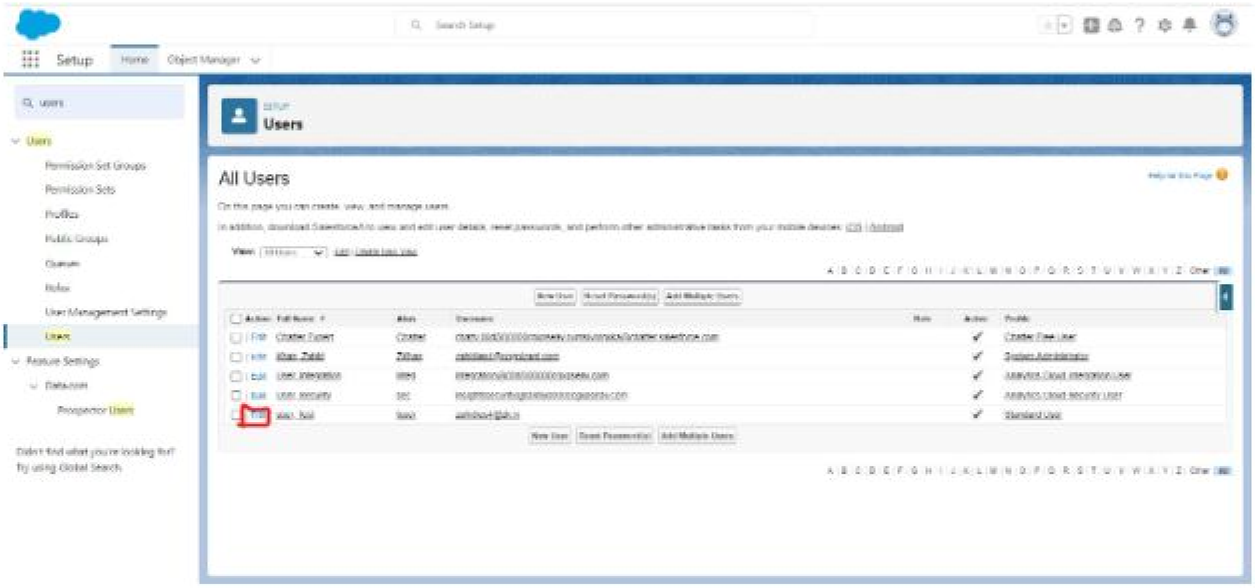
- We can also modify edit and read permission of any field of that object. In field level permission we have 2 options edit access and read access.
    I. If uncheck both boxes so that fields won't be visible in object.
    II. If we checked read access box so this profile will have read access only.
    III. If we checked edit access so this profile will have edit access only.
- Here we are taking example of Industry field in account object. We will give only read access of industry field to this profile.



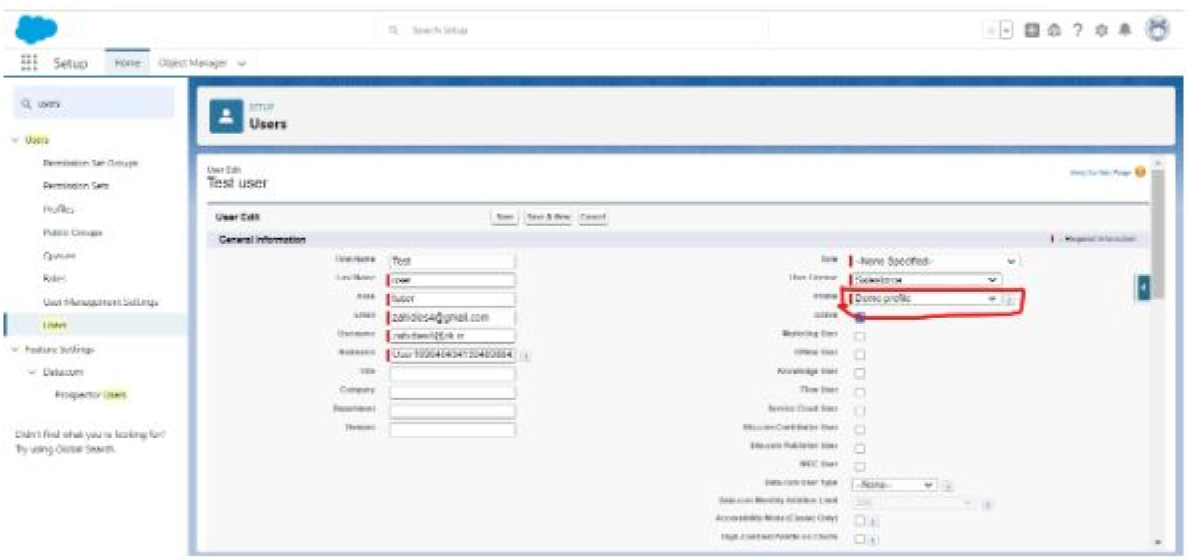
- Now click on save. Now what we made change will see here.



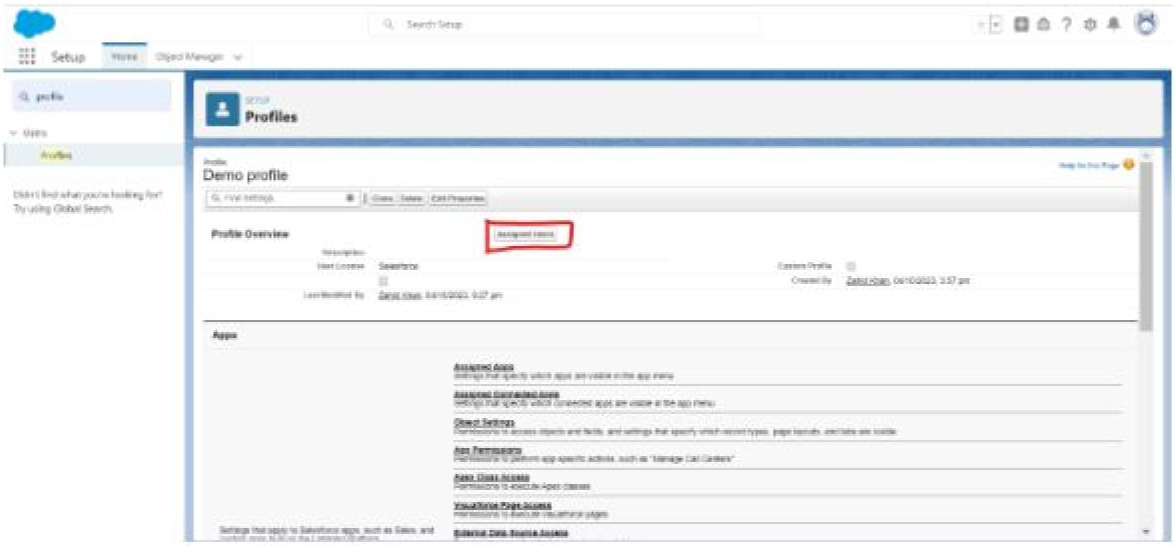
- Now we are going to assign this demo profile to already created users i.e., test user.
- Again, search for users in quick search box. And click on it.
- After that click on edit on beside Test user name.



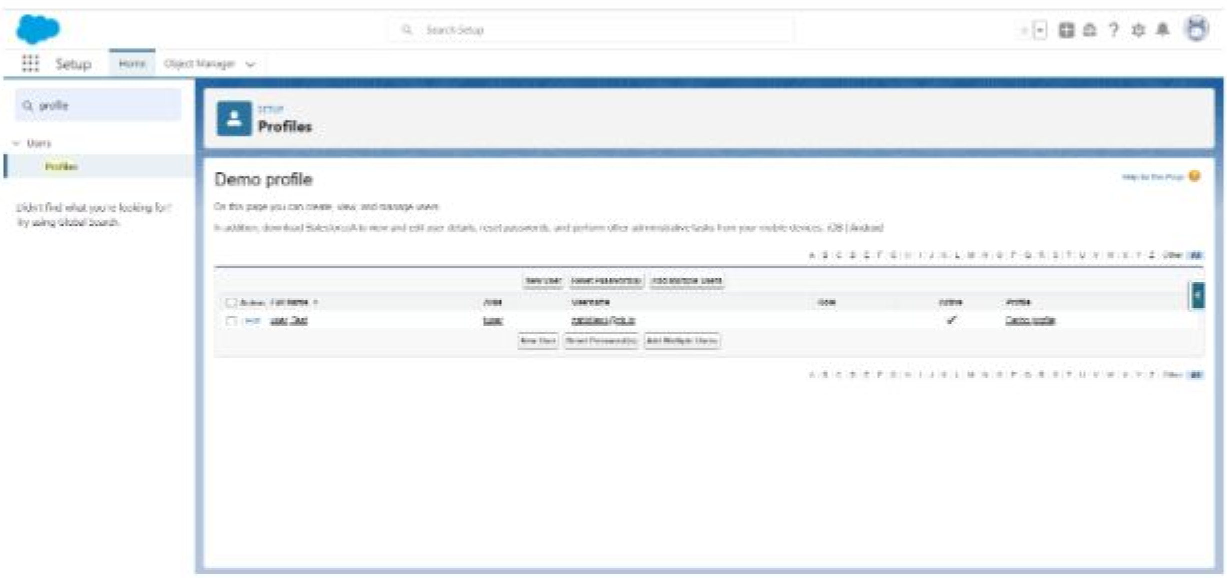
- After that select demo profile in Profile section. And click on save.



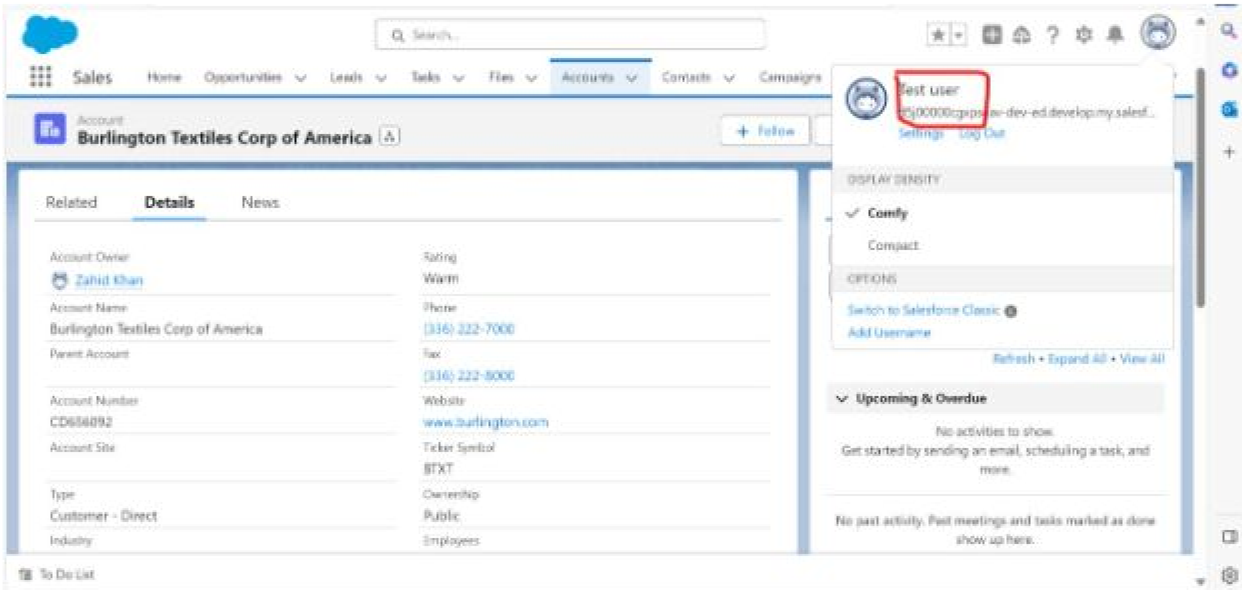
- Now demo profile is assigned to the test user and all the permissions set in that profile is apply on test user.
- We can also check in assigned user list of demo profile. For this, search for profile in quick search and click on it.
- After that find demo profile and click on it.
- After that click on assigned users.



- after that we will see all the assigned user of this profile.



- Now go to another browser and login for test user using username and password.
- After that go to account objects in sales sab see the access what we set in demo profile.
- Open any records to see the changes.



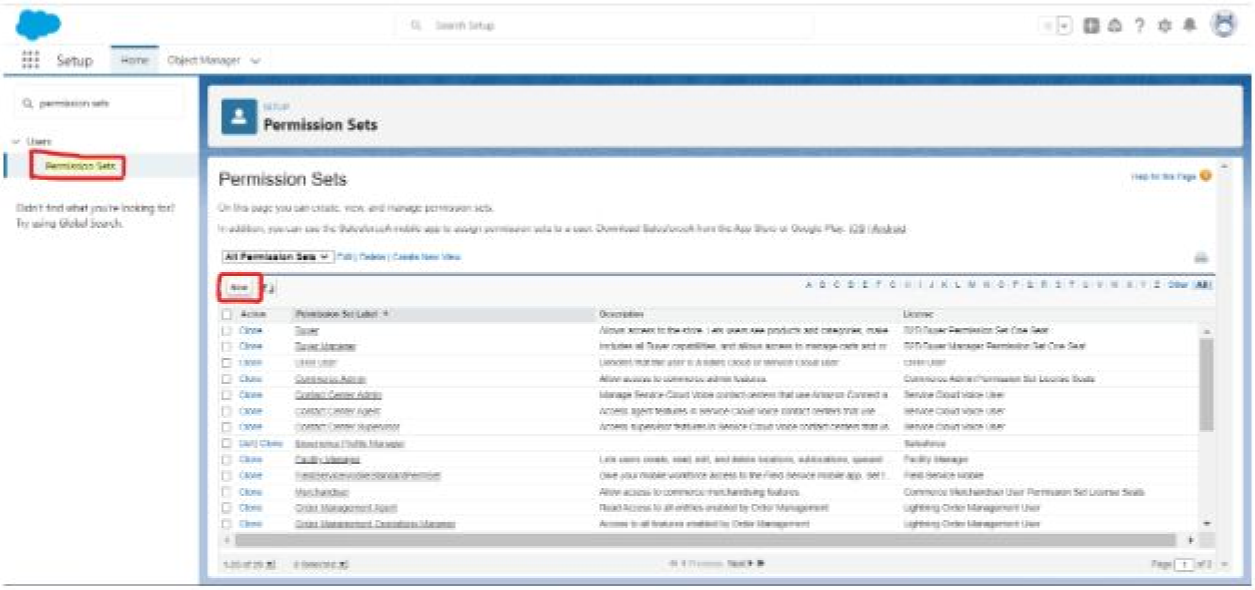
- Here we can see that edit button(pencil) is not visible because we disable this for test user.

Permission sets

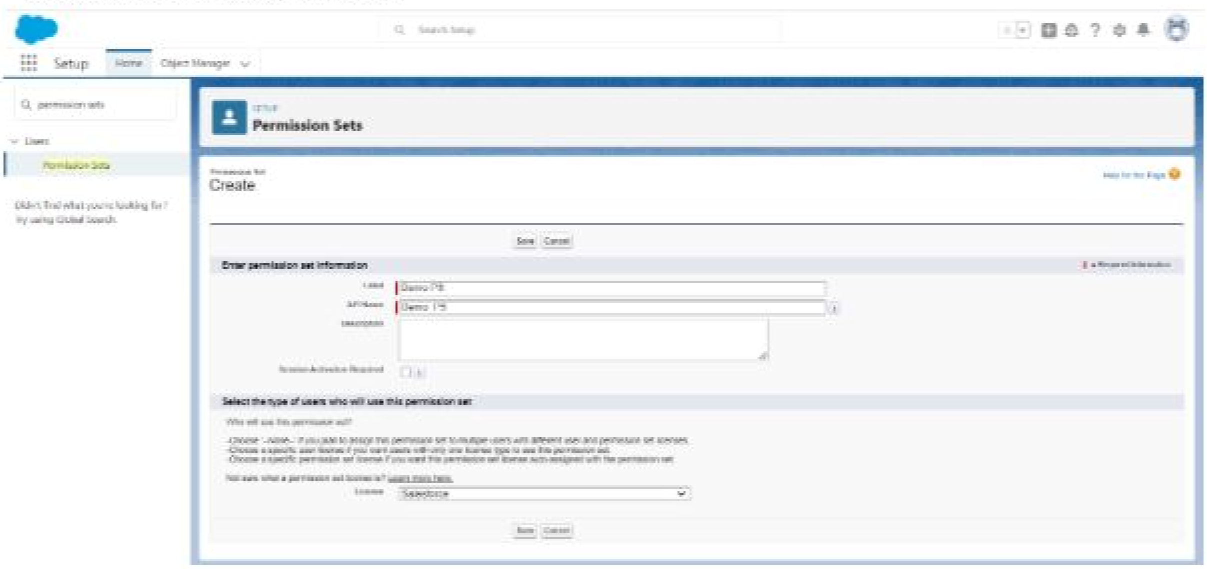
- When we have a requirement that we have 2 users. Users A and users B, we want to give read and create access to user A. we want to give edit and delete access to user B. for this scenario we can create 2 different profiles, but this approach is not good. for this type of scenario, we have to use **permission sets**.
- A permission set is a collection of settings and permissions that give user access to various tools and functions.
- Permissions sets extend users functional access without changing their profile.
- Through permissions sets permission can be granted and any time it can be taken away as well.
- Users can have only one profile, but they can have multiple permission sets assigned.

Steps to create permission sets:

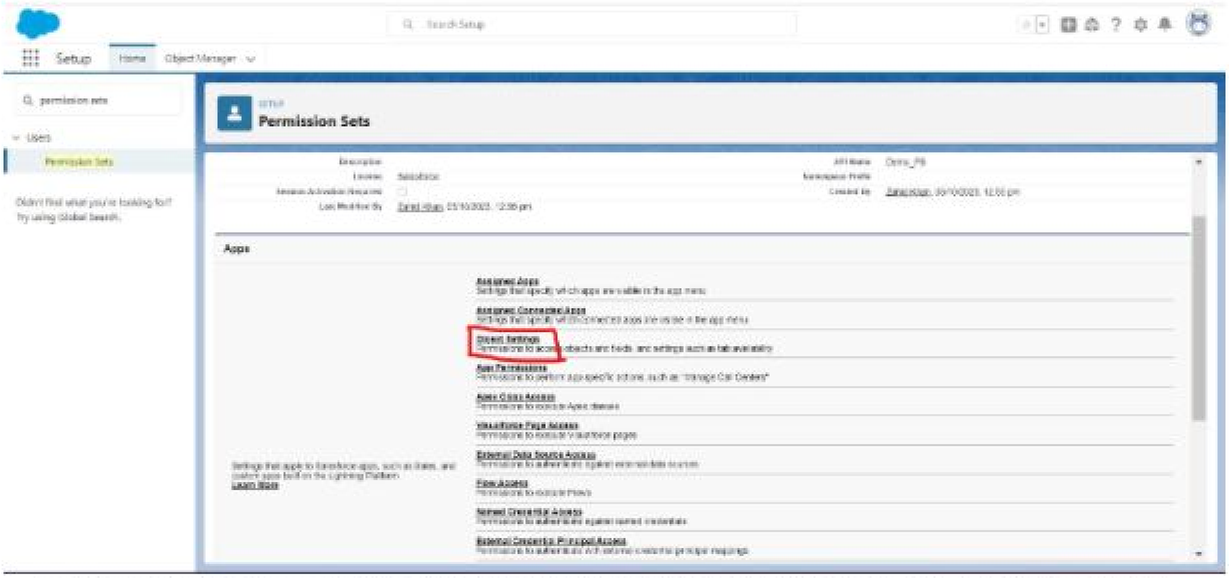
- Go to set-up and search for **permissions set** in Quick search box. And click on it.
- In permission set we don't have to clone like profile. We can create new permissions set by clicking on new button.



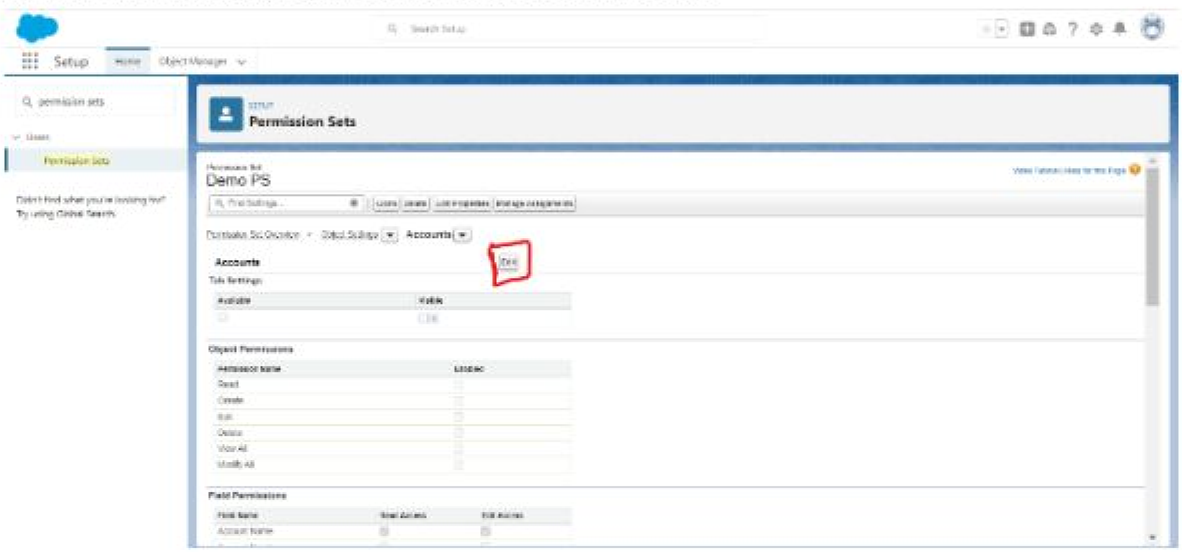
- After that enter label, Api name will be automatically filed and choose license as salesforce. And click on save.



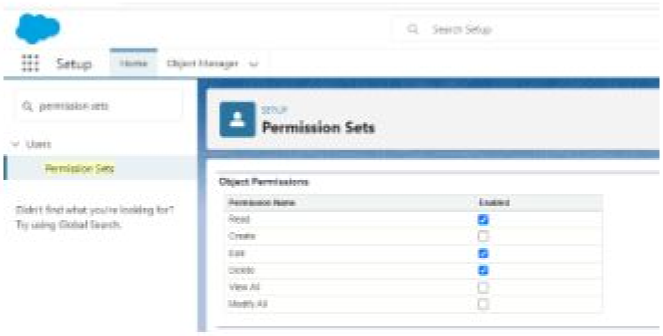
- Permission set will be adding the permissions. We can't revoke permissions through permissions set.
- After creating permissions set can edit access of any object and fields.
- Here, we are editing object Settings. So, click on object settings.

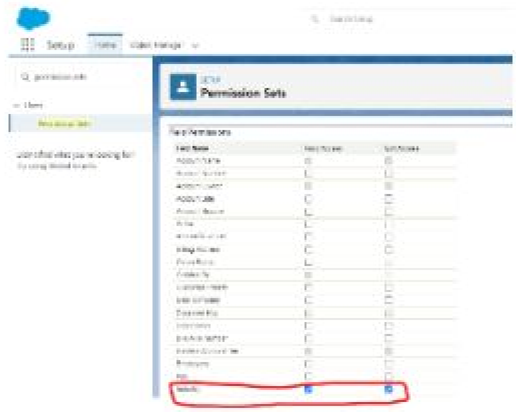


- after that we can see that whole objects of org. but don't have any access of any object. So, we have to edit the access of the object. For example, we are taking **account object**.
- Click on Account object. After that click on edit button.

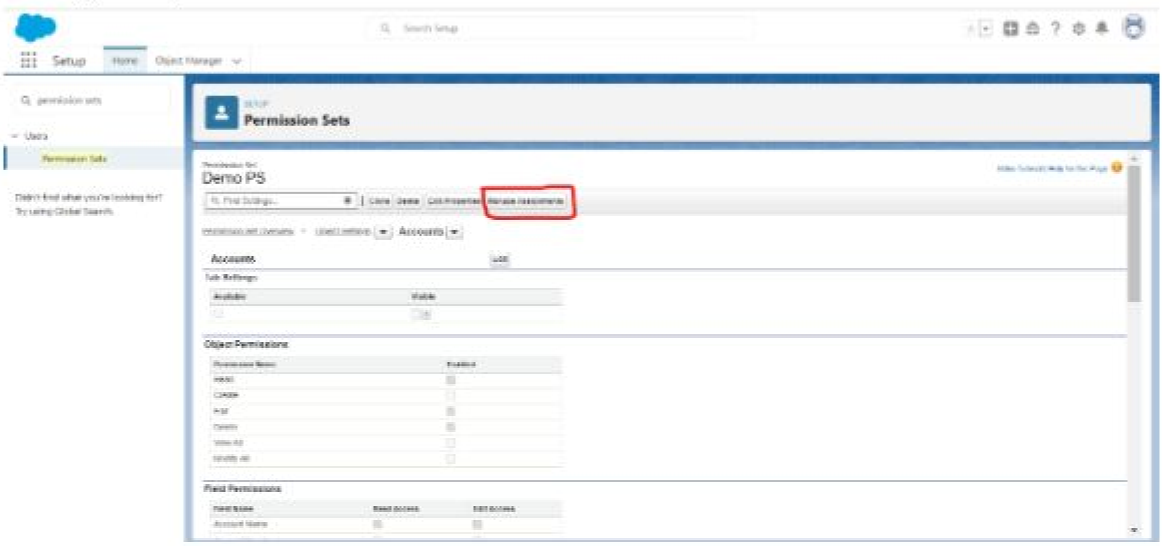


- Here, we can enable read, write, create, and delete access on account object and we can also give read and edit access of any field.
- If any box is checked in profile but unchecked in permission sets so that user have the access to that check box in profile. It can't be revoked.
- We are checked the box of read, edit, and delete. And create box will be unchecked because it already checked in profile. In permissions sets we do any add-on of the permissions.
- In field permissions, we are giving edit and read access to these permissions to industry field. In profile, we didn't give read and edit access of the industry field. So when we give access from permission set the user get the access.

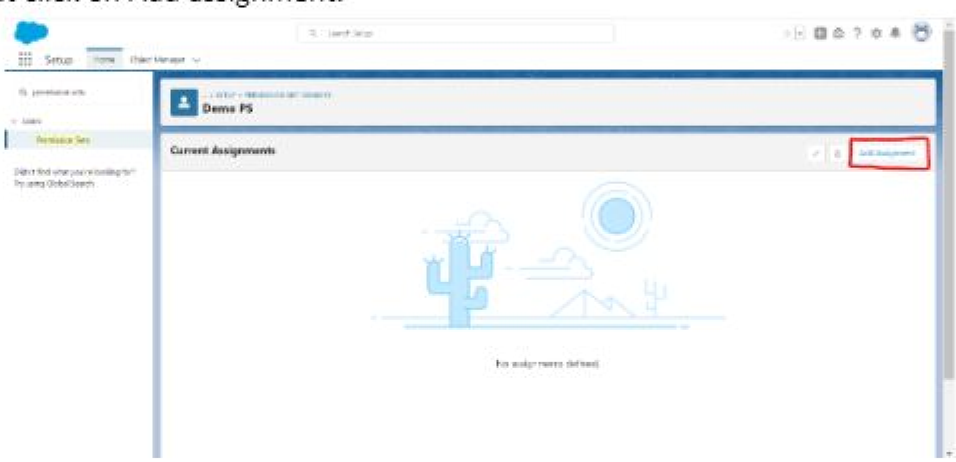




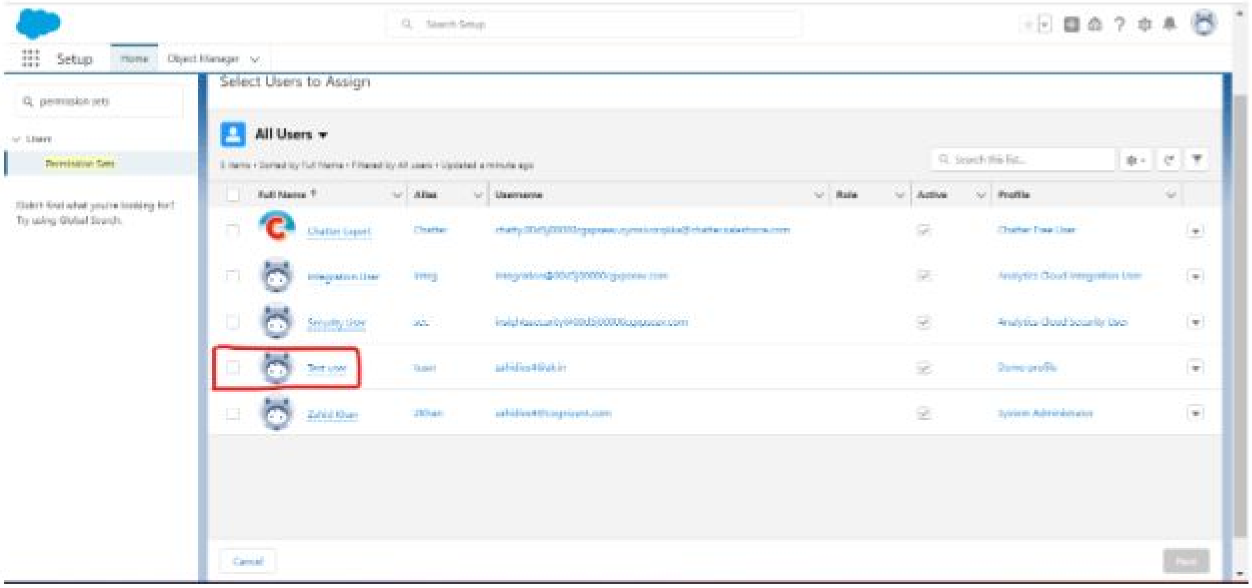
- After that click on save.
- Now we are assigning this permission set to test user. For this we can assign this permission set using 2 ways 1st like we assign profile to user. And 2nd just click on manage assignment.



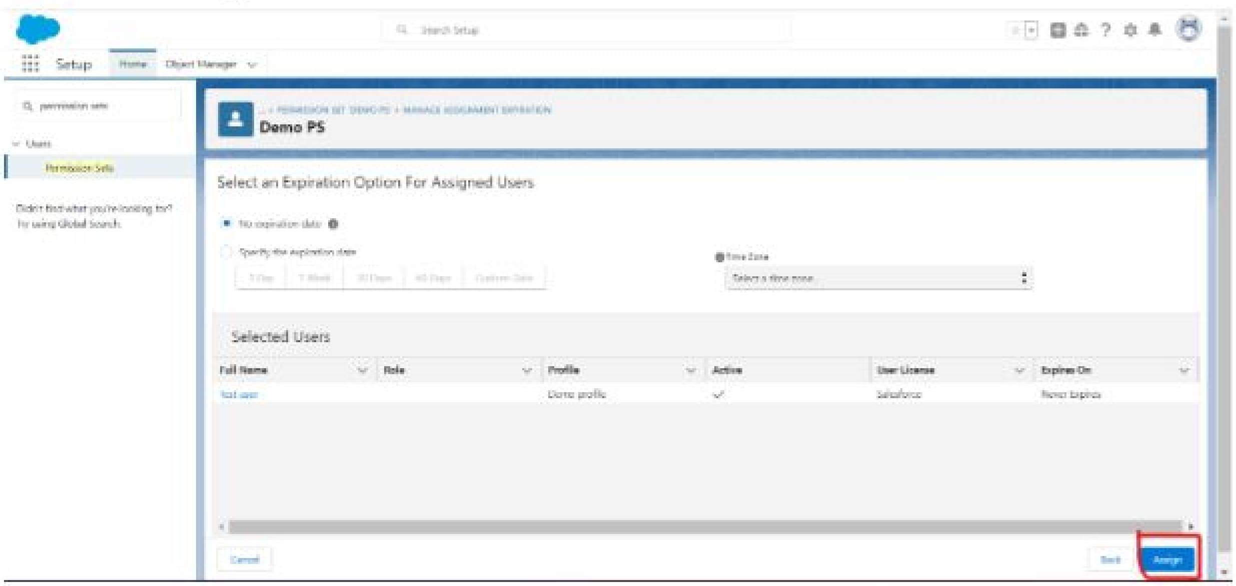
- After that click on Add assignment.



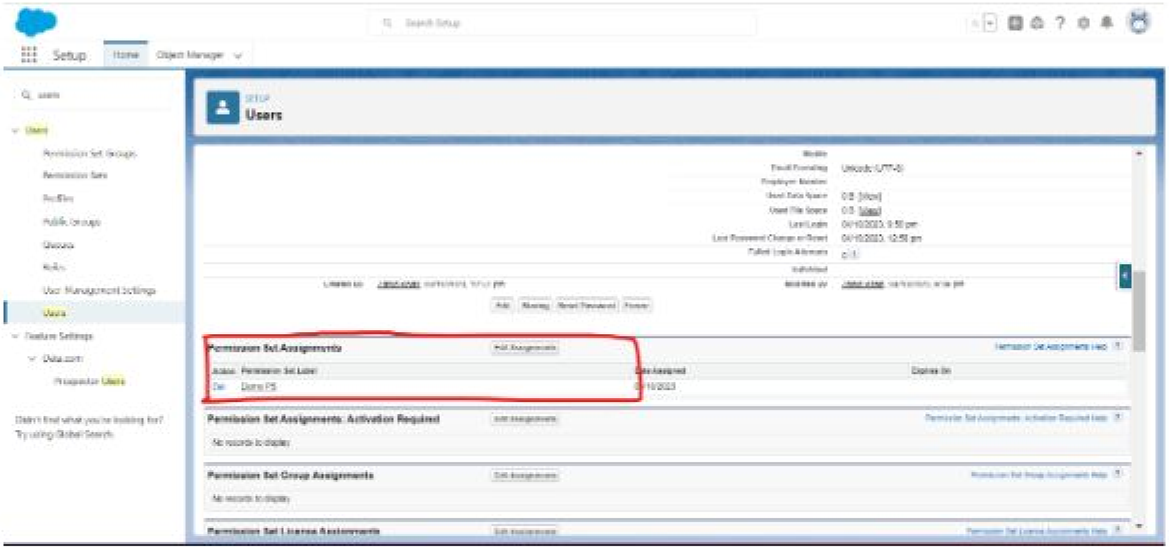
- After that we will see the All-user name. we can select according to our requirements. For example, we are selecting test user.



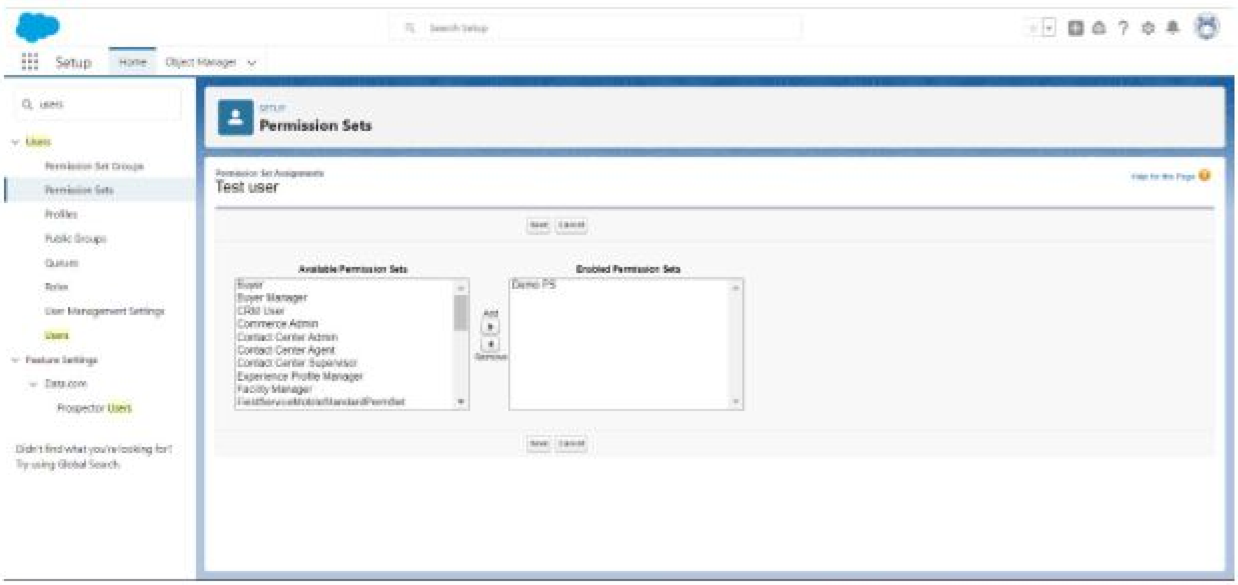
- Now select the test user and click on next.
- We can give expiration date and time date.
- Now click on assign. And click on done.



- Now search for users in quick box. Click on Test user. After that scroll down we will see demo PS in permission set assignment.

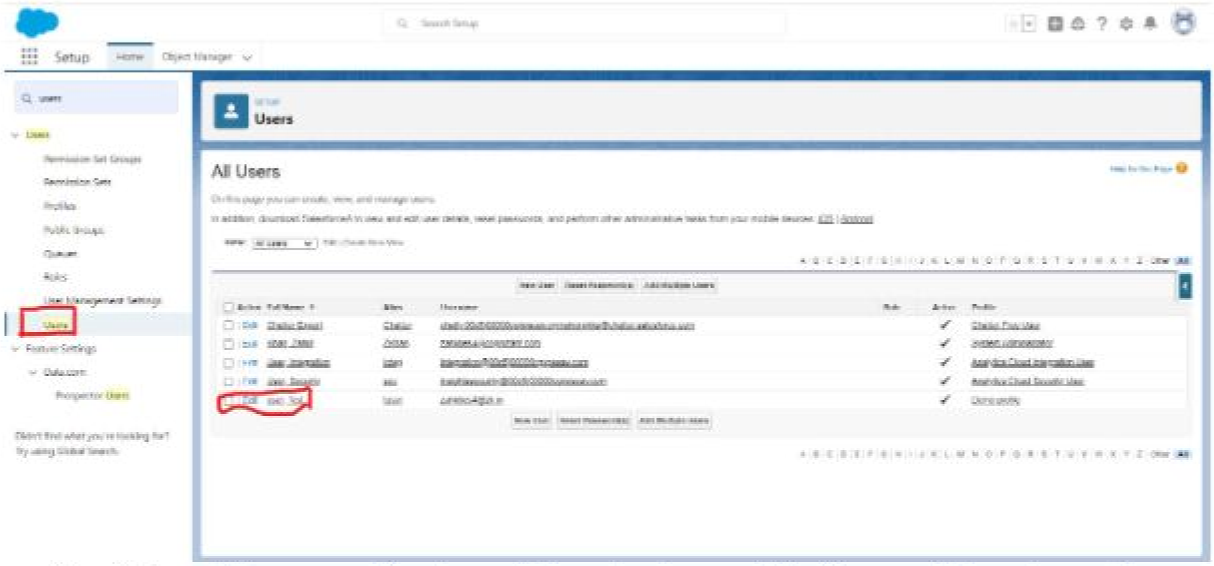


- If we want to add another permission set to this user, then click on Edit assignment and select the permissions set and click on add button. And click on save. So that permissions set will be add on that user.

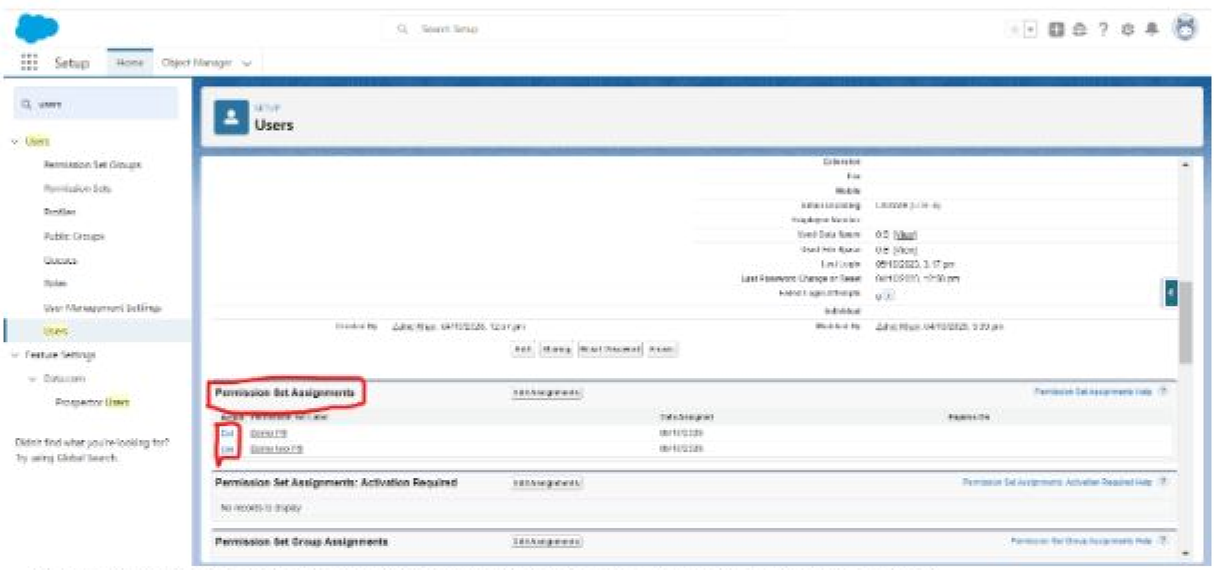


<u>Steps to delete permission set from any user:</u>

- We can delete the permission set from any users from **User**.
- To do this search for user in quick search and click on it. After that click on the user from which permission set need to be delete. Here, we are selecting test user because we have only user in free license.



- After that scroll down we will get permission set assignment. Beside permission set name there is a del option just click on this.



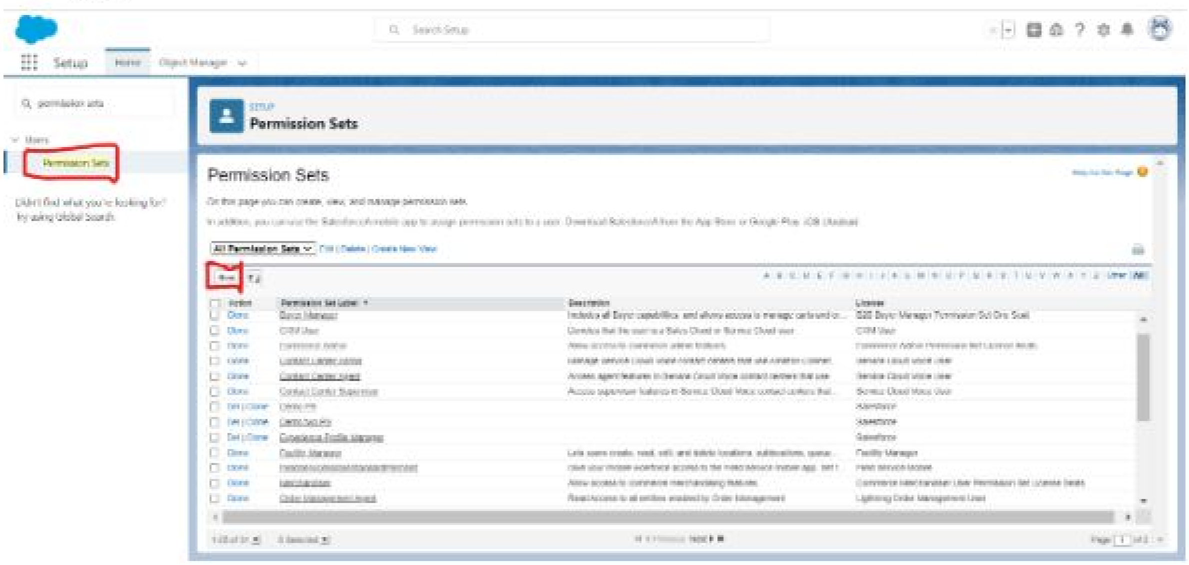
- After clicking on del that permission set will be deleted from that user.

Day-12

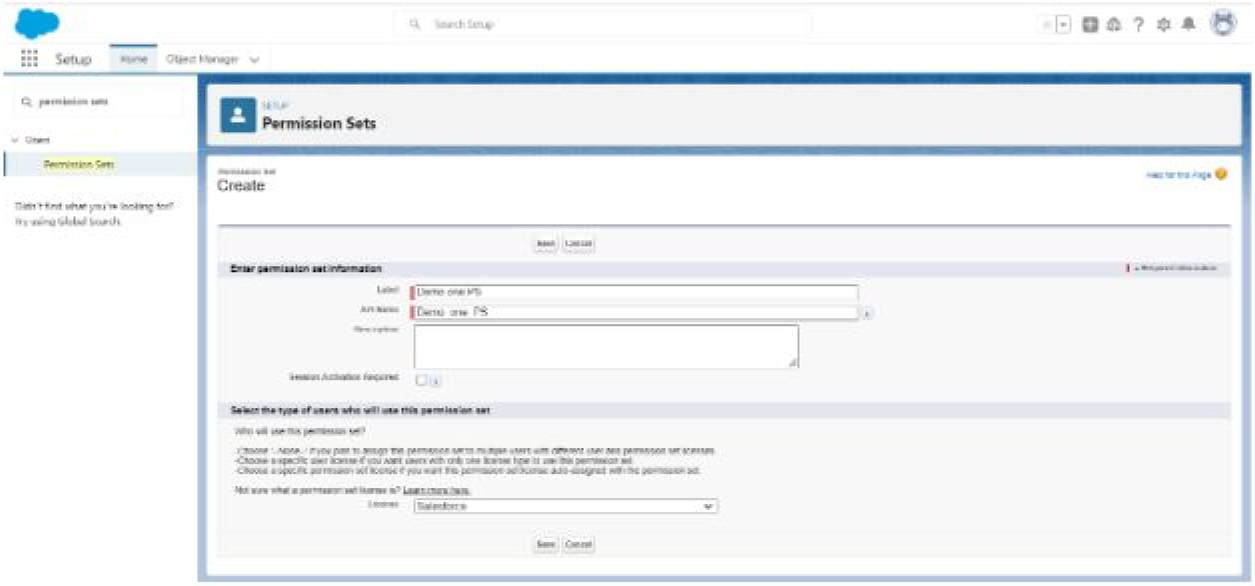
- Permission set group bundles different permission sets together based on a persona.
- A permission set group includes all the permissions available in the permission sets.
- One permission set can be included in more than one permission set groups.
- A user can be assigned one or more permission set groups.
- Also, we can assign permission set and permission set groups together to users.

Steps to create permission set groups:

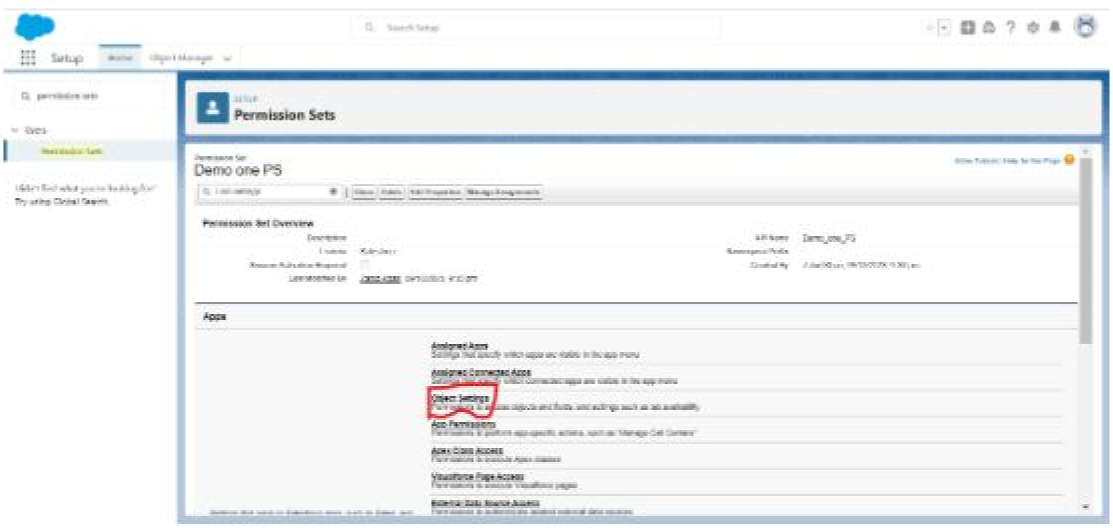
- Before creating permission set groups. We have to create 2 or more than and add them in one group and assign it to the users.
- 1st create 2 or more permission set before creating permission set group. For example, we are creating 2 permission set **Demo one PS, Demo two PS** and give them different access like for demo one Ps we give edit access iand demo two PS give delete access of account object and add them in permission set group and assign to Test user.
- For create permission set, search for permission sets in Quick search. After click on new.



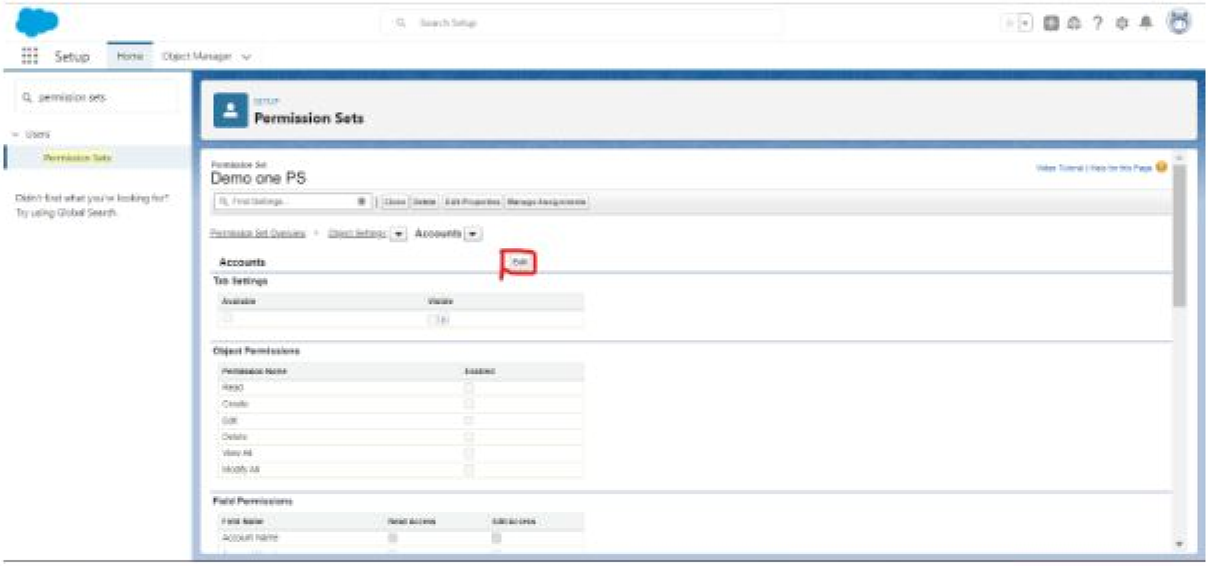
- Now give the label as Demo one PS.
- select license as salesforce.
- click on save.



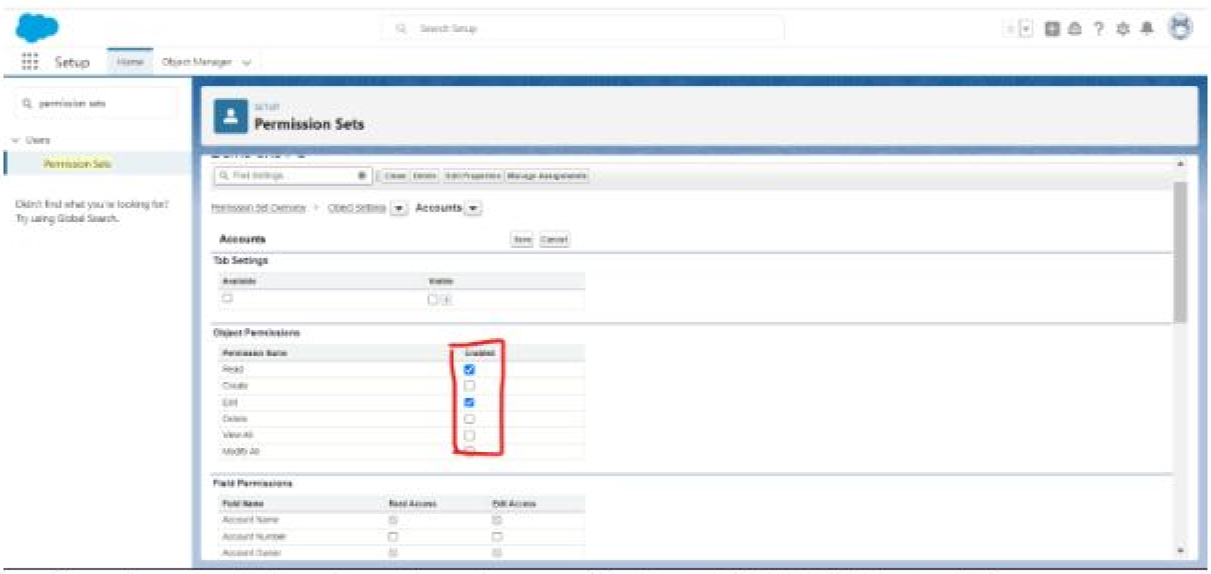
- Now permission set is created, and we can edit any access. Here we are edit objects settings and give only edit access to demo one PS and give access of industry field to this permission sets.



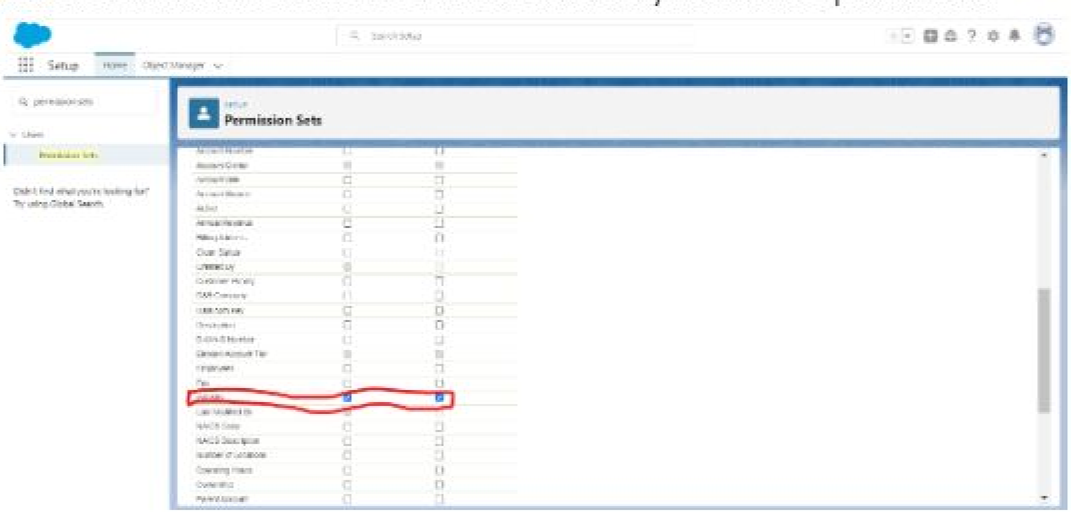
- After that we get all the objects of the org., we can select any object which is required. Here, we are selecting Account object.
- After that click on edit.



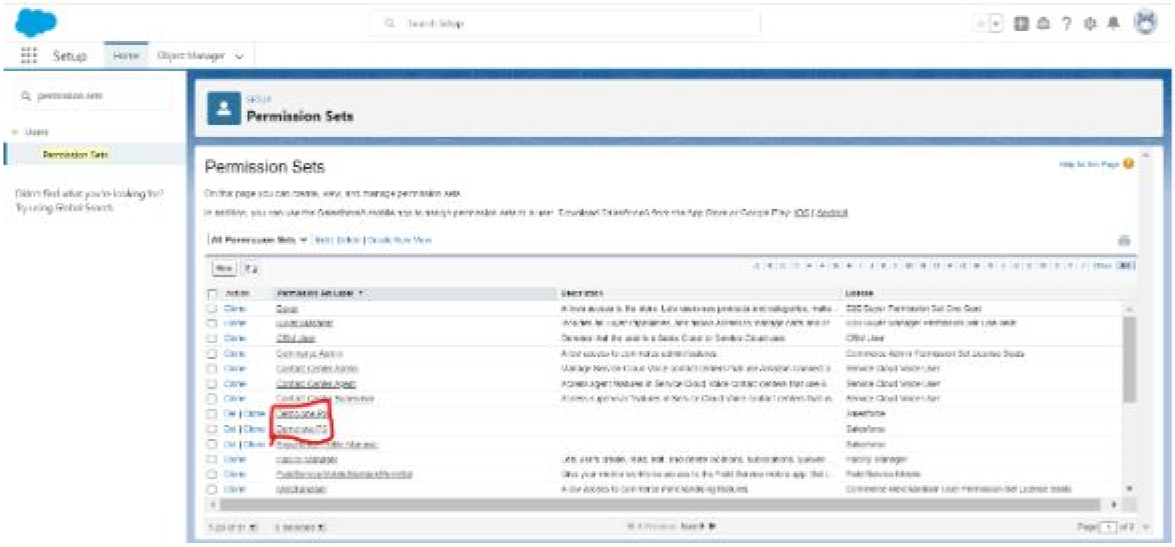
- now check the box of edit, read box auto enable.



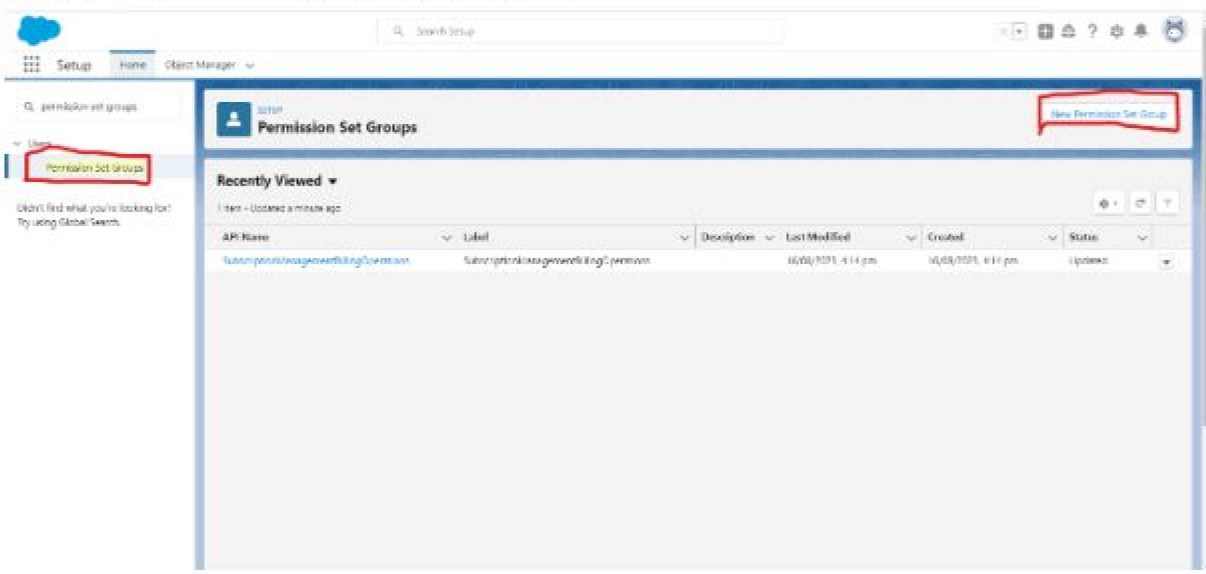
- After that check the edit and read access of industry field in field permissions.



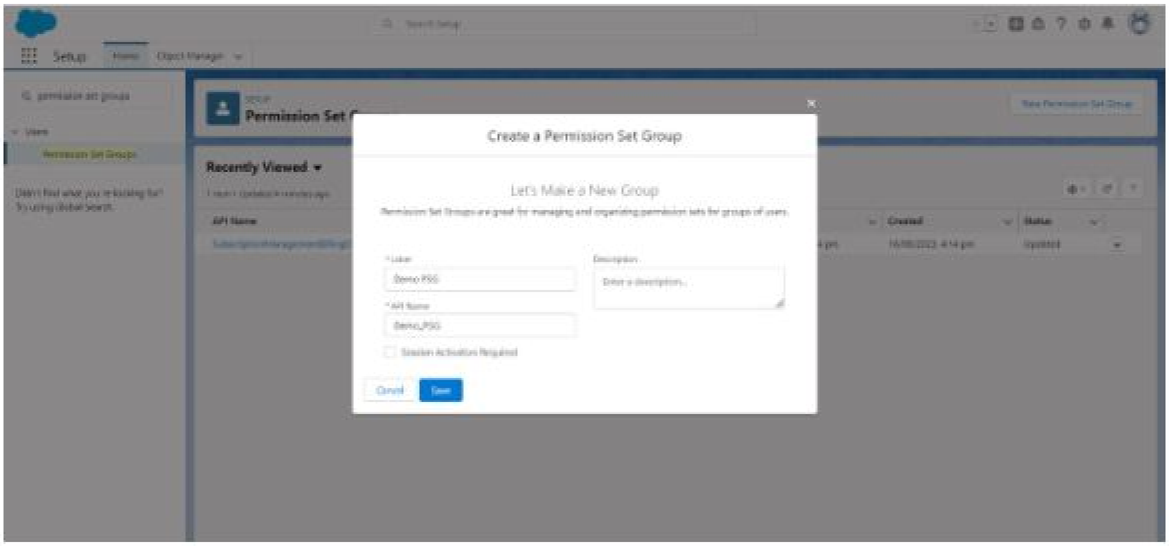
- After that click on save. Now demo one PS permission set is created.
- Same way creates demo two PS and give delete access. With delete access edit and read access enable automatically.



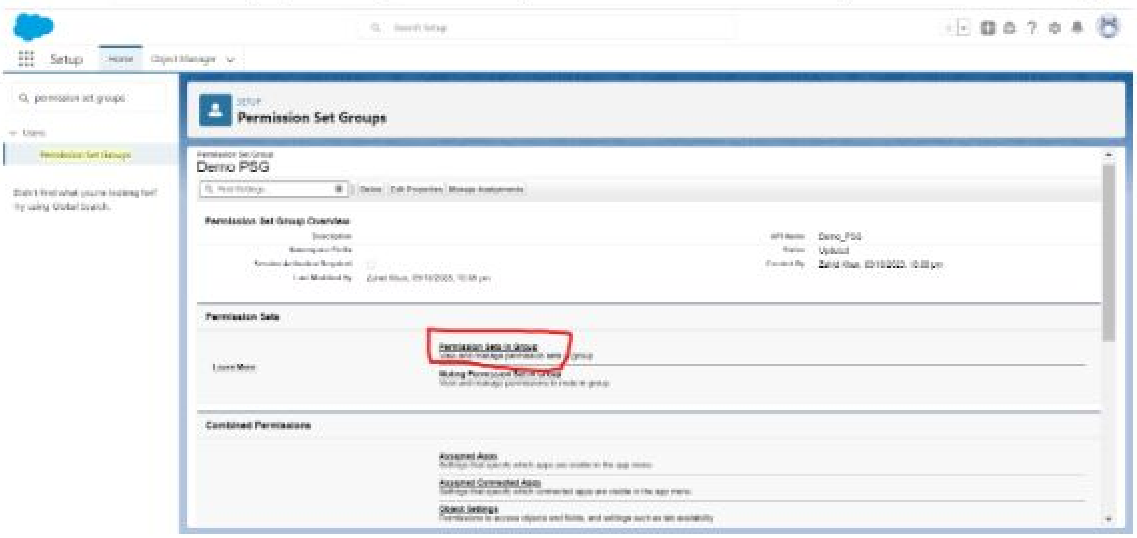
- After creating 2 permission sets. Search for permission set groups in quick search and click on it.
- After that click on new permission set group.



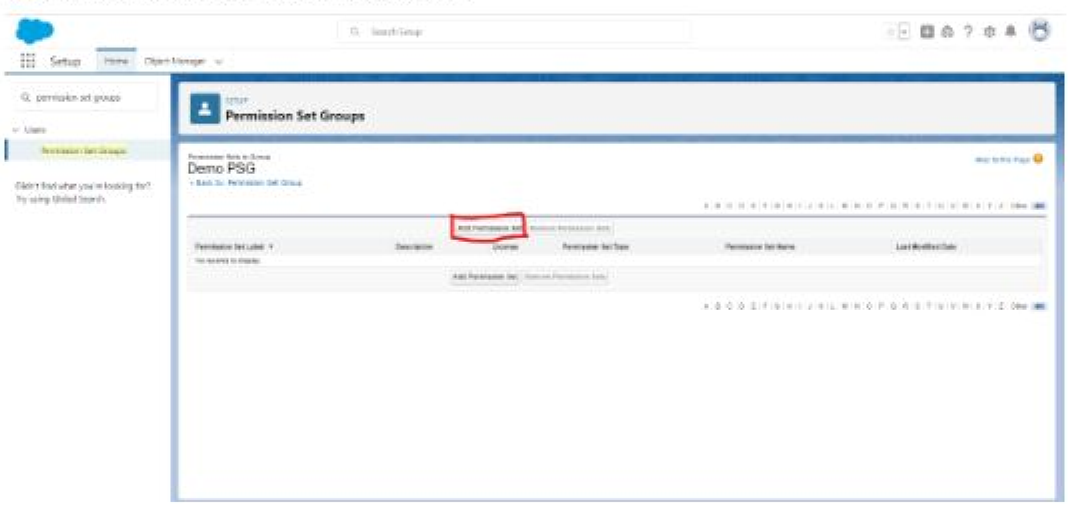
- After that enter the label name, description and click on save.



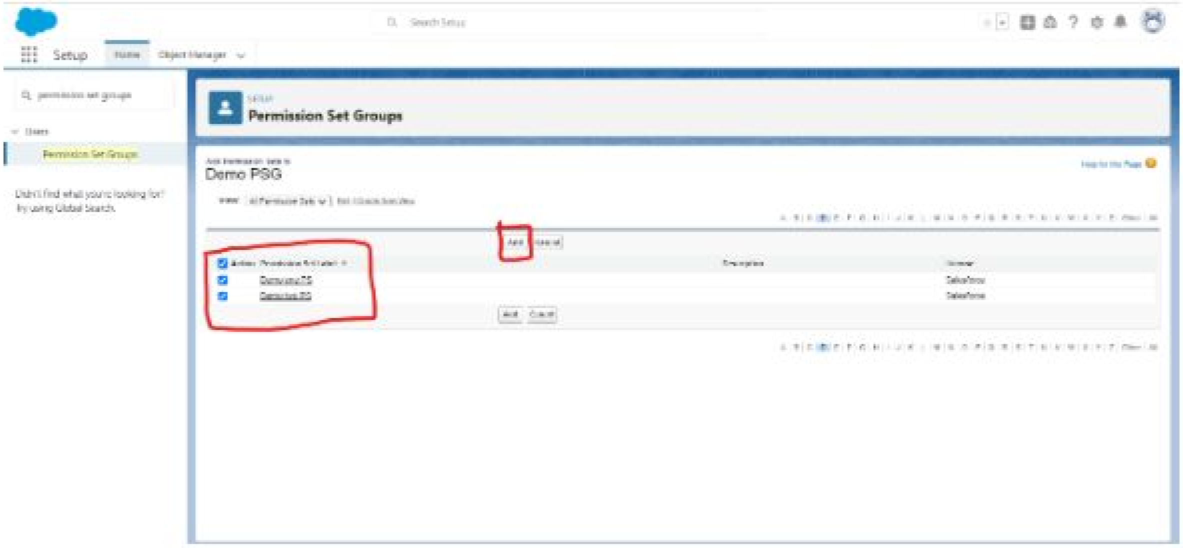
- after that new page will open. From permission sets click on **permission sets in group**.



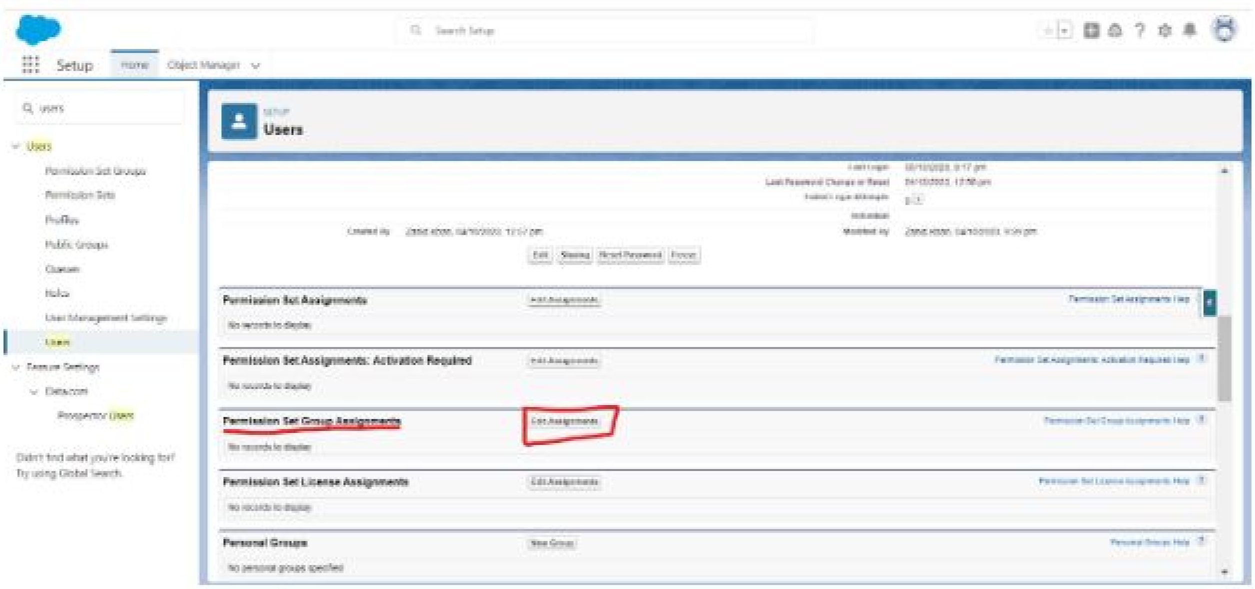
- After that click on Add permission set.



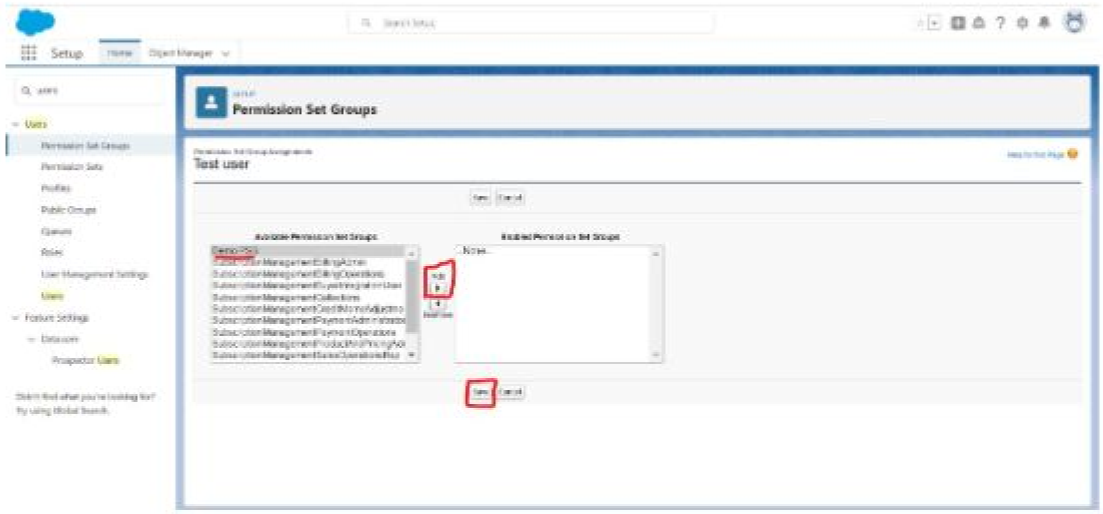
- After that search for created permission set and check the box beside permission set and click on Add. And click on done.



- Now permission set group is created. Now we are going to assign test user.
- For this search for User in quick search box and click on it. After that click on text user.
- Scroll down we will see a permission set group assignment. And click on edit assignment.



- After that click on demo PSG which we created and click on add button so that Demo PSG will add to this user. And click on save.



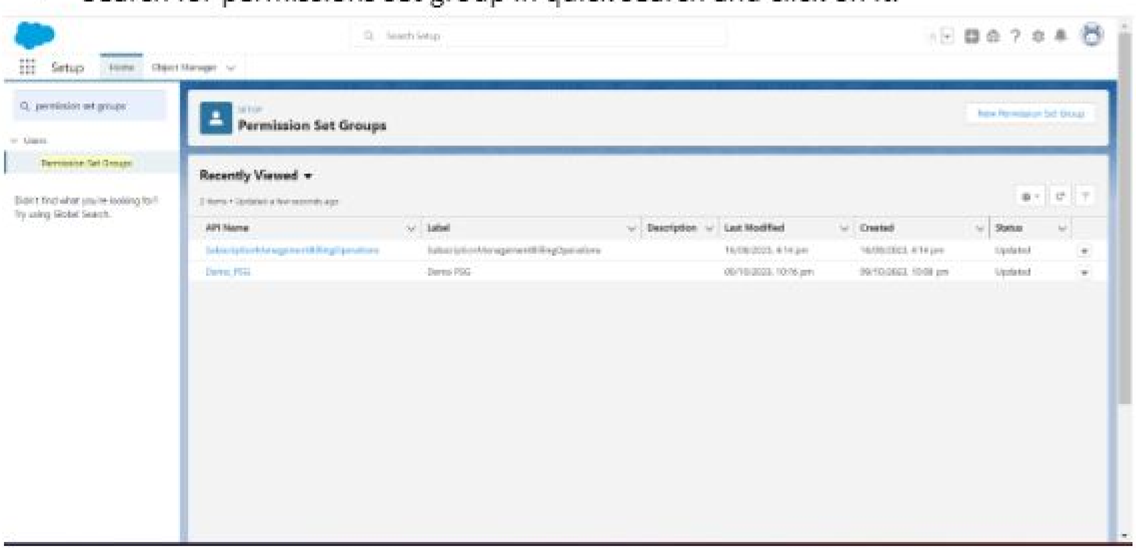
- now Permission set group assigned to the test user. Login test user in another browser and check the results.

What is MUTE in permission set group?

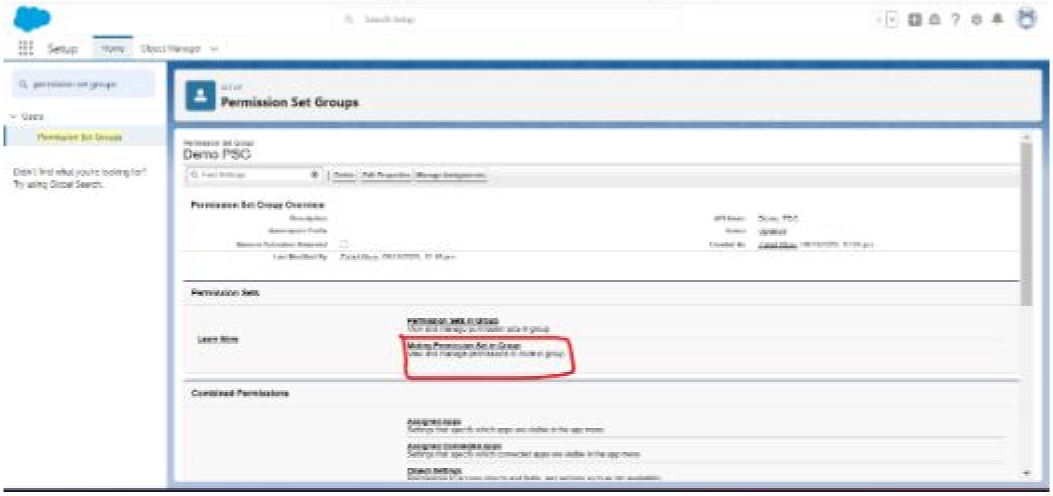
- One can mute some permission set groups so that they won't be given to the user.
- If you mute particular permission in permission set group then it won't impact individual permission set, they remain intact.
- You can anytime unmute the permission in permission set group.

Steps to enable MUTE in permission set group:

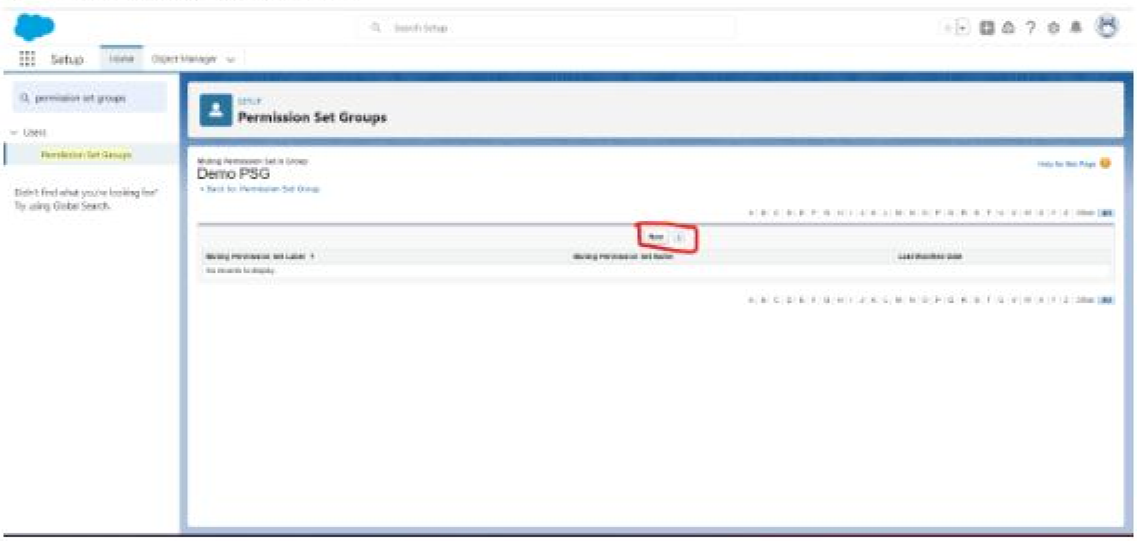
- For example, we have a requirement that we don't want to delete access to the test user so, instead of deleting it we can mute the delete access. After that user don't have access to the delete access.
- We are going to mute the delete access from demo two PS permission set through permission set group.
- Search for permissions set group in quick search and click on it.



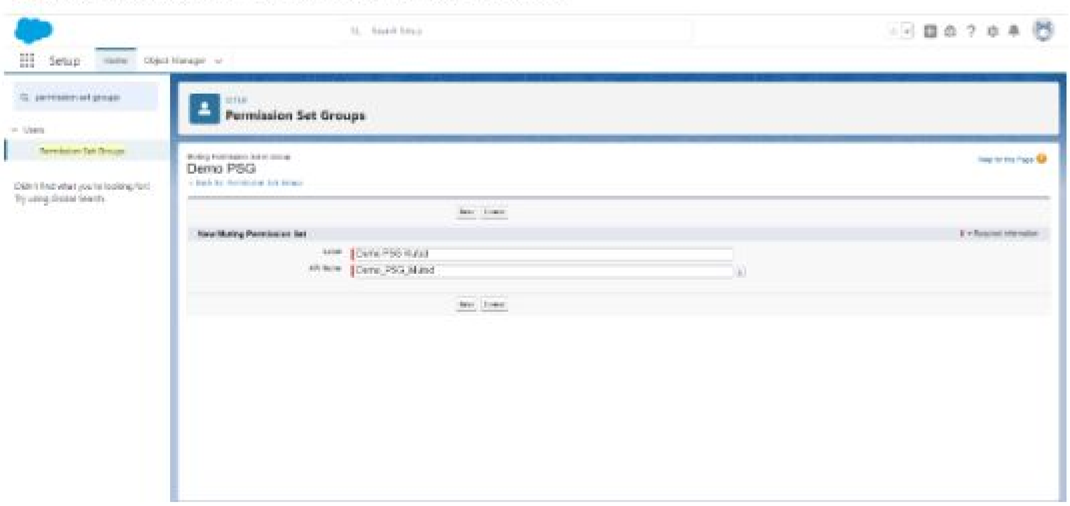
- After that click on permissions set group name e.g., Demo PSG.
- After that click on **Muting permissions set in group**.



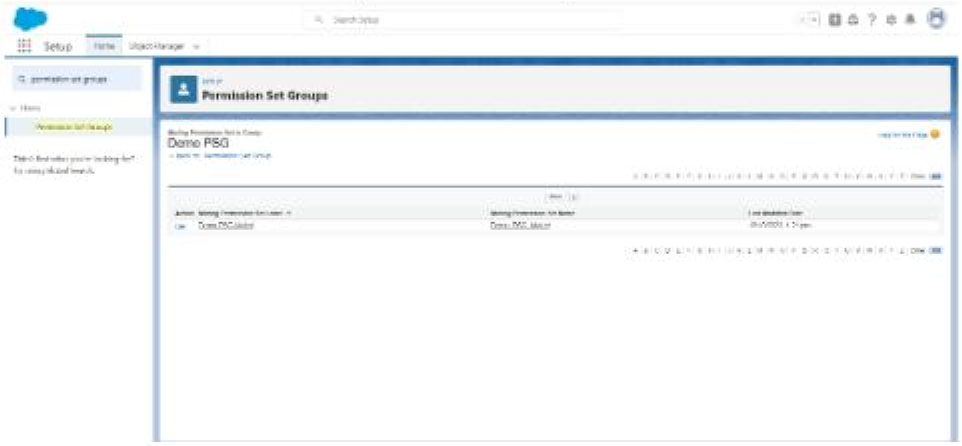
- After that click on New.



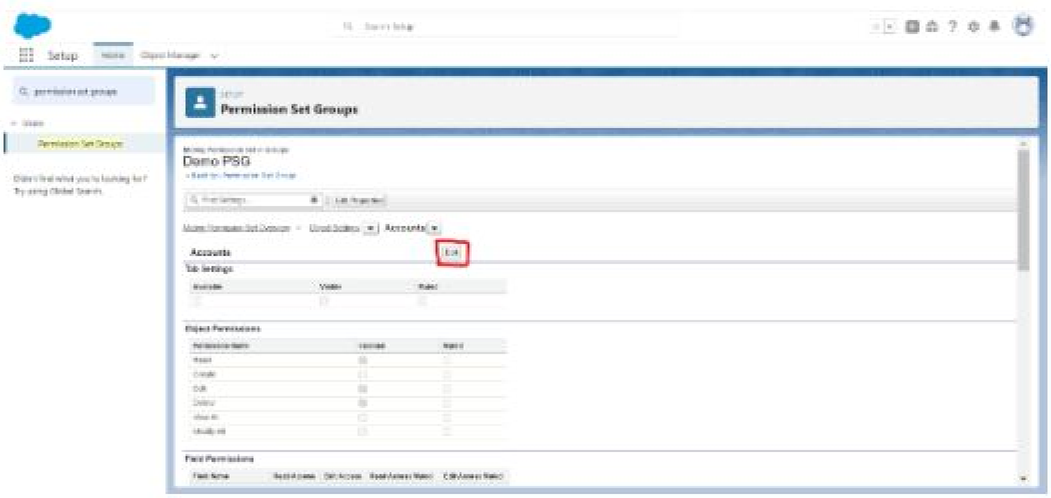
- After that enter the label and click on save.



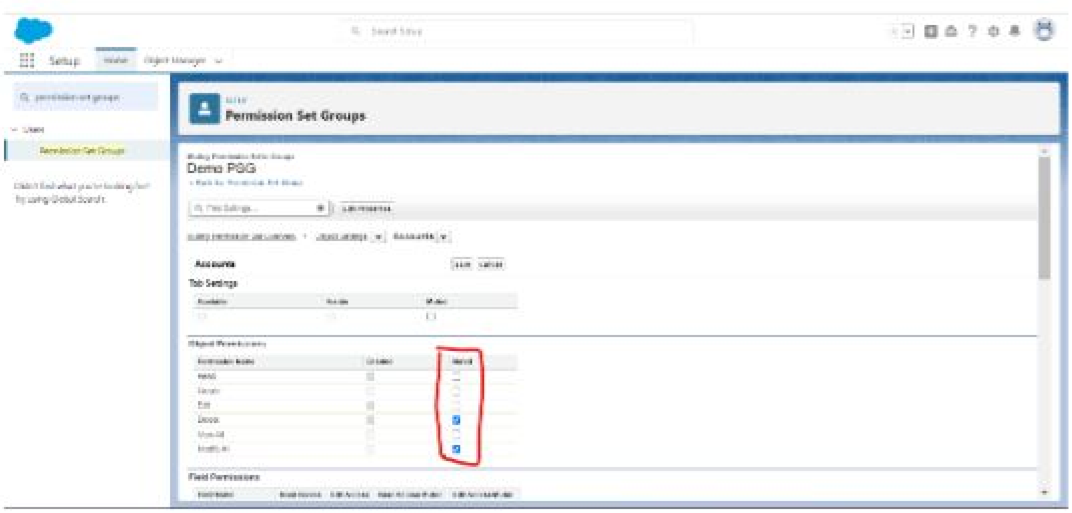
- After that click on newly created Muted permissions set.



- Click on object settings. After that click on account object because we want to mute delete permissions from account object.
- After clicking on object settings all access will be shown.
- Click on Edit.



- Now check the delete box in muted column.



- After click on save. We can also mute read and edit access of any field.
- Now log-In test user and check the results.
- If we want to unmute the permissions, we can do this by unchecking the muted box.

Record level security

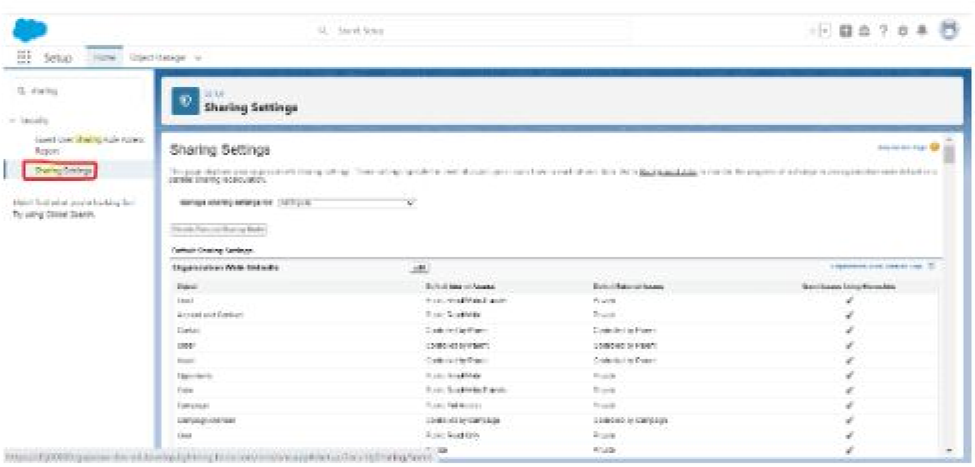
- You can restrict access to records for users, even If user has object level permissions.
- For example, a user can view his own records but not others.
- You can manage record level access in following ways:
    I. Organizational-wide defaults.
    II. Role hierarchies.
    III. Sharing rules.
    IV. Manual rules.

Organizational-wide defaults.

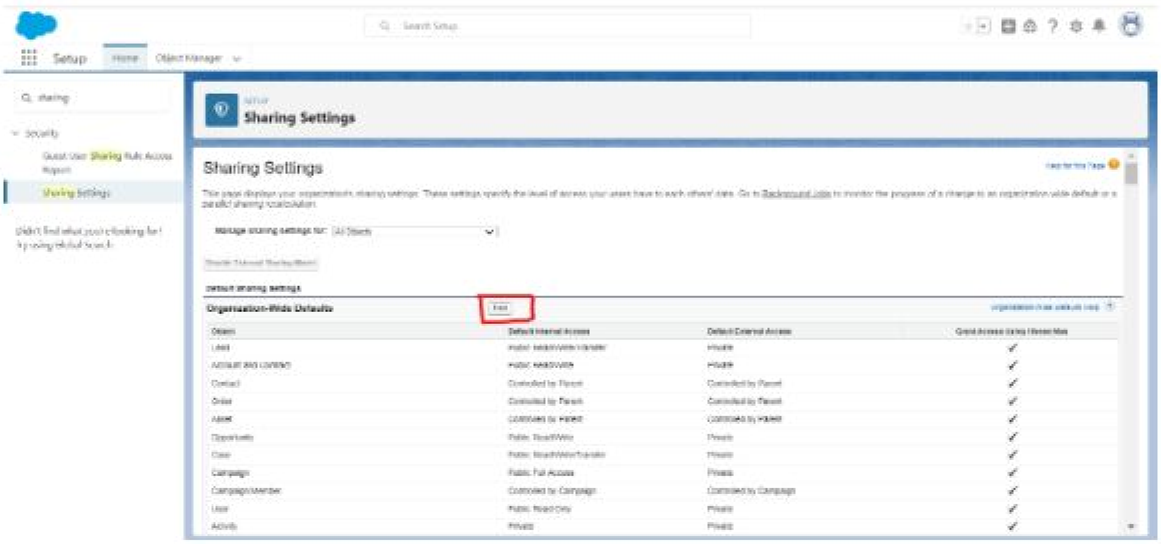
- If we want to restrict record access which means logged user can only see that records which is created by him/her not by other users. For this we have to apply organizational wide defaults.
- OWD specified the default level of access of records.
- Org-wide sharing setting lock down the data to the most restrictive level.
- Here you have three access level:
    I. Private.
    II. Public read-only.
    III. Public read/write.
- You can use other record level security and sharing tools to open up the sharing of records.

Steps to create organizational-wide default:

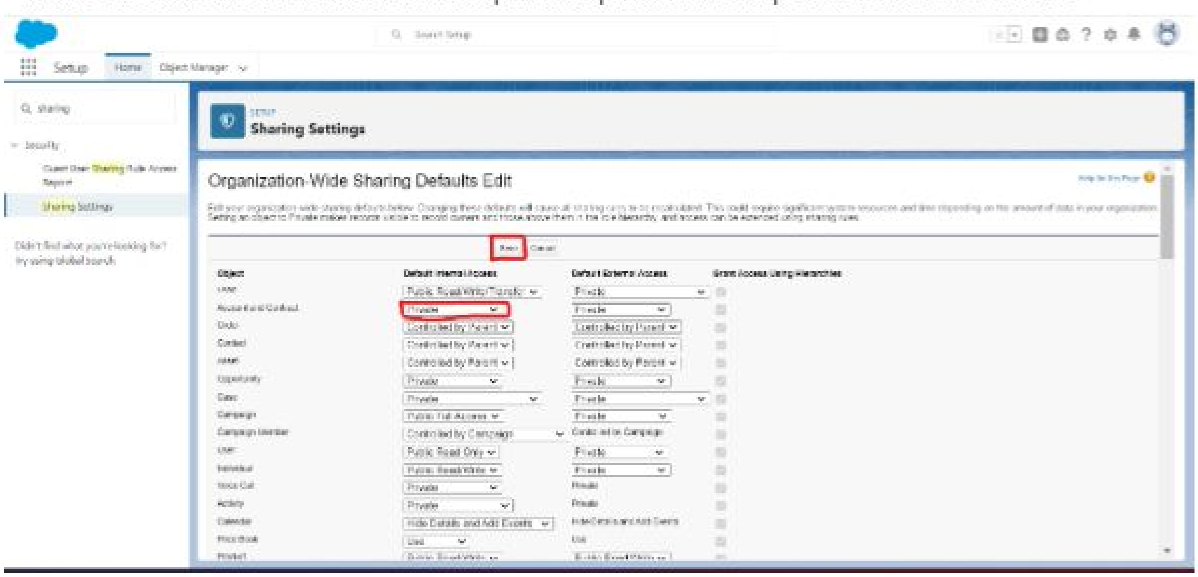
- Search for sharing settings in quick search box. And click on it.



