

## SESSION - 1

### **What is CLOUD COMPUTING?**

Cloud computing is nothing but supplying of resources such as application, network, servers, storage etc., remotely using internet connection

You will access the resources mentioned remotely from another company data centre who is providing those service such as resources.

**Before the cloud** If you wanted to start a company (enterprise),

- ✓ You would invest time to find the right softwares and hardwares
- ✓ Would invest huge cost in hardware, software, power, administrative staff etc.,
- ✓ More cost is needed to start

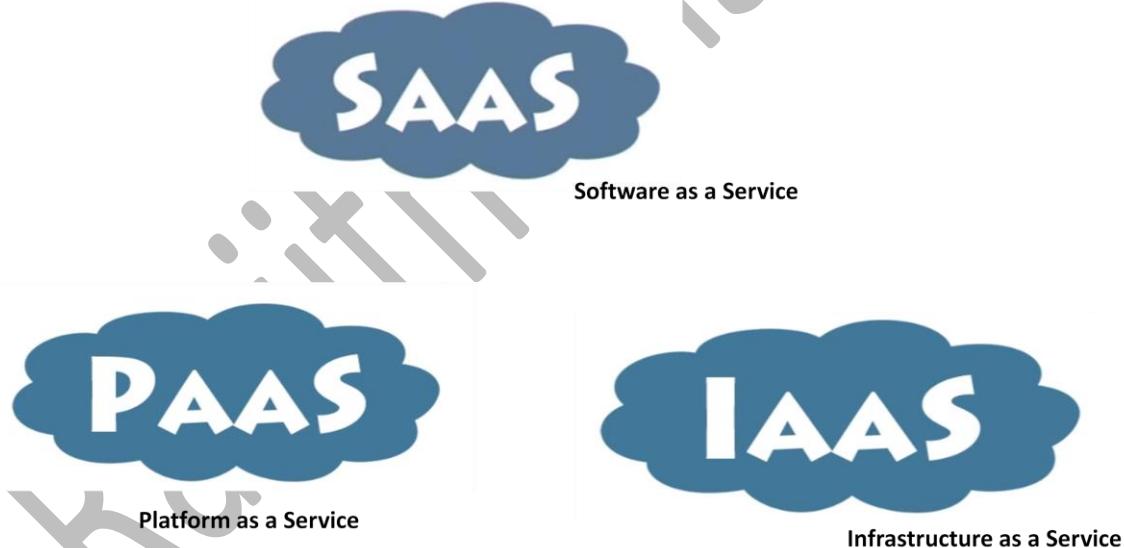
*"Cloud computing is using the Internet to deliver hardware and software services instead of keeping physical hardware and software at your office."*

So we can access get below services remotely

1. Equipments (Infra Structures) like computers (as virtual machines)
2. Development Environment (tools to develop new application, execute programs)
3. Developer Applications (inbuilt applications)

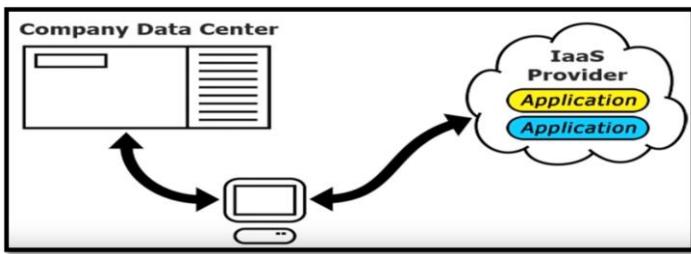
The above services are called Cloud Computing Services. Hence

The most **cloud computing services** fall into three broad categories:



### **What is Infrastructure as a Service (IaaS)**

- Allows existing application to be run on cloud's suppliers
- You have the choice of virtual computer, where you can select a configuration of CPU, memory &storage that is required for your application.
- The whole cloud infrastructure such as servers, routers, hardware based load-balancing, firewalls, storage & other network equipments are provided by the IaaS provider.



### What is Platform as a Service (PaaS)

- Cloud offers a development platform (environment and tools) to create new online applications.
- This includes operating system, programming language execution environment, database, and web server.



### Advantage

- Rapid development – Saving Time & Cost

### Disadvantages

- Limitation with tools and languages (specific to vendor)
- Cannot be migrated!

### What is Software as a Service (SaaS)

- Applications are accessed over the internet.
- Access applications on a subscription basis.



### Advantages

- Free or Paid Subscription
- Access from any where
- Better Collaborations

### Disadvantage

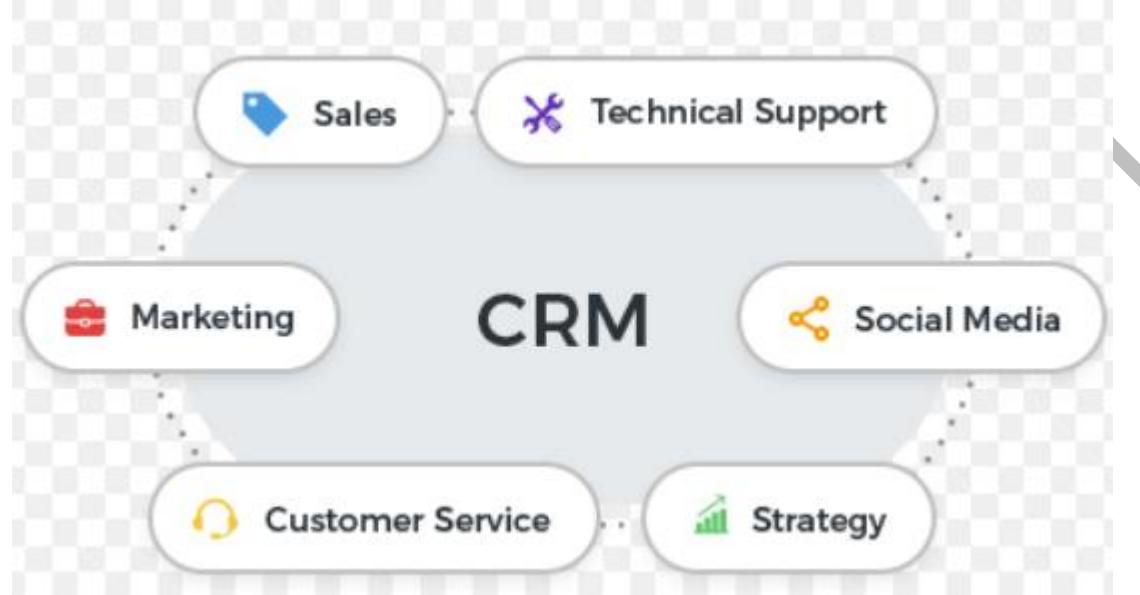
- May not suit for all business need

## **CRM = Customer Relationship Management**

CRM stands for “customer relationship management” and it’s software that stores customer contact information like names, addresses, and phone numbers, as well as keeps track of customer activity like website visits, phone calls, email, and more.

In other words, A CRM system is a business tool that allows you to manage all your customers, partners and prospects information all in one place. It allows all departments to refer one database to get data about your customer, sales, issues etc.,

We need not depend on person. Whereas we are going to depend on system any time we need.



**Let's see what is Salesforce?**

**Salesforce is a nothing but Platform as a Service provided by company named ‘Salesforce.com’.**

The platform provides development environment in two forms

1. Declarative Tools
2. Program languages

Hence the applications can be built using either or both of the below two approaches:

### **Declarative Approach:**

- Using point and click wizards in a browser.
- Requires complete understanding of force.com concepts and tool kits

### **Programmatic approach:**

- with code and some design techniques.
- Requires coding skills and allows developers to extend beyond the declarative approach capabilities.

### **Other possibilities of the Salesforce Platform.**

- The Salesforce platform provides pre-developed applications that were built in the platform itself. It provides data storage to store the data. So an organization could use that applications as it is to store and manage the customer data.
  - We can track customer activities
  - We can interact with other users within platform using tool called ‘CHATTER’
  - We can capture inquiries from company web site to Salesforce Database automatically etc.,
- So salesforce platform is a web based CRM Platform.

## What is Salesforce CRM?

- ✓ Web based CRM application where user can login using internet connection and user id.
- ✓ It helps to manage an organization's interaction with customers.
- ✓ It provides platform to develop new application using tools and programming languages.
- ✓ It also helps to integrate with other systems.

It is categorized into different tools such as platform, sales cloud, service cloud, chatter, marketing cloud.



## What is Sales Cloud?

This is a developed application (**SaaS**) existing in the salesforce platform. This is a CRM platform and hence will have common database and other automation features to track and manage the customer data related to sales activities such as lead follow-up, meetings, lead to customer conversion etc.,.

This helps to:

- Sell products
- Manage Connections
- Close Deals

## What is Service Cloud?

This is a developed application (**SaaS**) existing in the salesforce platform. This is a CRM platform and hence will have common database and other automation features to track and manage the customer data related to support activities such as issues, fix etc.,.

- Helps Customers to find solution for their issues
- Increase Productivity
- Reduce Costs
- Gain Visibility into Service

## The common use-cases for Salesforce include:

- Develop new applications
- Modify existing (developed) applications
- Tracking business development activities of salespeople
- Reporting on customer interactions through case management
- Reporting on the effectiveness of marketing initiatives
- Collaborating between employees, partners, and customers
- Integrate with other applications

## Few CRM Software in the market....

- ✓ Salesforce CRM
- ✓ Zoho CRM
- ✓ Dynamics CRM
- ✓ Sage CRM
- ✓ SugarCRM

## About Salesforce Architecture

- Multi-tenant
- Automatic upgrades

All of your applications are automatically upgraded to the latest version of Salesforce three times a year, without any rollout effort on your part.

- Subscription

Salesforce.com pricing is largely based on the per user per month subscription model. The Salesforce pricing model is relatively straight-forward, although can get more complex when considering add-on products and options such as the logon-based pricing for the customer portal.

- No large capital/start up fee
- Fixed and predictable cost
- You can upgrade the product with your business (by buying more licenses)

## Advantageous of Salesforce CRM

- Automatic Upgrade - 3 times a year
- Sustained Growth
- Strategic Acquisition
- Community - Ideas - Voting - New Releases
- Lightning
- API to integrate with other applications easily
- AppExchange to deploy and download salesforce prebuilt applications

## How to learn/use the salesforce platform?

Salesforce has provided different types of versions for each product such as sales cloud, service cloud etc.,. We can register with pay version or free version. These versions are referred as Edition.

The pay editions are only available for temporary duration. Whereas the free edition called as Developer Edition does not have any expiry date. Refer at the other document to know how to register into developer edition yourself.

## What is Edition

One of several bundles of Salesforce products and services, each geared toward a different set of business needs.

All Salesforce editions share the same look and feel, but they vary by feature, functionality, and pricing.

### Sales Cloud Pricing

Sell faster and smarter with any of our fully configurable CRM editions.

Lightning Essentials	Lightning Professional	Lightning Enterprise	Lightning Unlimited
Out-of-the-box CRM for up to 5 users	Complete CRM for any size team	Deeply customisable sales CRM for your business	Unlimited CRM power and support
<b>\$ 25</b> <small>USD /user/month* (billed annually)</small>	<b>\$ 75</b> <small>USD /user/month* (billed annually)</small>	<b>\$ 150</b> <small>USD /user/month* (billed annually)</small>	<b>\$ 300</b> <small>USD /user/month* (billed annually)</small>
<a href="#">TRY FOR FREE</a>	<a href="#">TRY FOR FREE</a>	<a href="#">TRY FOR FREE</a>	<a href="#">TRY FOR FREE</a>

Ranjith Krishnan  
sfdcmeet@gmail.com

### **Some of the other Salesforce Products**

- Marketing Cloud – to manage marketing process
- Commerce Cloud - With Commerce Cloud, retailers and brands can cater to their customers' individual needs whether that's online or in person. Commerce Cloud sites can be used across different devices and can personalize each shopper's experience with dynamic content on web and mobile sites and smart product recommendations.
- Einstein Analytics - Salesforce Einstein Analytics (formerly known as Wave) is a cloud-based platform for connecting data from multiple sources, creating interactive views of that data, and sharing those views in apps. It's a better way to distribute insight to business users so they can understand and take action on changing information.
- Heroku - Heroku is a cloud platform as a service (PaaS) supporting several programming languages.

Ranjith Krishnan

**Ranjith Krishnan**  
**sfdcmeet@gmail.com**

## SESSION - 2

### What is EDITION?

Any company implementing Salesforce for the first time or getting migrated to Salesforce CRM should first choose the type of Salesforce edition based on their business need such as type, number of users, features needed, storage etc.,.

Other words, A set of Salesforce features wrapped together in a bundle for access is what we call Editions.

Example - For Sales Cloud, we have four editions as below.

Edition Types		Comments
<b>Essential</b>	Designed for small businesses that want to get started with a CRM system quickly.	
<b>Professional</b>	Designed for businesses requiring full-featured CRM functionality.	
<b>Enterprise</b>	Designed to meet the needs of large and complex businesses. It gives you advanced customization and administration tools, in addition to all the functionality available in Professional Edition.	
<b>Unlimited</b>	Includes all Enterprise Edition functionality, Premier Support, full mobile access, unlimited custom apps, increased storage limits, and other features.	

Screen shot of Sales Cloud Edition (You can refer this in company website

<https://www.salesforce.com/in/products/sales-cloud/pricing/>)

The screenshot shows the Salesforce Sales Cloud Pricing page. At the top, it says "Sales Cloud Pricing" and "Sell faster and smarter with any of our fully customisable CRM editions." Below this, there are four pricing plans:

- Salesforce Essentials:** Out-of-the-box CRM for up to 10 users. Price: \$25 USD/user/month\* (billed annually). [TRY FOR FREE](#)
- Lightning Professional:** Complete CRM for any size team. Price: \$75 USD/user/month\* (billed annually). [TRY FOR FREE](#)
- Lightning Enterprise** (highlighted as the most popular): Deeply customisable sales CRM for your business. Price: \$150 USD/user/month\* (billed annually). [TRY FOR FREE](#)
- Lightning Unlimited:** Unlimited CRM power and support. Price: \$300 USD/user/month\* (billed annually). [TRY FOR FREE](#)

The table below showing few differences between these editions for your reference in Sales Cloud

Features	Essential	Professional	Enterprise	Unlimited
<b>No of Users</b>	Upto 10 Users	No Limit	No Limit	No Limit
<b>Lead Management Features</b>	No	No	Yes	Yes
<b>Chatter</b>	Yes	Yes	Yes	Yes

**Ranjith Krishnan**  
**sfdcmeet@gmail.com**

<b>Automatic Email Notification</b>	No	No	Yes	Yes
<b>Account and Contact Management</b>	Yes	Yes	Yes	Yes
<b>Price</b>	\$ 25 USD/user/month* (billed annually)	\$ 75 USD/user/month* (billed annually)	\$ 150 USD/user/month* (billed annually)	\$ 300 USD/user/month* (billed annually)

### How to login into Salesforce CRM?

There are 2 URLs available to login into Salesforce. They are

URL	Purpose
<a href="https://login.salesforce.com/">https://login.salesforce.com/</a>	To login into production environment
<a href="https://test.salesforce.com/">https://test.salesforce.com/</a>	To login into test (sandbox) environment

### How to get registered with salesforce CRM service?

Using Pay Edition, user can register for 30 days trial by click on option below under pricing link.

The screenshot shows the Salesforce Pricing page. It compares two editions: **Salesforce Essentials** and **Lightning Professional**. Both editions are described as "Out-of-the-box CRM for up to 10 users". The **Salesforce Essentials** edition is priced at \$25 USD/user/month\* (billed annually), and the **Lightning Professional** edition is priced at \$75 USD/user/month\* (billed annually). Each edition has a "TRY FOR FREE" button, which is highlighted with a yellow oval.

Product	Edition	Price	Description
Salesforce	Salesforce Essentials	\$ 25	Out-of-the-box CRM for up to 10 users
Salesforce	Lightning Professional	\$ 75	Complete CRM for any size team

**Then how to learn the salesforce platform with the help of edition that could be accessible beyond 30 days?**

Using Free Edition called Developer Edition, we can register and explore the platform.

Hence in general, Editions are of pay and free types.

Category	Comments
Pay Edition	Example: Sales Cloud, Service Cloud only available for 30Days Trial
Developer Edition	Free Edition. This will have features closer to higher end edition of pay edition which does not have expiry date

### How to register with Developer Edition?

**Step1:** go to this url

<https://developer.salesforce.com/signup?d=70130000000td6N>

**Step 2:** Fill the details

Name

Email (this should be an actual email id to get userid and notifications from salesforce)

Company name

Country

User name => this should be in the format of email id.

qualifier@domainname

eg., ranjithbatch105@capitalinfo.com

**Step 3:** Click on "Sign me Up" Button

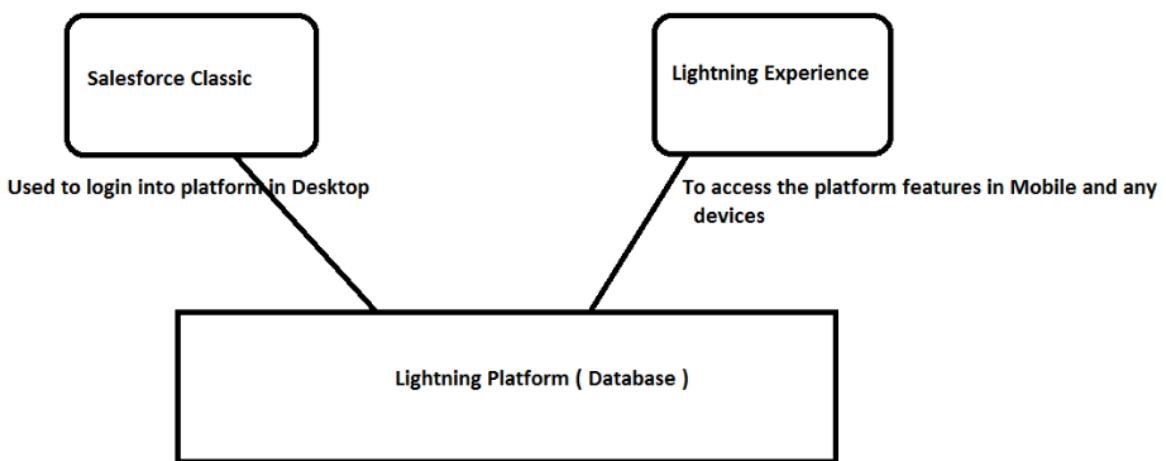
**Step 4:** Check the inbox of email provided and verify the account from the email received from developer@salesforce.com

**Step 5:** provide new password and security questions then click change password

### How many ways the salesforce platform can be accessible?

Using two interfaces

1. Classic
2. Lightning



**Salesforce Classic** is an interface used by users since the product launched. It is used to access the salesforce platform in desktops.

### Lightning Experience

This is a new redesigned interface in Salesforce that offers numerous benefits and helps sales representatives to work faster by referring information in one page. It's also called as single page application.

This lightning Interface is compatible to access the salesforce application in all types of devices such as mobile, tab and laptops.

**NOTE:**

Not all the features available in Classic are available in the lightning interface and vice versa. Hence salesforce is providing the options to switch between these two interfaces.

**How do you refer Salesforce Platform?**

**Can be referred in many ways**

- Organization
- Org
- Environment
- Developer Edition
- Developer Org

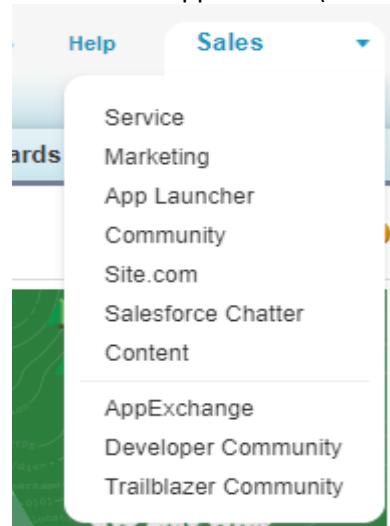
**How to logout from Org?**

**Logout** option under your name at the top.

You can login back using - <https://login.salesforce.com/>

**Now let us understand the basic features of the platform**

When you logged into Salesforce Classic, you will see a drop down at the top right as shown below. This is called Applications (also referred as "App") .