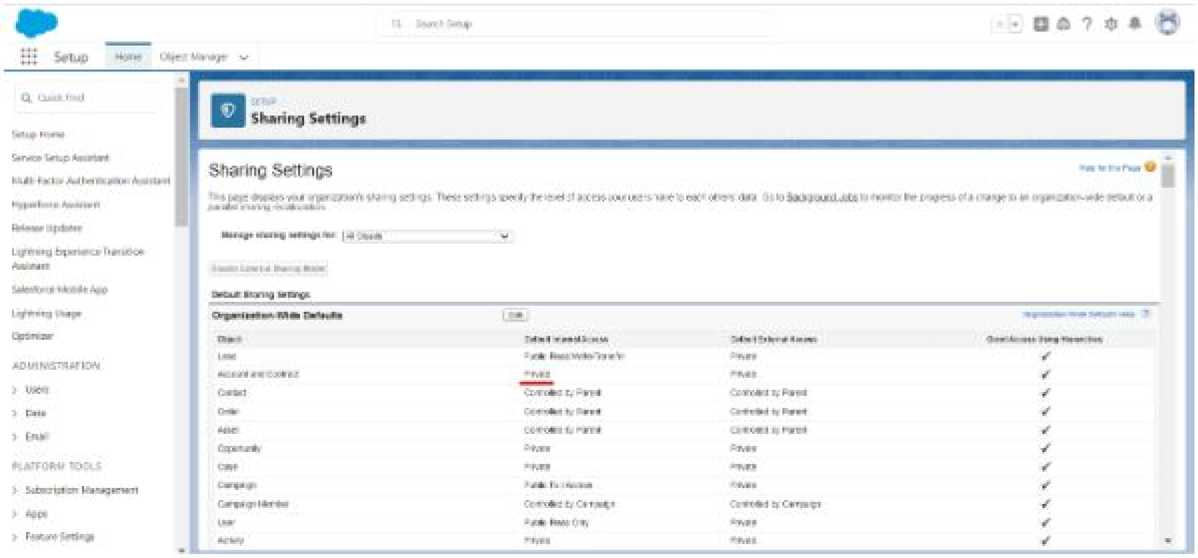
- In sharing settings, we can see organizational-wide defaults. In which we got all the objects with two option default internal access and default external access.
    1. The user which is created in our org. will be affected by the default internal access. Now we are focusing on default internal access.
    2. The experience site is controlled by the default external access.
- Here, we are taking example of account object and make the record of account object private so that the logged in user only can see the records which is created by them. We can also apply OWD to custom object.
- Click on edit.



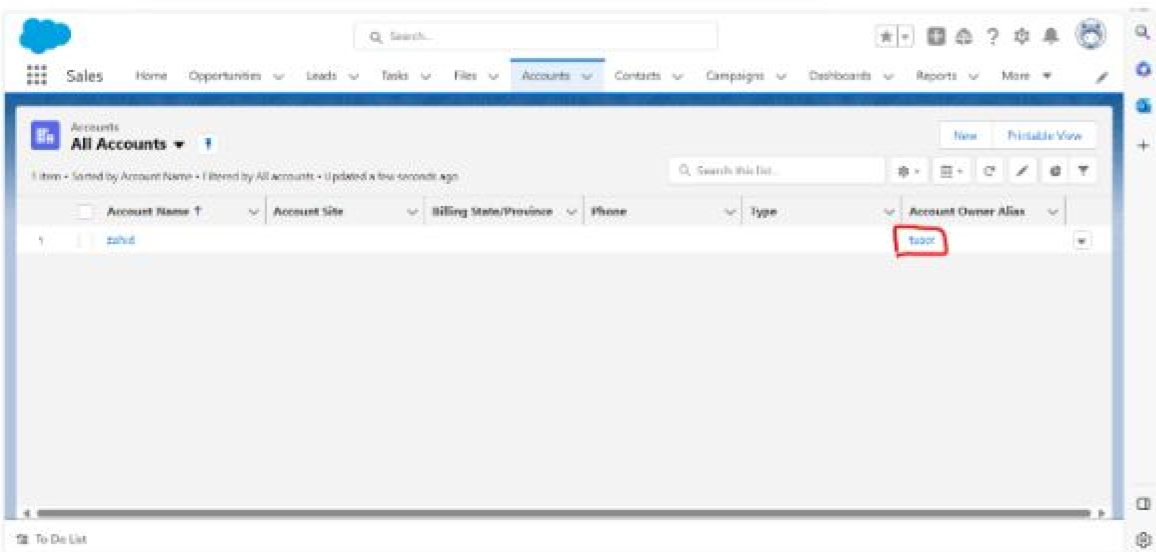
- In account and contact sections choose private option from drop-down and click on save.



- After few seconds the account and contact default internal access will be converted to private for all user of that org. e.g., test user.



- now log-In test user on another browser and go to the tab of account object. We can see that only records which is created by test user.



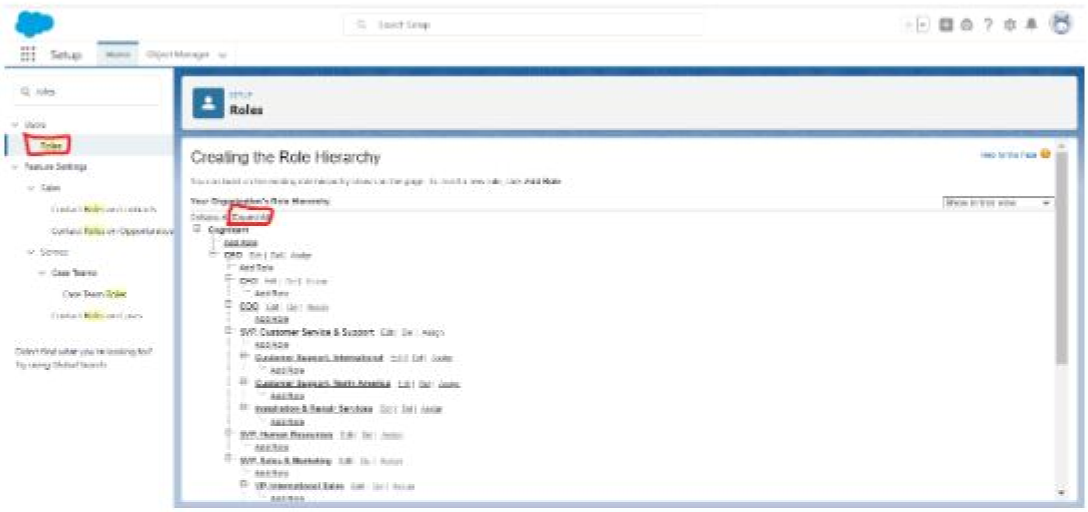
- System admin will see all the records, but test user didn't.

<u>Role Hierarchies:</u>

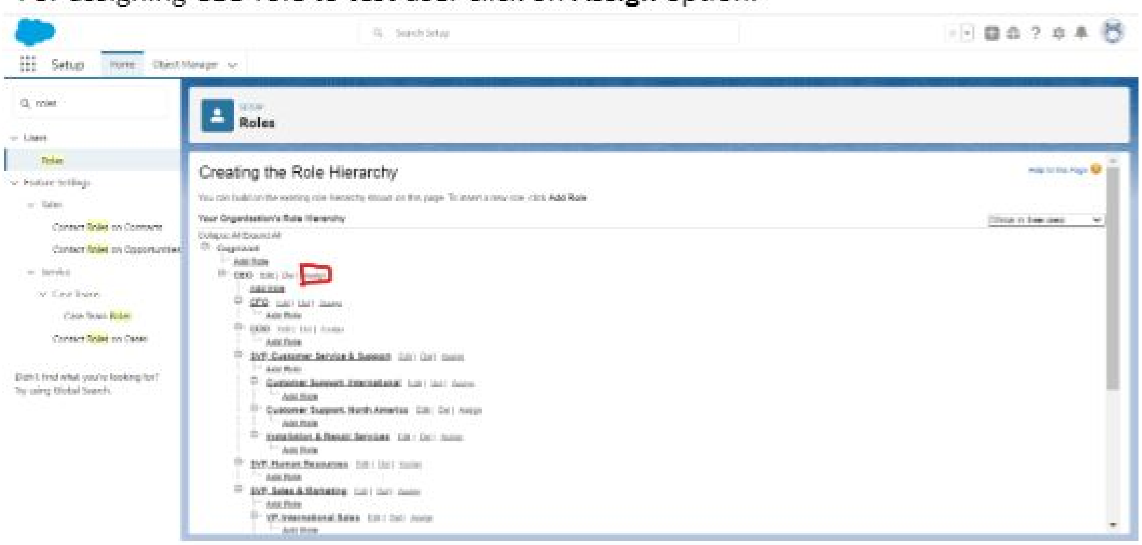
- Previously, we created OWD so that test user unable to see the records of another user. But we want to show the record which is created by system administrators for this we use role hierarchy.
- It gives access for users higher in the hierarchy.
- That user can access all records owned by the users below them in the hierarchy.
- Each role in the hierarchy should represent a level of data access that a user or group of user needs.

Steps to configure Role hierarchy:

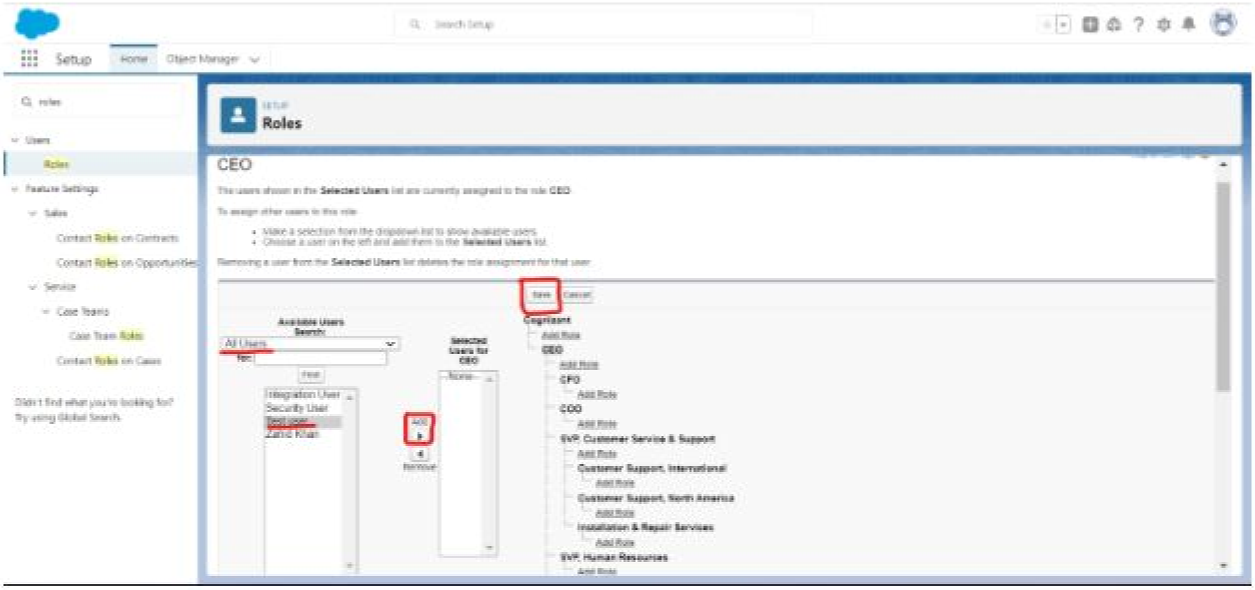
- Search for Roles in quick search box and click on it. After that click on expand all so that will see all the roles.



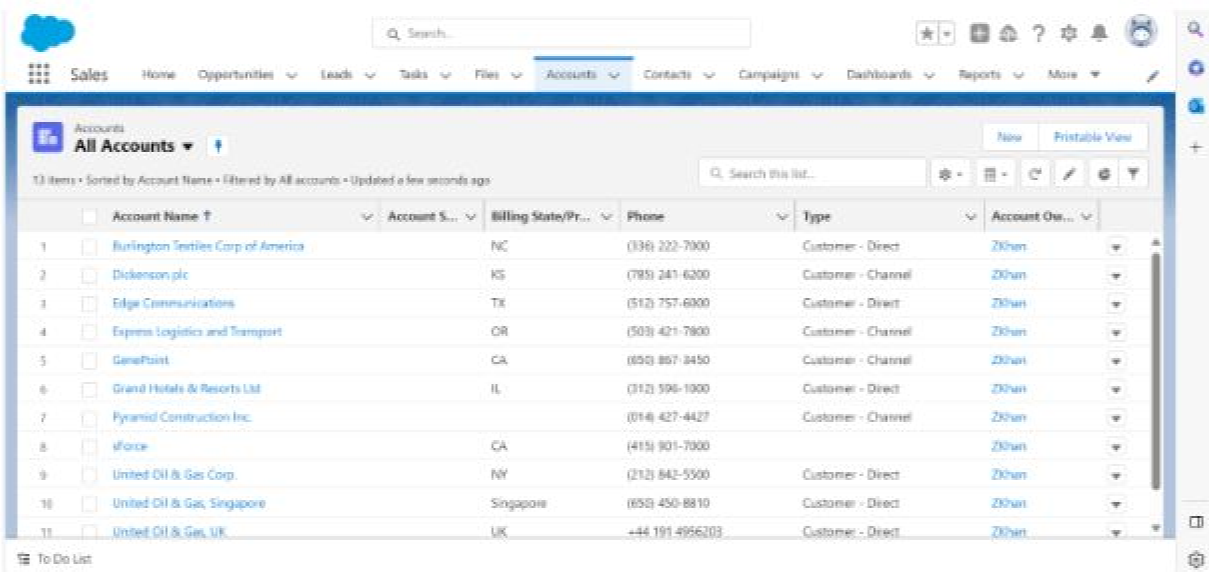
- Here, we can see all delete, Edit, and assign option with users and we can add Role under any role with Add role options.
- Every higher role will see the records of their below role. Like, CEO can see the records of all the role which is below them. We can also create hierarchy under any role.
- Here, we are assigning CEO role to test user and CFO role to system administrators.
- For assigning CEO role to test user click on **Assign** option.



- After that select all user and from them select the Test user and click on Add.
- After that click on save.



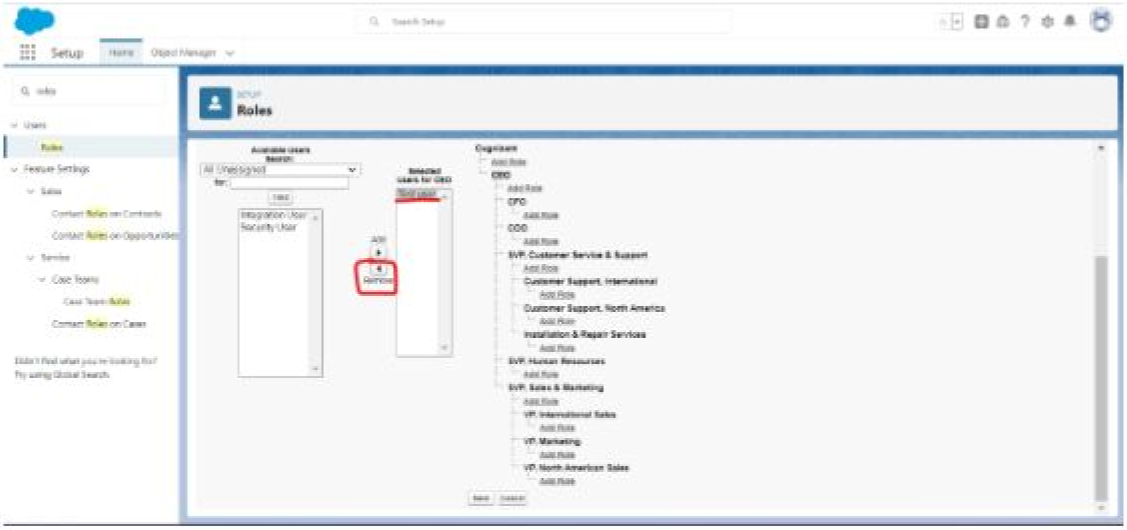
- same way we are assigning CFO role to system administrators.
- Now log-in test user and see the effect that test user able to see all the records which is in system administrator role because test user is CEO which is higher than CFO.



Sharing Rule:

- When we have to share the records with particular people or particular group of people, so we have to use sharing rule. Because in role hierarchy we can only share record in hierarchy.
- There are exceptions to org-wide defaults.
- Through sharing rules, you can share records to a group of users.
- So that, they can get access to the records they don't own or can't manually see.

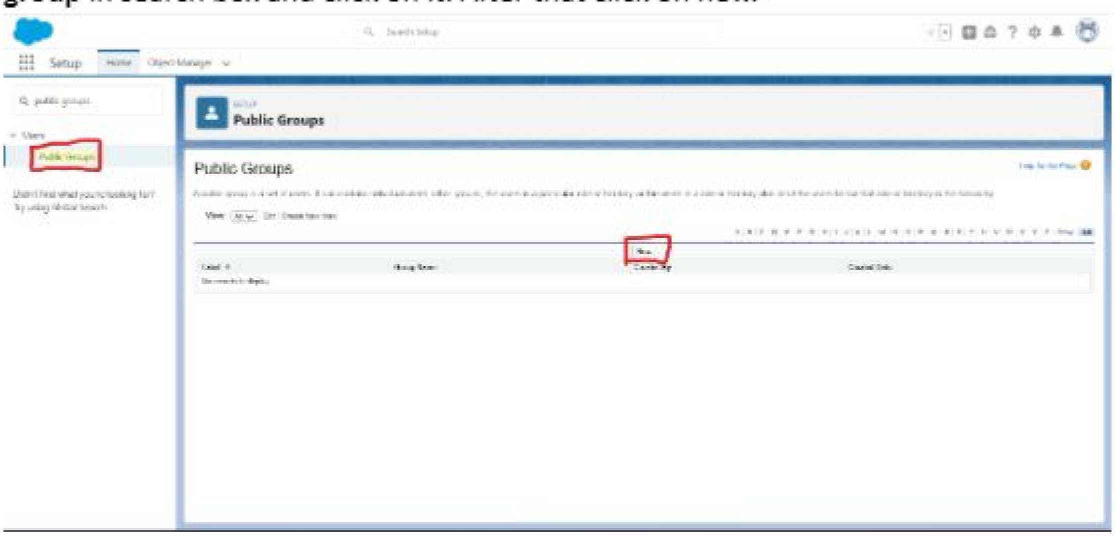
- Before making the sharing rule we have to unassign the test user from CEO and system administrator from CFO. Because we have only one user in free license account. For this again click on assign and select the user and click on remove button and save.



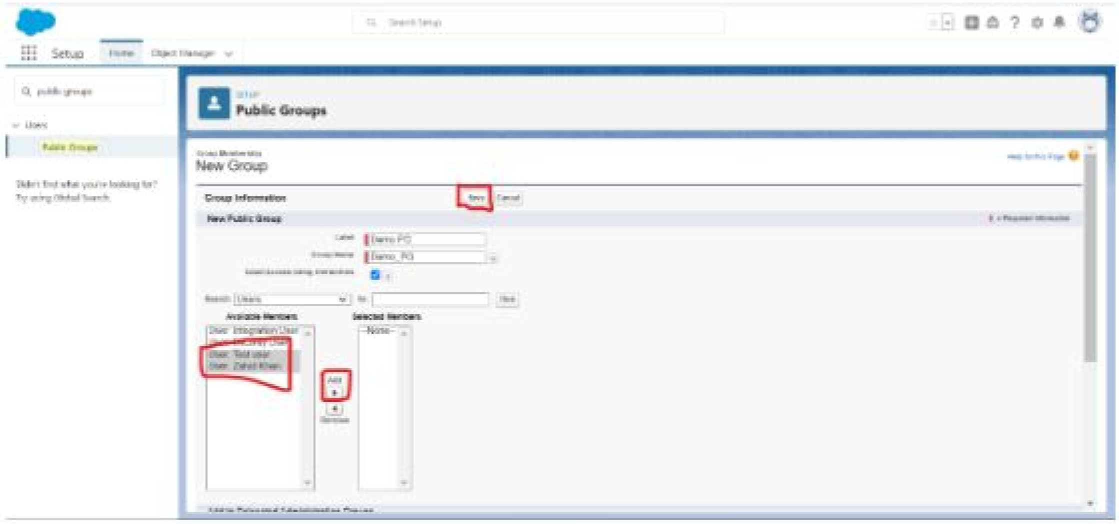
- Same way unassigned system administrator from CFO. And check in test user by log-in it that it unassigned or not.

<u>Steps to create sharing rule (based on records owner):</u>

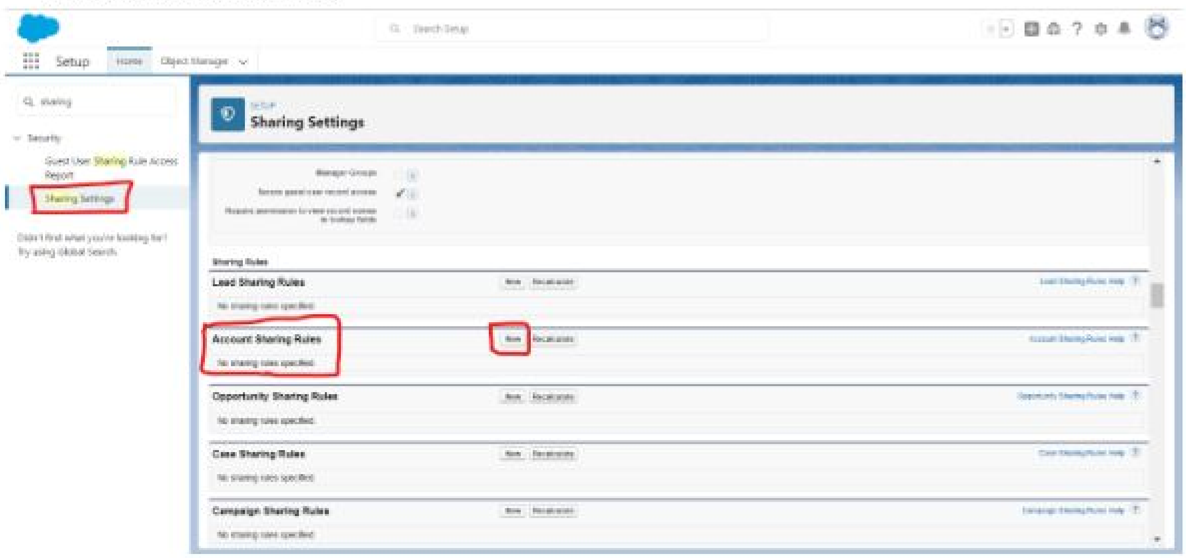
- Before creating sharing rule, we have to create a public group. For this search for **public group** in search box and click on it. After that click on new.



- After that enter label and group name. in search option select users so that all users will be visible. Select the users, click on add button and click on save.
- This way public group is created and all user to which we want to share the record will add to this public group.

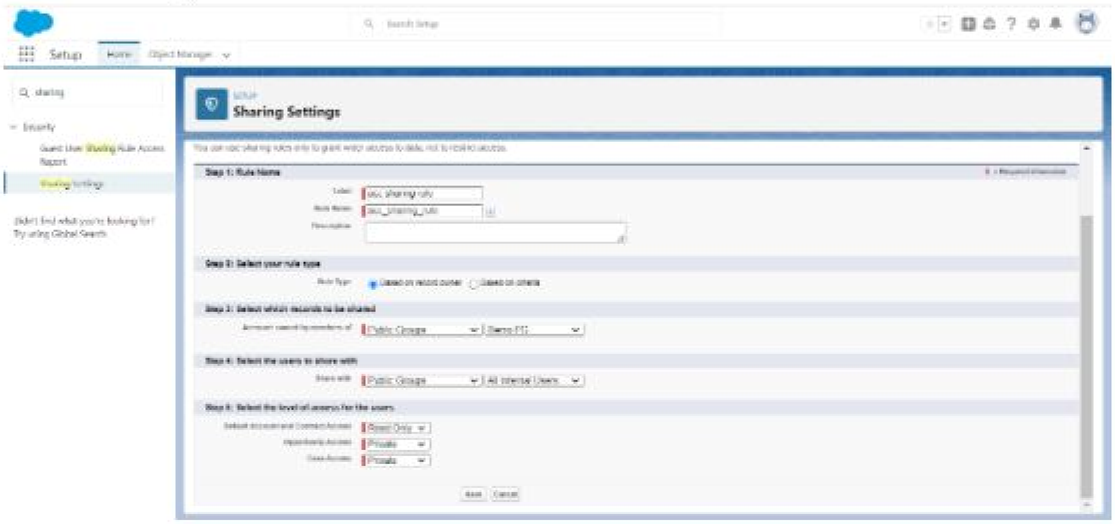


- After that we will create sharing rule.
- Search for **sharing settings** in quick search box. And click on it.
- After that scroll down so we will get all sharing rule of all objects. Here, we are taking example of account object.
- After that click on new.

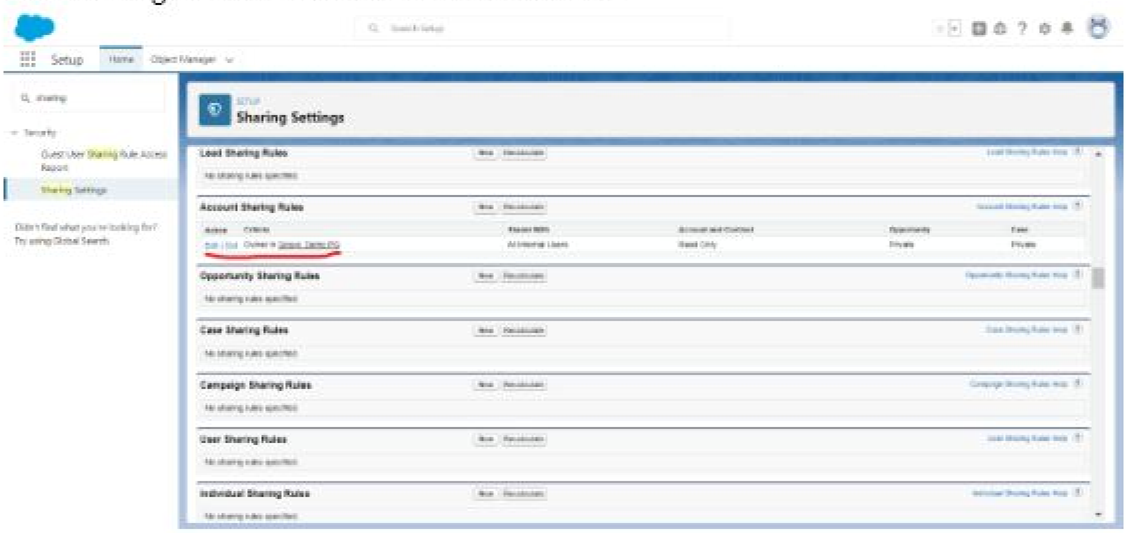


- Now we get 5 steps 1st to enter label name and Rule name.
- 2nd steps select your Rule type which contain 2 options **based on record owner** and **based on criteria**. Here, we are selecting **based on record owner** option.
- 3rd steps **select which records to be shared** which means the record who is created. For this we already created public group and add the user so that the record of those user.
- 4th steps **select the users to share with** which means with whom you want to share the report. Here, we are selecting public group and all internal user because currently we don't have much user.
- 5th **select the level access for the users**. This is select as per requirements.

- After entering this value click on save.



- Now sharing rule for account has been created.

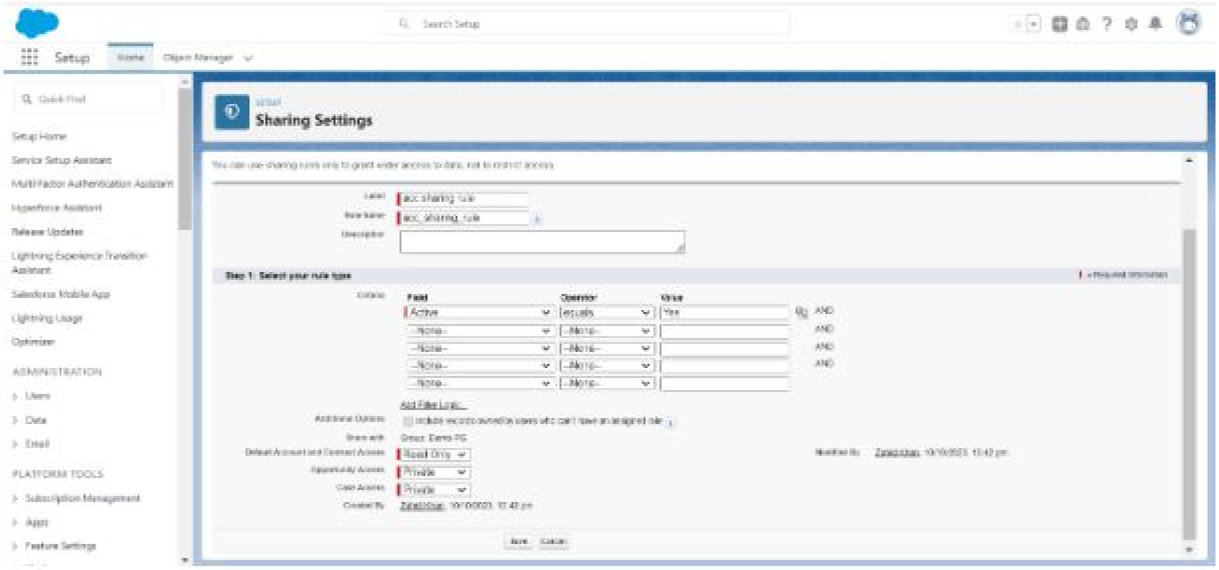


- Now go to test user and test the result. We will see all the records in test user because we add the system administrator and test user in same group.

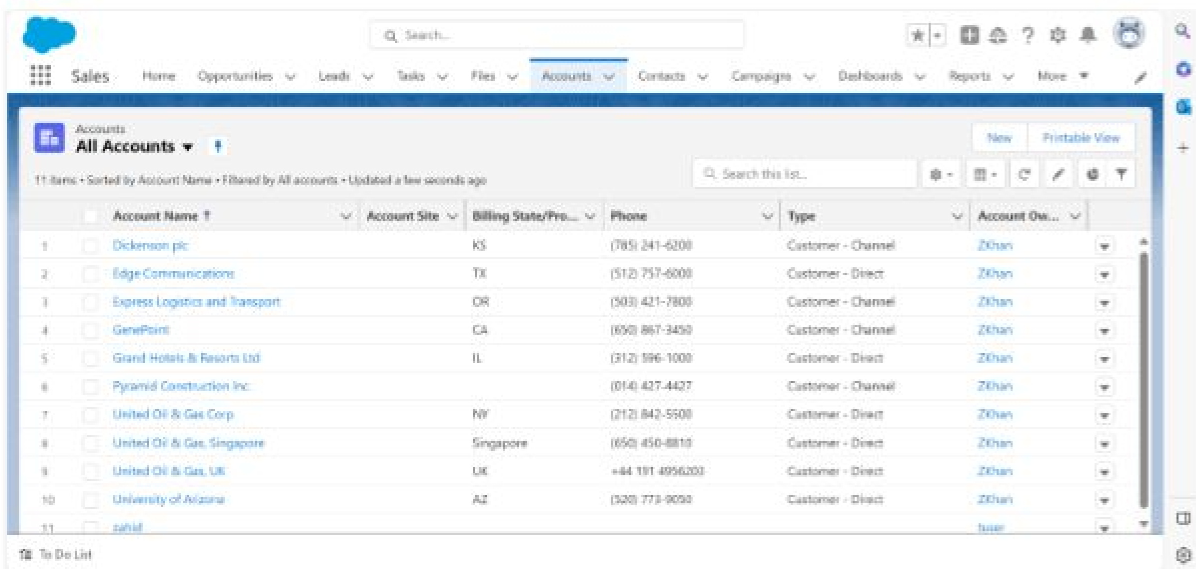
<u>Steps to create sharing rule (based on criteria):</u>

- If we want to share only some records based on criteria with another user so we have to choose option based on criteria.
- Again, search for sharing settings and click on it. After that scroll down and go to account sharing rule. And click on new.
- This time we have to choose based on criteria in step 2. After that we have to make criteria for showing the records. For example, we are selecting Active in field, operator equal and value is yes. Like this we can add criteria based on the requirements.

- After that select public group demo PG in step 4. And click on save.



- This way sharing rule created based on criteria. Now go to test user and check the results. All records will be visible whose active field is yes.



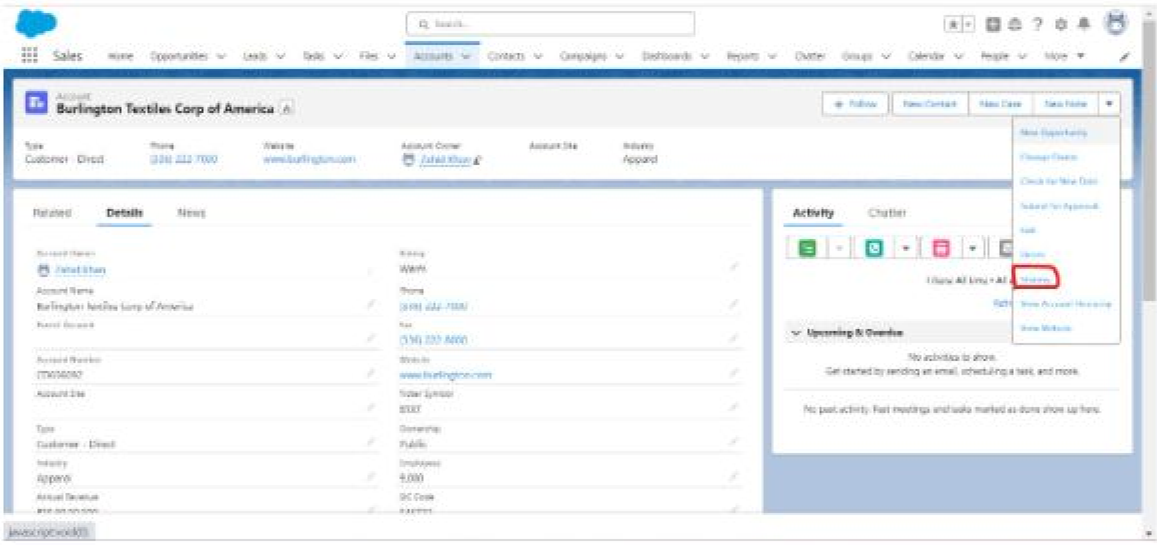
Manual sharing rule:

- It allows owners of particular records to share them with another users.
- Manual sharing is not automated like org-wide defaults, role hierarchy or sharing rules.
- It can be useful in some situations where you manually want to share a record with another user.
- We can share individual records with any users.
- we are sharing other records other than sharing rules. Which is created account sharing rule based on criteria.

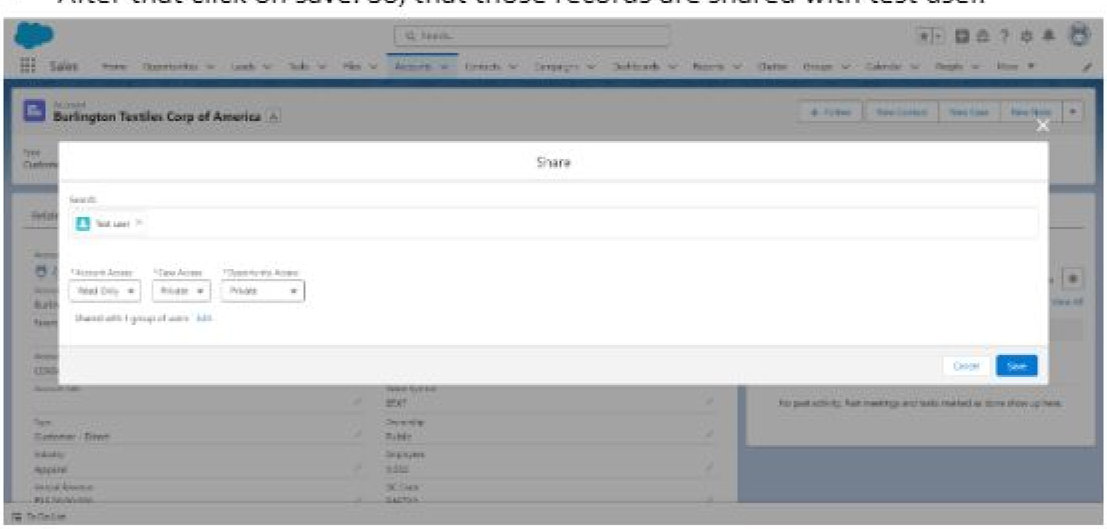
- If the user doesn't have access to the report and we share report by manual sharing rule so that user can see those records.

Steps to create manual sharing rule:

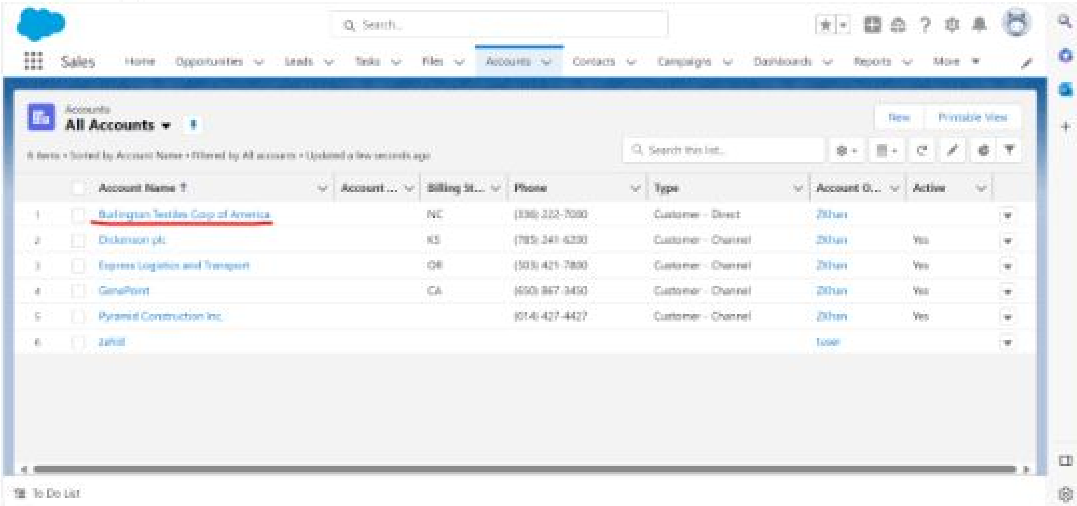
- Manual sharing rule will work in front-end of the App.
- For example, we are taking example of account object in sales app.
- Click on Account object and open any records.
- After that click on drop-down arrow at right hand side. And click on Sharing.



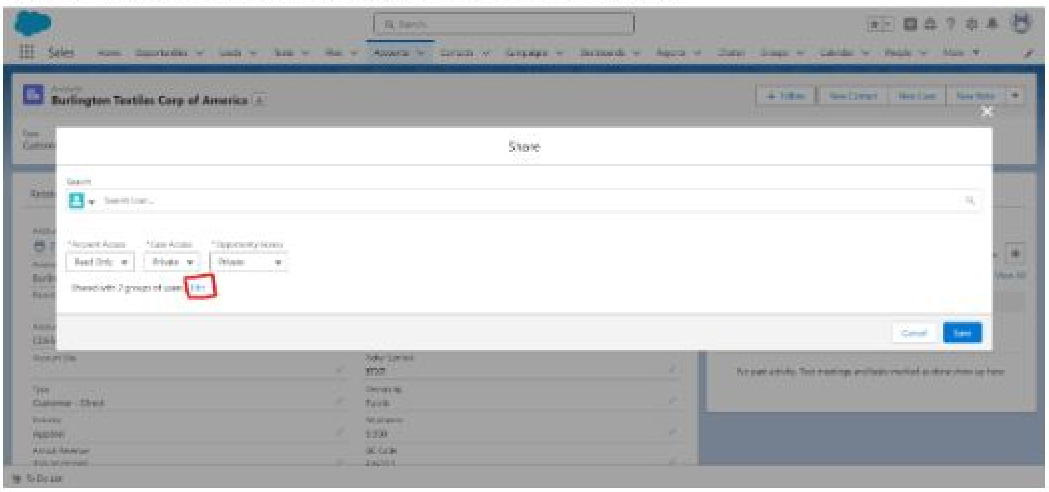
- After that share pop-up screen will open. We have to enter the user's name of the user to which we want to share these records.
- Here, we are taking the example of Test user because we have only test user in free account.
- We can also provide read/write access of those records.
- After that click on save. So, that those records are shared with test user.



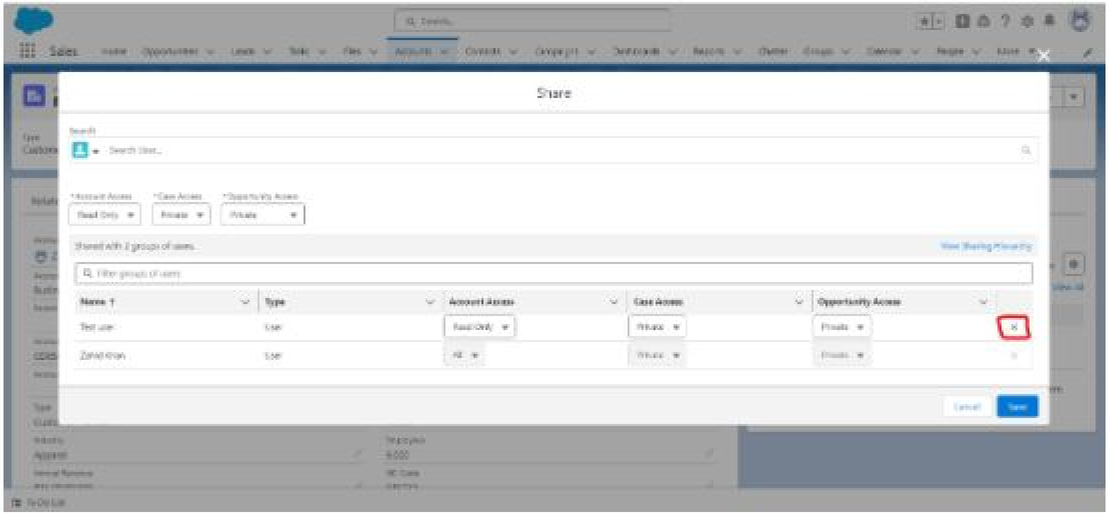
- Now log-in test user and check the result those records will share with test user.



- If we want to remove the access from the test user of those records again open that records on system administrators and again click on sharing option.
- After that click on edit so all user lists will be visible.



- If you want to revoke the access of any records just click on the cross sign beside the user's name.
- We can also edit the read/write access of the records.
- Click on save to affect the changes.


Share
Search
*Account Access
*Case Access
*Opportunity Access
Read Only
Private
Shared with 2 groups of users.
View Sharing Hierarchy
Name
Type
Account Access
Case Access
Opportunity Access
Test User
User
Zahid Khan
All
Cancel
Save

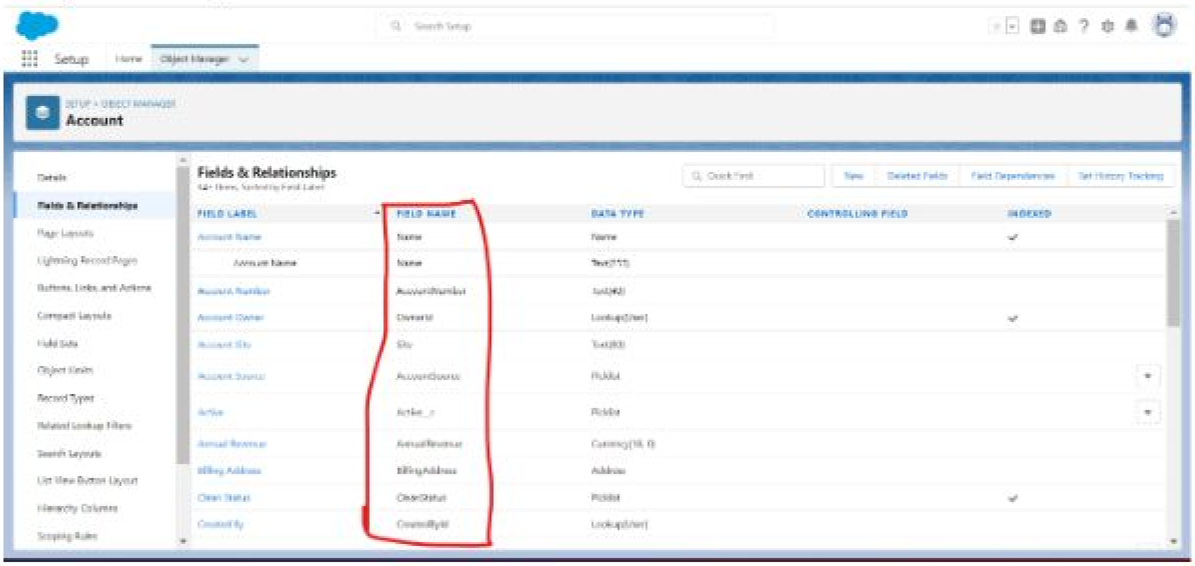
Day-13

Data import wizard

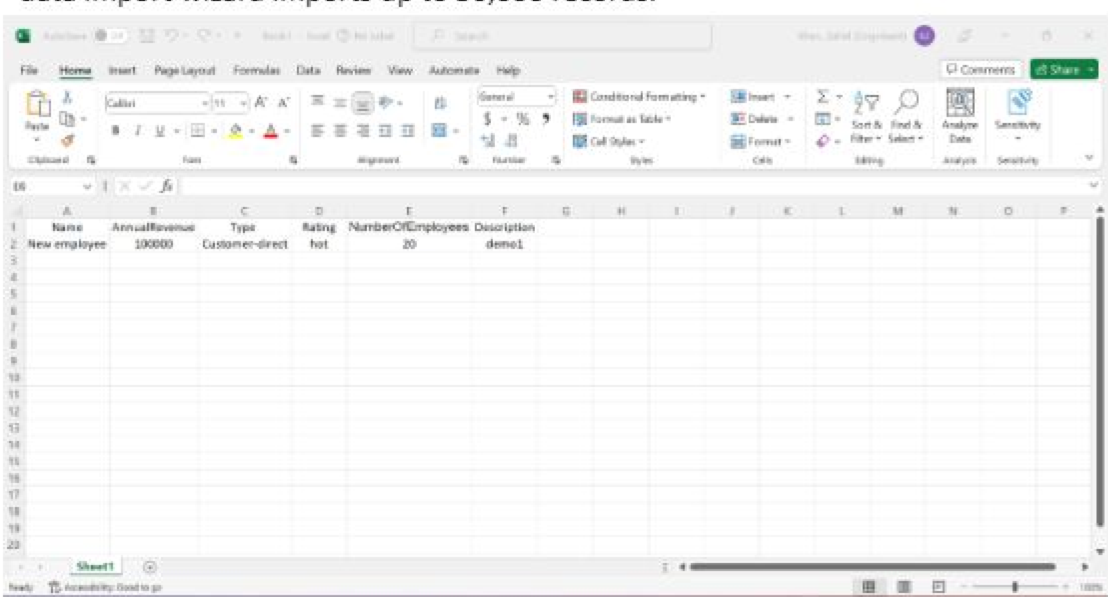
- It helps to import data from excel/csv format into salesforce.
- One can find this in setup.
- One can import up to 50,000 records at a time.
- One can perform insert, update, & upsert operations.

Steps to create data import wizard (insert):

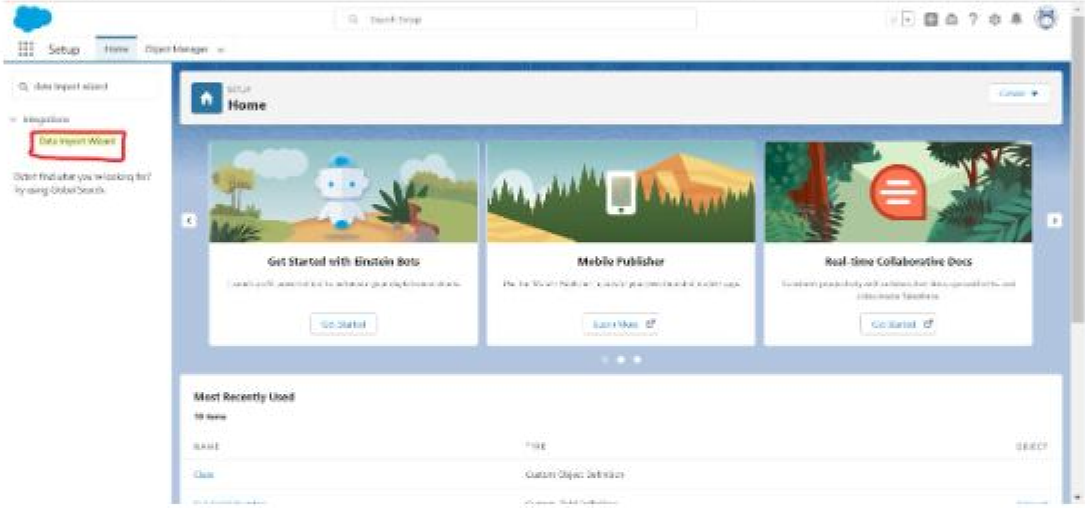
- First of all, create a record of the field in a excel file which we want to insert from the computer. Always use record name in excel.



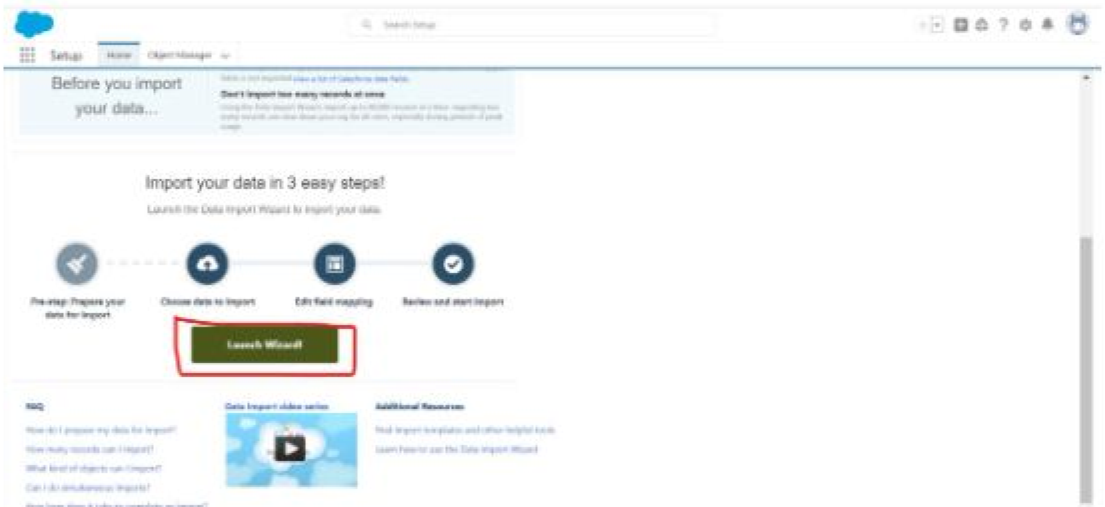
- Like, below we can create number of records in excel file and import it in our org. but data import wizard imports up to 50,000 records.



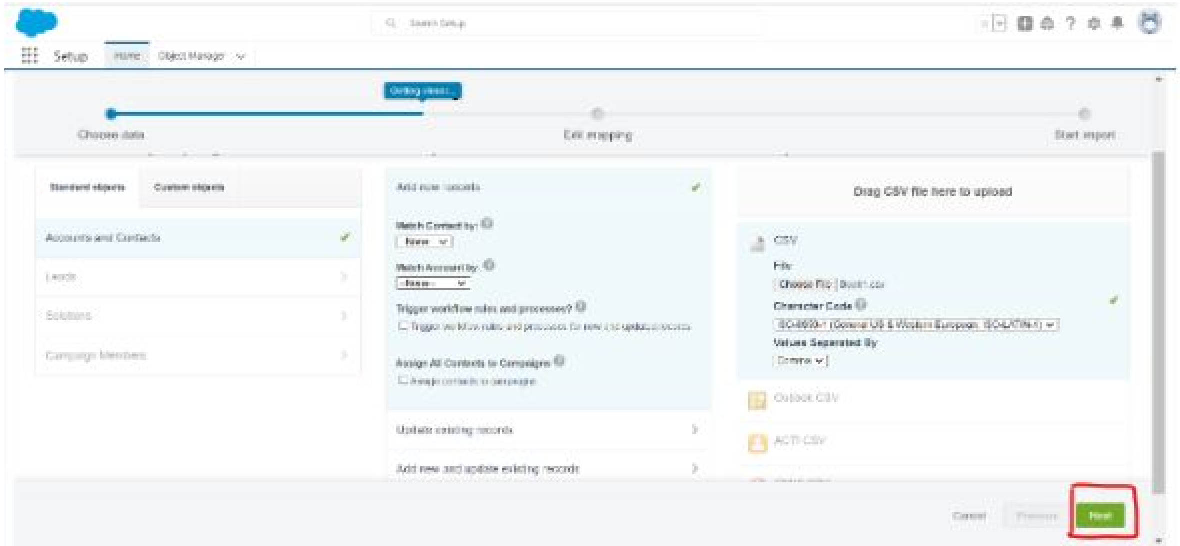
- Now go to set-up and search for **Data import Wizard** in quick search box. And click on it.



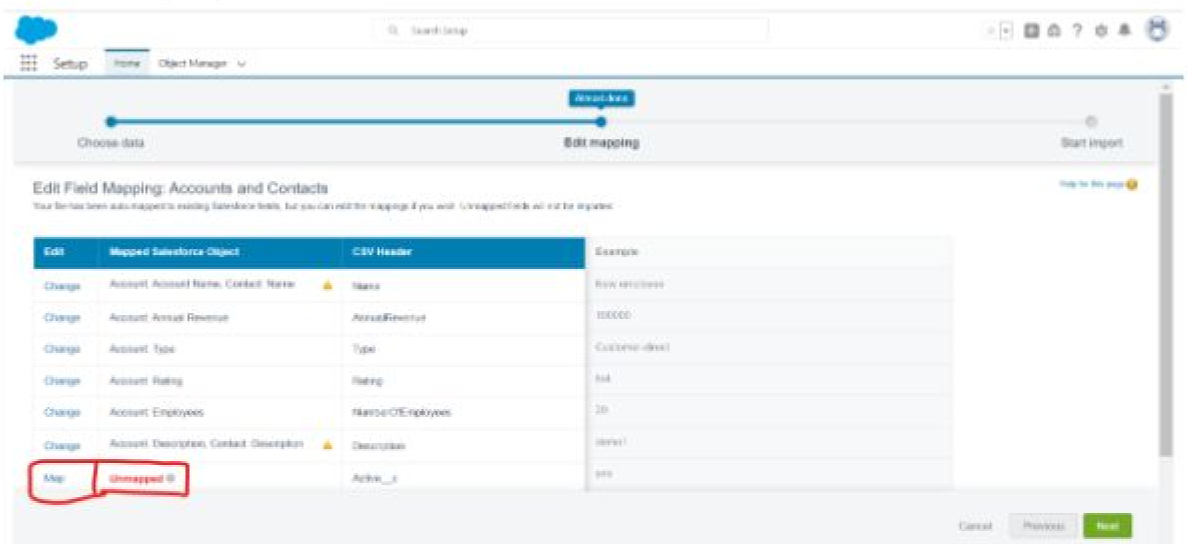
- Scroll down and click on Launch wizard.



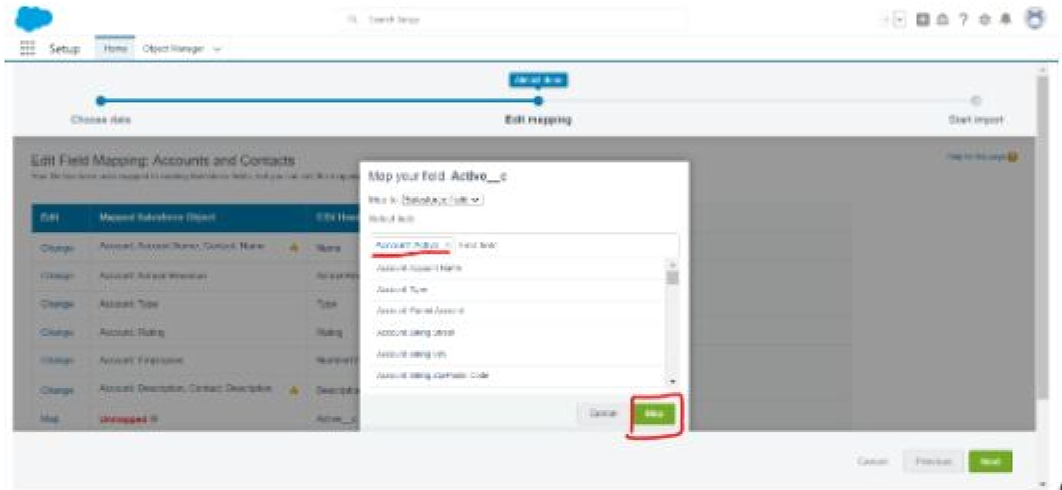
- After that **import your data into salesforce** window will be open. In which we got 3 options.
    1. **What kind of data you are importing?** In this option we got standard and custom object list.
    2. **What do you want to do?** In this option we got 3 options insert, update and upsert (insert as well as update).
    3. **Where is your data is located?** Means where our excel file is located.
- Here, we are taking example of account object (standard object).
- Select Account object under standard object.
- After that select **Add new records**.
- after that click on next.



- After that we have to do mapping of excel file records with object field heading. Mostly it will be mapped if not then we get map option in edit field.
- In below image we can see that active field is not mapped so we have to map by clicking on Map option in edit column.

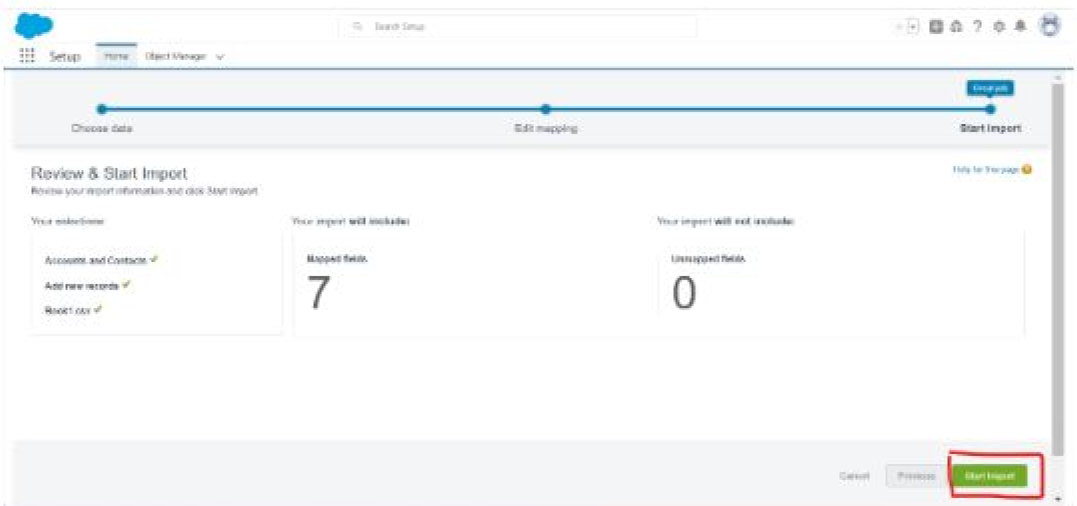


- After that search for field in which we want to map that unmapped field. Here, Active filed is unmapped so we have to search for Active.

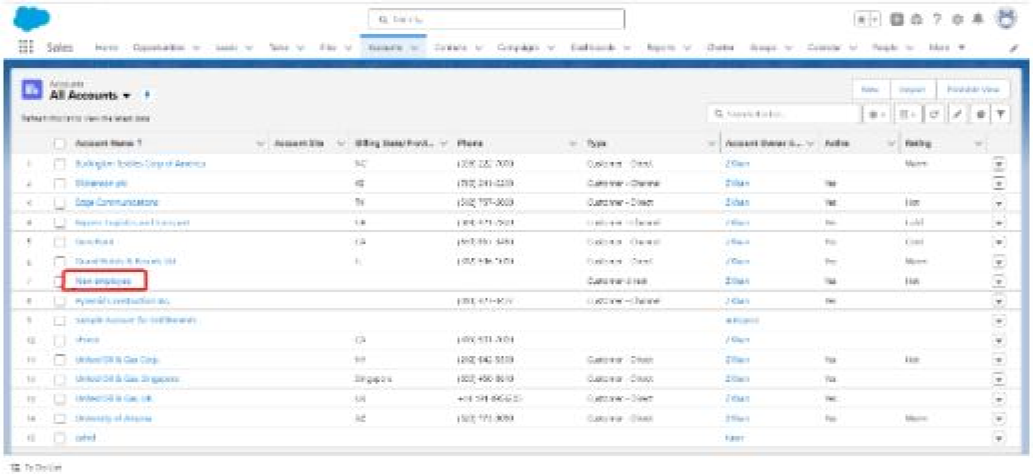


And click on Map.

- After that click on next.
- After that click on start import.

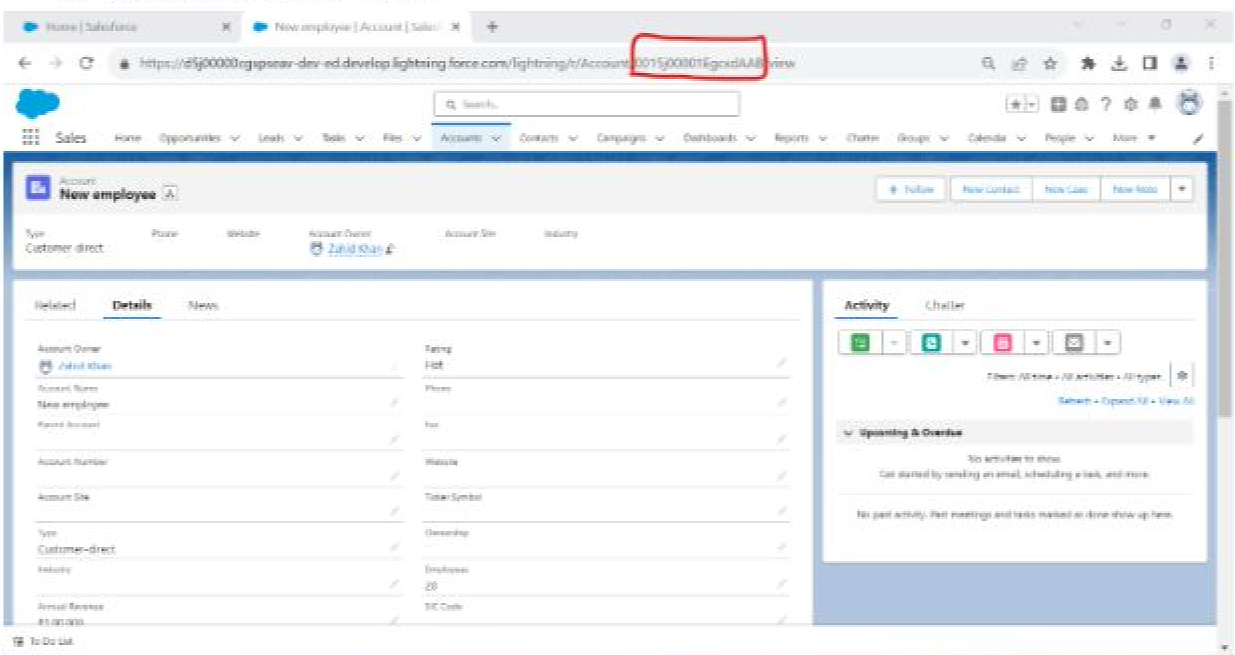


- After that go to front-end of the sales app and click on accounts object. We will see the records which we import.

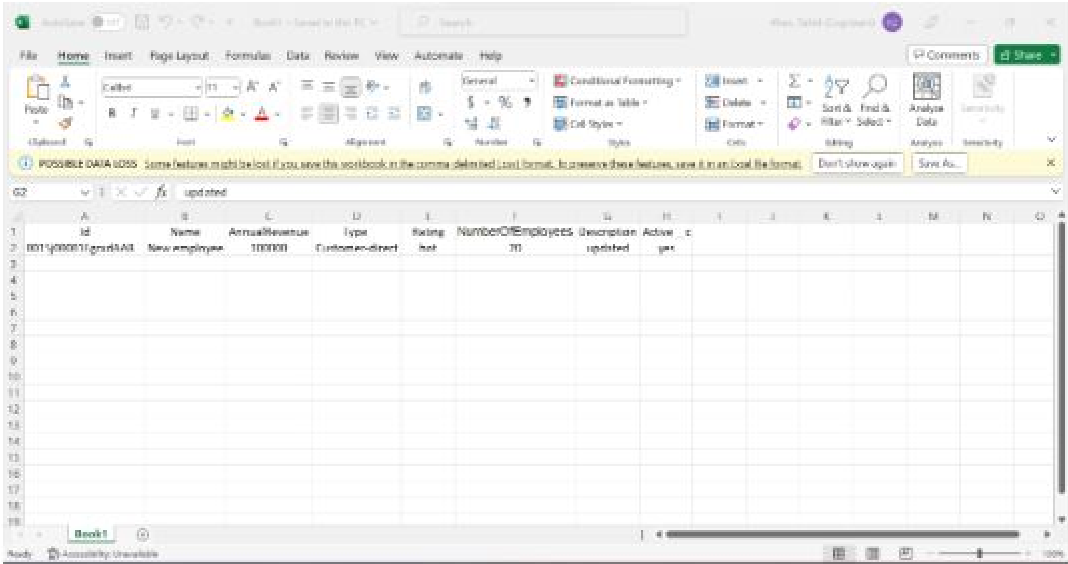


<u>Steps to update data import wizard:</u>

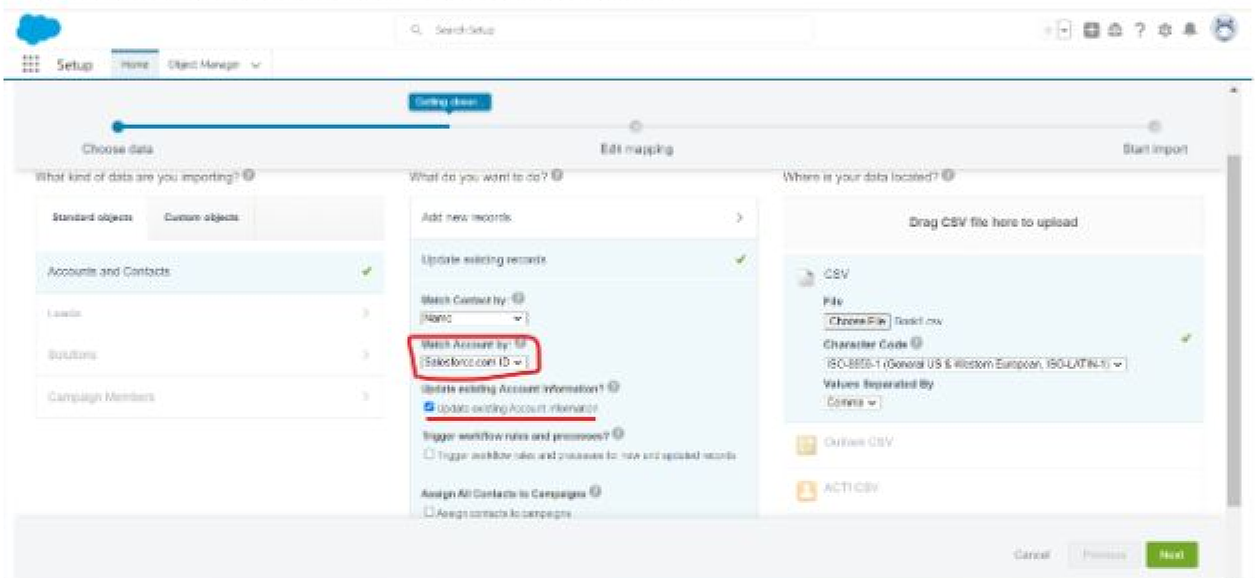
- To update a record through data import wizard we have to get the id of the existing records.
- To take the id of the records open that records which imported and want to update. And copy the id from address bar.



- After that enter id into excel sheet and again import that sheet.

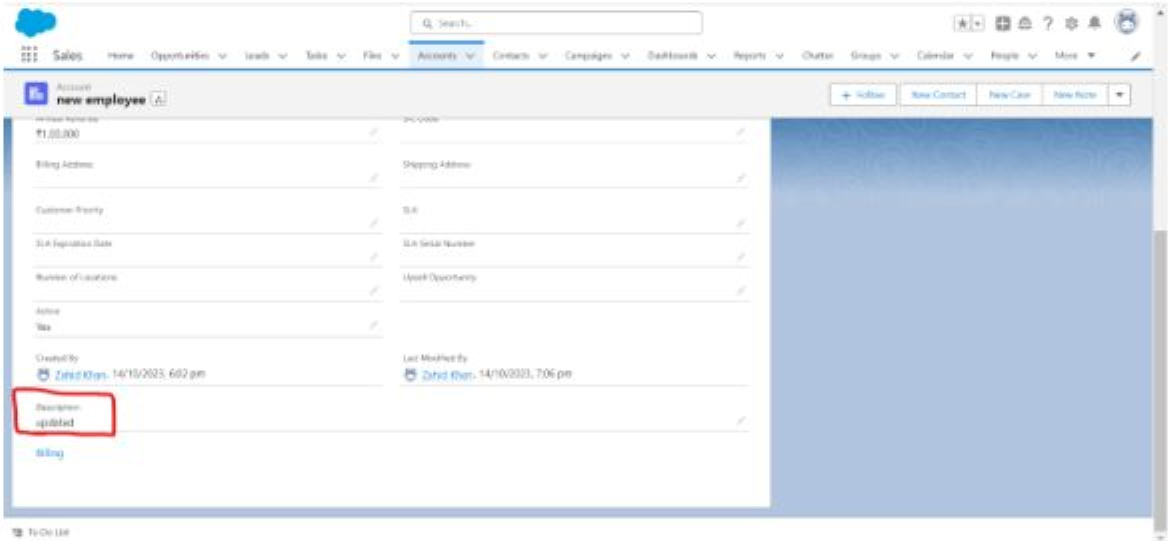


- Now go to setup and search for **data import wizard** and click on it.
- After that again click on launch wizard.
- After that select Account object because we are taking example of account object.
- After that click on **update existing records**. And select **Match Account by Salesforce.com ID.** and check the **box update existing account information**.
- At last, import the updated csv file from computer.



- Now click on next.
- Again, map the unmapped the salesforce object i.e., Active__c.
- And click on next.
- After that click on import start.
- Now data is updated.

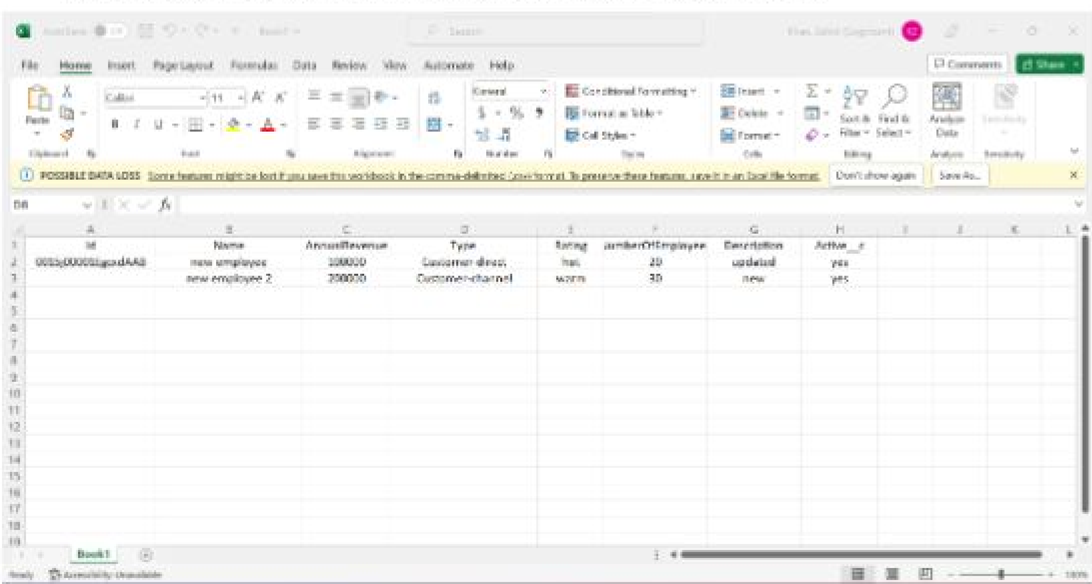
- Go to front-end and check the results.



- Now records are updated.

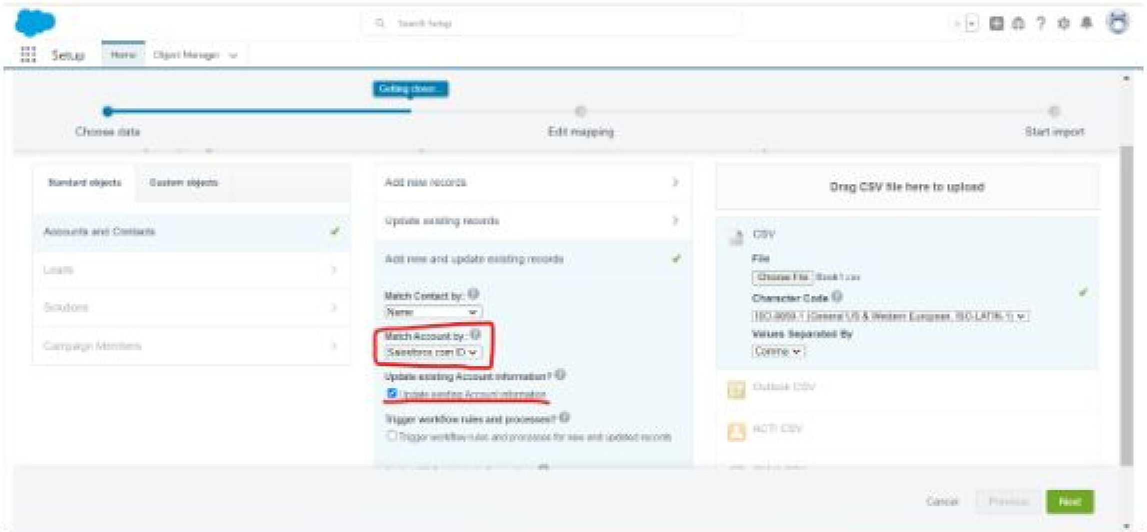
<u>Steps to upsert (add new records & update existing records) the records:</u>

- Make a excel csv file with existing records and new records.



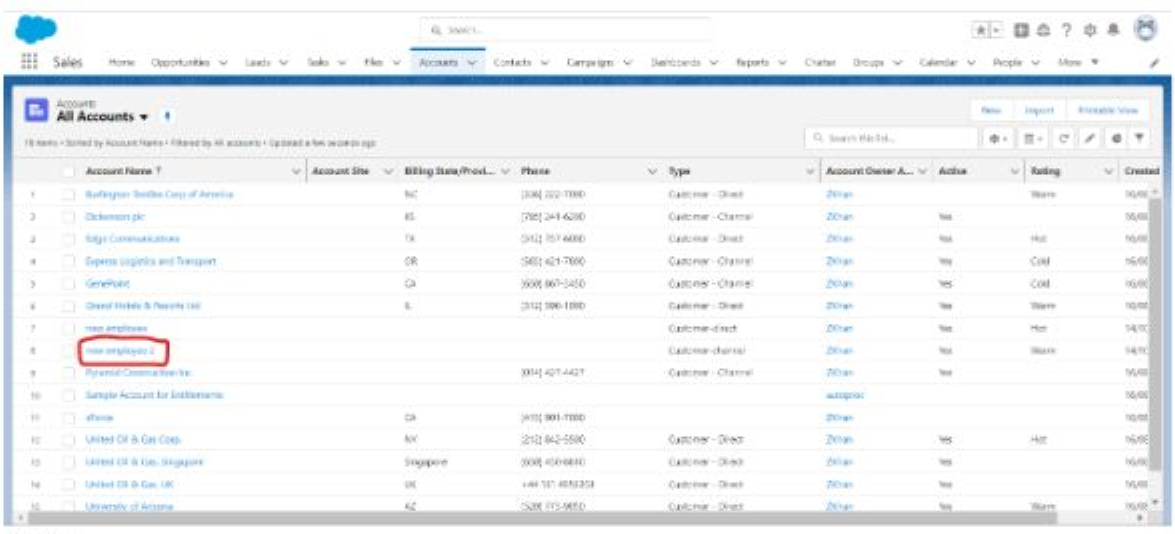
- Now go to setup and again search for data import wizard. And click on it.
- After that click on launch wizard.
- Select account object. After that select **Add new and update existing records**.

- Again, select Match Account by salesforce ID. and check the box update existing account information.
- After that select CSV file. And click on next.

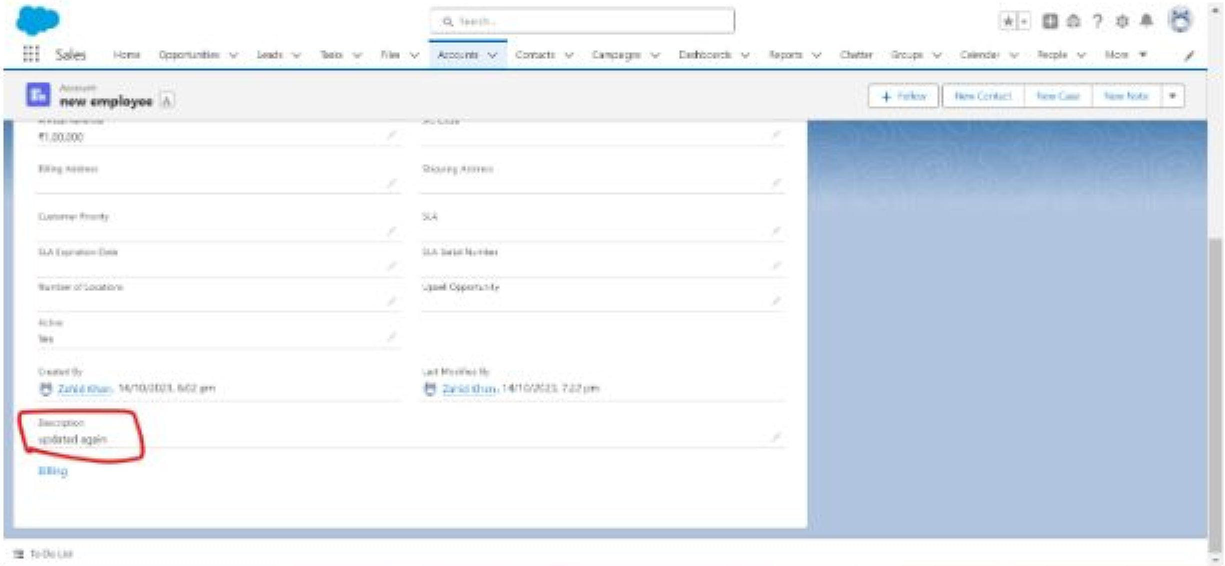


- After that map the unmapped salesforce object and click on next. And click on start import.
- Now data is updated, and new data also imported.
- Go to the sales App and click on accounts tab and check the results.

New imported Records



Updated records



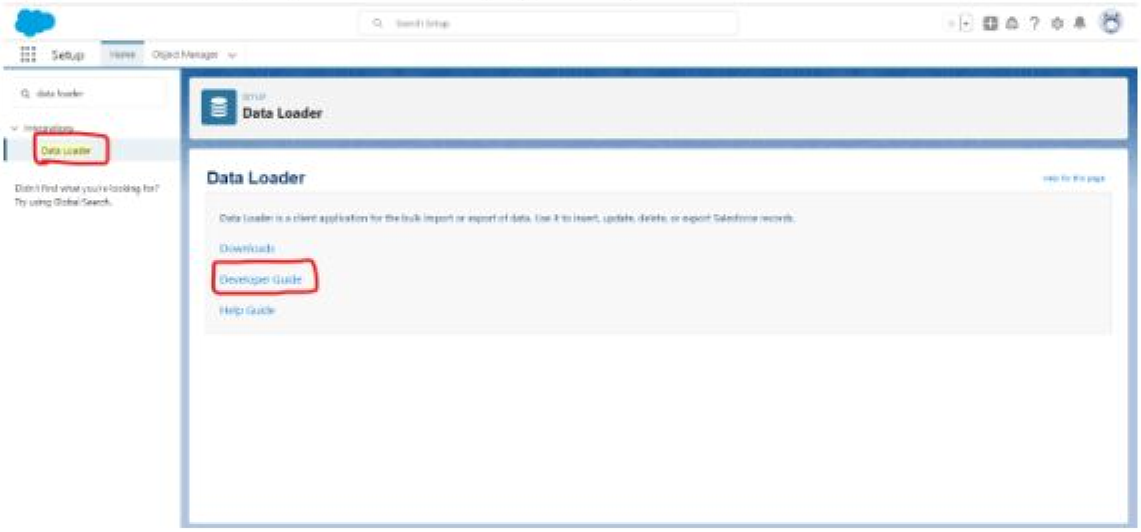
Data loader

- It helps to import data from excel/csv format into salesforce.
- One has to install it in the computer through downloading from internet.
- We can import up to 5,00,000 records at a time.
- Operations that can be done:
    I. Insert
    II. Update
    III. Upsert
    IV. Delete
    V. Export
    VI. Export All (includes deleted records as well).

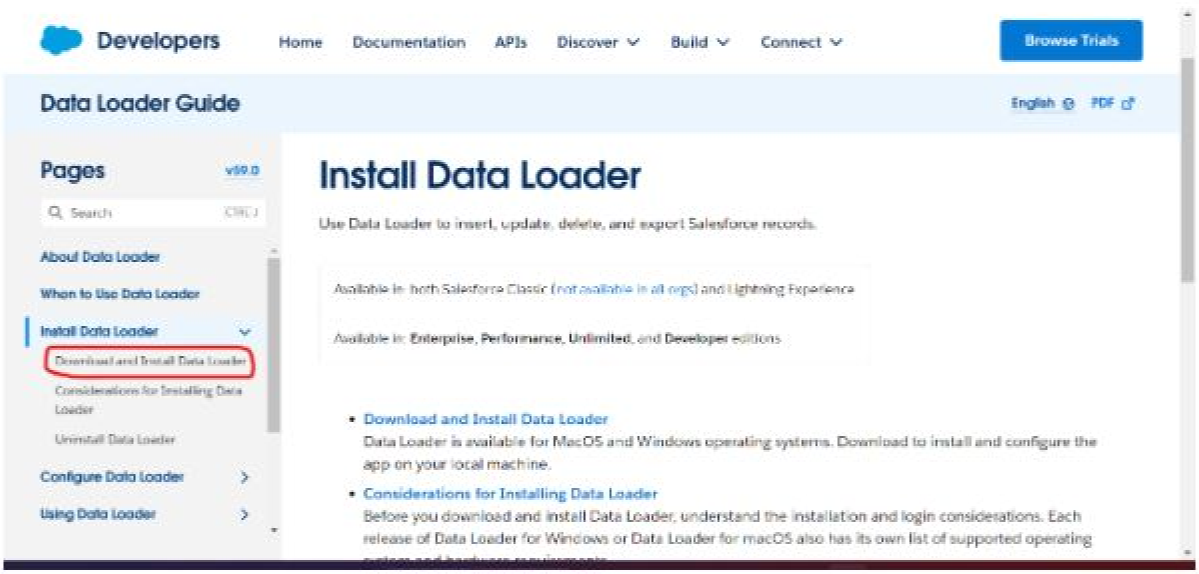
Steps to download data load and install:

- First of all, go to set up and search for **data loader** in quick find box. And click on it.
- After that we got option download, developer guide and help guide.
- We can direct download zip file of data loader and install it. But the prerequisite of data loader is to jdk 17 or above must be installed in the system.

- So, click on developer guide one new page will open.

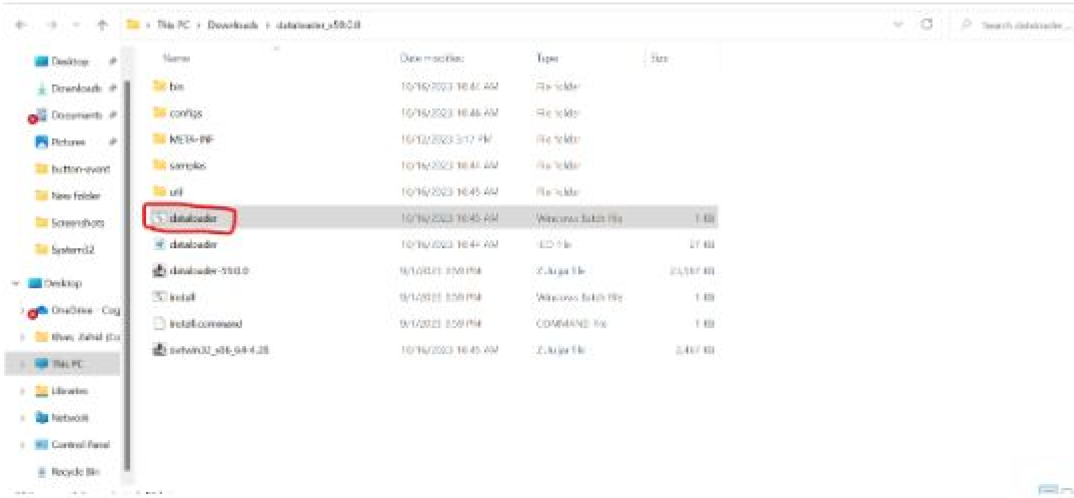


- In new page click on install data loader after that click on download and install data loader.

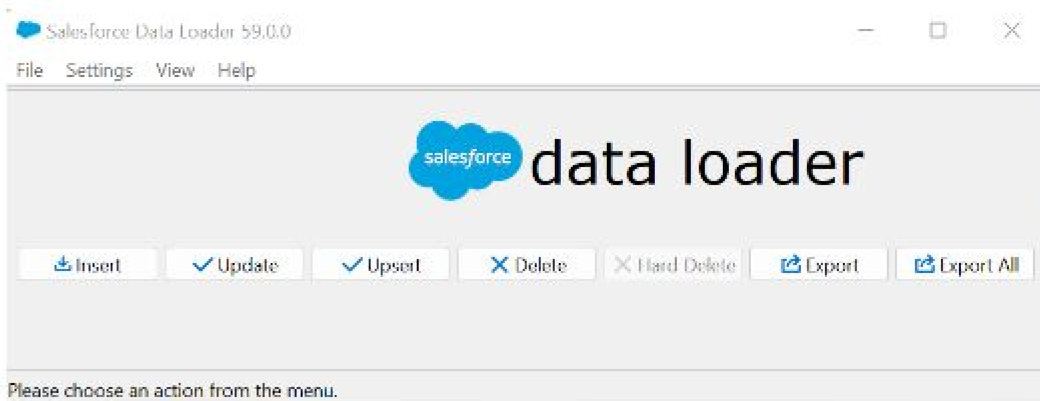


- After that follow all steps on the page and install the data loader.

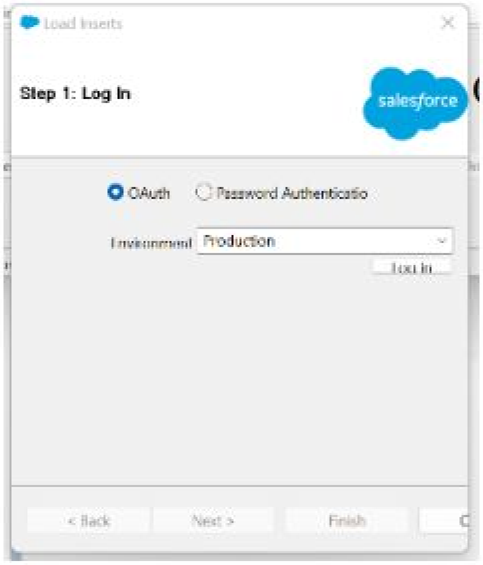
- After installation of data loader, we can get a icon on desktop if not then go to the extracted path of the data loader and click on below file.

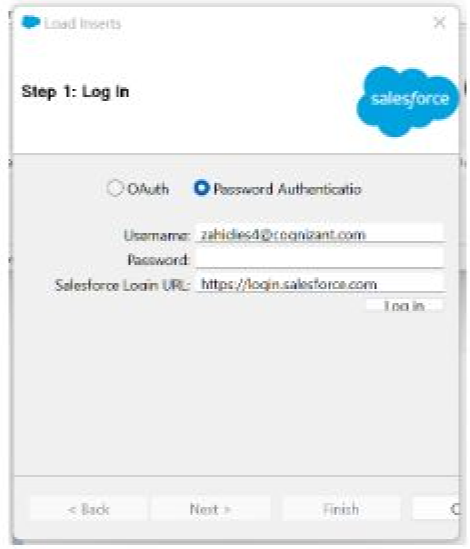


- After that we got the below interface of data loader.



- Now click on any option so that the login window will open, and we have to login by entering id and password.
- In OAuth choose production in environment. After that select Password authentication for enter id and password for authentication.





- After successfully login we can use all option as data import wizard.
- In data loader we don't have to copy the id from address bar manually. If we use export option the file is downloaded with id.

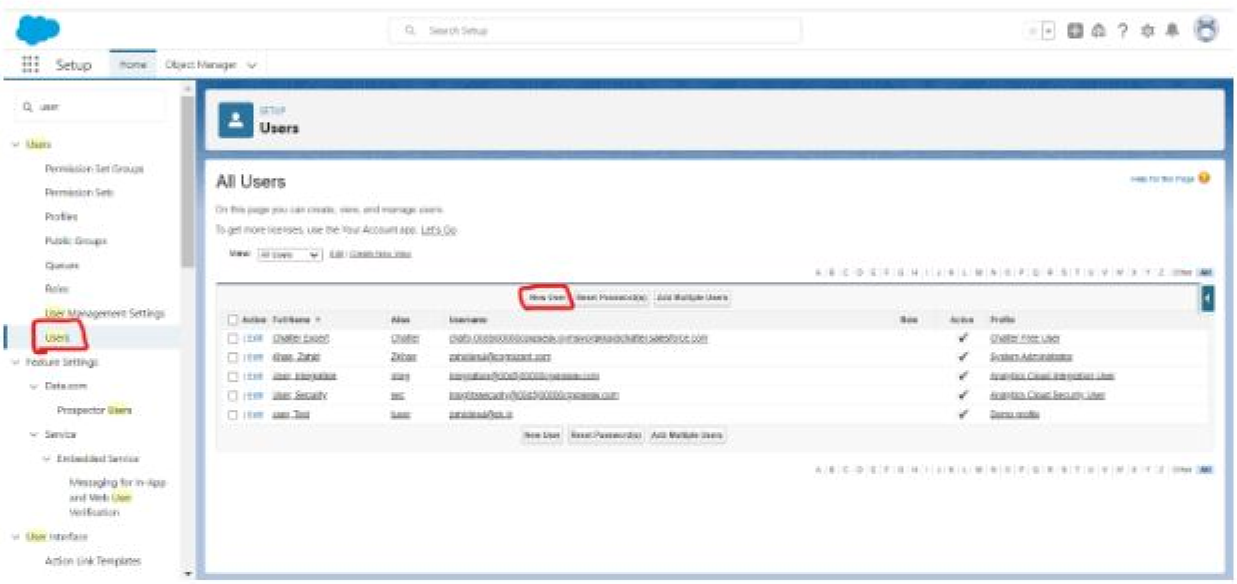
Day-14

Approval process

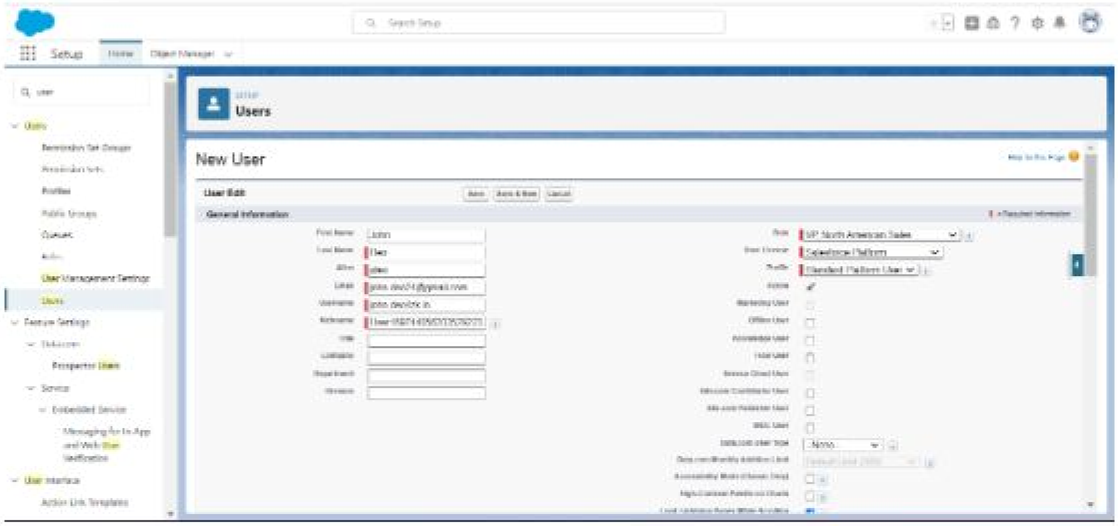
- An approval process is an automated process.
- It is implemented to approve records.
- We can specify the steps those are necessary for approval.
- It allows a step to apply to all records or just records that have certain attributes.
- In approval process we can also define who will be approving at each step.
- Approver can take steps that when records approved, rejected, or recalled.