**What is App**

- Short name to denote "Application." A collection of components such as tabs, reports, dashboards, and Visualforce pages that address a specific business need.
- Salesforce provides standard apps such as Sales and Call Centre. You can customize the standard apps to match the way you work.
- In addition, you can package an app and upload it to the AppExchange along with related components such as custom fields, custom tabs, and custom objects.

**What is Tab?**

- ✓ User interface to see Objects information in Salesforce.
- ✓ Help you in making the views which help user to see the information at a glance

The screenshot shows the top navigation bar of a Salesforce instance. It includes the Salesforce logo, a search bar with a 'Search' button, and a link to 'Switch to Lightning Experience'. Below the search bar is a horizontal menu with links: Home, Chatter, Accounts, Contacts, Cases, Solutions, Reports, Dashboards, Trainings, and a plus sign.

## APPEXCHANGE

- ✓ AppExchange is a marketplace featuring hundreds of cloud applications created by Salesforce customers, developers, and partners.
- ✓ Many of the applications are **free** and all of them are pre-integrated with Salesforce, enabling you to easily and efficiently add functionality.
- ✓ **There is dedicated URL available to access App Exchange -**  
**<https://appexchange.salesforce.com/>**

The screenshot shows the 'Setup' menu sidebar. It lists various sales-related applications: Sales, Marketing, App Launcher, Community, Site.com, Salesforce Chatter, Content, Dummy App, HR Recruiting, and AppExchange. The 'AppExchange' section is highlighted with a yellow box. Below this, there are sections for 'Developer Community' and 'Success Community'.

## ABOUT SETUP MENU IN SALESFORCE

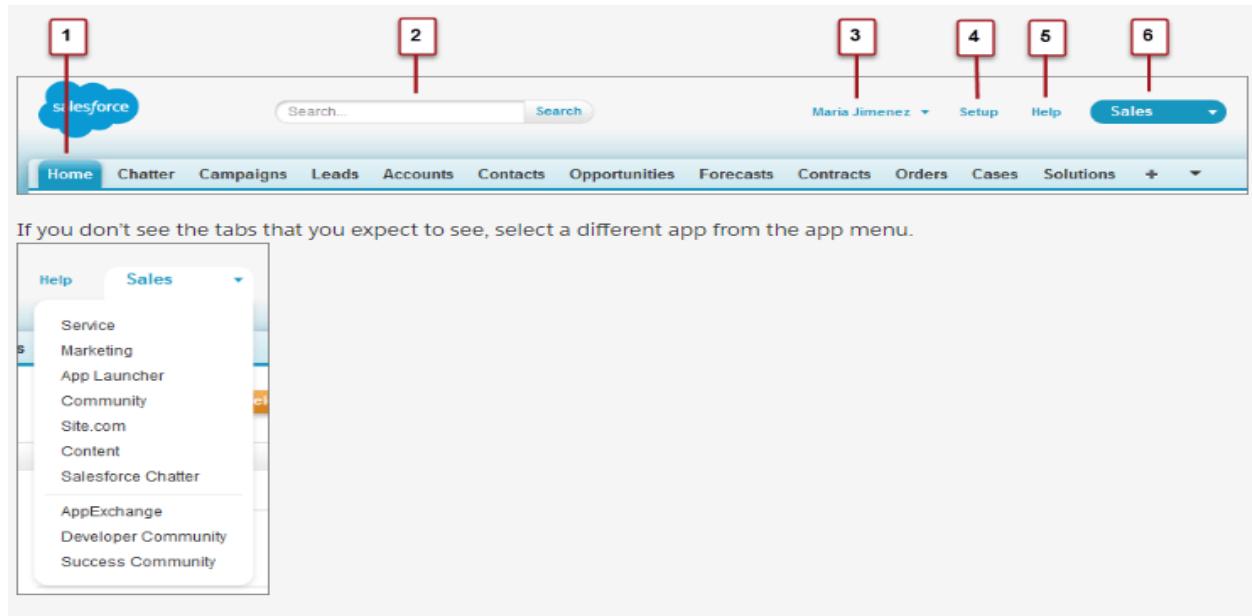
The Salesforce page also called as Setup consist of a tab bar, a navigational sidebar, and a main window as shown below

- It is located at top right side of your Salesforce Org as highlighted above next to your Name menu.
- It provides access to various options/tools to manage the salesforce Org, customize and develop application.

The screenshot shows the top navigation bar of a Salesforce instance. It includes tabs for Solutions, Products, Reports, Dashboards, and a plus sign. The 'Setup' tab is highlighted with a yellow box. Other visible tabs include 'Ranjith Krishnan' (with a dropdown arrow), 'Help', and a blue tab labeled 'Sales' with a dropdown arrow.

At the top of each Salesforce page are tabs and links for navigating to major features.

1. Use the tabs to switch between objects and features. You can customize this list to suit your needs (more on this in a bit).
2. Search to find any type of record.
3. Access user-specific customizations from the drop-down next to your name.
4. Use the Setup menu to customize Salesforce for your whole org. (You must have administrative privileges.)
5. Access help resources and training.
6. A list of apps, each of which contains different features and tabs.



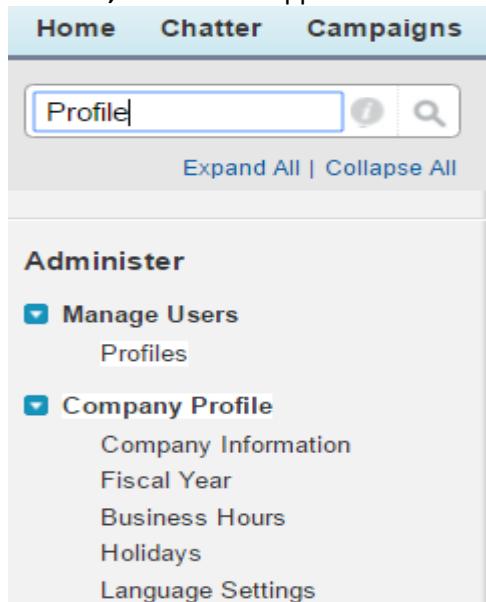
If you're a **Salesforce administrator or developer**, you use the **Setup** menu frequently.

#### SETUP SEARCH

Setup Search is at the top-left corner of Setup, above the left navigation menu. Setup Search uses type-ahead functionality to help you jump quickly to the item you want.

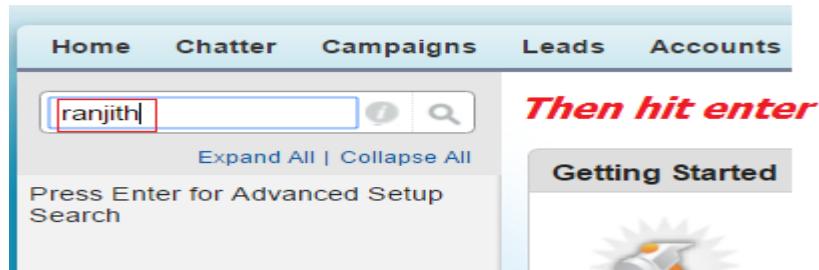
**For example, if you're looking for user profiles,**

You can either navigate to Administer | Manage Users | Profiles, or start typing profiles in the **Quick Find box**, and Profiles appears



Also, we can do advanced search which will do the search across multiple entities in Salesforce. Example: Let's say you want to find a specific user. Enter part or all of the user's name, and press Enter. If searching for string "Ranjith".

Ranjith Krishnan  
sfdcmeet@gmail.com



Setup Search looks for your keywords across users, objects, fields, and more. In the example below, we've located Email Templates, Workflow Rules, Field Updates, and Approval Processes.

All Results i

[« Back to Setup](#) [Help for this Page](#)

## Setup Search Results beta

Search: ranjith

Name	Type	Object	Last Modified Date	Last Modified By
Ranjith Krishnan	User		3/28/2017	Ranjith Krishnan

Approval Post Templates (0) Approval Processes (0) Assignment Rules (0) Compact Layouts (0) Custom Buttons or Links (0) Custom Home Pages (0) Duplicate Rules (0) Email Alerts (0) Email Templates (0) Field Updates (0) Fields (0) Groups and Queues (0) Home Page Components (0) Objects (0) Permission Sets (0)

1 - 1 of 1 First Previous Next Last Page  of 1

Click on **Setup Menu** comprised of 6 different sections with various links grouped to achieve specific need.

#### PURPOSE OF EACH SECTION IN BRIEF:

Section Name	Purpose
<b>Administer</b>	The Administration Setup page lists optional tasks for setting up and customizing your Salesforce organization
<b>Build</b>	Page lists options to customize, develop and manage applications. Example: Visualforce page -> to access list of VF pages stored in force.com database for particular org.
<b>Deploy</b>	Provides links to deploy customizations from one org to another
<b>Monitor</b>	To monitor the time dependent workflow processes, status of outbound messages etc.,
<b>Jobs</b>	To check the status of various scheduled jobs.
<b>Logs</b>	Used to debug the codes and processes.

**Ranjith Krishnan**  
**sfdcmeet@gmail.com**

## Highlights of Salesforce Features

### Chatter:

- ✓ To help share information and collaborate with Co-workers, Customers and Partners.
- ✓ A collaboration tool that helps to connect with other users in your Org.

The screenshot shows the Salesforce Chatter interface. At the top, there's a search bar with a 'Search' button. Below the header, a navigation bar includes Home, Accounts, Chatter (which is highlighted in blue), Campaigns, Leads, Contacts, Opportunities, Forecasts, Contracts, and more. The main area is titled 'sfdcmeet'. On the left, a sidebar for 'Ranjith Krishnan' shows sections for Messages, Feed (which is selected and highlighted in blue), What I Follow, People, Groups, Files, and Topics. The 'What I Follow' section lists 'To Me', 'Bookmarked', 'Muted', 'All Company', 'People', 'Groups', 'Files', and 'Topics'. The right side displays a feed of updates. The first update is from 'Burlington Textiles Weaving Plant Generator' (Ranjith Krishnan) changing the amount from USD 100,000.00 to USD 700,000.00. The second update is from 'Sales' (Ranjith Krishnan) about a deal being closed won with value - 700,000. Both posts have 'Comment', 'Like', and a timestamp of 'March 15, 2018 at 3:00 AM'.

### Global Search

The screenshot shows the Salesforce Global Search interface. At the top, there's a search bar with a 'Search' button and a 'Switch to Lightning Experience' link. Below the header, a navigation bar includes Home, Accounts, Chatter, Campaigns, Leads, Contacts, Opportunities, Forecasts, Contracts, Orders, Cases, Solutions, and more. The main area is titled 'Search Results'. On the left, a sidebar shows 'Search Feeds' with a search bar containing 'burlington', 'Records' (which is selected and highlighted in blue), and a list of other objects: People (0), Reports (0), Positions (0), Accounts (1), Cases (0), Opportunities (2), Trainings (0), Documents (0), Websites (0), and Contacts (1). The 'Records' section displays three tables: 'Accounts (1)', 'Opportunities (2)', and 'Contacts (1)'. The 'Accounts (1)' table shows one account: 'Burlington Textiles Corp of America' (Account Name, Account Site, Phone). The 'Opportunities (2)' table shows two opportunities: 'Burlington Textiles Weaving Plant Generator' (Opportunity Name, Account Name, Account Site). The 'Contacts (1)' table shows one contact: 'Mr. Jack Rogers' (Name, Account Name, Account Site, Phone).

Ranjith Krishnan  
sfdcmeet@gmail.com

## ABOUT USER LICENSES

- A user license determines the baseline of features that the user can access.
- Every user must have exactly one user license.
- You assign user permissions for data access through a profile.

Some of the user licenses provided by Salesforce

Name	Purpose
Salesforce	Designed for users who require full access to standard CRM and Salesforce AppExchange apps.  Users with this user license are entitled to access any standard or custom app.
Salesforce Platform	Designed for users who need access to custom apps but not to standard CRM functionality.  Users with this license can access core platform functionality such as accounts, contacts, reports, dashboards, documents and custom tabs.
Chatter Free	The Chatter Free license is for users who don't have Salesforce licenses but must have access to Chatter Tab.

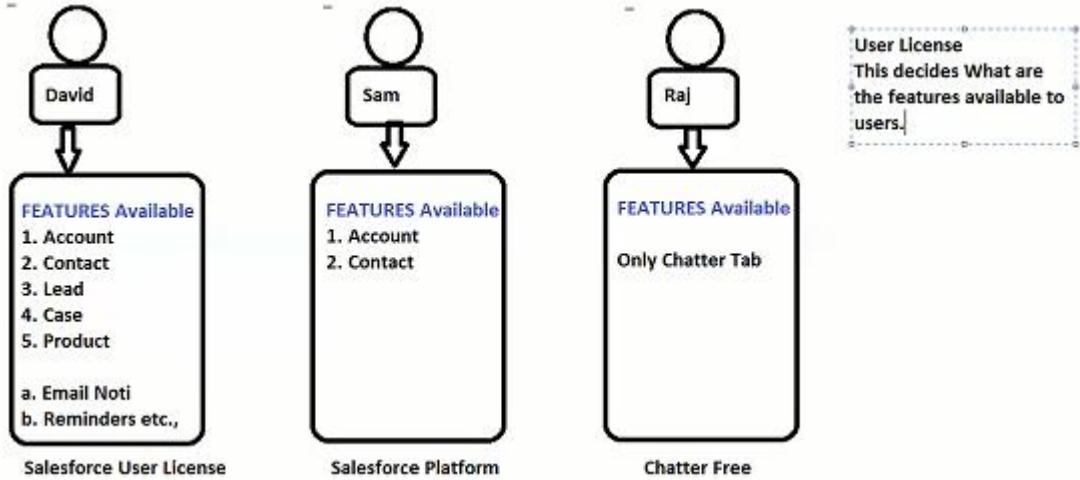
### Example

The User below David who is assigned with license – Salesforce can access the standard table such as Account, Contact, Lead, Case etc.,

User Sam who is assigned with Salesforce Platform License can only access the tables such as Account and Contact. He can not have access to other tables like lead, opportunity, case.

The user Raj can only have access to Chatter Tab.

**Ranjith Krishnan**  
**sfdcmeet@gmail.com**



### How to see which license is assigned to you?

#### Setup

| - Administer

  | -- Manage Users

    | - Users

Then click on your user name and see the field marked as below

User Detail		Edit	Sharing	Change Password	Role	
Name	Ranjith Krishnan				User License	Salesforce
Alias	RKris				Profile	System Administrator
Email	sfdcmeet@gmail.com				Active	<input checked="" type="checkbox"/>
Username	ranjithonbatch701@sfdcmeet.com					

This indicates I could access the complete features of standard CRM such as all the application, objects and features provided by salesforce.

### Where to check how many licenses are assigned and remaining in your Org?

#### Setup

| - Administer

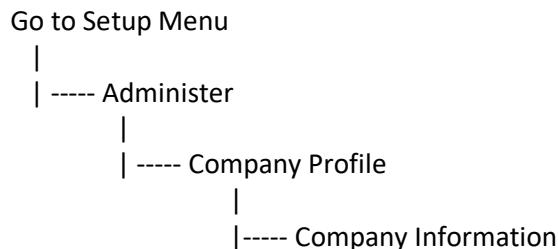
  | -- Company Profile

    | -- Company Information

Go to section “User Licenses” to see how many licenses are available in your org and how many has been assigned and left over?

**SESSION 3****ABOUT COMPANY INFORMATION IN SALESFORCE**

- Use the Company Information page in Setup to track what's important about your company's organization in Salesforce.
- You can manage your licenses (no of licenses assigned and remaining).
- This page contains the information that was provided when your company signed up with Salesforce.

**How to view the company information page?****Navigation: In Classic**
**Company Information**  
**CapitalInfo**

The organization's profile is below.

[User Licenses \[10+\]](#) | [Permission Set Licenses \[10+\]](#) | [Feature Licenses \[11\]](#) | [Usage-based Entitlements \[3\]](#)
**Organization Detail**
[Edit](#) [Deactivate Org](#)

Organization Name	CapitalInfo	Phone
Primary Contact	Capital Info Solutions	Fax
Division		Default Locale English (United States)
Address	IN	Default Language English
Fiscal Year Starts In	January	Default Time Zone (GMT-07:00) Pacific Daylight Tim
Activate Multiple Currencies	<input type="checkbox"/>	Currency Locale English (United States) - USD
Newsletter	<input checked="" type="checkbox"/>	Used Data Space 292 KB (6%) <a href="#">[View]</a>
Admin Newsletter	<input checked="" type="checkbox"/>	Used File Space 13 KB (0%) <a href="#">[View]</a>
Hide Notices About System Maintenance	<input type="checkbox"/>	API Requests, Last 24 Hours 0 (15,000 max)
Hide Notices About System Downtime	<input type="checkbox"/>	Streaming API Events, Last 24 Hours 0 (10,000 max)
		Restricted Logins, Current Month 0 (0 max)
		Salesforce.com Organization ID 00D0o000000TDvP
		Organization Edition Developer Edition
		Instance AP8
Created By	Capital Info Solutions, 3/14/1	Modified By Capital Info Solutions, 3/22/2

**IMPORTANT FIELDS TO BE NOTED UNDER COMPANY PROFILE**

Field Name	Purpose
<b>Default Language</b>	This setting is applicable for all users registered in the particular salesforce org. Users will see the every interfaces and help information's in this language settings.
<b>Default Locale</b>	This setting determines the <u>format of dates, times, and names</u> in Salesforce.
<b>Default Time Zone</b>	<u>Primary time zone</u> in which the organization is located. A user's individual Time Zone setting overrides the organization's Default Time Zone setting.
<b>Currency Locale</b>	The country or geographic region in which the organization is located. The setting affects the format of currency amounts. For single currency organizations, only.
<b>Salesforce Organization ID</b>	<u>Unique identifier</u> for every Salesforce Organization. Used to interact with Salesforce Support.

**Ranjith Krishnan**  
**sfdcmeet@gmail.com**

## Company Page is where you would select Your Language, Locale, and Currency.

The Salesforce settings for language, locale, time zone, and currency objects, such as Accounts, Leads, or Opportunities, are displayed.

**Language:** The default language that is selected for new users in the organization. This setting determines the language used for the user interface text and help.

The Salesforce Web user interface has two language settings:

- Personal language—All on-screen text, images, buttons, and online help display in this language. Edit your personal information to change this setting.
- Default organization language—this applies to all new users until they select their personal language. This setting also determines the language in which all customizations—such as custom fields, tabs, and user interface options—are stored

Go to edit page of Company Information page by click on “Edit” button in the page.

### About Locale Settings

Locale Settings

Default Locale: English (United States)

Default Language: English

Default Time Zone: (GMT-07:00) Pacific Daylight Time (America/Los\_Angeles)

The format used for dates, times, and names of people in Salesforce is determined by your Locale setting mentioned above (Also the addresses, and commas and periods in numbers).

Individual users can set their personal locale, which overrides the organization setting.

The Locale setting affects the format of date, date/time, and number fields, and the calendar.

For example:

If Default Locale	Date	Time	Name
English (United States)	The date in your org would be displayed in MM/DD/CCYY format. For example, 06/30/2000	Then the time would be displayed as twelve-hour clock with AM and PM For example, 2:00 PM.	The First Name appears first and then last Name appears For example if, First Name: Ranjith Last Name: Krishnan For example, Ranjith, Krishnan
English (United Kingdom)	Then the date in your org would be displayed in DD/MM/CCYY format. For example, 30/06/2000	Then the time would be displayed as twenty-four hour clock. For example, 14:00 PM.	For example, Ranjith, Krishnan
Chinese (China)	CCYY-MM-DD For example, 2000-06-30	PM 02:00	For example, Krishnan, Ranjith

### More about the above settings:

In a single currency organization, Salesforce administrators set the currency locale, default language, default locale, and default time zone for their organizations. Users can set their individual language, locale, and time zone on their personal settings pages.

# Ranjith Krishnan

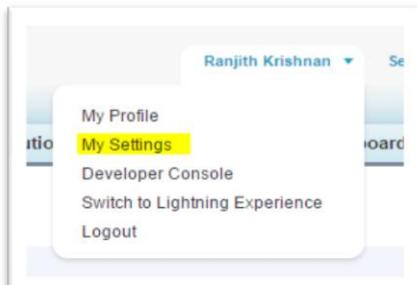
## How to work with personal settings?

Individual users can set their personal locale, which overrides the organization setting.

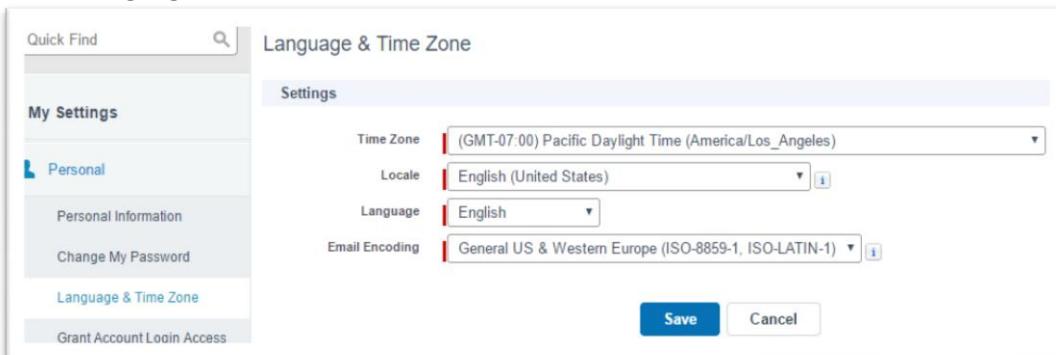
User can override the company locale settings under personal settings

Below your name at top of the Classic Org

- | - My settings
  - | - Personal
    - | -- Language & Time Zone



Select “Language & Time Zone”

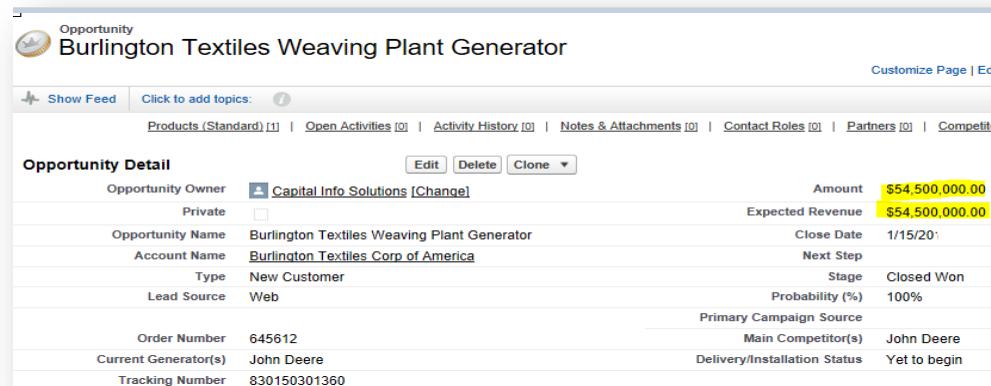


**Time Zone** - Primary time zone in which the organization is located. A user's individual Time Zone setting overrides the organization's Default Time Zone setting.

## ABOUT CURRENCY SET UP

By default, Salesforce organizations use a single currency. Once you set the required currency locale in your company profile, all currency values on records will display in that currency.

This means you do business only for one country example United States so transactions were reported solely in \$ (US Dollar). Every record has a Currency field that specifies the currency type for amounts in that record.



Ranjith Krishnan  
sfdcmeet@gmail.com

# Ranjith Krishnan

International organizations can use **multiple currencies** in opportunities, forecasts, reports, quotes, and other currency fields.

This case, admin can enable the option “Activate Multiple Currencies” in company information page as below

The screenshot shows the 'Company Profile' section of the Salesforce setup. Under 'Locale Settings', the 'Default Locale' is set to 'Chinese (China)'. Under 'Currency Settings', the 'Currency Locale' is set to 'English (United States) - USD'. A yellow warning box states: 'Turning on multiple currencies introduces permanent changes in your org. This feature can't be turned off. Review the [Implications of Enabling Multiple Currencies](#)'. Below this, the 'Activate Multiple Currencies' checkbox is checked and highlighted with a yellow box.

**Note:** Once enabled, this feature cannot be disabled back to single currency org again.

The currency locale which is selected currently will become the corporate currency for this Org

Once this multiple currency feature is enabled, then the option called “Manage Currencies” will be enabled under company information as shown below

The screenshot shows the 'Company Profile' section of the Salesforce setup. Under 'Company Information', the 'Manage Currencies' link is highlighted. Under 'Locale Settings', the 'Default Locale' is set to 'English (United States)'. Under 'Currency Settings', the 'Activate Multiple Currencies' checkbox is checked.

The administrator sets the “**corporate currency**,” which reflects the currency of the corporate headquarters. The administrator also maintains the list of active currencies and their conversion rates relative to the corporate currency. The active currencies represent the countries in which the organization does business. Only active currencies can be used in currency amount fields.

## HOW TO ADD CURRENCY TYPES?

Once the multiple currency feature is enabled as shown above, we can add the different currencies and make it active / inactive to enable users to use in real time

1. From Setup, enter **Manage Currencies** in the Quick Find box, then select **Manage Currencies**. The Active Currencies and Inactive Currencies will be listed out.

Active Currencies						<a href="#">New</a>	<a href="#">Edit Rates</a>	<a href="#">Change Corporate</a>
Action	Currency Code	Currency Name		Corporate	Conversion Rate	Decimal Places	L	
<a href="#">Edit</a>   <a href="#">Deactivate</a>	USD	U.S. Dollar		<input checked="" type="checkbox"/>	1.000000	2	E	

Choose INR

[Currency Edit](#)

## New Currency

Enter information for the new currency. Note that you cannot delete a currency once you activate it.

### Currency Type Edit

#### New Currency

Pick a new currency from the available list.

Currency Type

#### Conversion Rate

Enter the conversion rate from your corporate currency to this new currency.

Conversion Rate

#### Decimal Places

Enter decimal places (number of digits to the right of decimal point) allowed when displaying data in this new currency.

Decimal Places

[Save](#) [Save & New](#) [Cancel](#)

## Adding Australian Currency

[Currency Edit](#)

## New Currency

Enter information for the new currency. Note that you cannot delete a currency once you activate it.

### Currency Type Edit

#### New Currency

Pick a new currency from the available list.

Currency Type

#### Conversion Rate

Enter the conversion rate from your corporate currency to this new currency.

Conversion Rate

#### Decimal Places

Enter decimal places (number of digits to the right of decimal point) allowed when displaying data in this new currency.

Decimal Places

[Save](#) [Save & New](#) [Cancel](#)

Now got the active currencies as below

Active Currencies						<a href="#">New</a>	<a href="#">Edit Rates</a>	<a href="#">Change Corporate</a>
Action	Currency Code	Currency Name		Corporate	Conversion Rate			
<a href="#">Edit</a>   <a href="#">Deactivate</a>	AUD	Australian Dollar		<input type="checkbox"/>	1.390000			
<a href="#">Edit</a>   <a href="#">Deactivate</a>	INR	Indian Rupee		<input type="checkbox"/>	69.340000			
<a href="#">Edit</a>   <a href="#">Deactivate</a>	USD	U.S. Dollar		<input checked="" type="checkbox"/>	1.000000			

Deactivating a currency does not alter amounts in items that use that currency, but your users are no longer able to enter new amounts using the inactive currency. And deactivating a currency that's set as a user's personal currency automatically resets the user's currency to the corporate currency.

**Ranjith Krishnan**  
**sfdcmeet@gmail.com**

# Ranjith Krishnan

You can opt for a new corporate currency as soon as it's configured if you need to relocate.

1. From Setup, enter **Manage Currencies** in the Quick Find box, then select **Manage Currencies**.
2. In the Active Currencies list, click **Change Corporate**.



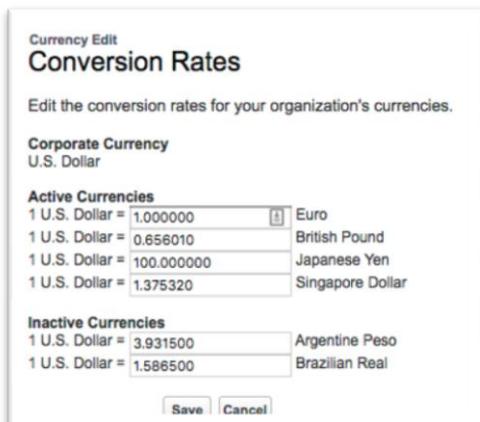
1. Select your new corporate currency from the dropdown. Only currencies that have been added and are active are available.
2. Click **Save**.

## UPDATE CONVERSION RATES

Ensure all the secret agents in your global organization use up-to-date currency values for deals by editing conversion rates. This lets you manage the static exchange rates between your active and inactive currencies and the corporate currency.

These exchange rates apply to all currency fields used in your org. Here are the steps for editing rates:

1. From Setup, enter **Manage Currencies** in the Quick Find box, then select **Manage Currencies**.
2. In the Active Currencies or Inactive Currencies list, click **Edit Rates**.
3. Enter the conversion rate between each currency and your corporate currency.
4. Click **Save**.



Your currency amounts update using the new rates.

## SETTING YOUR PERSONAL CURRENCY

All currency amounts display in the record's currency and are also converted to the personal currency of the record owner, based on the conversion rates entered by your administrator.

Amounts in the user's personal currency are displayed in parentheses.

### How to do?

1. Click your name at the top of the page and click **My Settings**.
2. Enter **Language** in the Quick Find, then select **Language & Time Zone**.
3. Update the Currency field, and click **Save**.

For example, if you do business with Acme, Inc., a German company, you can set the Currency field in the Acme, Inc. account to "EUR - Euro." Amounts such as Annual Revenue will display in euros as well as in your personal currency. You can set the Currency field for a record to any of your

**Ranjith Krishnan**  
**sfdcmeet@gmail.com**

# Ranjith Krishnan

organization's active currencies. If a currency is deactivated and it is already in use as a record currency, those records remain untouched. You cannot enter any new amounts using an inactive currency.

**In Standard pagelayout, the currency code will be chosen while capturing the currency as below**



**Administrators can change this setting by editing the company information.**

In a single currency organization, Salesforce administrators set the currency locale, default language, default locale, and default time zone for their organizations. Users can set their individual language, locale, and time zone on their personal settings pages.

In a multiple currency organization, Salesforce administrators set the corporate currency, default language, default locale, and default time zone for their organizations. Users can set their individual currency, language, locale, and time zone on their personal settings pages.

## Differences between Corporate Currency, Conversion Rates, Personal Currency, Active Currency, Inactive Currency and Record Currency

- Corporate Currency**

Corporate Currency The currency in which your organization's corporate headquarters reports revenue. Serves as the basis for all currency conversion rates.

- Active Currency**

A currency in which your organization does business. Only active currencies can be entered in opportunities, forecasts, and other items.

- Inactive Currency**

A currency that your organization no longer uses. You may have existing records that use inactive currencies, but you can't enter new amounts using inactive currencies.

- Record Currency**

The default currency for a record. Every record has a Currency field that specifies the currency type for amounts in that record.

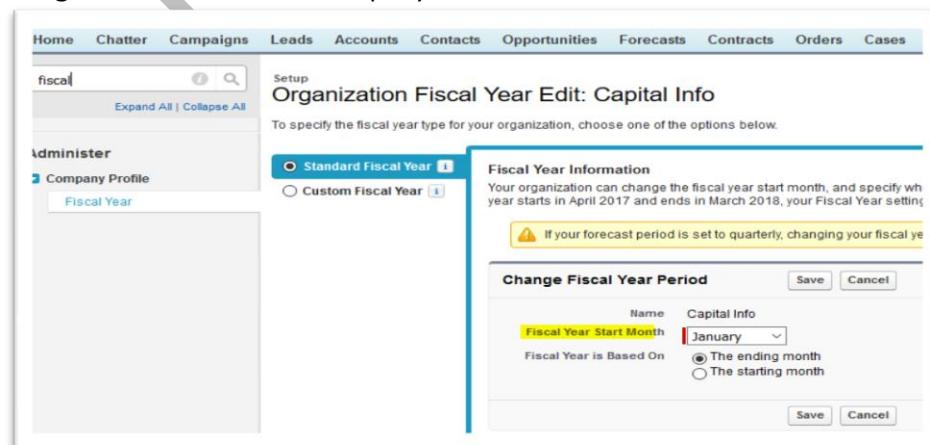
## Set Your Personal or Organization-Wide Currency

If you have a single-currency organization, you can set the default currency for your organization.

### FISCAL YEAR

This is used to define the financial period of a company. Based on which various reports, forecasting (predicting the trend based on past and present data) and quotas.

**Navigation:** Administer -> Company Profile -> Fiscal Year



**Ranjith Krishnan**  
**sfdcmeet@gmail.com**

## TWO TYPES OF FISCAL YEAR SETTING:

**1. Standard Fiscal Year** (based on Gregorian (12 months period) calendar. We can also change the fiscal year start month, for example, for the fiscal year starting in April, the standard fiscal year is used. Standard fiscal years can start on the first day of any month.

- i. Navigate to Setup | Administer | Company Profile | Fiscal Year.
- ii. Select the option of Standard Fiscal Year.
- iii. Select the start month for the fiscal year.

## 2. Custom Fiscal Year

If your fiscal year follows a different structure from the Gregorian calendar, you can define a custom fiscal year that meets your needs. Complex fiscal year structures can be achieved using the custom fiscal year option.

**Note:** Enabling custom fiscal years is not reversible.

Action	Field Label
Edit   Replace	Quarter Prefix
Edit   Replace	Period Prefix
Edit   Replace	Quarter Name
Edit   Replace	Period Name

Whether you use a standard fiscal year or a custom fiscal year, you define individual fiscal years one time. These fiscal year definitions allow you to use these fiscal periods throughout Salesforce including in reporting, opportunities, and forecasting.

For example, if you use three fiscal quarters per year (a trimester) rather than four, delete or modify quarters and periods to meet your needs.

Fiscal years can be modified any time that you need to change their definition. If you use forecasting, Salesforce recalculates your forecasts when you save changes to a fiscal year.

Enabling or defining custom fiscal years impacts your forecasts, reports, and quotas.

**DOCUMENT**

1. Document is a standard object in salesforce lightning platform.
2. Use the standard Tab “Documents” to work with document object.
3. Documents such as docx, image , pdf etc., can be stored in document object.
4. Documents are organized in folders.
5. The folder’s attributes determine the accessibility of the folder and the documents within it.
6. User with at least read permission on Document object can have access to documents tab and hence can read the documents in the folder.
7. User with at write permission on Document object can upload the documents in the folder.
8. Documents are classified as Internal Document and Externally available Image.
9. **Internal Document :**
  - a. These documents can be accessed or shared with only internal users.
  - b. Content of the document is not visible directly.
10. **Externally Available:**
  - a. These documents can be shared with internal users and external users.
  - b. Content of this document is visible directly.
11. Maximum size of the document that we can upload at a time is 5MB.
12. The maximum size for a custom-app logo is 20 KB to be accessible for use the image as log for custom application instead of salesforce standard logo.
13. Documents stored as links cannot be attached to emails, but they save space in your document library.
14. If the option **Don't allow HTML uploads as attachments or document records security setting** is enabled for your organization, you cannot upload files with the following file extensions: .htm, .html, .htt, .htx, .mhtm, .mhtml,.shtm, .shtml, .acgi, .svg.
15. Steps to create Document Folder.

Navigation:

Setup

|--- > TabPanel

|--- > Click on '+' sign

|--- > Document

|--- > Create Document Folder

To upload an image file, add a new document to the Documents tab. Click on “All Tabs”

 as below and select “Documents” Tab.



1. Enter Folder Name : Capital Info
2. Enter Visibility : Read | Read Write
3. Choose the list of users to whom the folder should be visible.

## 16. Steps to create a new Document.

Navigation:

TabPanel

|--- &gt;Click on '+' sign

|--- &gt;Documents

|--- &gt;New Document

Step 1: Enter Document Name : Example : Company Logo

Step 2: Enter Unique Name : Example: Company\_Logo

Step 3: Choose the document Type as Internal | External :

Example : Externally Available Image

Step 4: Enter Description and keyword

Keyword is used for the searching for this document from search functionality while selecting the document for custom app.

Step 5: Choose the document.

Step 6: Save.

Refer the screen shot below to fill the necessary fields in the document page

**1. Enter details**

Document Name	Company Logo	Name of your document.
Document Unique Name	Company_Logo	A unique name to be used by the API. This will appear automatically.
Indicate Document is Internal	<input type="checkbox"/>	
Externally Available Image	<input checked="" type="checkbox"/>	When checked, a flag is added to the document indicating that document viewers should not share the file outside of the organization.
Folder	My Personal Documents	
Description	Training Logo	
Enable this to select this logo for your App.	Training	Enter keywords that you can use later as search criteria
Keywords		

**2. Select the File**

( Enter the path of the file or click browse to find the file.)

File to upload	Browse...
----------------	-----------

Or:

( Create a reference link to the file. Enter a file location that others can access.)

Path/URL to reference
-----------------------

**3. Click the "Save" button**

Save
------

Click the Cancel button to cancel an in-progress upload

Cancel
--------

Click on browse option to select the image file from your local drive (save your company logo before you do this step) as below.

**2. Select the File**

( Enter the path of the file or click browse to find the file.)

File to upload	C:\Ranjith\Capital Info\7.30 Batch \Training Logo.png	Browse...
----------------	---	-----------

Click Save.

**Document Detail**[Edit Properties](#) [Delete](#) [Replace Document](#) [Email Document](#)

Document Name	Company Logo
Document Unique Name	Company_Logos
Internal Use Only	<input type="checkbox"/>
Externally Available Image	<input checked="" type="checkbox"/>
Document Content Searchable	<input type="checkbox"/>
Folder	<a href="#">My Personal Documents</a>
Author	Capital Info Solutions [Change]
File Extension	png
MIME Type	image/png
Size	3KB
Description	Training Logo
Keywords	Training
Image	

**Do this in your Org**

1. Create New Folder – Training Management Logos
  2. Upload few images files related to companies like Training Consultancy, Health Management related.
  3. Enable them as externally available images.
- Note: Ensure than size is more than 3KB Less than 20KB

1. **How to restrict file to be uploaded in extensions:** .htm, .html, .htt, .htx, .mhtm, .mhtml,.shtm, .shtml, .acgi, .svg.

**Navigation:**

Setup

| --- Administer

| ---- Security Controls

| ----- File Upload and Download Security

**Edit and enable the option “Don't allow HTML uploads as attachments or document records”**

## File Upload and Download Security

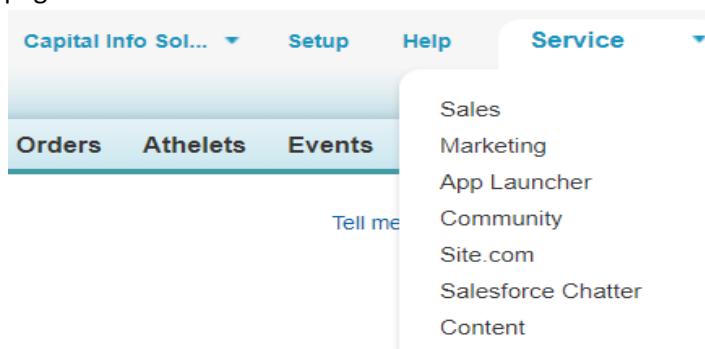
Control how various file types are handled during upload and download.

### File Handling Options

**Don't allow HTML uploads as attachments or document records**

## 1. What is App?

- An app is a group of tabs that work as a unit to provide functionality for a business Objective.
- Users can switch between apps using the app drop-down menu at the top-right corner of every page in Classic.



- It can have both Standard and Custom Tabs.
- You can customize existing apps to match the way you work, or build new apps by grouping standard and custom tabs.

## Example:

Sales App consists of Tabs such as Lead, Accounts, Contacts, Chatter etc..