Steps to create approval process:

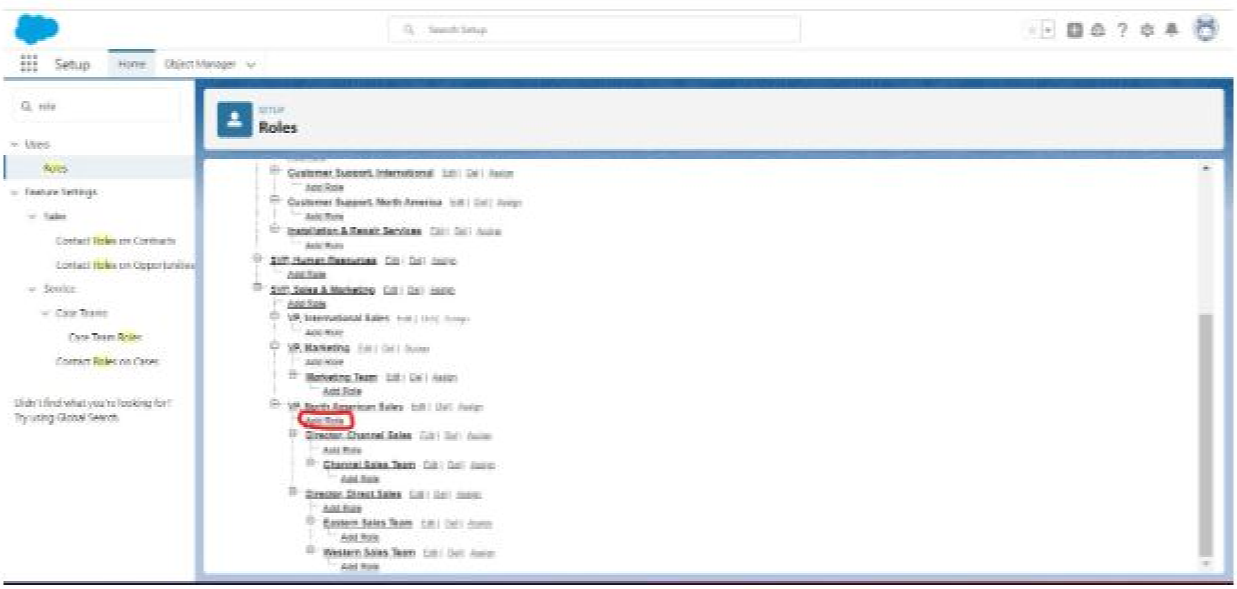
- We take following scenario for creating Approval process.
  I. If discount is requested for 20% or less, it is automatically approved.
  II. If a discount is requested for more than 20%, it must be approved by a manager in the sales department for U.S. reps.
  III. If discount is requested for more than 40%, it must also be approved by VP, north America sales.
- Before creating of approval process, we have to create user for VP and Manager so that they can approved the request.
- For this we have to create 2 profile 1. VP, 2. Manager.
- For creating user go to set and search for User in quick find box. After that click on new user.



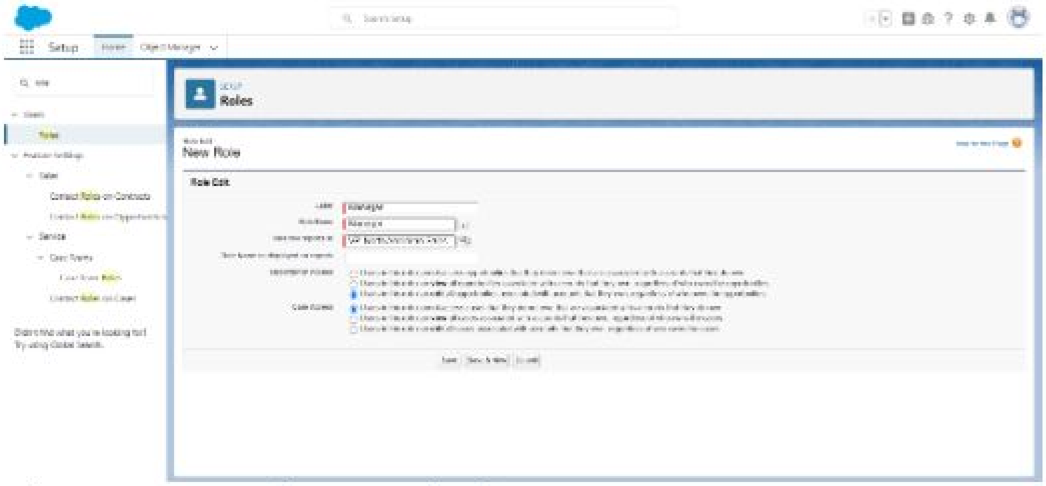
- After that enter all details for VP role and click on save.



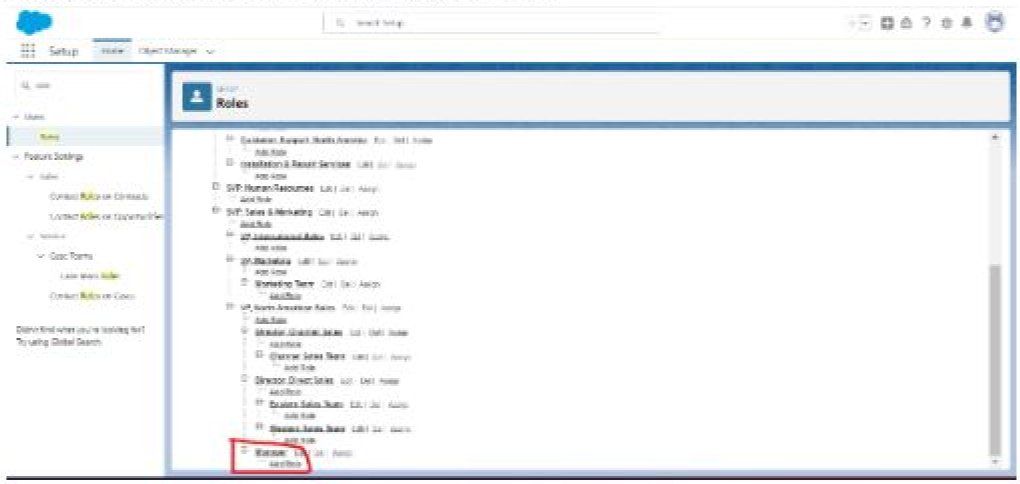
- Now VP profile user is created.
- After that create a role under VP.
- To create role search for **Roles** in quick find and click on it. And click on expand all to show all the hierarchy.
- Now click on add role under VP, north America sales and make manager role.



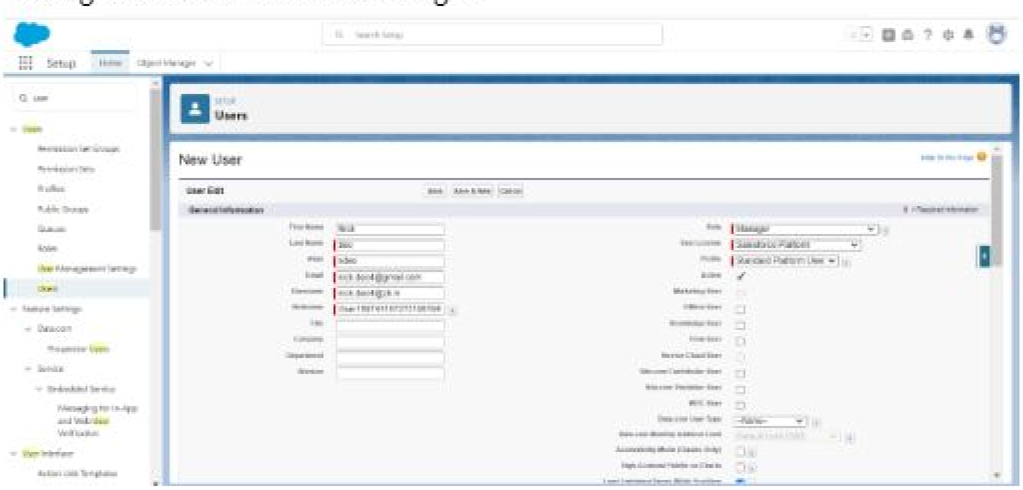
- After that enter the label and role name and click on save.



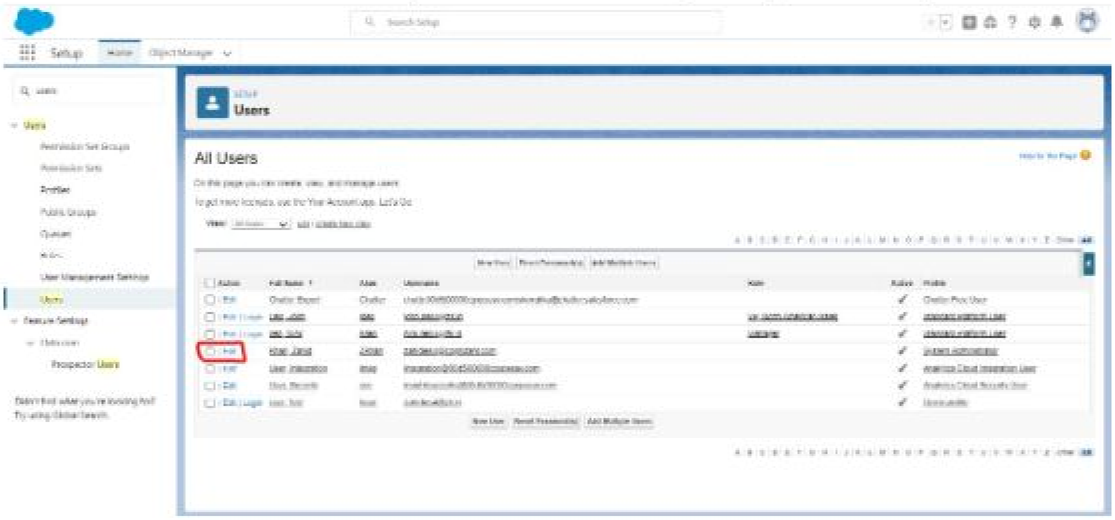
- This way manager role is created under VP.



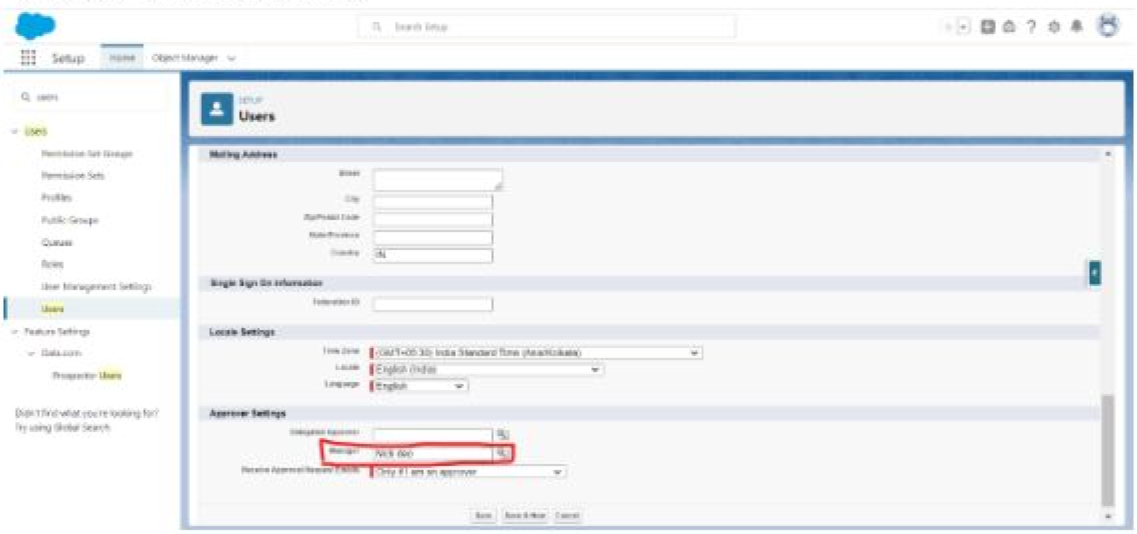
- Now we can create manager user under users' section. Before creating manager user we have to create role under VP after that we can create.
- Now, we have to create one more user for manager. Same way creates a user for manager and select role as manager.



- After that we have to make our account (system administrator) under manager like my manager is manager and VP is the manager of my manager. So, when we create any records, it will go to the approval of my manager after that VP.
- To do so again search for Users in quick find box. And click on it.
- After that click on edit beside system administrator profile (Zahid khan).



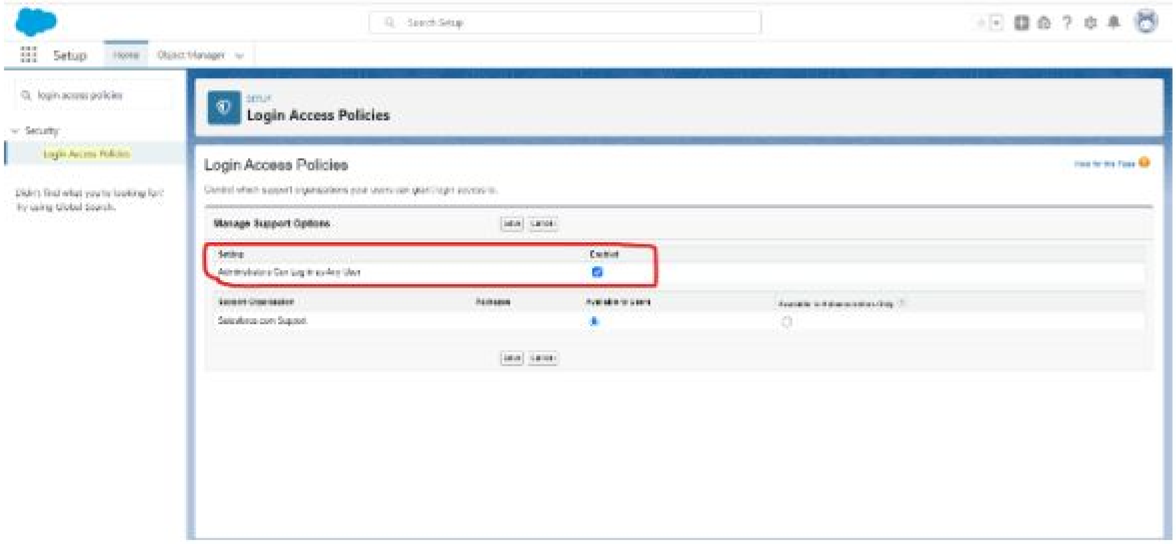
- After that scroll down and select manager field as nick deo. This way my manager is nick deo. And click on save.



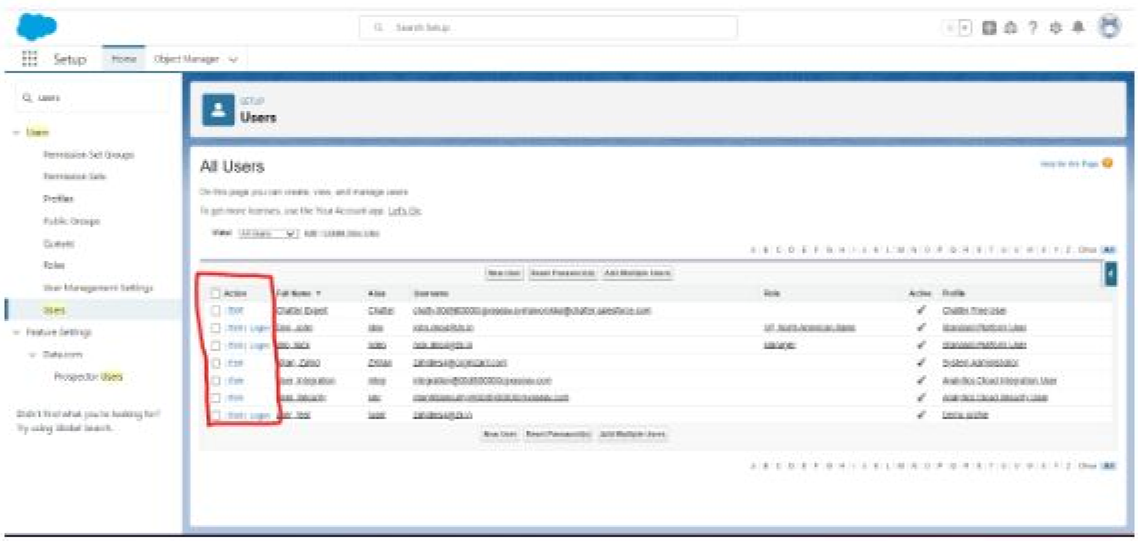
<u>Steps to enable login option in users:</u>

- As we can see that there are no login options beside user under Action section. Only edit option is there. To enable the login option search for **login access policies** in quick find and click on it.

- After that check the box that **administrator can login as any user**. And click on save.

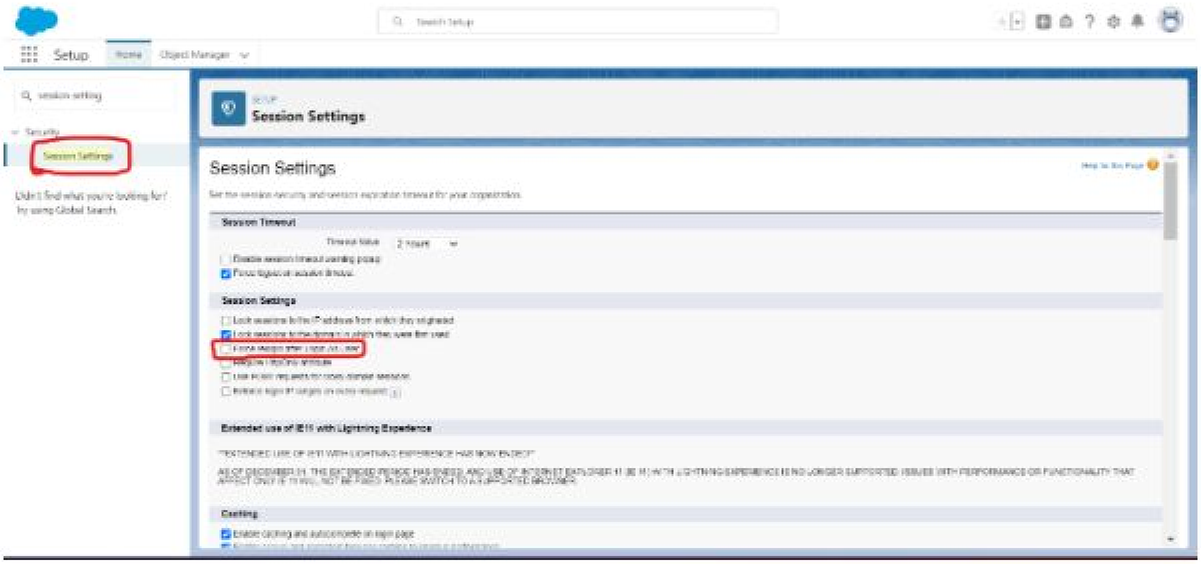


- After that again search for user and check that login option is available.



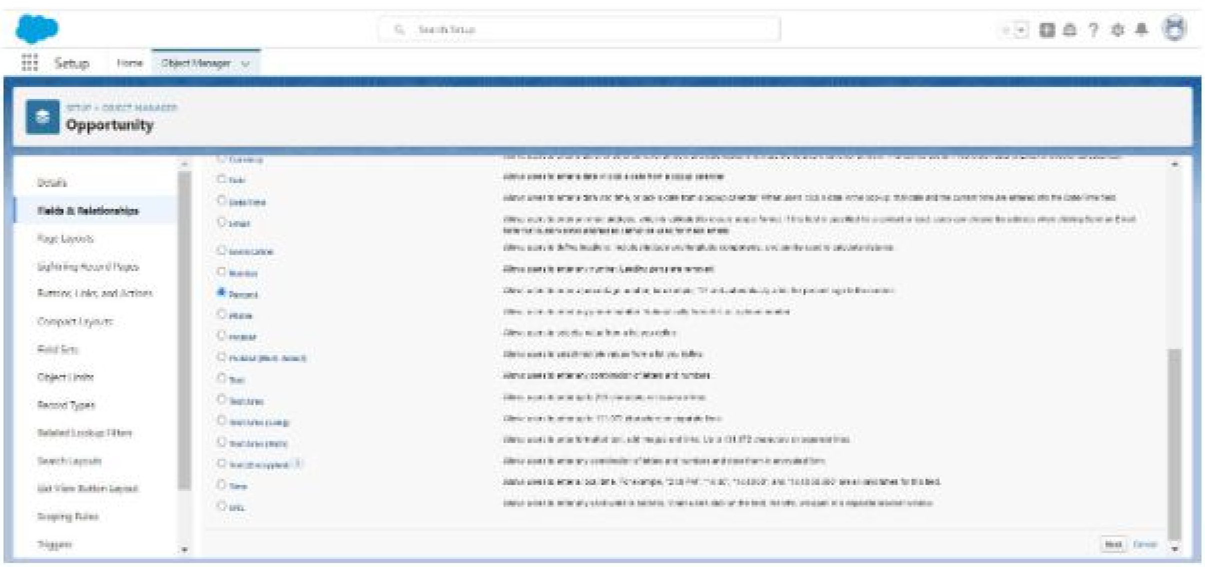
<u>Steps to enable login without password using user option:</u>

- For log-in to the other user we have to switch the browser and enter the username and password again and again.
- We can stop this through setting session.
- For this search for **session settings** in quick find search box. And click on it.
- After that go to session settings and uncheck the box **Force login after Login-as-user**.
- Click on save.

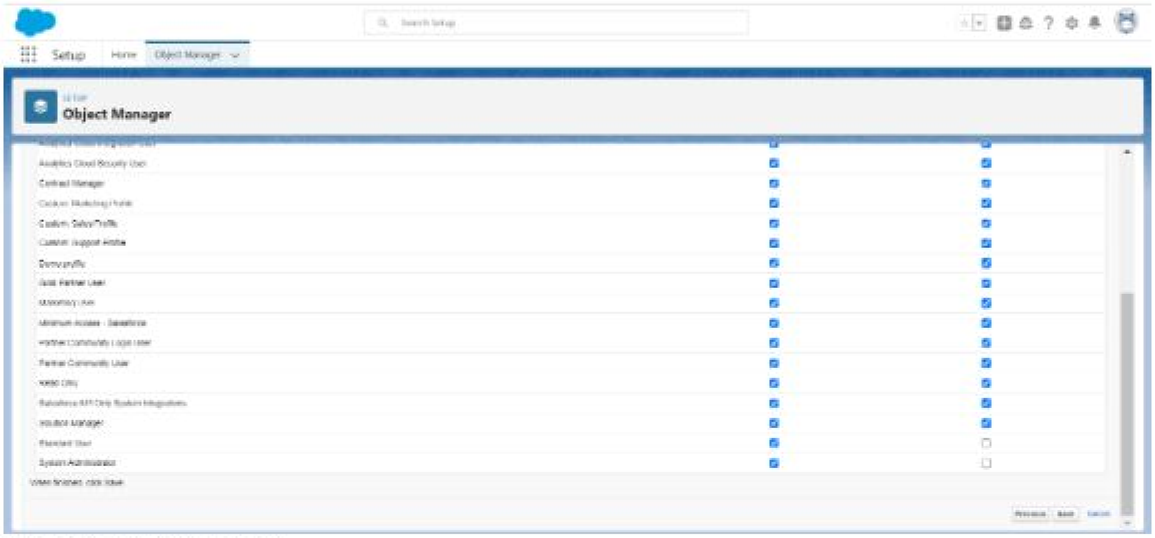


create approval process for opportunity:

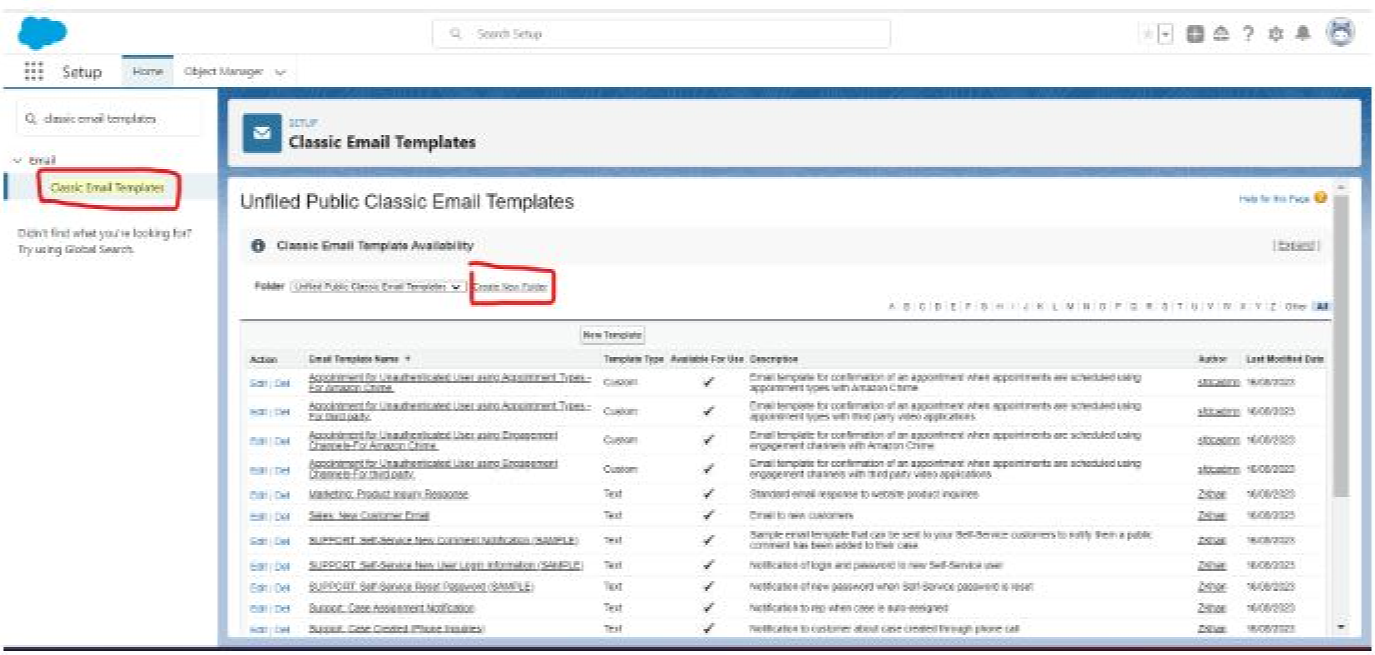
- All set-up in done for approval process. Now we are going to make approval process for opportunity object with discount field as mentioned in 1st page.
- Go to the opportunity object and click on field & relationship and create new field.
- After that click on new and choose data type as percent.



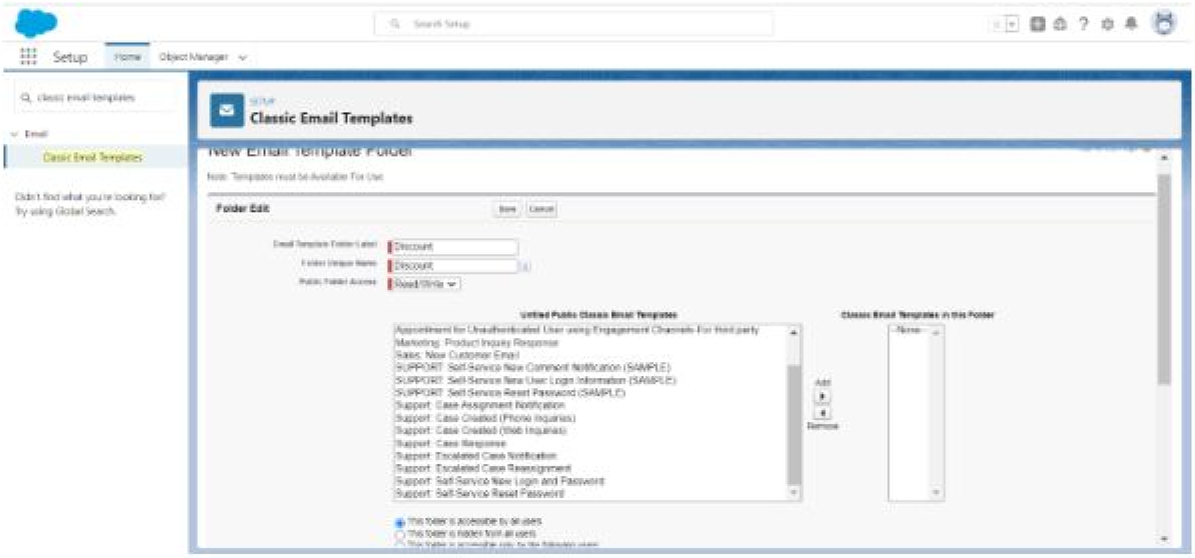
- After that click on next. Enter label name (discount percentage) label is 2 and decimal places is also 2.
- Click on next.
- After that check the visible box so that its visible to all and also check the read only box only uncheck the standard user and system administrator box of read only.



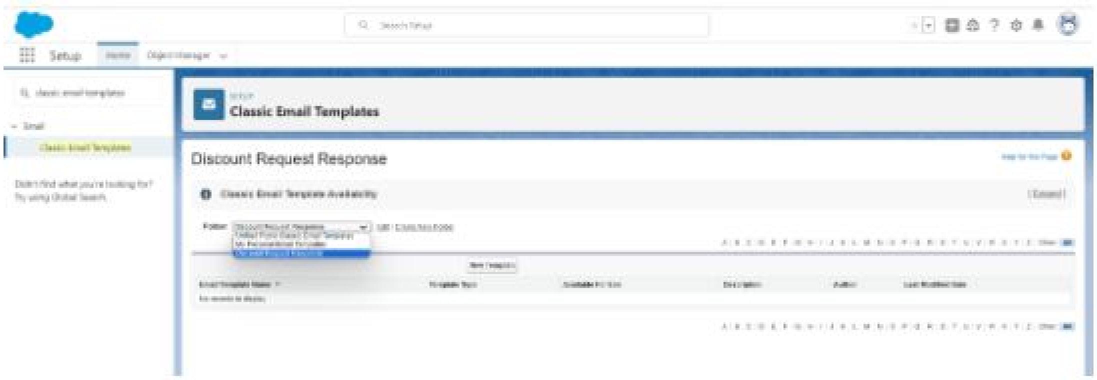
- click on next and save.
- Same way creates one more field and choose data type as picklist (approval process). And all option should be same as discount percentage.
- Now both field is created.
- Next step we have to **create a folder** and **email templates**.
- For this go to home and search for classic email templates. And click on it. After that click on create new folder.



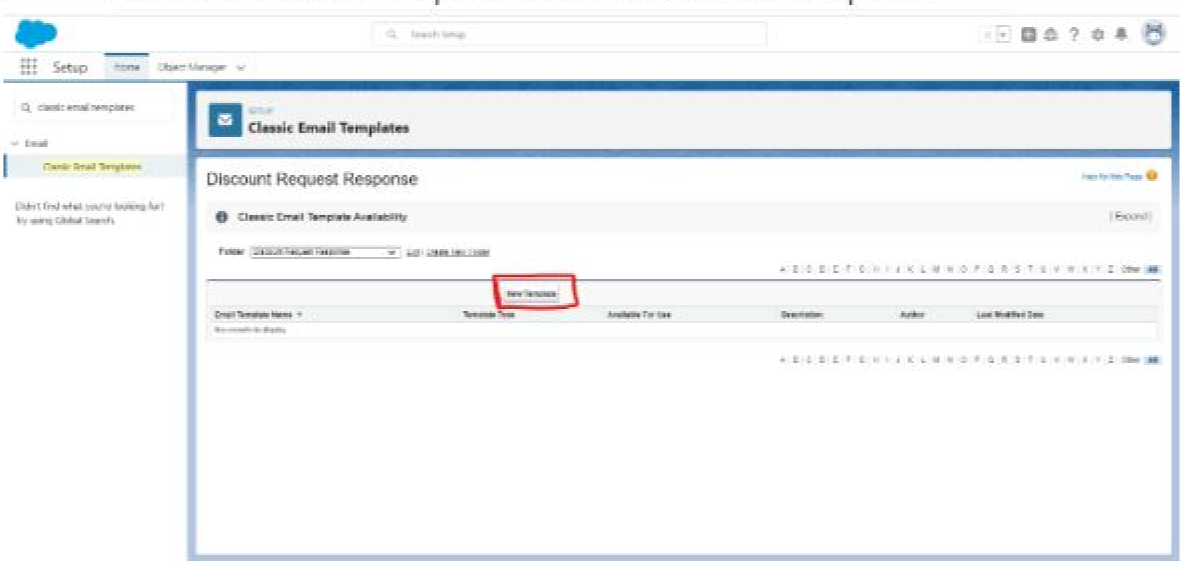
- After that enter the email templates folder label (i.e., discount request response) and folder unique name. and select public folder access is read/write. And click on save.



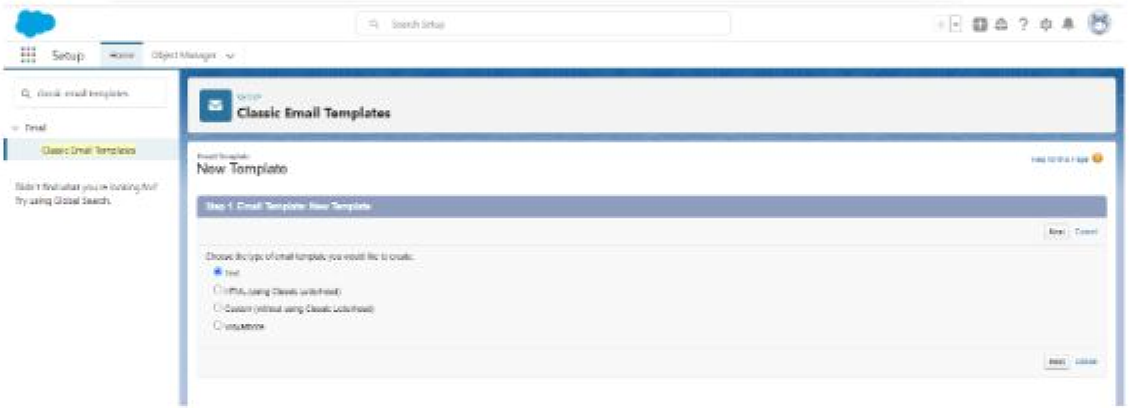
- now new folder is created.
- After that select folder which we created from drop down.



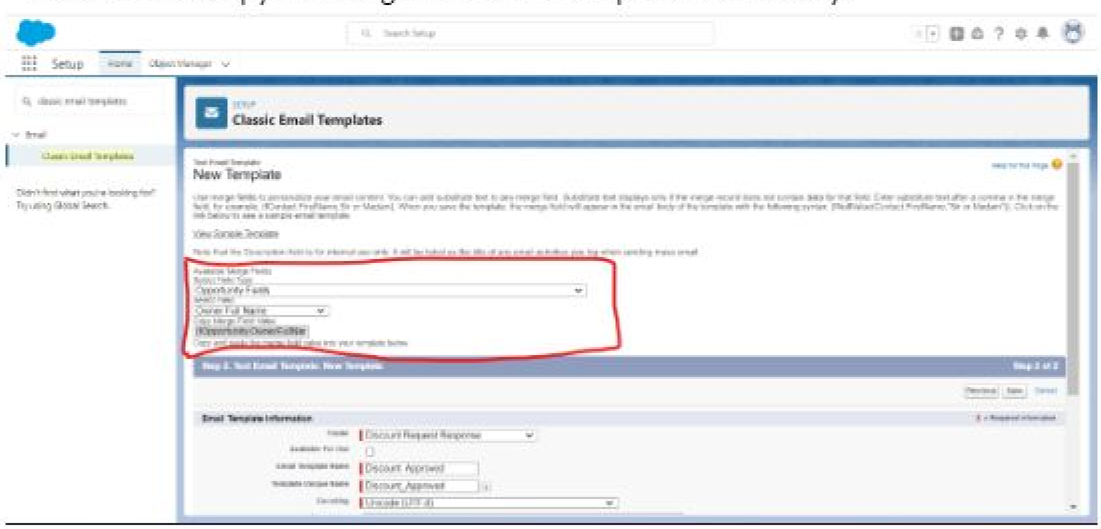
- After that we have to add templates. For this click on Add templates.



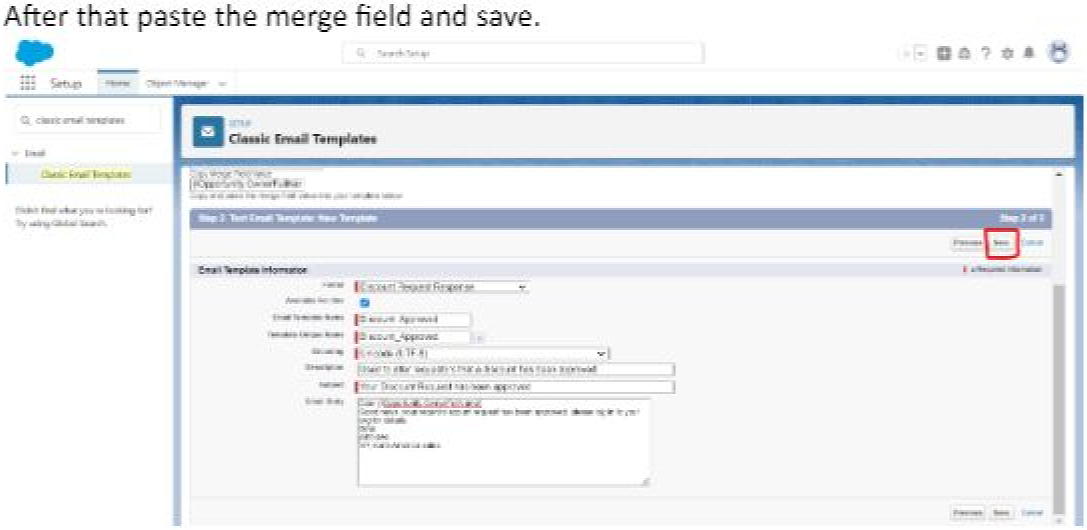
- After that in step 1 choose text. And click on next.



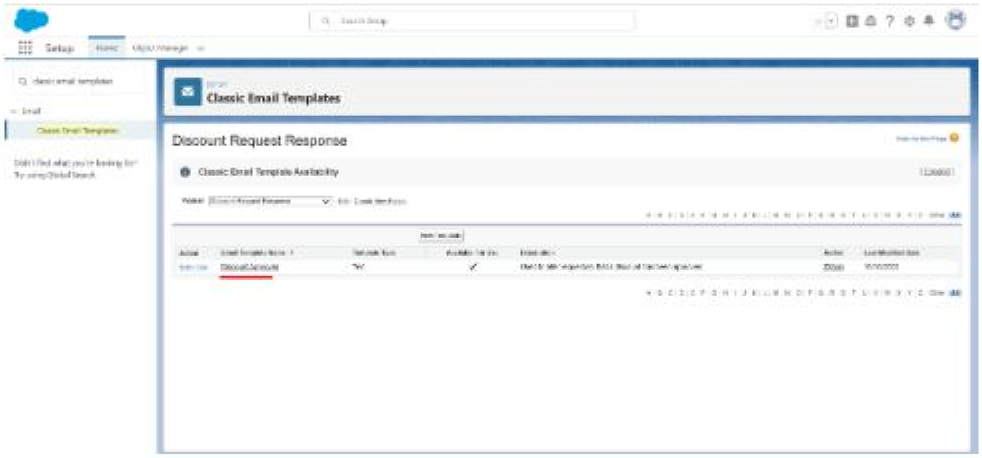
- After that we have to enter **email templates name**, email templates folder already entered, **template unique name**, check the box **available for use, description**, **subject** and **email body**.
- We have to enter the merge field of the owner's name from above of the email templates. Just scroll up and select field type as opportunity field, select field as owner full name and copy the merge field value and paste inside body.



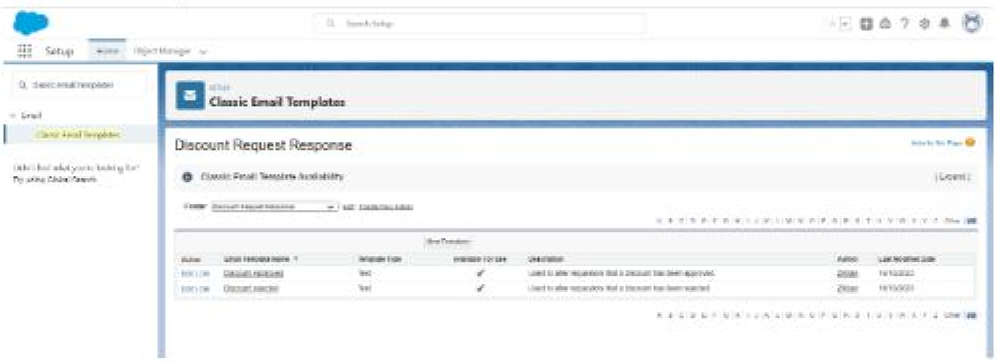
- After that paste the merge field and save.



- Now again search for classic email templates. We will see that discount approved templates created.

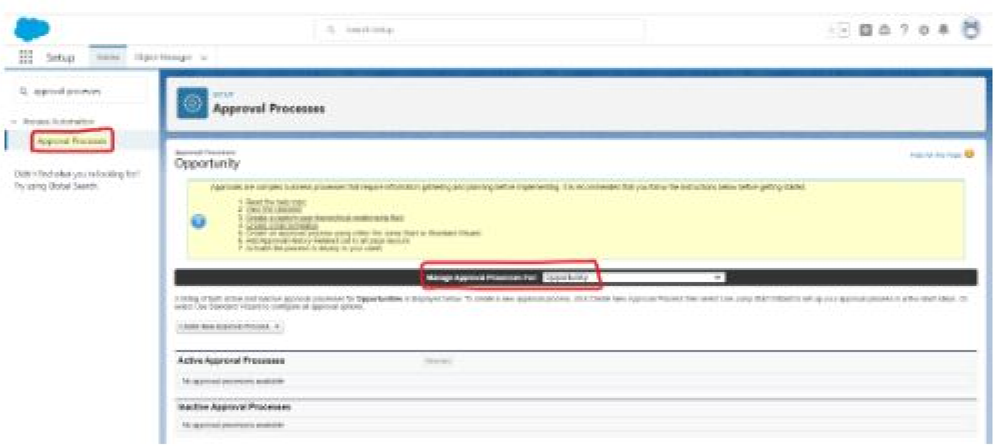


- Now in same way we have to create one more template for rejected approval inside same folder (discount response folder).
- Both email templates are created.

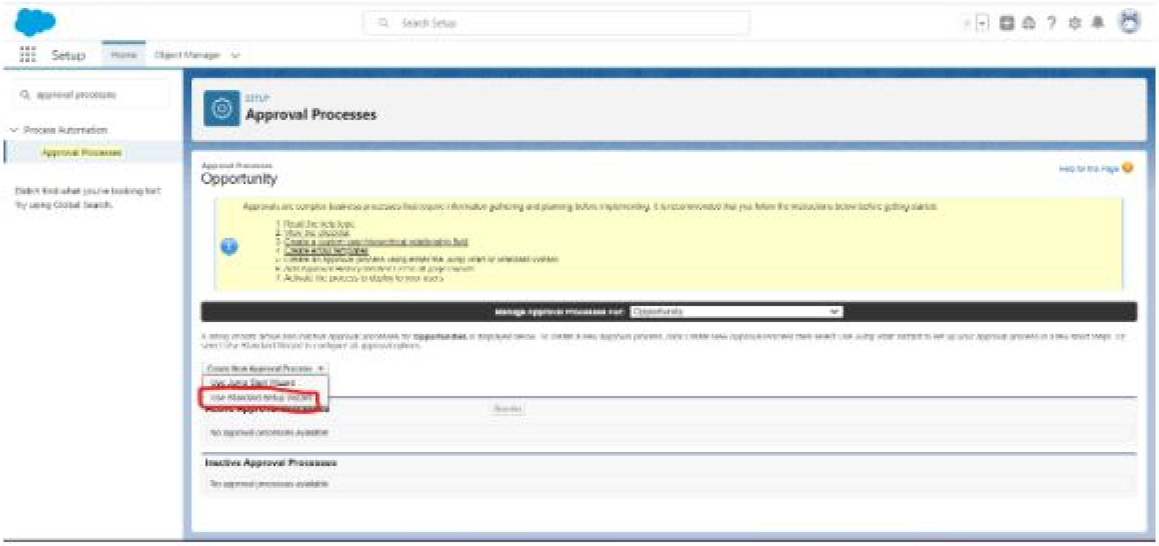


Approval process:

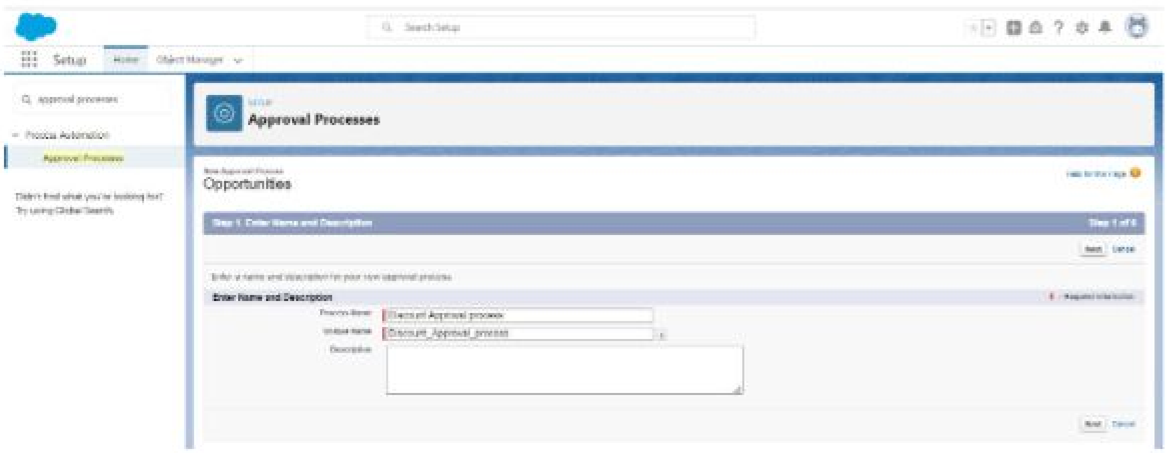
- Now next process is to set up approval process.
- For this search for Approval process in quick find box and click on it. And select manage approval process for opportunity object. Because we are taking example of opportunity object.



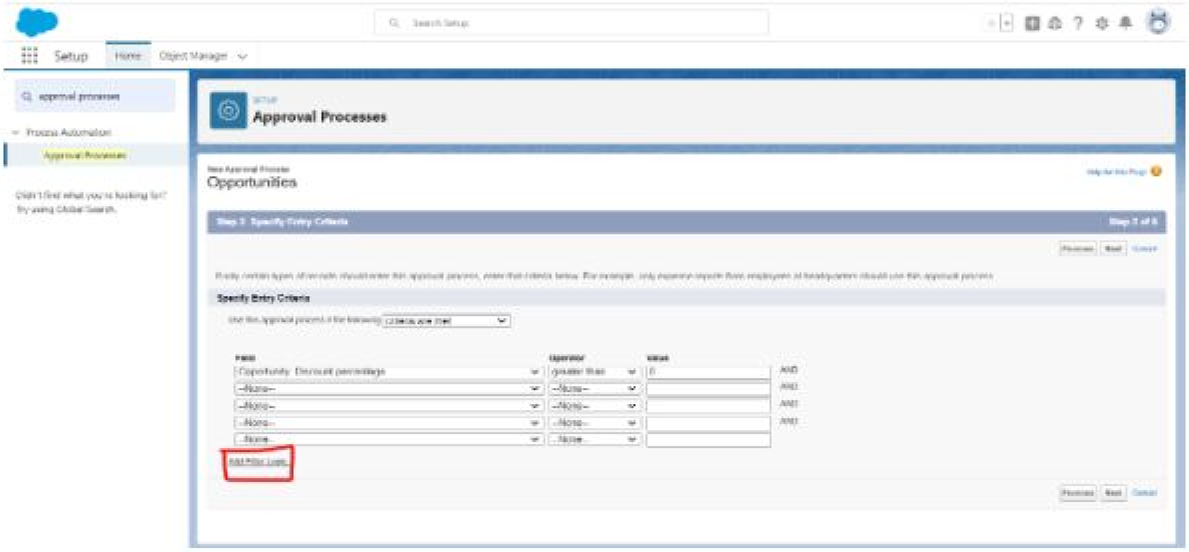
- After that click on the new approval process drop down and select use standard setup wizard.



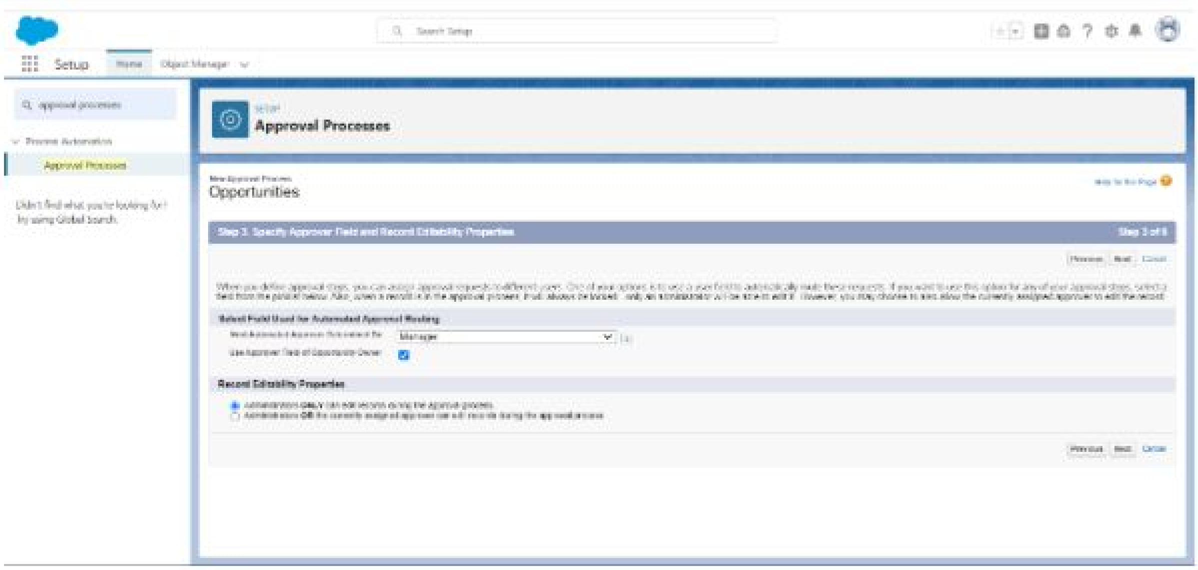
- After that enter process name, unique name, and description.
- After that click on next.



- After that we have to specify entry criteria like when this approval process will start. For this we have 2 options 1st formula evaluates to true, 2nd criteria are met.
- We are selecting 2nd option that criteria are met.
- After that select the field as discount percentage (which we created) operator is greater than and value is zero. Its means when discount percentage is greater than zero this approval process will start.
- We can add upto five criteria in this page. Based on the criteria we can also add logic.
- After that click on next.

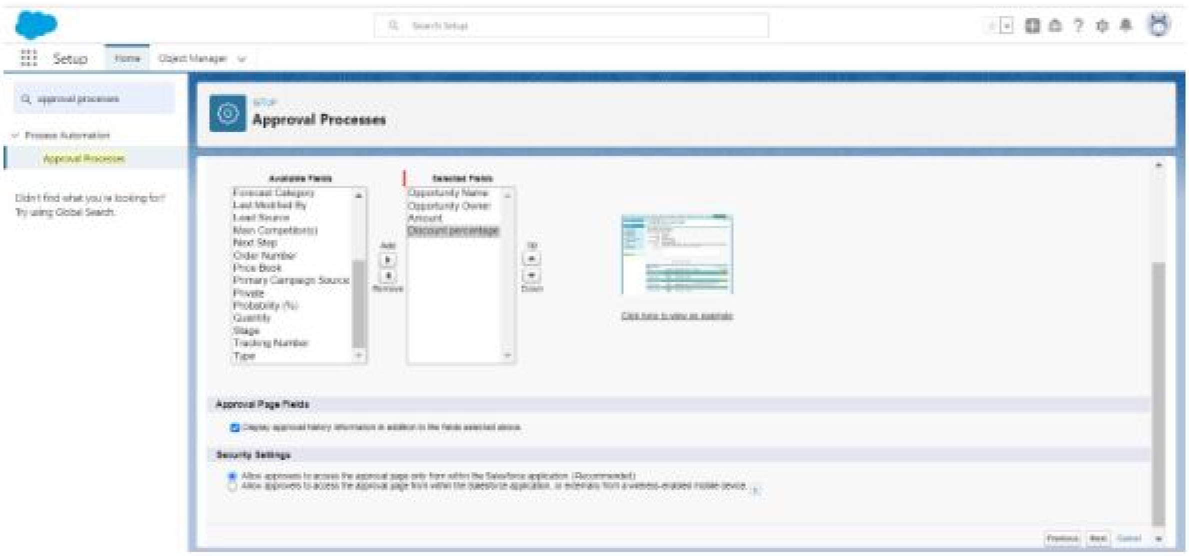


- in next step we got 2 options 1st for **select field user for automated approval routing** and 2nd is **Record editability properties**.
    I. In 1st step we have to select Manager in **next automated approved determined by.** its means when discount percentage field is created that record will automate route to the manager of the system administrator which we edited (nick deo). And check the box use approver field of opportunity owner.
    II. In 2nd step we have to 2 options **only system administrator can edit records during approval process** or **administrator or the currently assigned approver can edit records during approval process**. Here, we are selecting 1st option.
- After that click on next.

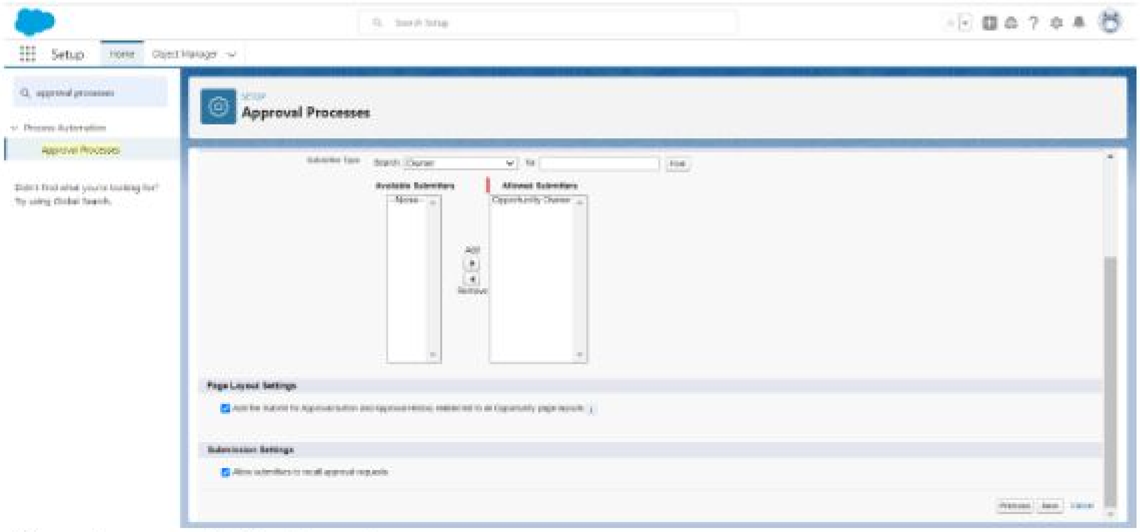


- next step we have to select assignment email templates. currently we don't have any templates, so we leave blank this field. Assignment email templates means that when any approval request assign to approver then this mail will send to approver in notifications.

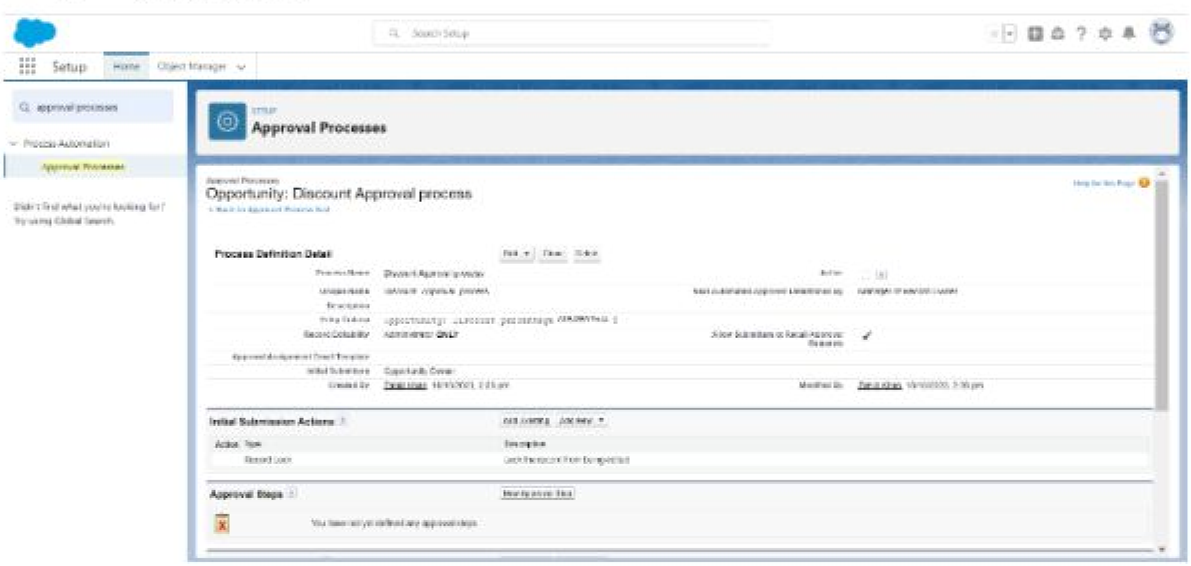
- After that click on next.
- Next steps, we have to Select Fields to Display on Approval Page Layout. Here, we are selecting Amount and discount percentage. Select these fields and click add button to add.
- After that check the box to the approval history to the field.
- Last option is that select that whether **approver access the approval page from salesforce applications only** or **approver access the approval page from salesforce applications or mobile devices**. Here, we are selecting 1st options.
- After that click on next.

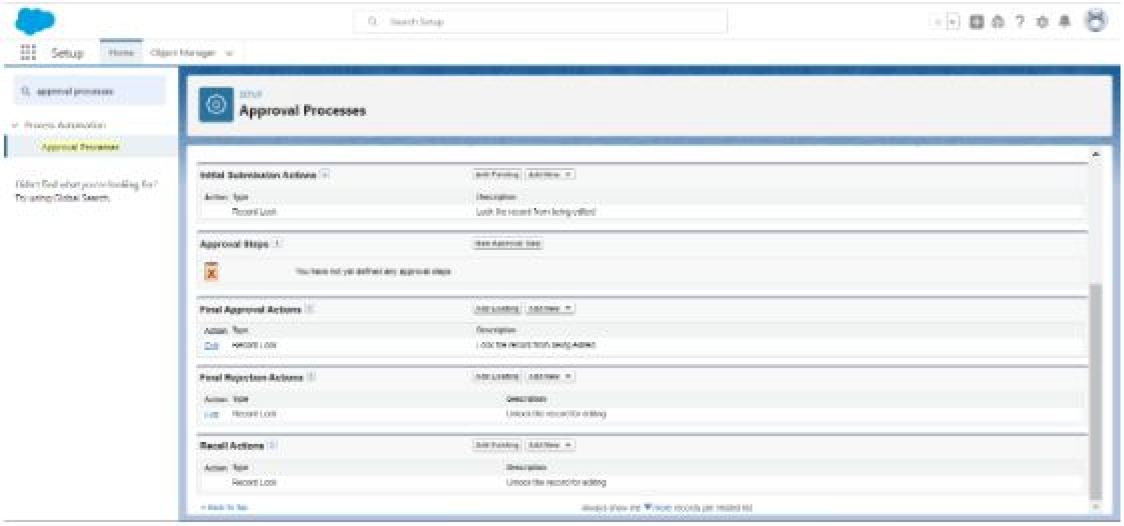


- In next step, we have to select the initial submitter. Opportunity owner is already selected.
- Next, in page layout setting select **Add the Submit for Approval button and Approval History related list to all Opportunity page layouts.** So, that one approval button will be add in opportunity page.
- In submission setting check the box if we want to give access to the submitter that they can recall records.
- After that click on save.

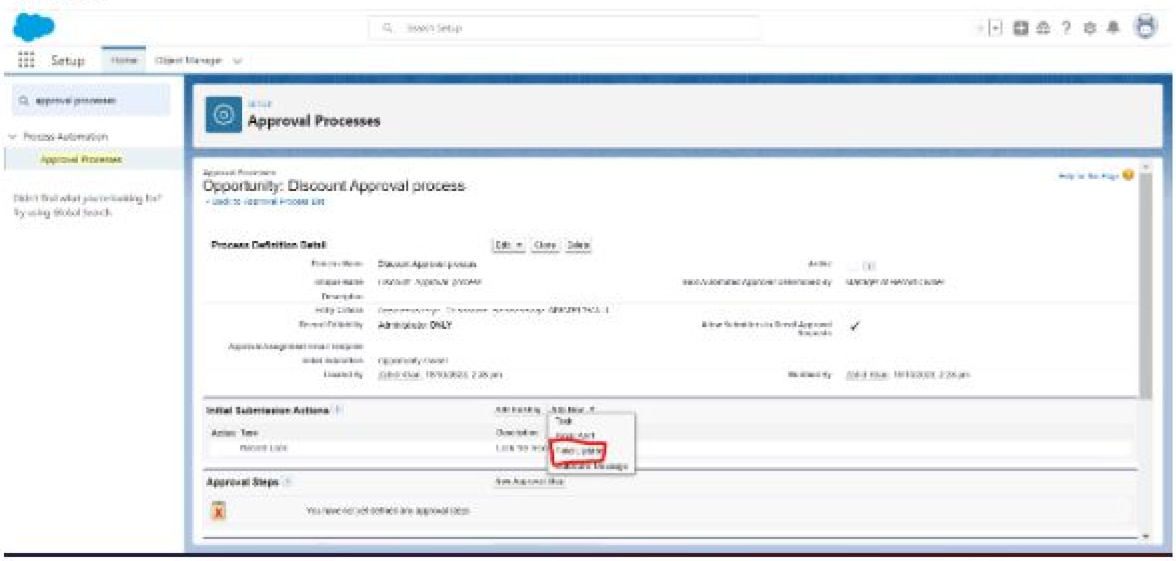


- After that we will find 3 options.
  You have just created an approval process. However, you cannot activate this process until you define at least one approval step.
  Would you like to do that now?
  I. Yes, I'd like to create an approval step now.
  II. I'll do this later. Take me to the approval detail page to review what I've just created.
  III. I'll do this later. Take me back to the listing of all approval processes for this object.
- Select 2nd option because we want to review and what we created and click on Go.
- After that all the options what we selected during making of approval process will be visible. Currently it is not active because we have to configure more things.
  Along with that we got below options as well.
  I. Initial submission Actions
  II. Approval steps
  III. Final approval actions
  IV. Final rejection actions
  V. Recall actions

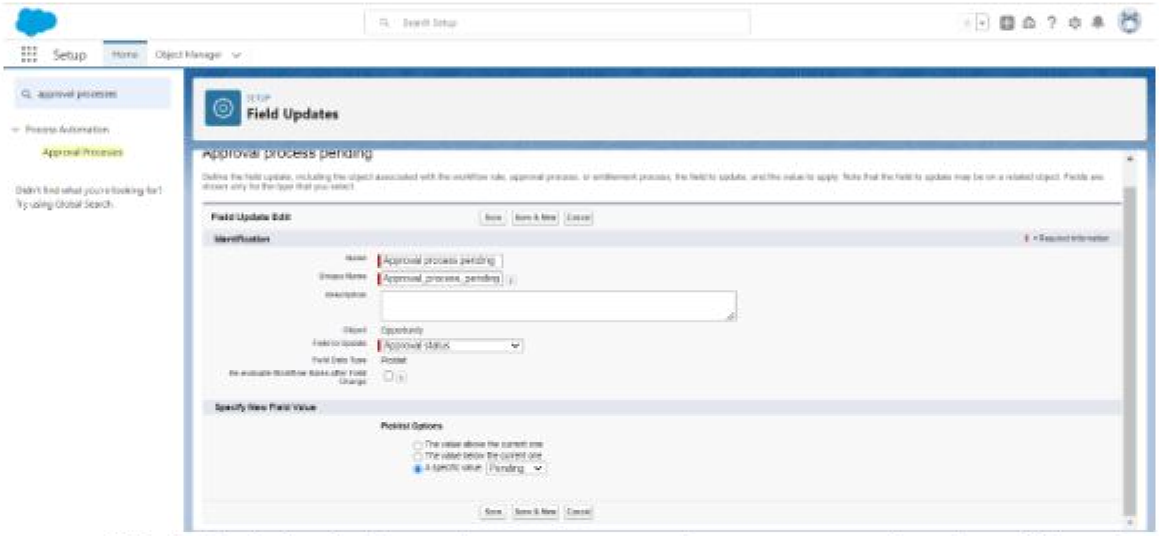




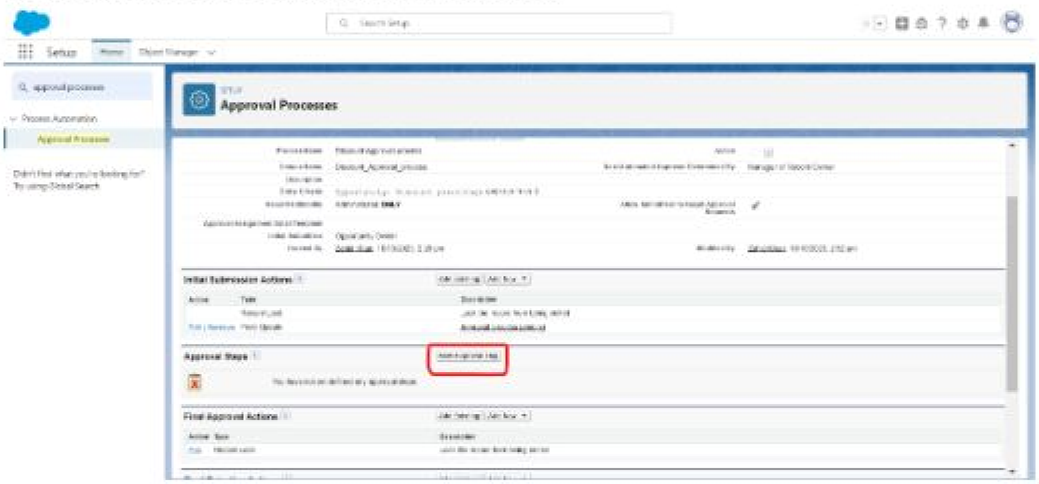
- Now, first we have to enter **initial submission actions**. This record is locked so that nobody can edit these records.
- Click on Add new button in which we got 4 options. Task, email alert, field update and outbound messages. Here we are selecting field updates. Because w are made a picklist filed and when approval process will start the initial option will be pending from the picklist.



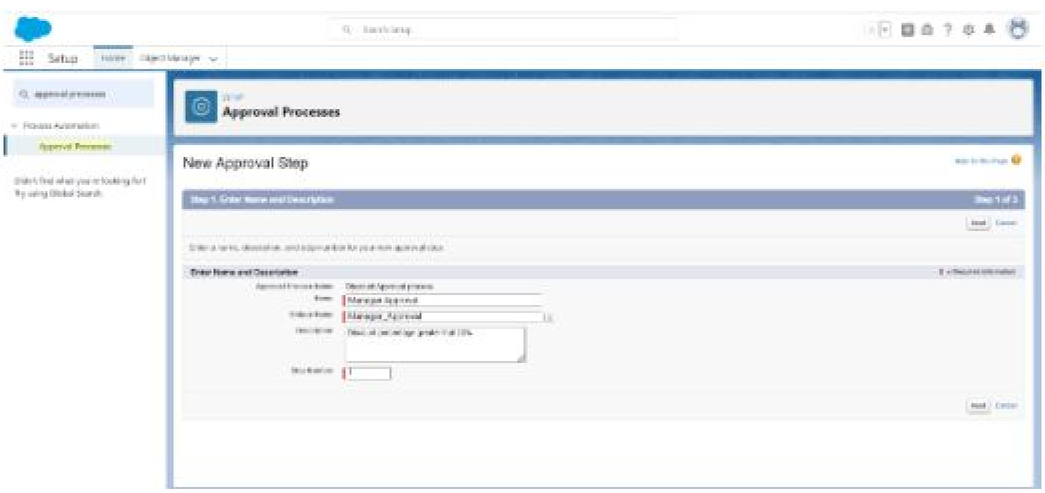
- After that enter the name, unique name, description and filed update.
- Select the field update is approval process field. And in specify new field value select pending
- After that click on save.



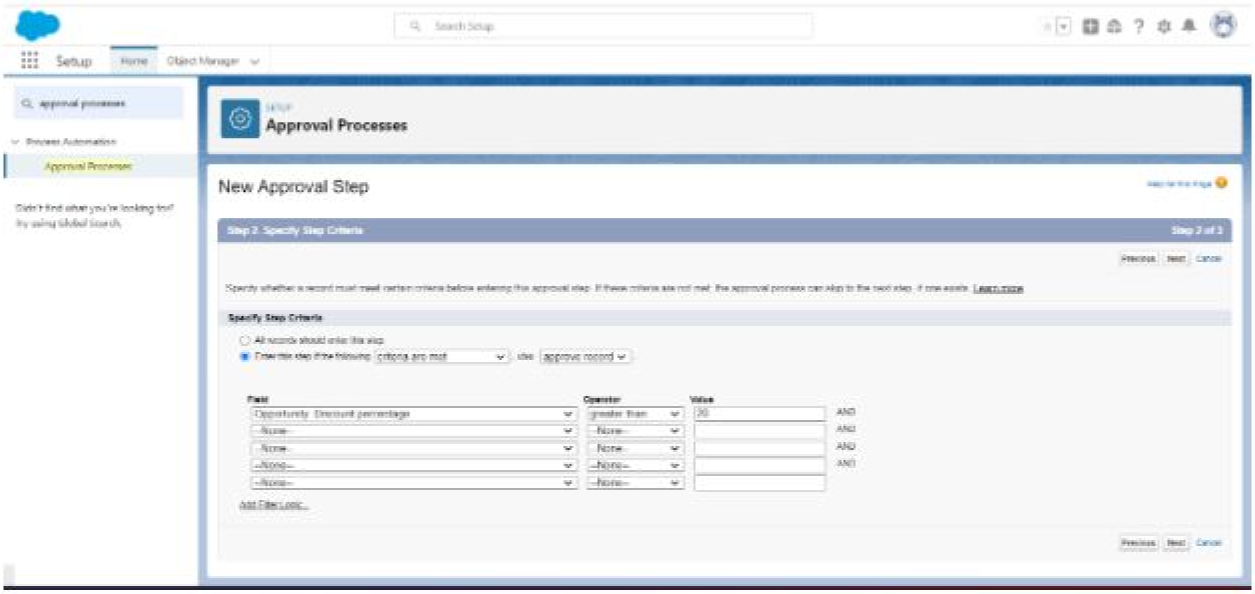
- now initial submission is done whenever approval process starts the value will be show pending.
- Now, in second option we have to specify **approval steps**. For this click on **new approval steps** button under approval steps options.



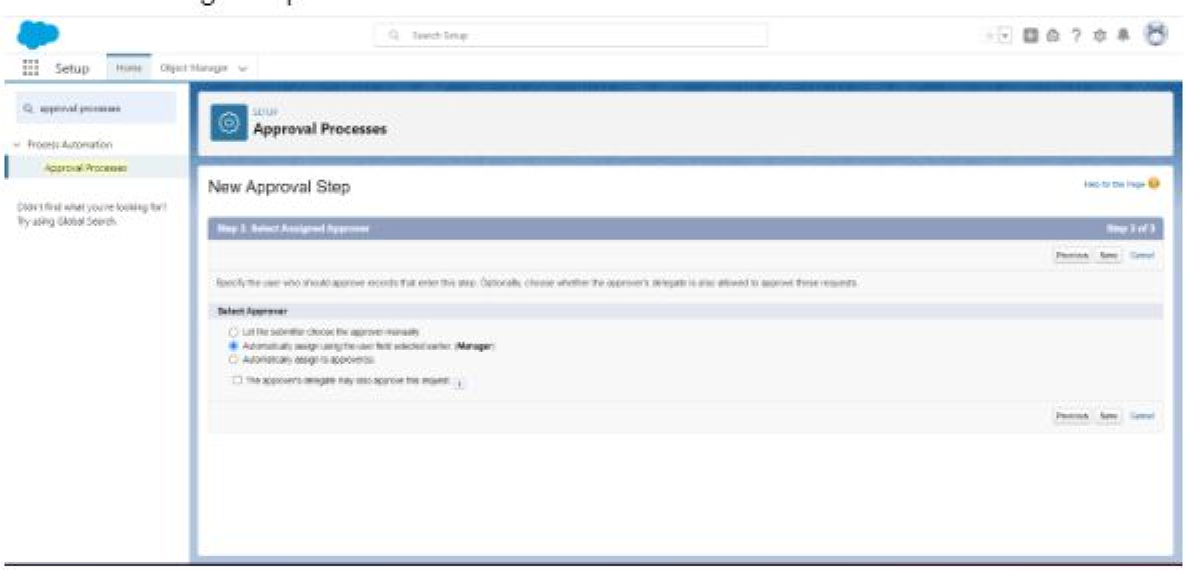
- Enter the name, unique name, description, and steps. And click on next.



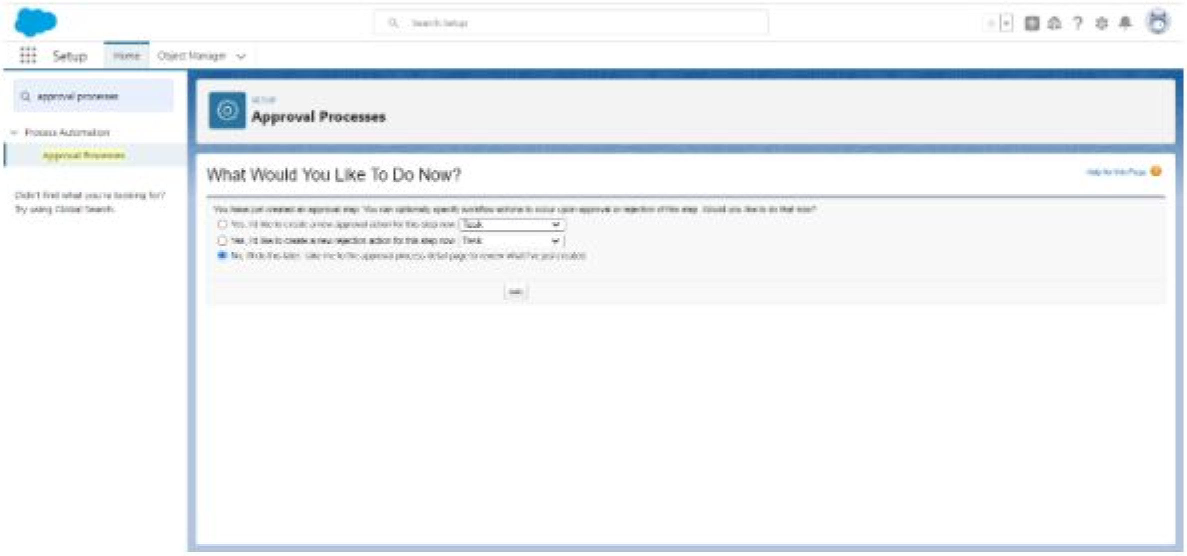
- After that we have to specify step criteria. Click on 2nd option and enter the criteria that if discount percentage is greater than 20% it will go for manager approval.
- click on next.



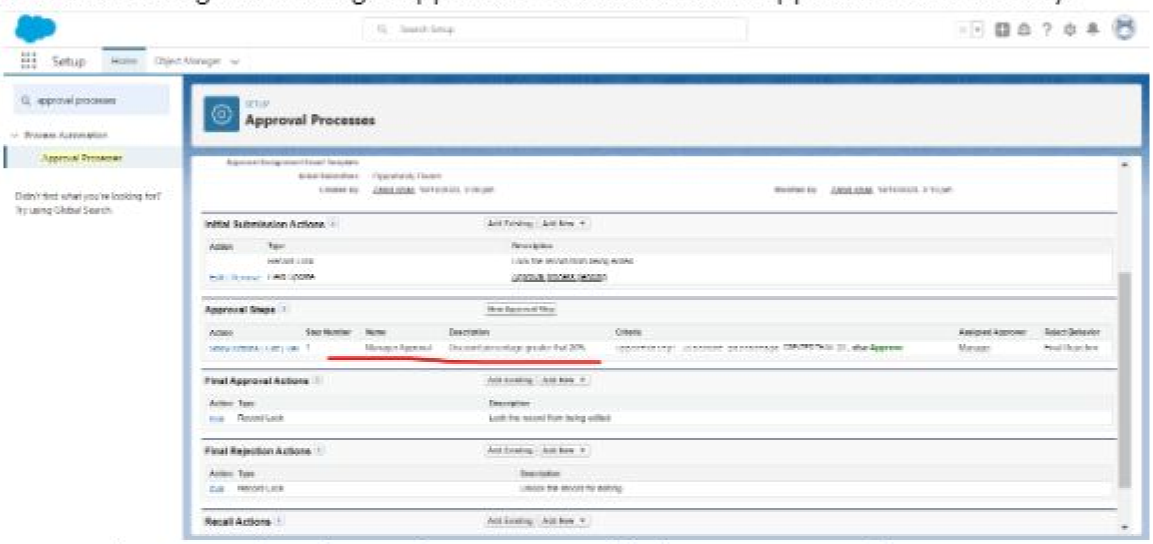
- After that we have to select the approver. In which we get 3 options.
  I. 1st let submitter choose the approver manually.
  II. 2nd automatically assign using the user field selected earlier like we select manager so by default it selects the manager.
  III. 3rd automatically assigns to approver. When we select this option so that list of users will open, and we can select anyone whom with we want to assign the request.
- We are selecting 2nd option. And click on save.



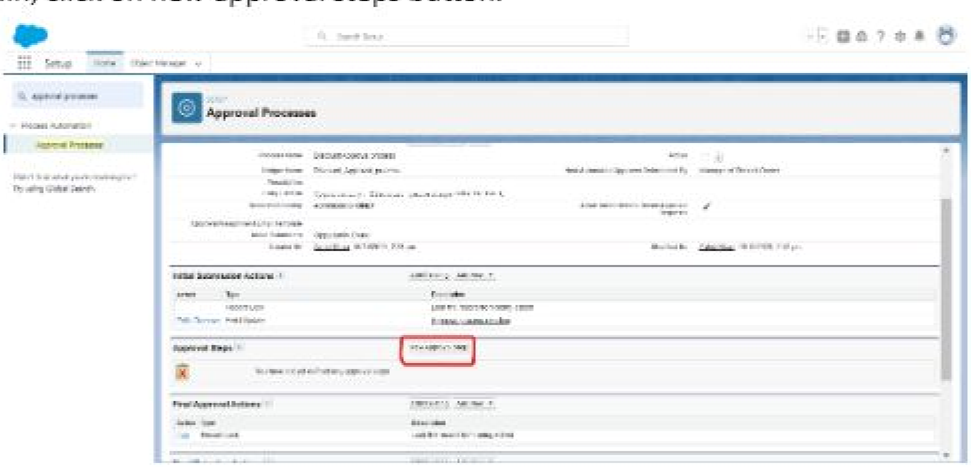
- After that we got 3 options just check the last options **No, I'll do this later. Take me to the approval process detail page to review what I've just created**. And click on go.



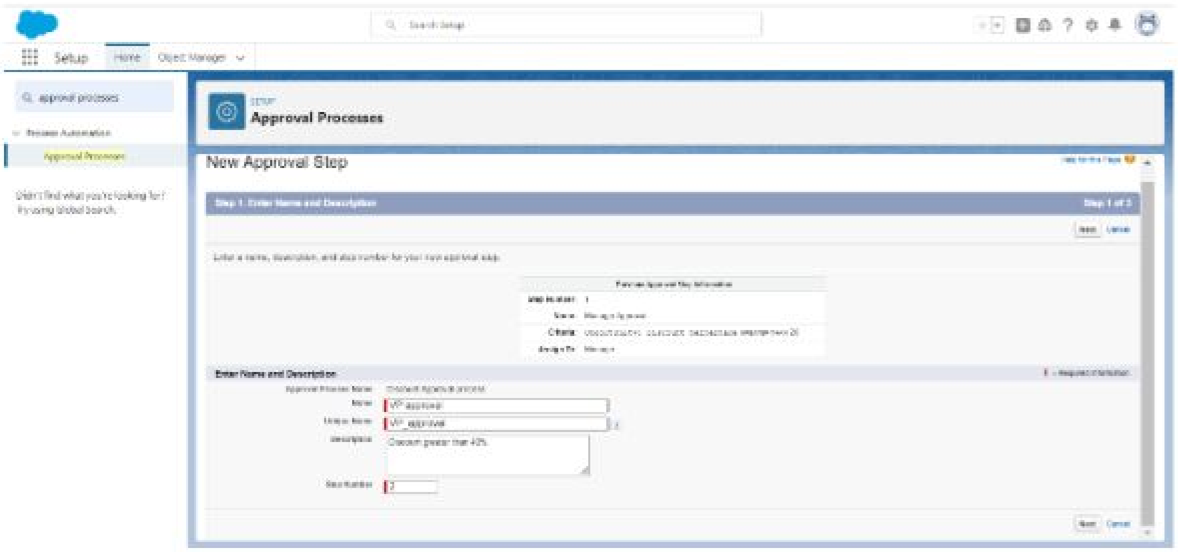
- This way 1st steps of the approval process are created. That is of the discount is greater that 20% so its go for manager approval. If less the 20% its approved automatically.



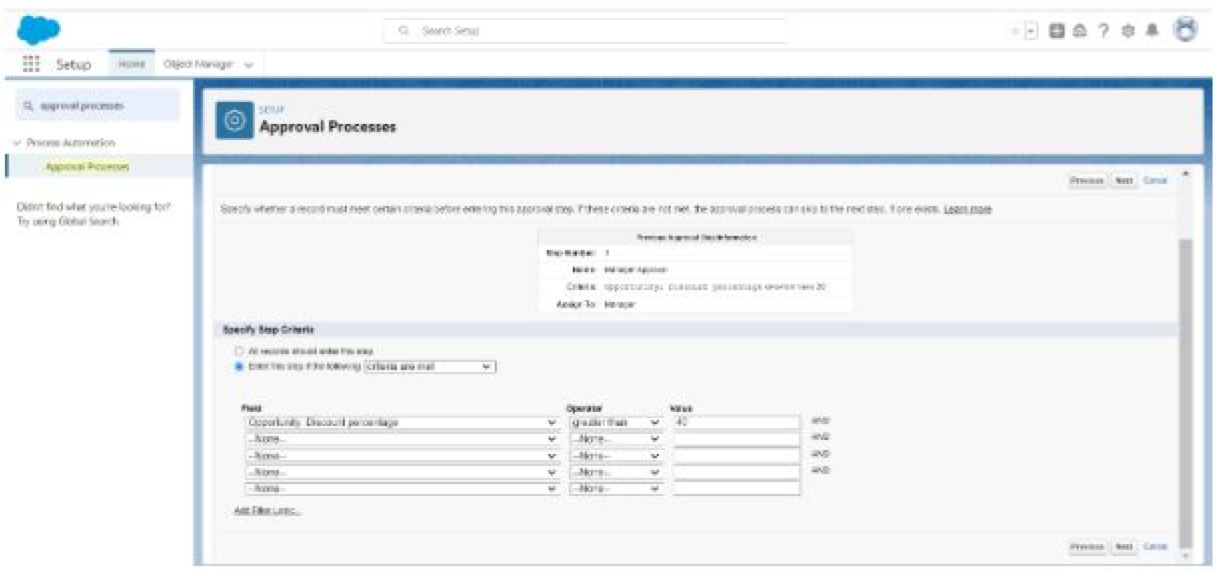
- Now we have to make 2nd steps for VP approval if discount greater than 40%.
- Again, click on new approval steps button.



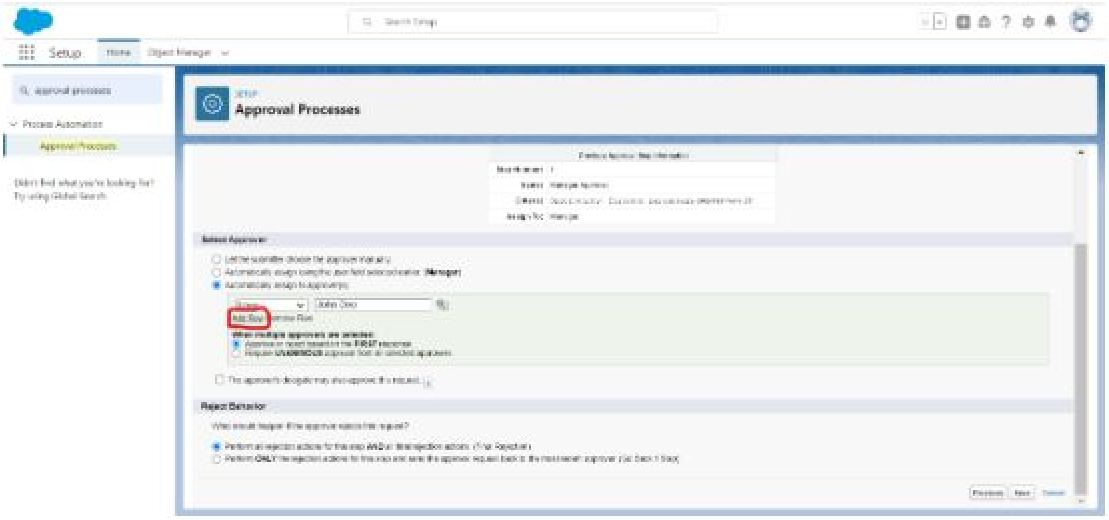
- Enter name **VP approval process**, unique name, description, and step number is 2 because its 2nd steps. After that click on next.



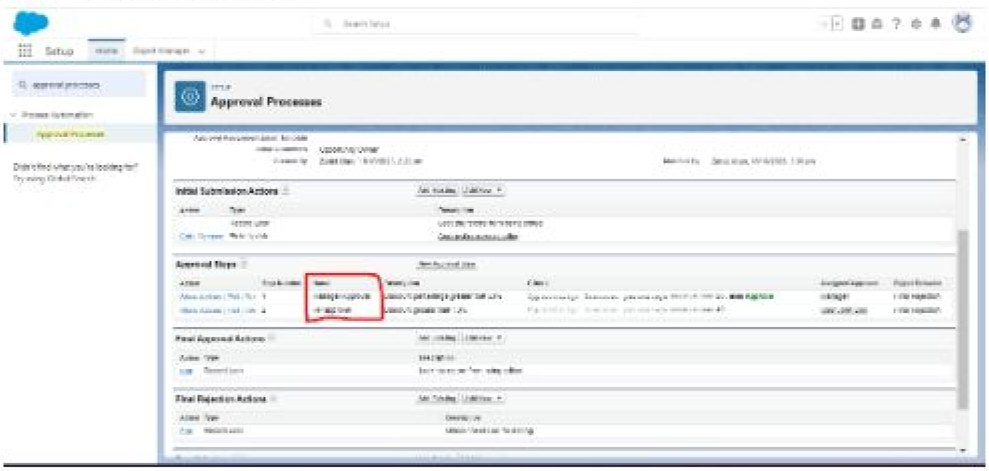
- After that enter the criteria that is discount percentage should be greater than 40%.
- After that click on next.



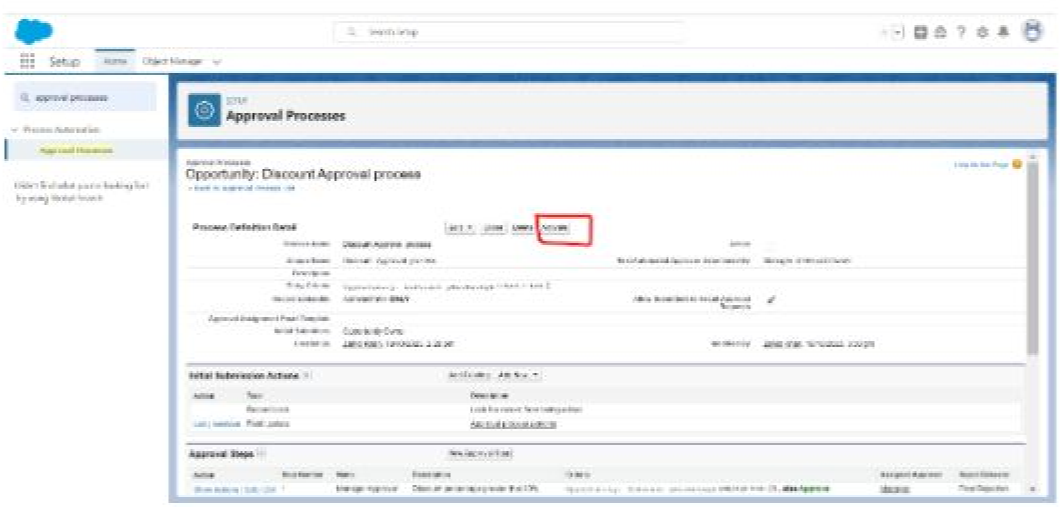
- After that we have to select approver. This time we have to select the 3rd option that is automatically assign to approver. Because we want to assign it to the VP. Select the user and click on search icon so that we can see available user list. And select john deo which role is VP. If we want to add more than 1 approver for 1 request, we will do by clicking on add row.
- After that in Rejection behavior select 1st option that is Perform all rejection actions for this step AND all final rejection actions. (Final Rejection). Its mean if this approver reject the request so that the I won't go back to previous approver it will be final rejection.
- After that click on next.



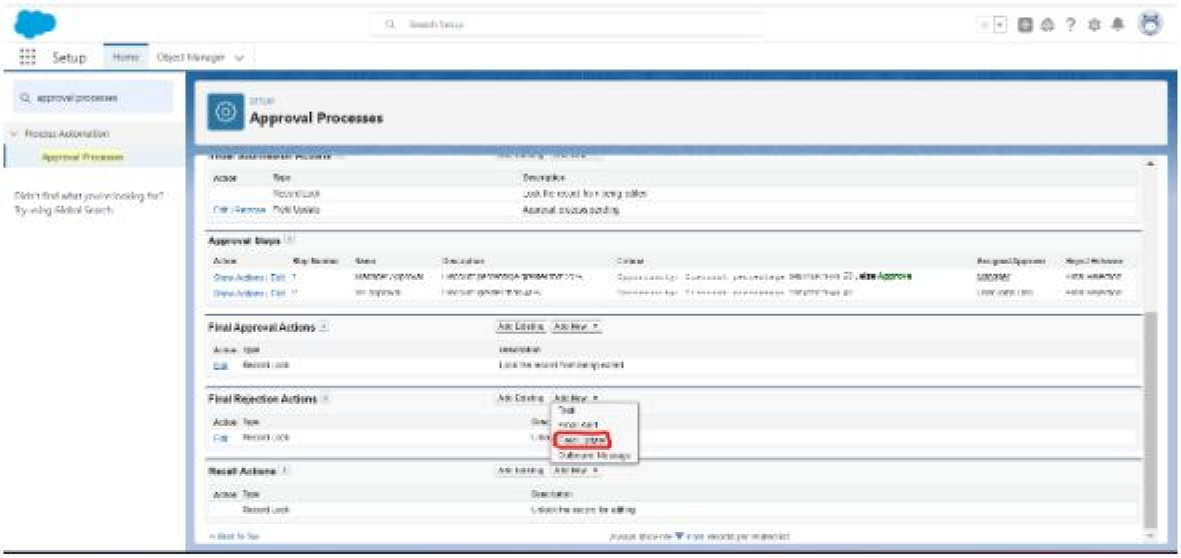
- After that again select 3rd option that is **No, I'll do this later. Take me to the approval process detail page to review what I've just created.** and click on Go.
- Now 2 steps are created.



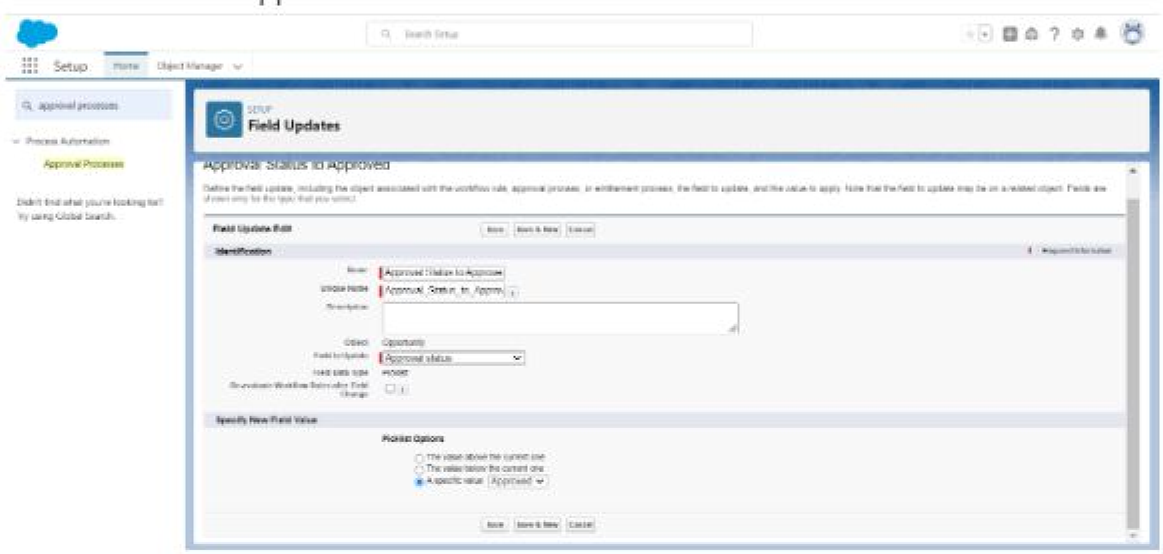
- After that click on Active so, that this approval process will activate.



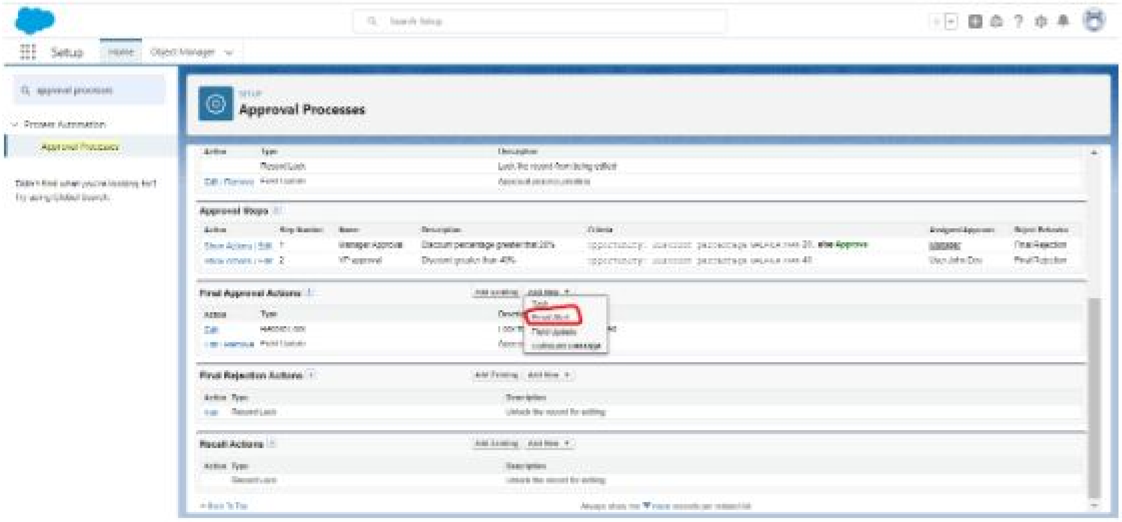
- After activating the process, the Add approval steps is invisible. For add new approval steps we have to deactivate the process after that we can add.
- In 3rd steps we have to create final approval actions. For this we have to select field update **approval status** and select **approved** and email alert which is we created in classic email templates.
- Now, click on Add new button under **final approval actions**. And select Field update.



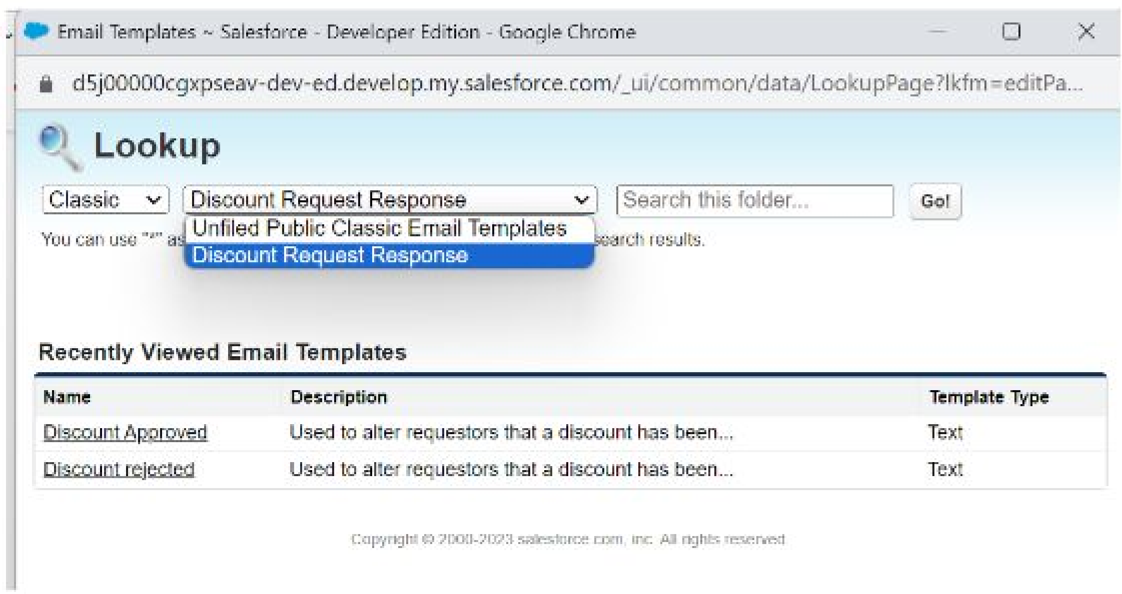
- After that enter the name, unique name, description, and field to update. In field to update we have to select Approval status. And specify new field value select approved because it's a final approval action. After that click on save.



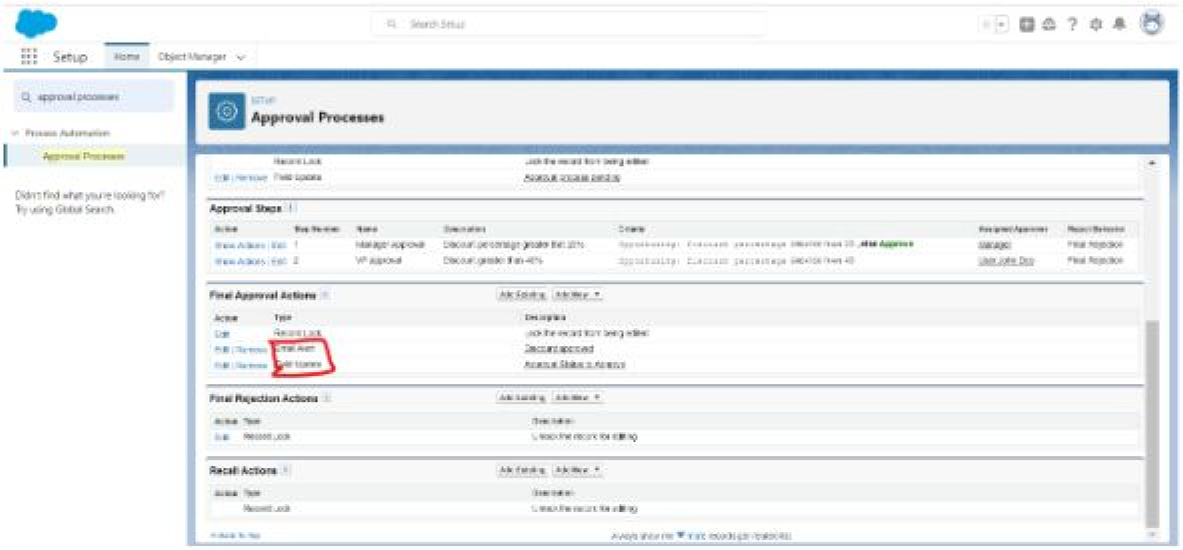
- After that again click on Add new button and this time select Email alert.



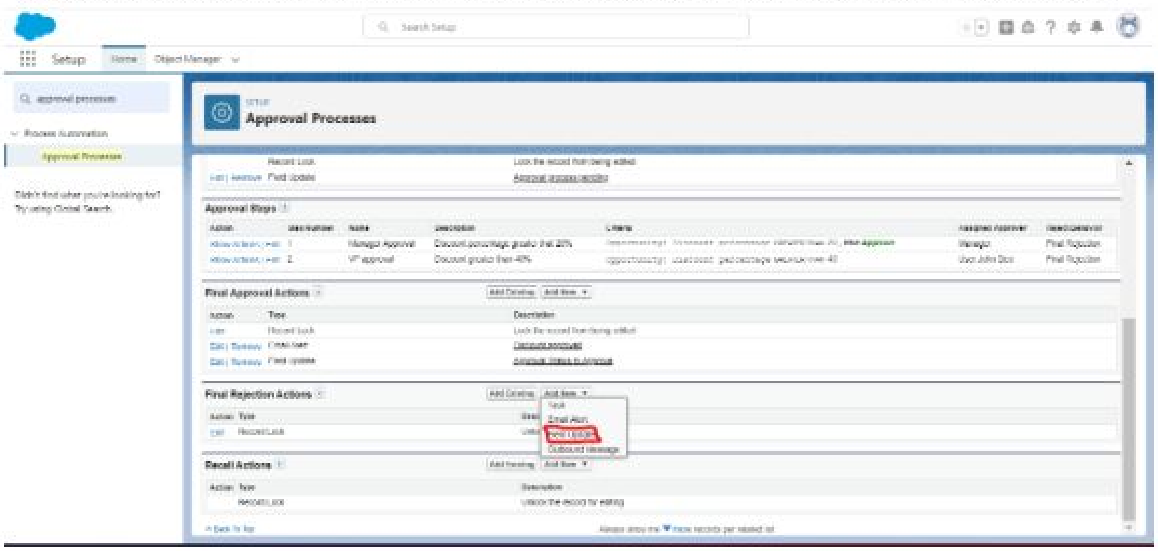
- After that enter description, unique name, email templates for approved which we created in classic email templates.
- Click on search icon in email templates so that all templates will open. One pop-up will open select the folder of the email what we created. after that select discount approved email.



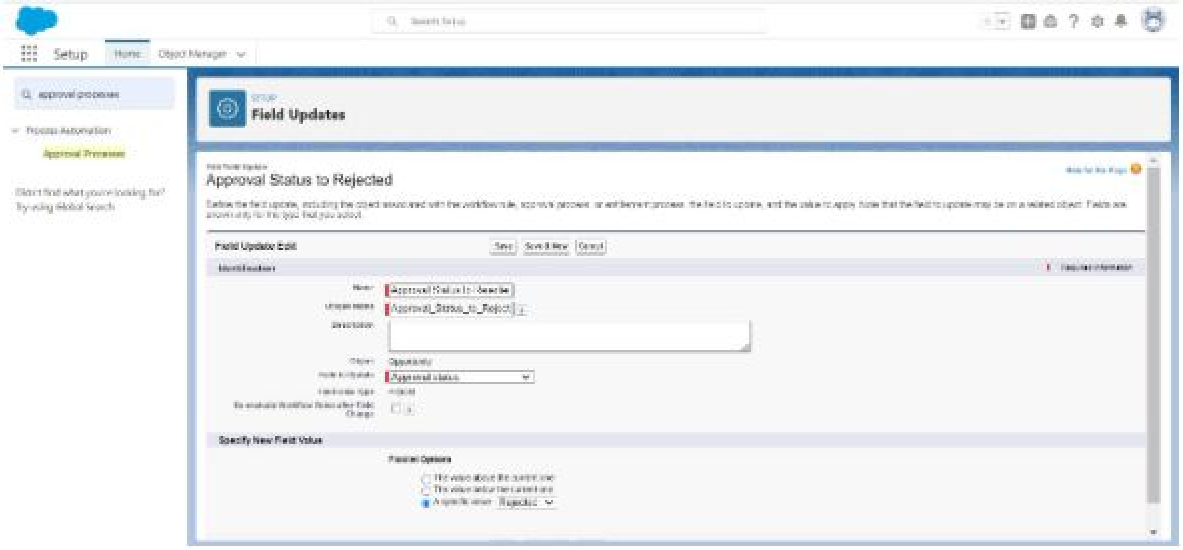
- After that select owner in receipt type and add the opportunity owner. Because owner is one who create the records.
- Now click on save.
- Now email alert and field update is created.



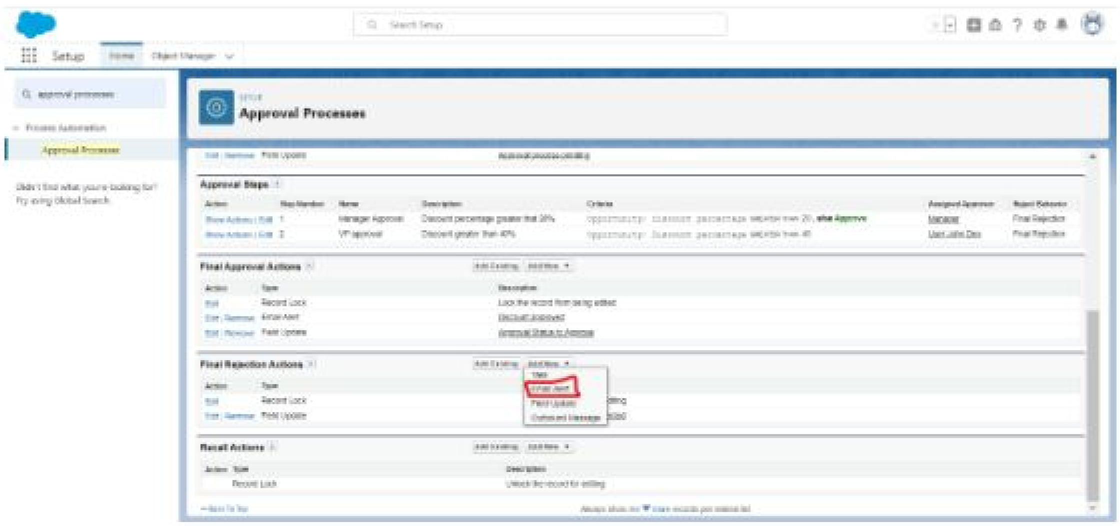
- In 4th steps we have to make **final rejections actions**.
- For this we have to select field update **rejected status** and select **rejects** and email alert which is we created in classic email templates.
- Now, click on Add new button under **final rejection actions**. And select Field update.



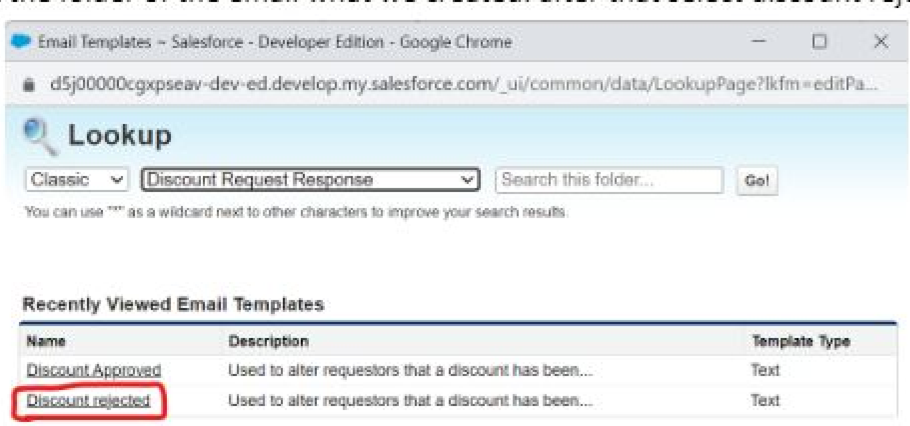
- After that enter the name, unique name, description, and field to update. In field to update we have to select Approval status. And specify new field value select rejected because it's a final rejection action. After that click on save.



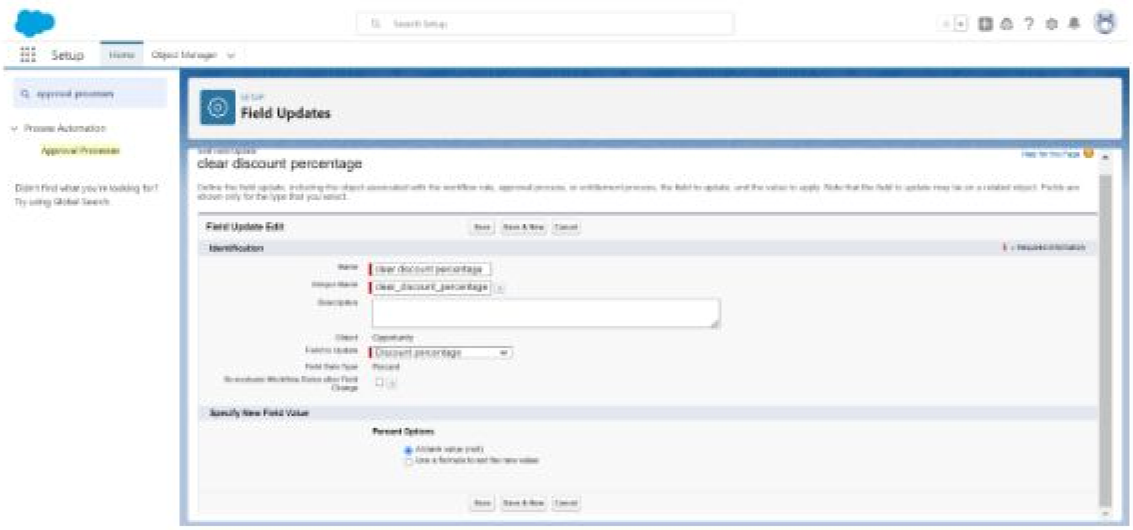
- After that again click on Add new button and this time select Email alert.



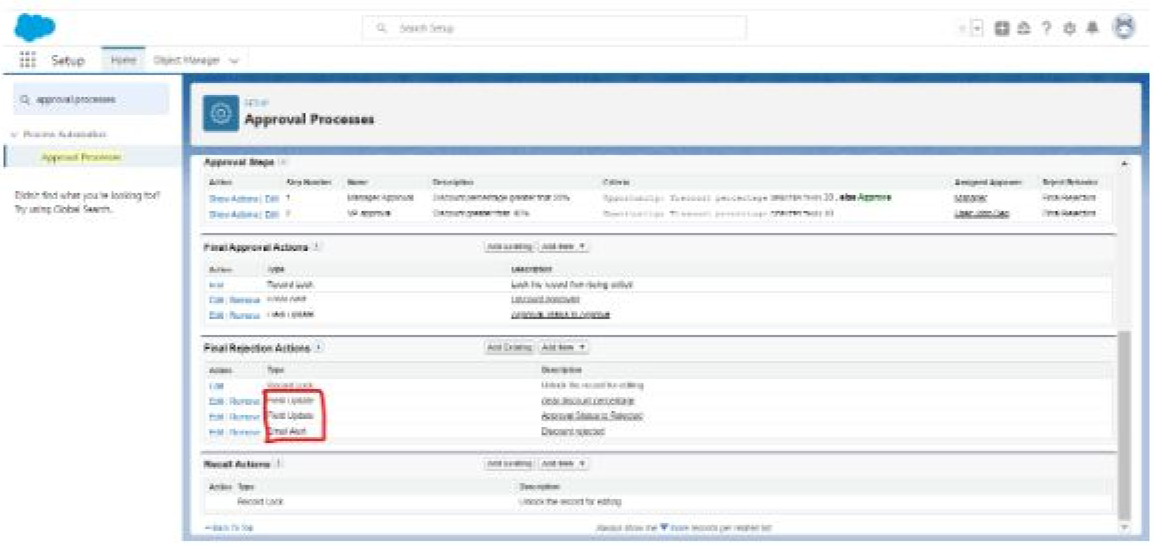
- After that enter description, unique name, email templates for rejected which we created in classic email templates.
- Click on search icon in email templates so that all templates will open. One pop-up will open select the folder of the email what we created. after that select discount rejected email.



- After that select owner in receipt type and add the opportunity owner. Because owner is one who create the records.
- Now click on save.
- One more field update needs to be created in final rejection option which blank the discount value if it rejected.
- Again, click on add new button and click on field update.
- In field to update select discount percentage. And in specify new face value click on **A blank value(null)**. Its means when discount is rejected so discount value will be null.
- Now click on save.

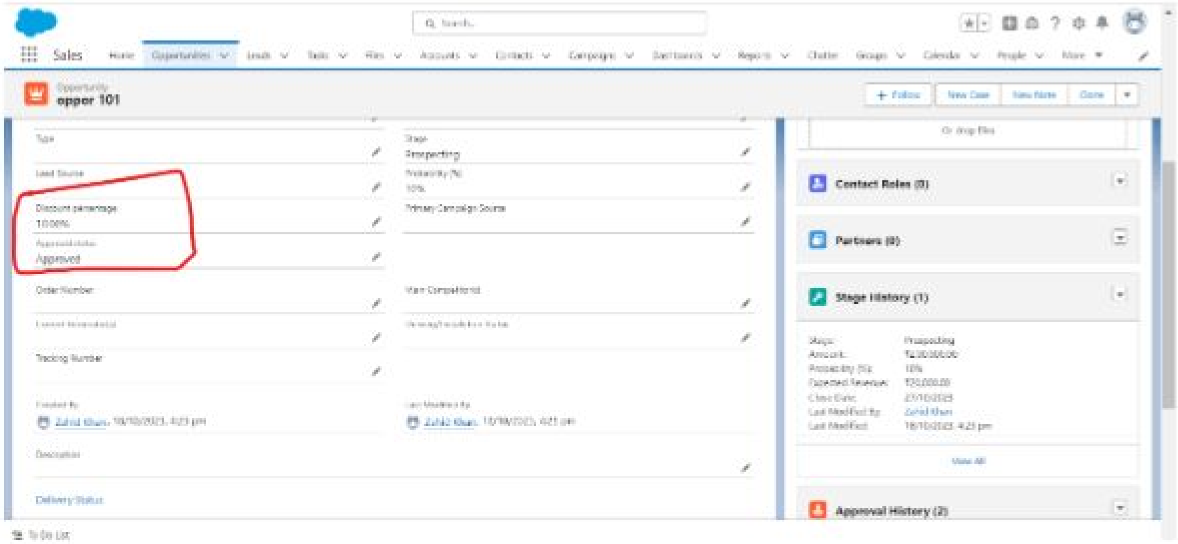


- This way 2 field update and one email alert is created in final rejection actions.

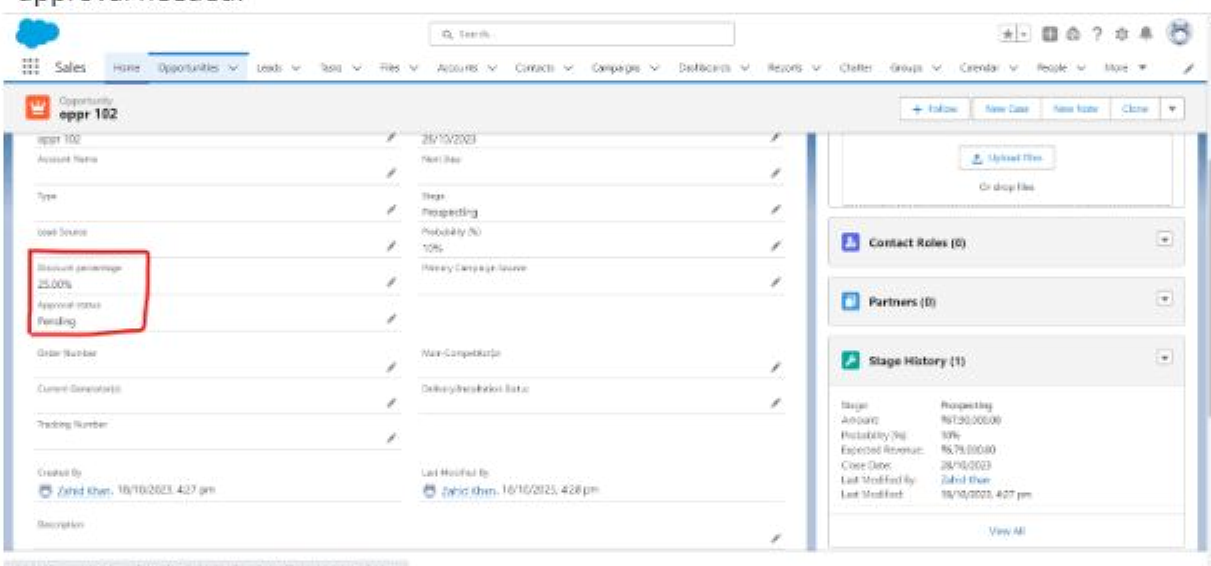


- Now all steps for approval process are completed. It's time to test the results.
- Just go to the front-end of sales app and click on opportunities tab.
- Create one record and enter discount percentage as 10% (less than 20%).

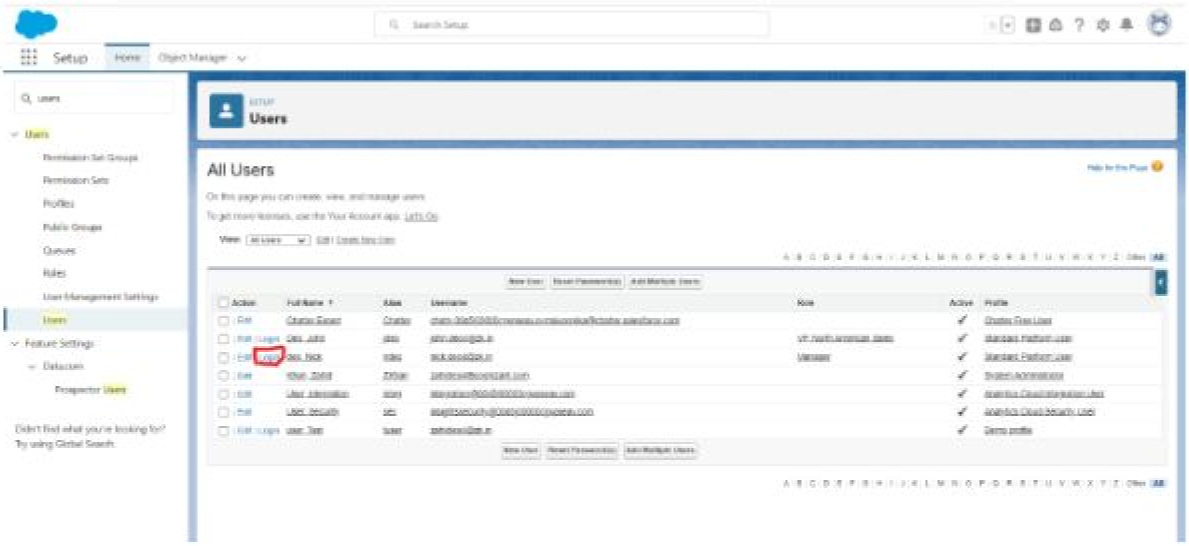
- After that open that created reports. And click on arrow at left side of the screen and click on submit for approval. And enter the comments and click on submit.
- In records we can see the history and status id approved because its less the 20%.



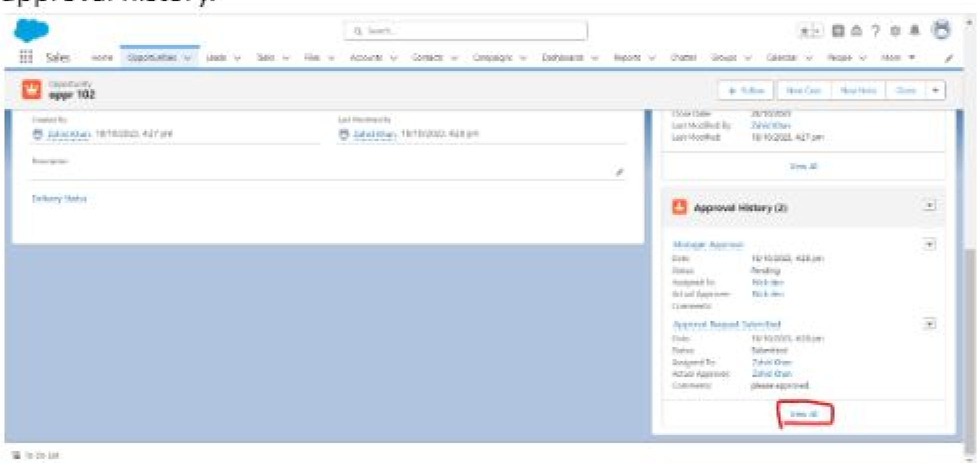
- Now create one new record and enter discount percentage 25% (i.e., greater than 20%). And click on submit for approval. This time its showing pending because manager approval needed.



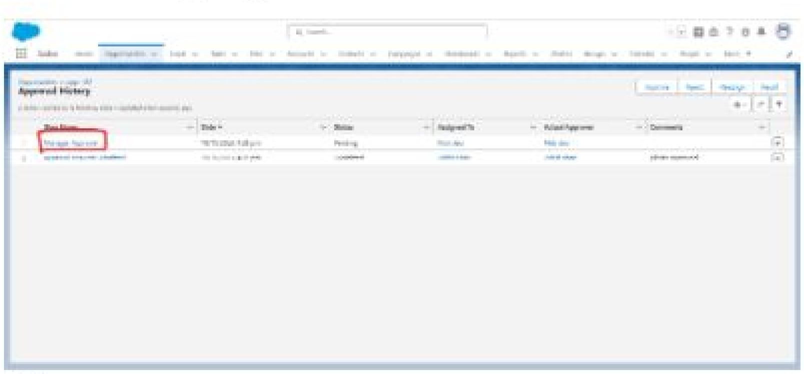
- Now, login the manager account and approved the request. For this go to set up click search for users and click on login beside the nick deo because he is a manager.



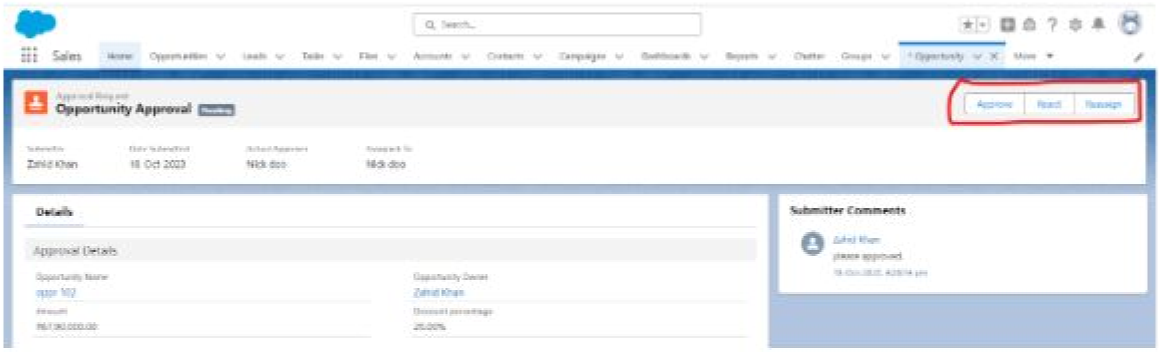
- we can’t the see that request in the opportunity in manager account because we use free license, but this is the process only.
- Here, we are a system administrator so we can also approve the request. For this go the front end of the sales app in system administrator account and click on opportunities tab. After that open that records and click on details after that click on view all in approval history.



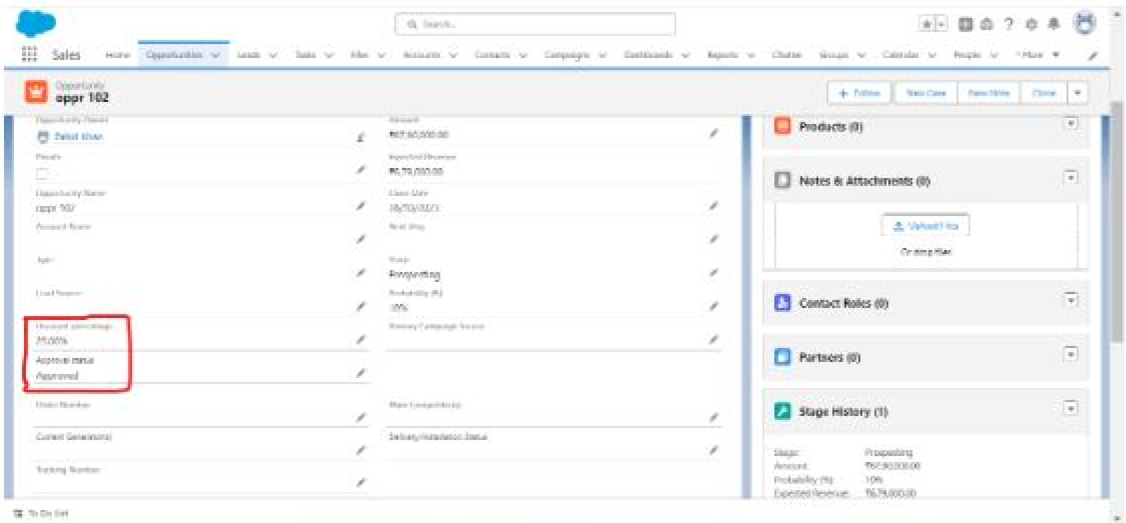
- After that click on manager approval



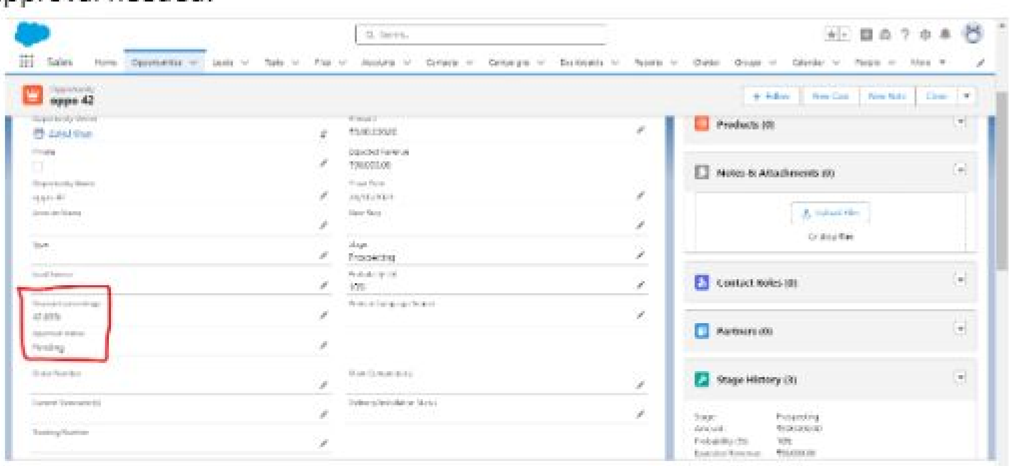
- After that we get 3 buttons approved, reject and reassign. We can do anything because we are a system administrator.



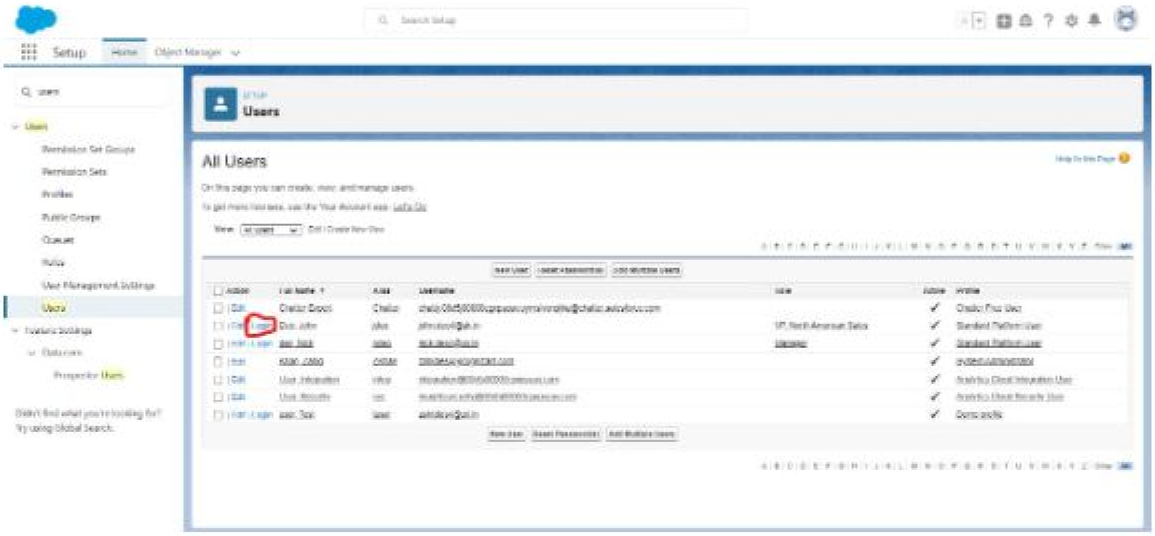
- Here, we are approved the request because its greater than 20%. Now its approved. If we have access to manager app so that manager will approve that.



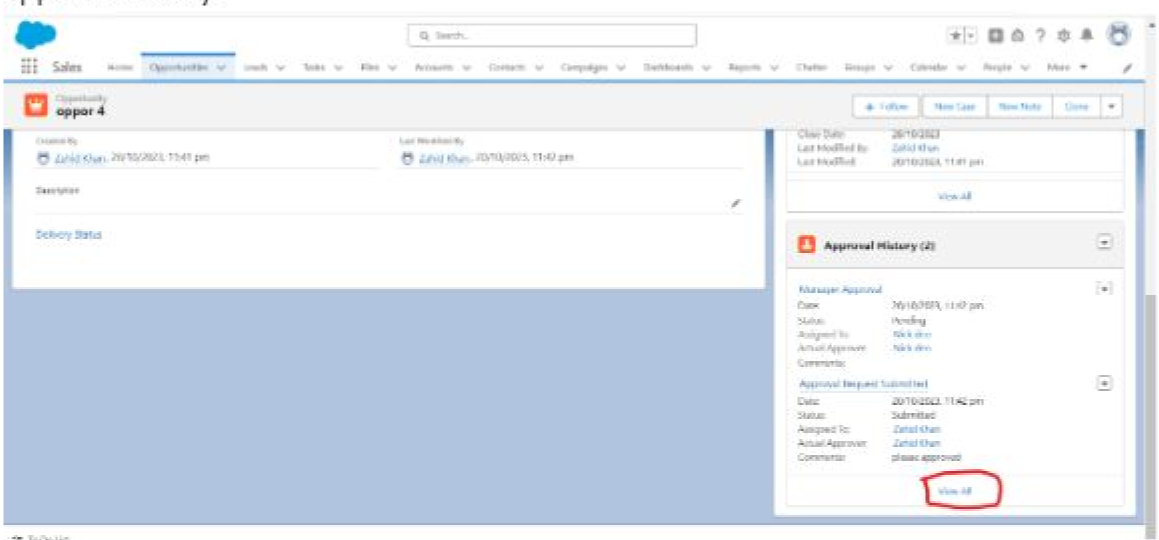
- Now, create new records in opportunities object and this time enter discount more that 40%. (I.e., 42%). And click on submit for approval. This time its showing pending because VP approval needed.



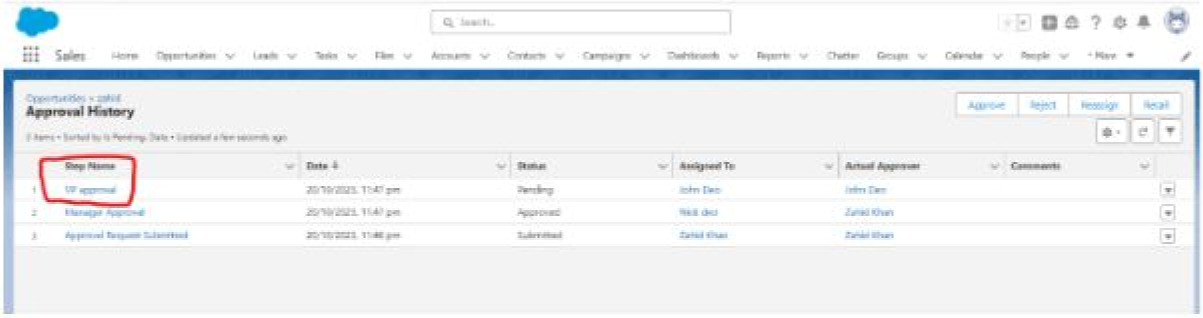
- Now, login the VP account and approved the request. For this go to set up click search for users and click on login beside the john deo because he is a VP.



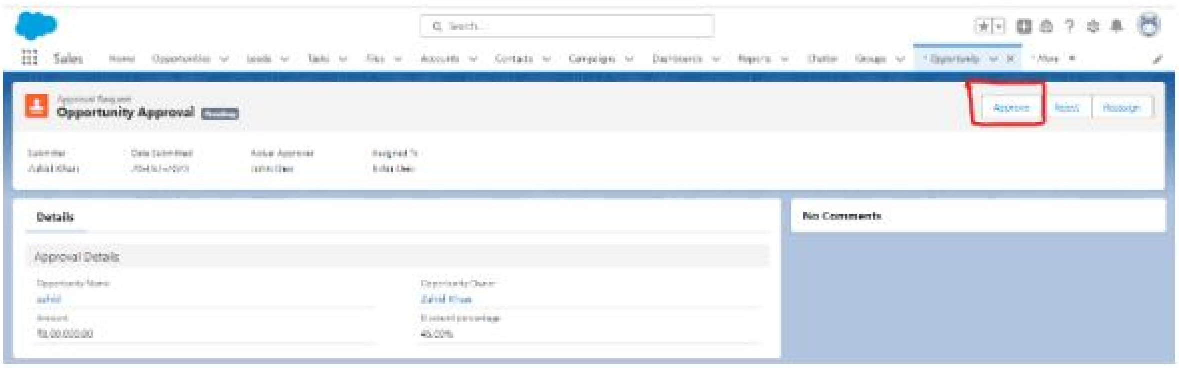
- we can't the see that request in the opportunity in VP account because we use free license, but this is the process only.
- Here, we are a system administrator so we can also approve the request. For this go the front end of the sales app in system administrator account and click on opportunities tab. After that open that records and click on details after that click on view all in approval history.



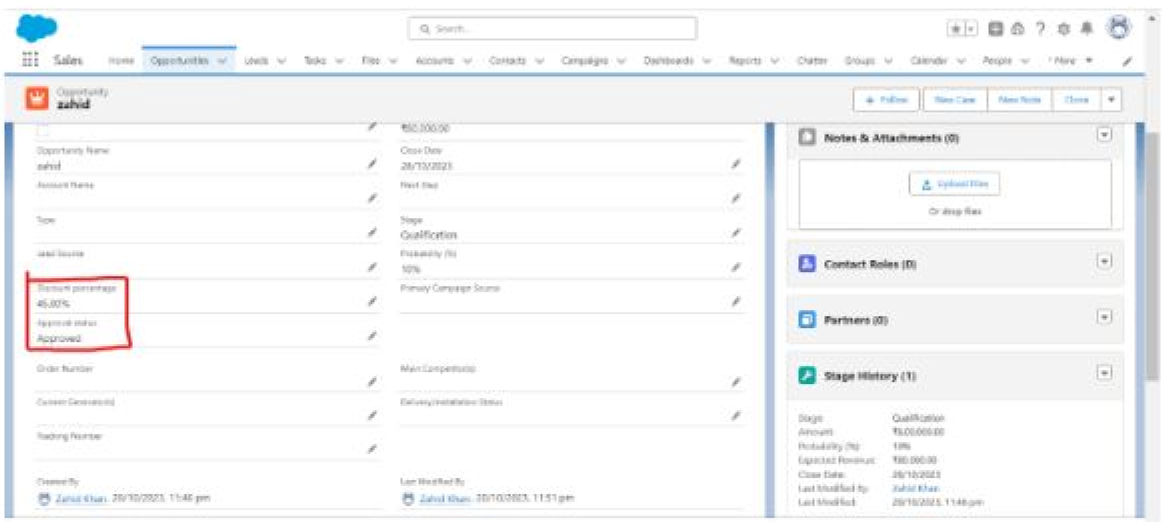
- Now in below image we can see that this show manager approval 1st because it's a hierarchy. 1st managers have to approve the request after that it goes to VP and after that VP will approve the request. So, 1st click on manager approval and approved by clicking on approved button.
- Now it goes to VP approval.



- Now click on VP approval and approved by clicking on approve button.



- After that this request status will show approved.



- This way we can create approval process for any request.

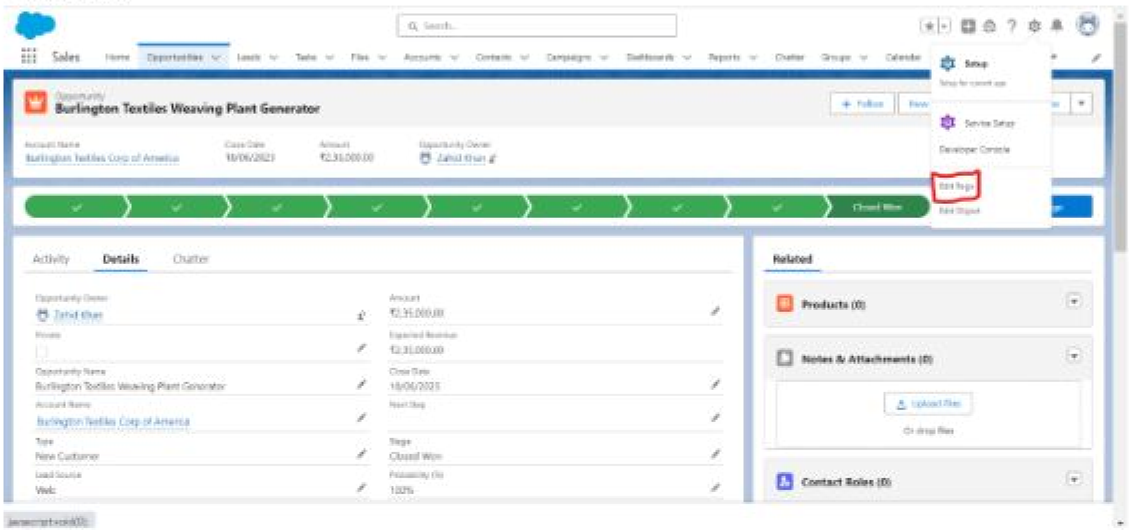
Day-15

Dynamic Form

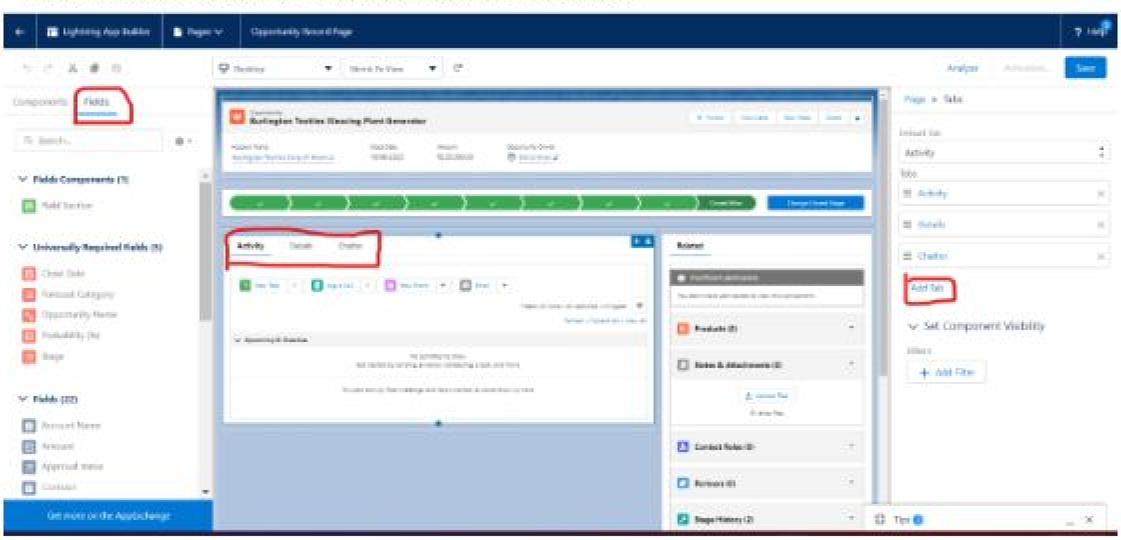
- We can create dynamic form in our record details page.
- dynamic form is same as our page layout, but we can add the field which want to show in dynamic form.
- We can add dynamic form using record type lighting page.

steps to create dynamic form:

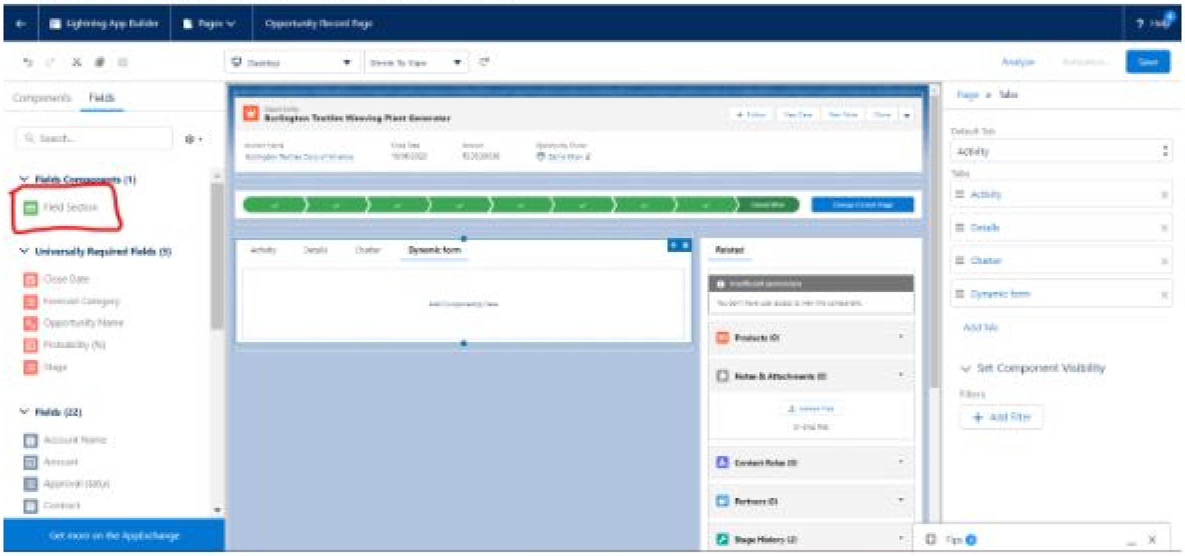
- 1st go to the details of any records of the object. For example, we are going to make dynamic form of opportunities object.
- Open any records in opportunities tab. After that click on the set-up icon and click on edit page.



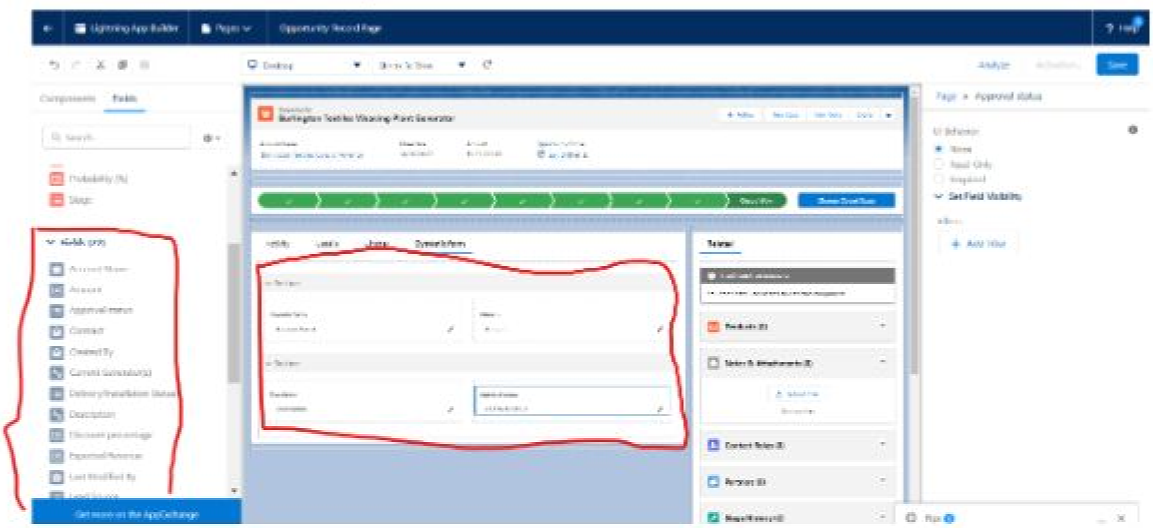
- After that we 2 options components and fields on left hand side. Click on fields.
- After that click on the details tab so that we can create new tab named as dynamic form. click on Add tab so that we can create new tab.



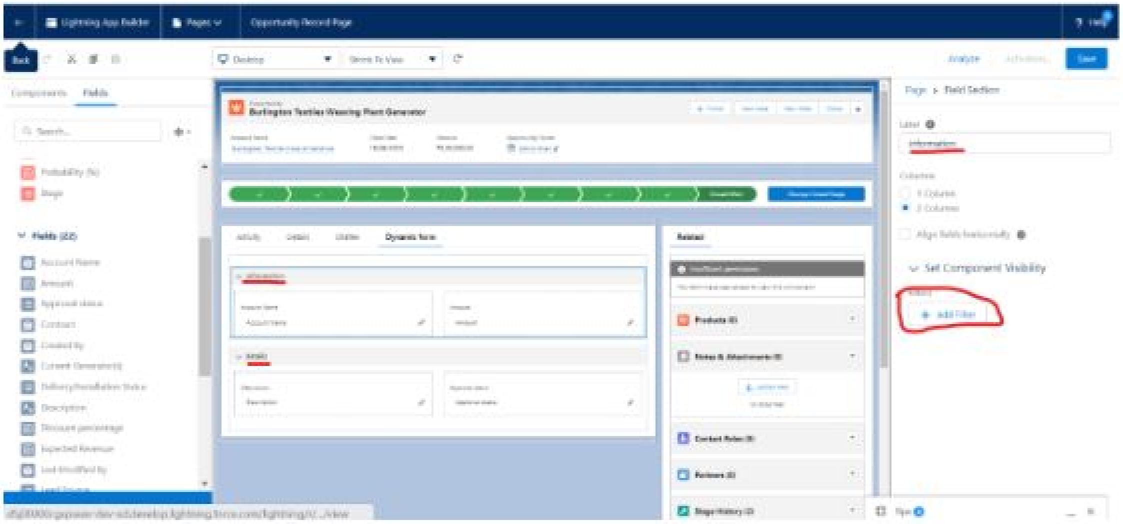
- After that create a custom tab named as dynamic form.
- In dynamic form tab we can add the field same as page layout for this select **field section** and drag it inside the dynamic form tab.



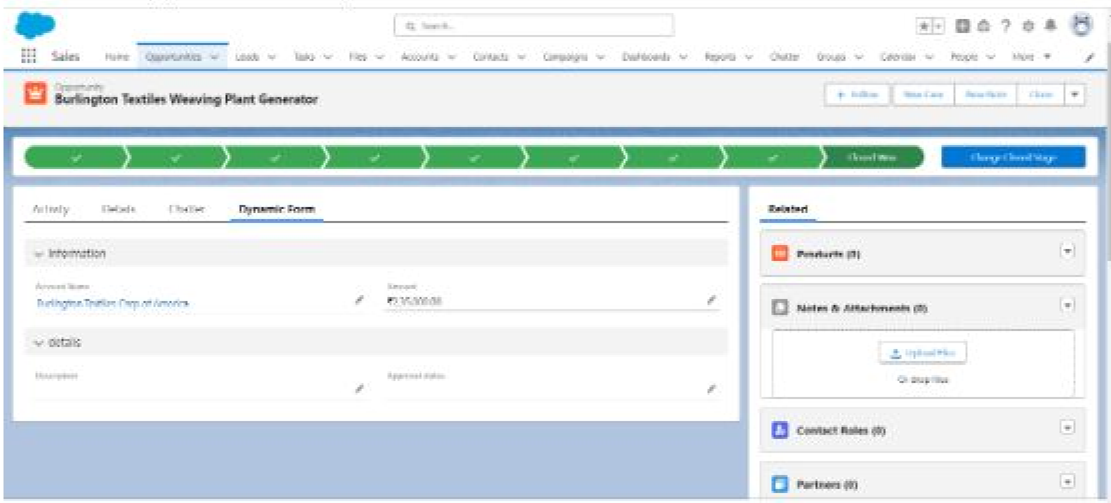
- Now section is added, and we have 2 section we can add any field from fields options.
- Just select the field and drag it inside the field section.



- This way dynamic form is created we can also add visibility filter for every field. We can also rename the section same as page layout.
- For this just click on the section so that edit action will show.
- We can also apply filter for each section.

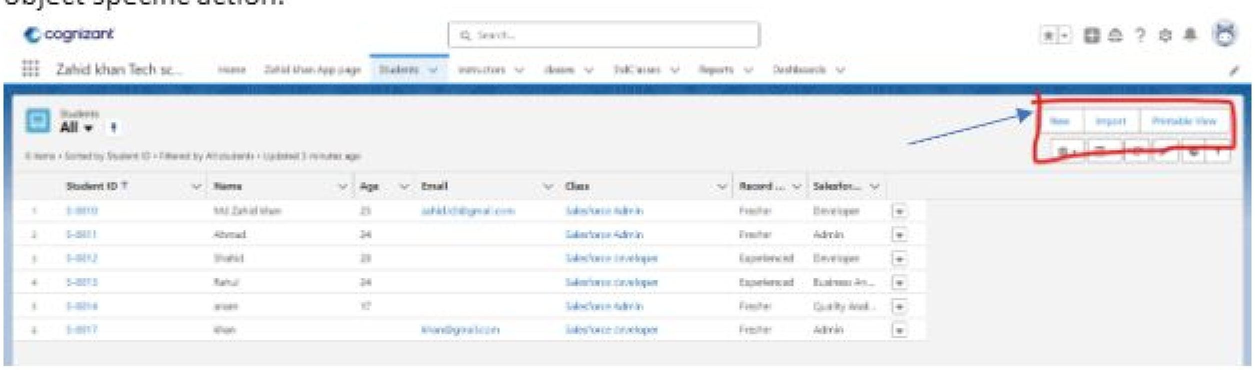


- now click on save and activate the page. After that check the results by opening the any record of opportunities object.



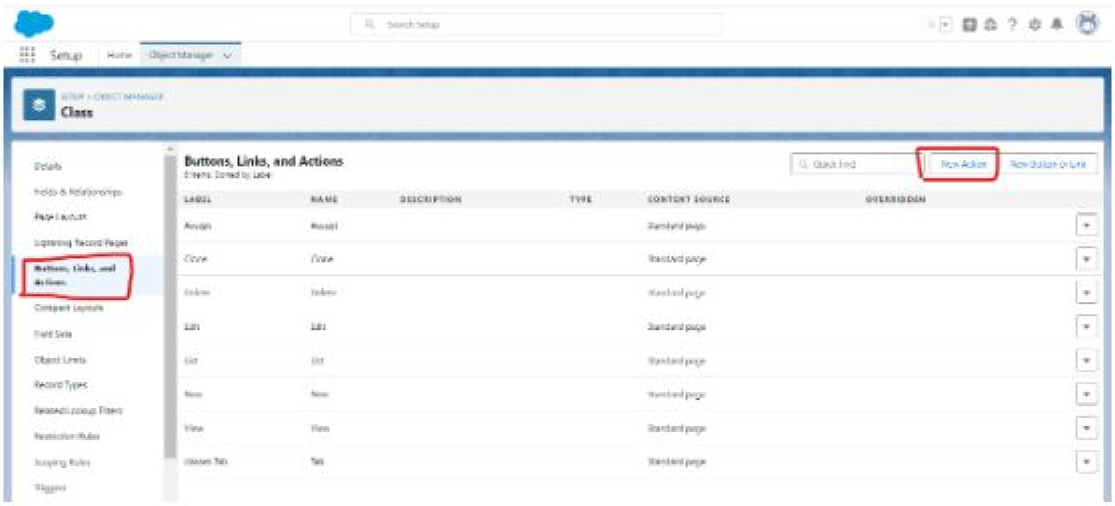
Quick Action

- Quick action means the button which is available inside the object and by clicking on that button we can redirect to the form of another object it known as a quick action or object specific action.

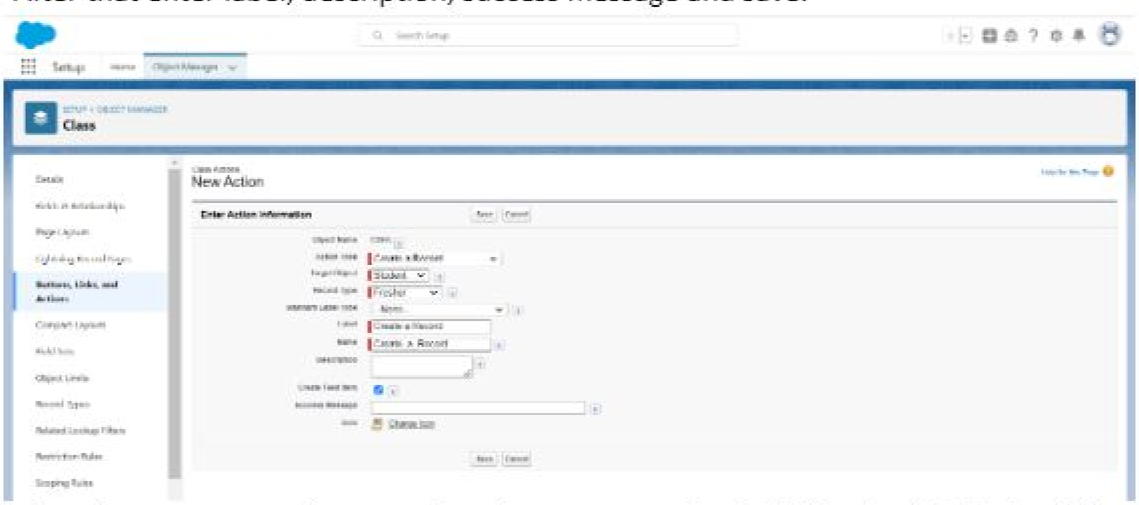


Steps to create quick action or object specific action:

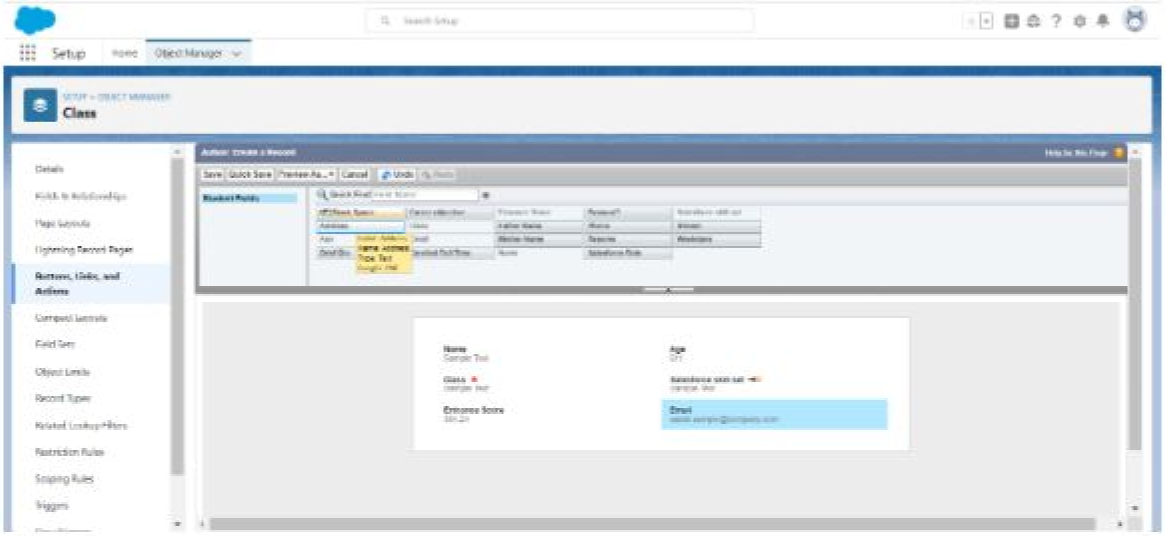
- For example, we are going to create a quick action in class object and attached it to the student object. So, when we click new student (custom) button in class object its redirect to the student object.
- Now, go to the object manager and search for class object because we are going to create quick action inside the class object.
- After that click on the Button, Link & action.
- After that click on new action.



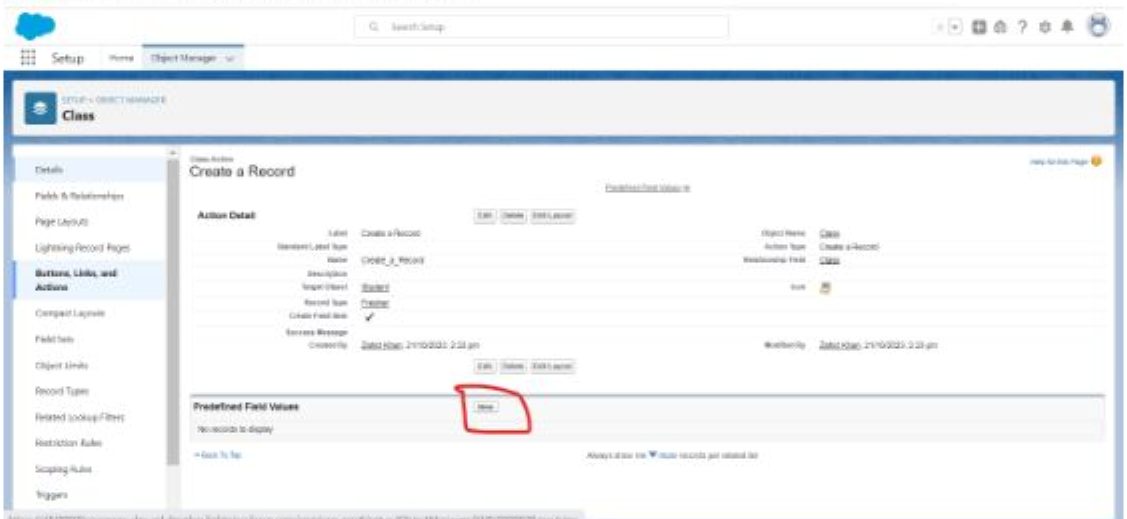
- After that enter the action type, we have lot of options, but we choose to create a record. After that enter the target object i.e., student.
- After that we have to choose record type because we have 2-page layout for student object fresher layout, experienced layout. Here, we are choosing fresher layout.
- After that enter label, description, success message and save.



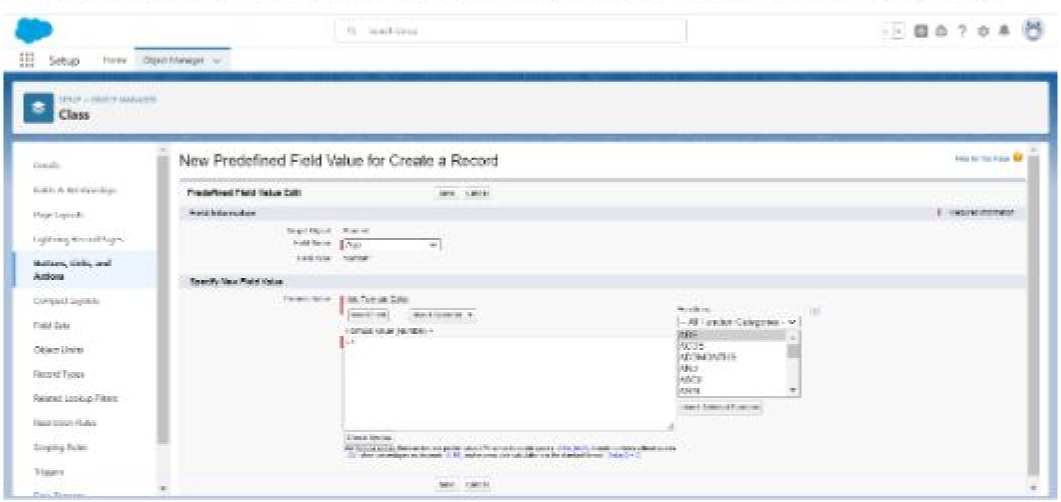
- After that one page will open and we have to enter the field like which field should be display when we click on this quick action button.
- Just select and drag the field. And always enter that field which has validation rule. Otherwise, it gives error.



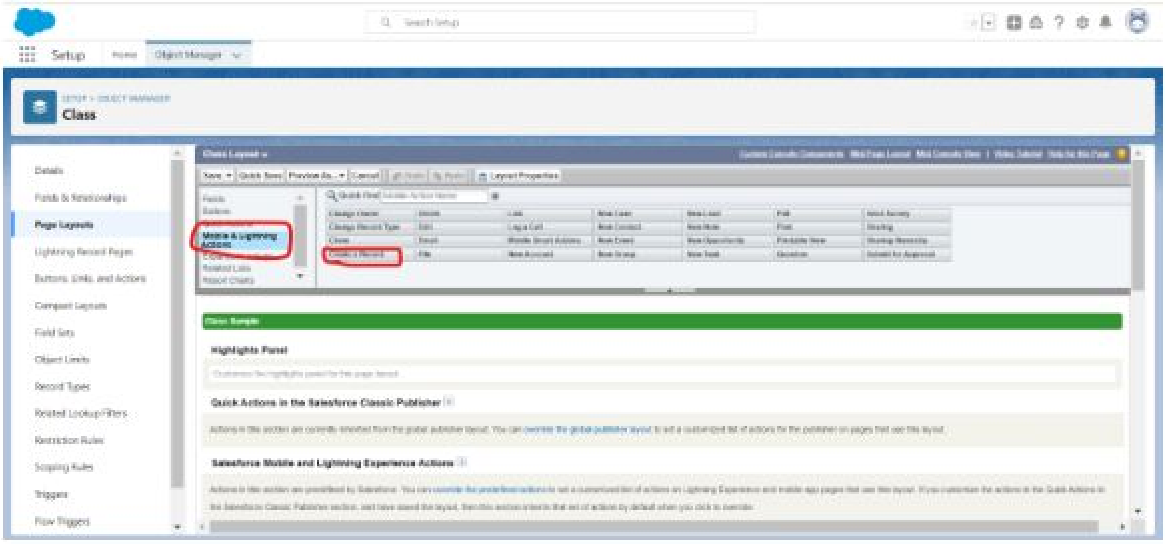
- click on save. Now quick action is created. we can also enter predefined field by on new button inside predefined field types.



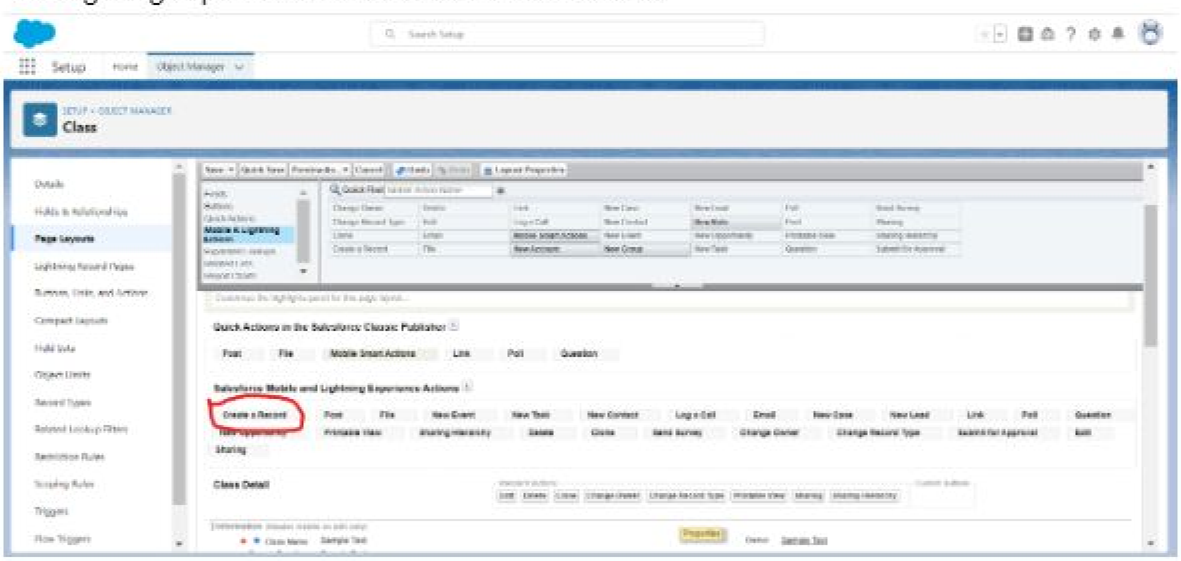
- After clicking on new we have to choose field and their value. Now click on save.



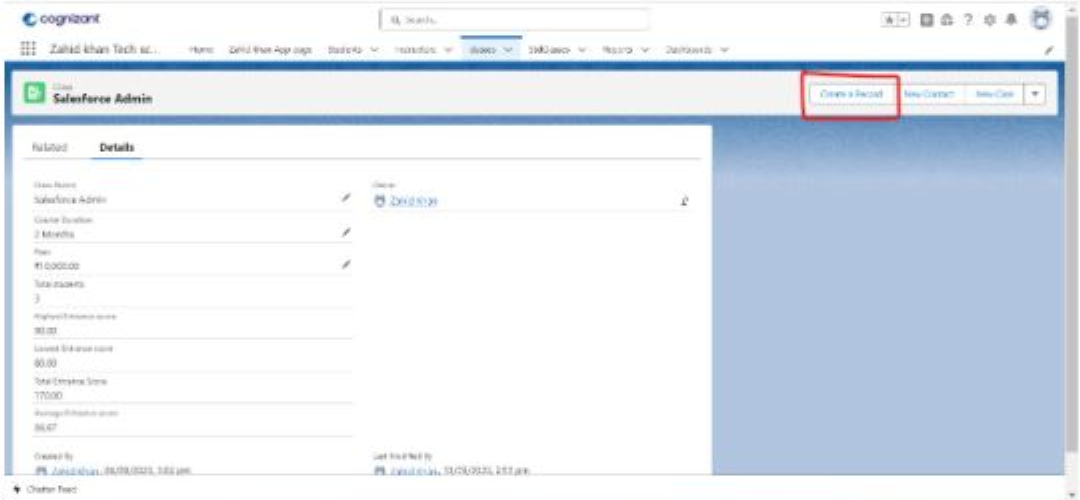
- After that we have to insert this newly created quick action button to the page. For this click on page layout of the class object and click on mobile and lighting action. Inside this we can find our newly created quick action i.e., create a record.



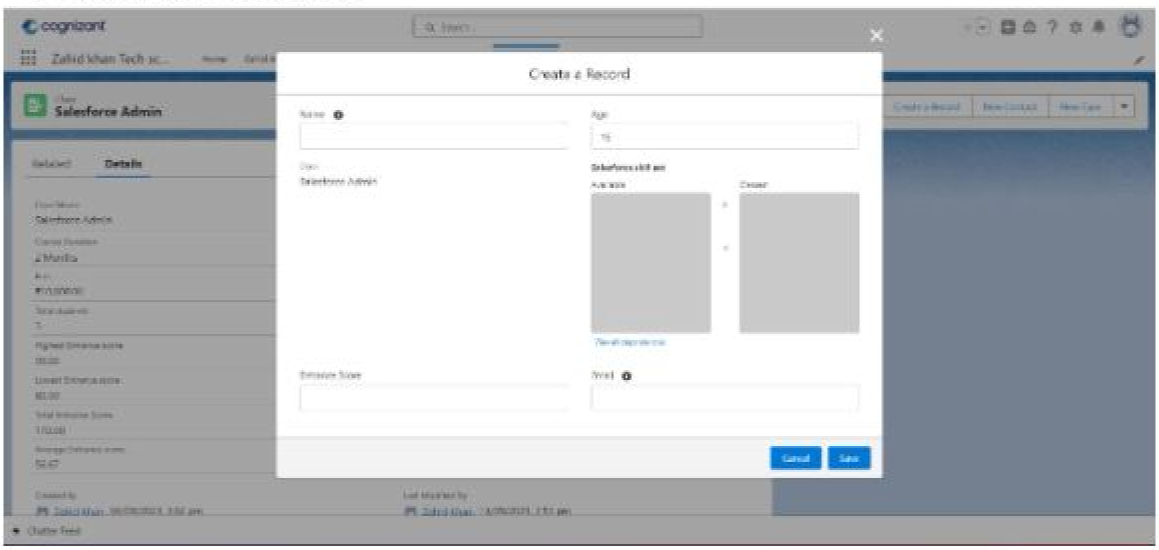
- After that click **on override the predefined actions** inside the salesforce mobile and lighting experience actions.
- Just select the quick action i.e., create a record and insert inside the salesforce mobile and lighting experience actions. And click on save.



- Now go the class object and open a record and check that create a record button will appear.



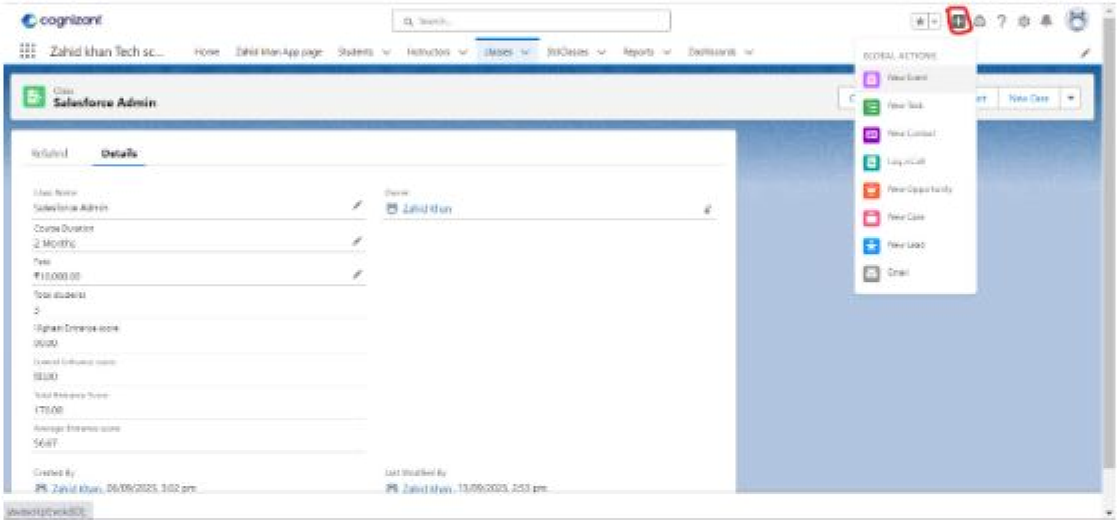
- When we click on create a record new form will open with those field which we insert and also predefined field.



- This way we can create quick action button for any object. But the condition is that both objects will be related to each other.

<u>Global actions</u>

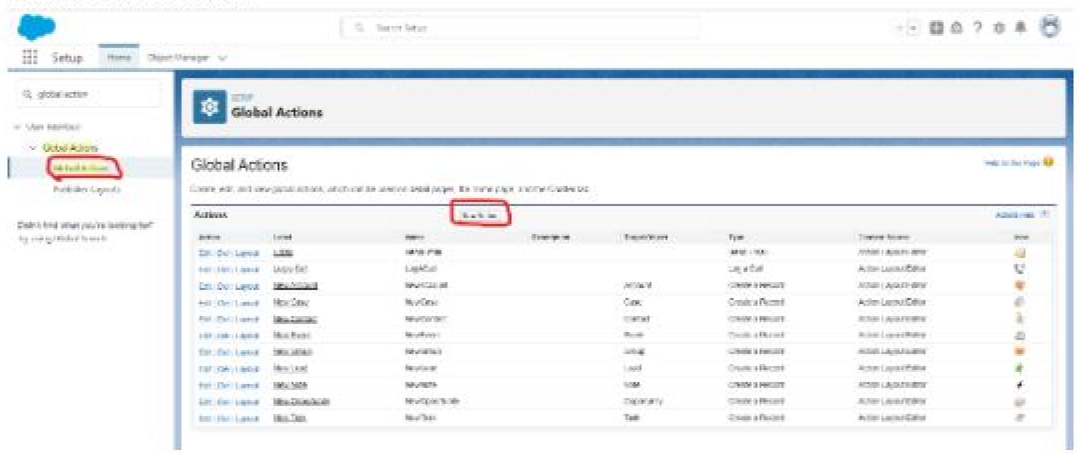
- global actions mean we can create a record for any object without opening that object tab.
- By clicking on the + icon on top of the screen we can see the global actions options. Inside, this + icon we can see the number of options.



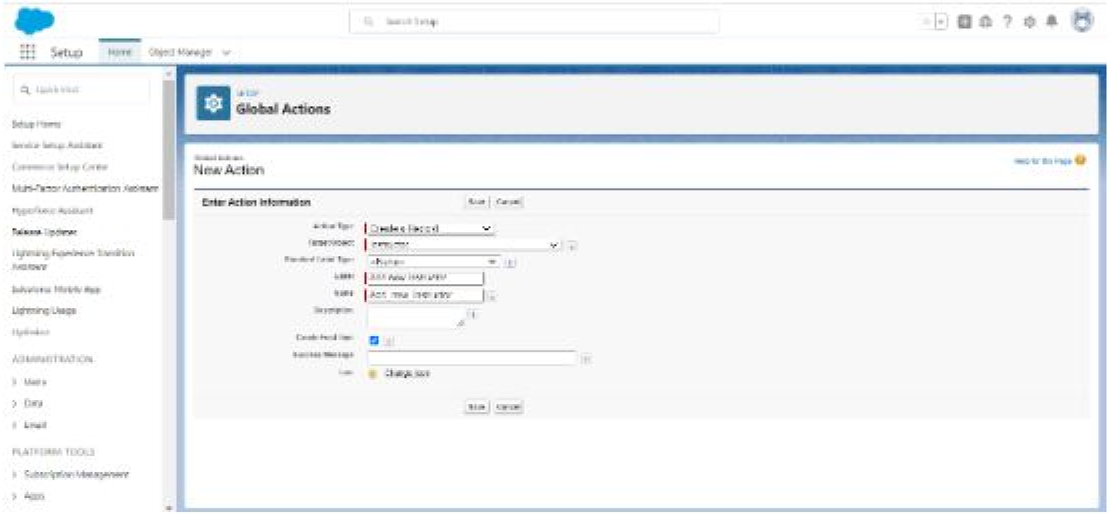
- these are pre-defined global actions. We can also add global actions as per our requirements.

<u>Steps to create global actions:</u>

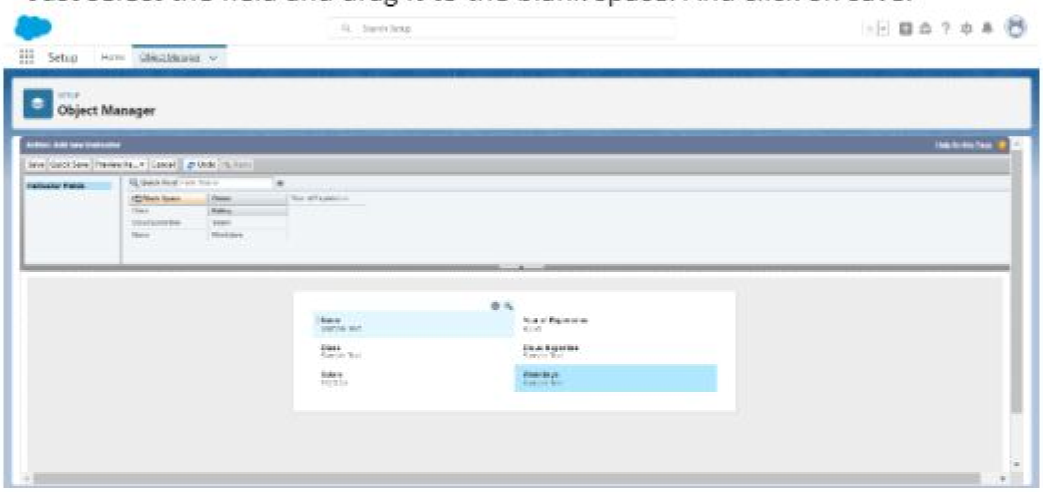
- Here, we want to create global actions for instructor object.
- Click on setup and go the home. Search for global actions in quick search. After that click on new action.



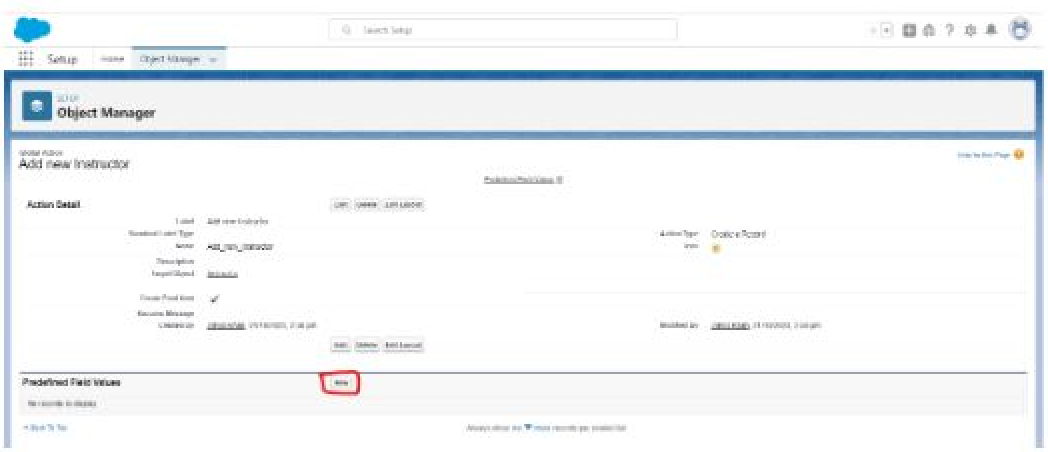
- After that choose the action type same as quick action. Here, we are selecting create a record.
- After that select target object as Instructor and label and click on save.



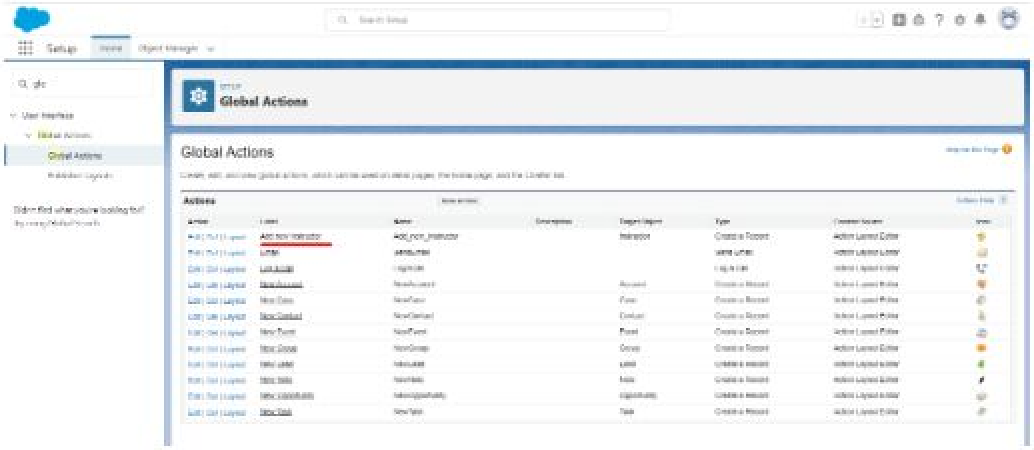
- after that we page will open, we have to choose the field like which field will be visible when we click on this global action button.
- Just select the field and drag it to the blank space. And click on save.



- We can also add pre-defined field values by clicking on new button same as quick action.

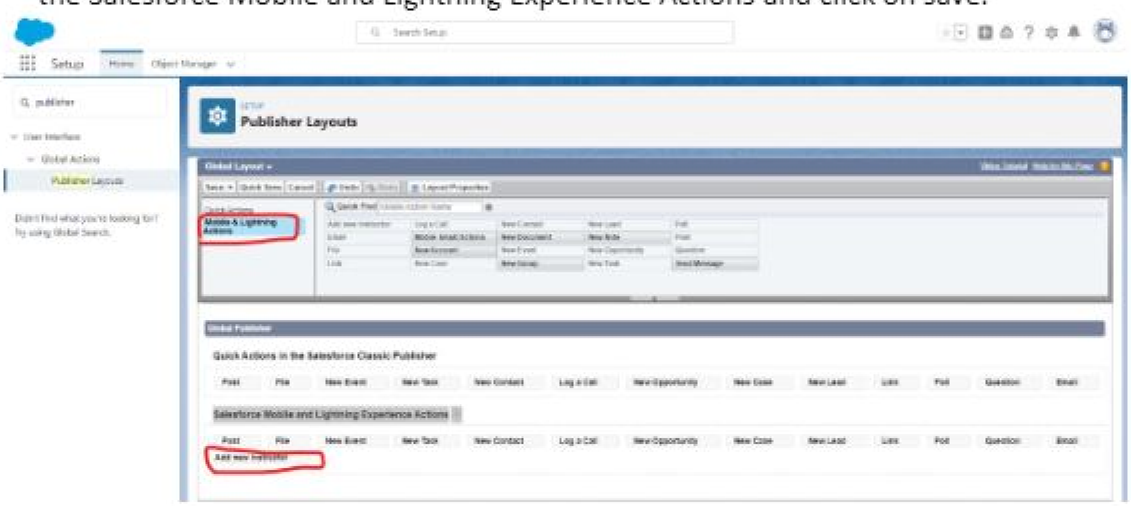


- Now go to home and again search for global action so that we can see our newly created global action.

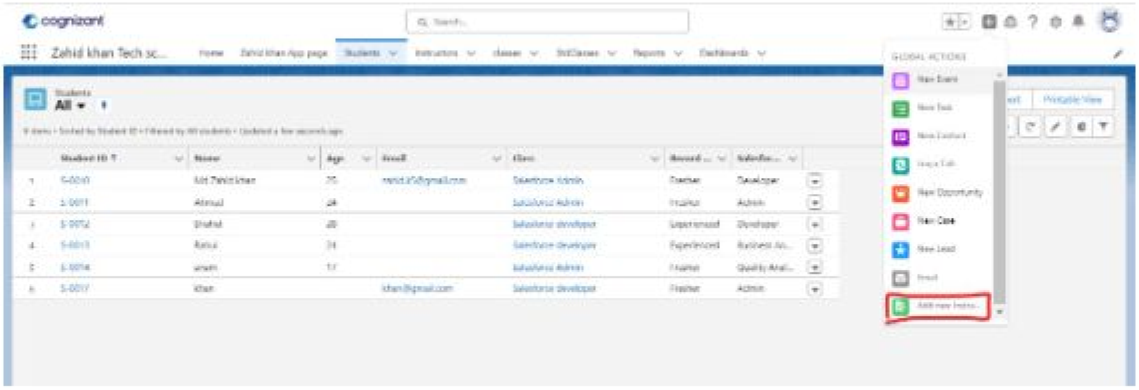


- Now search for publish layout in quick search box. And click on it.
- After that click on edit option beside the global layout.