## 2. There are two types of application

- a. Standard Application
- b. Custom Application

## 3. Standard Application :

- a. Applications created by the salesforce are called standard Application.  
Example : Sales, Service, Marketing etc.,
- b. Standard Application cannot be deleted, but they can be customized.

## 4. Custom Applications :

- a. Applications created by the user are called custom Applications.
- b. They can be deleted or customized as per business requirement.

## 5. Steps to Create Custom Applications

### Classic:

#### Setup

- |--- Build
- |--- Create
- |--- Apps
- |--- New Application

#### Apps

An app is a group of tabs that work as a unit to provide functionality. Users can switch between apps using the app drop-down menu at the top-right corner of every page in Classic. You can customize existing apps to match the way you work, or build new apps by grouping standard and custom tabs.

(i) Custom apps work in conjunction with User Profile Tab Visibility settings. [View User Profiles](#)

Apps					Quick Start	New	Reorder
Action	App Label	Console	Custom	Description			
Edit	Analytics Studio	<input type="checkbox"/>	<input type="checkbox"/>				
Edit	App Launcher	<input type="checkbox"/>	<input type="checkbox"/>	App Launcher tabs			
Edit	Community	<input type="checkbox"/>	<input type="checkbox"/>	Salesforce CRM Communities			

**Step 1:** Choose Application Type: Custom App

This will list two types of App such as Custom App and Console App. Go with default App "Custom App".

## New Custom App

**Step 1. Select Type**

Select the type of app to create.

Custom app  
 Console

**Step 2:** Enter Application Details:

App Label : Training Management

**Step 2. Enter the Details**

Fill in the fields below to define the custom app.

**Custom App Information**

App Label	Training Management
App Name	Training_Management <a href="#">i</a>
Description	To group tabs related to Training Management

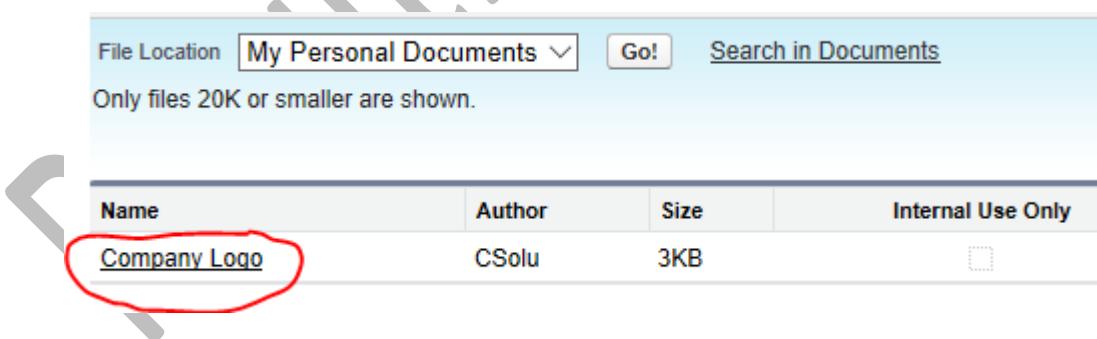
**Note:** Application will be visible to the users on the UI with App Label

If we want to refer to the application programmatically then we use app name.

**Step 3:** Choose the Logo for application

1. Application Logo should externally available Image in the document
2. Size should be lesser than 20KB
3. Width and Height should be 300px and 55px

The logo is available under your personal document folder. Select the logo by click on name "Company Logo" .



File Location: My Personal Documents [Go!](#) [Search in Documents](#)

Only files 20K or smaller are shown.

Name	Author	Size	Internal Use Only
<a href="#">Company Logo</a>	CSolu	3KB	

**Step 4:** Choose the tabs

1. Choose the tabs that should be visible in the application.
2. Choose Default landing tab
  - a. Tab, which is chosen as default landing tab, Content of that tab will be visible on the homepage of the application.

Example : Choose Lead, Account, Contact, Opportunity

Default Landing: Account

**Note:** Home tab is the default one cannot be removed from the app.

## New Custom App

### Step 4. Choose the Tabs

Choose the tabs to include in this custom app.

Available Tabs		Selected Tabs	
Reports	Home		
Scorecards	Chatter		
Service Contracts	<b>Trainings</b>		
Site.com			
Solutions			
Streaming Channels			
Profile			
User Provisioning Requests			
Analytics			
Feedback			
Performance Cycles			
Libraries			
Orders			
Quickstart			

**Step 5:** Choose the profile for whom the application should be visible.

Example : System Administrator

## New Custom App

### Step 5. Assign to Profiles

Choose the user profiles for which this custom app will be visible in the AppExchange menu. You may specify this custom app as the default custom app of a profile, meaning that new users who have the profile will see this custom app when they log in for the first time.

Visible

Standard User

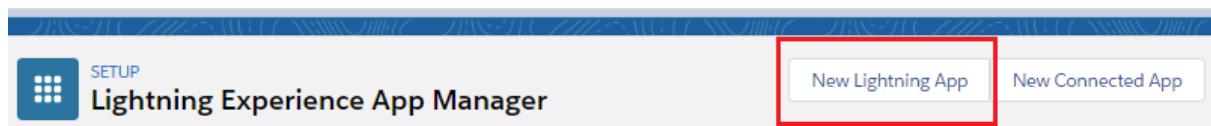


System Administrator



Now the custom App is included in menu at the top right.

- Setup
- Help
- Sales
  - Service
  - Marketing
  - App Launcher
  - Community
  - Site.com
  - Salesforce Chatter
  - Content
  - External Orders
  - Training Management**
  - AppExchange
  - Developer Community
  - Trailblazer Community

**HOW TO CREATE A LIGHTNING APP?****Lightning:****Step 1: Enter AppDetails**

- Enter App Name : Mutual Funds
- Developer Name : Mutual\_Funds
- Enter Description:
- Choose the Logo

**App Details & Branding**

Give your Lightning app a name and description. Upload an image and choose the highlight color for its navigation bar.

<b>App Details</b> * App Name <input type="text" value="Mutual Fund"/> <span style="border: 1px solid #ccc; padding: 2px;">Used by the API and managed packages, this name must be unique across all apps.</span> * Developer Name <input type="text" value="Mutual_Fund"/> Description <input type="text" value="Enter a description..."/>	<b>App Branding</b> Image <input type="button" value="Upload"/> Primary Color Hex Value <input type="color" value="#0070D2"/> <span>#0070D2</span> <input type="checkbox"/> Use the app's image and color instead of the org's custom theme
--	---

**Step 2: Choose the Navigation Type**

- Choose Navigation as Standard Navigation

**Step 3: Choose Utility Bar items**

- Choose Chatter, History

**Step 4: Choose the tabs for the application**

Account, Case, Contact

**Step 5: Choose the profile for which the application should be visible.**

Example: System Administrator

**User Profiles**

Choose the user profiles that can access this app.

**Available Profiles****Selected Profiles**

System Administrator

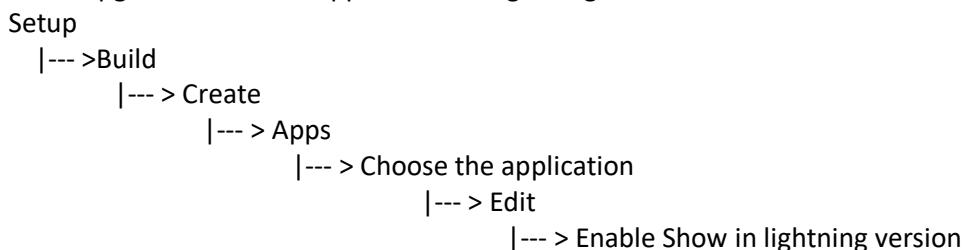
**Step 6: Save & Finish**

**Ranjith Krishnan**  
**sfdcmeet@gmail.com**

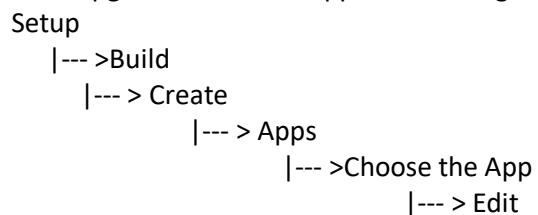
**Q:: How many custom Applications can be created in DE Org?**

Edition	No Applications
Developer	10
Professional	255
Enterprise	260
Unlimited	Unlimited

**Note:** We can upgrade the classic application as Lightning version



**Note:** If you want to upgrade the classic application to lightning

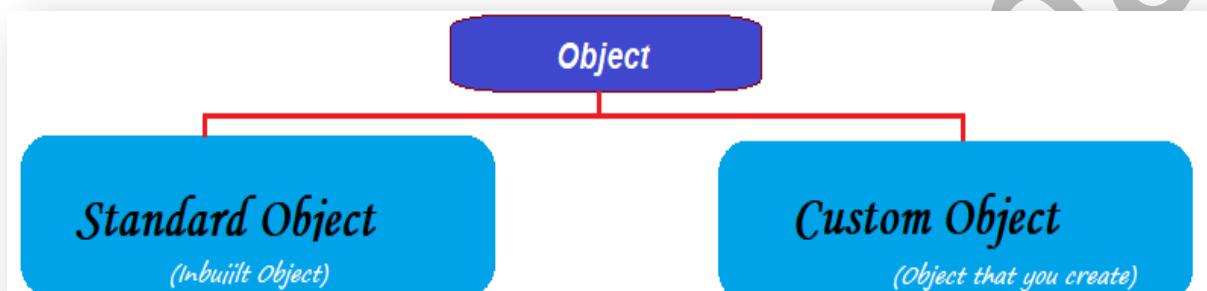


**Note :** Classic version of the application still remains the same ,but one more instance of the application in the lightning version will be created.

## SESSION 5

### Object :

1. Objects are nothing but tables in the regular database.
2. Any data stored in the salesforce will be saved to objects.
3. It consist of Field (columns) and record (rows)
4. There are two types of objects
  - a. Standard Objects.
  - b. Custom Objects



### 4. Standard Objects:

- a. Objects which are created by the salesforce are called standard objects.  
Example: Account, Contact, User, Profile , UserRole, Lead, Opportunity etc.,
- b. Standard Objects cannot be deleted but can be customized.



Object consists of fields to store specific type of data. Example shown below is a representation of data from an Account object and its fields.

**Ranjith Krishnan**  
**sfdcmeet@gmail.com**

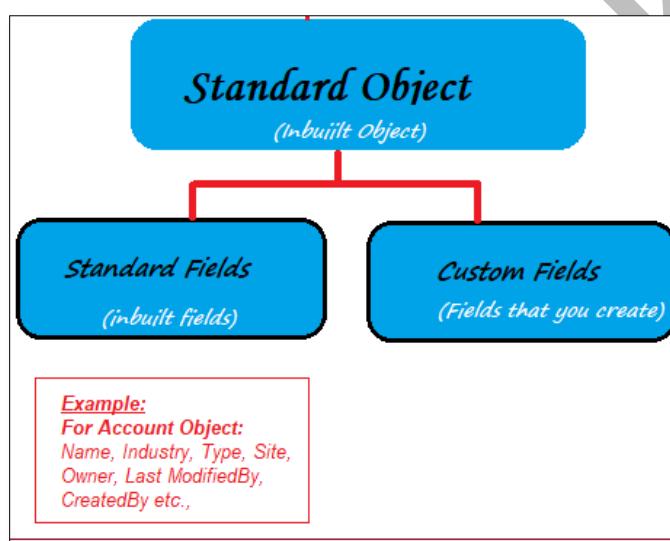
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**Fields** are nothing but columns in tables. For standard object Account, we have fields such as “Account Owner”, “Account Name”, “Industry”, “Billing City” etc., as shown in the screen shot below.

The record highlighted box denotes a row in the object called as “**Record**” (or Phil Smith record).

A	B	C	D
1	Account Owner	Account Name	Industry
2	Phil Smith	ABC Labs	Biotechnology
3	Phil Smith	Acme Inc.	Manufacturing
4	Phil Smith	Acme-NY	Manufacturing
5	Phil Smith	American Bank	Banking
6	Phil Smith	American Package	Shipping
7	David Hudson	American Package_UK	Shipping
8	Phil Smith	AMP Industries	Manufacturing
9	Phil Smith	AmShip Corporation	Shipping
10	Phil Smith	Arbuckle Laboratories	Biotechnology
11	David Hudson	Arbuckle Laboratories - Austria	Biotechnology
12	David Hudson	Arbuckle Laboratories - France	Biotechnology
13	Anjana Shah	Arbuckle Laboratories - Germany	Biotechnology
14	Phil Smith	Cable Inc.	Entertainment
15	Jin Chang	Canson	Technology

Admin can also create new custom fields under standard object to capture your business specific information.



**Record** -A collection of fields that store information about a specific item of a specific type (represented by an object), such as a contact, an account, or an opportunity.

For example, you might have a contact record to store information about Joe Smith, and a case record store information about his training inquiry.

There are different types of Fields available in Salesforce to capture the data specific to your business need.

# Ranjith Krishnan

Example shows the Account Object and its fields such as Account Name is text type to store company name, Phone is to store phone number and Annual Revenue is to hold currency value.

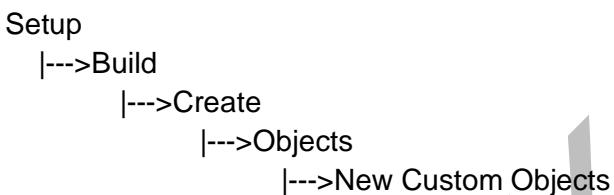
Account						
Column / Field	Id	Name	Site	Phone	Industry	AnnualRevenue
Record	0017F00000Jloh	CTS	India	123 IT		\$50000
		Talyor	US	3563	Communication	

## 5. Custom Objects :

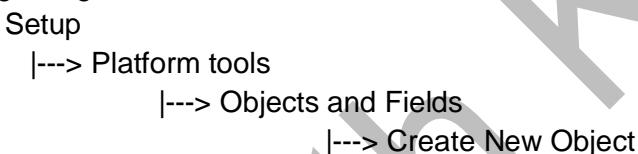
- a. These are the objects created by user to meet his organizational business requirement.
  - b. All the custom objects are appended with \_\_c (double underscore with character 'c')
- Example : Training\_\_c, Department\_\_c , Employee\_\_c ,Project\_\_c .

## 6. Steps to create Custom Objects

### a. Classic :



### b. Lightning:



#### Step 1: Enter Object Label

Example: Training

**Note** : Objects are displayed on the User Interface with object Label

#### Step 2: Enter Plural Label

**Example** : Trainings

**Note** : If we create a tab for this object ,label that should be display on the tab is called plural Label.

#### Step 3: Enter Object Name

**Example** : Training

**Note** : Name used to refer the object in API (Program) .

#### Step 4: Context sensitive help

1. On Every object salesforce provides help for this page Link.
2. When we click on the link which document should be opened is defined using this settings.
  - a. Open the standard Salesforce.com Help and Training window.  
If this option is selected salesforce standard document will be opened.

**Ranjith Krishnan**  
**sfdcmeet@gmail.com**

# Ranjith Krishnan

b. Open a window using a Visualforce page .

If we choose this option we can create our own visualforce page as help document.

## Step 5:: Record Name Label and DataType

- a. Salesforce by default on every custom object creates one standard field with name "Name".
- b. With what label this field should be displayed on the ui is defined as Record Name Label.
- c. This is a required field.
- d. This will accept only Text and AutoNumber as datatype.
- e. If we choose the data type as Text ,This will accept alphanumeric data and user has to manually enter the data.
- f. If we choose the data Type as Autonumber, Then system will generate the data based on the format what we have given .

### Example :

Format : DPT{0000}

Start : 0

DPT00001

DPT00002

DPT00003

Format : OR-{000}

Start : 501

OR-501

OR-502

Format : {mm}{dd}{000}

Start : 1

1029001

1029002

## Step 6: Optional Features:

These options can be enabled or disabled at any stage of the application

- a. Allow Reports : If you enable this option, we can create reports on this object data.
- b.Allow Activities : If you enable this option we can create Events and Tasks on this object.
- c.Track Field History : If you enable this option we can track the changes made on the fields of this object .
- d.Allow in chatter Group: If you enable this option we can create chatter groups on this object.

## Step 7: Object Classification:

- a. Allow Sharing
- b. Allow Bulk API Access
- c. Allow Streaming API Access

Note : If we enable all the three options then it is Enterprise Application object.

If we disable any one of this option we call it as Lightning application object.

**Ranjith Krishnan**  
**sfdcmeet@gmail.com**

**Step 8 : Deployment Status :**

In Development: If we enable this option only Administrator will be able to access this object ,no other user can see this object .

Deployed : If we enable this option, then all the users in the organization can access this object based on security model of the organization.

**Step 9: Allow Search :** If we enable this option content of this object can be searched from global search.**Step 10: Object Creation Option:**

These options can be enabled or disabled only at the time of creating an object.

- Add Notes and Attachments related list to default page layout.
- Launch New Custom Tab Wizard after saving this custom object.

**Schema Builder:**

1. We can also build custom objects using Schema builder.

2. Setup

|--->Build

|--->Develop

|--->Lightning Bolt

|--->Schema Builder

|--->Elements

|--->Drag and drop objects icon.

**Q:: In How many ways we can create custom objects?**

A:: Three ways

1. Standard Navigation
2. Schema Builder
3. Metadata SOAP API web service

**Q:: Objects falls under which part of MVC ?**

A:: Model

**Q:: How many custom objects we can create in the salesforce ?**

A:: It depends on the edition .

Unlimited Editions	: 2000
Enterprise	: 200
Developer	: 400
Professional	: 50

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Note : In salesforce every object has three character unique Id (Entity Id).

Account	-- 001
Contact	-- 003
User	-- 005
Opportunity	-- 006
Profile	-- 00e
Lead	-- 00Q
Order	-- 801
Case	-- 500
Solution	-- 501
Training__c	-- a01

**UseCase1:** Create Custom Objects.

**a.Object :Department**

Record Name Label	:	DepartmentNo
Name Field	:	AutoNumber
Format	:	DP-{000}
Start	:	1

**b.Object :Employee**

Record Name Label	:	EmpNo
DataType	:	AutoNumber
Format	:	EMP{mm}{000}
Start	:	1

**c.Object :Project**

Record Name Label	:	ProjectNo
DataType	:	AutoNumber
Format	:	PRJ-{00}
Start	:	1

**c.Object :Trainee**

Record Name Label	:	Trainee
DataType	:	AutoNumber
Format	:	TRN-{00}
Start	:	1

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## SESSION 6

### Tabs:

1. Tabs are interface between user and the application.

2. There are four types of tabs

- a. Custom Object Tab
- b. Visualforce Tab
- c. Web Tab
- d. Lightning Page Tab

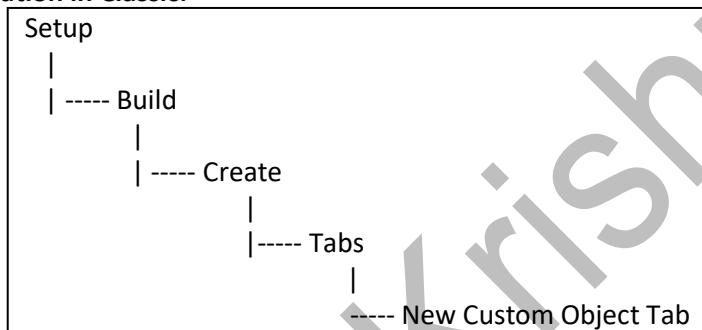
3. Custom Object Tab:

a. When we click on the tab, then we can perform below actions on the corresponding Object.

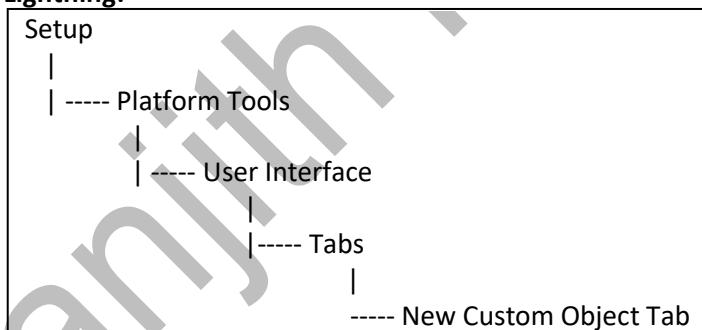
Read | Edit | Delete | Create

b. Steps to create a Custom object Tab:

#### Navigation in Classic:



#### Navigation in Lightning:



**Step 1:** Select object

**Step 2:** Choose the tab style

Click a tab style to select the color scheme and icon for the custom tab. Then click Next.