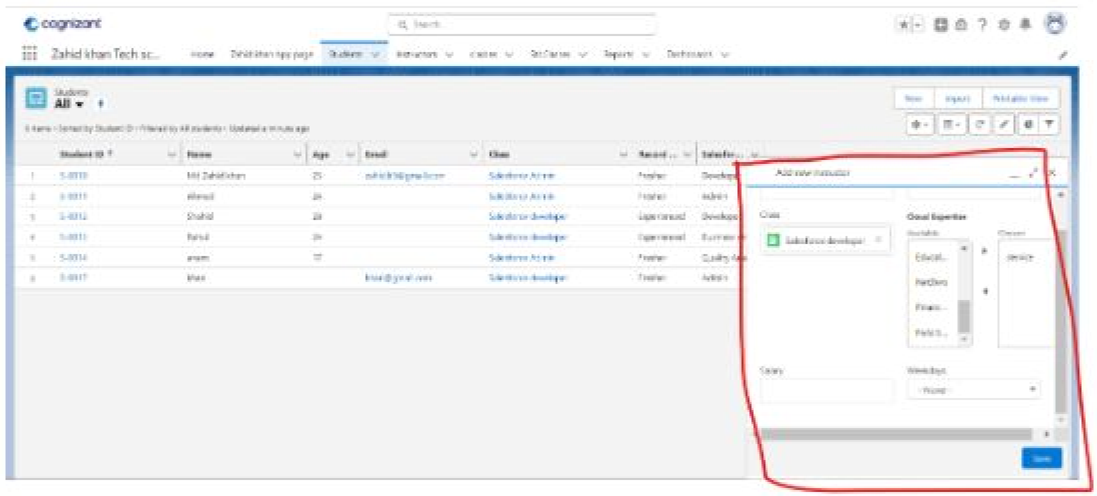
- After that click on mobile & lighting actions.
- Now select the newly created global action i.e., Add new instructor and drag it inside the Salesforce Mobile and Lightning Experience Actions and click on save.



- Now go the front-end of the app and click + icon we will see the newly created global action i.e., Add new instructor.



- when will click on this action instructor form will open without changing the records.

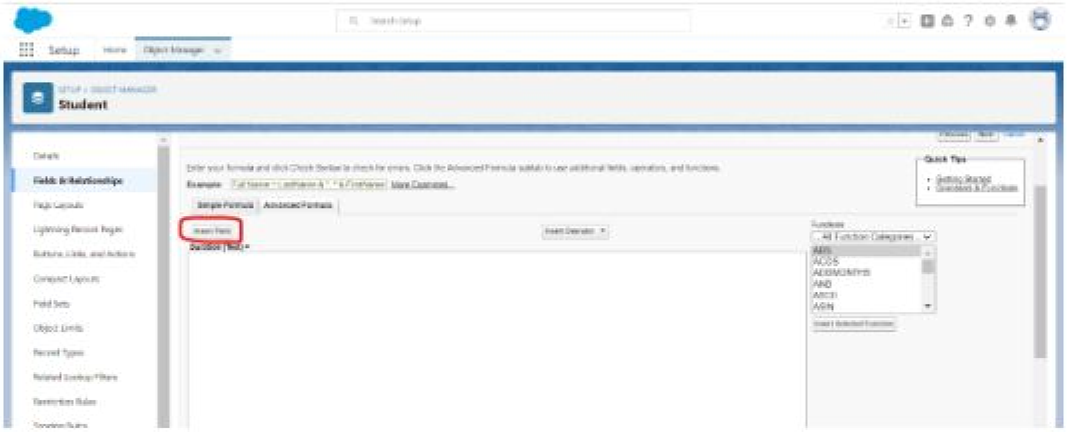


Cross object formula

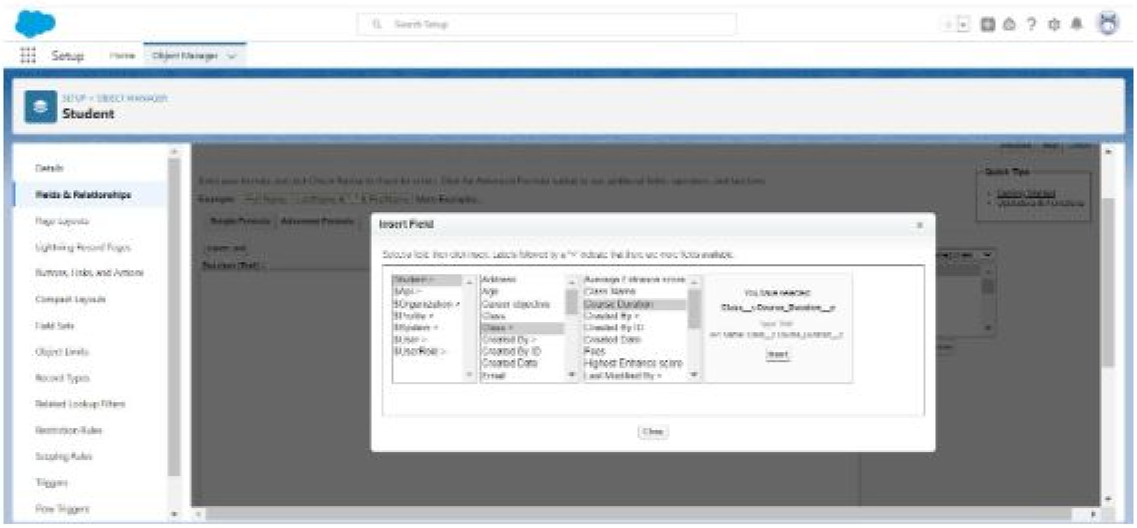
- Cross object formula is used to show the data of the parent object inside the child object. But they should have a relationship between them.

Steps to create cross object formula:

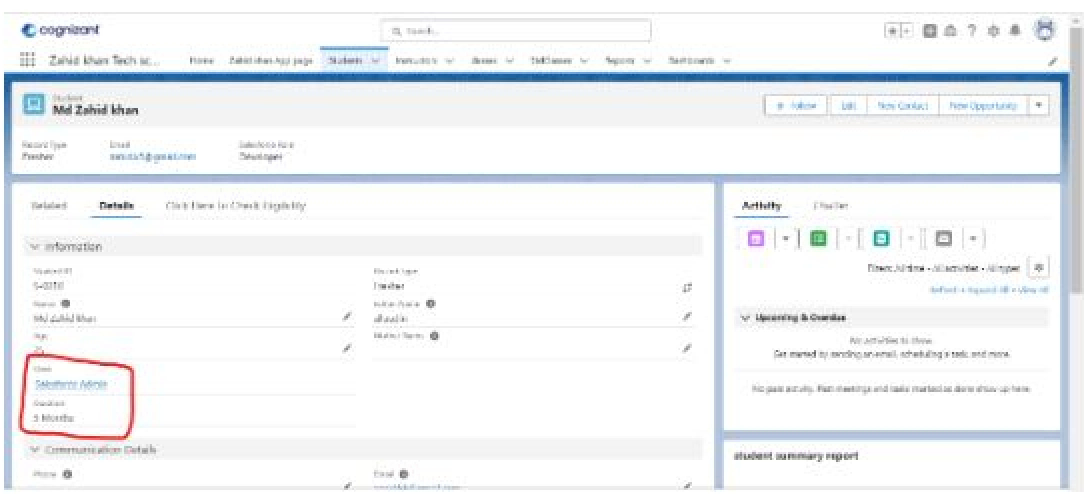
- We are going to make cross object formula between class object (parent) and student object (child). We are going to fetch duration field from class object to the student object.
- So, go to object manager and search for student object after that click on field & relationship.
- After that click on new.
- Choose data type formula. And click on next.
- After that enter the label name and select formula type return as text. Because duration field in class object is in text. Click on next.
- After that click on insert field.



- After that click on **class >** so that all field of the class object will be available we can select anyone of them. Here, we are selecting course duration.



- We can also apply function on this field. But for now, we will show only field.
- Now click on next. Check the visible box and click on next. After that click on save. Now cross object formula field is created.
- Go to the student records and check that class field is visible.

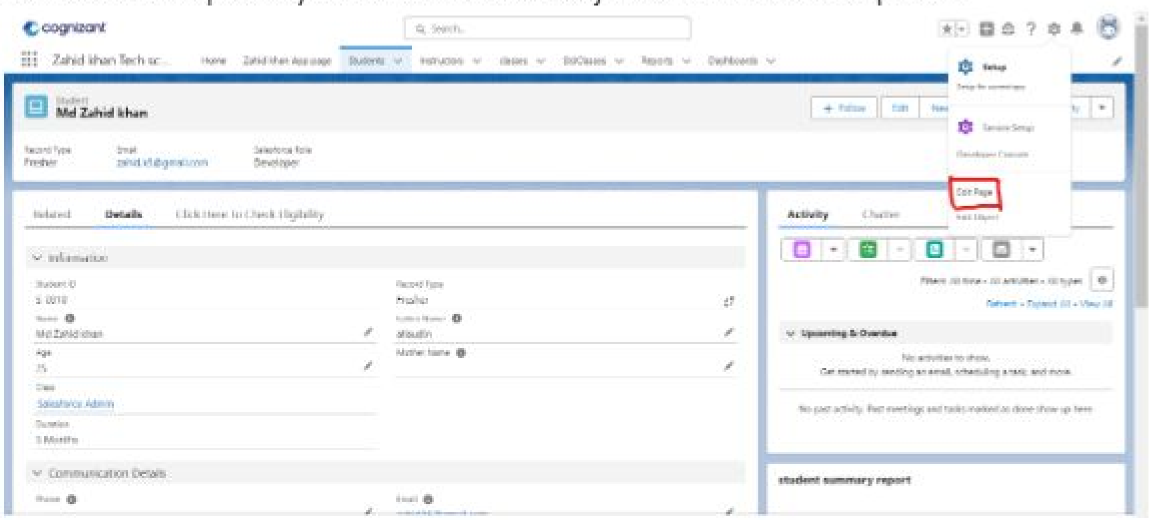


Related list single

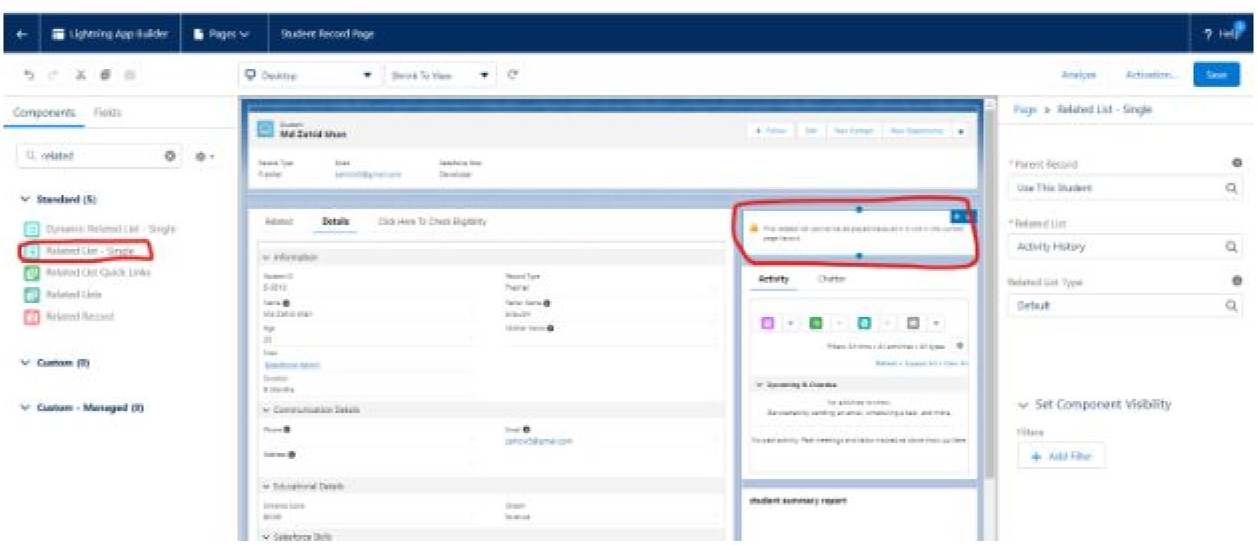
- Related list single is used to show the records of the child object records related to the one parent object records.
- For example, we have a class object which is related to student object. So, using related single list we can show the classmates which is related to one class object records.
- This is created in child object.

Steps to create related single list:

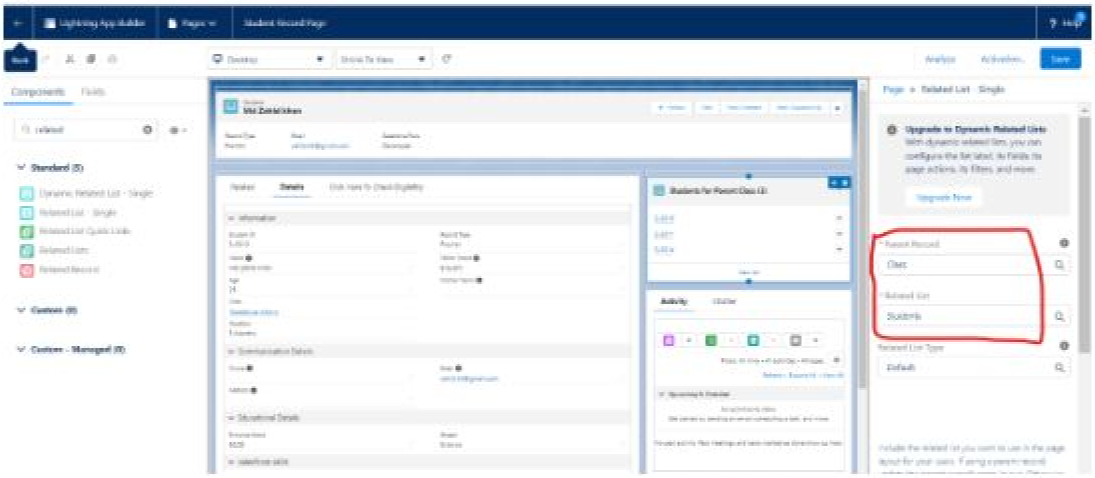
- We have to make related list single in child object because we want to show the records of child object which is related to some particular record in parent object. For example, students object is related to class object with salesforce admin or salesforce developer.
- For create this open any records of student object and click on set-up icon.



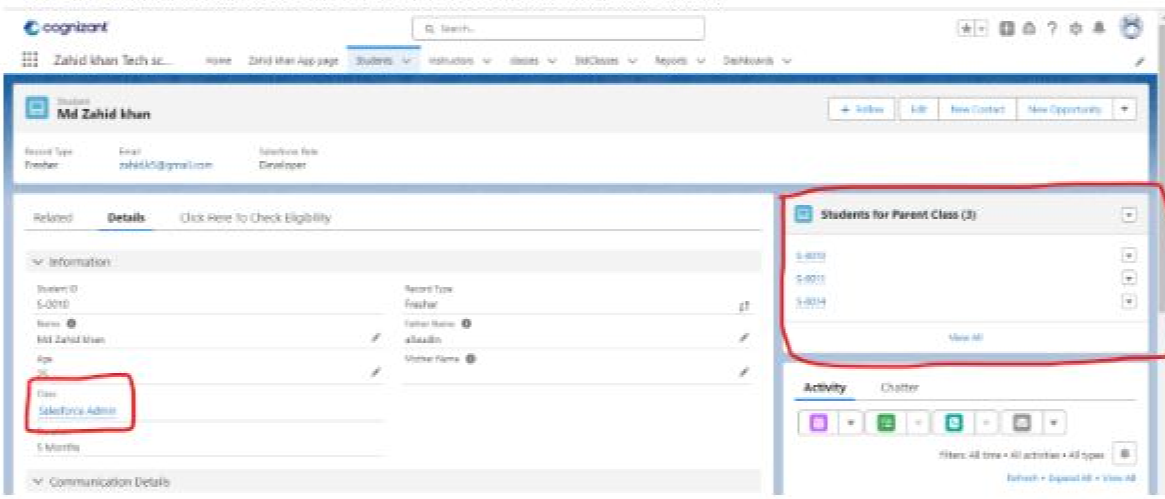
- Now, search for related list single in components and select and drag in before activity tab.



- In parent records select class. And in related list select student.



- After that save and check the results.
- these all records are related to salesforce admin class.



Salesforce inspector extensions

Steps to install salesforce inspector extensions:

- Go to the chrome browser and search **salesforce inspector extensions**.
- After that click on 1st link and download the extension.
- Using this extension, we can perform lot of tasks.

App exchange

- An online marketplace for salesforce Apps, components, and consulting services.
- Developers or consultants can use it as a gateway for connecting with customer to provide their business solutions.
- Salesforce admin or users can find tools to improve their company's productivity.

how does AppExchange work?

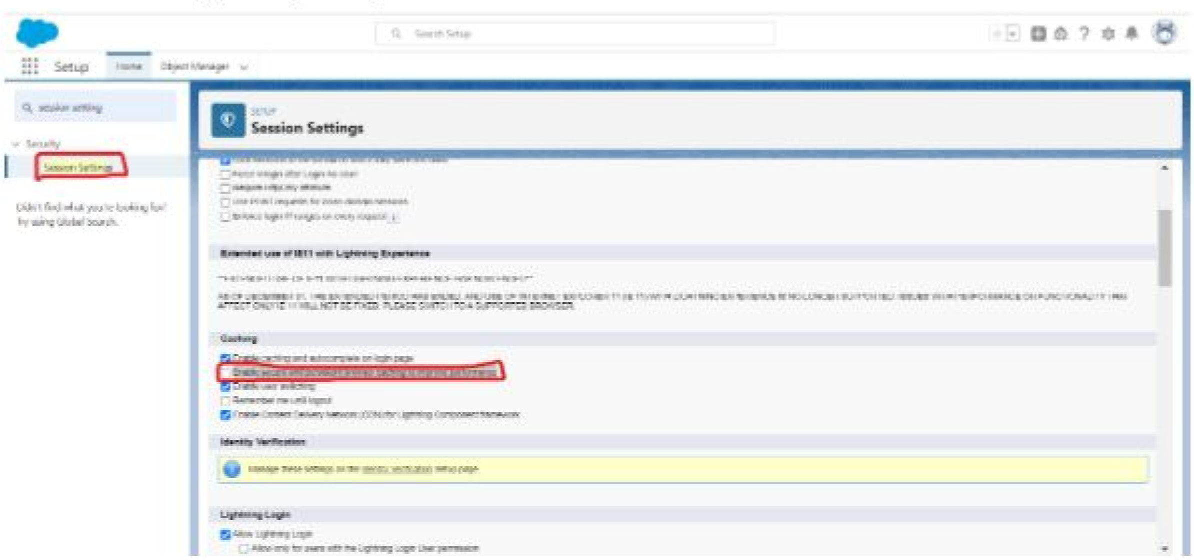
- Primary marketing tool for promoting App or components.
- In listing one can describe solutions, pricing, support, and other details.
- Can also upload videos, white papers, and other contents to help customers understand the app or component.
- AppExchange categorized the listing into various business areas like sales, marketing or analytics.

Who can use AppExchange?

- Anyone can browse listings and test apps or components.
- Need download packages permission to install app or components.
- To create a package and upload it to partner community. One must have created packages and upload packages permissions.
- To create and publish a listing, one must have the manage listings permissions.

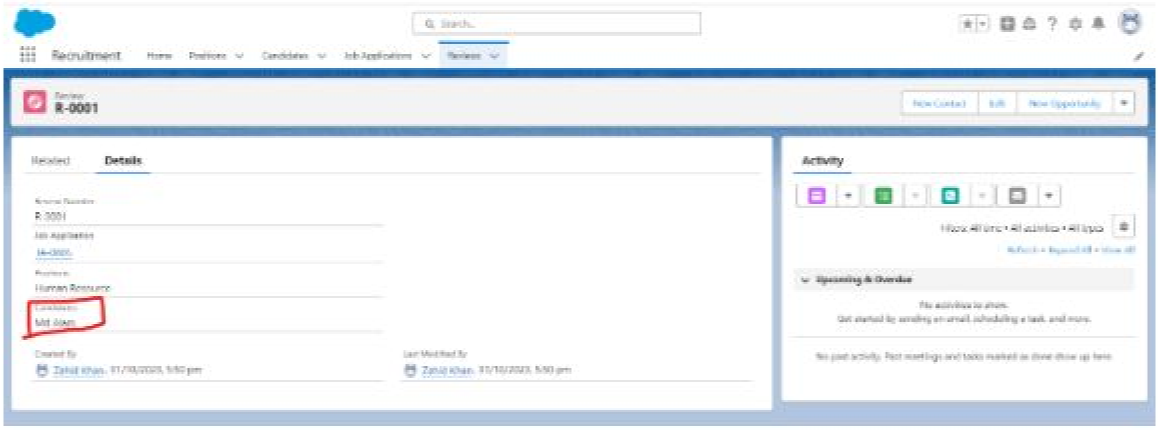
Note: - if field is not visible in the objects but you created it then follow the following steps to make it visible.

- Go to set-up and search for Session setting and click on this.
- After that go to caching option and disable the option **Enable secure and persistent browser caching to improve performance** and save.

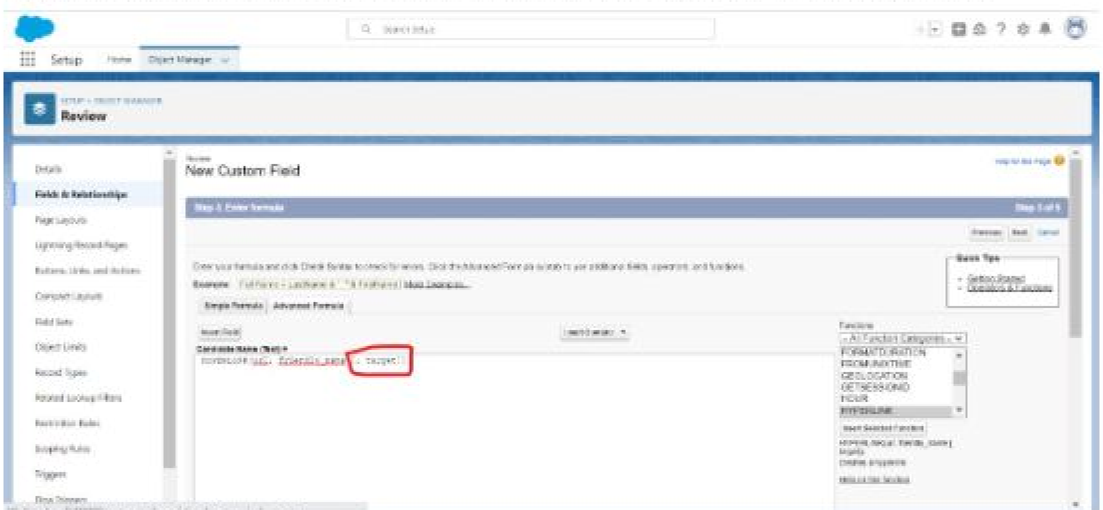


How to make Link of any text in field?

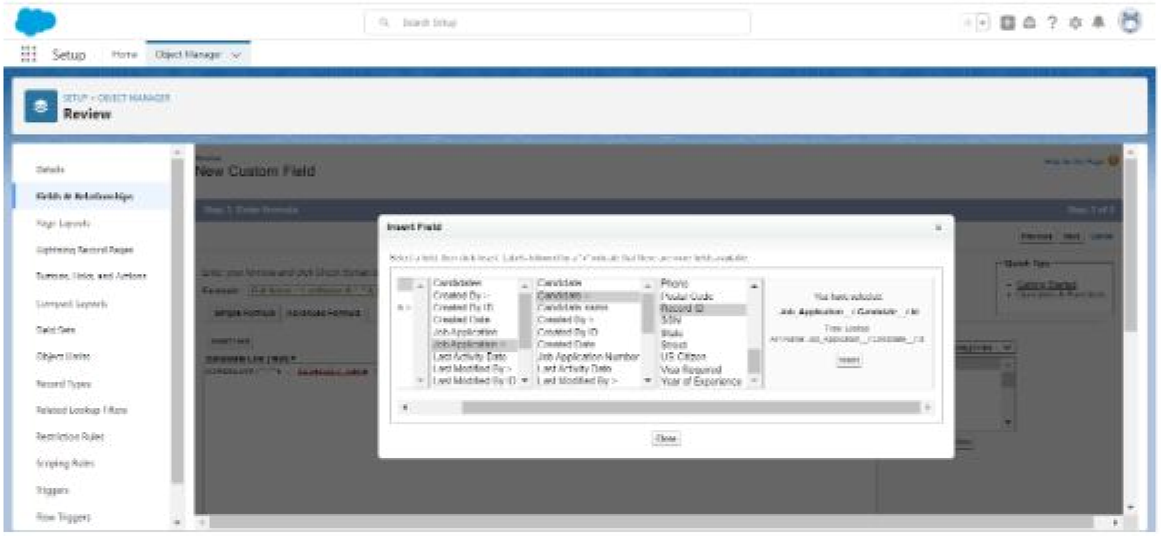
- In most of time we have to convert the text into link so that we can redirect the related records to the object.
- For example, in below image we want to make a link so that when we click on candidate name it will redirect to the records of that candidate.



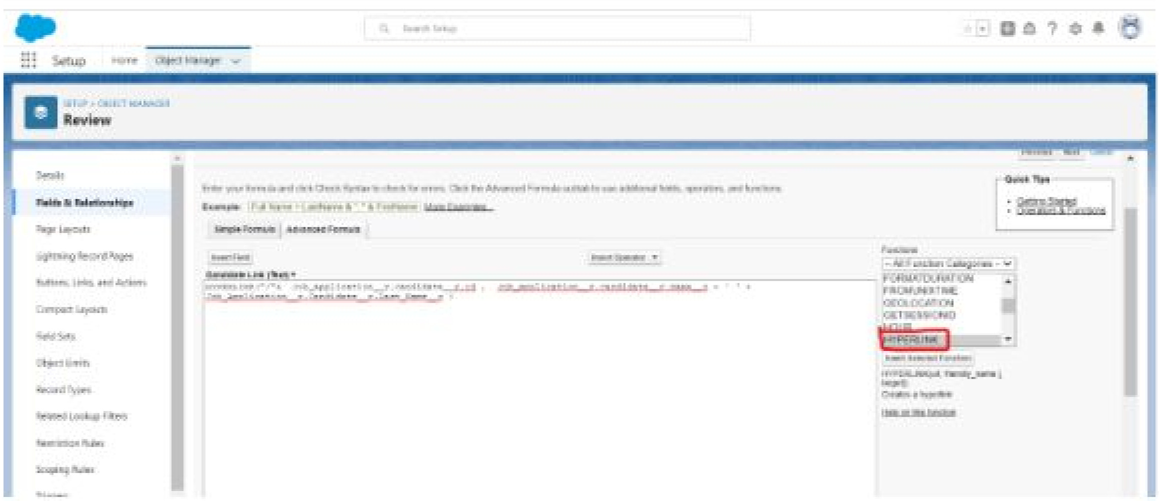
- Go to object manager and search for review object and click on it. After that click on fields & relationships.
- After that click on new.
- Select formula for data types. And click on next.
- After that enter field label and select Text in formula return type.
- Click on next.
- Now select HYPERLINK from functions tray and insert it.
- In hyperlink remove the target because we need only url and friendly name.



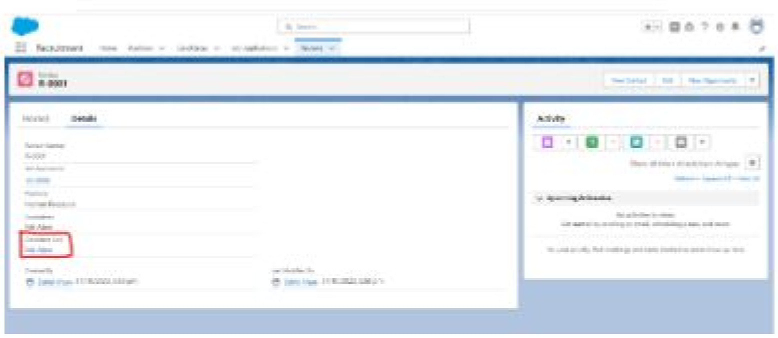
- Now in place of URL insert **"/"&** after this we have to specify the id where the record will redirect. For this click on insert field click on **job application>** after that **candidate>** and then select **Record Id.** and click on insert.



- After that we have to insert the friendly name means what should be visible on UI, we want to show candidate name. For this click on insert field **job application>** after that **candidate>** and then select **first name.** for insert 1st and last name insert like this first name + ' ' + last name.



- Now click on next after that click the visible check box then click on next. And save.
- Now go to front-end and check.



Day-22

Introduction of Flow

- Flow provides declarative process automation.
- Lighting flow provides this point and click automation tool i.e., Flow builder.
- Lighting flow is the name of product.
- Process builder and flow builder are name of the tools.
  - ➢ Use process builder to create processes.
  - ➢ Use flow builder to create flow.

When to use?

- Automated a guided visual experience.
  - ➢ Screen flow
- To build complex functionality which can run automatically in the background.
  - ➢ Record Triggered flow.
  - ➢ Schedule Triggered flow.
  - ➢ Auto launched flow.
- Need to call flows from apex or lighting components.

Flow Elements:

- Interaction
  - ➢ Screen
  - ➢ Action
  - ➢ Subflow
- Logic
  - ➢ Assignment
  - ➢ Decision
  - ➢ Loop
  - ➢ Collection sort
  - ➢ Collection filter
- Data
  - ➢ Create Records
  - ➢ Update Records
  - ➢ Get Records
  - ➢ Delete Records

Resources that can be created:

- Variables
- Constant
- Formula

- Text template
- Choice
- Record choice set
- Picklist choice set
- Stage

Flow must be:

- Activated
    - So that it works.
- Deactivated
    - So that it won't work.

Types of flow:

- Screen flow.
- Record triggered flow.
- Schedule triggered flow.
- Platform event triggered floe.
- Auto launched flow.

1) **Screen flow:**
    - Screen flow guides through a business process.
    - It can be launched through,
        - ➢ lighting page,
        - ➢ experience cloud sites,
        - ➢ quick actions
        - ➢ and more
    - screen flow is the only flow which is visible to user and other type of flow is not visible to users its run-in background.
    - We can place screen flow in any type of lighting page like, App page, Record page and home page.
2) **Record triggered flow:**
    - Record triggered flow launches when a record is,
        - ➢ Created
        - ➢ Updated or
        - ➢ Deleted
    - This auto launched flow runs in the background.
3) **Schedule – triggered flow:**
    - Schedule- triggered flow launches at a specific time and frequency for each record in a batch.
    - This auto launched flow also runs in the background.

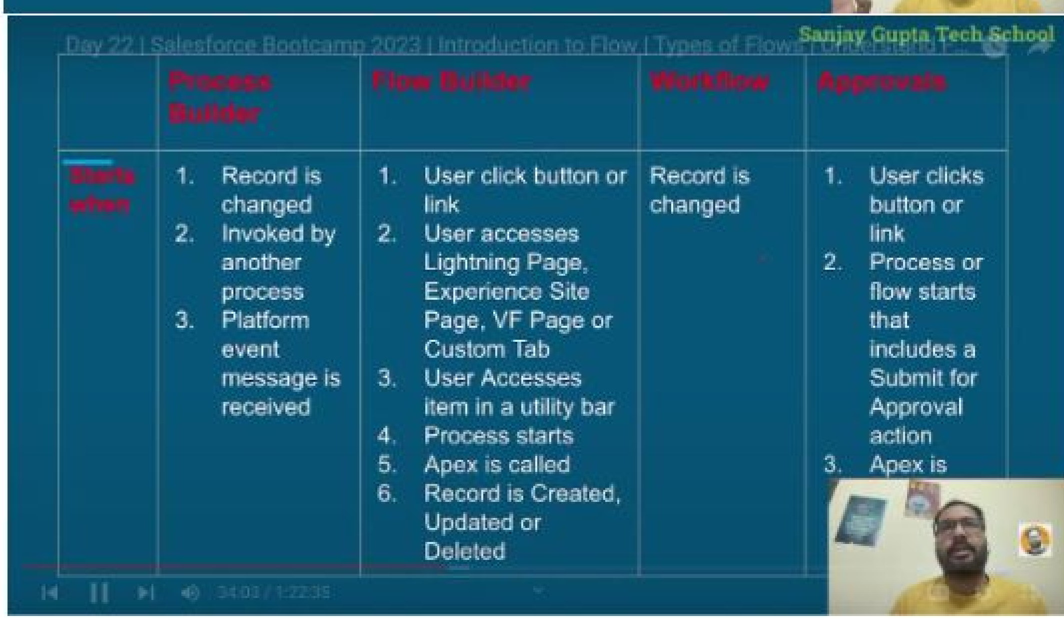
4) Platform event – triggered flow:

- Platform event – triggered flow launched when a platform event message is received.
- It used rarely.
- This auto launched flow also runs in the background.

5) Auto launched flow:

- It is invoked or call by any external features like,
  - Apex
  - Processes (process builder)
  - REST API
  - And more
- This auto launched flow also runs in the background.

	Process Builder	Flow Builder	Workflow	Approvals
Complexity	Multiple if/then Statements	Complex	A single if/then Statement	A single if/then Statement
Visual Designer	Yes	Yes	No	No
Supports Time-based Actions	Yes	Yes	Yes	No
Supports User Interaction	No	Yes	No	



	Process Builder	Flow Builder	Workflow	Approvals
Starts when	1. Record is changed 2. Invoked by another process 3. Platform event message is received	1. User click button or link 2. User accesses Lightning Page, Experience Site Page, VF Page or Custom Tab 3. User Accesses item in a utility bar 4. Process starts 5. Apex is called 6. Record is Created, Updated or Deleted	Record is changed	1. User clicks button or link 2. Process or flow starts that includes a Submit for Approval action 3. Apex is

Difference between process builder, flow builder, workflow and approvals based on supported action:

Sanjay Gupta Tech School

	Process Builder	Flow Builder	Workflow	Approvals
Call Apex Code	Yes	Yes	No	No
Create Records	Yes	Yes	Task only	Task only
Invoke Sub Processes	Yes	Yes	No	No
Delete Records	No	Yes	No	[illegible]

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	Process Builder	Flow Builder	Workflow	Approvals
Launch a flow	Yes	Yes	No	No
Post to Chatter	Yes	Yes	No	No
Send email	Yes (Email alerts only)	Yes	Yes (Email alerts only)	Yes (Email alerts only)
Send outbound messages without code	No	Yes	Yes	Yes

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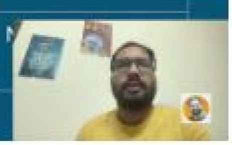
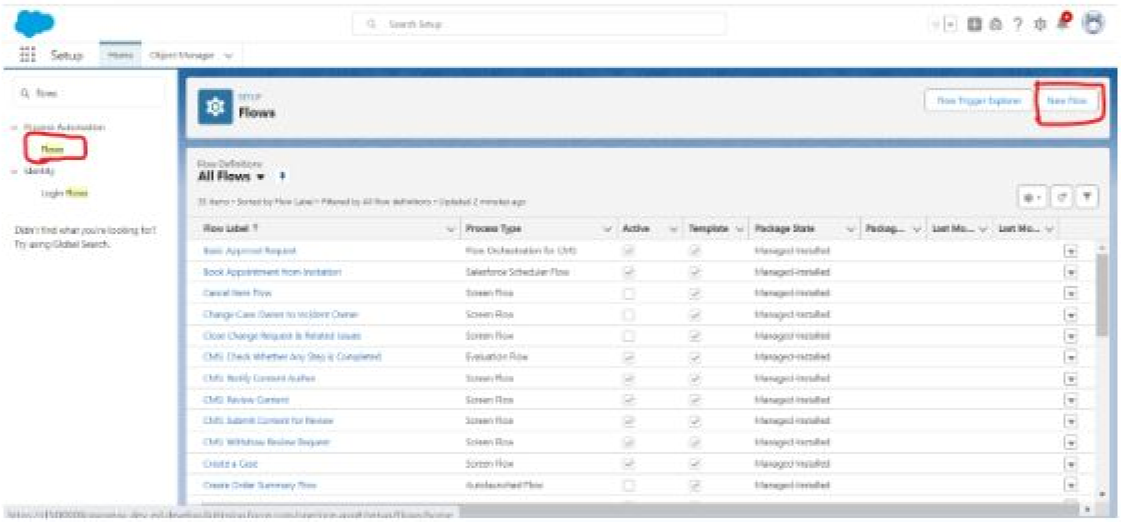
	Process Builder	Flow Builder	Workflow	Approvals
Submit for Approvals	Yes	Yes	No	No
Update fields	The record or its parent or child	Any record	The record or its parent	The record or its parent
Custom Notification	Yes	Yes	No	No
Quick Action	Yes	Yes	No	No
Quip	Yes	Yes	No	[illegible]

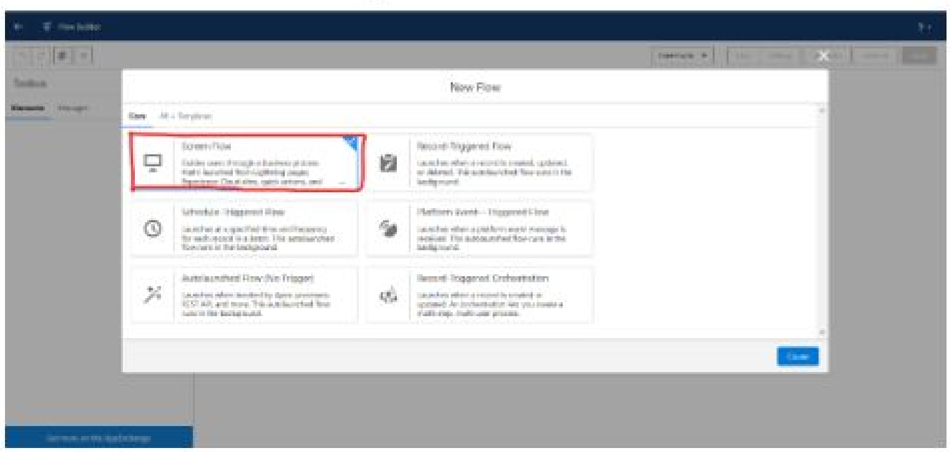


Flow builder demo (steps):

- To create a flow 1st, go to setup after that go to home and search for **flows** in quick search. After that click on flows. After that click on new flow.

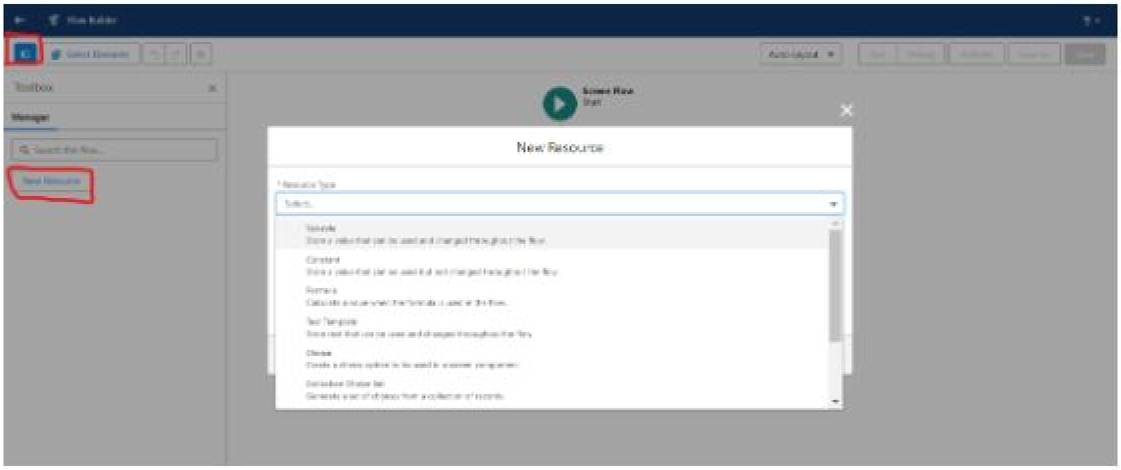


- After that different type of flow screen will open and we have to choose one flow. Here, we are selecting screen flow. And click on create.

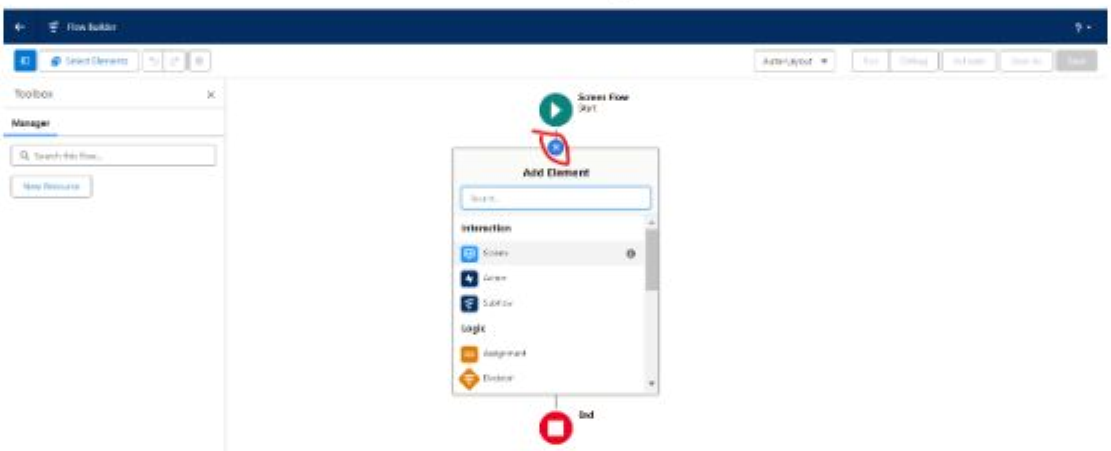


- After that flow builder will open.

- As we know that we are making flow with 2 things elements and resources.
- To take the resource we have to click on toggle button on left hand side and click on add resources button so add the resources.



- To take elements we have to click on + sign on flow builder canvas.

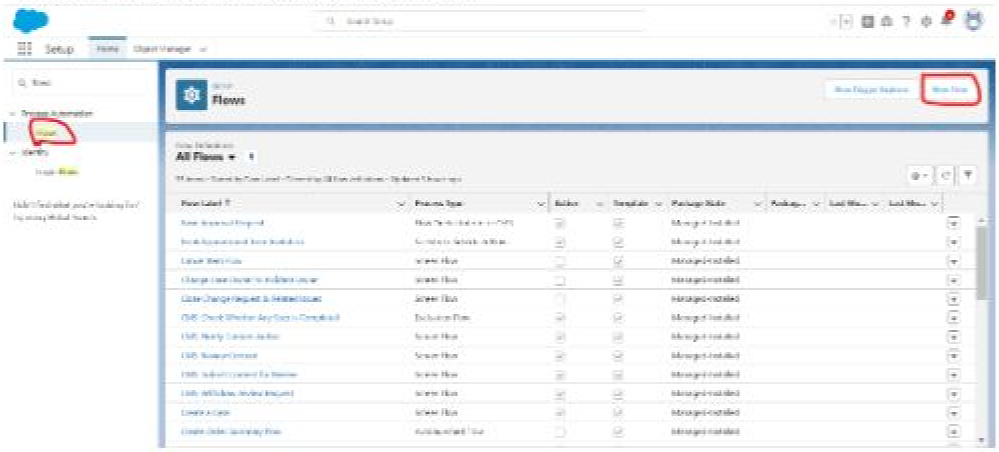


Screen flow

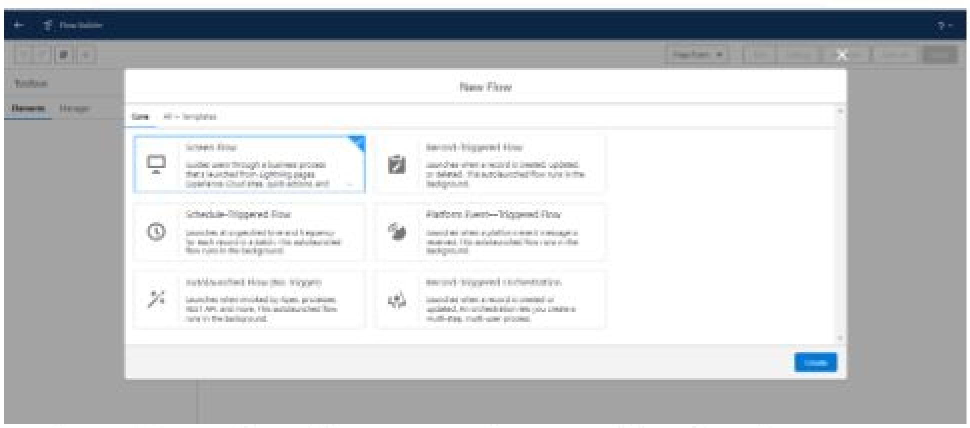
Scenario: -

1. create a screen flow to create opportunity related to an Account.
2. Debug the flow.
3. Launch screen flow through quick action and test.
4. Handle flow error.
5. Place screen flow on account page and test

1. **<u>Steps to create screen flow:</u>**
   - Go to setup and click on home page and search for flows in quick box. After that click on flows and click on new flow.



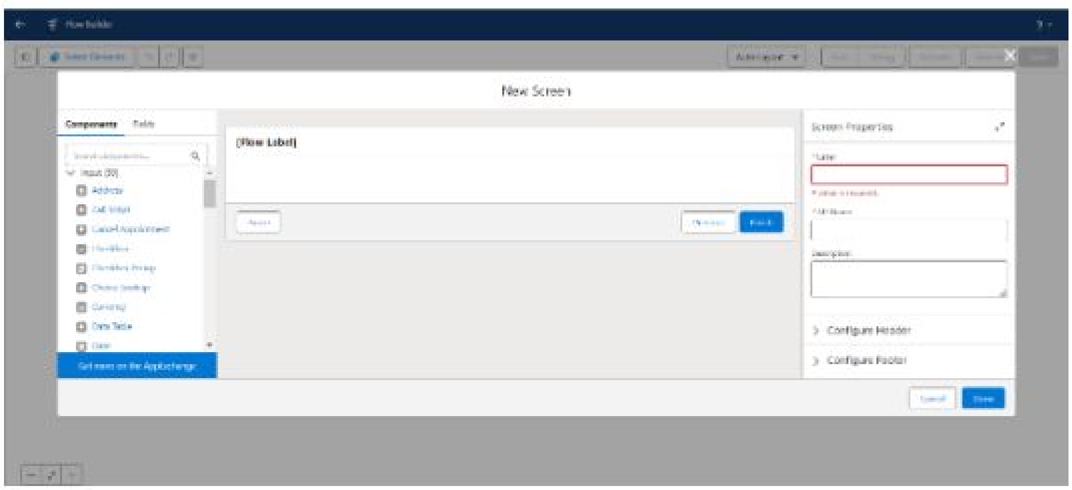
   - After that one pop up will open to select the flow here, we are selecting screen flow. And click on create.



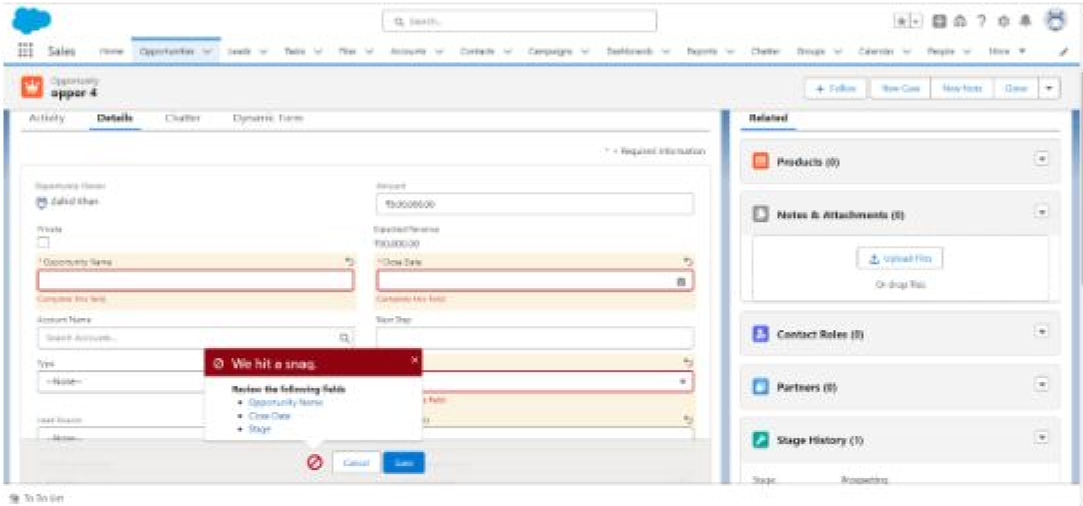
   - As we know that we have 2 layout auto layout and free flow here, we are selecting auto-layout.

- Now click on the + sign we will see screen in flow this screen only visible only in screen flow not in triggered and record flow.

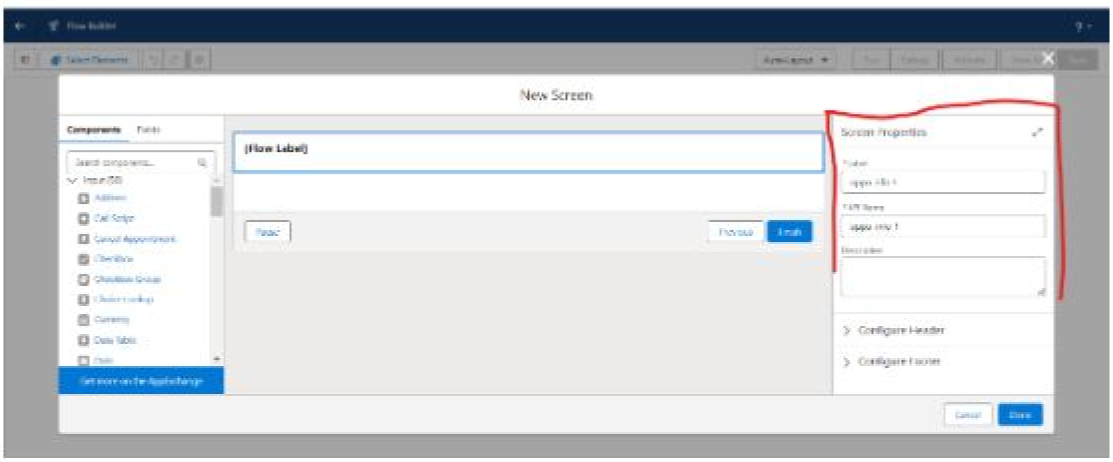
- Now click on screen, one new screen window will open. This is screen builder through this we can create screen and get input from user.



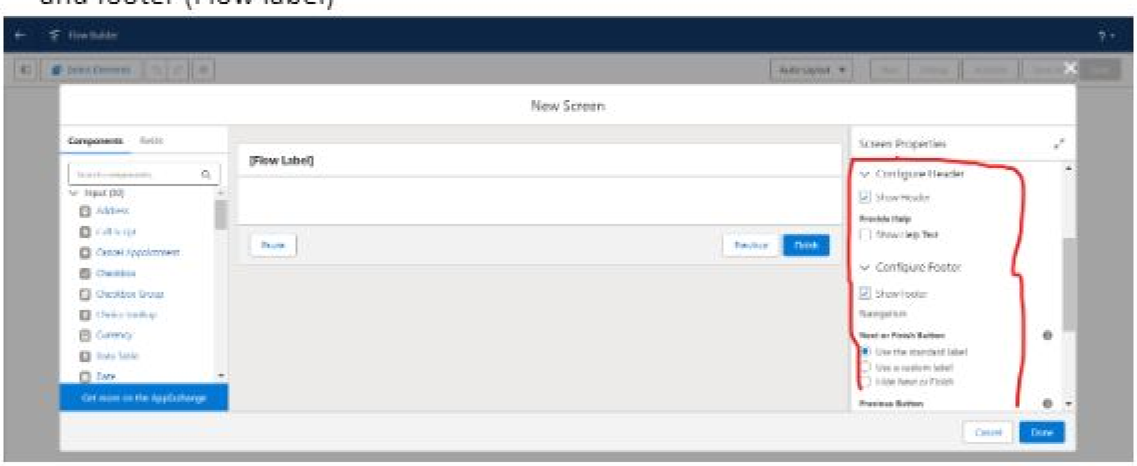
- Now we have to decide what are required field to create an opportunity record. For example, we are going to create opportunities record so go to sales application and click on opportunities tab and click on new to create new record and click on save without entering any value so that required field will be visible.
- Here, opportunity name, stage and closing date are the required fields. Its mean when we want these information from user through screen flow user have to enter this information otherwise we can’t get information from user through screen flow.



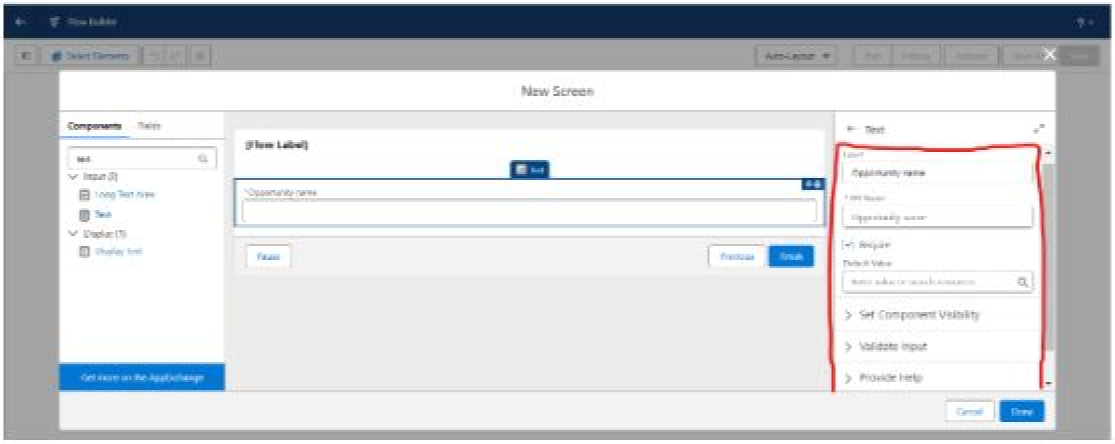
- Now go the screen flow builder, in left hand side we have screen properties in which we have to enter label and api name. screen is also an element in the flow which need identification.



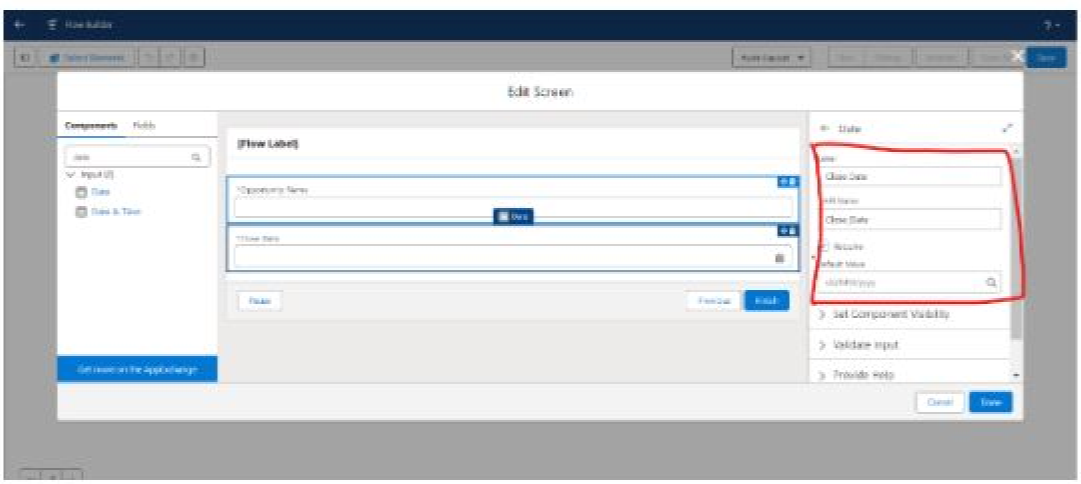
- In middle of the screen, we have header and footer using configure header and configure footer. Using configure header and footer option we can remove the header and footer (Flow label)



- In footer we have 3 buttons pause, previous and finish. We can control these buttons using configure footer.
- At left hand side we have components and fields. Here, we are going to add some components like opportunity name (text). Search text in components and click on it so that text comes in field.
- On right hand we have screen properties of the text components then required box. Apart from this we have component visibility (based on condition who can see this component. Then validate input (to show error message)

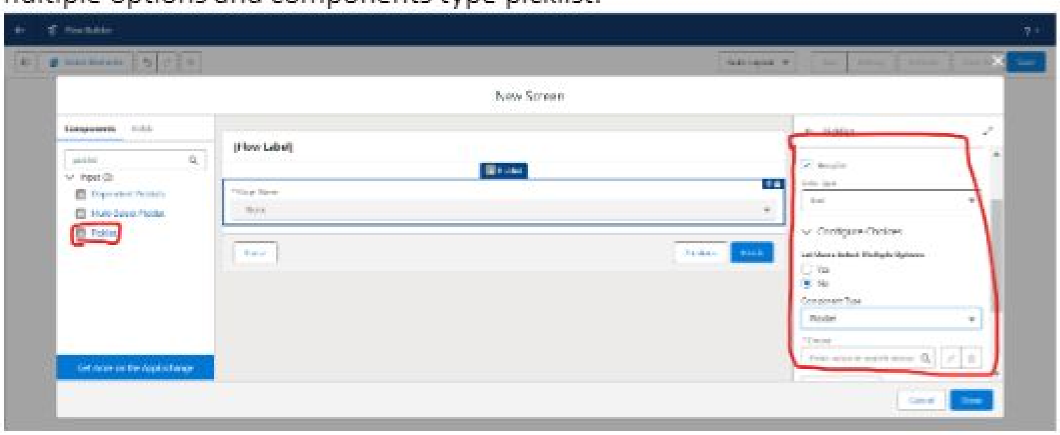


- In same way we have to enter close date. For this search for date in components and click on it so that it will show in middle screen. If we want to give default value so we can give using default value field.

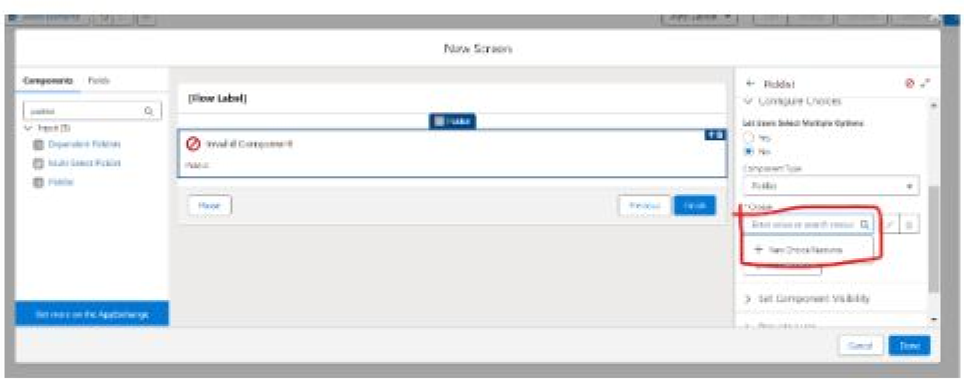


- In this way we add two components text and date. Now we have to insert 3rd element stage.
- Now click on done so that 1 screen will created.

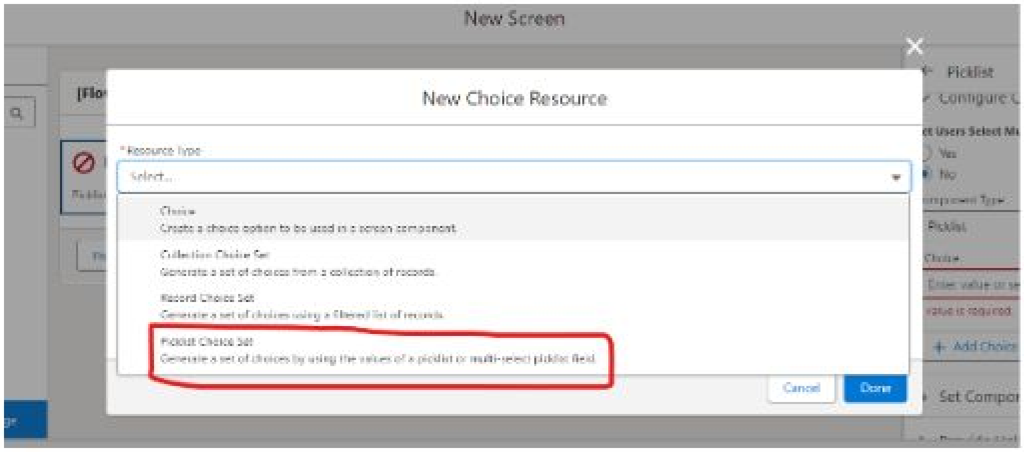
- after that click on + sign below 1st screen so that we can create another screen for stage. After that enter label for 2nd screen.
- Here, we have to make picklist because stage is a picklist in opportunity records. And it contains lots of picklist value. So, we need to make screen flow which populates all value.
- For this search for picklist in components and click on it so it will insert into the middle screen. After that enter label and api name, data type is text, let user select multiple options and components type picklist.



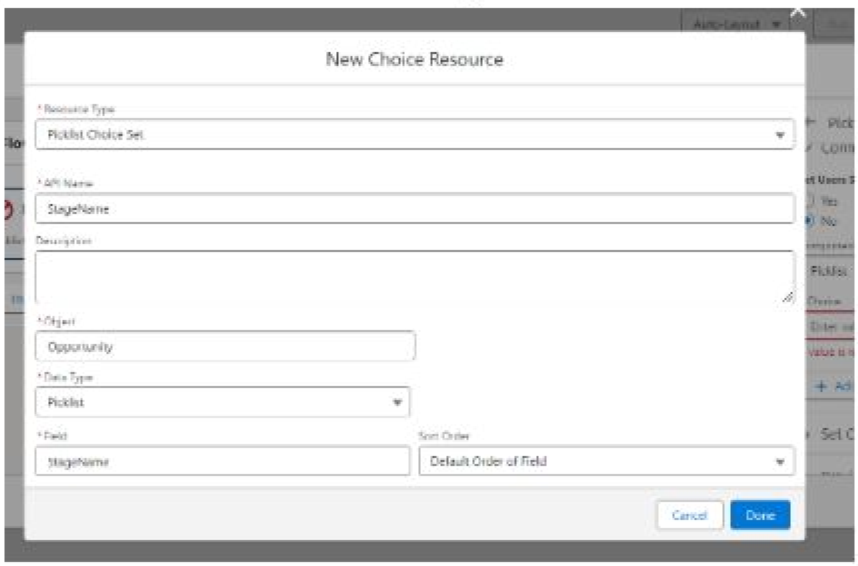
- Now we have to insert the picklist option same as opportunity object stage record options. Now we have 2 options either we can enter picklist data manually or we can extract picklist value directly from opportunity object's stage records.
- Here, we are choosing 2nd options. Now click on choice in right hand side of screen properties and click on new **+New choice Resources.**



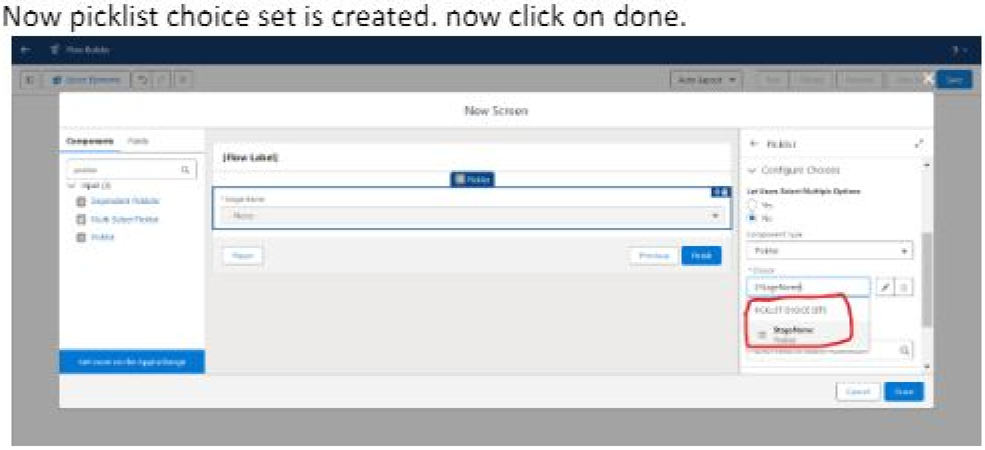
- After that new resource choice page will open. In which we have 4 options here we are taking picklist value from opportunity object so select 4th option.



- After that enter Api name then search object as opportunity. After that select data type as picklist. After that select the field stageName and click on done.

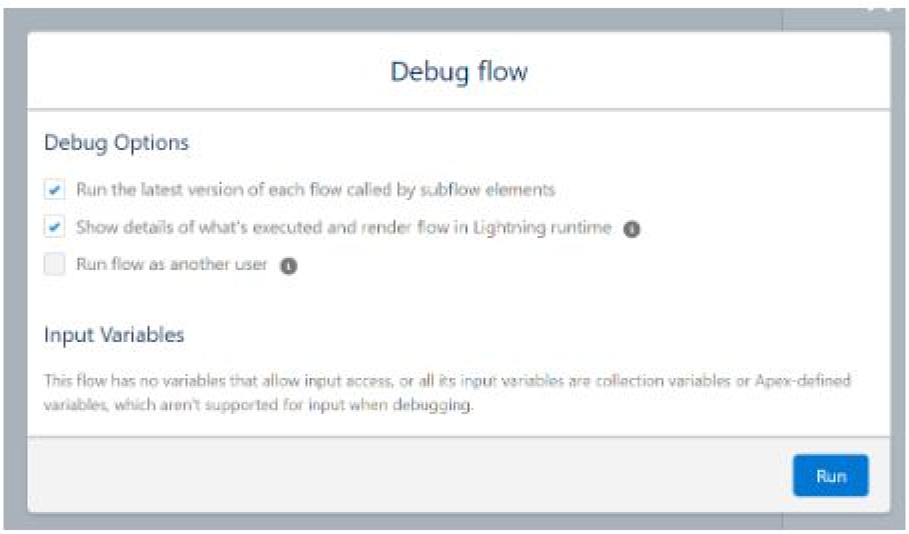


- Now picklist choice set is created. now click on done.



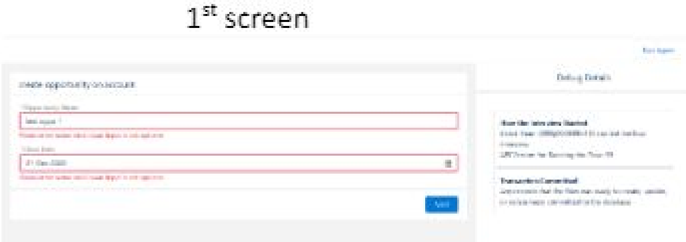
- In this way we created 2 screen flow. Click on the small icon on right hand side we will see the overview if components, resources, and screens.

- Now click on save button and enter label and api name.
- Now before activation we have to **debug** the flow as per scenario.
- Click on **debug** button so that we can assure that our flow is working fine.
- After that click on run to run the flow.

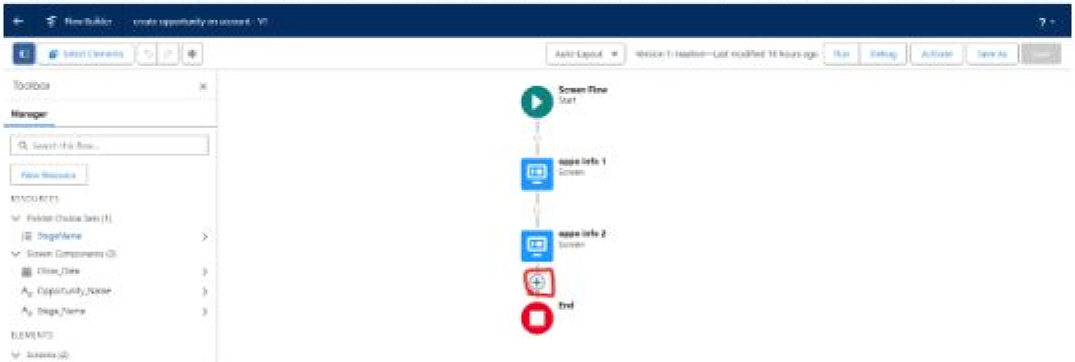


- In next page we will verify the flow like its working fine or not. 1st screen run first after that clicking on next button 2nd screen will run.
- After all, done just click on finish button.

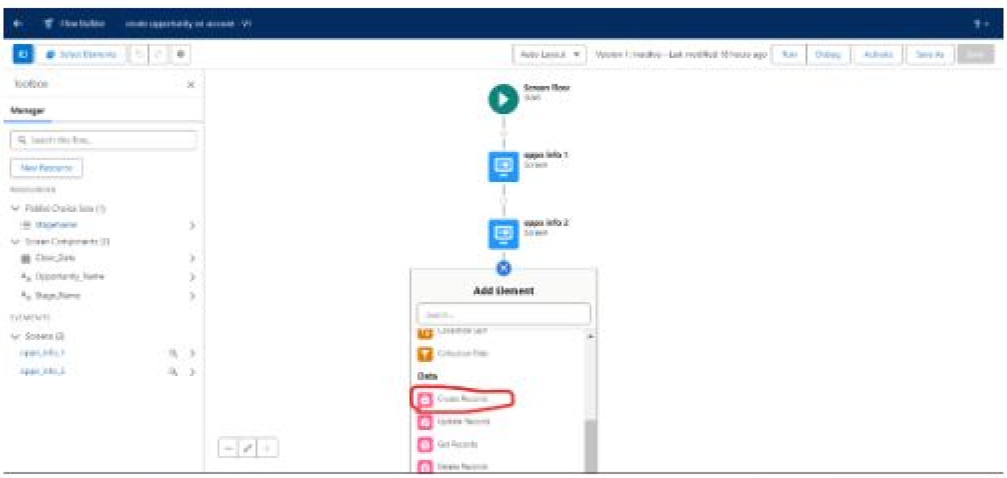
1st screen 2nd screen



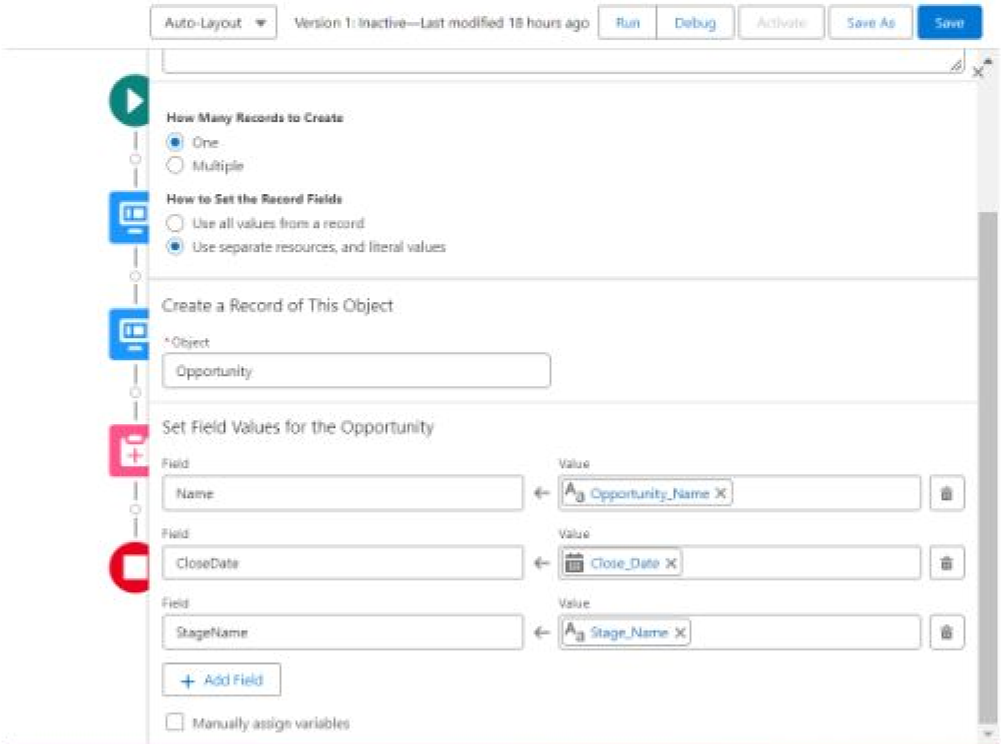
- After successfully run (debug) the flow returns to the canvas.
- Now after verifying that all the flow working fine like get opportunities name, close date, and stage. In the background we have to create an opportunity record.
- To create opportunities, record in background click on + sign below 2nd screen flow.



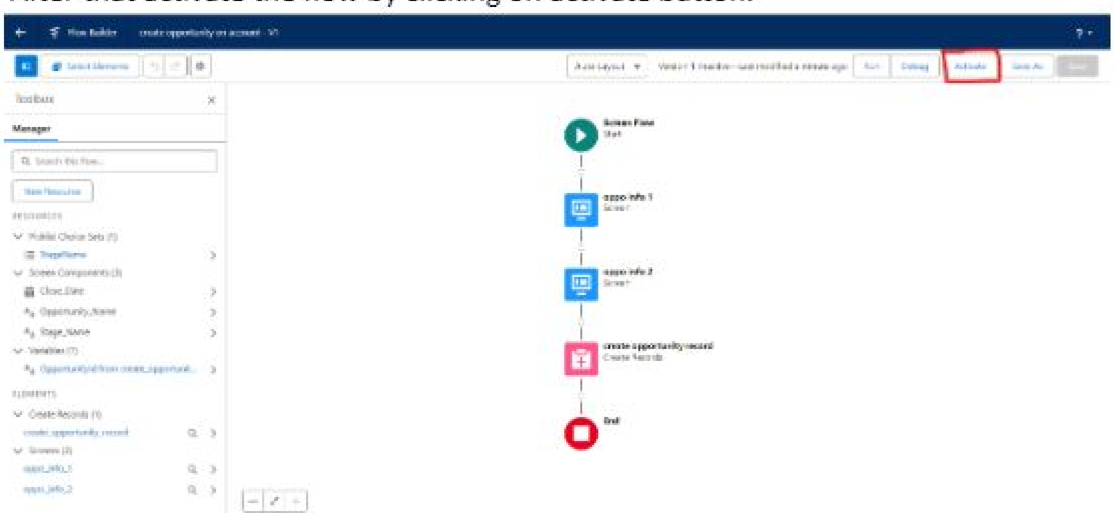
- After that select **create record** elements under **Data**.



- After that enter label and API name,
- In option **how many records to create** we are selecting **One** for this scenario,
- In **how to set record fields** we are **selecting Use separate resources, and literal values**. If we select **multiple** in **how many records to create** so we need to select **Use all values from a record.**
- After that select object as **opportunity**.
- After that we have to map the opportunity field with field components which we created in flow. Like **Name** with **opportunity name**, **close date** with **close date** and **stagename** with **stage**. And by clicking on Add **field button** we can add the numbers of field.
- After that click on done.

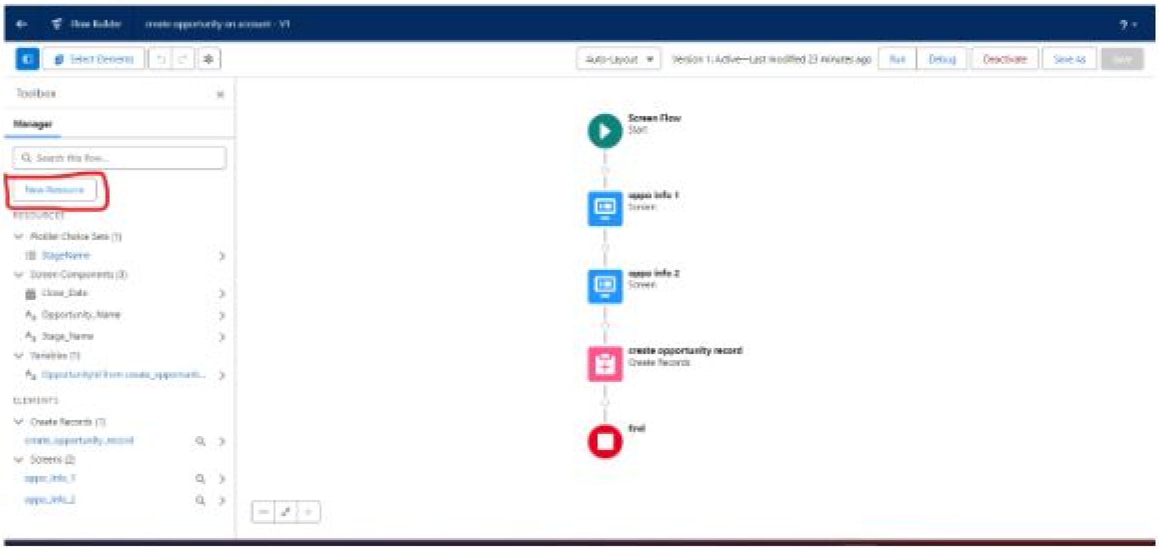


- After that create a record is created.
- After that click on save again.
- After that activate the flow by clicking on activate button.

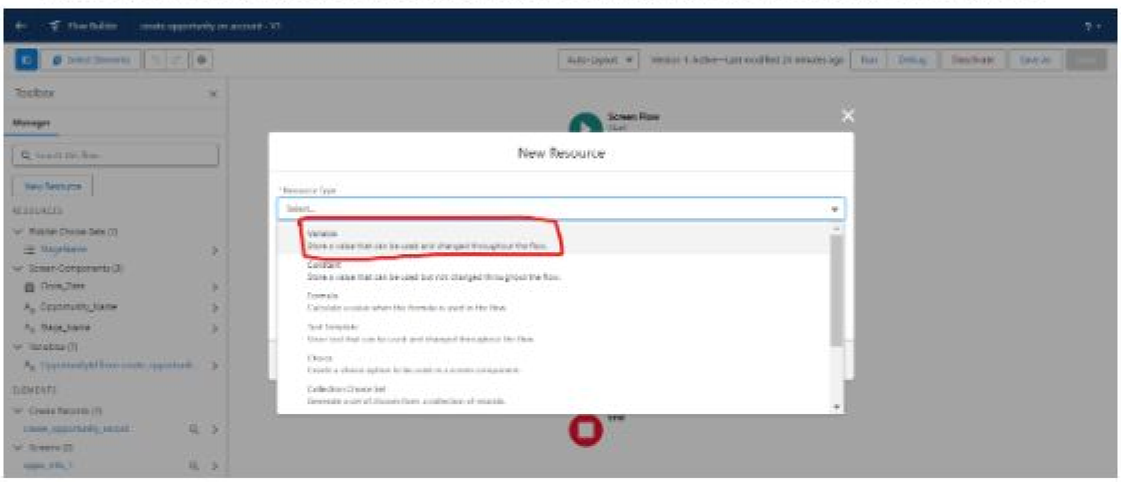


- Now we can debug and enter the value which is visible in opportunity records, but we can see that its not linked with account object, so we have to do some steps to add this.
- Now go back to screen flow canvas so that we can create a link between opportunities object flow with account object.

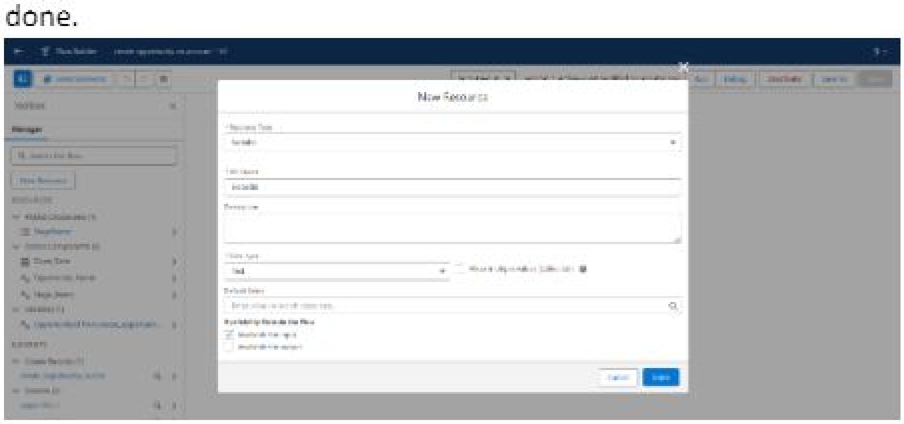
- To link the opportunities object with account object we have to create resources **variable**. For this click on Add resource button on at left hand side.



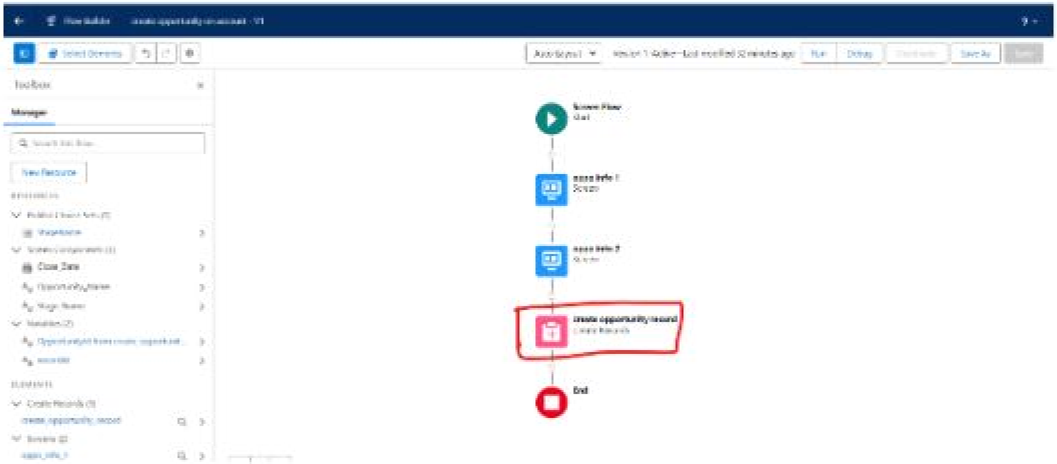
- After that select Variable from the drop-down menu to record the account id.



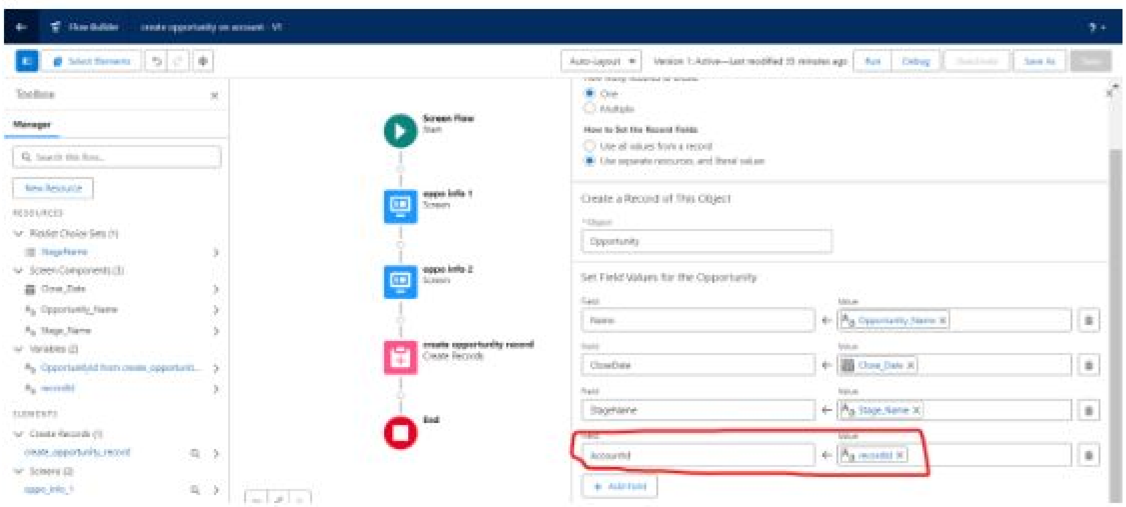
- After that enter the API name and api name should be **recordId** and data type is text and always select **available for input** in **availability outside the flow** option. And click on done.



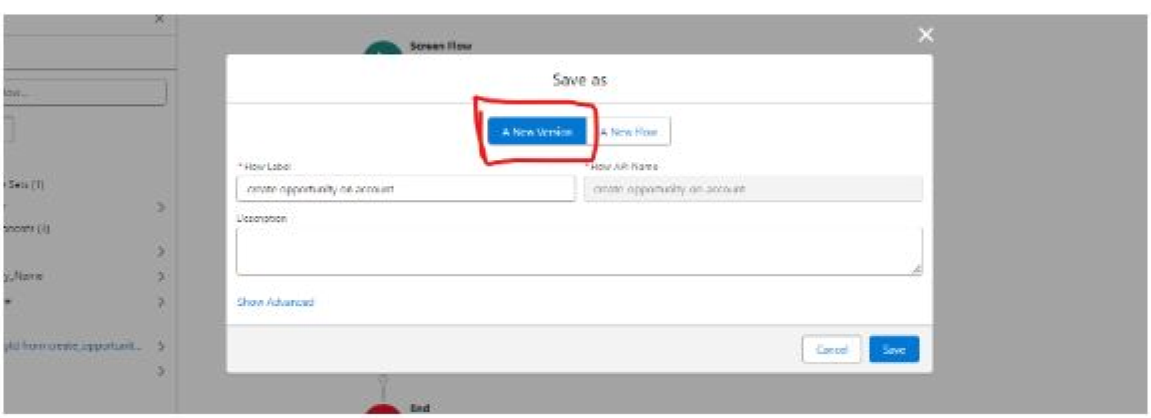
- After that click on create record field which we created earlier to map the Id field. And click on edit elements.



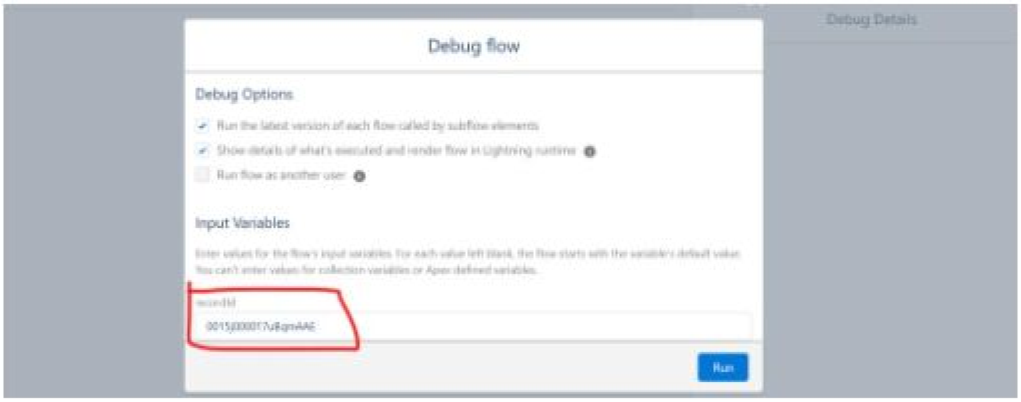
- After that click on Add filed button and add the recordId variable. In field type account id and value will be recordId so that I will be lookup to account object.



- After that click on save as to save the flow and select **A new version**. And click on save. When do save as always click on activate button to activate current version.



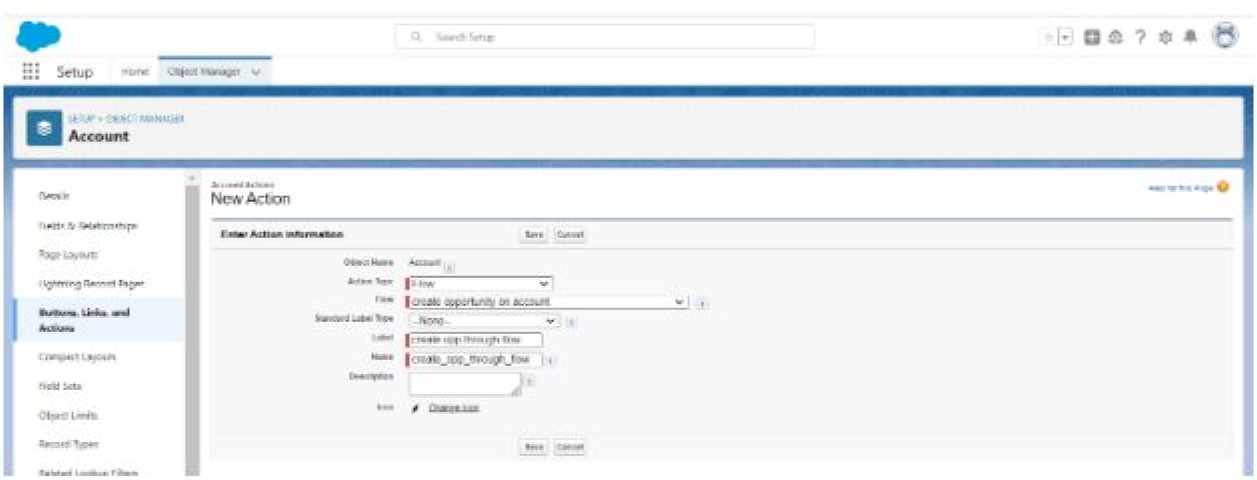
- After that again click on activate.
- After that again click on debug and check. When we click on debug button recordId variable also available, so we have to enter the account id of any records for this open record and copy the id from the url and paste it in debug window.



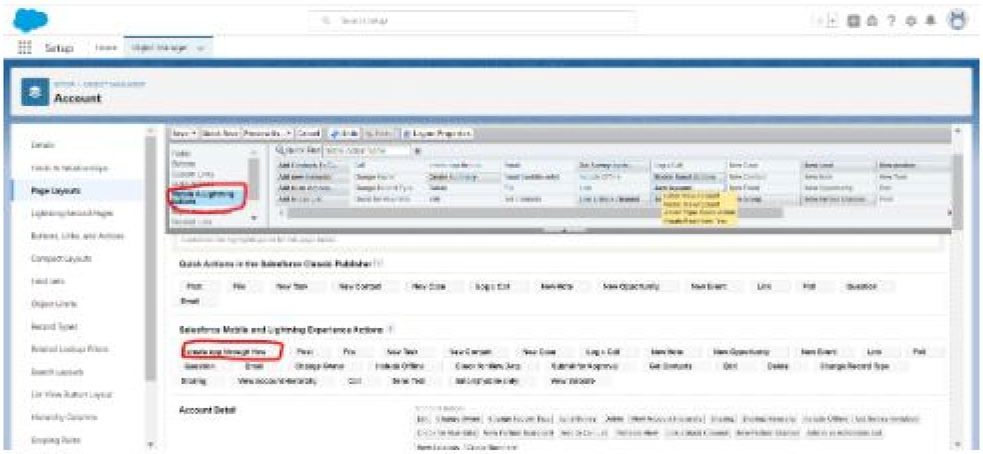
- Now we enter any value, so it relates to the account record of that account id.

<u>Screen flow placing in quick action:</u>

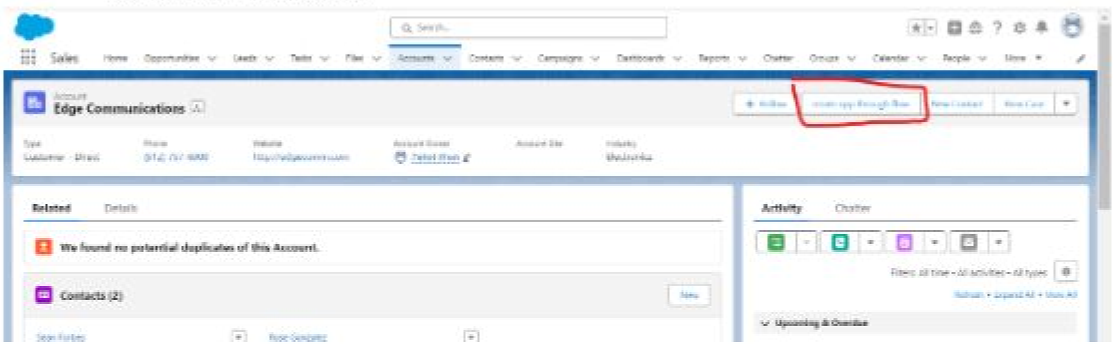
- Now we are going to place this flow in quick action.
- For this, go to object manager and select the account object we are created opportunity flow, which is related to account, so we have to add that flow to account object.
- After that click on button, links & actions.
- After click on new actions.
- After that select flow in Action type.
- After that select flow like create opportunity on account which we created. only active flow will be available here.
- After that enter label and name.
- Click on save.



- After that we have to add this action to page layout and select account layout and click on mobile and lighting action. Click the action we created and drag and drop inside the salesforce mobile and lighting experience.
- And click on save.

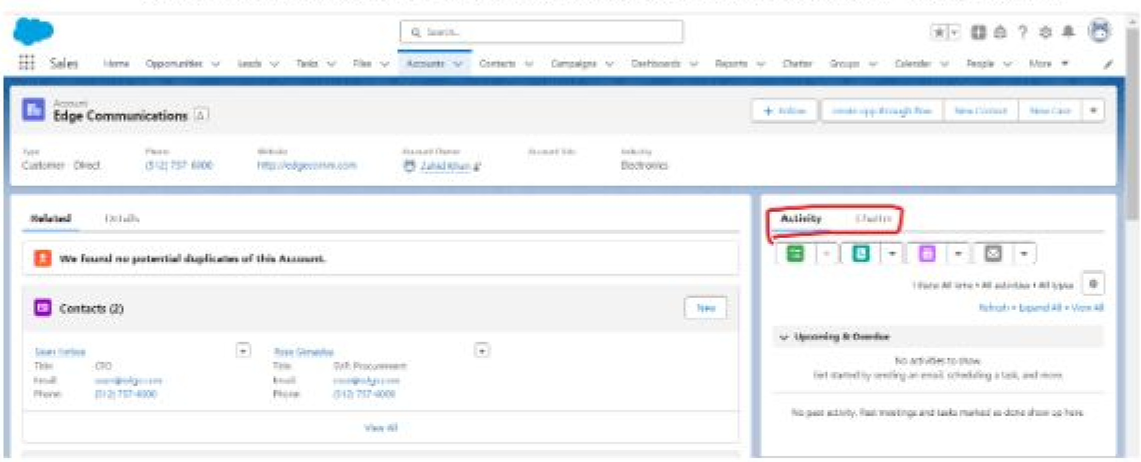


- After that go to account object page and open any record and check that button will available.

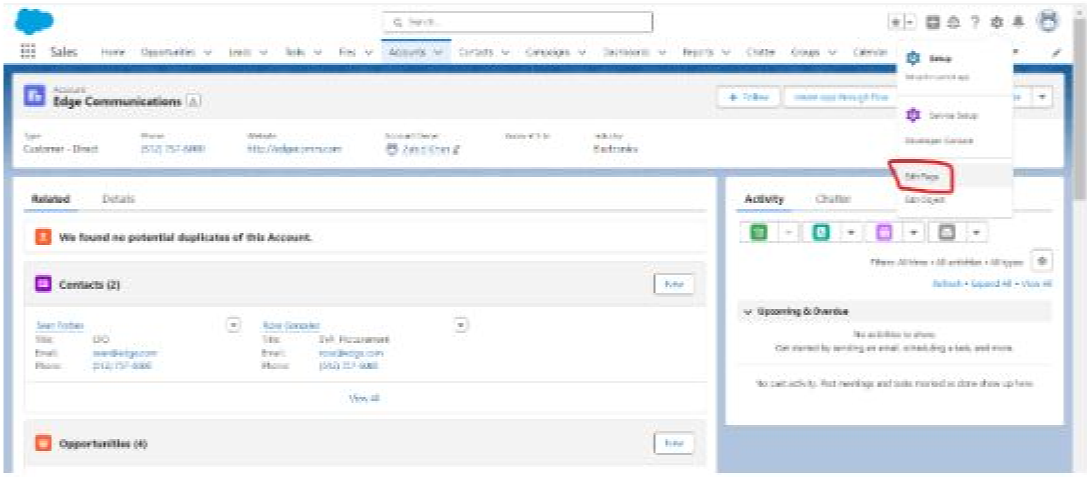


<u>Place flow on record page (account object) record page:</u>

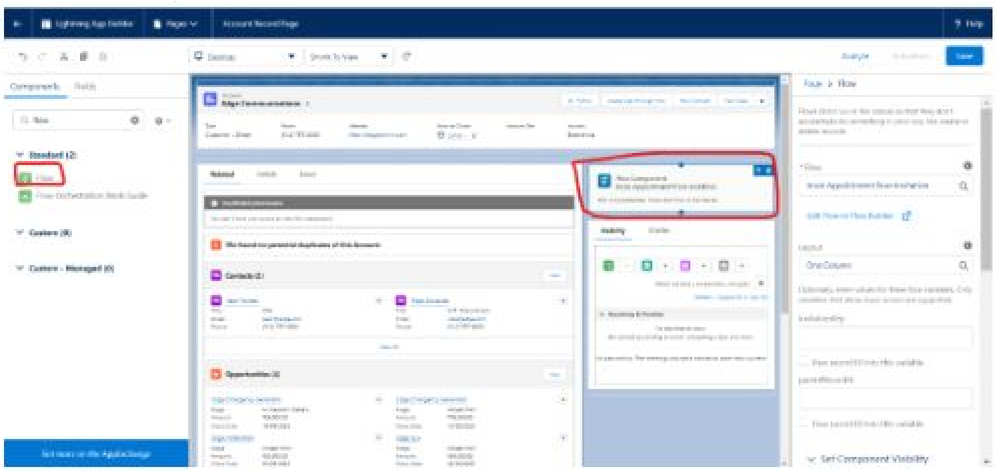
- Opportunity flow will be placed before activity and chatter component.



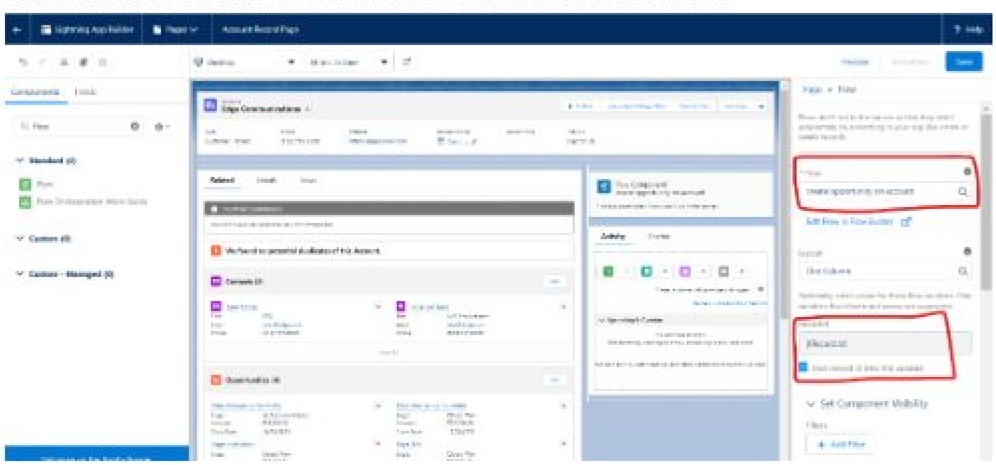
- Click on set-up icon and click on edit page. I will open lighting app builder.



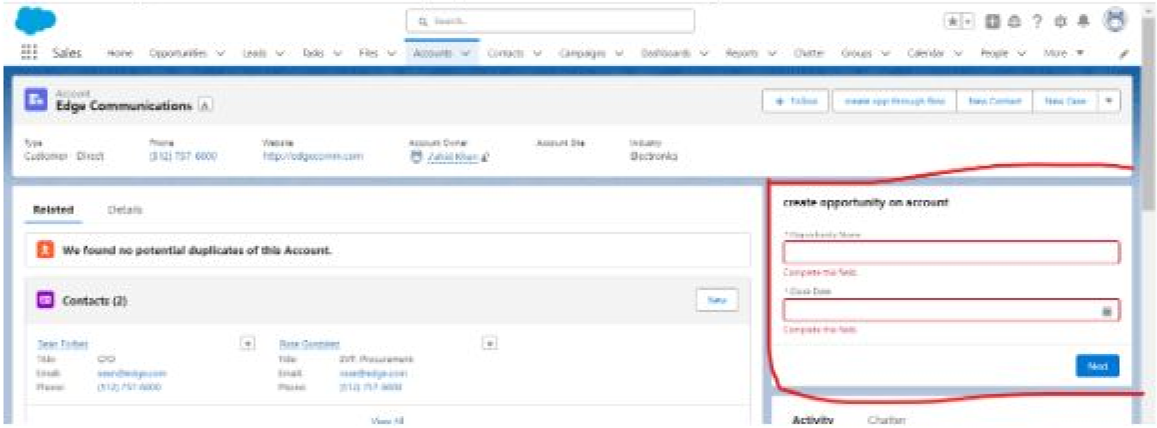
- After that search for flow on left hand side components. After that click drag and drop flow above activity tab.



- After that we can see the flow field at right hand side just select the flow which we created **create opportunity on account**. And enable the check box of pass recordId into this variable. After that record id will be stored in this variable.

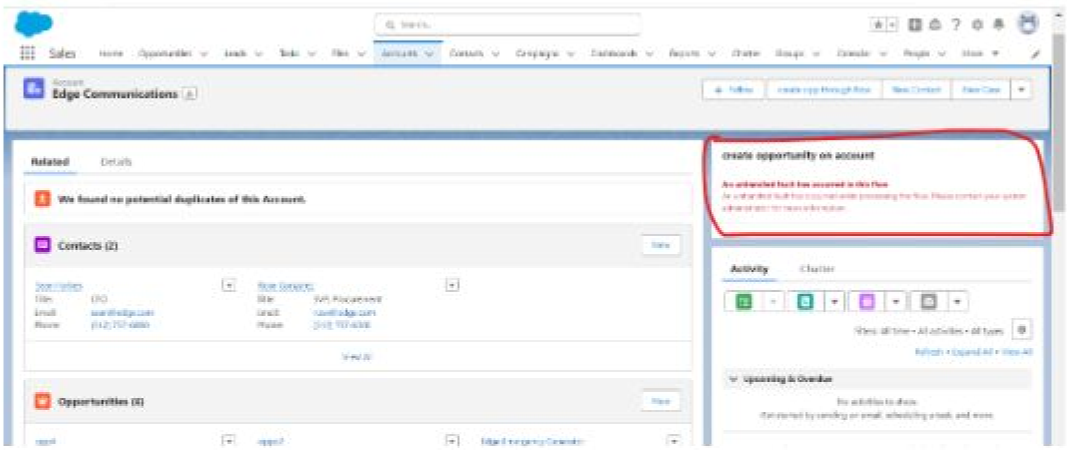


- After that click on save.
- After that go back to the record page and see the changes.

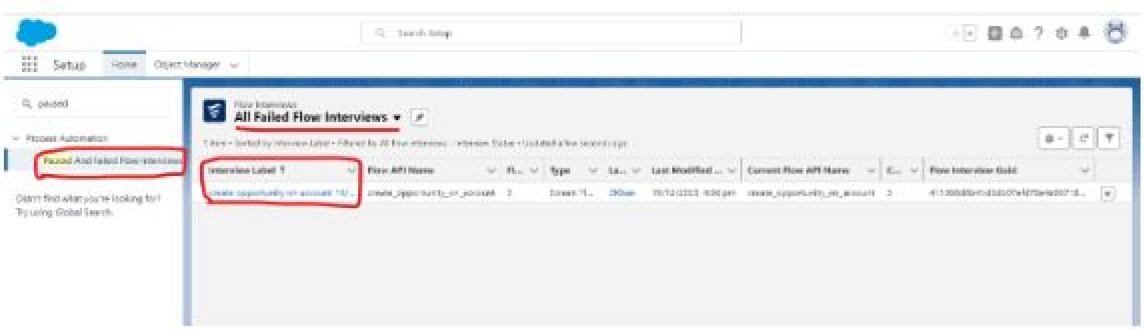


Handle flow error:

- Whenever we create flow and forgot to map any field then an error will come.



- To locate the error, go to set-up and search for paused and failed flow interviews. All failed flow interviews will show here.
- If we click on the interview label so that we can see the details of this error.



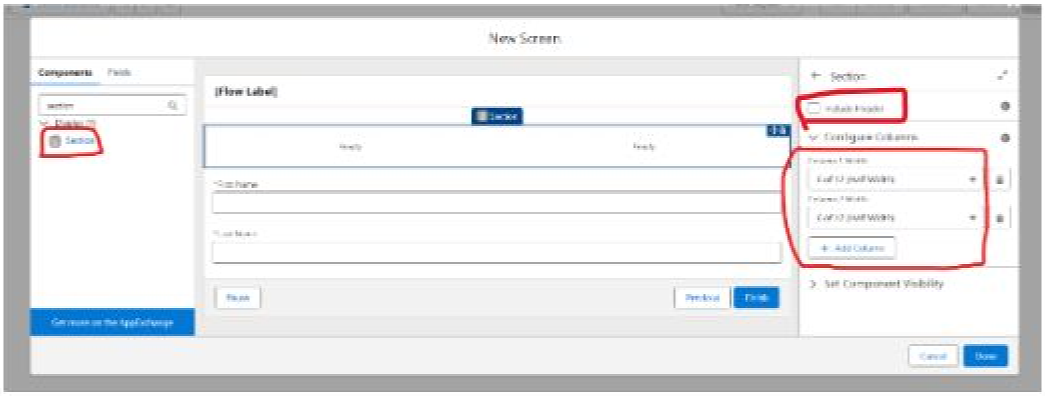
- We can see the error on right hand side.

Flow continuation – Screen flow 2

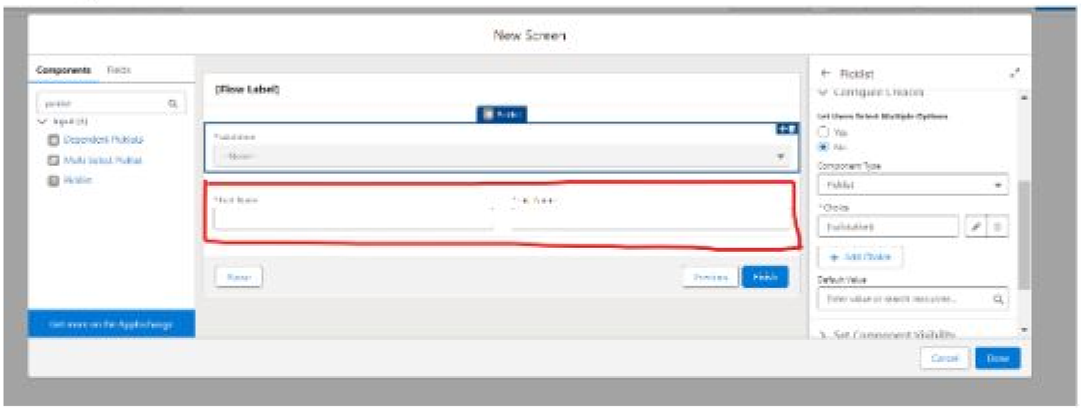
Scenario:

1. Create a contact by placing screen flow on home page of "zahid khan tech school".
2. Option to attach a file and file should be related to contact.
3. Option to link contact with an account [lookup flow].
4. Upon contact creation send an email.
5. Try to place flow on app page and test.

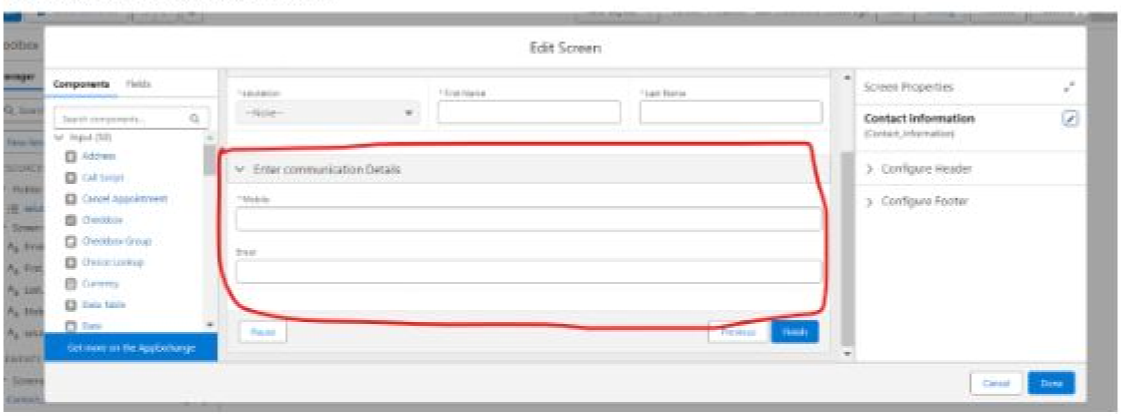
1. **Create a contact by placing screen flow on home page of "zahid khan tech school".**
    - 1st of all check the required field of contact in sales application which is last name.
    - After that we have to create a new flow for contact. For this go to home and search for flows in quick action and click on it. After that click on new flow button.
    - After that select **screen flow** because we want to take data from user.
    - After that click on + sign in canvas and select screen.
    - Then enter the screen flow label and Api name.
    - After that search text in components and place it in middle screen of screen flow.
    - Enter the label First name and Last Name. here, we are making two column layouts. For this search for section in components.
    - After that click on Add column button on right hand side so it creates 2 columns.
    - If we want to add header to this 2-column layout so we can add by check the box **includes header.**



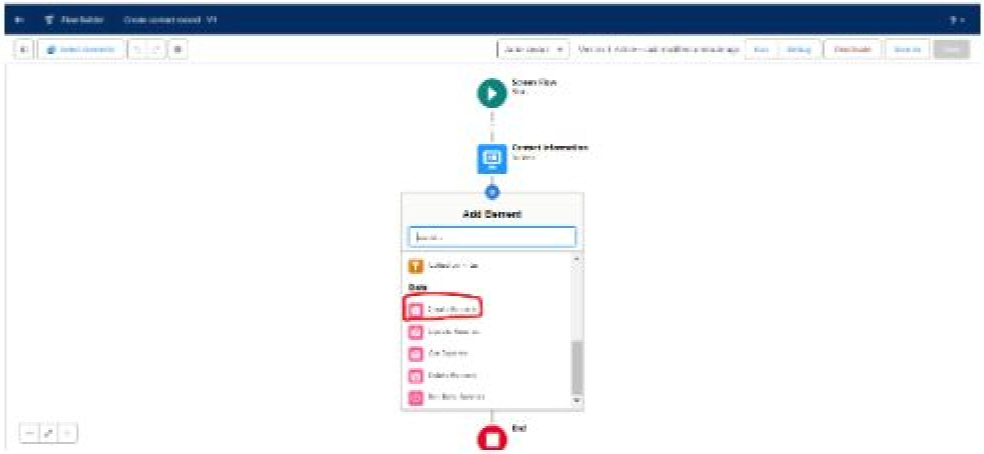
- Now drag the 1st name and last name into this 2-column section.



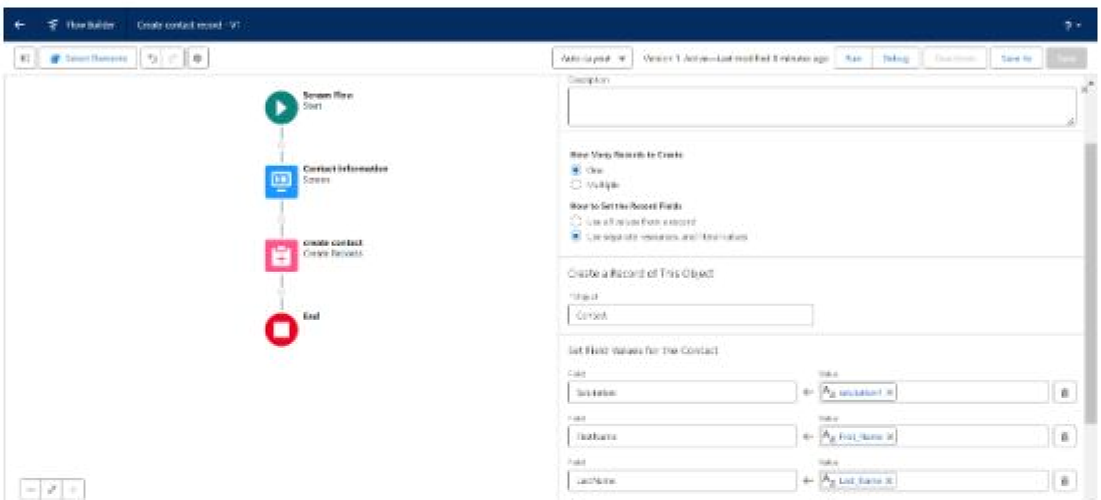
- In same way create mobile field and email field using text components and also includes header. And click on done



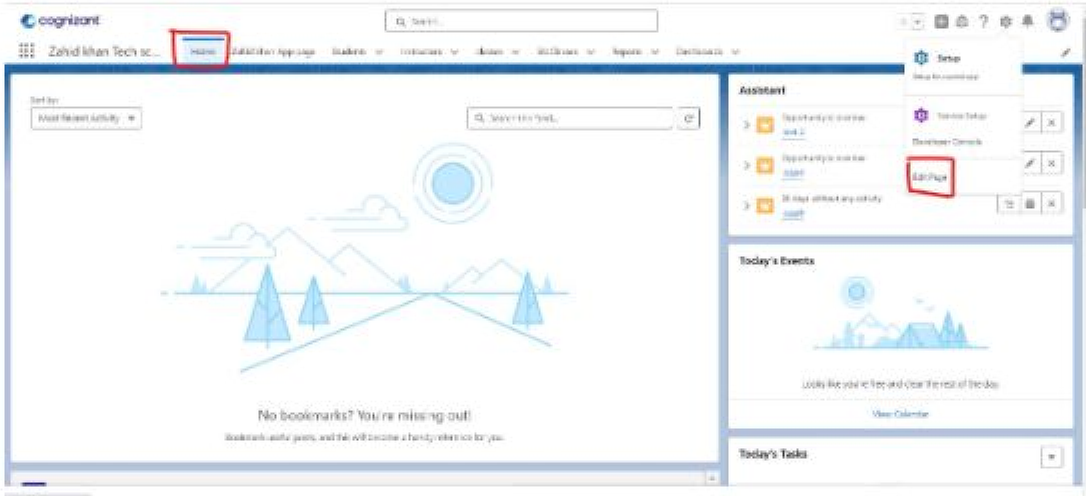
- After that save the flow and debug the flow.
- Now we have to create record from Data.



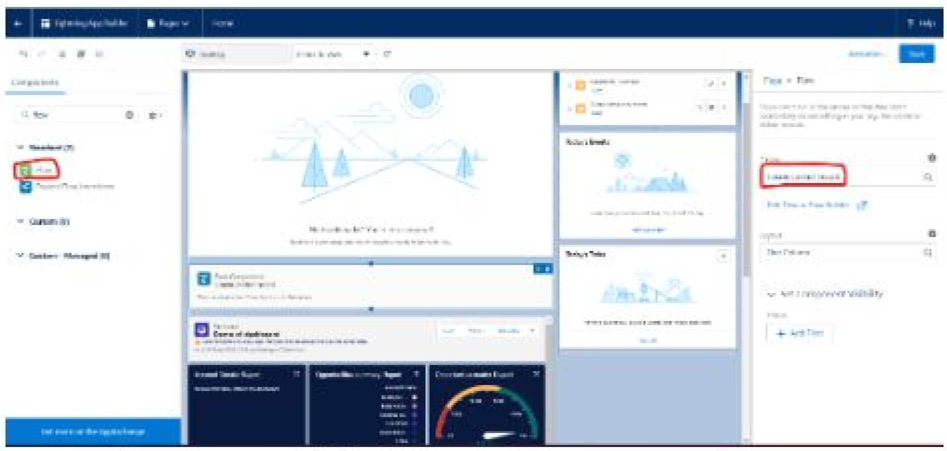
- After that enter the label name and api name.
- How Many Records to Create as **one.**
- How to Set the Record Fields as **Use separate resources, and literal values**.
- After that select the object as contact.
- After that enter the field and match with the value so that it takes data from user.



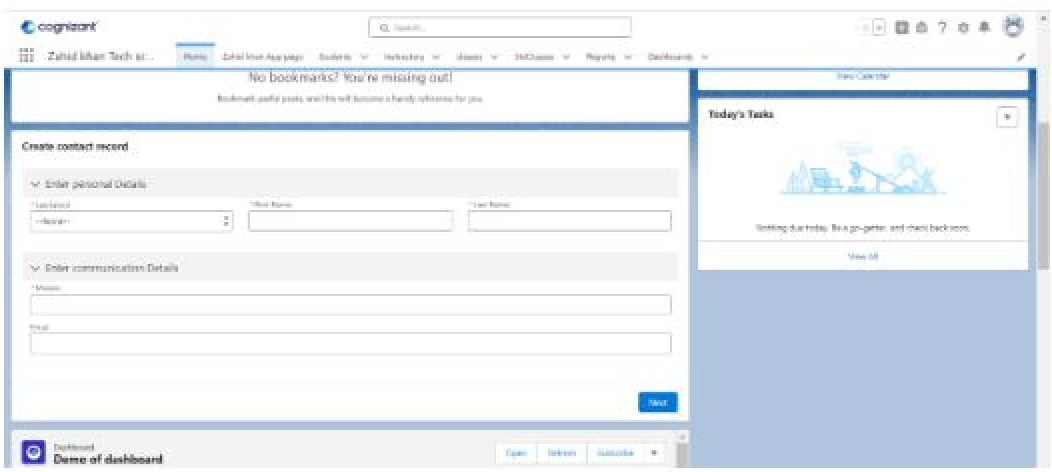
- Now we are going to place this contact flow in the home page of ‘zahid khan rech school’.
- Go to the ‘zahid khan tech school’ app page.
- After that click on home tab.
- After that click on set-up icon and click on edit page.



- After that search for flow in components and drag it in middle page.
- After that choose to **create a contact flow** which we created earlier. And click on save.

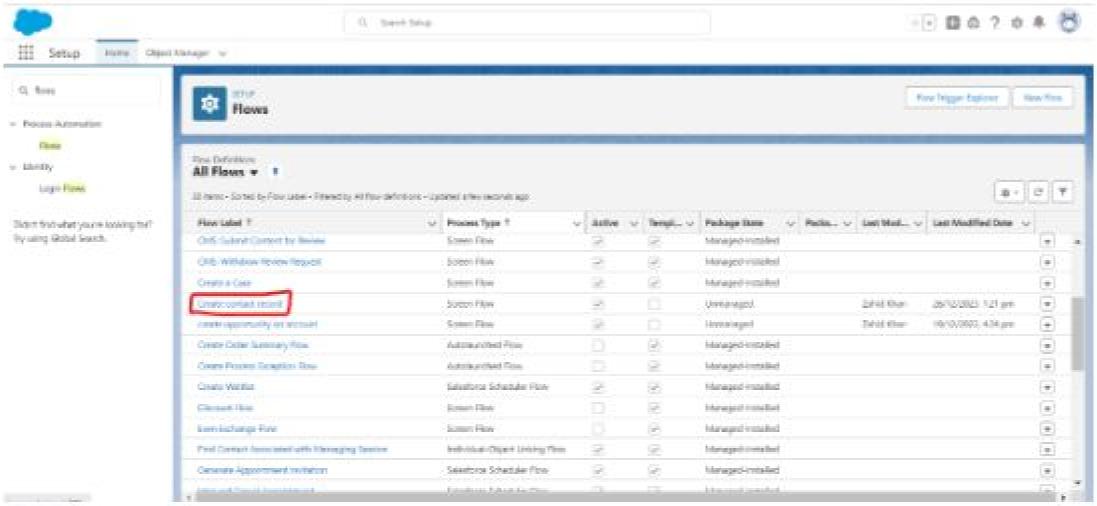


- After that go to home page and check the results.

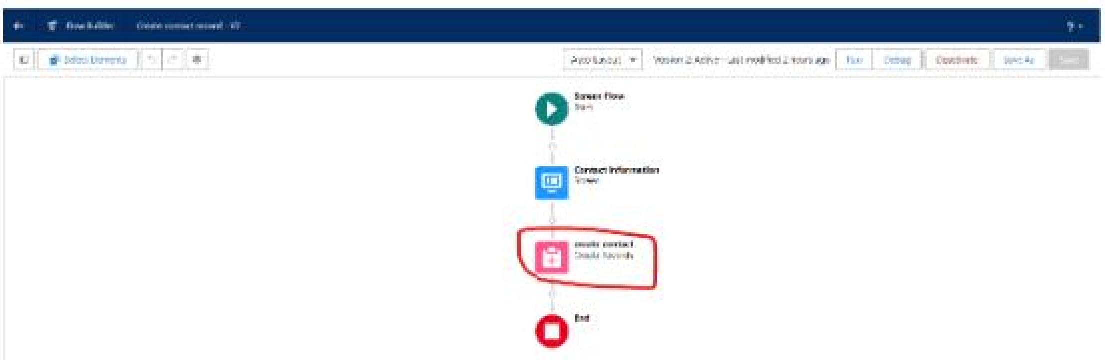


<u>Option to attach a file and file should be related to contact:</u>

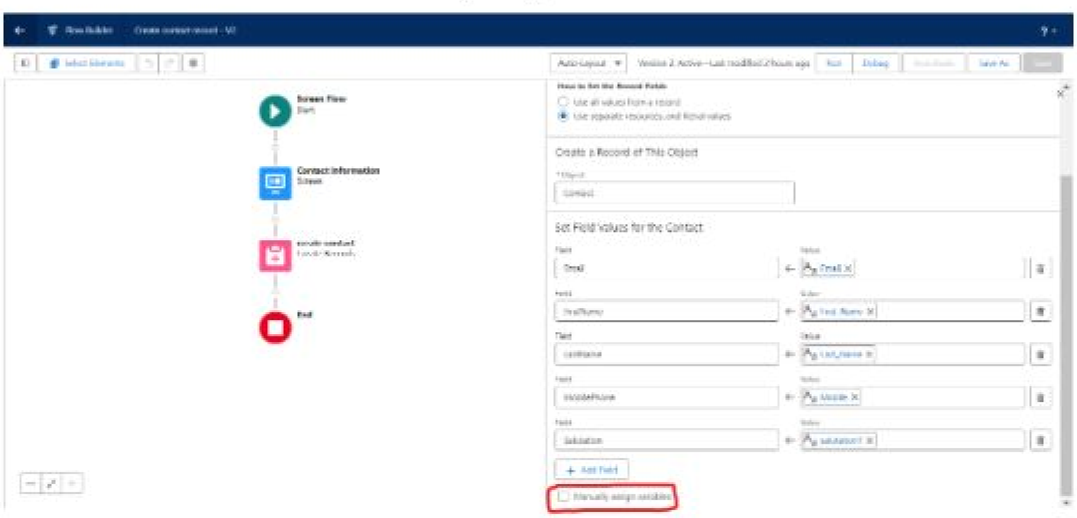
- First, go to the contact flow which we created earlier.



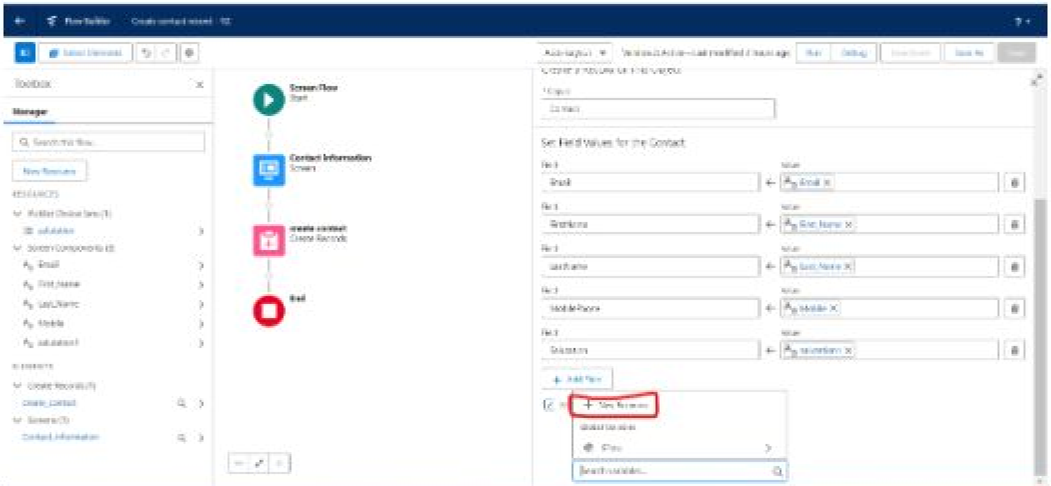
- Before creating file upload, we have to give a **related record id**. For this open the create record screen by double clicking on it.



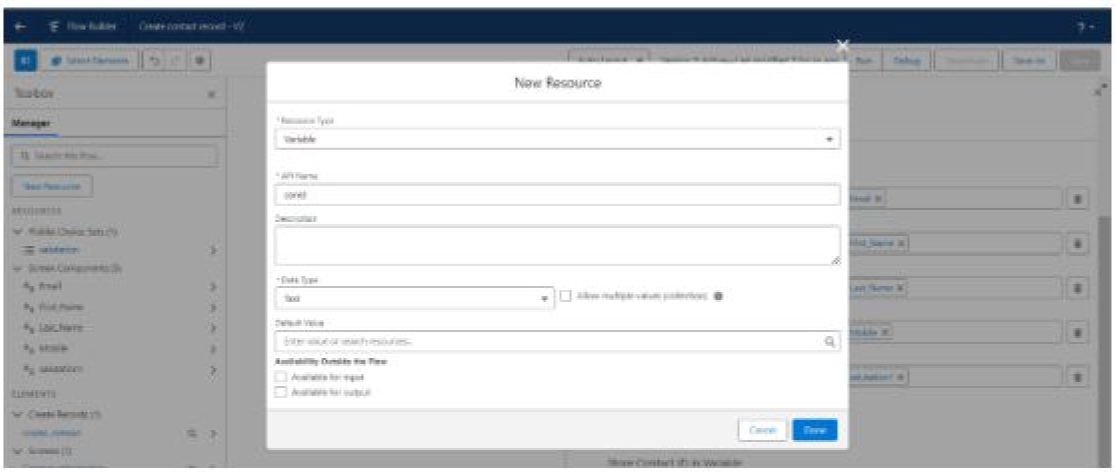
- After that check the box **Manually assign variable**.



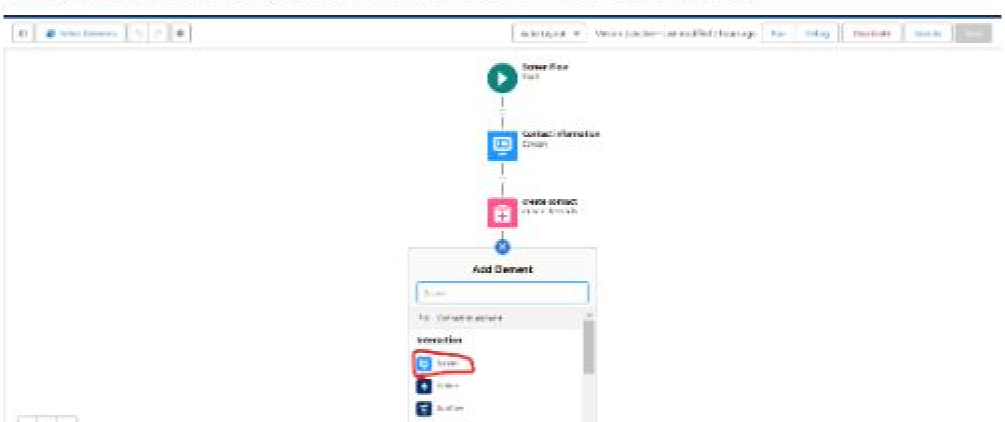
- Now we got a search box of **Store Contact ID in Variable.**
- After that we have to create new variable for this click on **+new resources** option.



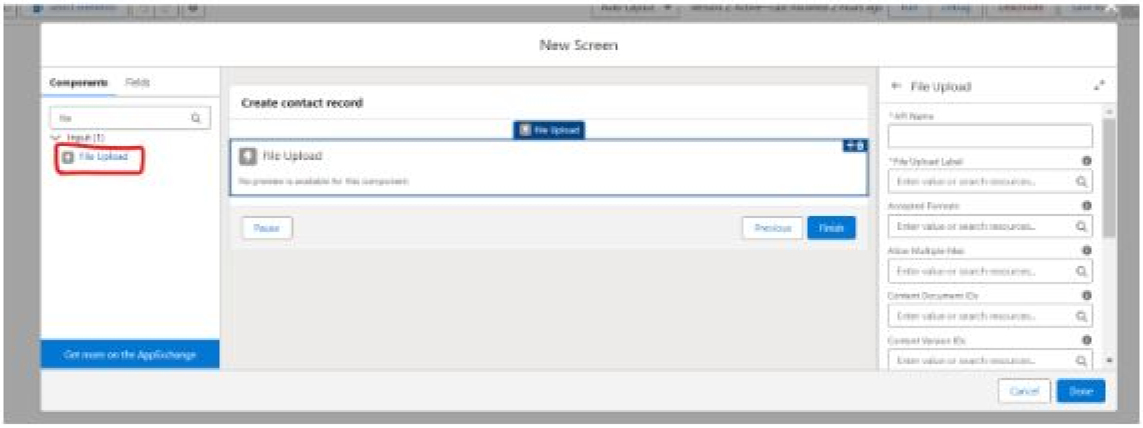
- Select **variable** from resources. After that enter api name, data type text and click on done.



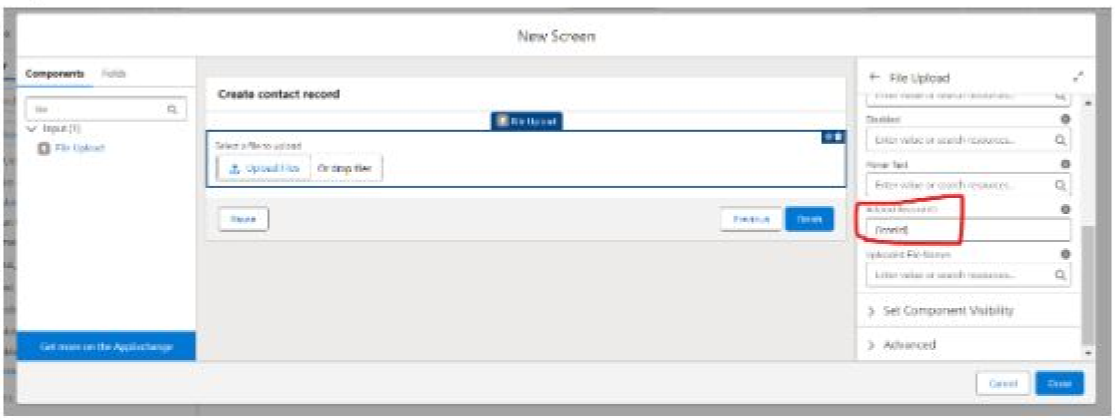
- Here what happen that if any contact record is created new created record id store in these variables (conId).
- After the create record add click on + icon to add one screen.



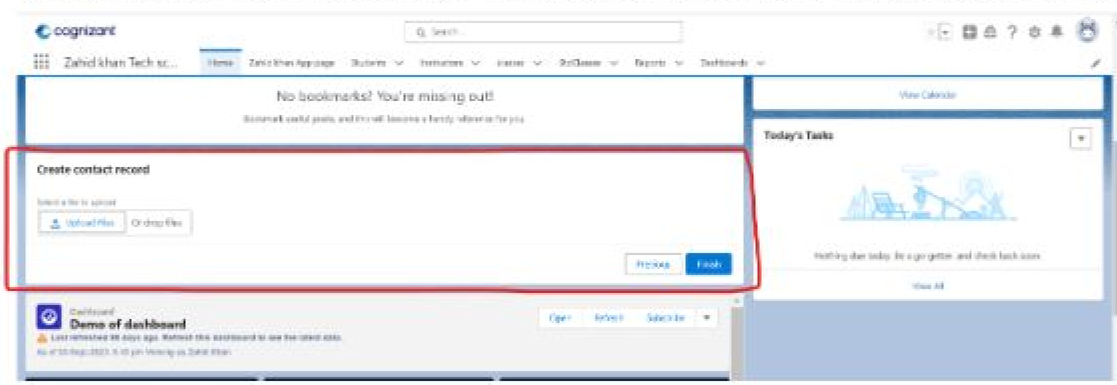
- After that enter the screen label and api name.
- After that search for **file upload** in components and place it in middle scree.



- After that enter the API name and file upload label of the file upload, now we have to provide related record id. add that variable **conId** which we created earlier.

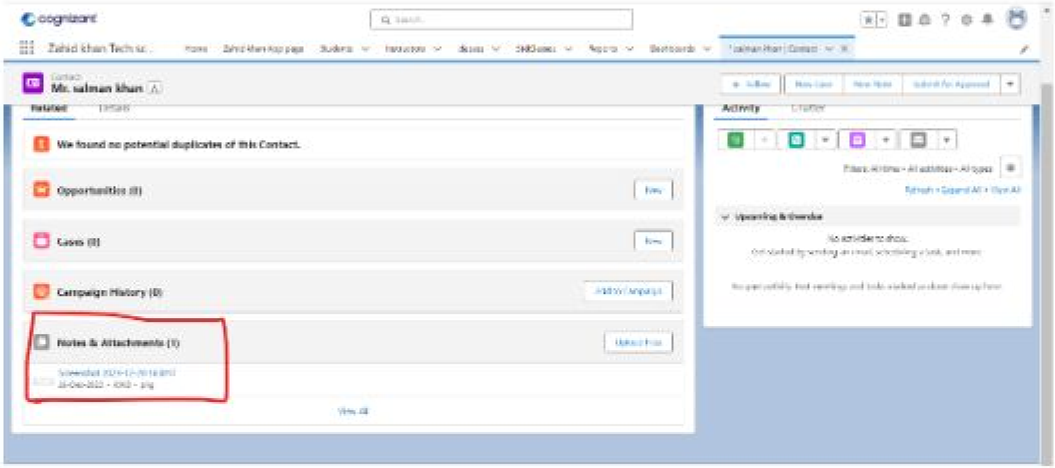


- After that click on done.
- After that save as the flow and click on activate.
- Now go to 'Zahid khan tech school' home page and check that file is uploaded or not.

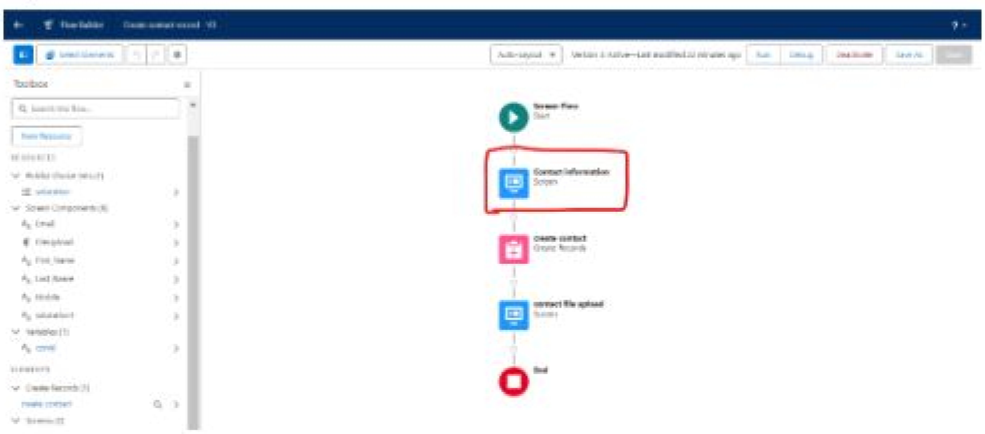


- Here we can see that we have an option to upload a file related to contact. Upload any file.

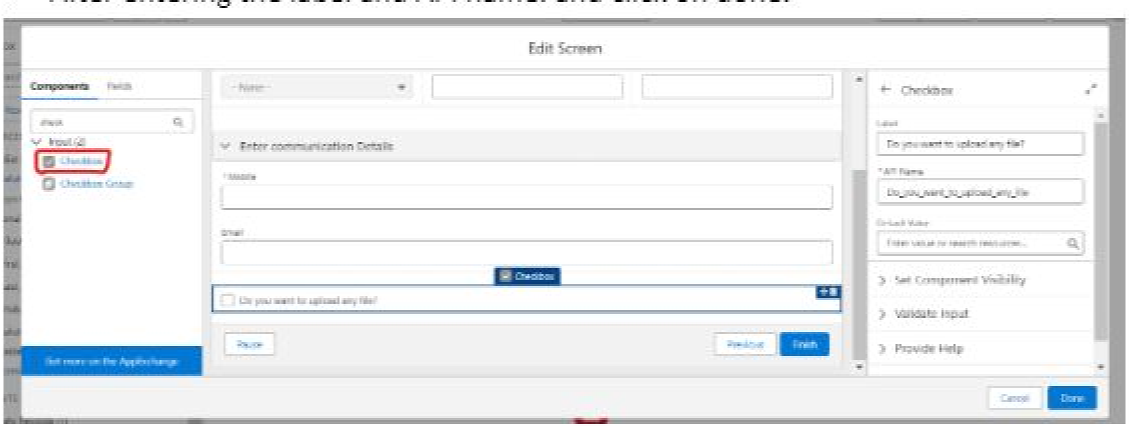
- After that go to contact object page in sales application and see that this file will be uploaded.



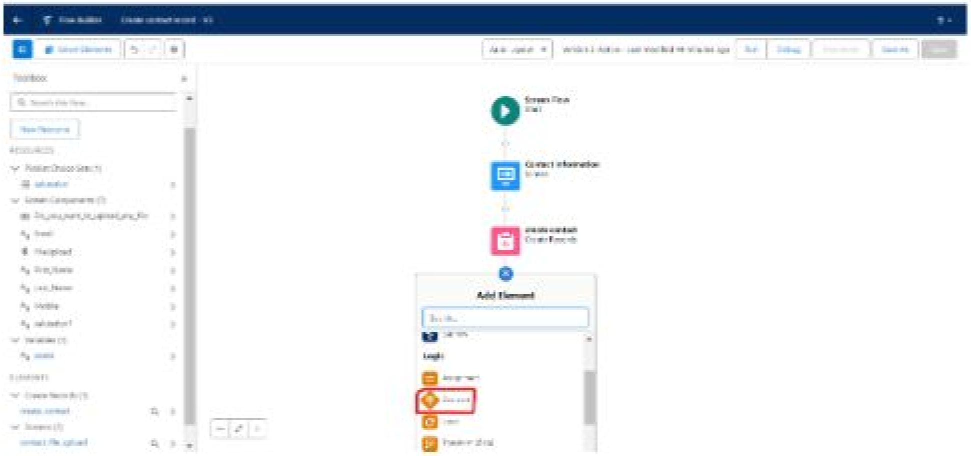
- We can also add check box in our 1st screen. If user want to upload file then they have to check the box after that they can upload file if unchecked then upload file steps will skips.
- To create this, we have to make decision logic.
- Open the contact flow which we created and double click 1st screen.



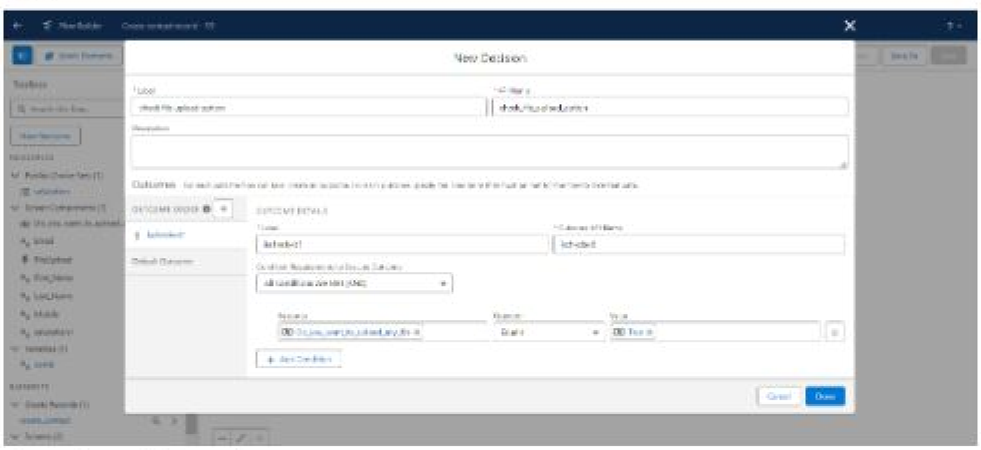
- After entering the label and API name. and click on done.



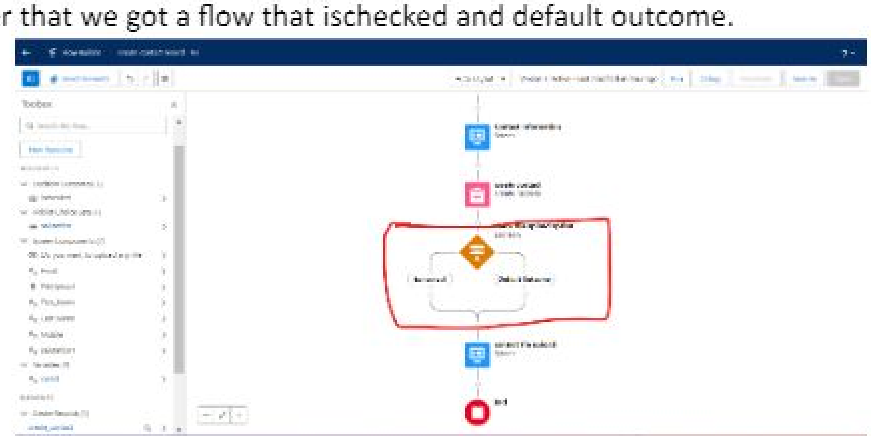
- After that click on + icon below create records and select decisions under logic.



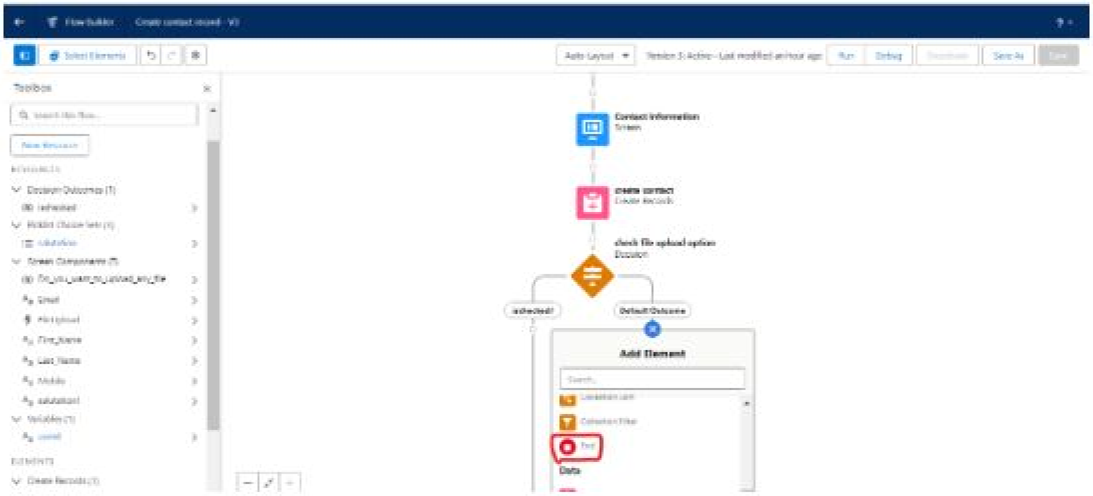
- After that enter the label and API name.
- After that enter the label and API name in outcome details.
- After that select resources that checkbox which we created in 1st screen. And operator is equals and value is true. Its means if the check box checked this decision will trigger otherwise default outcome will come. If we want to add more outcome, they we can do that.



- after that click on done.
- After that we got a flow that ischecked and default outcome.

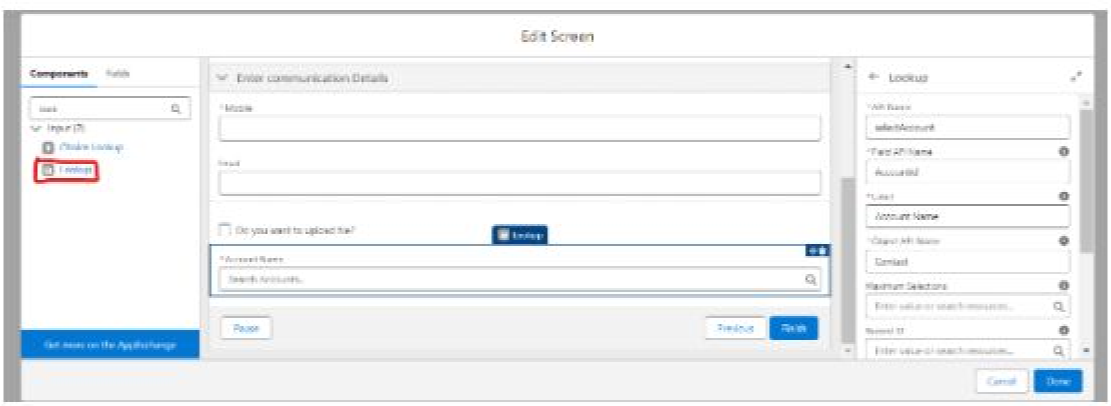


- Now we have 2 options if checkbox is checked so the file upload option will be visible. If not checked so the flow will end.
- To end the flow just click on the + sign below default outcome and select End from logic.

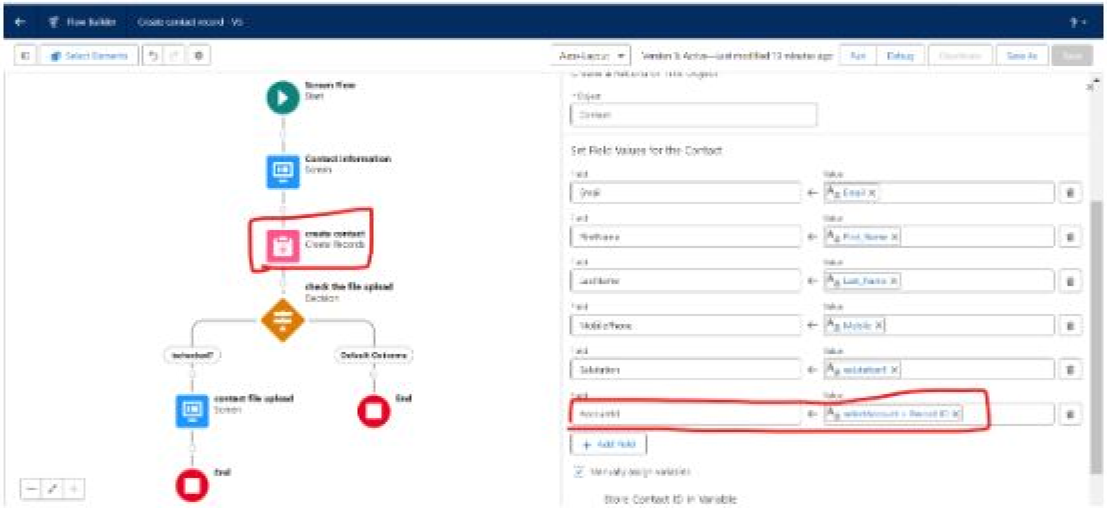


Option to link contact with an account [lookup flow]:

- To link the contact with an account record, double click on 1st screen and add **lookup** components.
- After that enter label, API name, field API name and object API name.
- Field API name should be the source API same here, we enter AccountId.
- Now we have to enter the object API name which should be source object here, contact.
- After that click on done.

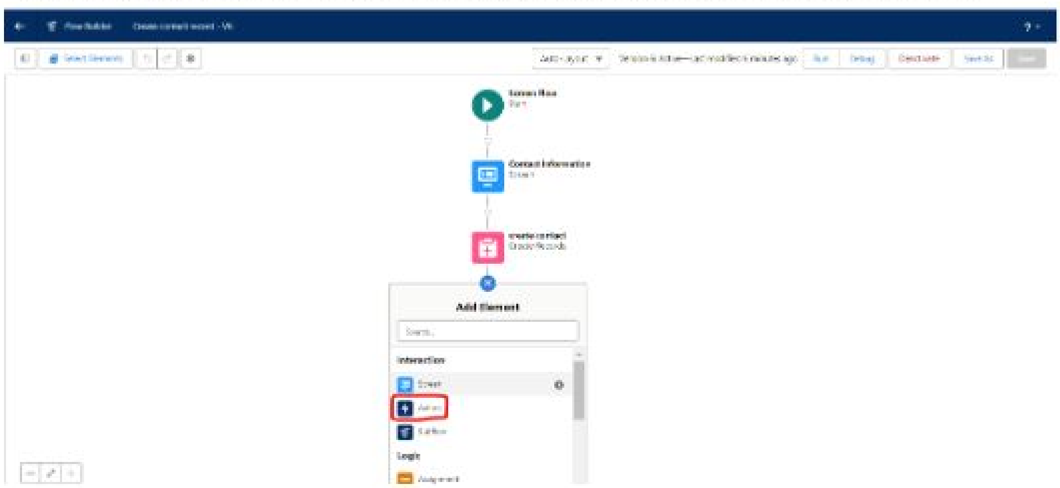


- After that double click on create record screen to add the account lookup.
- Now save as the flow and activate it.
- Now go to the home page of 'zahid khan tech school' and check the result.

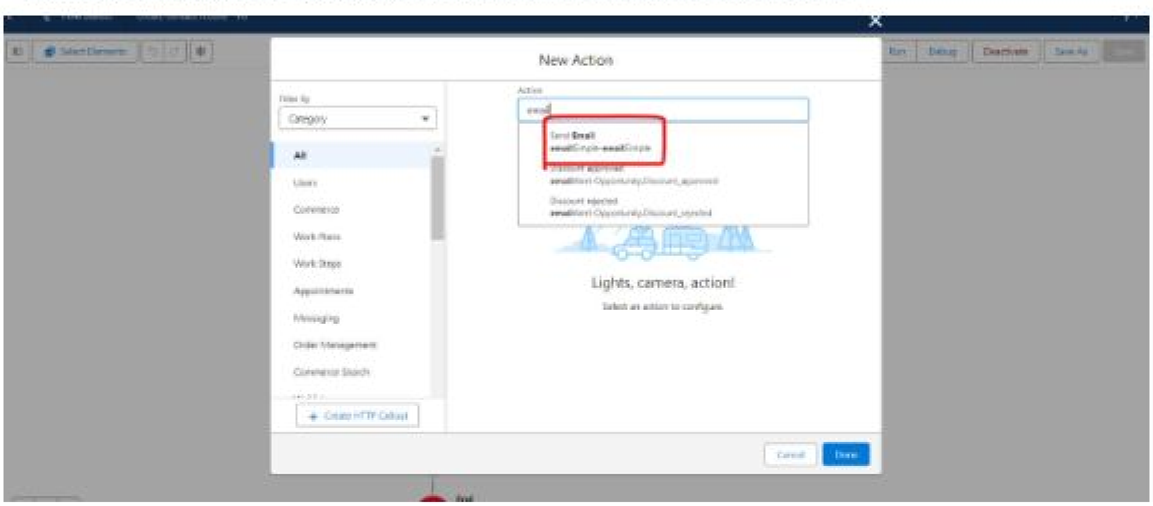


<u>Upon contact creation send an email.</u>

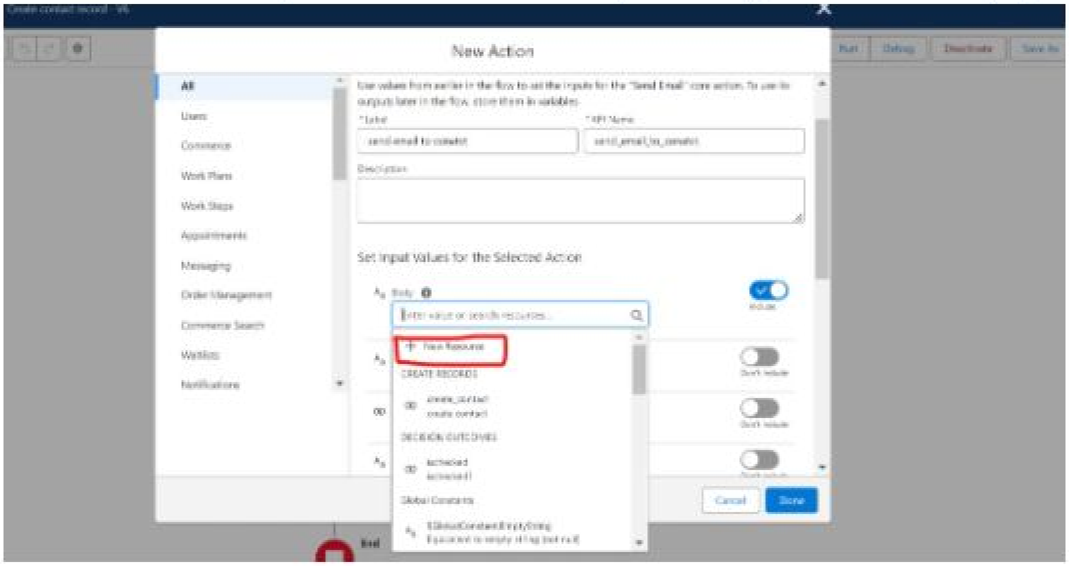
- After the **create record** click on + icon and choose action from interaction.



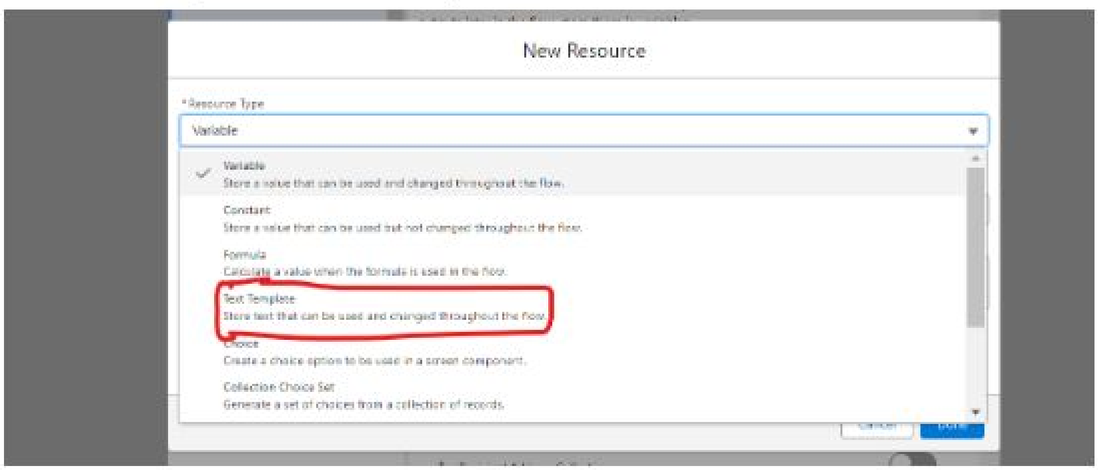
- After that search **email** in action and choose send email options.



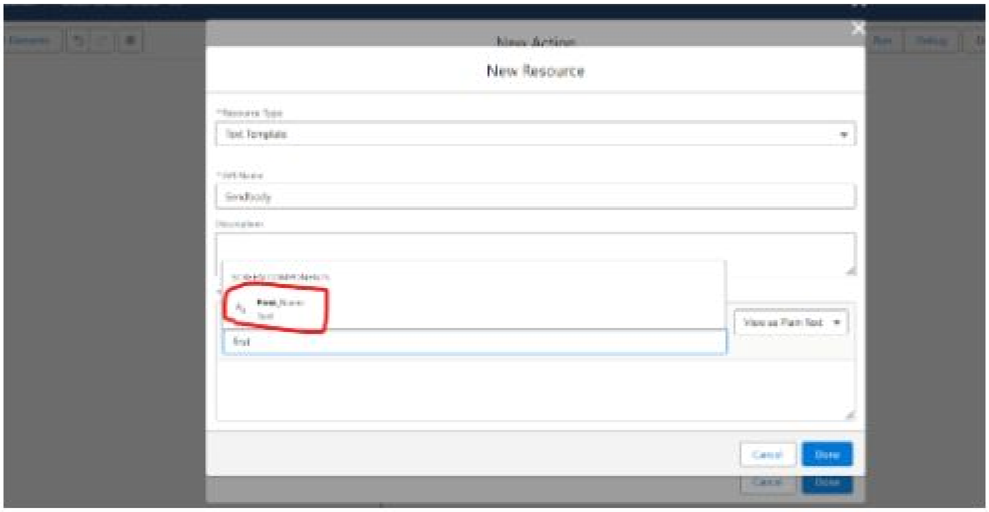
- After that enter label and API name. and we have to create body and subject for this on the toggle switch of the body and subject.
- After that inside body click on +new resource option and go to the resource page.



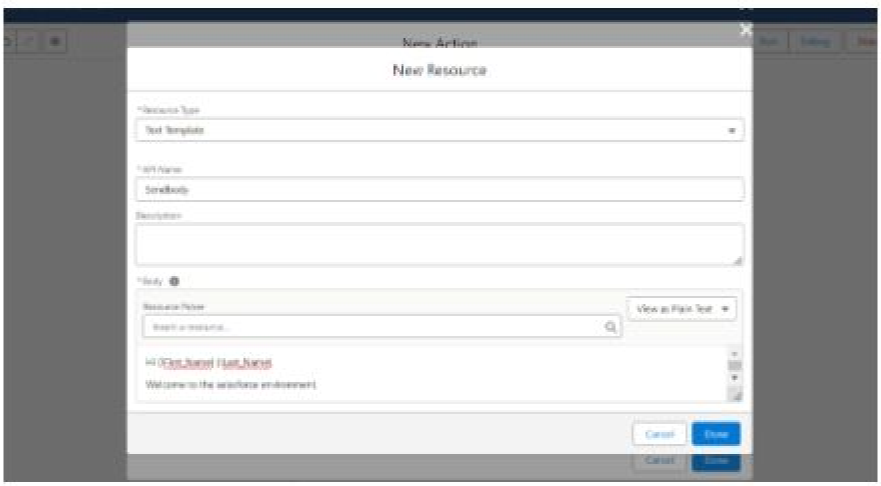
- Now select template text from drop down.



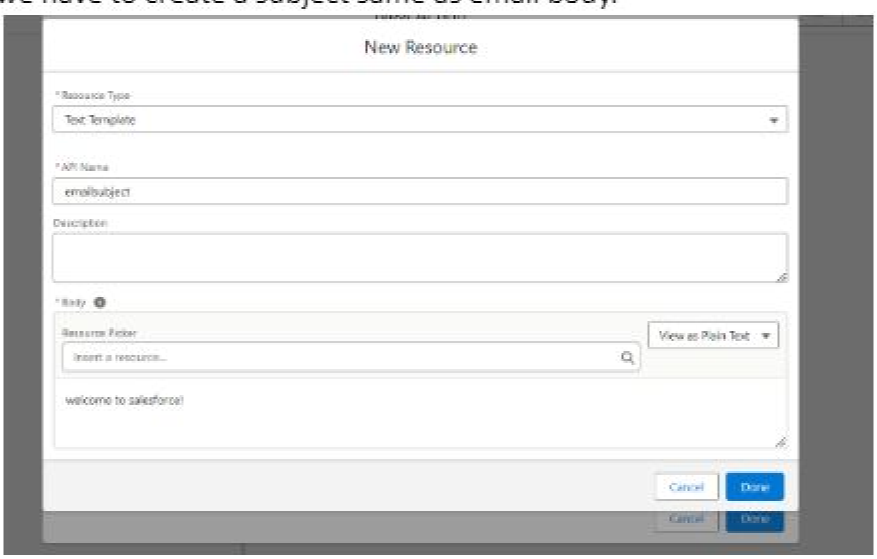
- After that API name and body. After that select view as plain text.
- After select the resources like first name or last name any resources which is created in the screen flow.



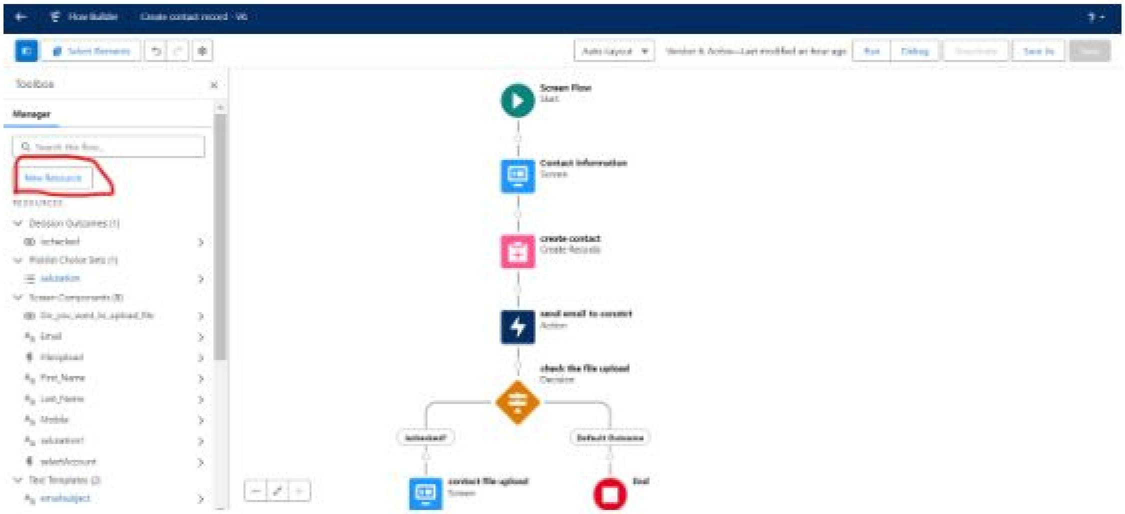
- After that enter the body of the email.



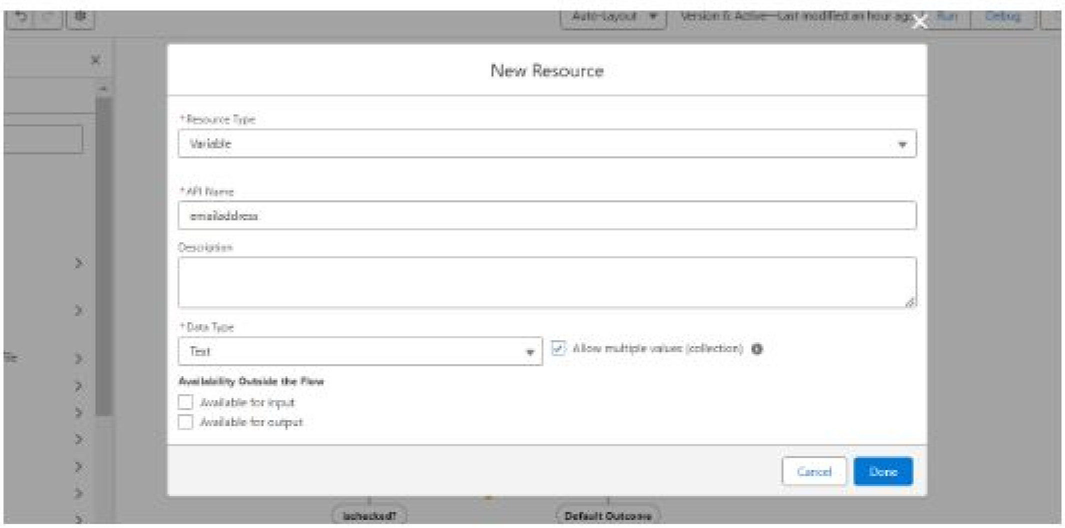
- After that click on done.
- Now we have to create a subject same as email body.



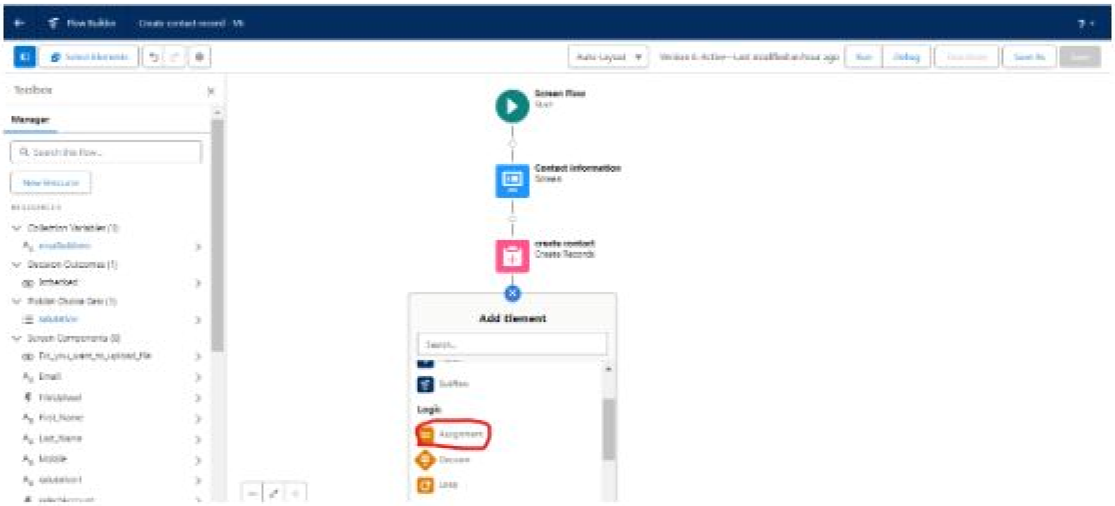
- After that click on done.
- Now we have to specify to whom we want to send email. Before specifying the email of collection, we have to make new resource of **variable**. For this click on new resource button on left hand side.



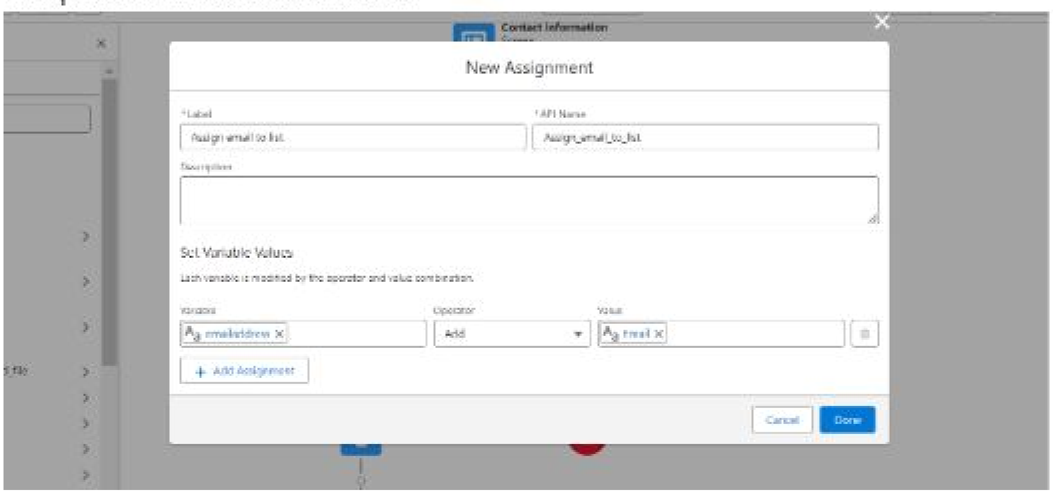
- After that's elect variables. Enter API name and check the box Allow multiple values(collection). And click on done.



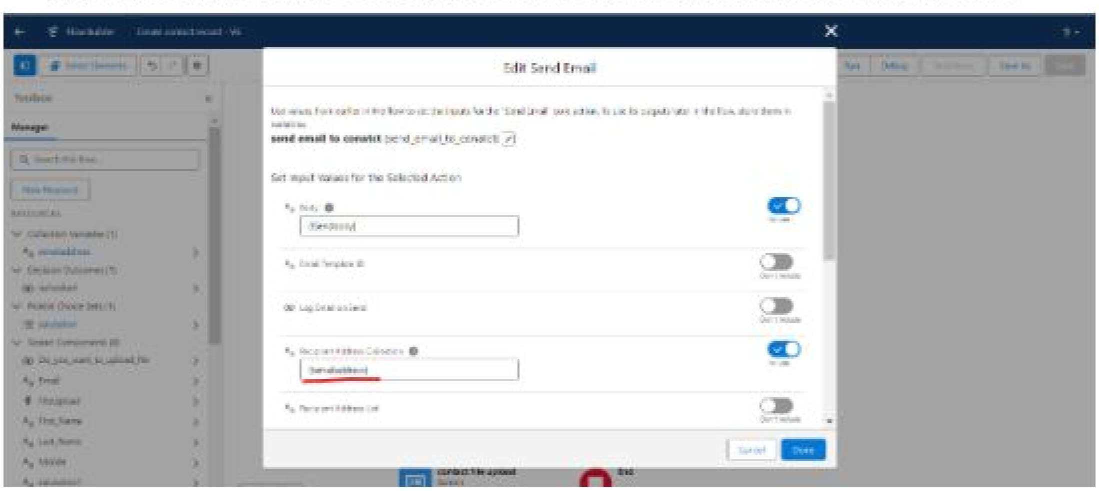
- after that we have to make an assignment to store the email address on email field in the emailaddress variable which we created earlier.
- For this click on + icon below **create record** and above email temaplates. And select **assignment** from logic.



- after that enter the label and API name. after that choose variable **emailaddress** in variable, in operator choose **Add** and in value choose email field from screen components. And click on done.



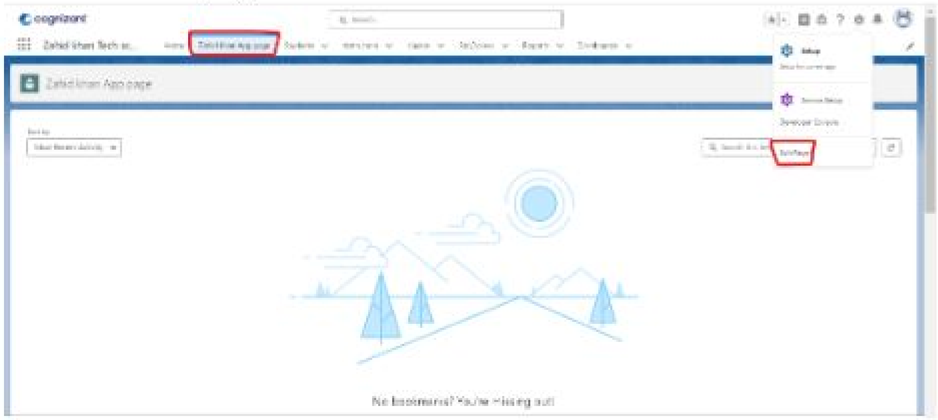
- After that double click on send email to contact action. Enable the recipient address collection. And select emailaddress variable inside the collection variable. And click on done.



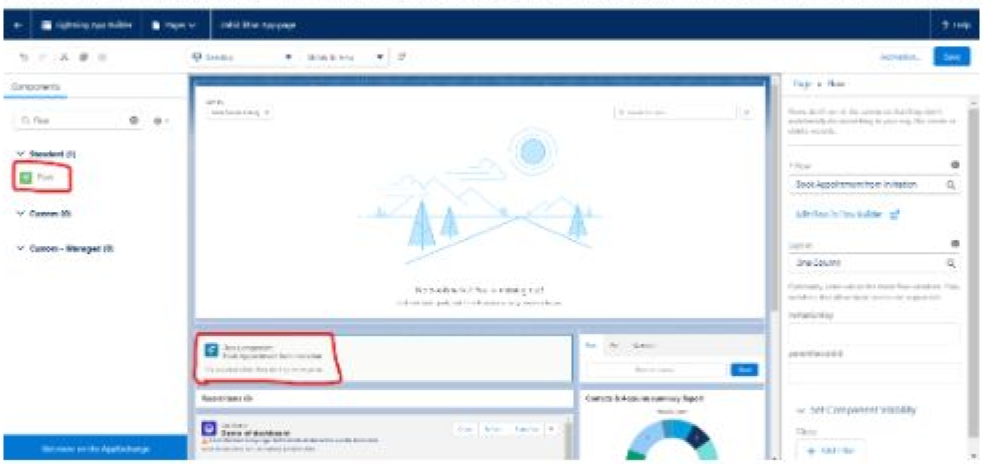
- After that click on save as and activate.
- Go to homepage and test the results.

Try to place flow on app page and test:

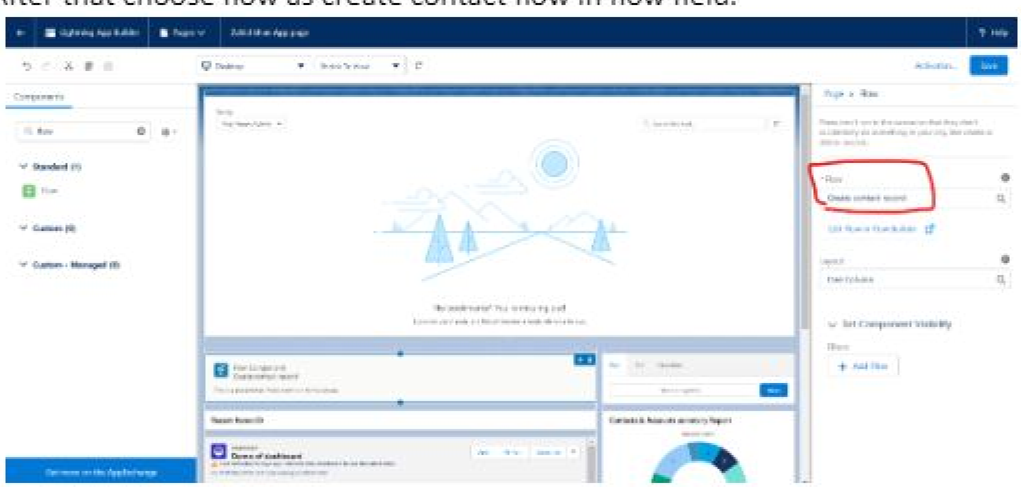
- First, open the app page which we created in 'zahid khan tech school' and click on se-up icon and click on edit page.



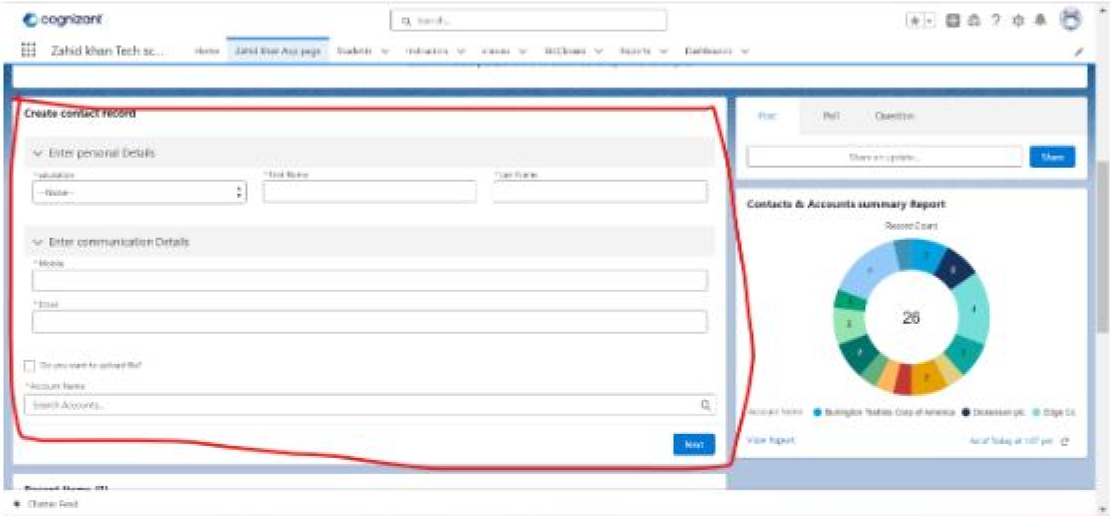
- After that search for flow in components and drag it into the middle screen.



- After that choose flow as create contact flow in flow field.



- After that click on done and see the results.



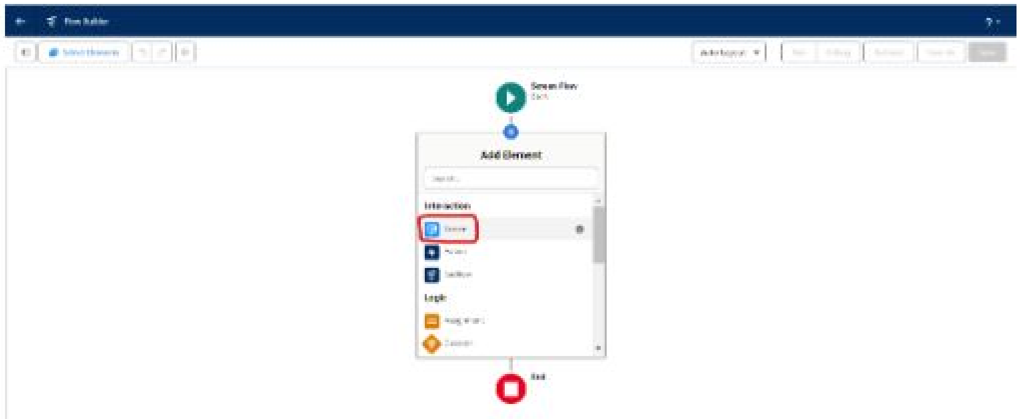
Day-25

Scenario

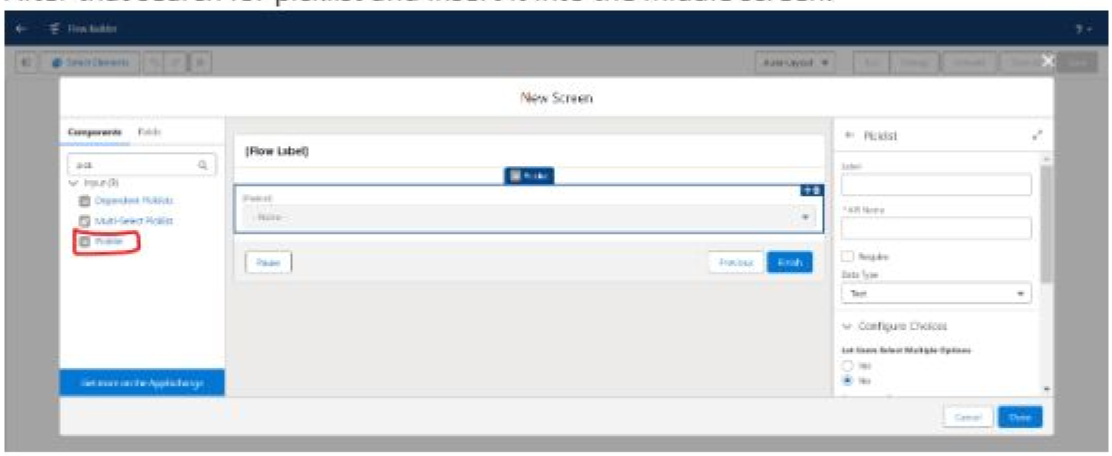
- Create a contact or an opportunity or case related to account based on users' choice through one flow.
- Create a contact or an opportunity or case related to account based on user choice through one sub flow.
- Modify above flow to ask how many contacts or opportunity or case should be created related to account based on user choice.

Create a contact or an opportunity or case related to account based on users through one flow:

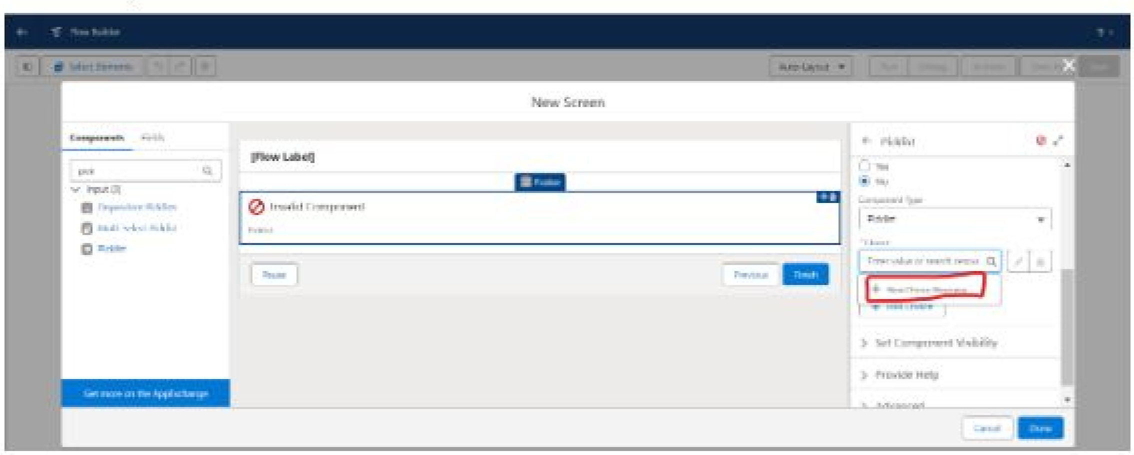
- Firstly, go to the set-up and search for flow in quick search and click on new flow.
- After that select screen flow and click on create.
- Before creating any flow, we have to ask or check that which record should be in flow.
- Now we have to create a picklist to select the that which flow wants to open. Here, we are going to make manual picklist value of three objects.
- For this, click on + icon below start and choose screen.



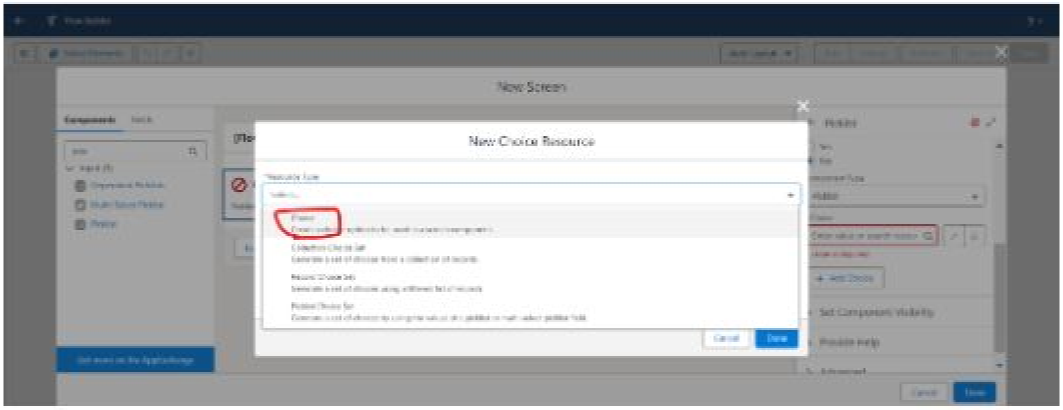
- After that search for picklist and insert it into the middle screen.



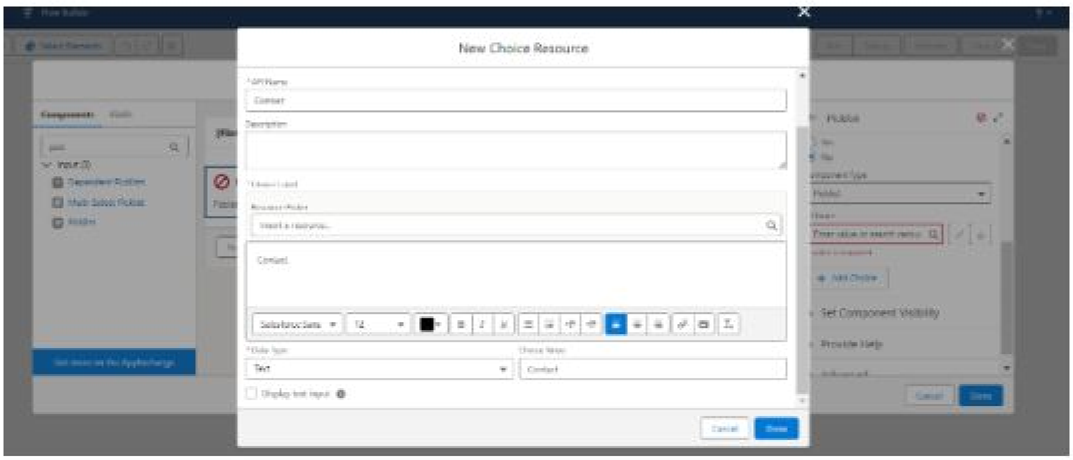
- After that enter the label and Api name. check the required box, data type text, and **let users select multiple options** should be no and components type should be picklist.
- After that we have to add options manually. Here, we are making picklist manually for contact, opportunity, and case so that user can choose any one.
- For this, click on **choice** field and click on **+ new resource choice**.