### New Custom Object Tab

**Step 1. Enter the Details**

Choose the custom object for this new custom tab. Fill in other details.

Select an existing custom object or [create a new custom object now](#).

Object	Training
Tab Style	Bank

**Step 3:** Choose the Visibility of tab to the Profile. There are 3 types of visibilities we can set for tabs to users. They are

**Default On:** Tab is available on All Tab page and appears in tab panel for associated apps.

# Ranjith Krishnan

**Default off:** Tab is available on All Tab page.

**Tab Hidden:** Tab is not visible to all the users with given profile.

When “Apply one tab visibility to all profiles”, as Default On. It indicates that all users in the organization can see this tab. Click Next.

**Note:** When you choose other option, ‘Apply a different tab visibility for each profile’, then different visibility can be set for each user profile.

## Step 2. Add to Profiles

Choose the user profiles for which the new custom tab will be available. You may also examine or alter the visibility each profile.

**Apply one tab visibility to all profiles** **Default On**   
 [Apply a different tab visibility for each profile](#)

## Step 4: Add the tabs to the application.

Include this tab to your custom Application so that user can see the tab when choose the application at the top side of the Salesforce Classic.

Select Append tab to users' existing personal customizations to add the tab to your users' customized display settings if they have customized their personal display.

## Step 5: Save

### 4. Web Tab :

When we click on the web tab corresponding webpage will open.

### 5. Visualforce Tab:

When we click on the Visualforce tab corresponding Visualforce page will open.

### 6. Lightning page Tab :

When we click on the tab corresponding lightning Application page will open.

### Q:: What are the default permissions that are enabled when we add tab to the application?

- Ans:: 1. Global Search  
2. Create new Shortcut  
3. Recent Items

### Q:: How many tabs can be created for an object ?

Ans:: One Tab

### Q:: Can one Tab be added in more than one applications?

Ans: Yes, we can add into multiple applications.

### Note:

- The custom tabs limit is a fixed number based on edition and can't be increased.

### **Object Fields:**

1. Fields are nothing but the columns in the regular database.
2. There are two types of fields.
  - a. Standard Fields
  - b. Custom Fields

### **3. Standard Fields:**

- a. There are the fields created by salesforce.
- b. These fields cannot be deleted.
- c. We can customize the fields
- d. Some of the standard fields are called System fields.

### **4. System Fields:**

- a. There are the fields which are created by salesforce and updated by salesforce .
- b. There are 7 System Fields
  1. ID :
    - a. Salesforce by default creates 18 Character unique Id for every record.
    - b..Salesforce will recognize the record by using this Id
    - c. First Three characters of Id will represent object (Entity Id).
    - d. It is case-sensitive.
    - e. This can also be referred with 15 Digit Id. The conversion from 15 to 18 digit will be handled by the system itself.
  2. isDeleted :
    - a. Whenever we delete any record, value of isDeleted field is set as True.
    - b. When we delete any record it will still be in the object for 15 days.
    - c. After 15 days of time, the records would be permanently deleted.
  3. CreatedById
    - a. This filed will store the 18 character Id of the user who created this record.
  4. LastModifiedById
    - a. This field will store the 18 character Id of the user who last modified this record
  5. CreatedDate :
    - a. This field will store date and time when the record was created.
  6. LastModifiedDate :
    - a. This field will store date and time when a user was last modified manually.
  7. SystemModStamp
    - a. This field will store date and time when the record was last modified this record programmatically.

Q: Which fields we call as System Audit Fields?

- a.CreatedById
- b.LastModifiedById
- c.CreatedDate
- d.LastModifiedDate
- e.SystemModStamp

## 5: Custom Fields:

- a. These are the fields which are created by the user to meet an organizational business requirement.
- b. Salesforce has defined predefined datatypes to create the custom fields

### 1. Text :

Format : Alphanumeric  
MaxLength : 255 Characters  
Single|Multiple : Single Line

### 2. TextArea:

Format : AlphaNumeric  
MaxLength : 255 Characters  
Single|Multiple : Multiple Line (more than one line)



### 3. TextArea(Long) :

Format : AlphaNumeric  
MaxLength : 1,31,072 Characters  
Default : 32,768 characters  
Minimum Length : 256 Characters  
Single|Multiple : Multiple (>= 2 or <= 50)

### 4. TextArea(Rich) :

Format : Formatted Data  
Max Length : 1,31,072 characters  
Default Length : 32,768 Characters  
Minimum Lines : 10 Lines

### 5: Phone :

This data type is used to store the phone numbers. The data will be formatted

### 6. CheckBox :

This data types will store the value of true or false

Screen shot from Opportunity Page layout (Private is check box field)



### 7. Currency :

Currency values are stored in this field.

Max Length : (Length of Integer +Length of Decimal) should be at max 18 characters

Example : \$32000.20 (5 + 2 = 7 )

(Length of this value is calculated as 5 digits before decimal +  
digits after the decimal 2= 7)

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## 8.Date :

Allows users to enter a date or pick a date from a popup calendar.

For Example:

A screenshot of a Salesforce interface showing a date input field. The field contains the value "1/15/2019". A calendar overlay is displayed, showing the month of January 2019. The date "15" is highlighted with a blue border, indicating it is selected. The calendar also shows the days of the week and the dates from 1 to 31.

## 9.DateTime :

Allows users to enter a date or pick a date from a popup calendar and enter a time of day.

Example:

A screenshot of a Salesforce interface showing a date-time input field. The field contains the value "7/16/2019 11:21 PM". A calendar overlay is displayed, showing the month of July 2019. The date "16" is highlighted with a blue border, indicating it is selected. The calendar also shows the days of the week and the dates from 1 to 31.

## 10. Number :

These fields are used to store numerical values

Max Length : 18 characters (Length of Integer + Length of Decimal)

## 11. Percent :

These fields are used to store the percentage value by default '%' symbol is appended to the data .

Max Length : 18 characters (Length of Integer + Length of Decimal)

Example:

Probability (%) 60%

## 12. Email :

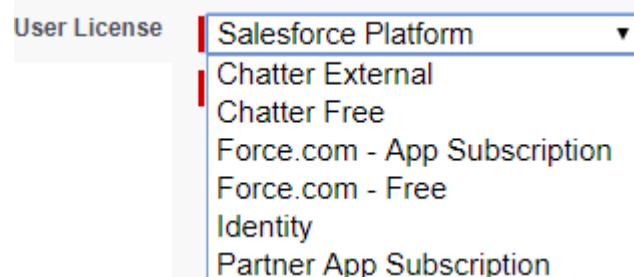
This field will store the email id.

**Note :** Salesforce has defined validation rules to check the format of the email address.

## 13. PickList :

- It is a dropdown list from which we can select one option at a time.
- Maximum we can provide 1000 options.
- Length of each option can be 255 characters
- We can sort options in the ascending order.
- We can make the first option as default option by enabling the checkbox.
- We can add /remove/edit /reorder the options based on business requirement.

**Example:** User can pick one value from the list of options as drop down.



**14. PickList( Multi-Select) :**

- a. It is also a picklist field but we can select more than one option at a time .
- b. We can provide maximum 300 options.
- c. Maximum we select 100 options from 300 options.
- d. Length of each option can be at max 255 characters

Example:

Choose the Tabs

Available Tabs	Selected Tabs
Accounts	Home
Account Brands	Chatter
App Launcher	Trainings
Assets	Athlete
Authorization Form	Events
Authorization Form Consent	Employees
Authorization Form Data Use	EventLineItems
Authorization Form Text	
Campaigns	
Cases	
Channel Programs	

Add

Remove

**15 .Text Encrypted:**

- a. It is used to store sensitive data with masked characters.
- b. Maximum length of the field is 175 characters.
- c. By default no one can access the data in the original format.
- d. Users with permission 'View encrypted data' in profile can only see this data.
- e. Text encrypted fields cannot be used in formulas
- f. Encrypted fields cannot be used in search Criteria or filter Conditions.
- g. Encrypted fields can be used in validations, search results, report results.

**16. Auto-Number**

- a. Automatically assigns a unique number to each record.
- b. The maximum length of any auto-number field is 30 characters,
- c. 20 of which are reserved for prefix or suffix text.

**Example:**

E-{00000}{YYYY}{MM}-{0} -> 201704-1

## 6. Custom Fields Creation

- a. Custom Fields can be created in four ways
  1. Standard Navigation
  2. Schema Builder
  3. Force.com Quick Menu
  4. Metadata SOAP API webservice

## b. Standard Navigation

### 1. Classic

Setup

|--->Build

|---> Create

|---> Object

|--->Object Name

|---> Custom Fields and Relations

|---> New

### 2. Lightning

Setup

|---> Platform Tools

|---> Objects and Fields

|---> Object Manager

|---> Object Name

|--->Fields and Relation

**Step 1:** Choose the dataType

Step 2: Enter field Details Like (Label,Name,Required, Unique)

Step 3: Next

Step 4: Next

Step 5: Save

## b. Schema Builder

### 1. Classic

Setup

|--->Build

|--->Lightning Bolt

|--->Schema Builder

### 2. Lightning

Setup

|--->Platform Tools

|--->Objects and Fields

|--->Schema Builder

Step 1: Choose the Object

Step 2: Choose elements

Step 3: Choose the dataType

Step 4: Enter the details

Step 5: Save

**Note :** if we create the fields using Schema builder fields are not added to pagelayout.

: We need to manually add the fields to the pagelayout

Setup

|---> Build

|---> Create

|---> Objects

|--->Object Name

|---> PageLayouts

|--->Edit

|--->Add the fields

## c. Force.com Quick Access Menu

- Step 1: Click on the Tab of the object
- Step 2: Select Force.com Menu
- Step 3: Choose view fields
- Step 4: Select Custom Fields and Relations
- Step 5: Select new and create the fields.

## 7. Field Dependency:

1. If need to control the values of one field by using another field then we use field dependency.
  2. Controlling Field:
    - a. We can choose the any of PickList Field and Checkbox field as controlling field.
    - b. If we choose any picklist field as controlling field, then picklist field can have only 300 options in it.
  3. Dependent Field : We can choose PickList /MultiSelect PickList field as Dependent field.
  4. We can create multilevel dependency.
  5. Steps to create field dependency
    - Setup
    - |---Build
    - |---Object Name
    - |----Custom Fields and Relations
    - |----Field Dependency
    - |----Create
    - |---Object
    - |---New
- Step 1:** Select the Controlling Field  
**Step 2:** Choose the Dependent field  
**Step 3:** Include and Exclude the dependent options for the Controlling Field.  
**Step 4:** Save .

**UseCase :** Create Two Custom Fields in Training Object

Field Name	Data Type	Options
City	PickList	Hyderabad, Chennai, Bangalore
Places	PickList	SRNagar, LBNagar Chrompet, Tambaram ElectronicCity, Marathahalli

Create a field dependency.

### About Custom Formula Type

1. Formula is one of the data type of the field.
2. This is used to derive its value from a formula expression you define.

<b>Literal Value</b>	The hardcoded text string or number in the formula. For example, if there is a formula to calculate bonus of employees where the percentage of bonus is always 20% from the salary field (Salary__c).  Salary__c *0.20  Here the number 0.20 is hardcoded that would never change in the calculation.
<b>Field Reference</b>	This denotes the standard or custom field of object that is referred in formula. Salary__c is a custom field reference. Field from related object can also be referred in below format. If standard object and standard field. ObjectName.FieldName  If custom object and custom field. <b>ObjectName__r.FieldName</b>
<b>Function</b>	System defined formula such as ISBLANK(value), TODAY() etc., Some required input from user such as ISBLANK(value), ISCHANGED(value) etc., and some of them do not require any value like TODAY() which return current date always.
<b>Operator</b>	Used to specify the types of calculation to perform
<b>Comment</b>	Use forward slash followed by an asterisk /*) to begin the comment and ends with an asterisk followed by a forward slash (*/).  Example /*this is a comment in formula*/

3. Every formula in the salesforce returns the result in any of the below format

- a. Checkbox
- b. Currency
- c. Date
- d. DateTime
- e. Number
- f. Text
- g. Percent

4. Steps to create the formula.



**Step 1:** Choose the field type as “Formula”

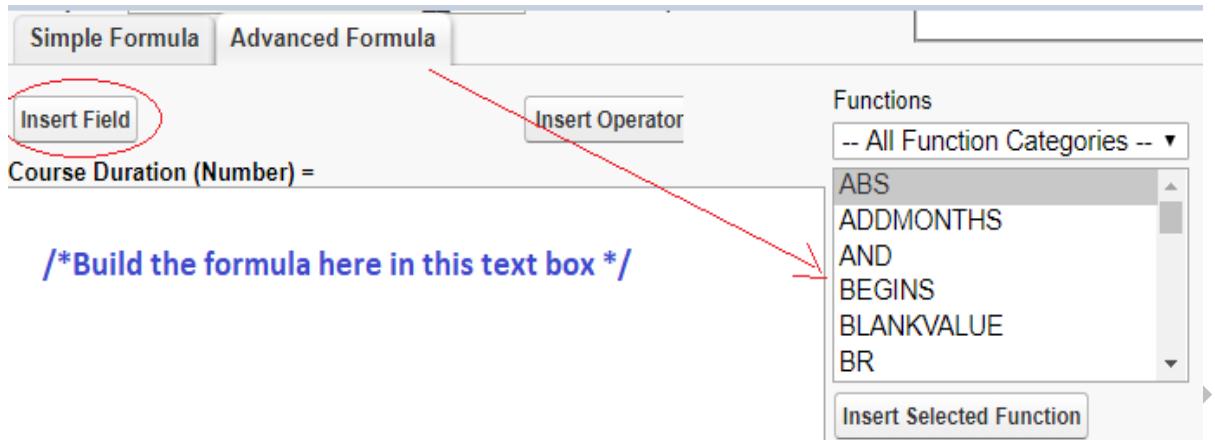
**Step 2:** Choose output type (return type of the formula)

**Step 3:** Create the formula here

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Note: If required, select the object field from the option “Insert Field”.

Choose the “Advanced Formula” to select get the list of predefined functions.



Step 4: Give the field level security

Step 5: Add the field to the layouts.

## 5. Global Data:

- Data which remains constant throughout the application is called global data
- All global objects are prefixed with '\$' sign

Example:

\$Organization  
\$User  
\$UserRole  
\$System  
\$Api

## Formula Example:

1. Object	:	Training__c
Field Name	:	Course Duration
Return Type	:	Number

Formula Editor:

End\_DateTime\_\_c - Start\_DateTime\_\_c

2. Object	:	Training__c
Field Name	:	Total Hours
Return Type	:	Number

Formula Editor:

Course\_Duration\_\_c \* Hours per Day

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Formula can also be built by using pre-defined functions provided by Salesforce as follows.

## PRE-DEFINED FUNCTIONS IN SALESFORCE:

### IF(Logic Condition, return\_value\_if\_true, return\_value\_if\_false)

Where

**Logic Condition:** This is a logical check which would return true or false.

**Example:**

1. If Fee\_\_c = 0, then return the text 'is a Free Course' or 'is a Paid Course',

Object : Training\_\_c

Field Name : This Course

Return Type : Text

Formula Editor:

```
IF(Fee__c = 0, 'is a Free Course', 'is a Paid Course')
```

2. If No\_of\_Seats\_\_c <= 50, then return the text "Seats are available" else "Seats are filled".

Object : Training\_\_c

Field Name : Availability

Return Type : Text

Formula Editor:

```
IF(No_of_Seats__c < 50, 'Seats are available', 'Seats are filled')
```

3. Calculate Bonus

Object : Employee\_\_c

Field Name : Bonus

Return Type : Percent

If Salary = 5000, give bonus 0.20

If Salary = 7500, give bonus 0.15

if Salary = 10000, give bonus 0.10

For any other salary, give bonus 0.

**This is an example to handle multiple condition using nested IF.**

Formula Editor:

```
IF(Salary__C = 5000, 0.20,  
    IF(Salary__c = 7500, 0.15,  
        IF(Salary__c = 10000, 0.10, 0)))
```

**AND (cond1, cond2,...), This will return true if all the arguments (conditions) are true.**

**NOW()** this returns current date time.

**This formula returns small if price of the product < 1nd Quantity is lesser than 5**

```
IF(AND(Price<100,Quantity<5),"Small", null)
```

**Use this operator '&&' as an alternative to the logical function AND.**

```
IF((Price<100 && Quantity<5),"Small", null)
```

**Ranjith Krishnan**  
**sfdcmeet@gmail.com**

**Example:**

1. If Course had already started and the course type is online, then provide discount 10%

Object : Training\_\_c  
Field Name : Discount\_\_c  
Return Type : Percent

**Step 1:** Start\_DateTime\_\_c > NOW() and

**Step 2:** Online\_Type\_\_c = TRUE

**Step 3:** Combine the Step 1 and Step 2

AND(Start\_DateTime\_\_c > NOW(), Online\_Type\_\_c)

**Note:** Online\_Type\_\_C is a checkbox field and hence can be referred without explicit Boolean check as "Online\_Type\_\_c = true"

**Formula Editor:**

```
IF( AND(Start_DateTime__c > NOW(), Online_Type__c ), 0.10,0)
```

The above formula can also be written as

```
IF(Start_DateTime__c > NOW() && Online_Type__c, 0.10,0)
```

2. Show the employee is eligible for bonus only if they are in-service and years of experience > 1.

Object : Employee\_\_c  
Field Name : Bonus Eligibility?  
Return Type : CheckBox

The Status\_\_c is a picklist type which cannot be used directly referred as Status\_\_c = 'In Service' like a text field. Instead use any of the below function

**TEXT()** - this will convert value to text. Eg., TEXT(Status\_\_c) = 'In Service'

**ISPICKVAL(Field,'Literal')** => returns true if field is equal to literal given.

Eg., ISPICKVAL(Status\_\_c,'In Service')

AND(TEXT(Status\_\_c) = 'In Service', Years\_of\_Exp\_\_c > 1)

**Formula Editor**

```
IF(AND(TEXT(Status__c) = 'In Service', Years_of_Exp__c > 1),True, False)
```

**OR(Cond1, Cond2, Cond3,,)** This function returns true if any of the argument is true.

**Example:**

1. If Years\_of\_Experience\_\_c > 10 or Salary\_\_c > 100000 then display as 'Critical Employee'

Object : Employee\_\_c  
Field Name : Priority  
Return Type : Text

**Formula Editor**

```
IF(OR(Years_of_Experience__c > 10 , Salary__c > 100000), 'Critical Employee', NULL)
```

Use this operator '||' as an alternative to the logical function AND.

IF((Years\_of\_Experience\_\_c > 10 || Salary\_\_c > 100000), 'Critical Employee', NULL)

2. This formula returns 'Fast Track Course' if Course Duration is between 1 and 30.

IF(OR(Course\_Duration\_\_c > 1, Course\_Duration\_\_c < 30), 'Fast Track Course', 'Regular Course')

& is used to concatenate the text

TEXT() - this will convert value to text.

1. Display the text to show the course name and when it starts

Eg., The course 'SFDC Admin' begins at 05/07/2019

Object : Training\_\_c

Field Name : Notification

Return Type : Text

Formula Editor:

'The Course ' & Course\_Name\_\_c & ' begins at ' & TEXT(Start\_DateTime\_\_c)

Explanation:

The field Start\_DateTime\_\_c is not a string and hence cannot be concatenated with another string. So this must be converted to text using TEXT() function.

**ISBLANK(arg) => Returns true if the argument does not have any value. This function will support both number as well as text type of argument.**

1. Bonus with respect to salary range

If Salary > 5000 and < 15000, then provide bonus 10%

If Salary > 15000 and < 30000, then provide bonus 5%

If Salary < 5000, then bonus 15%.

Formula:

IF(OR(Salary > 5000, Salary < 15000), 0.10,  
IF(OR(Salary > 15000, < 30000), 0.05,  
IF(OR(Salary < 5000, 0.15), 0)))

2. Calculate the lead score with respect to number of contact information available as below

Object : Training\_\_c

Field Name : Lead Score

Return Type : Number

Condition	: FieldName	Blank/Null	Lead Score Points
	Phone	0	10
	Email	0	10
	FirstName	0	10
	AnnualRevenue	> 0	20

Formula Editor:

IF( ISBLANK(Phone) ,0 ,10 ) +  
IF( ISBLANK>Email) , 0, 10 ) +  
IF( ISBLANK(FirstName),0,10 ) +  
IF( AnnualRevenue > 0 , 20 ,0)

**Ranjith Krishnan  
sf dcmeet@gmail.com**

**NOT(field1/expr) -> return true if argument is resolved to false and vice versa**

**Example:**

i. Salary = 6000  
NOT( Salary > 5000 ) => False

ii. Name => if field is not blank, then return true  
NOT(ISBLANK(Name))

**CASE() - Checks an expression against a series of values. If the expression compares equal to any value, the corresponding result is returned**

**Syntax: CASE(Expression,**

```
    value1, return_value1,  
    value2, return_value2,  
    value3, return_value3,  
    return_value4)
```

**Example:**

This formula returns how much travelling allowance is allowed with respect to trainer's city

**Formula Editor:**

```
CASE(City,  
    'Hyderabad' , 300,  
    'Noida' , 500,  
    'Chennai' , 1000,  
    100)
```

**IMAGE(URL(ErrorMessage)) : This will print the image ,if the url is not working then it throws error message.**

Note: if you want print image using formulas we have to take return type of the formula as Text.

<b>Object</b>	: Lead
<b>Field Name</b>	: Lead Score
<b>Formulae Field</b>	: Lead Rating
<b>Return Type</b>	: Text
<b>Condition</b>	: LeadScore
	Rating
	50
	40
	30
	20
	10
	0
	5 star
	4 Star
	3 Star
	2 star
	1 star
	0 star

**Formula Editor:**

```
IMAGE ( CASE(Lead_Score__c ,  
    50,'img/samples/stars_500.gif',  
    40, 'img/samples/stars_400.gif',  
    30, 'img/samples/stars_300.gif',  
    20, 'img/samples/stars_200.gif',  
    10, 'img/samples/stars_100.gif',  
    'img/samples/stars_000.gif'),  
    'Image not Found' )
```

## DATE RELATED FUNCTION

**TODAY () :** This will return today's date .

**NOW()** : This will give you current date and time .

**DATE(YYYY,MM,DD) :** This will return the instance of the date

DATE(2010,10,23)

DATE(2019,2,23 )

**DAY(Date) :** This will return you the day in the month .

DAY(TODAY() ) : 8

DAY(Date(2019,2,23 ) : 23

**MONTH(Date) :** This will return the month in the date

MONTH(TODAY() ) : 06

MONTH(DATE(2019,2,23 ) :2

**YEAR(Date) :** This will return the year in the given date.

YEAR(TODAY()) : 2019

**DATEVALUE(expression) :** This will return the date in the expression

DATEVALUE(NOW() ): TODAY

## UseCase:

Object : Account

Formula Field : Modified before

Condition : Calculate how many days back record was last modified.

LastModifiedDate : DateTime

TODAY() - DATEVALUE>LastModifiedDat

## Relations:

1. Relations are used to establish connection between two or more objects.
2. Salesforce provides different types of relations
  - a. Master-Detail
  - b. Lookup
  - c. Many -Many (Junction object)
  - d. Hierarchical
  - e. External Lookup
  - f. Indirect Lookup

## Importance of creating relationships among objects

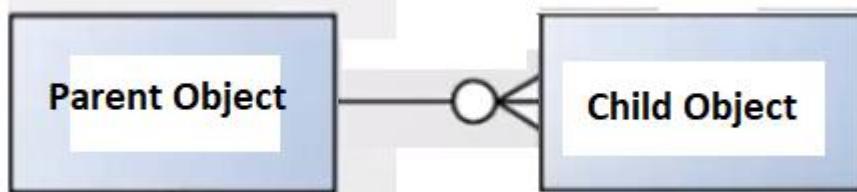
1. To avoid data redundancy
2. To refer the related info in the same data
3. To have cascade delete - Data Integrity

## Steps to create relationship between two objects in salesforce

- Step 1: Create a custom field of Relationship type in child object.
- Step 2: Choose the parent to relate the relationship field.
- Step 3: Which profile has access to this field (Field Level Security )
- Step 4: Add to pagelayout.

### 3.Master-Detail :

1. It is one to many relationships between two objects.



2. The field type 'Master-Detail Relationship' can be created only on Custom objects.
3. Master-Detail field can only be created on custom objects.
4. Master-Detail field will be created on many side of the relationship. It means the child object.  
Eg., Department is master and Employee is detail (child). The custom field of type Master-Detail is created in child object as marked below.

Master Object	Child Object
<b>Department</b> Created By <i>Lookup(User)</i> Currency <i>Picklist</i> Department <i>Picklist</i> DepartmentNo <i>Auto Number</i> Dept Grade <i>Formula (Text)</i> Last Modified By <i>Lookup(User)</i>	<b>Employee</b> Auto <i>Auto Number (External ID)</i> Created By <i>Lookup(User)</i> Currency <i>Picklist</i> Date of Join <i>Date</i> Department <b>Master-Detail(Department)</b> Department Name <i>Formula (Text)</i>

5. Master-Detail field is a required field.
6. Object on which Master-Detail Field is created is called as child object /Detail Object/ Related

**Ranjith Krishnan**  
**sfdcmeet@gmail.com**

# Ranjith Krishnan

Object.

7. In one to many relation of Master-Detail, the parent object is referred as master object.
8. When creating the child record, the master record will be chosen to set the relation. When setting this relation, the record id of the master record will be stored in master-detail field in the child record.

**Employee Edit**

Save Save

**Information**

First Name	Ranjith
Last Name	Krishnan
Years of Experience	14
Department	Information Technology

(**This master-detail field will store the record id of master record. But the name will be displayed in the layout**)

9. If the master record is deleted, corresponding child records are also deleted.  
But deleted child records will not be displayed in recycle bin.
10. If we undelete the master record, corresponding child records are also undeleted.
11. Object in which Master-Detail field is created, that object will not have any owner field in it.
12. Whoever is the owner of the master record will become the owner of corresponding child records.
13. In master object, there is a custom field type called 'Rollup Summary' is allowed to create. This is used to summarize the child records such as total number of child record, sum of any number field values, currency, maximum or minimum of currency or number or date or dateTime or time.



## 13. Sharing Setting

This will specify the minimum access level required on the Master record to create, edit, or delete related Child records:

a. Read Only:

If you choose this option, Allows users who has atleast Read access to the Master record can perform create, edit, or delete operations on corresponding child records.

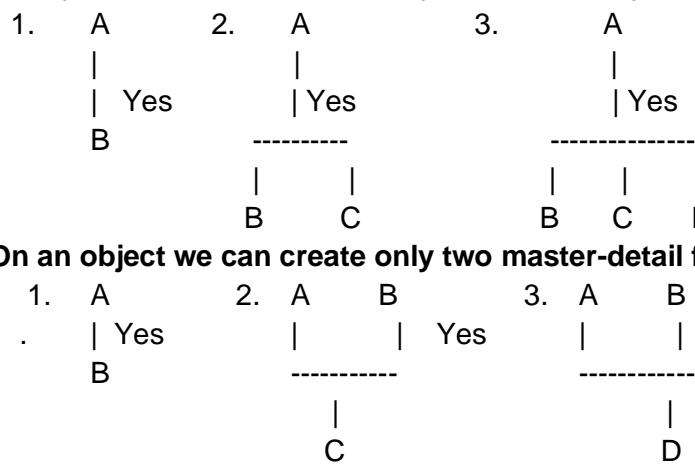
b. Read/Write:

If you choose this option, Allows users who has at least Read / Write access to the Master record can perform create, edit, or delete operations on corresponding child records.

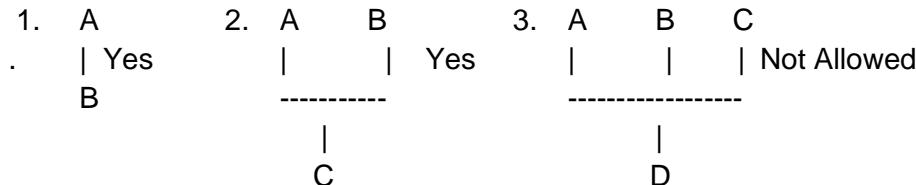
**14. Allow Reparenting:** If this option is enabled, Child can change it's master record after creation of child record.

# Ranjith Krishnan

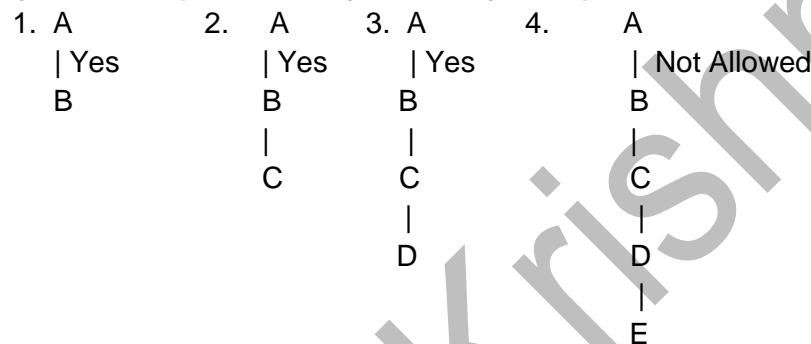
15. An object can be a Master to any number of objects.



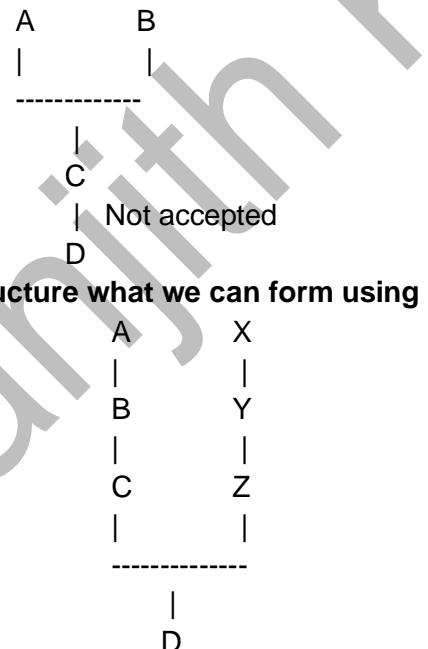
16. On an object we can create only two master-detail fields.



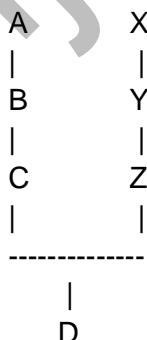
17. Child object can be parent to any other objects upto three levels



18. If an object has two parents on it, it cannot be parent to any other object.



19. Maximum structure what we can form using master-Detail

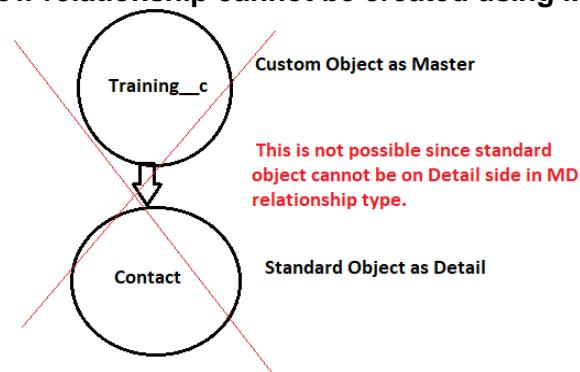


20. In master object can be a standard object, such as Account or Opportunity, or a custom object.

# Ranjith Krishnan

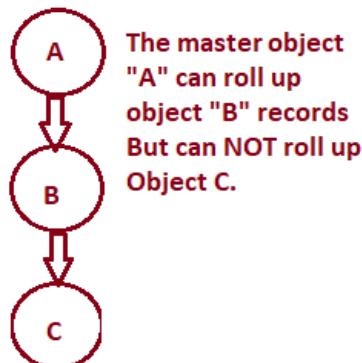
21. The standard object cannot be on detail side.

Example the below relationship cannot be created using Master-Detail Type.



22. You can't delete a custom object if it is on the master side of a master-detail relationship. If you delete a custom object that is on the detail side of a master-detail relationship, the relationship is converted to a lookup relationship.

23. Roll-up summary fields work as in two-object master-detail relationships. A master can roll up fields on detail records; however, it can't directly roll up fields on subdetail records.

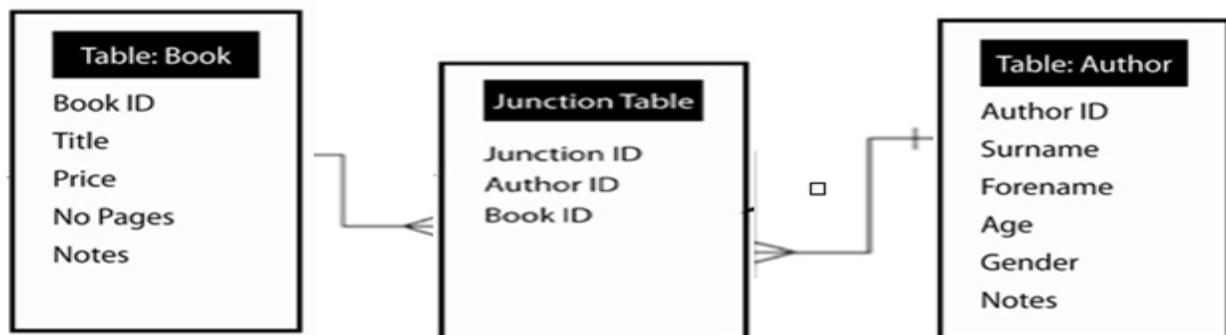


24. Max Roll-Up Summary Field limit per object is 25.

#### 4. Junction Object:

1. Junction object is a custom object.
2. Junction object has two master-detail fields on it.
3. Junction object maintains **Many to Many relation**.

For example, Books can have many authors and authors can write more than one book.



4. First Master -Detail field created on the junction object is called primary master.

Eg., Author ID in Junction Table here

5. Second Master-Detail field created on the Junction object is called secondary master.

**Ranjith Krishnan**  
**sfdcmeet@gmail.com**

# Ranjith Krishnan

Eg., Book ID in Junction Table here

6. Look and feel and ownership is inherited from primary master
7. If you delete any master record corresponding child records are deleted.
8. If any master record has more than 200 child records in the junction object, then we cannot delete that master record.

## UseCase :

### 1. Create two Custom Objects

#### a. Course

SNO	Field Label	Field Name	DataType	Options
1	Coure Name	Name	Text	-
2.	Fee	Fee	Currency	-
3.	Status	Status	PickList	Active, InActive

#### b. Branch

SNO	Field Label	Field Name	DataType	Options
1	Branch Name	Name	Text	-
2.	Phone	Phone	Phone	-
3.	Email	Email	Email	-

### 2. Create a Custom Object student using Schema Builder

SNO	Field Label	Field Name	DataType	Options
1.	StudentId	Name	AutoNumber	-
2.	FirstName	FirstName	Text	-
3.	LastName	LastName	Text	-
4.	Phone	Phone	Phone	-
5.	Email	Email	Email	-
6.	Course	Course	Master-Detail(Course)	
7.	Branch	Branch	Master-Detail(Branch)	

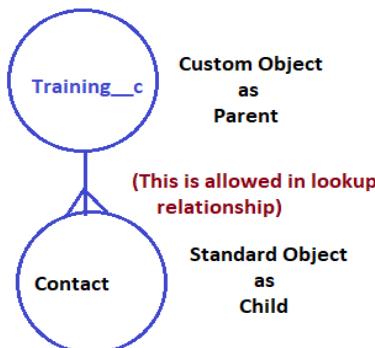
3. Goto Student Detail page and add the fields to the pagelayout.

4. Create new Application CapitalInfo

5. Create new Custom object tabs for Course ,Branch ,Student and add them to CapitalInfo application.

### 5. Lookup Relation :

1. It is one-to-Many Relation.
2. It can be created on both standard and custom object.



Ranjith Krishnan  
sfdcmeet@gmail.com

# Ranjith Krishnan

3. It can be created on both objects which contains data or which doesn't contain data.
4. If you delete master record, then corresponding child records will not be deleted.
5. Owner of parent record and child record can be same or different.
6. We can create 40 lookup fields on an object.
7. It is an optional field.
8. We can create self lookup on an object.
9. Don't Allow deletion of Lookup Record which is a part of Lookup relation.  
if you enable this option parent record which has child using lookup cannot be deleted.

## 6. Hierarchical Relation:

1. This can be created only on user object.
2. It is one-to-one relation,
3. This is used to create a relation between users.  
Eg., Relate an user with another user as manager.
4. Steps to create Hierarchical relation.

Setup  
|--->Build  
|--->Customize  
|--->User  
|--->Fields  
|--->Custom Fields & Relations  
|---->new

- Step 1: Choose datatype as hierarchical relation  
Step 2: Enter field Name and details  
Step 3: Add field level security  
Step 4: Add this field to the pageLayout.

**We cannot convert lookup relationship field to master-detail if the detail object contains data.**

**To do this, follow the work around Process as below:**

- Step 1 : Create Lookup field choosing master object as parent .
- Step 2: Go to every record existing in the child object and assign some value in the Lookup field
- Step 3: Change the data type from lookup to master-detail

Setup  
|--->Build  
|--->Create  
|--->Object  
|--->Object Name  
|--->Fields  
|--Choose the lookup field

- Step 1: Choose the Lookup field and click on edit  
Step 2: Change Type  
Step 3: Choose Master-Detail  
Step 4: Save

# Ranjith Krishnan

## SESSION 10

### CROSS Object Formula

When the formula is referring the field from related fields of parent object, then that custom formula is called **Custom Formula Field**.

Parent object can belong to any of relationships either **lookup** or **master-detail**.

**Scenario:**

There are two objects as below

Department\_\_c (Parent)

Department No ↑	Department Name	Status
DPT-001	Sales	Active
DPT-002	Support	Active
DPT-003	Information Technology	Obselete

Employee\_\_c (Child Object)

First Name ↑	Last Name	Department No
Ramya	Krishnan	DPT-001
David	John	DPT-002
Laskhman	Kumar	DPT-002
Ram	Krishnan	DPT-001
Sekar	Babu	DPT-001
Usha	Emilie	DPT-002

Now requirement is to display the department name of parent object Department\_\_c into every employee record.

**Solution:**

Create a custom formula field in employee object as below

Step 1: Choose the field type – Formula

Step 2: Give the label and field Name, and then choose the return type as text

Step 3: Click on Insert Field button and Then click on “Department No >” (relationship field) to see all the fields from the parent (department) object.

The screenshot shows the Salesforce formula editor interface. At the top, there are tabs for 'Simple Formula' and 'Advanced Formula', with 'Advanced Formula' selected. Below the tabs are buttons for 'Insert Field' and 'Insert Operator'. To the right of these buttons is a 'Functions' dropdown menu with the option '-- All Function Categ'.

The main area is titled 'Insert Field' and contains the instruction: 'Select a field, then click Insert. Labels followed by a ">" indicate that there are more fields available.'

On the left, there is a list of relationship fields starting with 'Employee >'. This list includes '\$Api >', '\$Organization >', '\$Profile >', '\$System >', '\$User >', and '\$UserRole >'. Below this list are other fields: 'Created By >', 'Created By ID', 'Created Date', 'Current Status', 'Date of Hire', 'Department Name', 'Department No', 'Department No >', and 'EmployeeAutoNo'.

In the center, there is another list of fields under 'Employee >': 'Created By >', 'Created By ID', 'Created Date', 'Department Name', 'Department No', 'Last Activity Date', 'Last Modified By >', 'Last Modified By ID', and 'Last Modified Date'. The 'Department Name' field is highlighted with a blue selection bar.

To the right, a panel displays the selected field: 'Department\_No\_\_r.Department\_Name\_\_c'. It shows the 'Type: Text' and 'API Name: Department\_No\_\_r.Department\_Name\_\_c'. At the bottom of this panel is a large 'Insert' button.