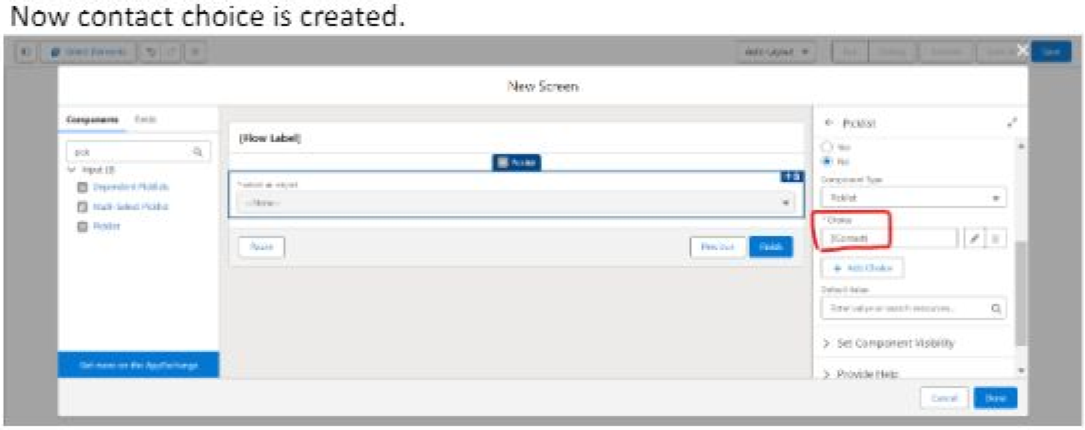
- After that select choice in resource tyeps.



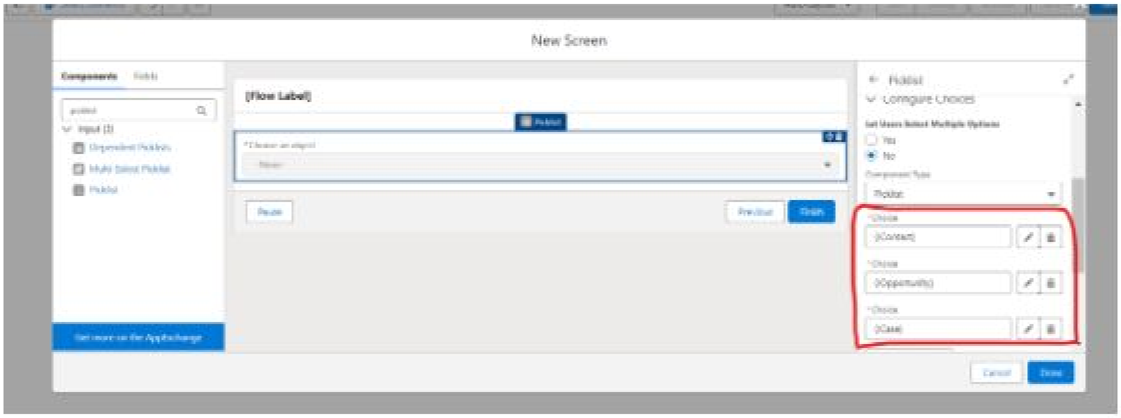
- After that enter the API name as contact. Choice label should be contact, data type should be text and choice value are contact and click on done.



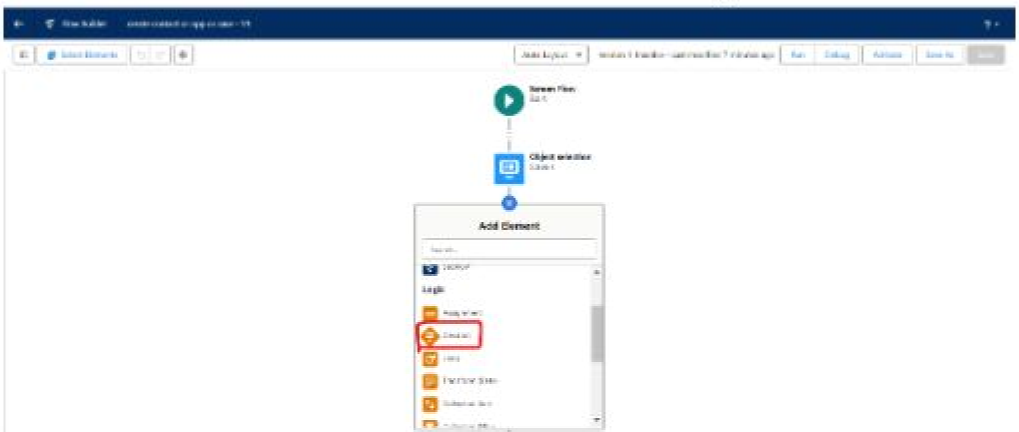
- Now contact choice is created.



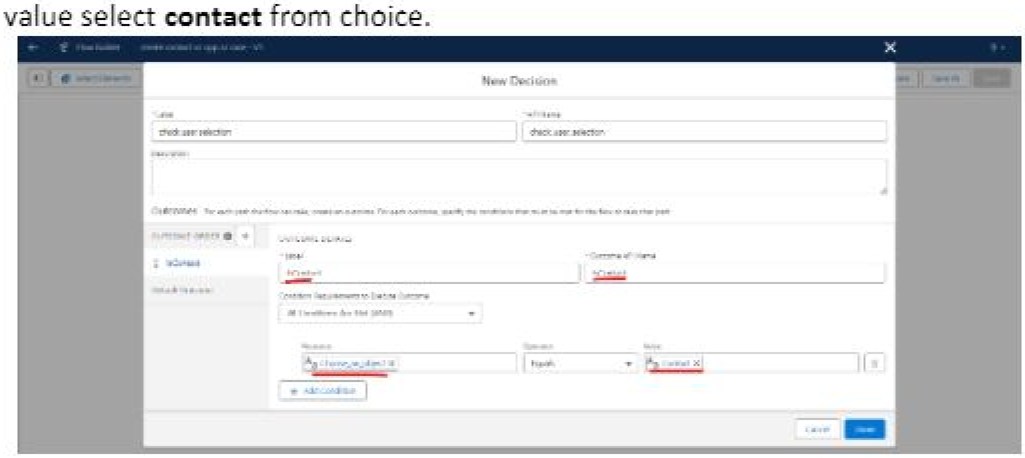
- Same way we have to create picklist for account and case by clicking on Add Choice.
- After that click on done.
- After that save the flow and check in debug that all picklist value visible or not.



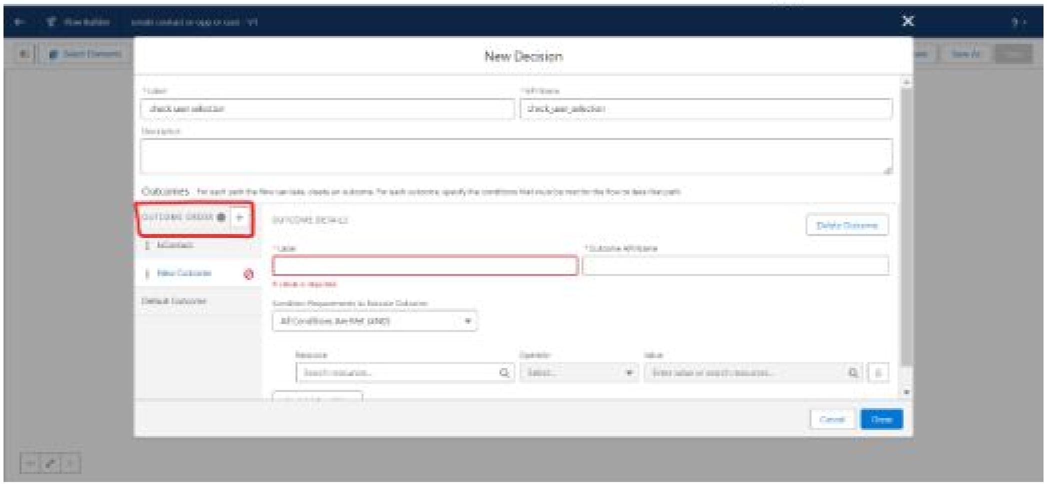
- Now we have 3 options in picklist contact, opportunity, and case. If user choose to contact so they can create contact if case so user can create case.
- To create this feature, we have to apply **decision** from **logic**.
- Just click on + below screen and select decision from logic.



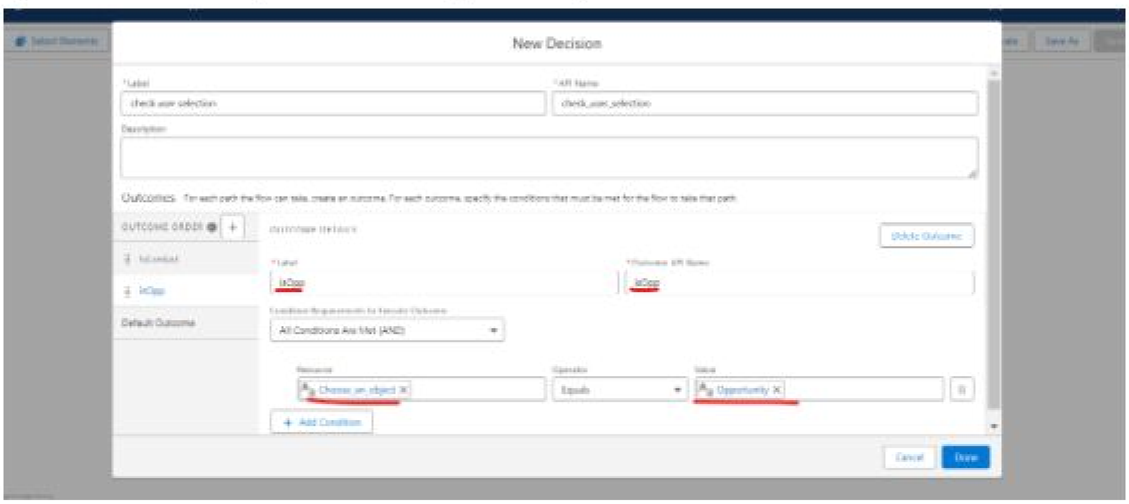
- After that enter label and API name.
- After that enter the outcome details label and Api name.
- 1st we have to create outcome for contact so enter label and API name should be isContact.
- After that enter the resource as **picklist** which we created earlier in screen. And in value select **contact** from choice.



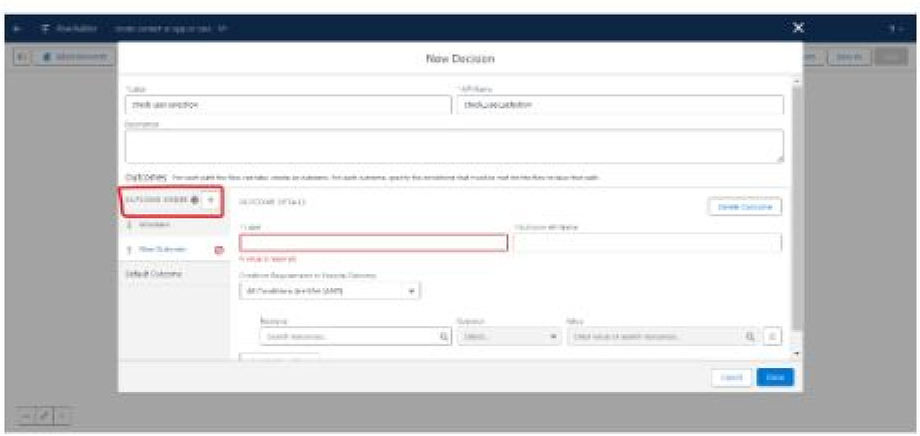
- In same way we have to create outcome for opportunities and case.
- For this click on **Outcome order +** and create outcome for opportunities.



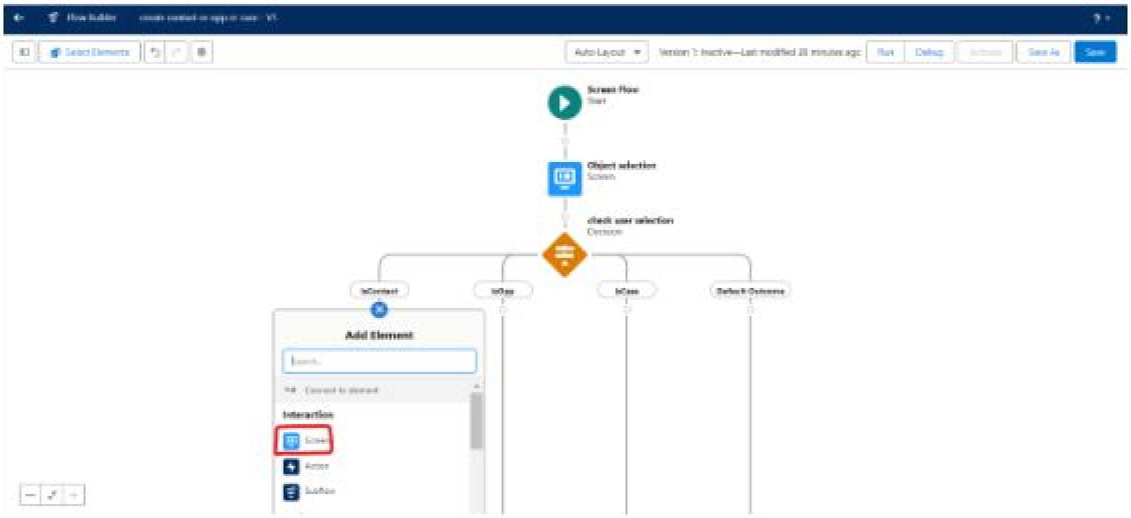
- Label and API name of the Outcome details should be **isOpp**. Resource should be picklist we created, and value is **opportunity** from choice.



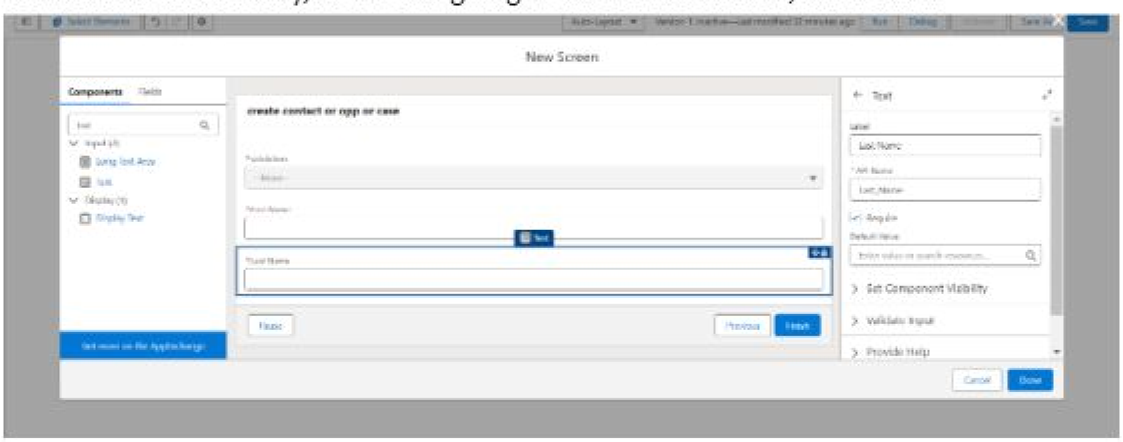
- In same way we have to create outcome for case.
- For this click on **Outcome order +** and create outcome for case.



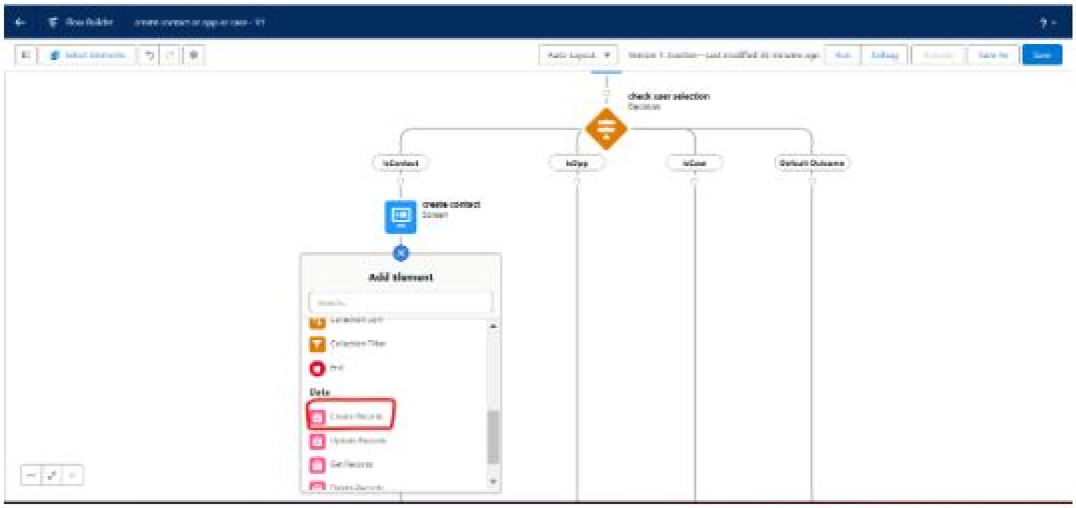
- Label and API name of the Outcome details should be **isCase**. Resource should be picklist we created, and value is **case** from choice.
- In this way we created 3 outcomes. Now click on done.
- Now click on + sign below the **isConatct** so that we can create screen for create contact record if user select contact so contact record will open. Same way we have to create screen for **isOpp** and **isCase**.



- Now we have to add field and mandatory field of contact. As we know that in contact last name is mandatory, so we are going to create First name, last name.

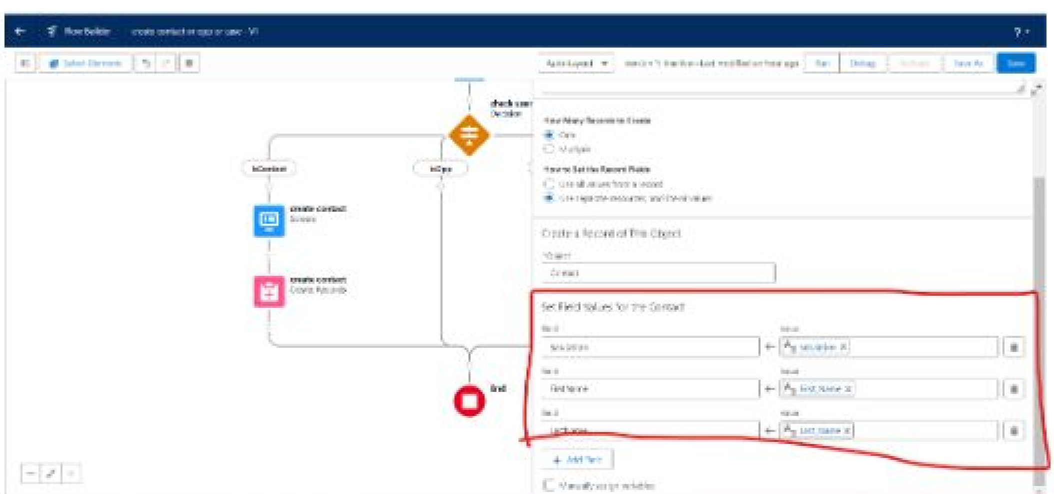


- click on done.
- After that click on + icon below screen to choose **create record** from **Data**.

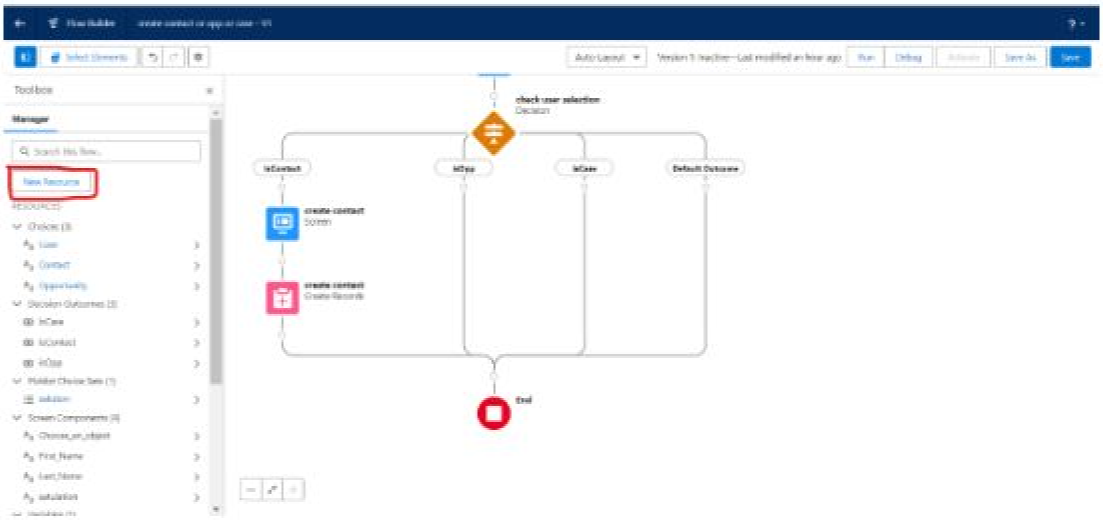


- Enter label and API name. **How Many Records to Create** is **one, How to Set the Record Fields** is Use separate resources, and literal values.
- After that select object as contact.

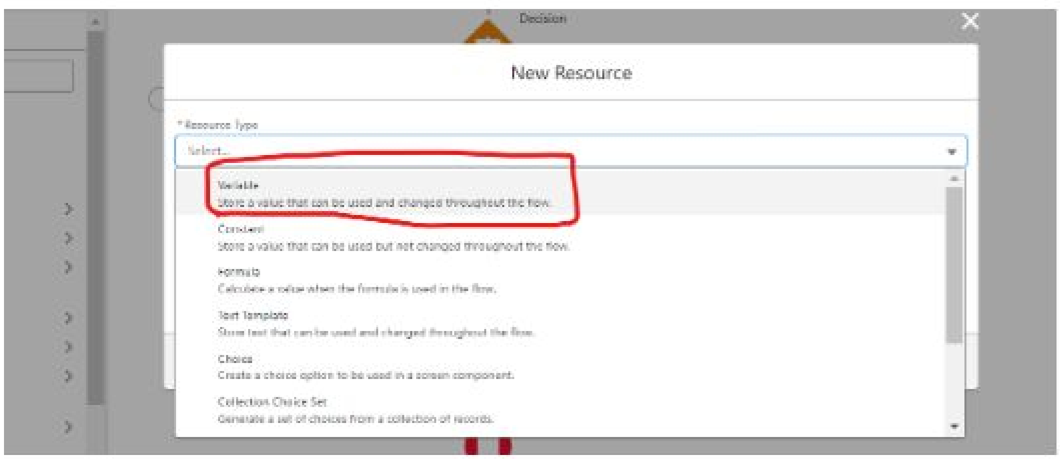
- After that enter **field** and **value**. Such as **salutation** to **salutation**, **First name to first name**, and **last name** to **last name**.



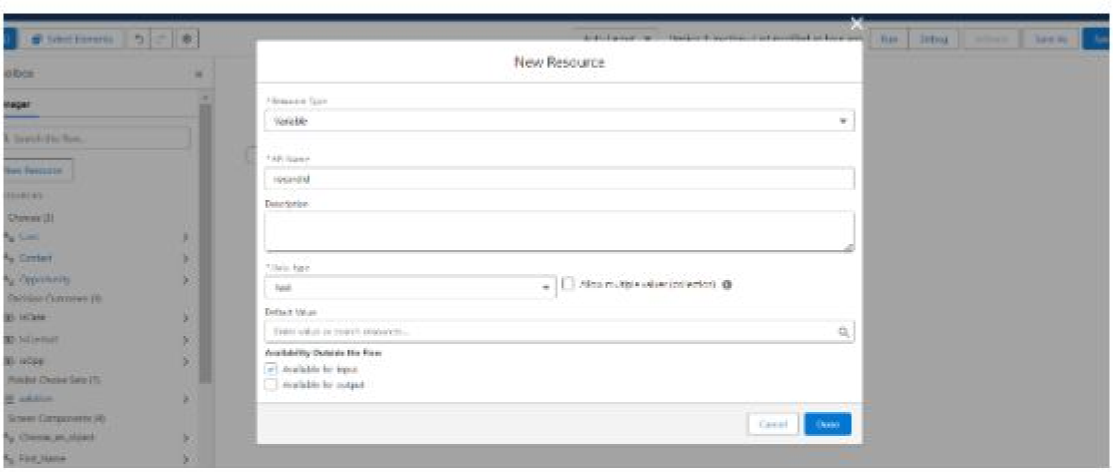
- now we have to relate this contact with account object. For this 1st create new resources as variable for **recordId**. For this click on **New Resources**.



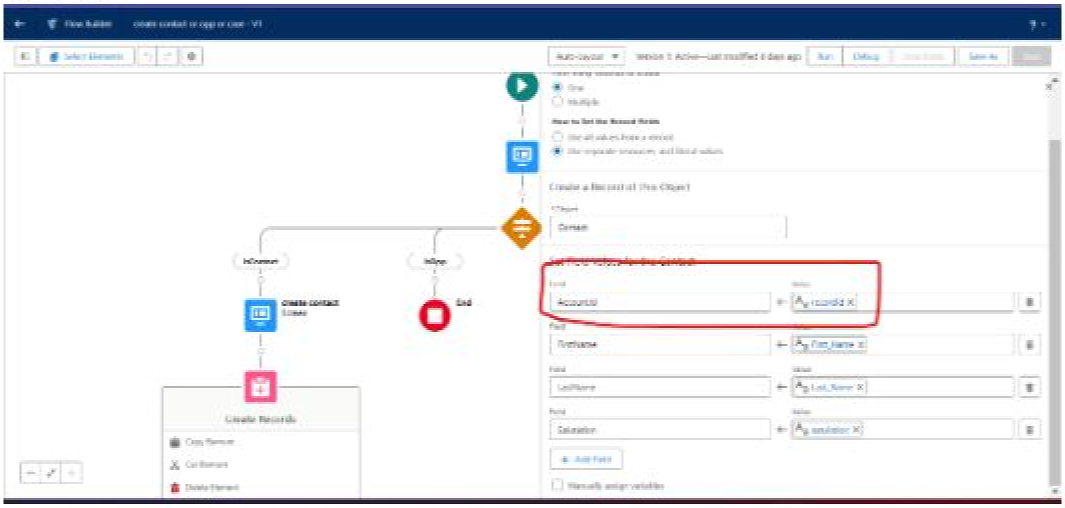
- After that select the variable from drop down.



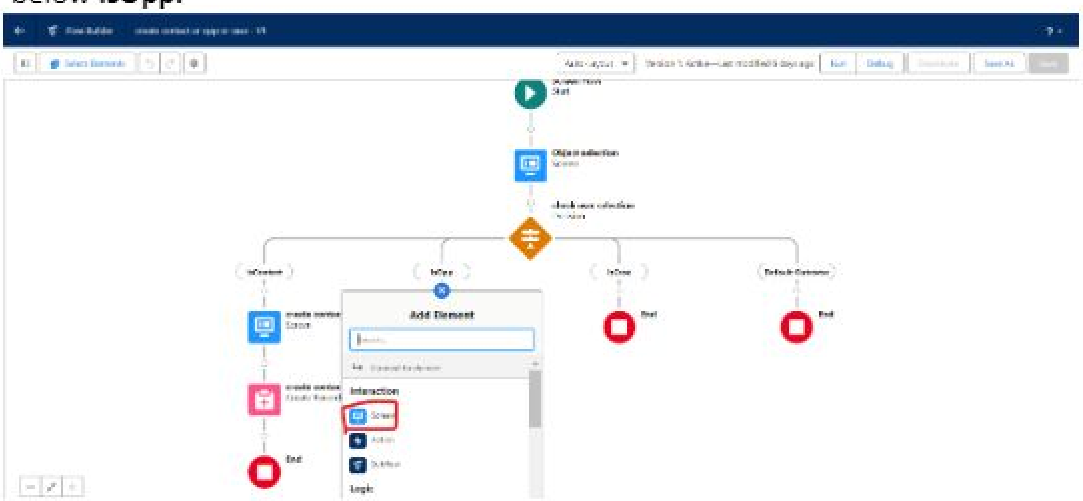
- After that enter label and API name. data type as **text**. **Availability Outside the Flow** as available for input.



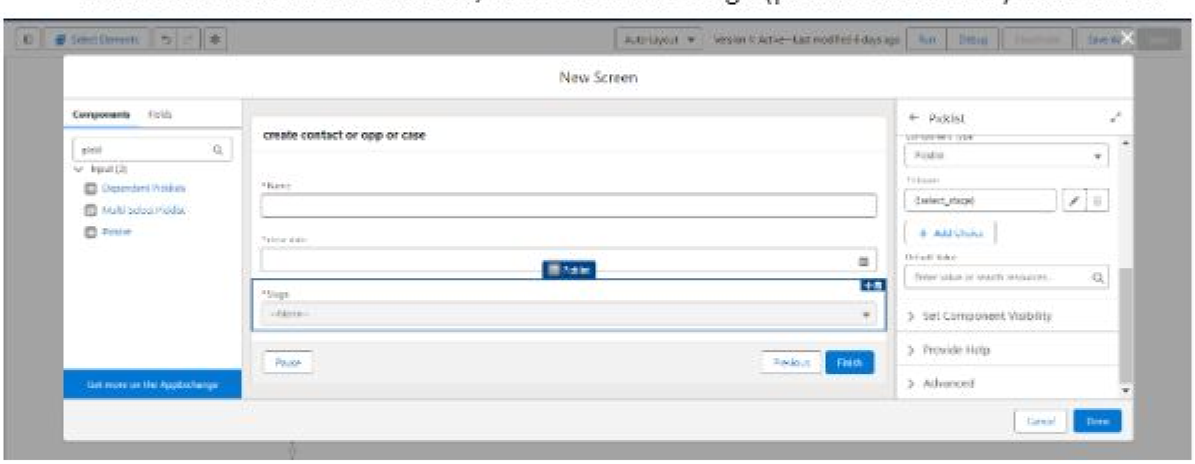
- After that double click on **create record** of **isConatct** to add the **recordId** variable. Field should be **AccountId** and value should be **recordId** which we created as variable.



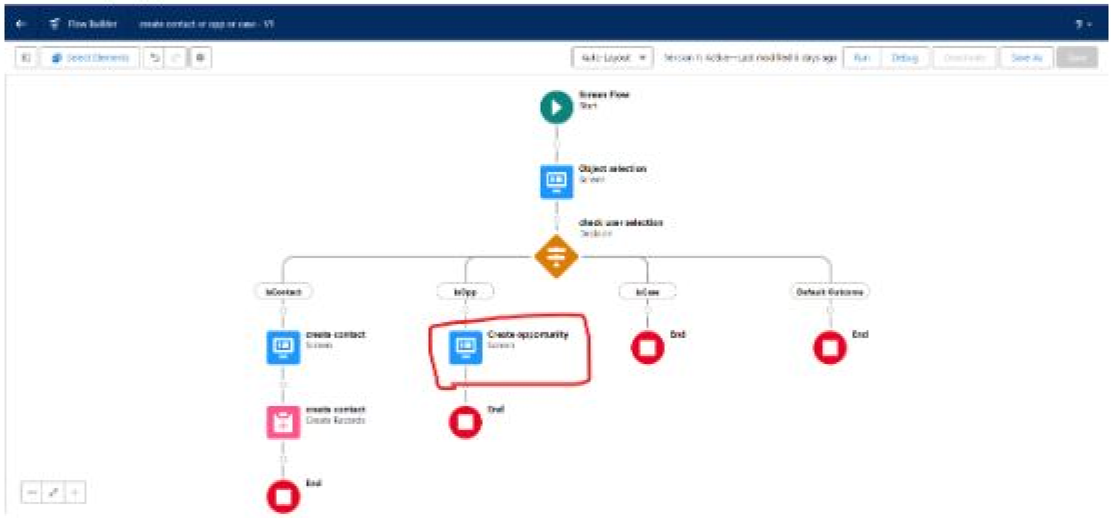
- In same way we have to create screen for opportunity object. For this click on + sign below **isOpp.**



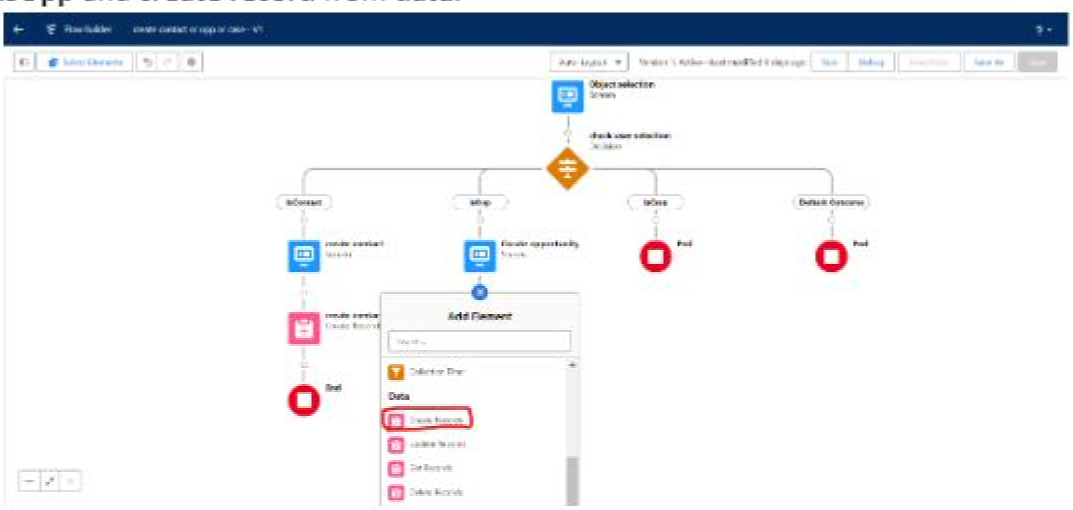
- After that create field of name, close date and stage (picklist choice set). And done.



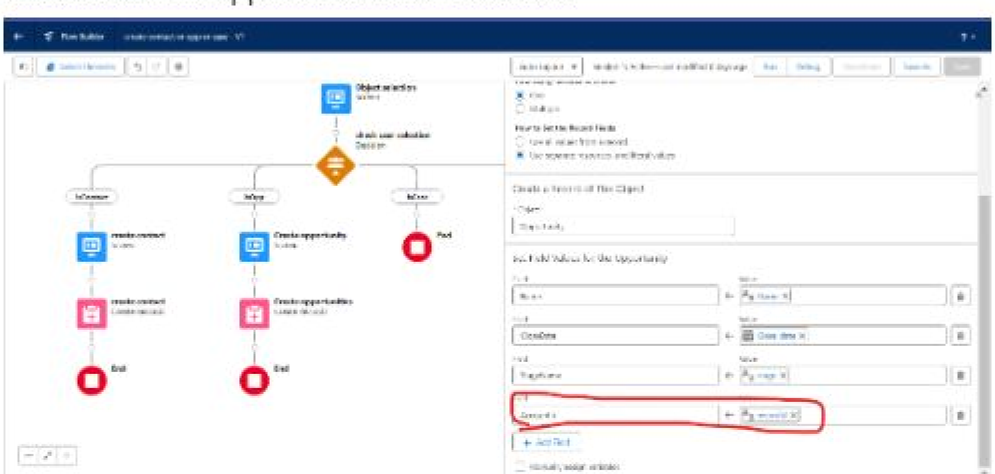
- This way opportunities screen is created.



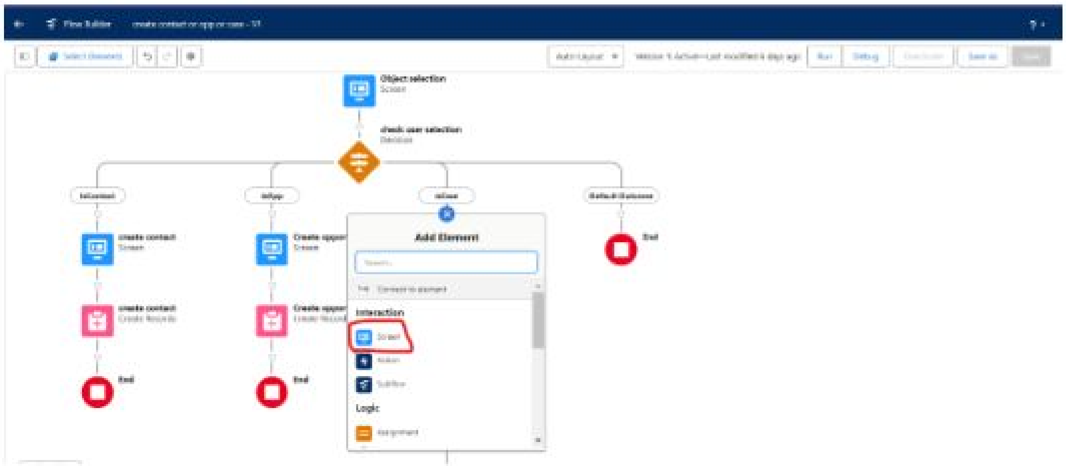
- Now we have to create record for opportunities. For this click + sign below screen in **isOpp** and **create record** from **data**.



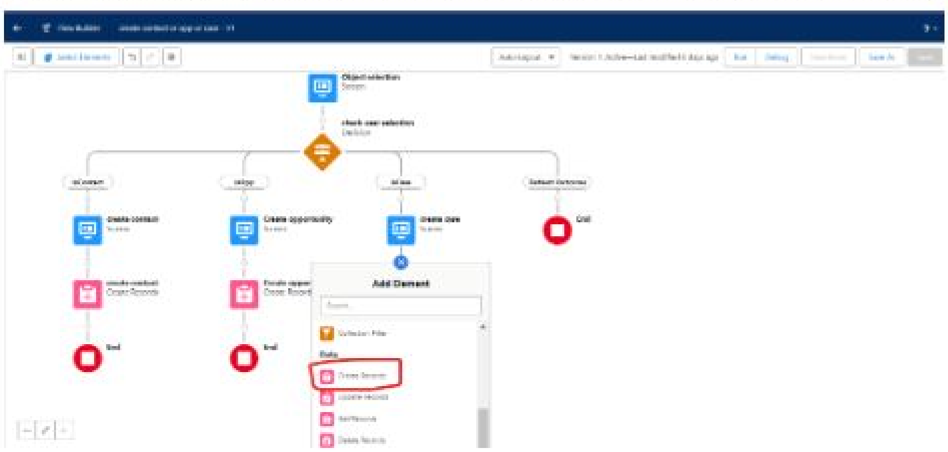
- Now map the field of opportunities object. And also add **accountId** with **recordId** variable to relate opportunities with account.



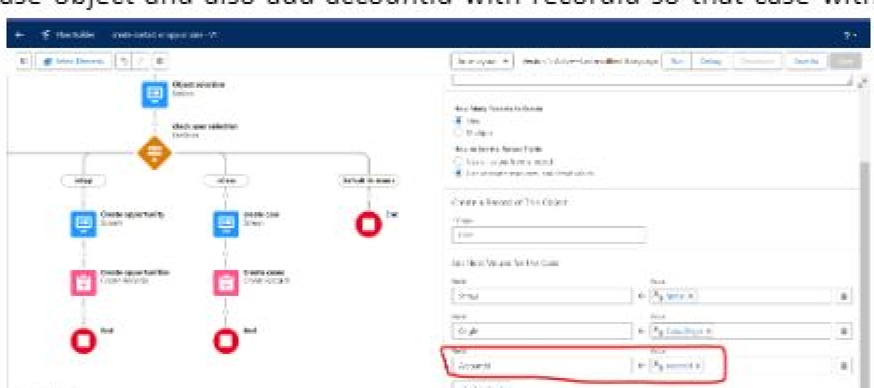
- Now opportunities object flow is created and relate with account.
- Now same way we are going to create screen for case object.
- For case object we are going to create screen for **status** and **case origin,** and both are picklist, so we need to create picklist choice set.
- Click on + icon in isCase and select screen.



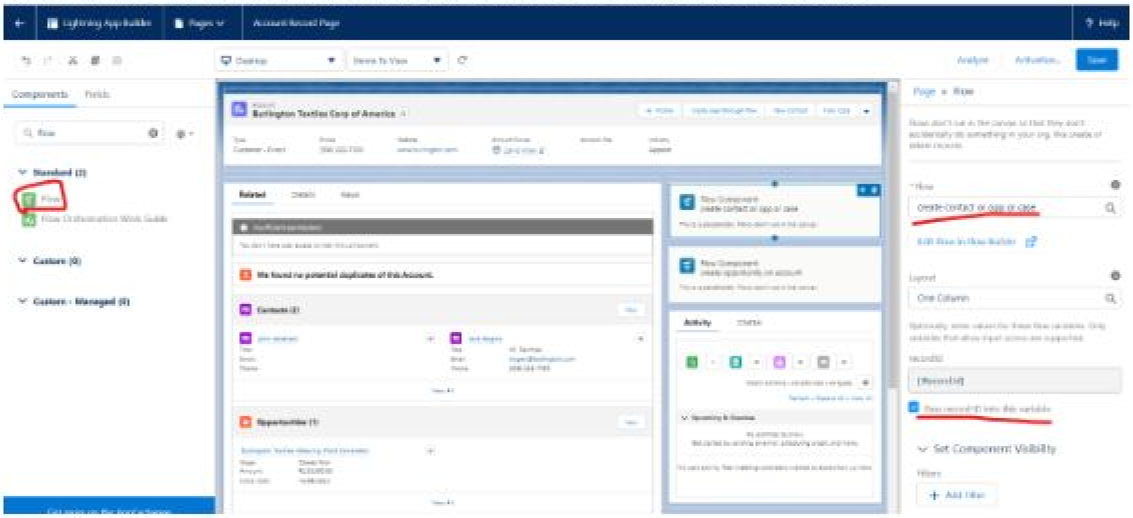
- Create required field and click on done.
- After that make create screen. For this choose create screen from data below screen.



- Map field with the case object and also add accountId with recordId so that case with relate to account.



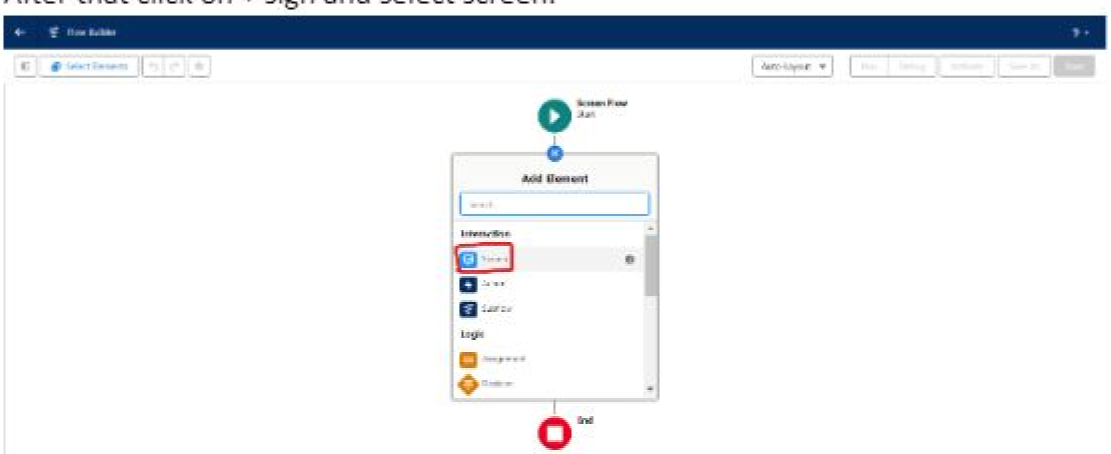
- Now all flow is created just click on save as and activate it.
- After that we are going to add this flow inside account object records.
- Go to account and open any records. After that click on set-up icon then click on edit page option. And check the check box **Pass record ID into variable**.



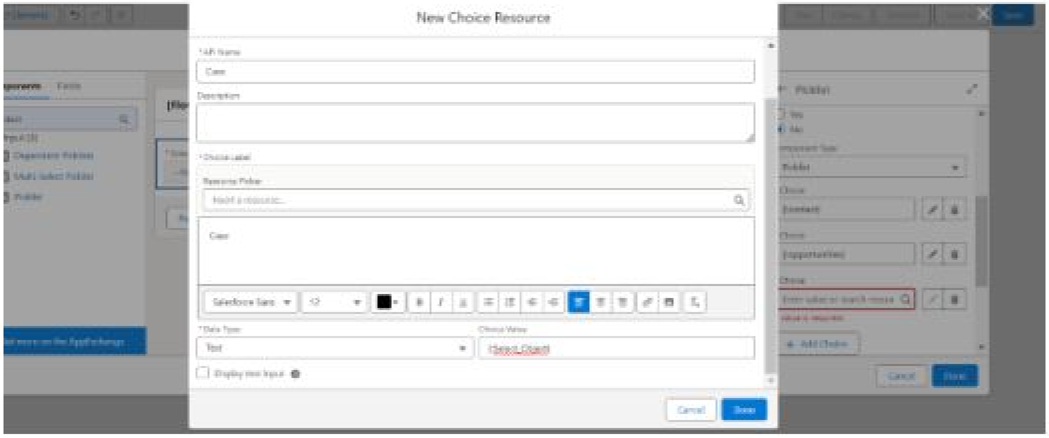
- After that go to the records of account and check the result of the flow.

<u>Create a contact or an opportunity or case related to account based on user choice through one sub flow:</u>

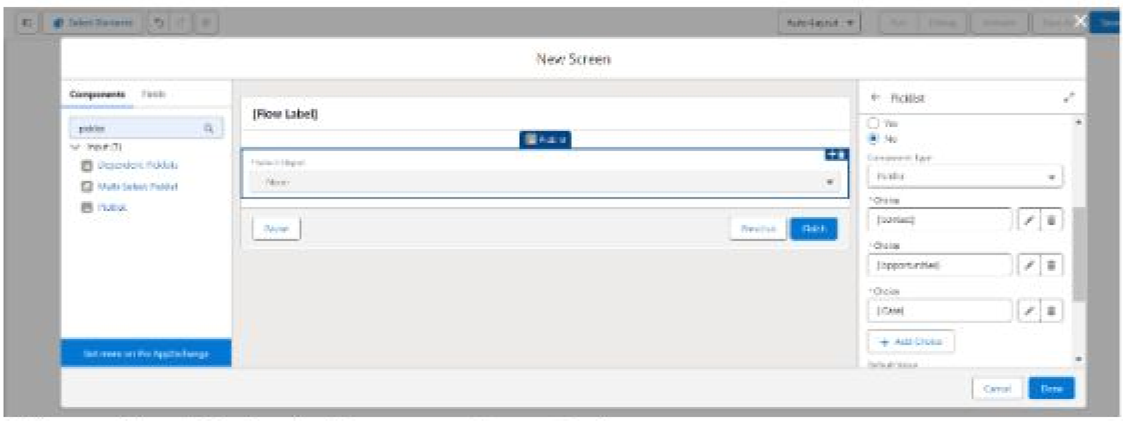
- For creating sub flow we have to create new flow. For this search flow in quick search and click on it after that click on new flow.
- After that select screen and click on create. This flow is for object selection (parents).
- After that click on + sign and select screen.



- After that enter the screen label and API.
- After that search picklist and insert into screen to make object selection.
- Create picklist value of contact, opportunity, case.

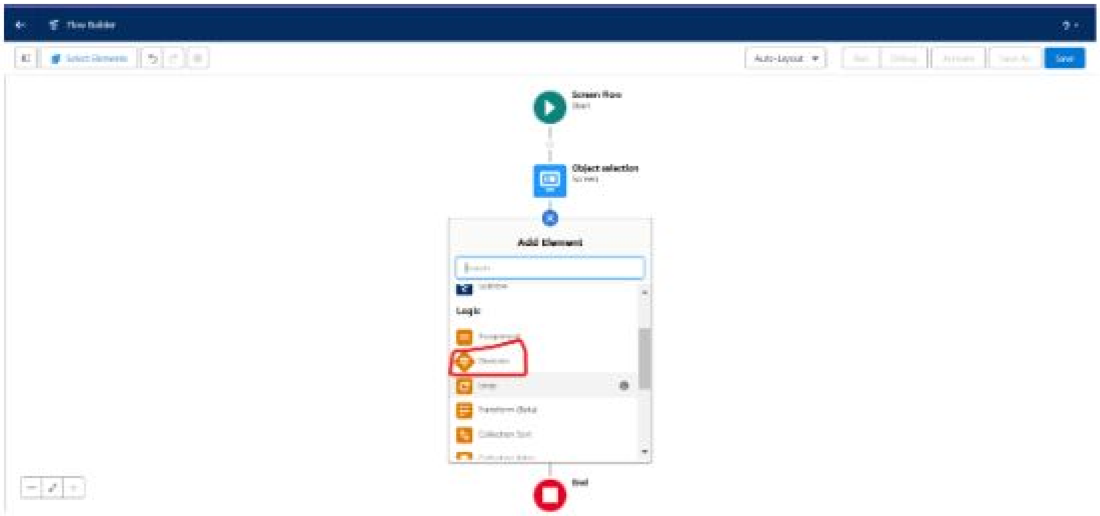


- After that click on done.

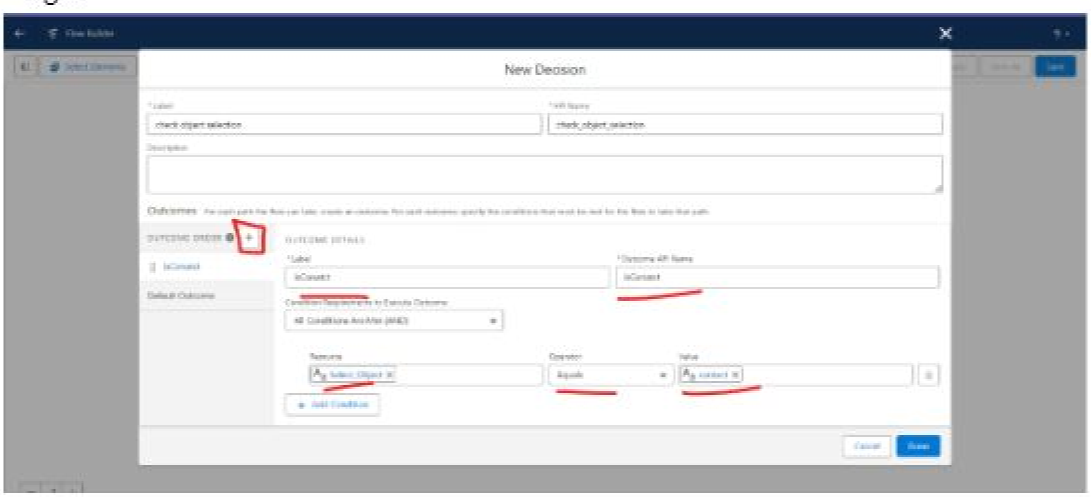


- This way the object selection screen is created.

- After that we are going to create decision. For this click on + icon below screen and select **decision** under **logic**.

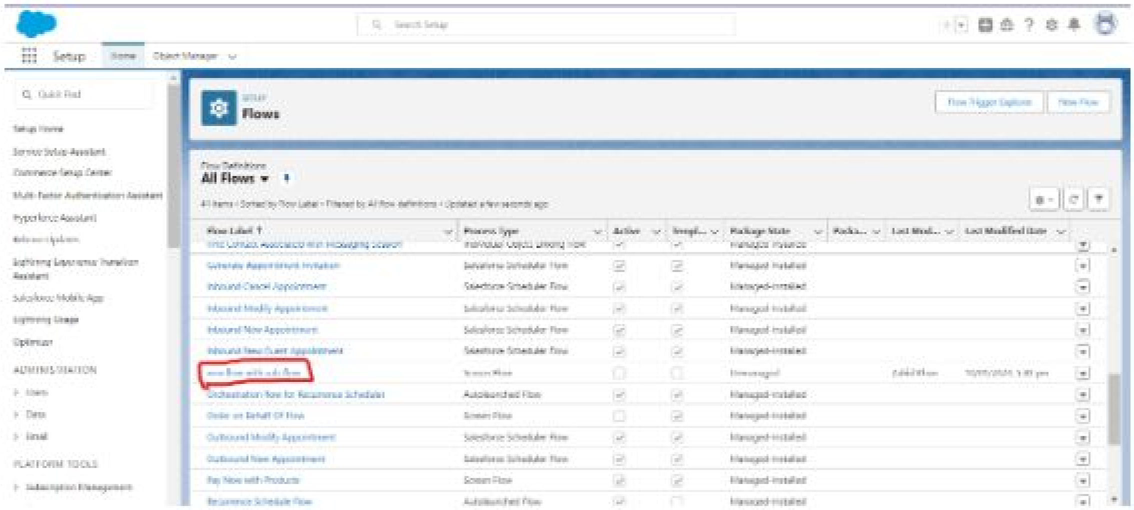


- After that enter Label and API name.
- After that enter outcome details for contact. Label, Api name, Resource as select_object(picklist) from screen components operator is equal and value is contact from choice. This way contact outcome is created.
- Same way we have to create outcome for opportunity and case by clicking on + sign.

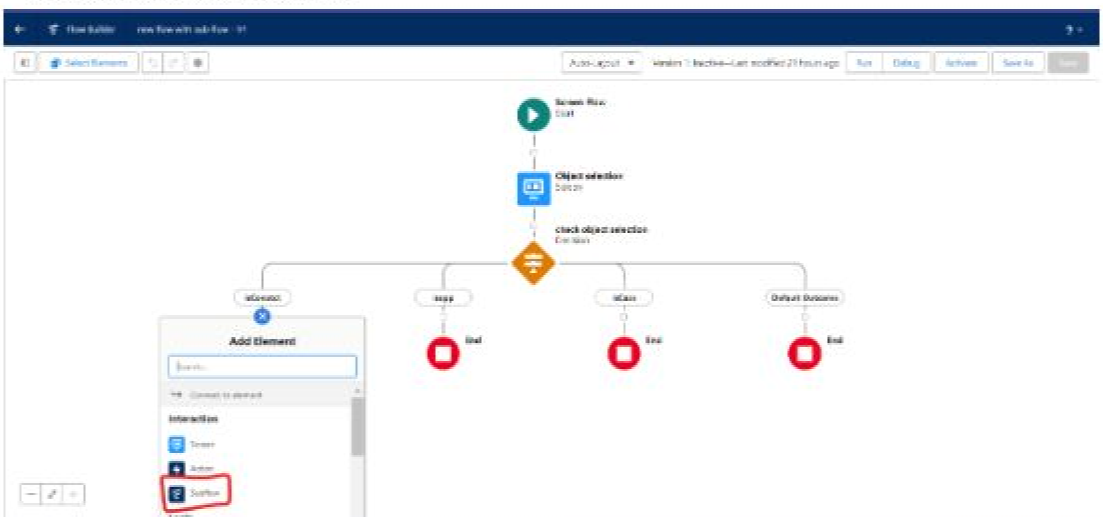


- After creating click on done. Now decision is created.

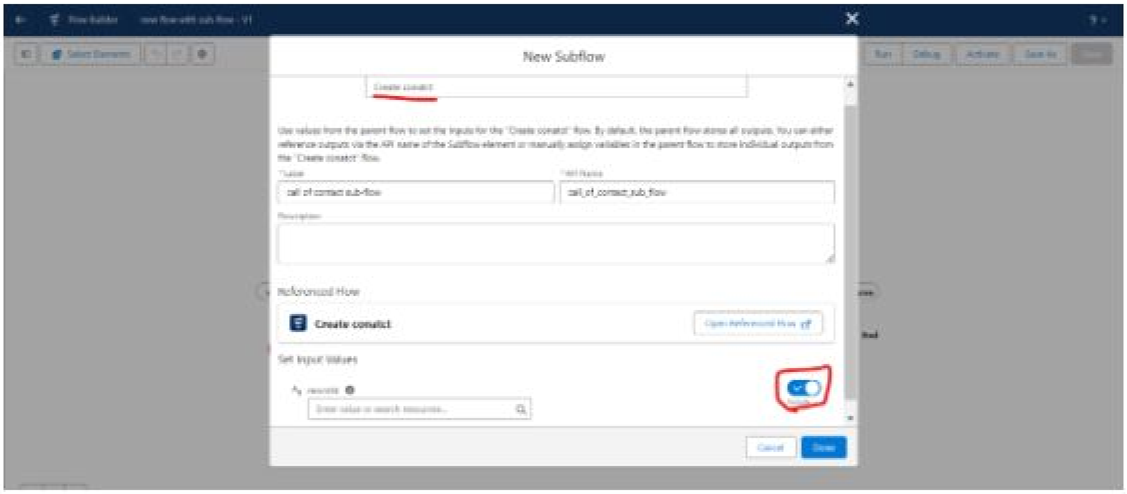
- After that we are going to create sub-flow for each object and linked this with account.
- To use sub-flow, we have to create new flow for each object and then we have to add them into parent flow.
- Firstly, we are going to create flow for contact with account linked.
- After that go to the parent flow and click + sign under iscontact.



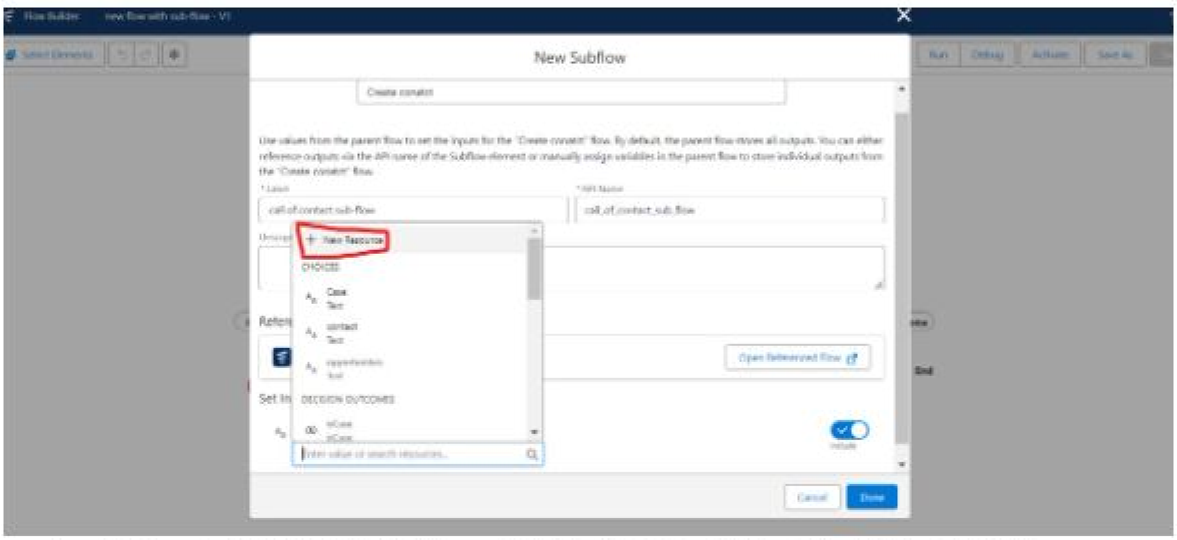
- After that select sub-flow.



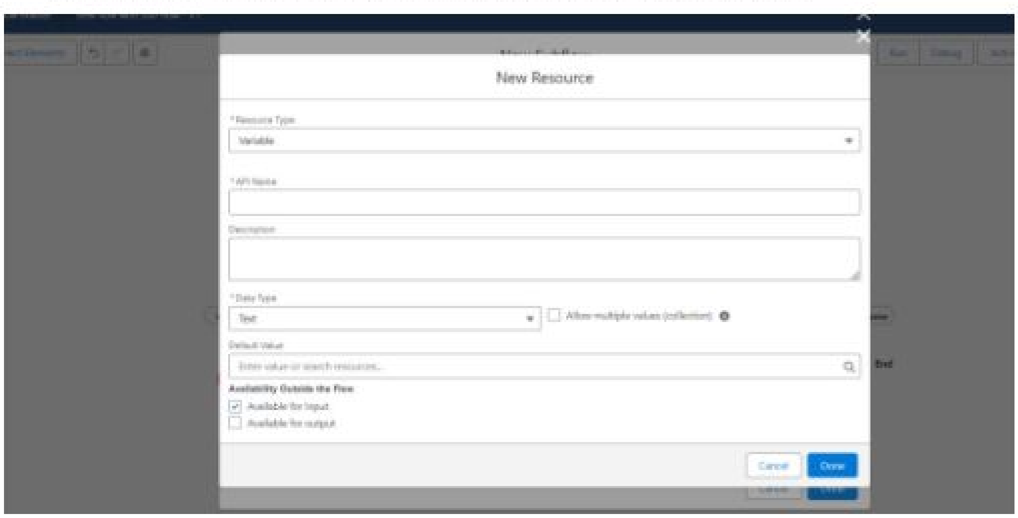
- After that select reference flow which is created for contact.
- After that enter label name and API. recordId under set input value toggle button should be green.



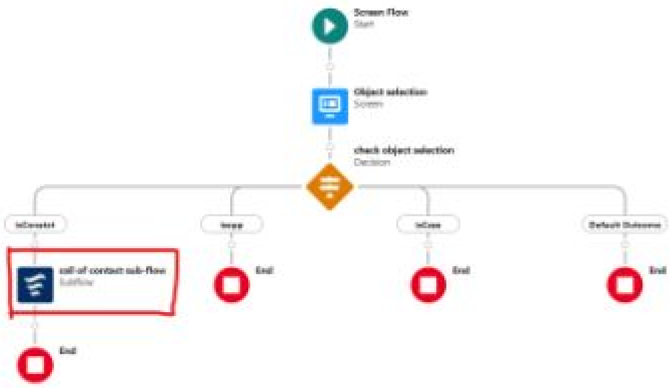
- After that in recordId select new resouces .



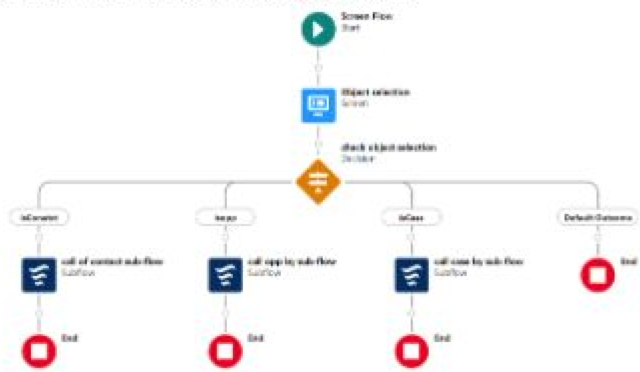
- Here, we need to create new variable for account id with name recordId.
- After that select variable in resource type and API name should be record id and data type text. Check box available for input. Click on done.



- After that click on done.



- In same way we have to create new flow for opportunity and case and add them in parent flow as sub-flow.
- After adding all flow our flow will look like this.

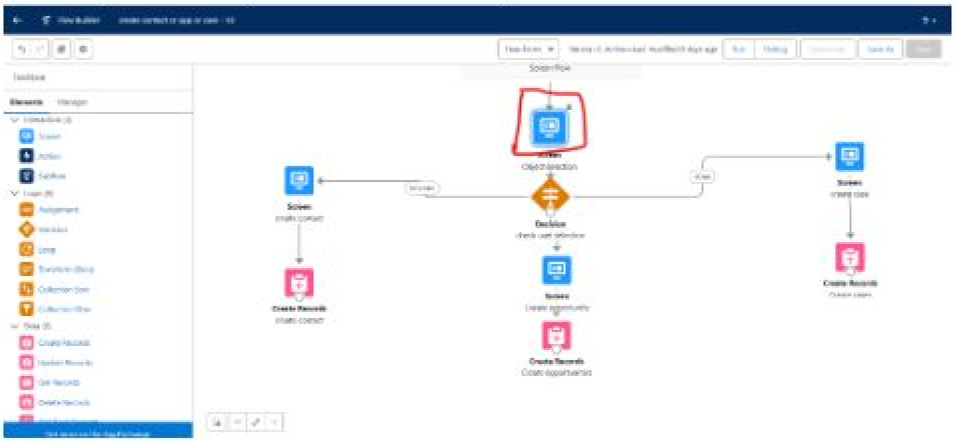


- After that go to account record page and place this flow.

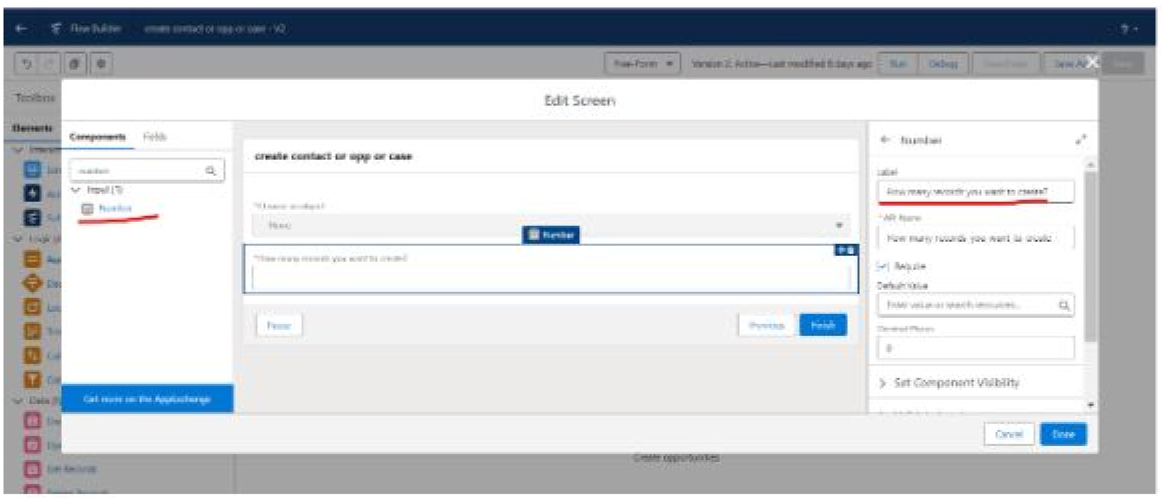
<u>Modify above flow to ask how many contacts or opportunity or case should be created related to account based on user choice:</u>

- For creating this scenario, we are going to modify the 1st scenario flow like we created a picklist for each object then decision after that make create screen flow.
- Firstly, convert the flow to free-form show that we can adjust the flow according to our requirements.

- After that open the **object select** screen by double click on it.

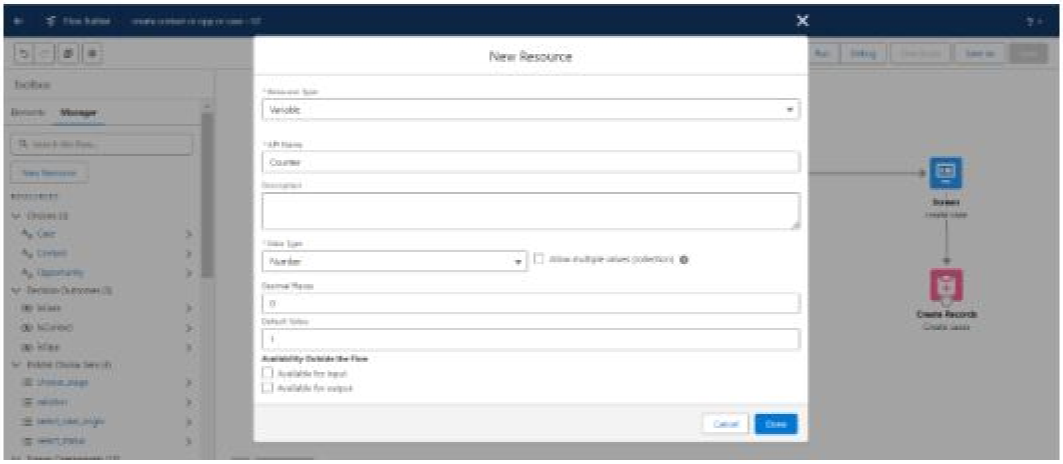


- After that add the **number** components to ask from user like **how many records you want to create?** make it required and click on done.



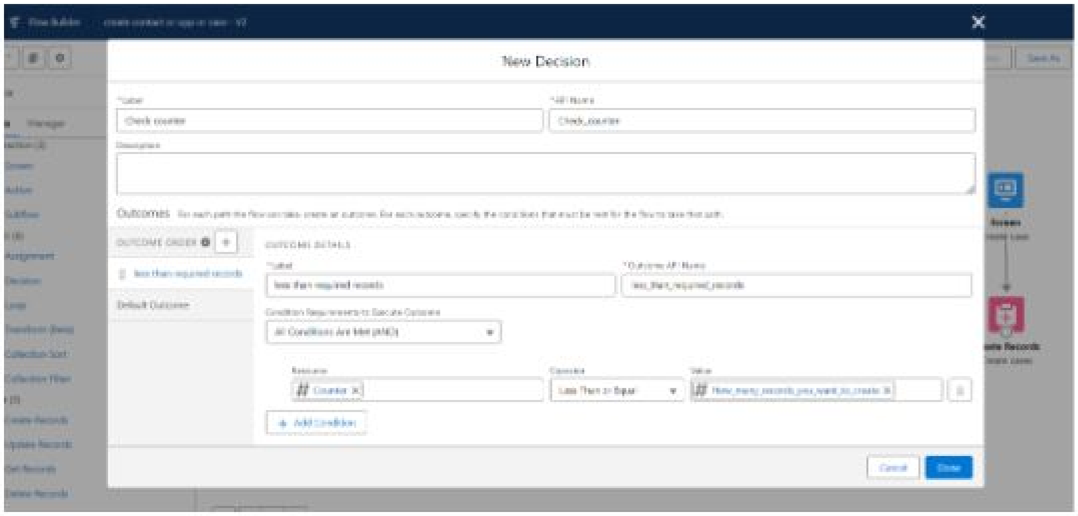
- Suppose that user select contact object and records 5 times so the isContact screen should be repeat 5 times. Now, we have to create loop for this scenario.
- For this we have to create a new resource. Go to manage and click on new resource and select variable.

- Enter the label and Api name, data type should be number, decimal places is 0 and default value is 1.

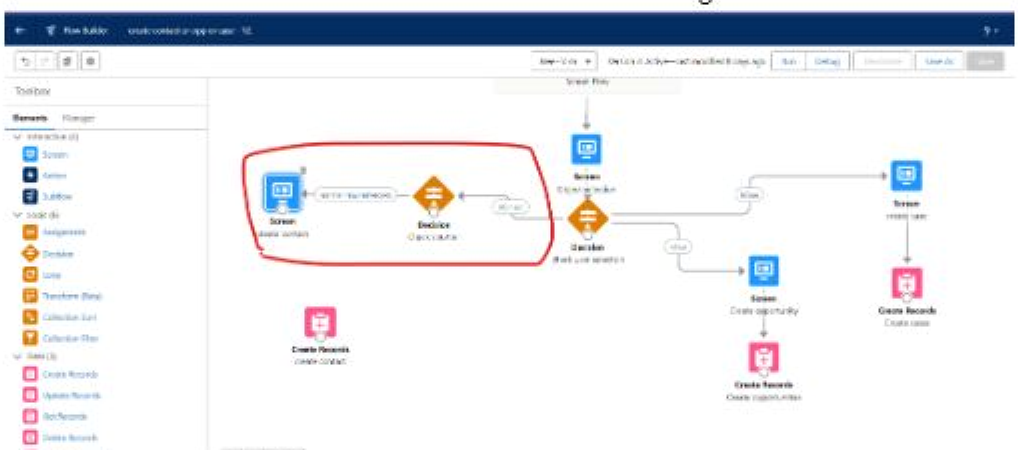


- Here, we are creating a counter which default value is 1 it works like a loop. Now click on done.
- After that delete the line which connects to the isContact screen to the decision show that we can add another element. To delete line just click on it and press delete button.
- Now, go to elements tab and select the decision to create loop.

- After that enter the label name and api name. then enter details outcome label and api name.
- After that enter the Resource as **counter** variable.
- Operator as **less than or equal**.
- Value is **How many records you want to create?** Number component which we created in object select screen.

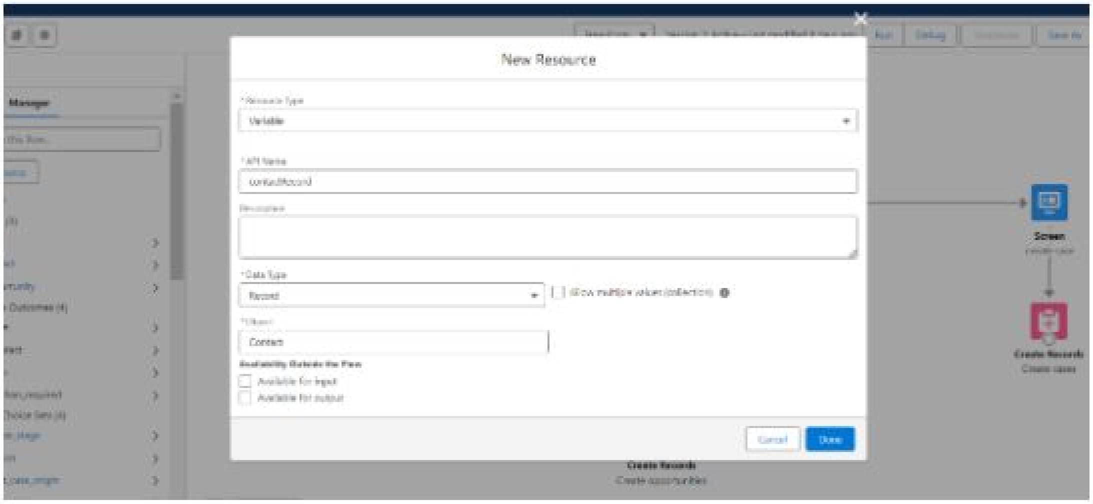


- After that click on done. Now the decision loop is created.
- Now, first connect the connect the **check user select decision** to **check counter decision** after that to the **isContact** screen. As shown in below image.

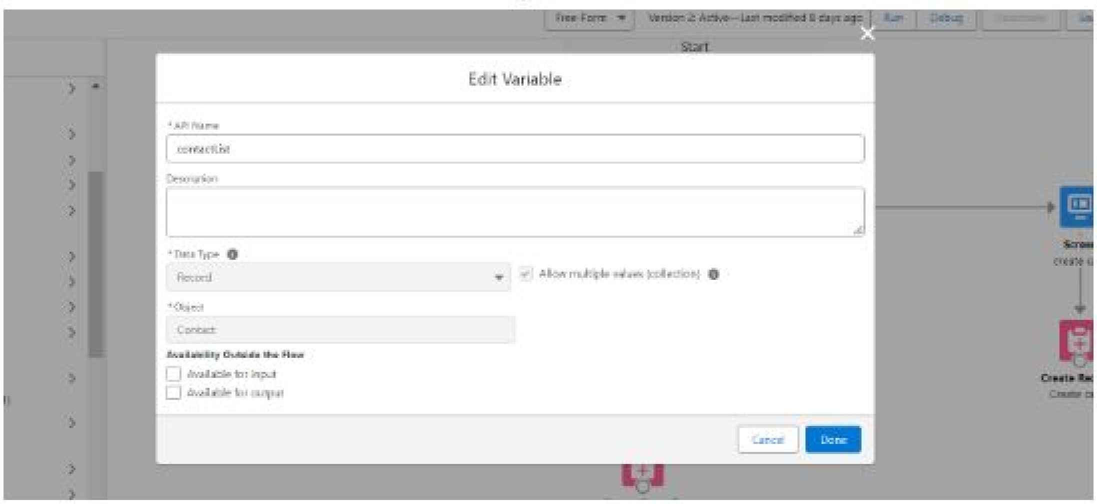


- we are not going to add the create records of isContact to this loop, so we disconnect the line.
- Here, we are going to create 2 variable 1st variable recording contact related information. 2nd variable for **contactList** as collection.
- To create these 2 variables, go to manager and select new resources.

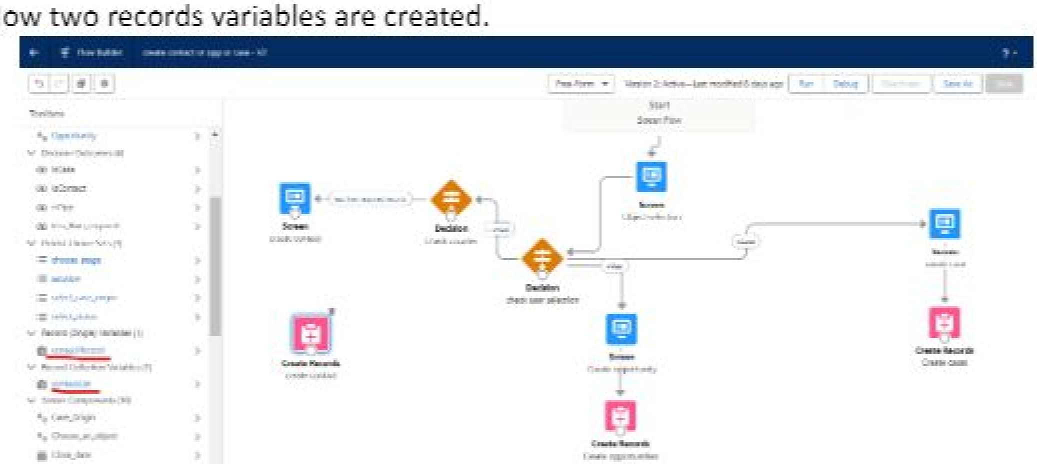
- After that select variables. Then enter API name as contactRecord and data type is record. And object will be contact. And click on done.



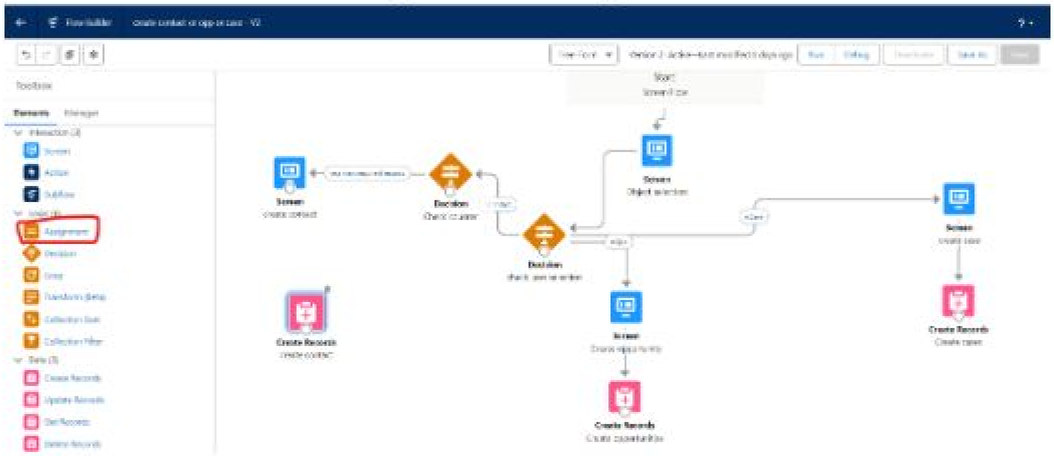
- Now again click on new resources to create varibale as **contactList**.
- After that enter the API name as **contactList**, data type should be Record, object is contact. And check the box **allow multiple values**. And click on done.



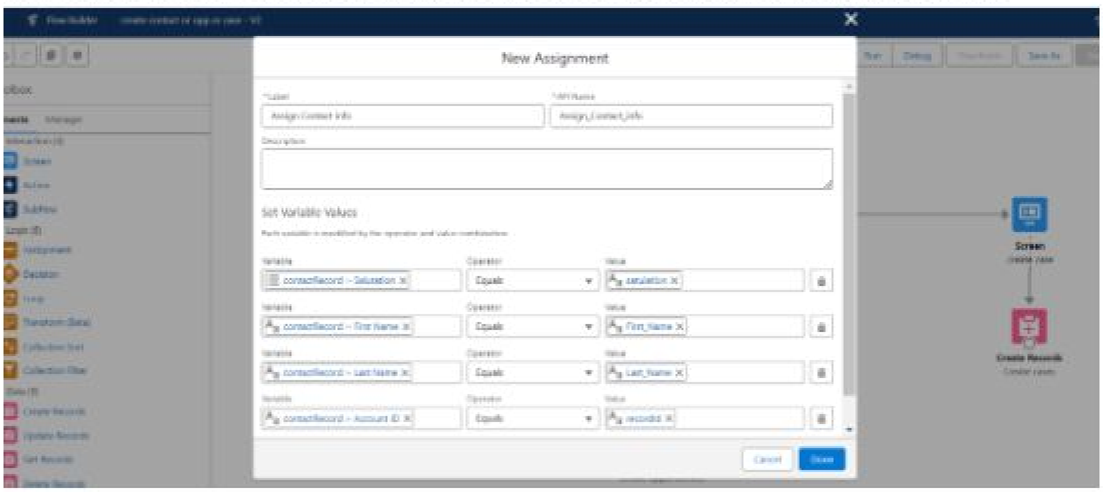
- Now two records variables are created.



- After that we have to add assignment from elements.
- Go to elements and select assignment and drag it to the canvas.

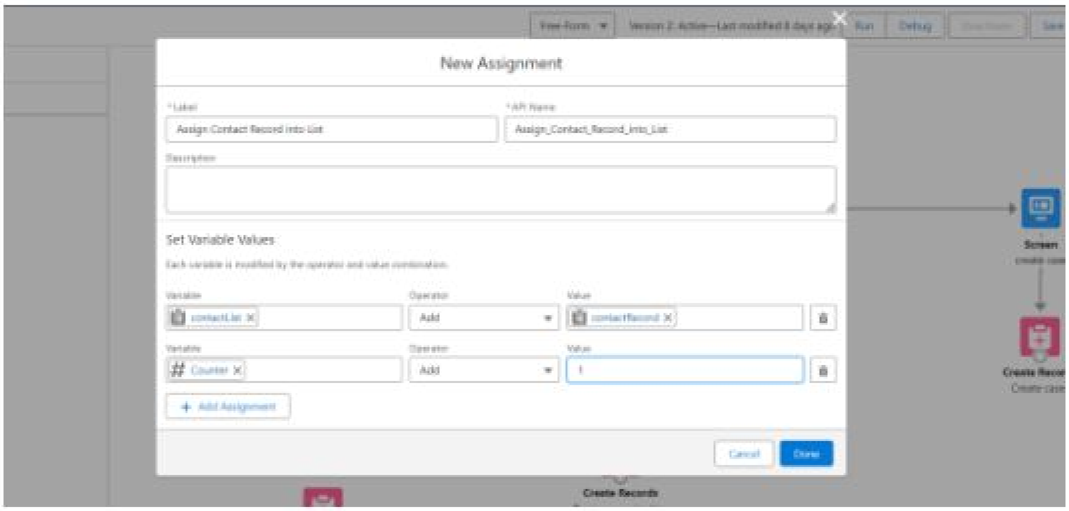


- After that enter the label and API name. now we are going to map the fields of contact object inside the contactRecord variable. Like below image and click on done.

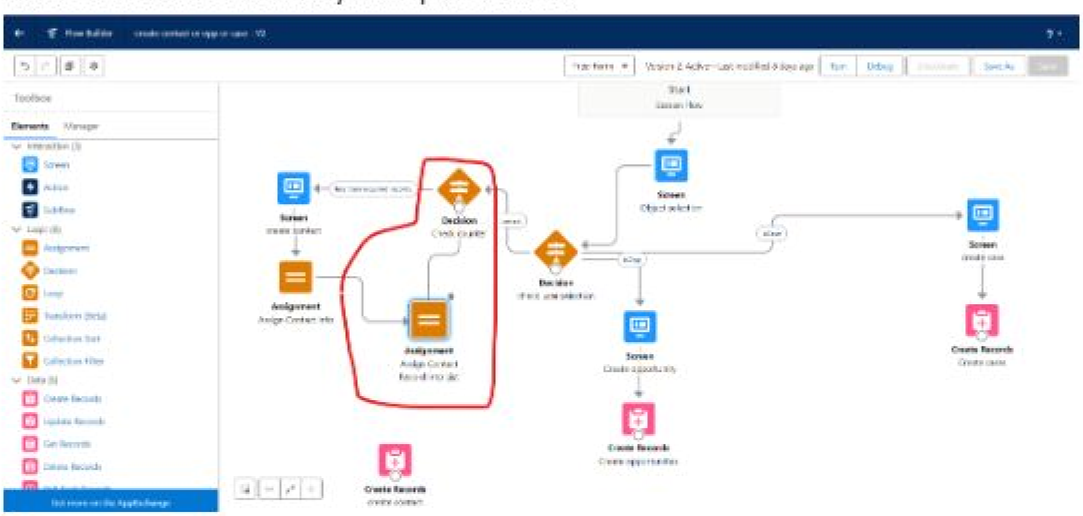


- Now assignment is created. after that connect the screen of contact with this assignment.

- After that we have to create one more assignment for **contactList** which add the records of contact which is created in **contactRecord** variable.
- Again, click on assignment inside elements and place it in canvas.
- After that enter label and API name, variable is contactList, operators is ADD and value is contactRecords.
- After that click on Add assignment button to add the counter. Variable is counter, operator is ADD and Values is 1. And click on done.



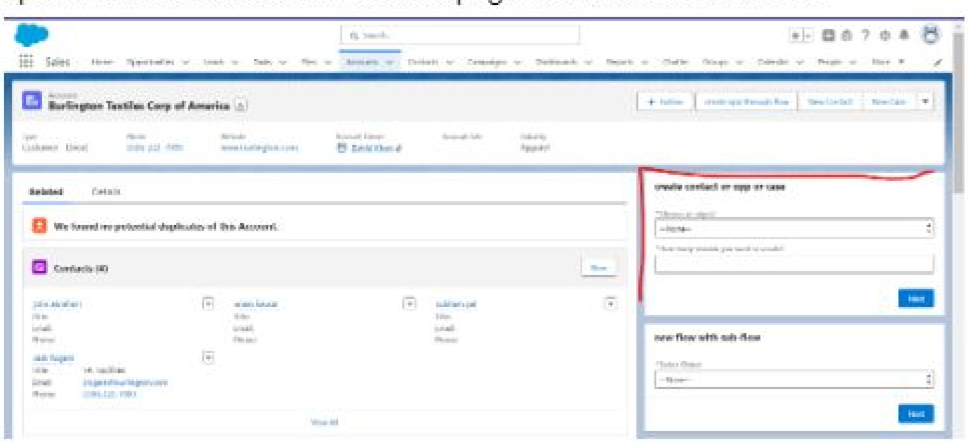
- After that connect the **Assign contact info assignment** with **assign contact Record into List assignment.**
- After that connect the **assign contact Record into List assignment** with the **check counter decision**. This way a loop is created.



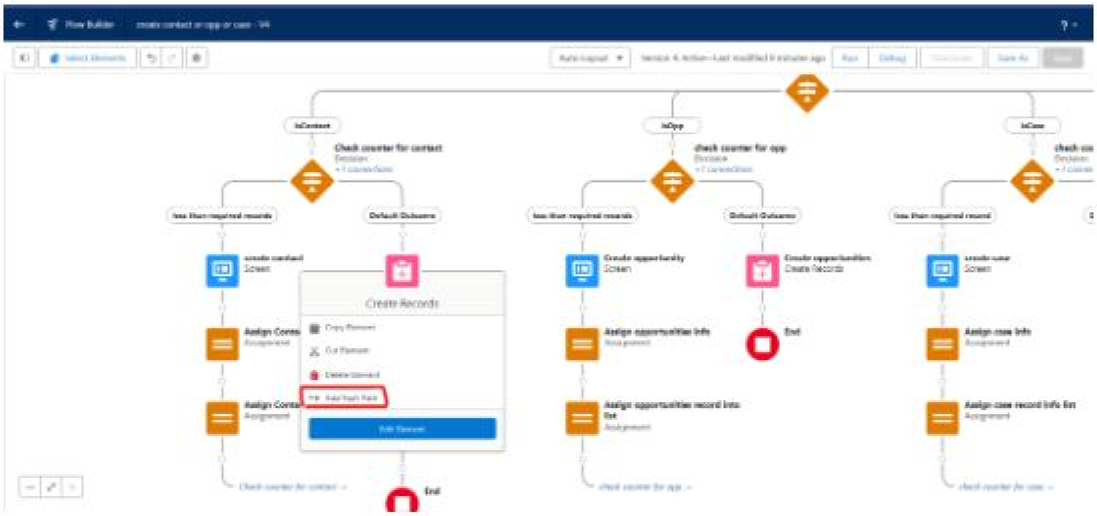
- Once this loop is fulfilling the check counter decision will be directed to create records of contact. So, connect the check counter decision with create records.

- now, we are creating multiple records, so we have to choose multiple in create records of contact.
- Just double click on create records and choose multiple in **How Many Records to Create,** and for record collection enter the conatctList variable which we created. and click on done.

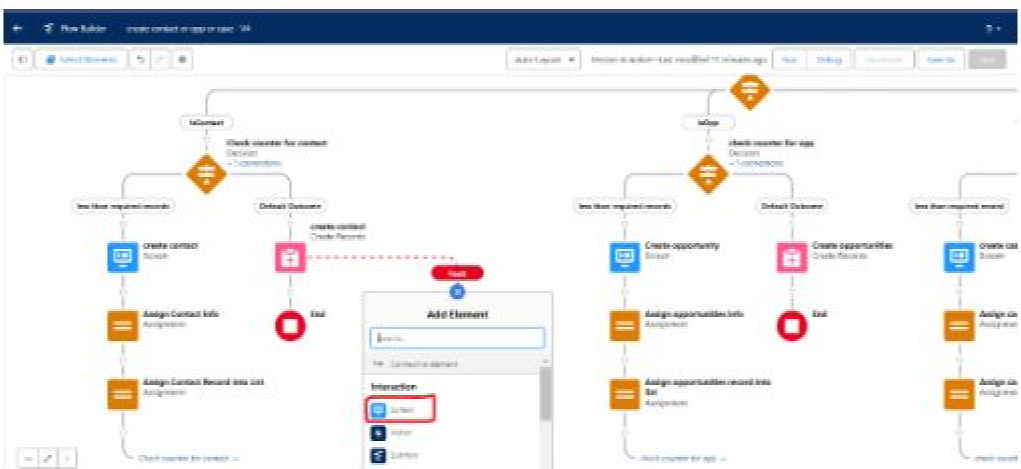
- This way the contact part is done in same way we have to create this for opportunities and case. But here we are using same variable counter only apart from this we have to repeat all steps.
- Now place this flow on account record page. And check the results.



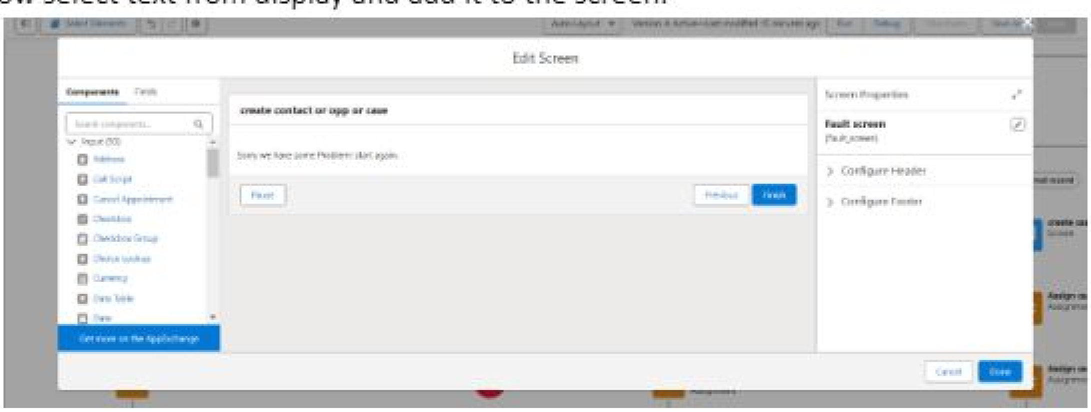
- We can also add fault path for the flow so if the create records is not working so that we can use fault path and show some text.
- To use fault path first convert the flow into auto-layout after that click on the create records and select Add fault path.



- After that click on + sign below fault and we can use anything like screen, sub-flow. Here we are using screen to show text.



- Now select text from display and add it to the screen.



- Now fault is created. so when ever the create screen is fail so fault screen will show the text.

DAY-27

TRIGGERED FLOW

- Record triggered flow can't be visible in front-end or UI. It will run in background.
- Record triggered flow will be trigger when record is created, updated, or deleted.
- Screen flow is used to show the flow on UI.