**Ranjith Krishnan**  
**sfdcmeet@gmail.com**

# Ranjith Krishnan

Step 4: Click insert to include the formula as below

**Department\_No\_\_r.Department\_Name\_\_c**

Step 5: Assign to profile

Step 6: Add to page layout

Step 7: Save the field.

View any employee record. Now the department name from parent object is displayed in child record employee here as follows

## Employee Detail

EmployeeAutoNo	EMP-0007
First Name	Ramya
Last Name	Krishnan
Grade	Executive
Grade Level	
Department No	DPT-001
Department Name	Sales

### 1. How many levels back the parent field is referred?

You can reference fields from objects that are up to 10 relationships away.

### 2. Where to use the cross object formula?

A cross-object formula is available anywhere formulas are used except when creating default values.

### 3. Cross Object formula by passes the security restriction

Using cross object formula, a user can see the field of parent object in child even though the user does not have access to that parent object record.

## Create below formula Fields

Child Object Name	Field Label	Purpose	Parent Object Name and Field
Employee__c	Department Name	To display the department name in employee record	Department__c and Department_Name__c
Employee__c	Dept Status	To display the department status in employee record	Department__c and Status__c
Trainee__c	Project Name	To display the project name in trainee record	Project__c and Project_Name__c
Contact	Company Type	To display the industry field value of account in contact record	Account and Industry
Opportunity	Customer Website	To display the website	Account and Website

Ranjith Krishnan  
sf dc meet@gmail.com

# Ranjith Krishnan

## SESSION 11

### Object Relationship

Object relationships are of 6 types.

1. Lookup
  2. Master Detail
  3. Many to Many
  4. Hierarchical
  5. External Lookup
  6. Internal Lookup
- Relationships types can be used for external objects

External Object is the one helps to connect the external data source with Salesforce Org.

### **What is External Object?**

External objects are supported in API version 32.0 and later. External objects are similar to custom objects, but external object record data is stored outside your Salesforce organization.

External objects support standard lookup relationships, which use the 18-character Salesforce record IDs to associate related records with each other. However, data that's stored outside your Salesforce org often doesn't contain those record IDs. Therefore, two special types of lookup relationships are available for external objects: external lookups and indirect lookups.

Before creating the external object, we need to create external data sources as below

### **STEPS TO CONNECT EXTERNAL SOURCE WITH SALESFORCE**

In a real production system, you would use Salesforce Connect to access data in a back-end system, such as SAP or Microsoft SharePoint. In this task, you connect to a sample data source running on Heroku.

1. From **Setup | Develop | External Data Sources**, select **New External Data Source**.

The screenshot shows the Salesforce 'External Data Sources' page. At the top, there is a navigation bar with links for Home, Chatter, Accounts, Contacts, Cases, Solutions, Reports, Dashboards, Entitlements, and a plus sign. Below the navigation bar is a search bar labeled 'Quick Find / Search...' with a magnifying glass icon. To the right of the search bar are 'Expand All' and 'Collapse All' buttons. On the left side, there is a sidebar for the 'Lightning Experience Transition Assistant' with a blue flower icon, a lightning bolt icon, and text: 'Move to the new, more productive Salesforce.' and a 'Get Started' button. The main content area is titled 'External Data Sources' and contains the following text: 'Access data in other Salesforce orgs as well as third-party databases and content systems.' Below this is a 'View:' dropdown set to 'All' and a 'Create New View' button. A table lists external data sources, with the first row showing 'Name' and 'External Data Source'. A red box highlights the 'New External Data Source' button at the top right of the table header. The table body displays the message 'No records to display.'

2. Name the data source **OrderDB**, and select **Salesforce Connect: OData 2.0** as the type.
3. Enter <http://orderdb.herokuapp.com/orders.svc> as the URL. Leave the other fields with their default values, and click **Save**.

**Ranjith Krishnan**  
**sfdcmeet@gmail.com**

## New External Data Source

Connect to another Salesforce org or a third-party database or content system.

Save Save and New Cancel

External Data Source	OrderDB
Name	OrderDB
Type	Salesforce Connect: OData 2.0

**▼ Parameters**

URL	https://orderdb.herokuapp.com/orders.svc/
Connection Timeout (Seconds)	120
Writable External Objects	<input type="checkbox"/>
High Data Volume	<input type="checkbox"/>
Request Row Counts	<input checked="" type="checkbox"/>
Enable Search	<input checked="" type="checkbox"/>
Format	AtomPub
Server Driven Pagination	<input type="checkbox"/>
Compress Requests	<input type="checkbox"/>
Custom Query Option for Salesforce Search	
Special Compatibility	None

**▼ Authentication**

4. On the next screen, click **Validate and Sync**. Salesforce Connect retrieves the schema from the external system.

## External Data Source: OrderDB

Connect to another Salesforce org or a third-party database or content system.

[« Back to External Data Sources](#)

Edit Validate and Sync Delete

External Data Source	OrderDB
Name	OrderDB
Type	Salesforce Connect: OData 2.0

**▼ Parameters**

URL	https://orderdb.herokuapp.com/orders.svc/
Connection Timeout (Seconds)	120

5. Select both the **Orders** and **OrderDetails** tables, and click **Sync**.

Ranjith Krishnan  
sfdcmeet@gmail.com

# Ranjith Krishnan

## Validate External Data Source: OrderDB

Confirm that you can connect to the external system, and synchronize its schema with your Salesforce org.

[« Back to External Data Source: OrderDB](#)

Name	OrderDB
External Data Source	OrderDB
Status	Success

Select	Table Name	Table Label	Synced
<input type="checkbox"/>	Categorys	Categorys	<input type="checkbox"/>
<input checked="" type="checkbox"/>	OrderDetails	OrderDetails	<input type="checkbox"/>
<input checked="" type="checkbox"/>	Orders	Orders	<input type="checkbox"/>
<input type="checkbox"/>	PaymentMechanisms	PaymentMechanisms	<input type="checkbox"/>
<input type="checkbox"/>	Payments	Payments	<input type="checkbox"/>
<input type="checkbox"/>	Subcategorys	Subcategorys	<input type="checkbox"/>

This is an example scenario where we need only the above two tables to be synced with external objects. The sync processes will create the corresponding **external objects** automatically in salesforce as below.

External Objects

Action	Label	Namespace Prefix	Description	Table Name
Edit   Erase   Validate	OrderDetails		OrderDetails	OrderDetails
Edit   Erase   Validate	Orders		Orders	Orders

The same objects can be located under setup -> Build -> Develop -> External Objects as below

Home Chatter Accounts Contacts Cases Solutions Reports Dashboards Entitlements +

External Ob     
Expand All | Collapse All

Build  Develop  
External Objects

### External Objects

Use external objects to virtually represent external data as Salesforce objects. External objects map to a table in a data source outside the Salesforce org and enable access to that data via custom tabs and search. Each external object requires an [external data source](#) definition for connection details.

New External Object			
Action	Label	Deployed	External Data Source
Edit   Erase	OrderDetails	<input type="checkbox"/>	OrderDB
Edit   Erase	Orders	<input type="checkbox"/>	OrderDB

Use external objects to virtually represent external data as Salesforce objects. External objects map to a table in a data source outside the Salesforce org and enable access to that data via custom tabs and search.

Now the external objects can be viewed as custom objects with fields and related lists such as standard field, custom field & dependencies, page layout, search layout similar to custom object definition page. But there are features not available for external objects such as triggers, validation rules etc.,

Ranjith Krishnan  
sfdcmeet@gmail.com

# Ranjith Krishnan

External Object Definition Detail		<a href="#">Edit</a>	<a href="#">Delete</a>
Singular Label	OrderDetails	Description	OrderDetails
Plural Label	OrderDetails	Enable Reports	<input type="checkbox"/>
Object Name	OrderDetails	Name Field	External ID
API Name	OrderDetails__X	Deployment Status	In Development
External Data Source	OrderDB	Allow Search	<input checked="" type="checkbox"/> If selected, also enable source.
Table Name	OrderDetails		
Display URL Reference Field			
Created By	<a href="#">Capital Info Solutions, 3/17:</a>	Modified By	<a href="#">Capital Info Solutions, 3/17</a>

Standard Fields					
Action	Field Label	Field Name	Data Type		
<a href="#">Edit   Del</a>	Display URL	DisplayUrl	URL(1000)		
<a href="#">Edit   Del</a>	External ID	ExternalId	External Lookup		

Custom Fields & Relationships					
Action	Field Label	API Name	Data Type	External Alias	Modified By
<a href="#">Edit   Del</a>	orderId	orderId__c	Number(18, 0)	orderId	<a href="#">Capital Info Solutions, 3/17, 9:3 PM</a>
<a href="#">Edit   Del</a>	orderLine	orderLine__c	Number(18, 0)	orderLine	<a href="#">Capital Info Solutions, 3/17/20, 9:3 PM</a>
<a href="#">Edit   Del</a>	product	product__c	Text(255)	product	<a href="#">Capital Info Solutions, 3/17/20, 9:3 PM</a>
<a href="#">Edit   Del</a>	quantity	quantity__c	Number(18, 0)	quantity	<a href="#">Capital Info Solutions, 3/17/20, 9:3 PM</a>
<a href="#">Edit   Del</a>	unitPrice	unitPrice__c	Number(10, 8)	unitPrice	<a href="#">Capital Info Solutions, 3/17/20, 9:3 PM</a>

External objects are similar to custom objects, except that they map to data that's stored outside your Salesforce organization. Each external object relies on an external data source definition to connect with the external system's data. Each external object definition maps to a data table on the external system. Each of the external object's fields maps to a table column on the external system. External objects enable your users and the Force.com platform to search and interact with the external data.

### Note:

- Each org can have up to 200 external objects. External objects don't count toward the limit for custom objects.
- If the external system allows it, we recommend that you [sync](#) the external data source to automatically create related external objects. You can instead choose to manually define external objects to customize the external object names and manually create the custom fields.

### Details about fields as part of external data source creation:

External Data Source Edit: OrderDB

Connect to another Salesforce org or a third-party database or content system.

		<a href="#">Save</a>	<a href="#">Save and New</a>	<a href="#">Cancel</a>
External Data Source	OrderDB			
Name	OrderDB			
Type	Salesforce Connect: OData 2.0			
<b>Parameters</b>				
URL	<input type="text" value="http://orderdb.herokuapp.com/orders.svc"/>			
Connection Timeout (Seconds)	<input type="text" value="120"/>			
Writable External Objects	<input type="checkbox"/>			
High Data Volume	<input type="checkbox"/>			
Request Row Counts	<input checked="" type="checkbox"/>			
Enable Search	<input checked="" type="checkbox"/>			
Format	<input type="text" value="AtomPub"/>			
	Special Compatibility <input type="text" value="None"/>			

Field	Description
Label	A user-friendly name for the external data source. The label is displayed in the Salesforce user interface, such as in list views. If you set Identity Type to Per User, this label appears when your users view or edit their authentication settings for external systems.

Ranjith Krishnan  
[sfdcmeet@gmail.com](mailto:sfdcmeet@gmail.com)

# Ranjith Krishnan

Field	Description
Name	A unique identifier that's used to refer to this external data source definition through the API. The name can contain only underscores and alphanumeric characters. It must be unique, begin with a letter, not include spaces, not end with underscore, and not contain two consecutive underscores.
Type	Select <b>Salesforce Connect: OData 2.0</b> or <b>Salesforce Connect: OData 4.0</b> .
URL	The OData service root URL. Make sure that you escape all special characters.
Connection Timeout	Number of seconds to wait for a response from the external system before timing out. By default, the value is set to the maximum of 120 seconds.

**TO CREATE AN EXTERNAL OBJECT RELATIONSHIP**, create a custom field on the child object with one of the following field types

1. Lookup Relationship
2. External Lookup Relationship
3. Indirect Lookup Relationship

**Step 1. Choose the field type**

Specify the type of information that the custom field will contain.

**Data Type**

[None Selected](#)      Select one of the data types below.

[Lookup Relationship](#)      Creates a relationship that links this object to another object in your Salesforce org. The other object is the source of the values in this relationship.

[External Lookup Relationship](#)      Creates a relationship that links this object to an external system. The external system provides the values for this relationship.

[Indirect Lookup Relationship](#)      Creates a relationship that links this external object to another object in your Salesforce org. Associate records in this relationship.

External objects support standard lookup relationships, which use the 18-character Salesforce record IDs to associate related records with each other. However, data that's stored outside your Salesforce org often doesn't contain those record IDs.

Therefore, two special types of lookup relationships are available for external objects: They are

1. External lookups
2. Indirect lookups.

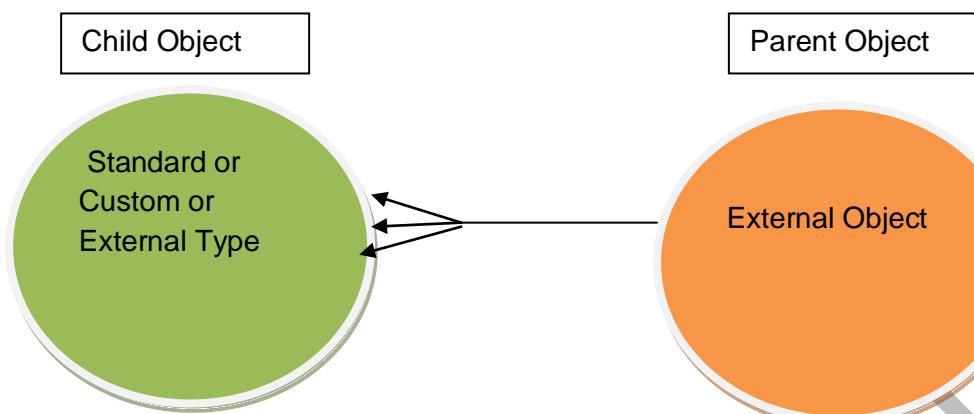
External lookups and indirect lookups compare a specific field's values on the parent object to the relationship field's values on the child object. When values match, the records are related to each other.

**Ranjith Krishnan**  
**sfdcmeet@gmail.com**

## ABOUT EXTERNAL LOOKUPS

Use an external lookup relationship when the parent is an external object.

An external lookup relationship links a child **standard**, **custom**, or **external** object to a **parent external** object.



**Note:** External Lookup relationship field has to be created in child object

The values of the standard External ID field on the parent external object are matched against the values of the external lookup relationship field. For a child external object, the values of the external lookup relationship field come from the specified External Column Name.

Now we are going to establish external look up relationship between two external objects Order and Order Details that we created earlier.

Both the tables had already data related to each other since they come from external data source and we are using them for demo. Order is the parent and OrderDetails is the child which contains line items for each order.

Now it is time to create External Lookup relationship field in orderDetails so that we can see the line items on an order's page in your org.

1. From Setup, enter External Objects in the Quick Find box, then select **External Objects**.
2. Click the **OrderDetails** external object.

## External Objects

Use external objects to virtually represent external data as Salesforce objects. External objects map to a table in a data source via custom tabs and search. Each external object requires an external data source definition for connection details.

New External Object			
Action	Label	Deployed	External Data Source
Edit   Erase	OrderDetails	<input type="checkbox"/>	OrderDB
Edit   Erase	Orders	<input type="checkbox"/>	OrderDB

3. Click the **Edit** link next to Order ID.

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## Standard Fields

Action	Field Label	Field Name	Data Type
<a href="#">Edit</a>   <a href="#">Del</a>	Display URL	DisplayUrl	URL(1000)
<a href="#">Edit</a>   <a href="#">Del</a>	External ID	ExternalId	External Lookup

## Custom Fields & Relationships

New

Action	Field Label	API Name	Data Type	External Alias	Modified By
<a href="#">Edit</a>   <a href="#">Del</a>	orderID	orderID__c	Number(18, 0)	orderID	<a href="#">Capital Info Solutions, 3/17/</a>
<a href="#">Edit</a>   <a href="#">Del</a>	orderLine	orderLine__c	Number(18, 0)	orderLine	<a href="#">Capital Info Solutions, 3/17/</a>
<a href="#">Edit</a>   <a href="#">Del</a>	product	product__c	Text(255)	product	<a href="#">Capital Info Solutions, 3/17/</a>
<a href="#">Edit</a>   <a href="#">Del</a>	quantity	quantity__c	Number(18, 0)	quantity	<a href="#">Capital Info Solutions, 3/17/</a>
<a href="#">Edit</a>   <a href="#">Del</a>	unitPrice	unitPrice__c	Number(10, 8)	unitPrice	<a href="#">Capital Info Solutions, 3/17/</a>

4. Click the Change Field Type button.

Edit OrderDetails Custom Field  
orderID

Custom Field Definition Edit

[Change Field Type](#) Save Cancel

**Field Information**

Field Label	orderID	Data Type	Number
Field Name	orderID		
Description	orderID		
Help Text			
External Column Name	orderID		

**General Options**

Filtering Disabled	<input type="checkbox"/>
Sorting Disabled	<input type="checkbox"/>

**Number Options**

Length	18
Decimal Places	0

[Change Field Type](#) Save Cancel

5. Select External Lookup Relationship and click Next. An external lookup relationship can link any object to an external object.

Edit OrderDetails Custom Field  
orderID

### Step 1. Choose the field type

Specify the type of information that the custom field will contain.

#### Data Type

None Selected

Select one of the data types below.

Lookup Relationship

Creates a relationship that links this object to another object. The other object is the source of the values in this relationship.

External Lookup Relationship

Creates a relationship that links this object to an external object.

Indirect Lookup Relationship

Creates a relationship that links this external object to associate records in this relationship.

6. Select Orders as the related object and click Next.

Ranjith Krishnan  
sfdcmeet@gmail.com

Edit Relationship

## OrderDetails

### Step 2. Choose the related external object

Select the external object to which this object is related.

Related To Orders ▼

7. Enter 18 as the length and click **Next**.
8. To make the relationship visible to all profiles, select the **Visible** option and click **Next**. (In a real production deployment, you would only enable access to required profiles).

Edit Relationship

## OrderDetails

### Step 4. Establish field-level security for reference field

Field Label orderId  
Data Type External Lookup  
Field Name orderId  
Description orderId

Select the profiles to which you want to grant edit access to this field via field-level security. The field will be hidden from all profiles if you do not check any boxes.

Field-Level Security for Profile	<input checked="" type="checkbox"/> Visible
Analytics Cloud Integration User	<input checked="" type="checkbox"/>
Analytics Cloud Security User	<input checked="" type="checkbox"/>
Contract Manager	<input checked="" type="checkbox"/>
Cross Org Data Proxy User	<input checked="" type="checkbox"/>
Custom: Marketing Profile	<input checked="" type="checkbox"/>
Custom: Sales Profile	<input type="checkbox"/>

9. Click **Save** to accept the defaults—you definitely want an OrderDetails related list on the Orders page layout!
10. Create custom tab as “Order” and include to any APP and view the list view of the tab.
11. Click the External ID of an order in the Recent Orders list.