Scenario:

- On account creation if industry is **=** 'media' then popular rating as 'hot'.
- Record is created.
  - ➢ Upon creation of an account, a related opportunity should be created automatically. [no criteria].

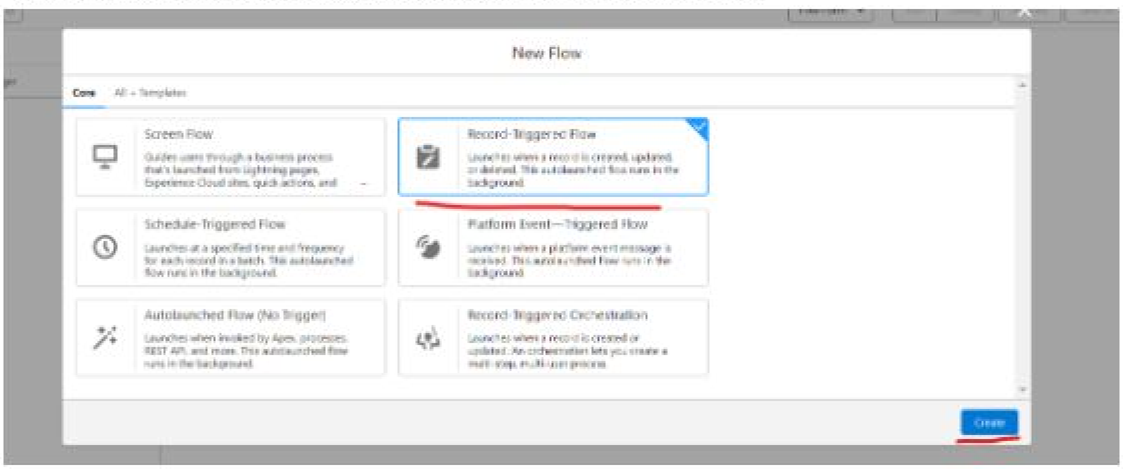
    Opp name **=** opportunity name

    Close date **=** close date

    Stage **=** prospecting
  - ➢ Now add a criterion if Active **=** Yes on account then newly opportunity should be created.
- When a contact is created the update the 'Total contact' field

On account creation if industry is = 'media' then popular rating as 'hot'.

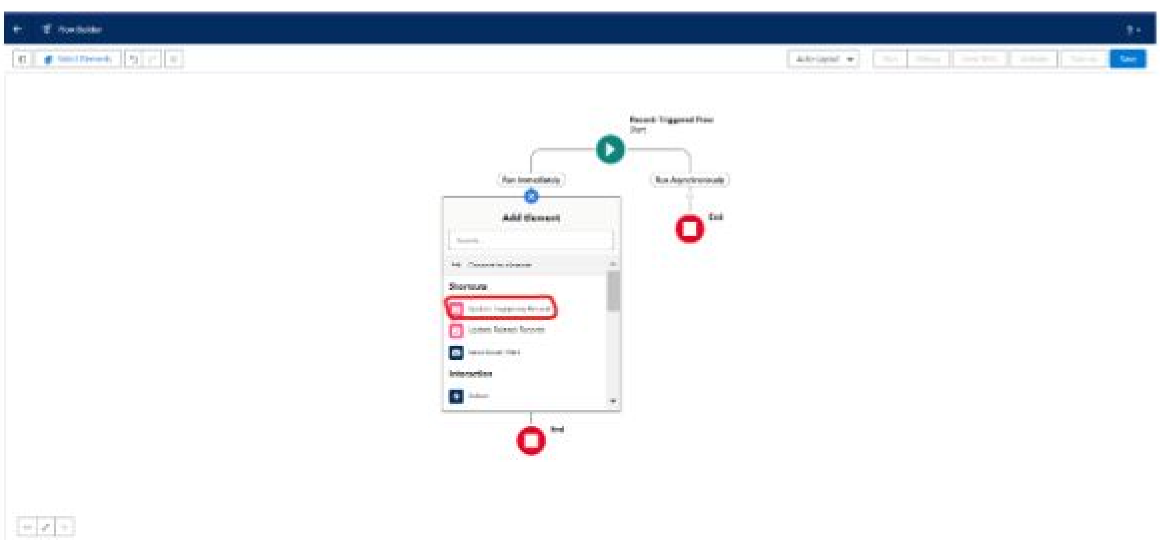
- Go to the set-up and search for flow on quick search and click on new flow.
- After that select record-triggered flow and click on create.



- After that we have to select object in triggered flow. In our requirements we are using account object so select account object.
- Inside configure trigger, **A record in created** because we are creating account records.
- In set entry **conditions requirement** choose AND and conditions is **industry is equal to media**.

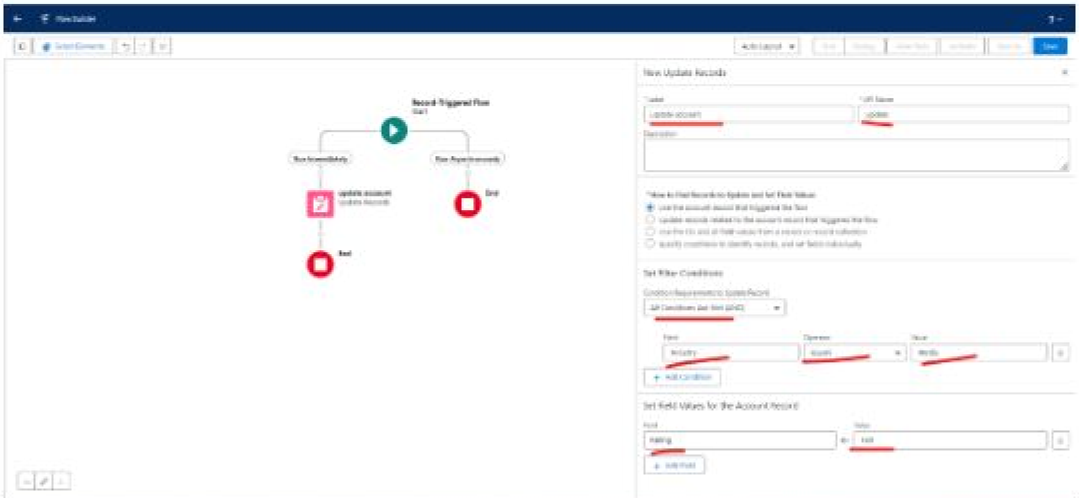
- In optimize the flow for we have 2 option **Fast Field updates** and **Actions and related records**.
- If we want to do something on the same record through which flow is triggered, then choose Fast Field updates.
- If we want to do something on the related record, then go with actions and related records.
- Here, we are selecting Fast field updates.

- After that click on + icon on run immediately and select **update triggering record.** Select this option when we want to create account records and through which this flow will triggered.

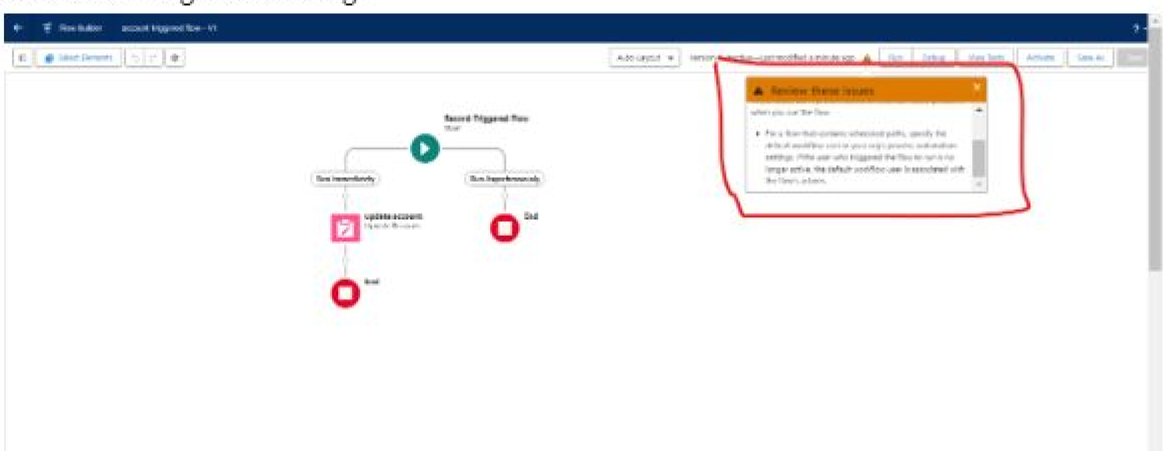


- After that enter label and API name. in **How to Find Records to Update and Set Their Values** choose 1st option.
- In set filter conditions we are going to make criteria according to our scenario if industry is **=** 'media' then popular rating as 'hot'.

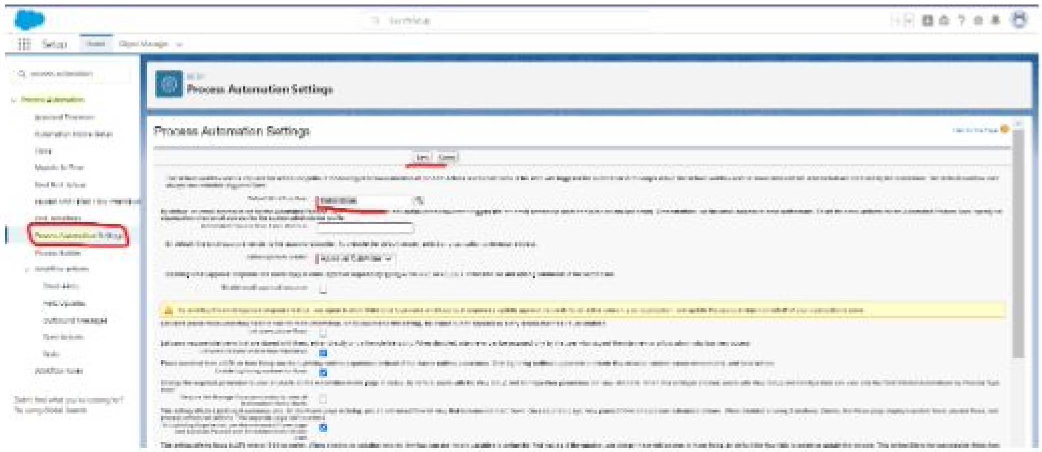
- So, in Set Filter Conditions select AND and condition is when industry is equal to media the rating is hot.



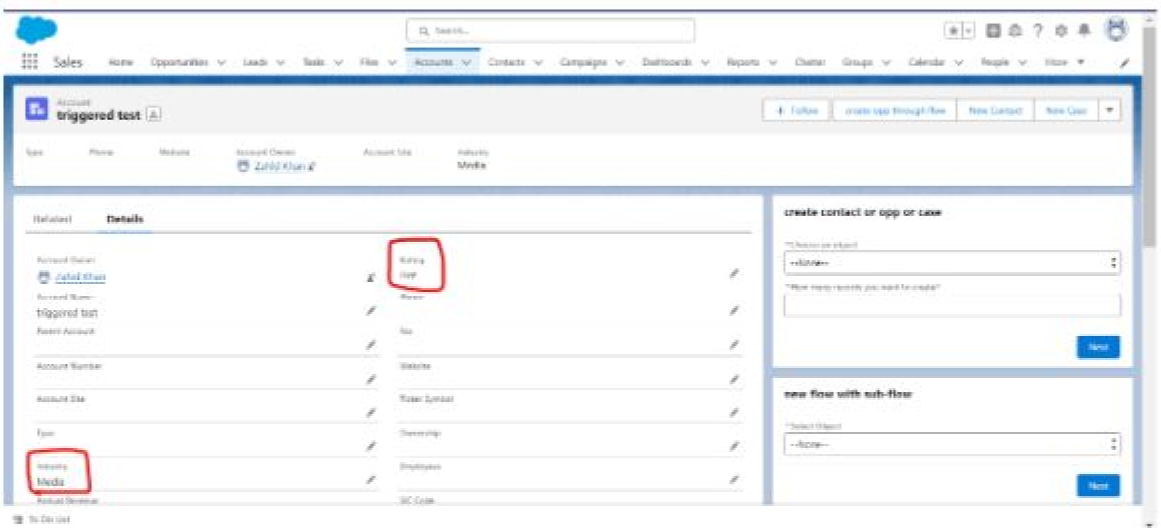
- now when the industry **=** ‘media’ so rating will be hot otherwise this flow will not be triggered.
- After that save the flow.
- After save we got a warning.



- To solve this warning, we have to set default workflow user. For this go to home and search for process automation settings. After that enter system admin name in default workflow user. And click on save.



- After that refresh the page so warning will be gone.
- Now activate the flow.
- Now to account object and create a record and choose media in industry so that rating will become hot automatically because of this triggered flow.



2nd-scenario:

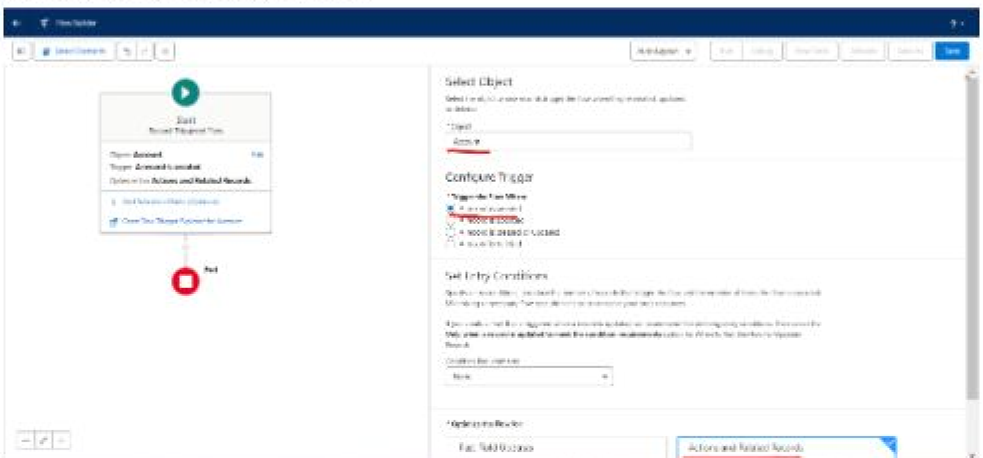
1.Upon creation of an account, a related opportunity should be created automatically. [no criteria].

Opp name = opportunity name
Close date = close date
Stage = prospecting

2.Now add a criterion if Active = Yes on account then newly opportunity should be created

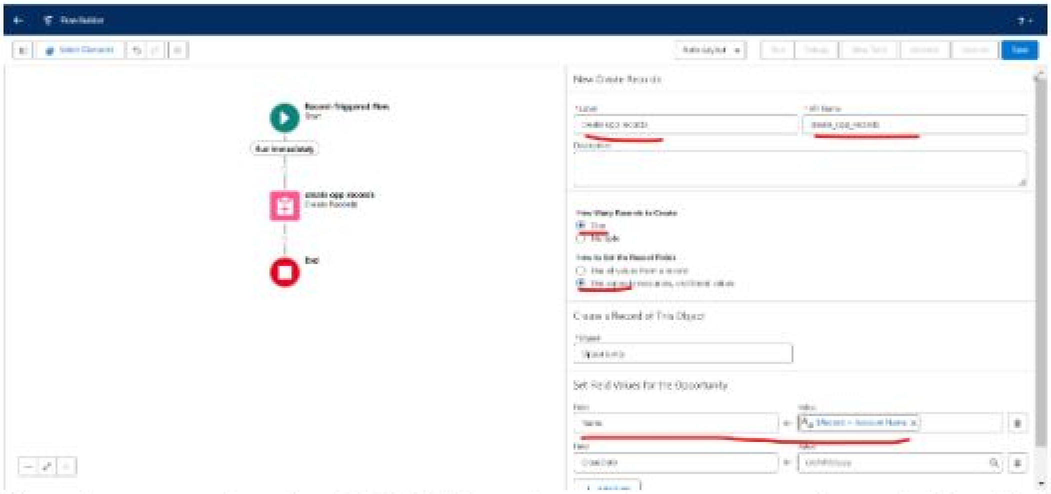
<u>1.Upon creation of an account, a related opportunity should be created automatically. [no criteria]:</u>

- Go to the home and search for flows and click on new flow and select the record-triggered flow.
- After that select account object and create a record and select Action and related records. And criteria are none.

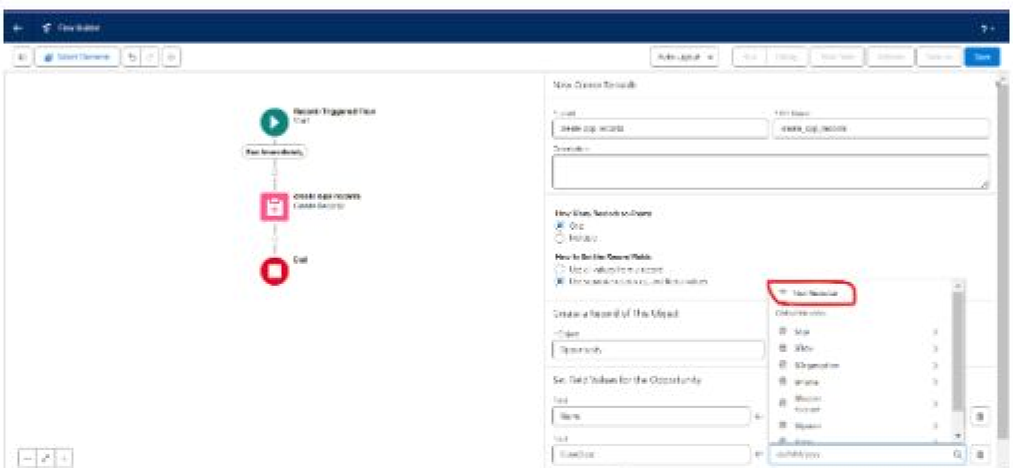


- If we have a validation rule in our org like few fields can't be empty so we have to add that field in our conditions otherwise we won't be able to create record.
- After that click on + icon and select **create Records** from **data** so that we can create record for opportunity.

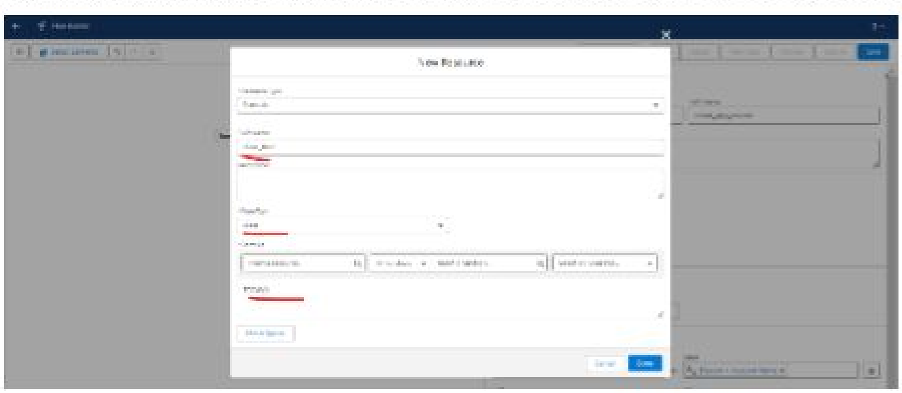
- After that enter the label and api name, how many records to create select one, how to set the records field select use separate resource. Select object as opportunity. Now we have to write the field name **as name, close date and stage**.
- In field type select **Name** and in value select **$Record** inside this all information will available. So, the account name will be equal to opportunity name.



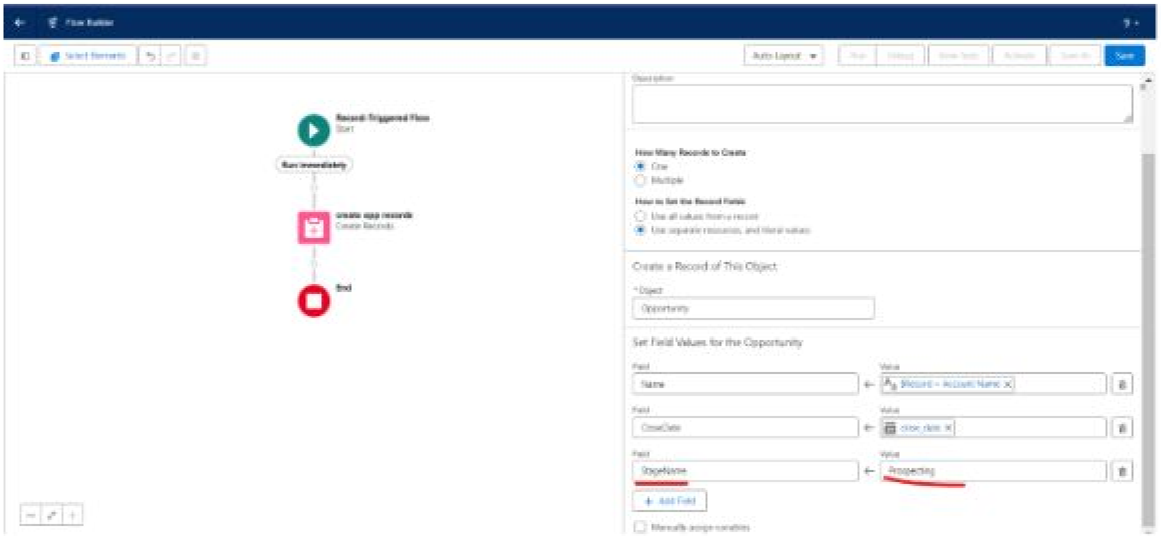
- After that enter close date in field. For value we have to create formula. For this click on new resources and select formula.



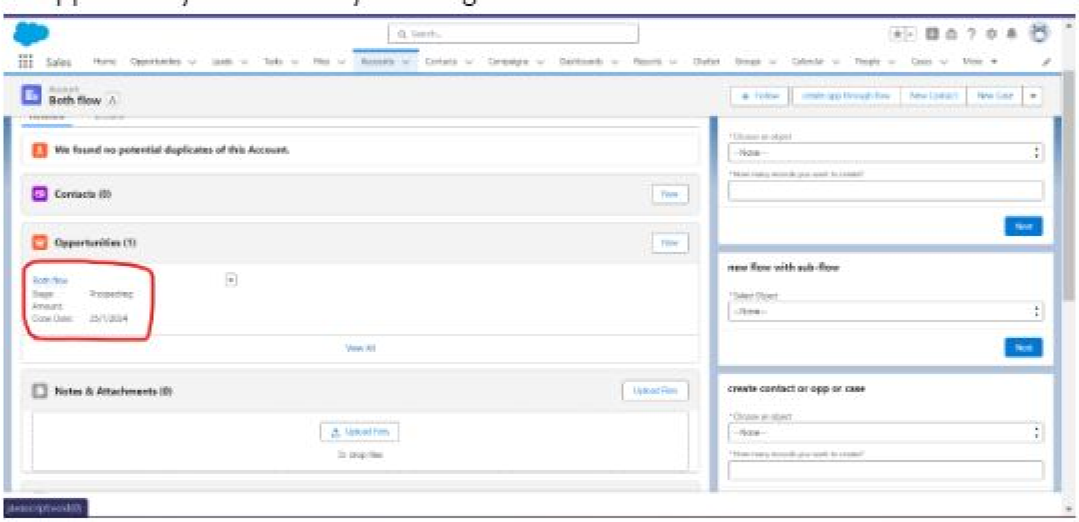
- After that type api name, data type as date and in formula type **TODAY().** And click on done.



- After that we have to create stage. So, write stage in field and in value select prospecting.

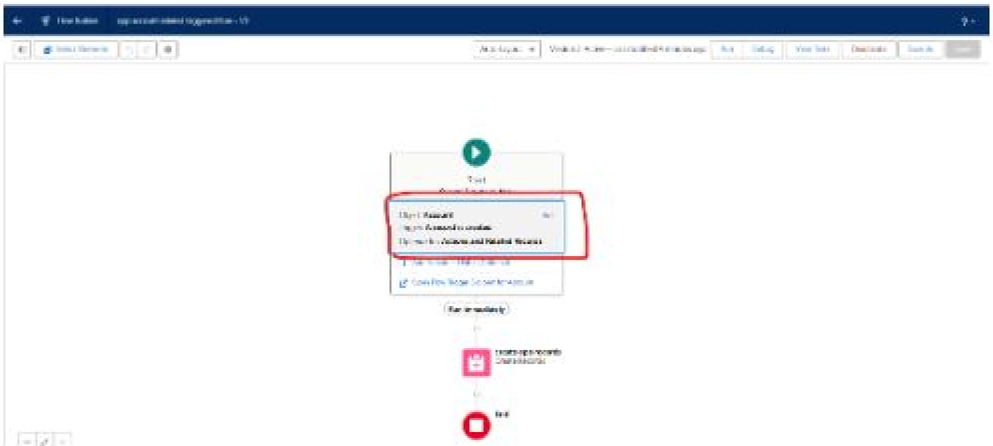


- After that add accountId in field and in value select **$Record** then accountid so that this opportunity record will be related to account.
- Now save the flow and activate it.
- Now go to account object and create any record to see that working of flows.
- Opportunity is created by creating account records.

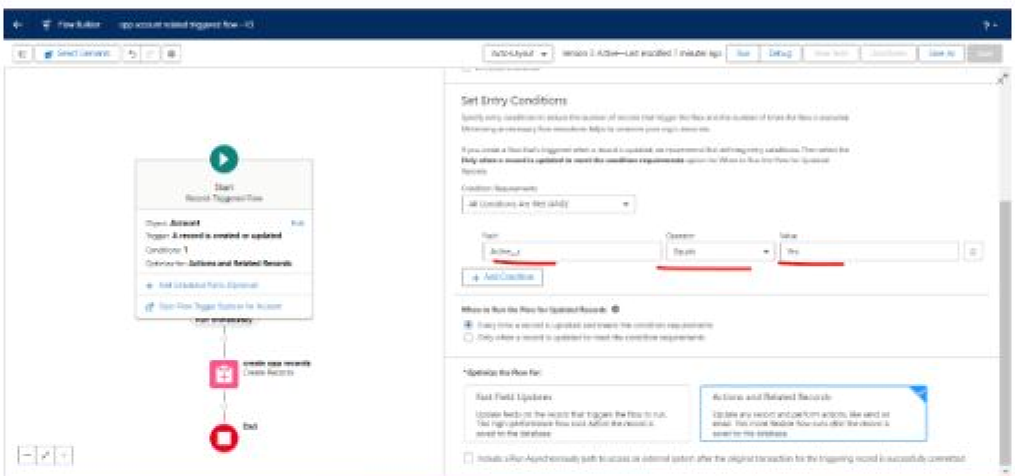


2.Now add a criterion if Active = Yes on account then newly opportunity should be created:

- Now we have to add the criteria in same flow. So, open the flow click on start button and flow and edit the record triggered flow.



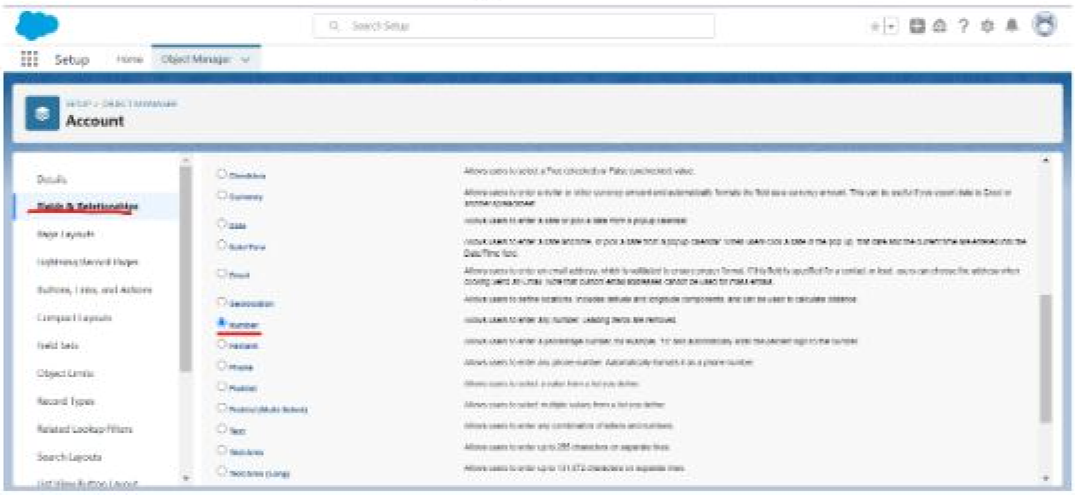
- After that enter the criteria in set entry conditions that active **=** 'yes' so that opportunity record created otherwise not created.



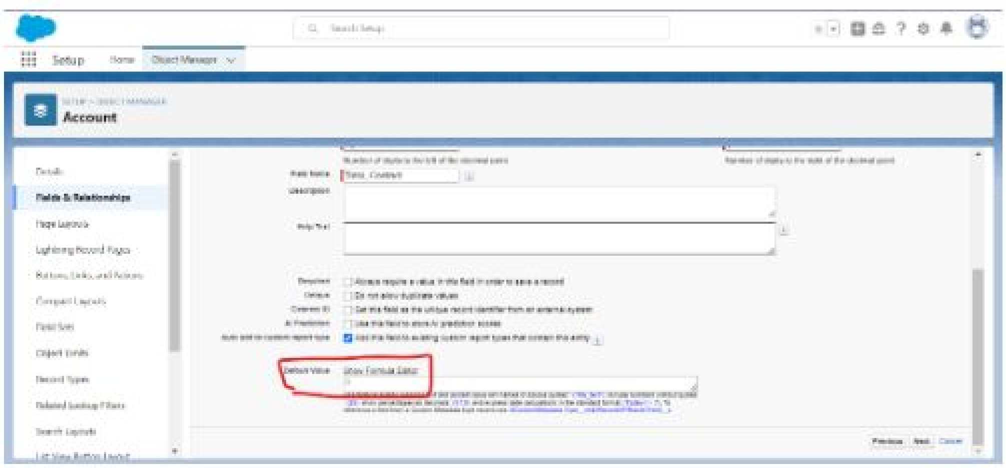
- Now save the flow and check that result.
- As we select active is no so the opportunity record is not created. if active is yes so that opportunity record in created.

3-Scenario-When a contact is created then update the 'Total contact' field on account using record triggered flow:

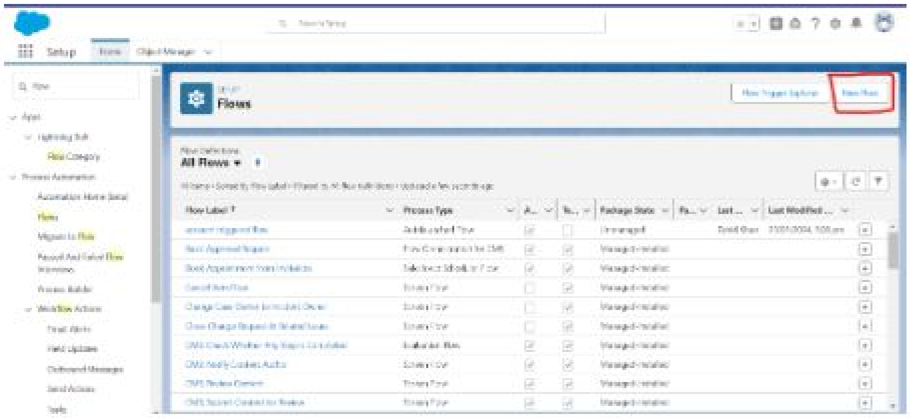
- Before making this flow, we have to create a field of total contact in account object. For this, go to set-up and click on object-manager after that select account object.
- After that click on field & relationship and click on new.
- After that select number in datatype. And create a field with name **Total Contact**.



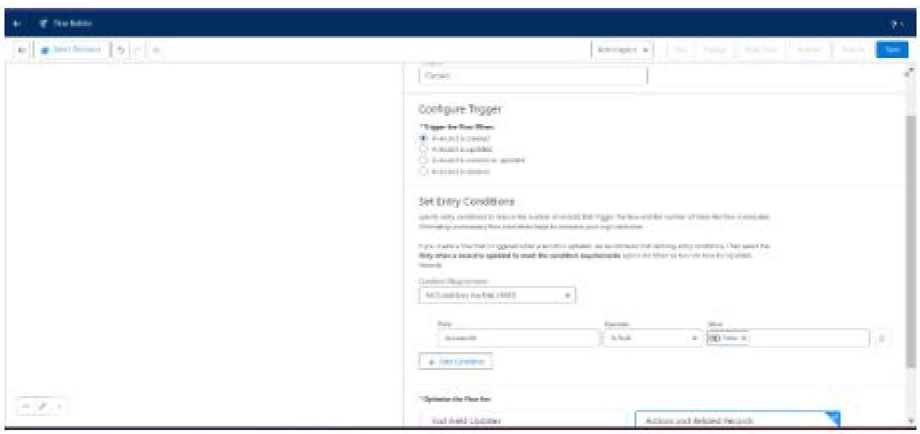
- After that enter the default value is 0.



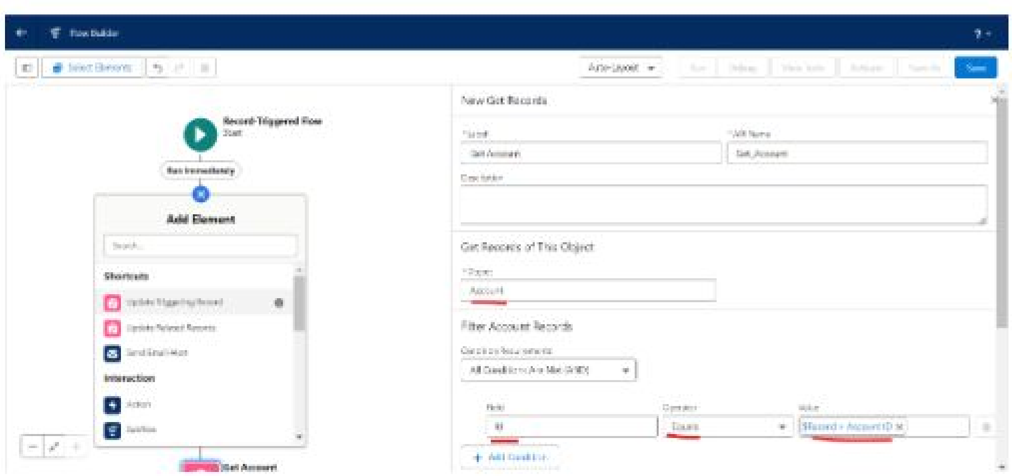
- Now total contact field is created.
- Now we can make a triggered flow which count the total contact on account when account is created.
- Go to the set-up and search flows in quick search. And click on new flow.



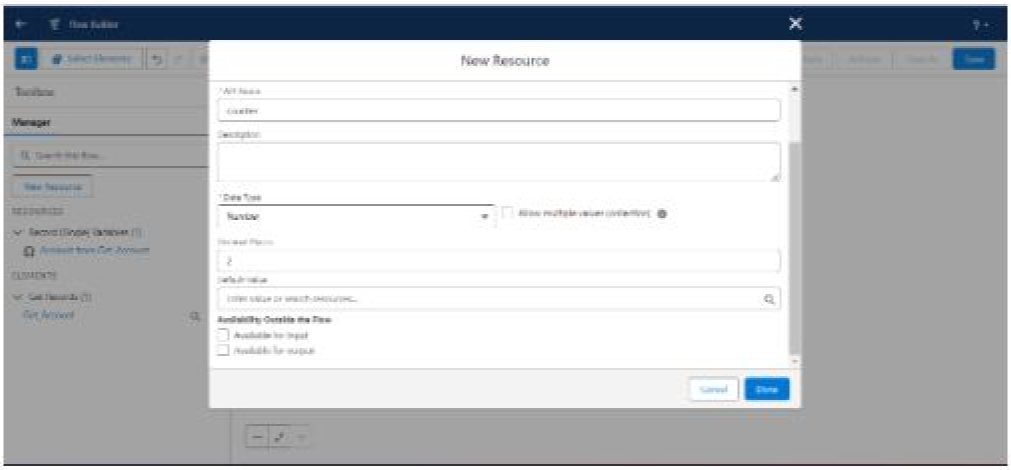
- after that select record-triggered flow and click on create.
- After that enter the object as **contact**, in configure trigger choose **A record is created**. then make entry criteria that accountid is null. And select actions and related records. And click on done.



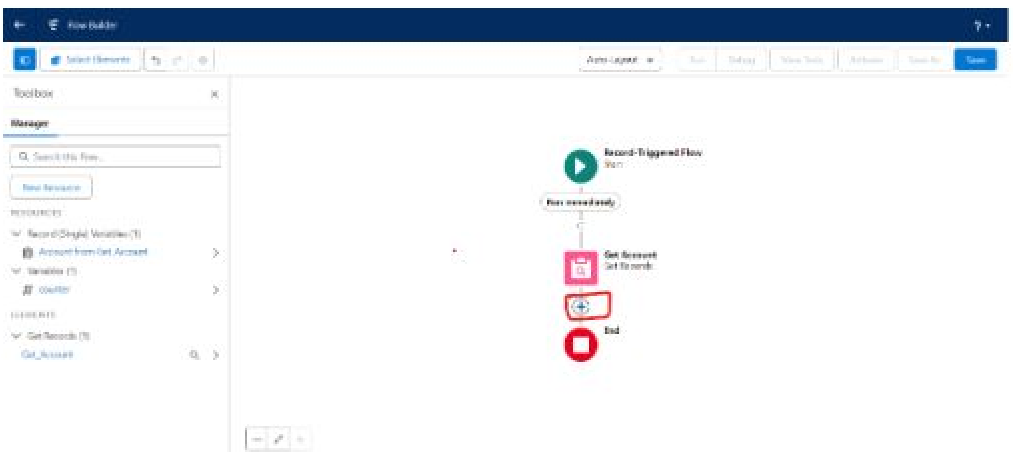
- After that click on + icon and select **Get Record** under **Data.**
- After that enter Label and API name and select account is object. And filter account records as id equal to account id. after that select only the first record and automatically store all field.



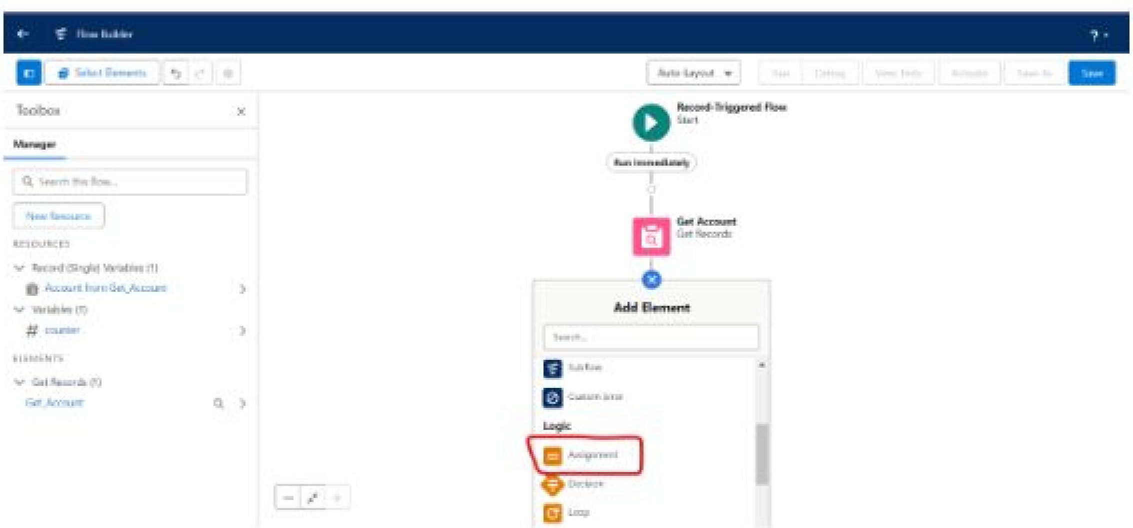
- Make a resource and resource type should be variable. Enter the API and data type should be number. And click on done.



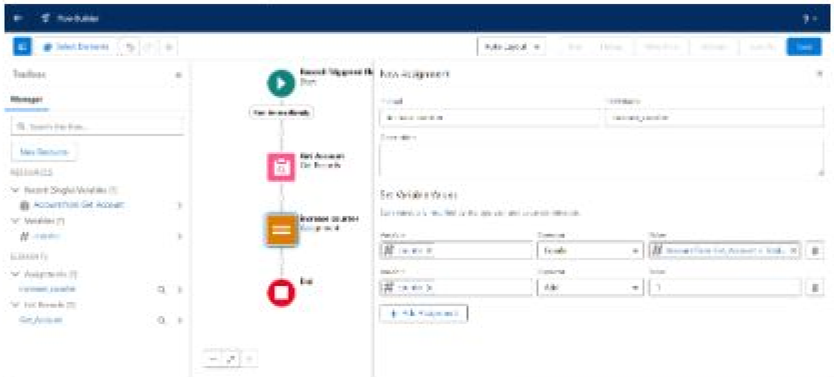
- After that click on + icon below Get Account.



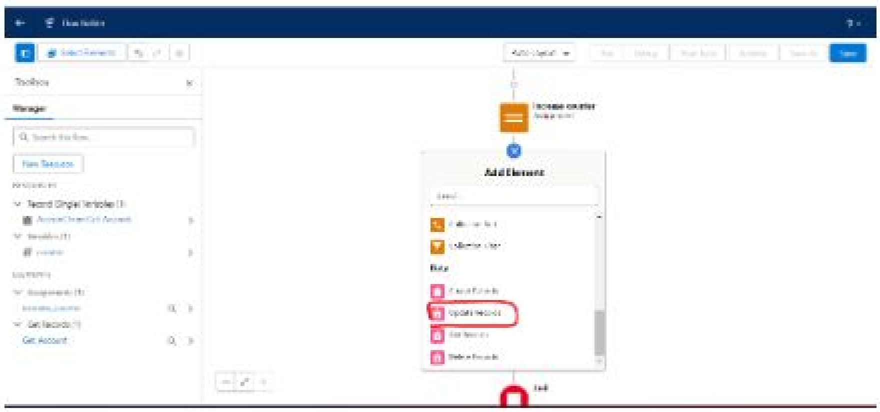
- After that select assignment under logic.



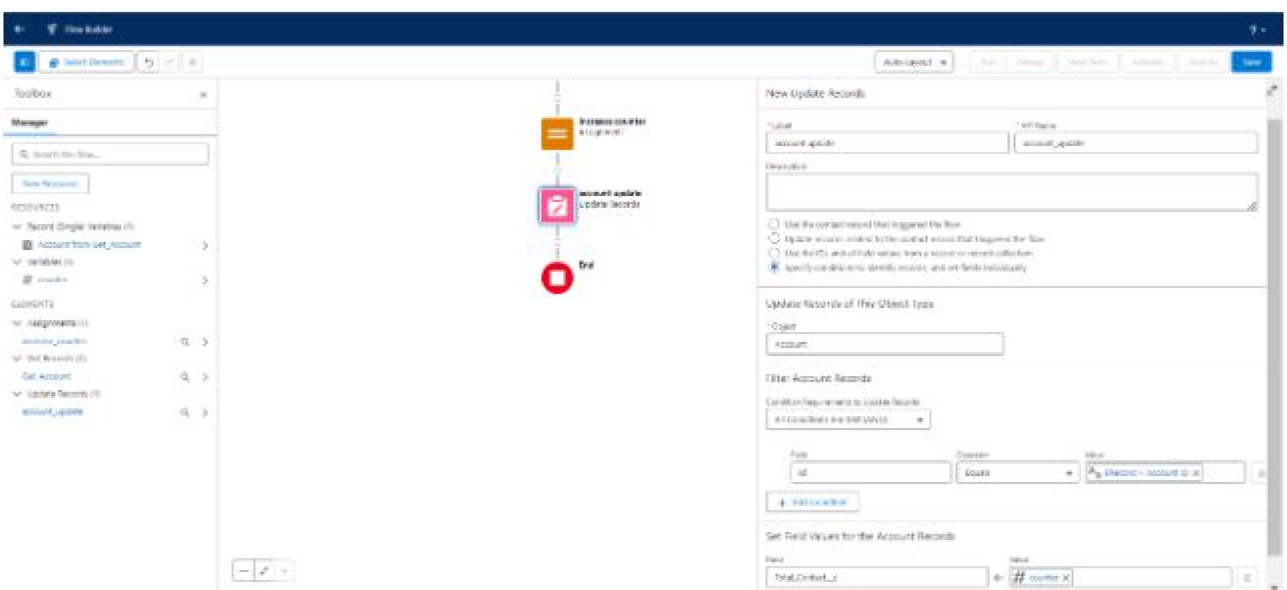
- After that enter name and api name. and set the variable.



- After that click on + icon below increase counter and select **update record** under **data**.



- After that enter label and api name. choose specify conditions to identify records and set fields individually. After that select object account. Then enter filters for account records. Now set the field value for the account records.



- Now save the flow and activate it. Now go to front-end of the app and check.

Day – 28

Record-Trigged Flow -2

Scenario:

- Upon Account Phone update, update all related contacts phone number as well.
    1. Without using loop elements.
    2. Using loop elements.
- When an opportunity is set as closed won/lost and Account is populated the post beloe message as chatter on the opportunity: [using chatter post action]

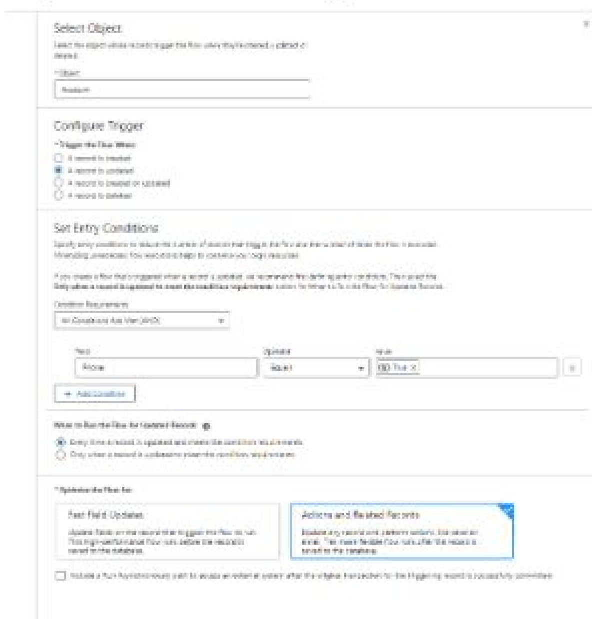
  @[account owner] opportunity is closed won/lost.

  Closed date: show close date of opportunity.

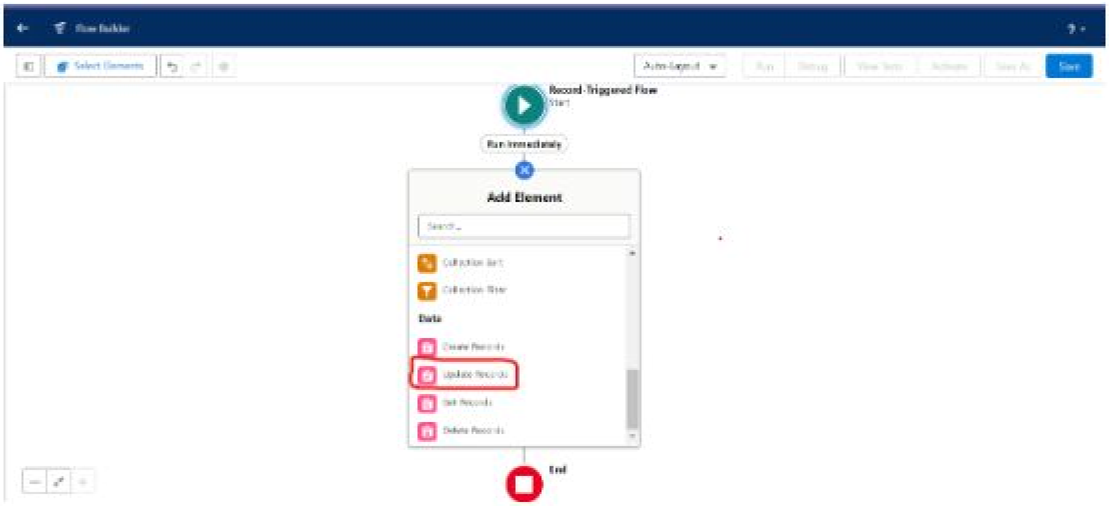
  Amount: show amount of opportunity

1. **Upon Account Phone update, update all related contacts phone number as well.**
    i. **Without using loop elements.**
    ii. **Using loop elements.**

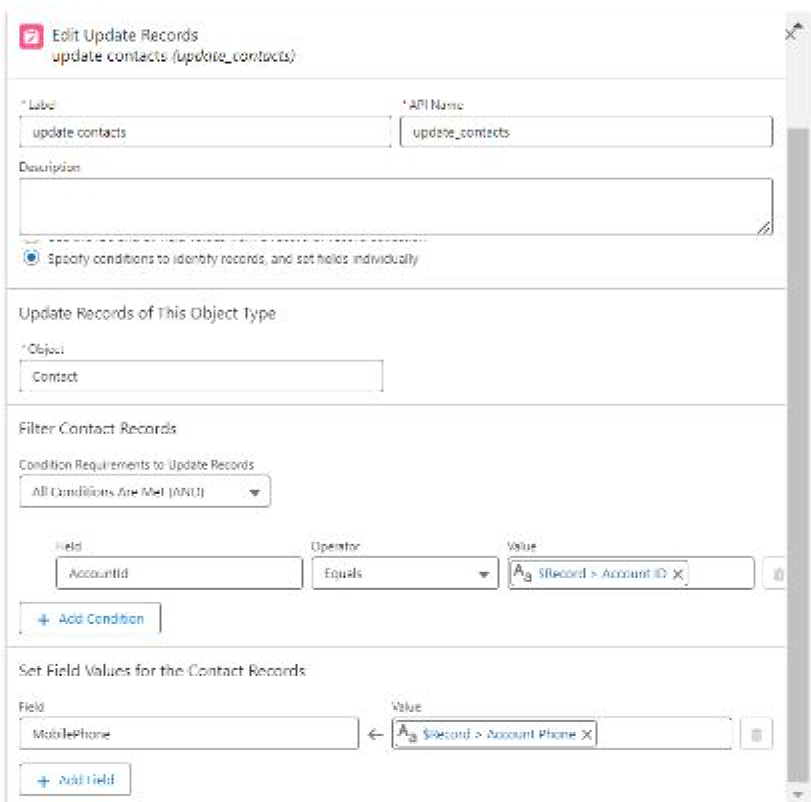
- **Steps for Without using loop elements.**
- Click on set-up and search flows in quick search after that click on new flow.
- After that select record triggered flow and click on create.
- After select object account and configure trigger is **a record is update** because we update the phone number.
- In entry conditions select And and phone number is changed to true. And choose account and related accounts.



- After that click on + icon and select update records from the **data** section.

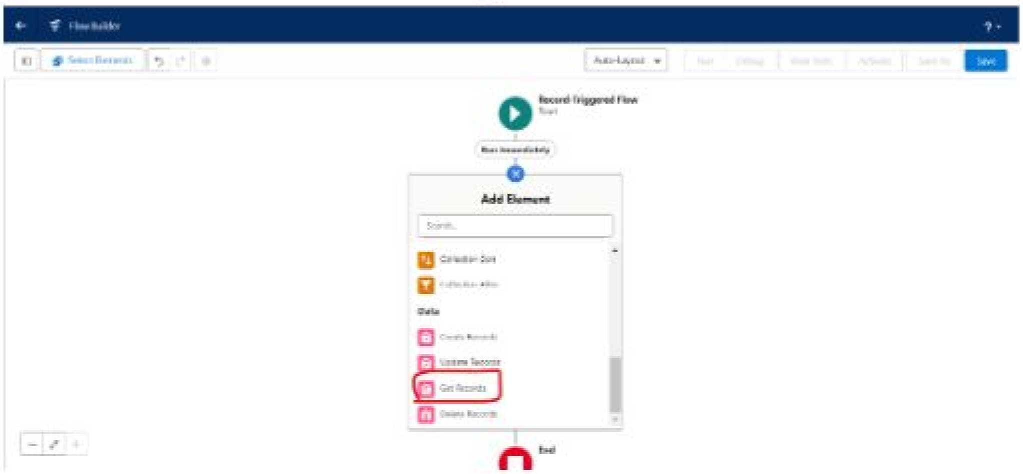


- After that enter label and Api name and select Specify conditions to identify records and set fields individually.
- Now select the contact object because we want to update the contacts phone number updated.
- After that set filter contact record. Which is accountid equal to $Record>account id.
- After that set field values for the contact records. field is mobilephone and value is $Record and the account phone.

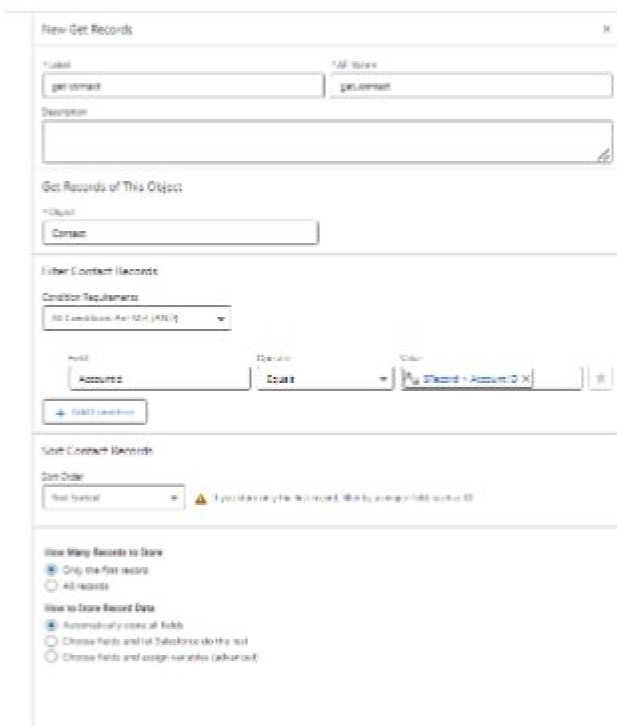


- Now save the flow and activate it.
- Now go the app and see the result that change the phone of any account records its related contact phone also updated.

- <u>**Using loop elements.**</u>
    - 1st create a triggered flow same as before.
    - After that click on + icon and select **get record** from data **section**.

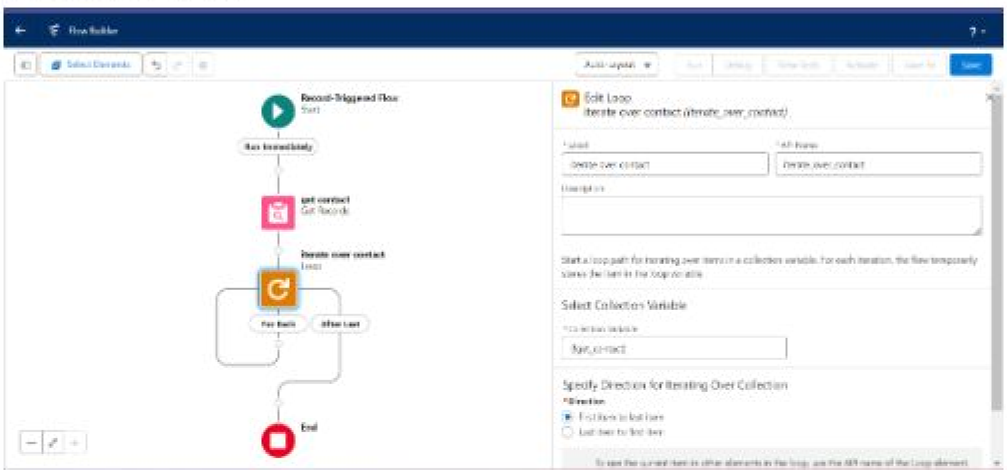


- After that enter label and api name and select contact object. After that we have to specify the condition. Condition should be accountid equal to $record and accountId.
- In how many records to store select **All records.**

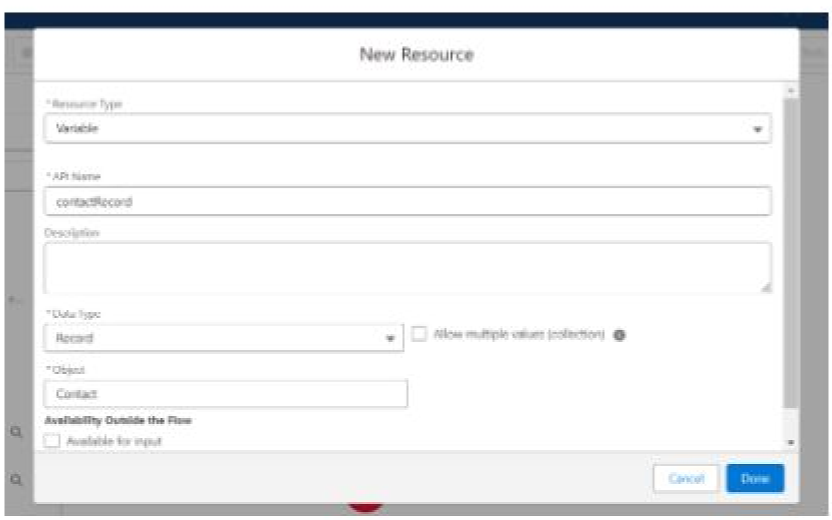


- Now we are going to implement loop. For this click on + icon below get contact and select **loop** under **logic** section.

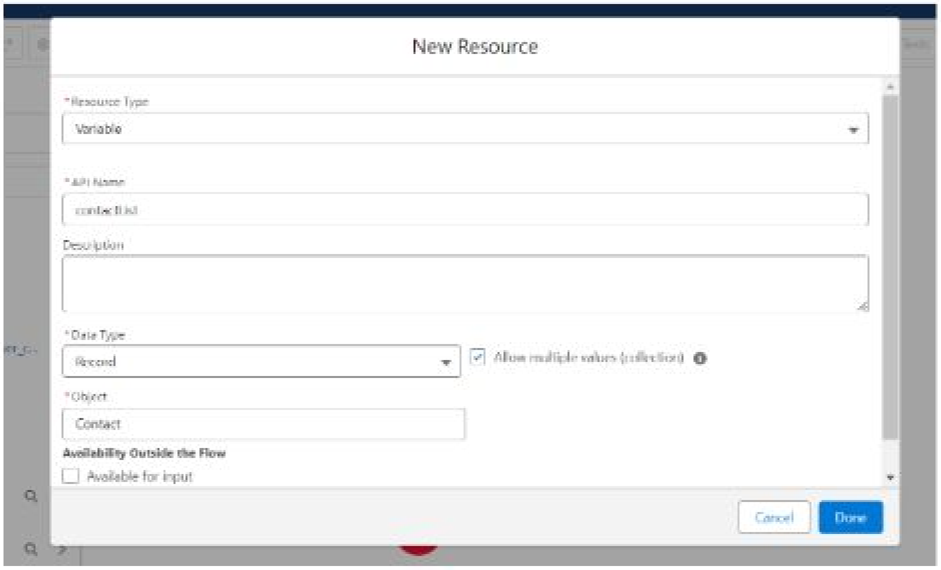
- After that enter label and Api name. after that enter the collection variable get contact which we create earlier.



- After that create 2 variables. For this click on new resources and select variable.
- After that enter the api name contactRecord and data type is record and object is contact. and click on done.

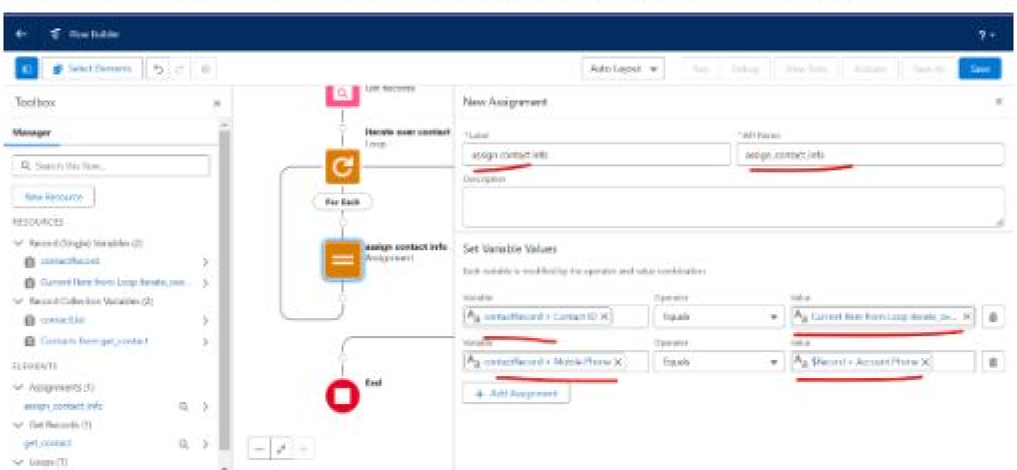


- After that create one more variable. Name contactList data type is record and object will be contact and check the box allow multiple value. And click on done.

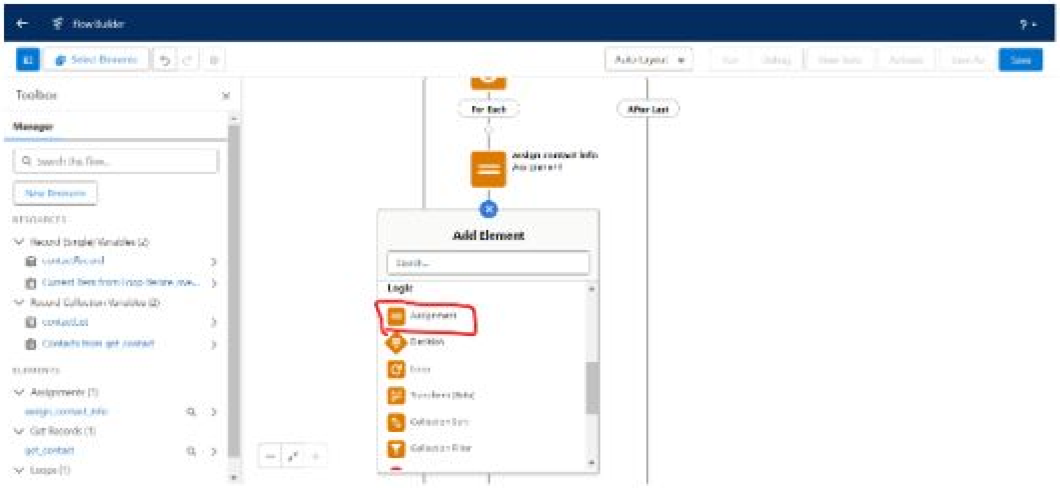


- After that click on + icon below For Each and select **assignment** under **logic** section.

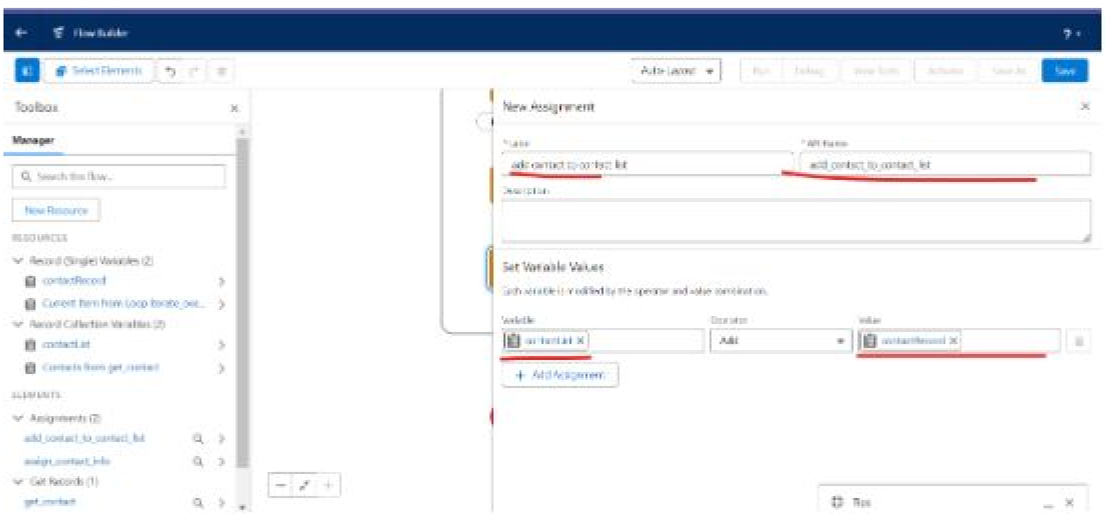
- after that enter label and api and enter below details and click on done.



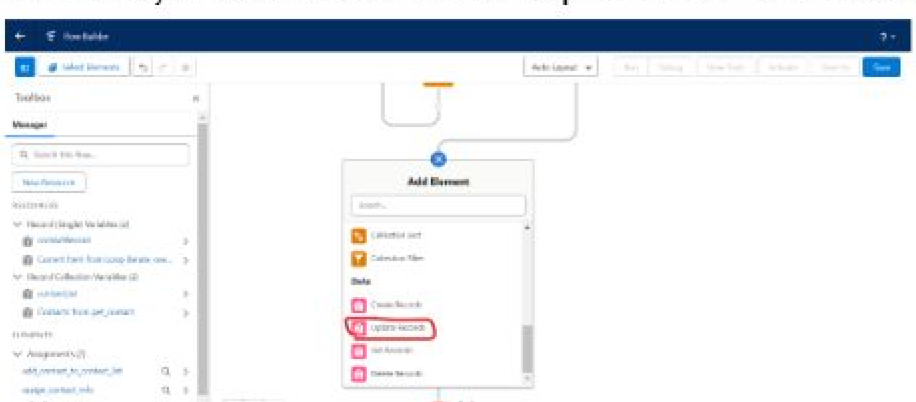
- again, click on + icon below the + icon of 1st assignment and choose assignment from logic section.



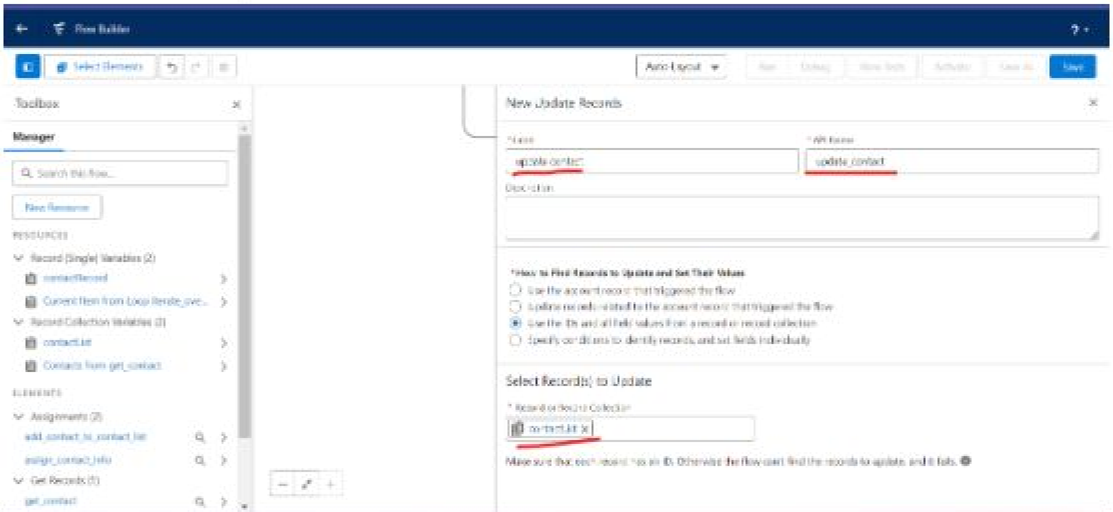
- After that enter label and api name and enter below details as shown in image.



- Now flow is created and this loop will iterate based on the contact in account object if 3 contact so it iterate 3 time.
- Now click on + icon just above the end and select **update** record from **data** section.



- Enter label and api. After that enter details as shown in below.



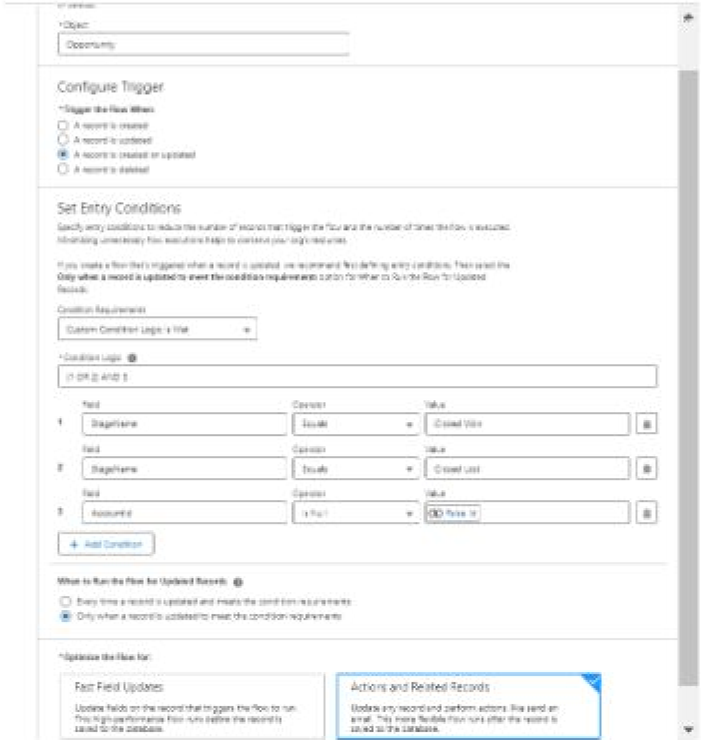
- Now click on save and activate the flow.
- Now got to front-end and check the results that when phone number of account is changed so the related contact number is also changed.

- **When an opportunity is set as closed won/lost and Account is populated the post below message as chatter on the opportunity: [using chatter post action]**

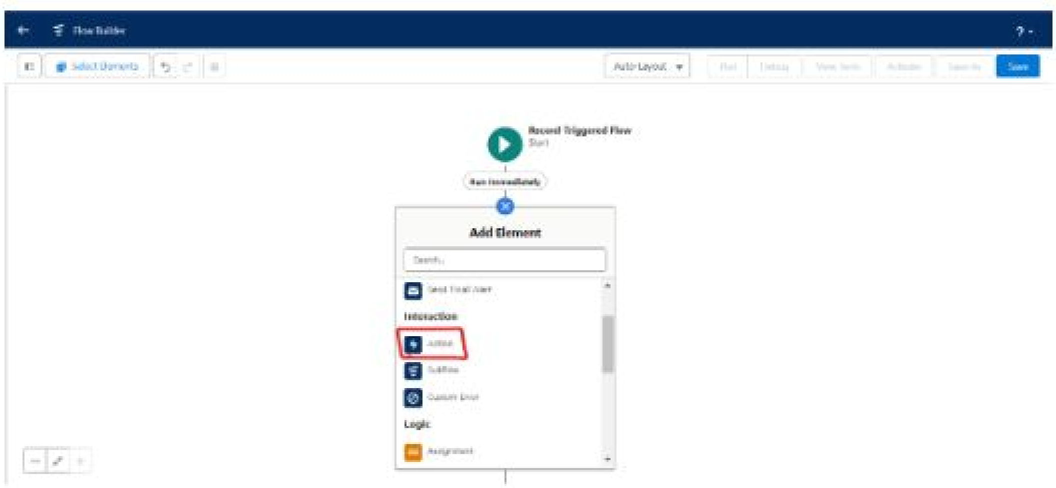
  @ [account owner] opportunity is closed won/lost.

  Closed date: show close date of opportunity.

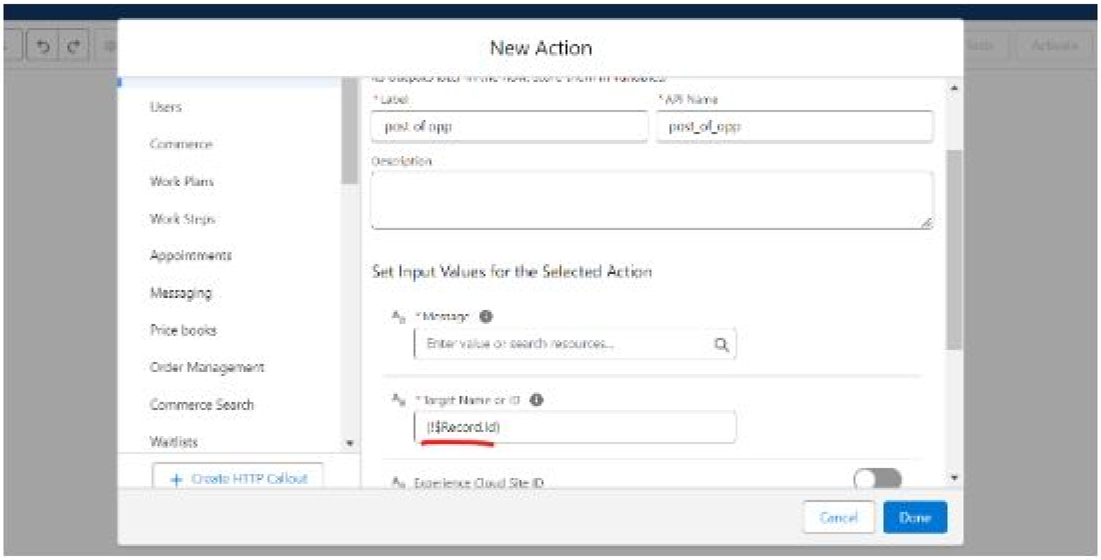
  Amount: show amount of opportunity.
- Go to the set-up and search for flows and click on new flow. After that select record-triggered flow.
- After that select object as opportunity.
- In configure trigger choose A record is created or updated.



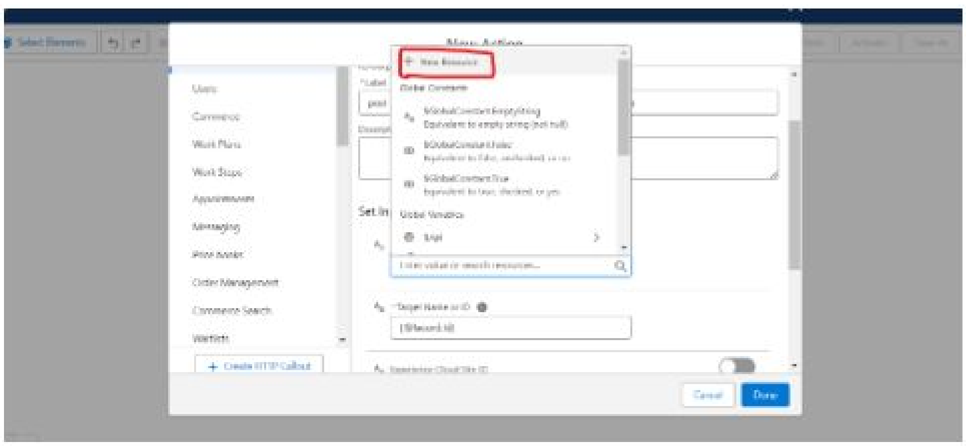
- After that click on + icon and select action from interaction section.



- Search for post to chatter in action search box.
- After that enter label and Api name.
- After that enter the target id from where we want to post that chatter message so choose opportunity id. ($record then id).

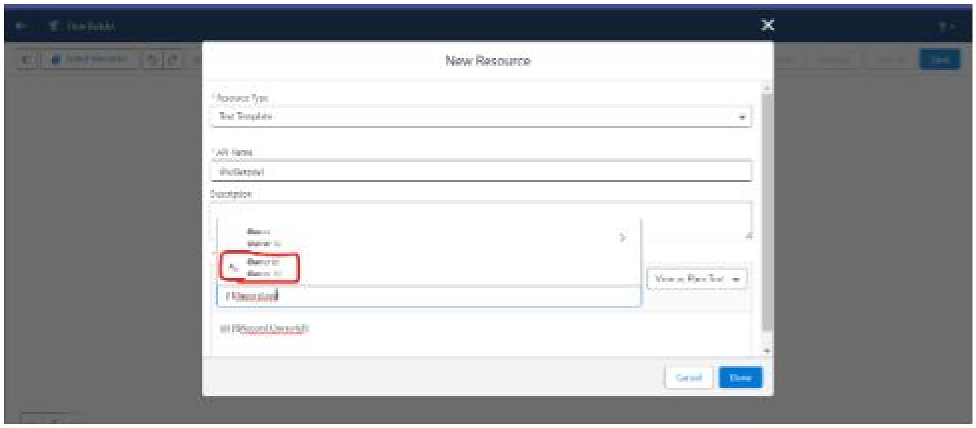


- After that in message we have to create message. For this click new resources inside the message.

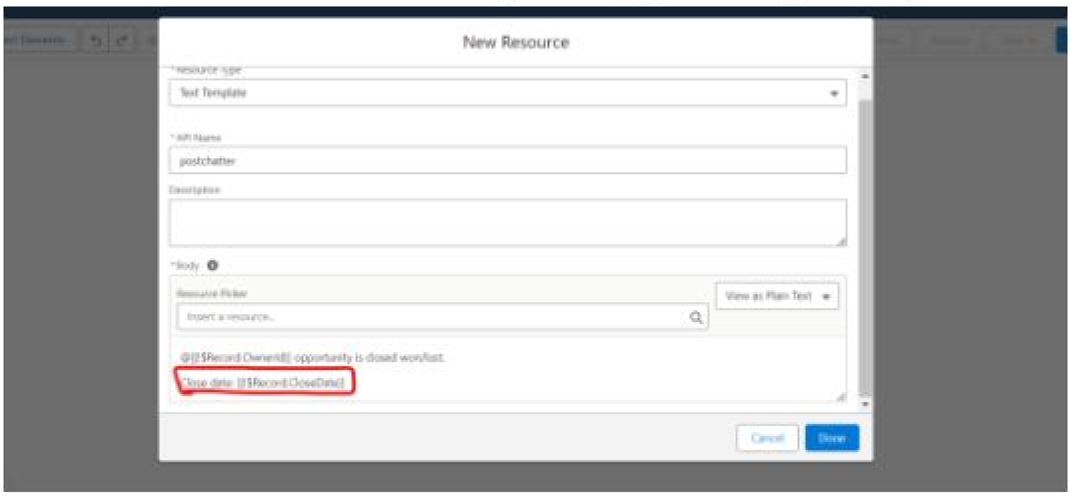


- After that select text templates from the drop down.

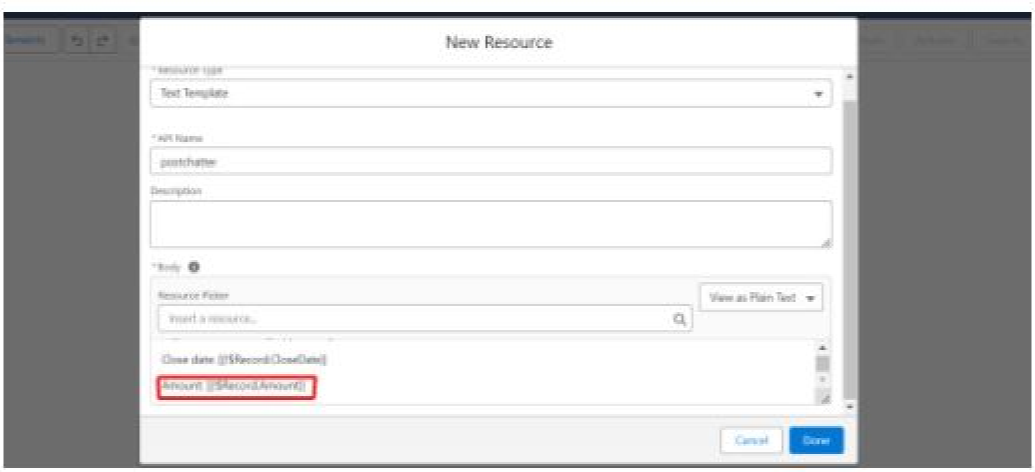
- After that enter the Api name and select view as plain text. After that enter the msg in body.
- To add account owner simply enter @[search $record(opportunity) then ownerId].



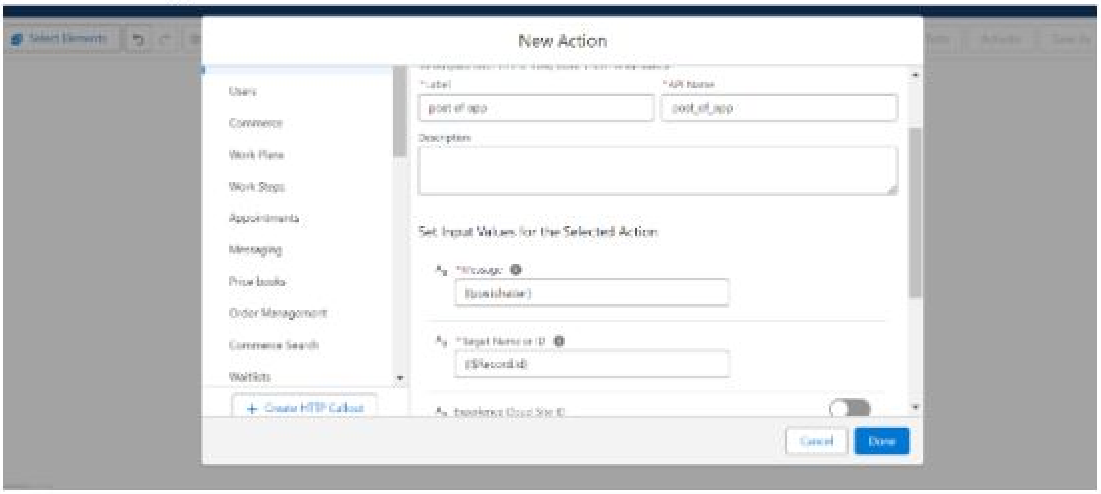
- After that enter the msg **opportunity is closed won/lost.**
- After that enter close date from the opportunity [$record>opportunity then close date].



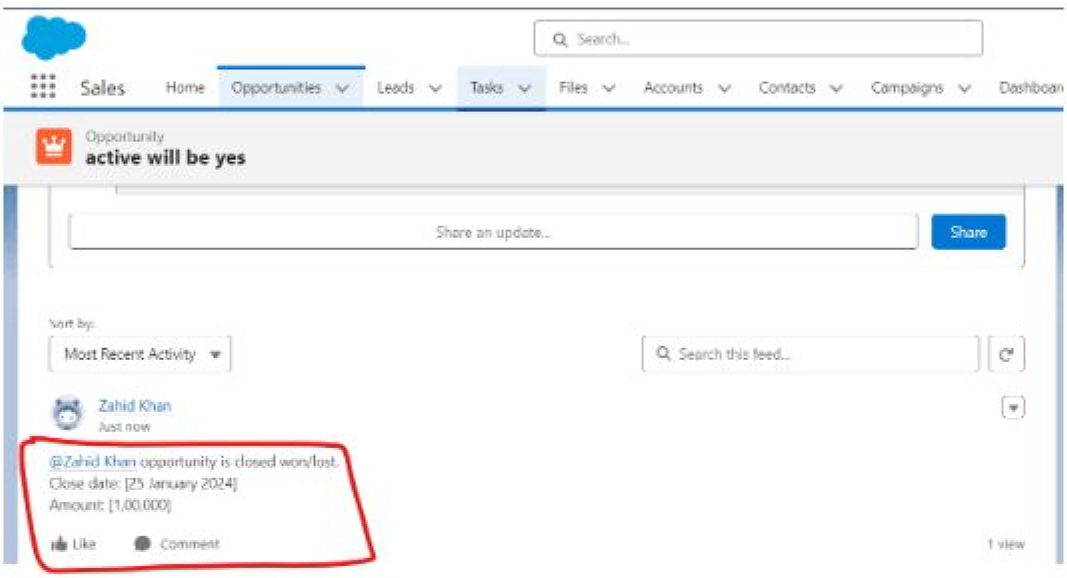
- After that we have to enter amount and fetch amount from opportunity. [$Record>opportunity then amount].



- Now message is created click on done.



- Now save the for and activate it and text the result on App.



Day – 29

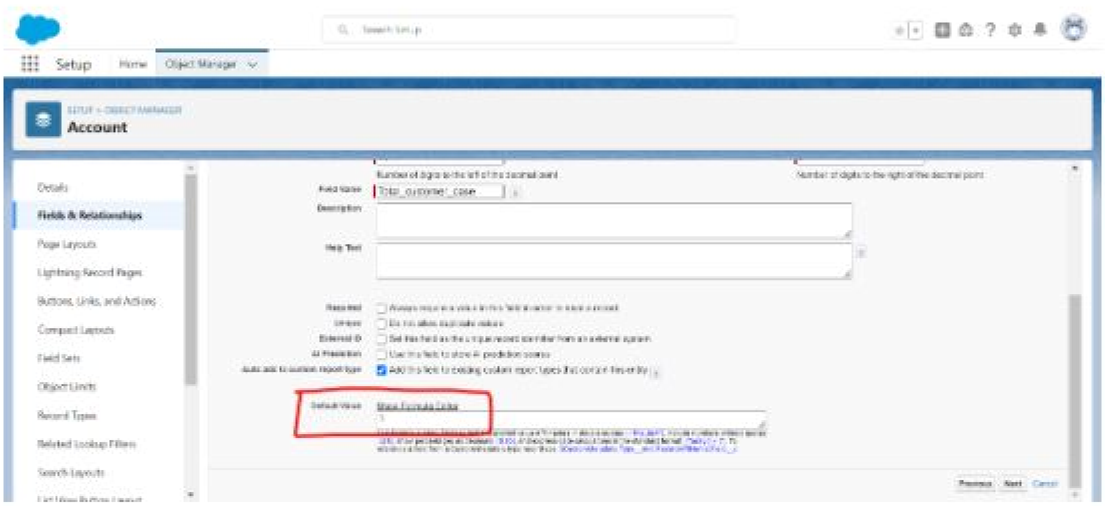
Triggered flow – 2.

Scenario:

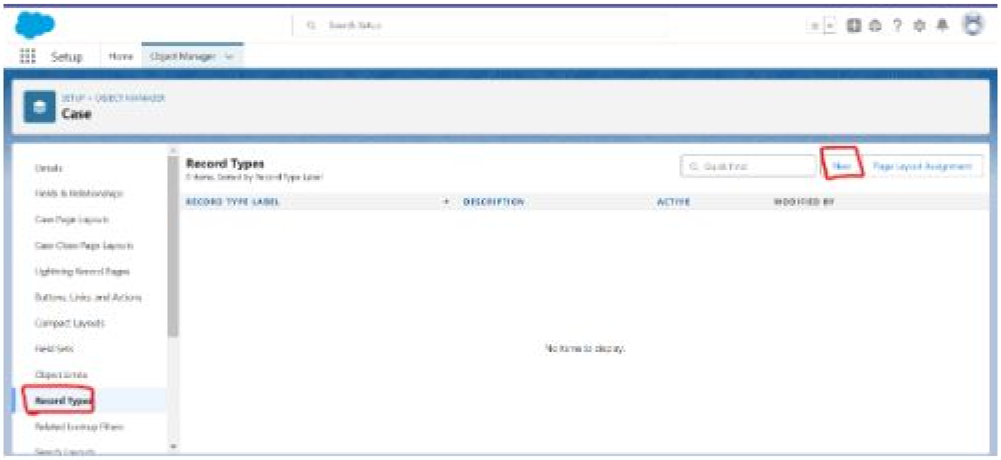
- Create two record types names as "partner case" and "customer case" on case object. On creation case populate the total number of partner case and customer on account object. create custom fields labeled "total customer case" and total partner case" on account.
- Delete the opportunity when its stage is set to closed-lost.
- Apply validation rule based on existing record data using record triggered flow.

1. **Create two record types names as "partner case" and "customer case" on case object. On creation case populate the total number of partner case and customer on account object. create custom fields labeled "total customer case" and total partner case" on account.**

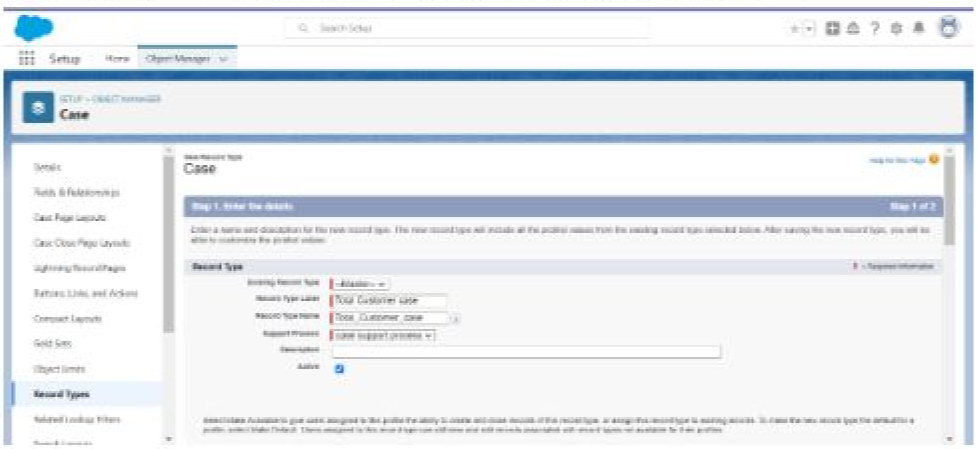
    - 1st create total customer case and total partner case field in account object.
    - Make sure that default value should be 0 for these two fields.



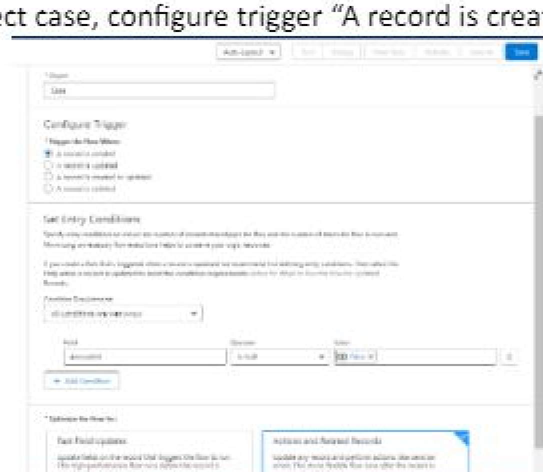
    - After that go the case object from object manager and click on record types to create two records and click on new.



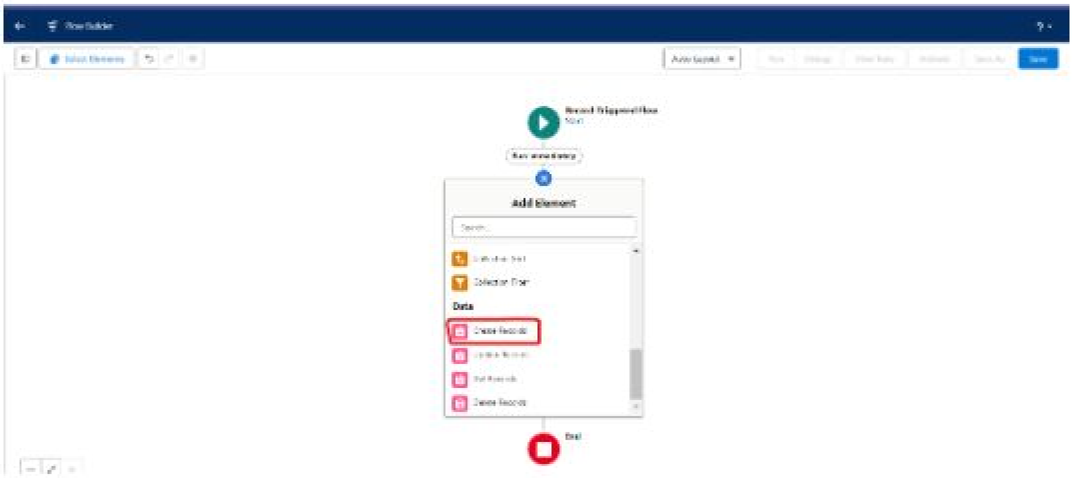
- Create support process before creating record type.
- After that enter the label and support process and click on next.



- after that select case layout and click on save.
- Same way creates select total partner case record types.
- After that go to home and search flows in quick find and click on new flow and select record-triggered flow.
- After that select object case, configure trigger "A record is created".'



- After that click on + icon and select **create record** from **Data**.



Apex

- Object oriented programming language.
    - Supports classes, interfaces and inheritance.
    - Uses java like syntax.
- Strongly types.
    - Validates references to objects at compile time.
- Integrated with the databases.
    - Provides direct access to records and their fields.
- Enable developers to add business logic to system events, including button clicks, related record updates, visual Force pages and lighting components.
- One can call apex code through web service request and triggers the object