**Ranjith Krishnan**  
**sfdcmeet@gmail.com**

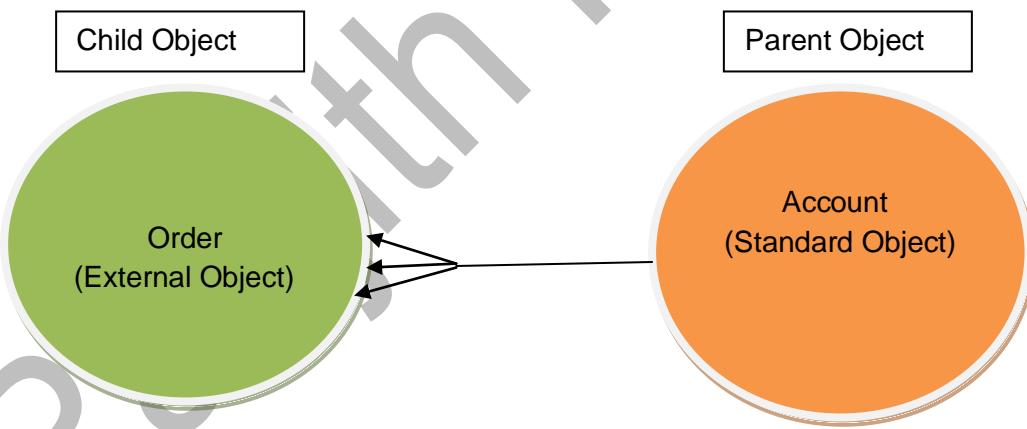
External ID ↑	Display URL
6	<a href="https://orderdb.herokuapp.com/">https://orderdb.herokuapp.com/</a>
9	<a href="https://orderdb.herokuapp.com/">https://orderdb.herokuapp.com/</a>
10	<a href="https://orderdb.herokuapp.com/">https://orderdb.herokuapp.com/</a>
11	<a href="https://orderdb.herokuapp.com/">https://orderdb.herokuapp.com/</a>
12	<a href="https://orderdb.herokuapp.com/">https://orderdb.herokuapp.com/</a>
13	<a href="https://orderdb.herokuapp.com/">https://orderdb.herokuapp.com/</a>
14	<a href="https://orderdb.herokuapp.com/">https://orderdb.herokuapp.com/</a>
19	<a href="https://orderdb.herokuapp.com/">https://orderdb.herokuapp.com/</a>
30	<a href="https://orderdb.herokuapp.com/">https://orderdb.herokuapp.com/</a>

## ABOUT INDIRECT LOOKUP RELATIONSHIPS.

Use an indirect lookup relationship when the external data doesn't include Salesforce record IDs.

An indirect lookup relationship links a child external object to a parent standard or custom object.

Now we are going to configure an indirect lookup relationship between **orders** and **accounts**. This relationship enables your users to see which account a given order is associated with and all the orders for a given account.



A field on an external object (customerId on Orders) corresponds to a unique, external ID field on a custom or standard object (Customer\_ID\_\_c on Account). It's an indirect lookup because it references a field other than the standard ID field.

So before creating Indirect Look up in Order object we need to create a custom field in Account object to match with customer id in order object. This field must also be populated with id of account and hence when user clicks on customer id field in order would be navigated to account detail. To accomplish this, let us install a package that would configure the new field and populates it with data. Here's the link - <https://trailhead.salesforce.com/en/content/learn/projects/quickstart-lightning-connect/quickstart-lightning-connect1>

## Introduction

Salesforce Connect lets you seamlessly access data from legacy systems such as SAP, Microsoft and Oracle in real time, without making a copy of the data in Salesforce. In this Quick Start, you'll integrate data from a sample external data source into Salesforce using Salesforce Connect. You'll start by setting up an external data source and creating some external objects. You'll then create relationships between the external objects and the Account standard object.

## Install the Schema Package

Your hands-on org (Trailhead Playground or Developer Edition) needs the custom field Customer ID on the Account object. This field allows you to link orders from an external data source to accounts in Salesforce. This package configures the new field and populates it with data. If you have trouble installing the package, follow the instructions in [this article](#).

1. [Install this package](#), accepting the defaults at each step.
2. From the app menu in the top right, select the **External Orders** app.
3. Click **Set Customer IDs** to assign customer IDs to account records in your hands-on org. Return to the **Sales** app via the app menu.

You need to set the customer id as below

 **Install Lightning Connect Quickstart**  
By salesforce.com

 **Installation Complete!**  
Please review the instructions below to properly configure this app. [View in another browser](#)

**Lightning Connect Quickstart**  
Customer IDs have been successfully assigned to Account records. You can now do the Lightning Connect Quick Start.

1. In Setup, use the Quick Find box to go to the External Objects  
2. Click the Order object, then click **Fields and Relationships**.  
3. Click **Edit** next to Customer ID.

**SETUP**  
**External Objects**

Action	Field Label	API Name	Data Type	External Alias	Modified By
<a href="#">Edit</a>   <a href="#">Del</a>	customerID	customerID__c	Number(18, 0)	customerID	<a href="#">Capital Info Solutions</a>
<a href="#">Edit</a>   <a href="#">Del</a>	orderDate	orderDate__c	Date/Time	orderDate	<a href="#">Capital Info Solutions</a>
<a href="#">Edit</a>   <a href="#">Del</a>	orderId	orderId__c	Number(18, 0)	orderId	<a href="#">Capital Info Solutions</a>
<a href="#">Edit</a>   <a href="#">Del</a>	shippedDate	shippedDate__c	Date/Time	shippedDate	<a href="#">Capital Info Solutions</a>

**Standard Fields**

Action	Field Label	API Name	Data Type	External Alias	Modified By
	Display URL	DisplayUrl	URL(1000)		
	External ID	ExternalId	External Lookup		

**Custom Fields & Relationships**

Action	Field Label	API Name	Data Type	External Alias	Modified By
<a href="#">Edit</a>   <a href="#">Del</a>	customerID	customerID__c	Number(18, 0)	customerID	<a href="#">Capital Info Solutions</a>
<a href="#">Edit</a>   <a href="#">Del</a>	orderDate	orderDate__c	Date/Time	orderDate	<a href="#">Capital Info Solutions</a>
<a href="#">Edit</a>   <a href="#">Del</a>	orderId	orderId__c	Number(18, 0)	orderId	<a href="#">Capital Info Solutions</a>
<a href="#">Edit</a>   <a href="#">Del</a>	shippedDate	shippedDate__c	Date/Time	shippedDate	<a href="#">Capital Info Solutions</a>

4. Click the **Change Field Type** button.
5. Select **Indirect Lookup Relationship** and click **Next**. An indirect lookup relationship links an external object, such as orders, to a standard object, such as account, or even a custom object.

**Ranjith Krishnan**  
**sfdcmeet@gmail.com**



SETUP

## External Objects

Edit Orders Custom Field  
**customerID**

### Step 1. Choose the field type

Specify the type of information that the custom field will contain.

#### Data Type

None Selected

Select one of the data types below.

Lookup Relationship

Creates a relationship that links this object to another object. The other object is the source of the value.

External Lookup Relationship

Creates a relationship that links this object to another object. The other object is the source of the value.

Indirect Lookup Relationship

Creates a relationship that links this external object to another object. The other object is the source of the value. Associate records in this relationship.

6. Select **Account** as the related object and click **Next**.



SETUP

## External Objects

Edit Relationship  
**Orders**

### Step 2. Choose the related object

Select the standard or custom object to which this external object is related.

Related To

--None--  
Account

7. Select **Customer\_ID\_c** as the value of Target Field and click **Next**.
8. Enter 18 as the length and click **Next**.
9. To make the relationship visible to all profiles, select the **Visible** option and click **Next**.
10. Click **Save** to accept the defaults—you want the Orders related list on the Account page layout!

**Ranjith Krishnan**  
**sfdcmeet@gmail.com**

# Ranjith Krishnan

11. If the app menu (top right) is not already showing External Orders, click the app menu and select it.
12. Click the **Orders** tab.
13. Click the External ID of an order in the Recent Orders list.

The screenshot shows the Salesforce Orders Home page. At the top, there is a navigation bar with tabs: Contacts, Cases, Solutions, Reports, Dashboards, Entitlements, Orders (which is highlighted in blue), and a plus sign. Below the navigation bar is a header with the Orders logo and the word "Home". Underneath is a search bar with "View: All" and a "Go!" button, along with links for "Edit" and "Create New View". The main content area is titled "Recent Orders" and contains a table with three rows. The columns are "External ID" and "Display URL". The data is as follows:

External ID	Display URL
1012	<a href="https://orderdb.herokuapp.com/orders.svc/Orders...">https://orderdb.herokuapp.com/orders.svc/Orders...</a>
6	<a href="https://orderdb.herokuapp.com/orders.svc/Orders(6)">https://orderdb.herokuapp.com/orders.svc/Orders(6)</a>
11	<a href="https://orderdb.herokuapp.com/orders.svc/Orders...">https://orderdb.herokuapp.com/orders.svc/Orders...</a>

14. Confirm that the order shows a link in the customerID field.

The screenshot shows the Order details page for order 1012. At the top, there is a navigation bar with tabs: Contacts, Cases, Solutions, Reports, Dashboards, Entitlements, Orders (highlighted in dark blue), and a plus sign. Below the navigation bar is a header with the Orders logo and the number "1012". There is a link "[« Back to List: Custom Object Definitions](#)". On the right side, there is a link "[OrderDetails \[5\]](#)". The main content area is titled "Orders Detail" and contains a table with five rows. The columns are "customerID", "orderDate", "orderId", and "shippedDate". The data is as follows:

customerID	2
orderDate	2/10/20 4:00 PM
orderId	1,012
shippedDate	2/18/20 4:00 PM
<b>OrderDetails</b>	

15. Click the customerID link. You're taken to the corresponding account page. Scroll to the bottom to see a list of orders. (Edit the Account pagelayout and drag the related lists "Orders" (External Object) then save the changes.

Ranjith Krishnan  
sfdcmeet@gmail.com

# Ranjith Krishnan

## Validation Rules

- This is a declarative feature to restrict user entering invalid data.
- Used to set custom error message when the input data is not in defined format
- Used to make a field required conditionally.
- This will fire only when new record is inserted / updated.
- When the expression returns true, then error message will be thrown.

## Two Types

1. Standard Validation
2. Custom Validation

## When it fires?

When the record is saved (due to insert or modification)

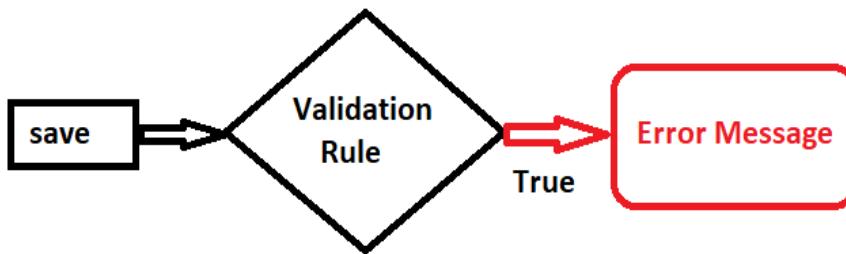
## Why should I need validation rules?

- To make a field conditionally required.
- To make a field required
- To accept the input in certain defined format
- To set a field as required such as CheckBox which is not possible in edit page of field or page layout.

**Validation rule is like a formula consists of Expression.**

**This will always return Boolean (True or False).**

It works as below. When the record is saved, then validation rules will be invoked similar to standard validations. When the rules resolved to true, then error message will be thrown in the interface.



**This custom error message will be displayed next to the field optionally and at the top of the page.**  
Error message will be thrown in interface if user saved the record using standard layout. If the record is inserted or modified through API, then the error message will be thrown in system log or error file.

**Use Case 1: The course begins should NOT be greater than Course End.**

**How to create validation rule for the above use case?**

**Navigation:**

**Setup-> Build-> Create-> Objects, then choose your object**

**Step 1:** Go to Validation Rule section in Object Definition page

**Step 2:** Click New and enter the rule name

Enter the expression to execute

Enter the error message.

## Fields in formula editor

- i. Can be included from current object and related object.
- ii. From global variables such as currently logged in user, profile, roles etc.,

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For this use case, the rule will be as follows

IF( Course\_Start\_Date\_\_c > Course\_End\_Date\_\_c , true, false)

**Use Case 2:**

When the status is in progress, then course fee is mandatory

**Use Case 3:**

When Virtual and Class Room types are enabled, then Contact NO must be given.

**Use Case 4:**

When the status is approved, then should not allow user to modify the course fee.

## **SOLUTION FOR USE CASES 2:**

**Approach to build the validation rules.**

**Considering "When error message thrown"**

Step 1: Break the requirement into running sentence

Step 2: Replace with Actual Field and Operators if applicable

Step 3: Combine into one formula

**When to throw the error message.**

**Step 1:** Running sentence

- i. the status is in progress  
and
- ii. When course fee is space

**Step 2:**

- i. Status\_\_c = 'IN Progress'  
and
- ii. Course\_Fee\_\_c = ''

**Step 3:**

- i. TEXT(Status\_\_c) = 'In Progress' | ISPICKVAL(Field, Value) => return when field = value  
ISPICKVAL(Status\_\_c, 'In Progress')  
and
- ii. ISBLANK(Field) => returns true when the field is blank  
ISBLANK(Course\_Fee\_\_c)

**Step 4: Final Formula**

AND(Cond1, Cond2...) => True when all the conditions are met.

**Final Formula:** AND(ISPICKVAL(Status\_\_c, 'In Progress'), ISBLANK(Course\_Fee\_\_c) )

**Solution for Use Case 3A:**

When Virtual and Class Room types are enabled, then Contact NO must be given.

**Step 1: Running sentence - When to throw the error message.**

- i. Virtual is true and Class Room is true  
and
- iii. Contact No is blank

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## Step 2:

i. Virtual\_c = True and Class\_Room\_c = True

and

iii. ISBLANK(Contact\_No\_c)

**Step 3:** since both the conditions need to be met, user AND function. **Final Formula.**

AND(Virtual\_c, Class\_Room\_c, ISBLANK(Contact\_No\_c))

## Solution for Use Case 3B:

When Virtual or Class Room type is enabled, then Contact NO must be given.

## Step 1:

i. Virtual\_c = True or Class\_Room\_c = True and

iii. ISBLANK(Contact\_No\_c)

## Step 2:

OR(cond1, cond2..) => true when any one of the given argument is true.

OR(Virtual\_c, Class\_Room\_c)

and

ISBLANK(Contact\_No\_c)

## Step 3: Final Formula

AND(OR(Virtual\_c, Class\_Room\_c), ISBLANK(Contact\_No\_c))

## Use Case 4:

When the status is approved, then should not allow user to modify the course fee.

## Step 1:

i. the status is approved

and

ii. when course fee is modified. There is a inbuilt function to check if the field is modified or not as below.

**ISCHANGED(field)** => return true when the argument is modified.

## Step 2:

i. ISPICKVAL(Status\_c, 'Approved')

and

ii. ISCHANGED(Course\_Fee\_c)

## Step 3: Final Formula

AND(ISPICKVAL(Status\_c, 'Approved'), ISCHANGED(Course\_Fee\_c))

## Use Case 6:

Should not allow user to add new employee for the departments which are not approved or obsolete.

## Use Case 7: (Exercise)

Last working day value must be given if the employee is in notice period. (Custom field 'Last working day' must be added of date type)

## Use Case 8:

Do not allow to change the status from resigned to any other status.

## Solution for Use Case 6

Should not allow user to add new employee for the departments which are not approved or obsolete.

## Step 1: Running sentence - When to throw the error message.

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- i. When new record is added  
and
- ii. Department status = approved or obsolete

## Step 2:

- i. ISNEW() => This is an inbuilt function used to check if when the record is new  
and
- ii. ISPICKVAL(Department\_\_r.Status\_\_C, 'Not Approved') Or  
ISPICKVAL(Department\_\_r.Status\_\_C, 'Obsolete')

## Step 3:

AND(ISNEW(), OR(ISPICKVAL(Department\_\_r.Status\_\_C, 'Not Approved'),  
ISPICKVAL(Department\_\_r.Status\_\_C, 'Obsolete')))

**Note:** Formula which is referring the field from parent object is called CROSS Object formula

## Use Case 8:

**Do not allow to change the status from resigned to any other status.**

**ISPICKVAL(Field,value) => return if field = value**

### Example:

ISPICKVAL(Status\_\_C, 'Resigned')

**PRIORVALUE(field) => this will return the current value.**

### Step 1:

ISPICKVAL(PRIORVALUE(Status\_\_c), 'Resigned')

and

ISCHANGED(field) => return true when the field in this argument is modified.

### Step 2: Final Formula

AND(ISPICKVAL(PRIORVALUE(Status\_\_c), 'Resigned'), ISCHANGED(Status\_\_C))

condition 1

condition 2

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## SESSION 13

### Users

- A user is anyone who logs in to Salesforce.
- Users may be employees at your company, such as sales reps, managers, and IT specialists, who need access to the company's records.
- Users may be customers who will have access to your org.

**To login into salesforce org, every users must be assigned with followings**

1. User License
2. Profile
3. Roles (Optional)

### What is User License

A user license determines which features the user can access in Salesforce. For example, you can allow users access to standard Salesforce features and Chatter with the standard Salesforce license. But, if you want to grant a user access to only some features in Salesforce, you have a host of licenses to choose from. For example, if you have to grant a user access to Chatter without allowing them to see any data in Salesforce, you can give them a Chatter Free license.

### What is Profile?

Profiles determine what users can do in Salesforce.

### What are Roles

Roles determine what users can see in Salesforce based on where they are located in the role hierarchy. User at any level can view, edit all data that's owned by or shared with users below them in their role hierarchy.

### How to add new user?

#### Classic:

```
Setup
    |--->Administer
        |--->Manager Users
            |---> Users
                |--->New User
```

#### Lightning:

```
Setup
    |---> Administration
        |---> User
            |---> Users
                |---> New User
```

#### Step 1:

Enter required fields

FirstName, LastName, username, alias name, Email

#### Step 2:

Select the Role

#### Step 3:

Select the license

#### Step 4:

Select Profile

#### Step 5:

Save

**Note:** Once the user is created, we CAN NOT delete the user.

Use Case: (provide the email ids of your choice for below users)

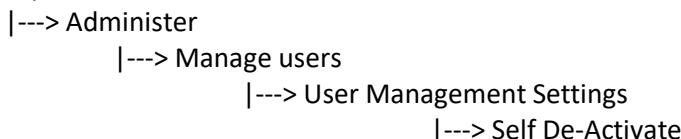
SNo	Name	User Name	License	Profile
1	Robert Bob	Bob@ranjithbatch105.com	Salesforce	System Administrator
2	David John	David@ranjithbatch105.com	Salesforce Platform	Standard Platform User

# Ranjith Krishnan

**Note:** User can self de-activate the user account without requesting admin to do this.

## Navigation:

Setup



## How to disable user account to login into salesforce?

### Two ways

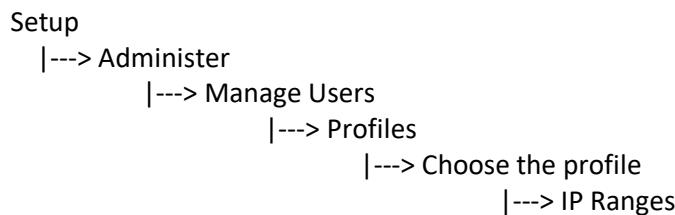
- i. Freeze the user
- ii. Deactivate the user

### Difference between Freeze and Deactivation

SNo	Freeze the User	Deactivate the User
1	This is done by click on the button 'Freeze' in details of any user.	This is done by uncheck the check box 'Active' in edit page of any user.
2	Once freeze the user, the user will not be able to login to his account	Once uncheck the active check box, the user will not be able to login to his account
3	License assigned to user will remain assigned to the user even after the freeze	License assigned to the user will now be released back to organization

## How to restrict users at profile level to login within particular IP Ranges?

1. This will specify range of IP address from which user can login to his/her account.
2. This can be defined at the profile level.
3. Navigation:



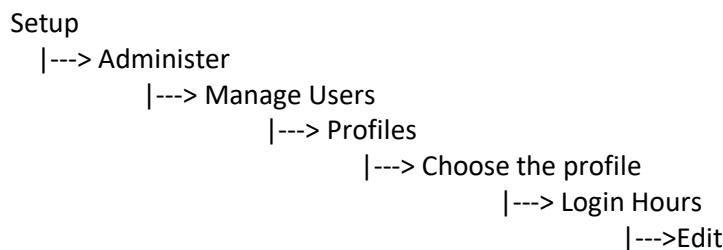
Step 1: Specify the range of IP address

Step 2: Save

Note: To enable the user with particular profile into any IP range without verification challenge check, give the IP range as 0.0.0.0 and 255.255.255.255

## How to restrict users at profile level to login within time ranges?

1. This will specify during which hours in the calendar user can login to his account.
2. This is used to control the logins at the profile level.
3. Navigation:



Step 1: Day wise set the Login Hours for user

Step 2: save

**How to set the maximum number of invalid attempts allowed for a profile? Beyond this, the user id will be locked.**

- a. Navigation:

Setup

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```
|---> Administer  
    |---> Manage Users  
        |---> Profiles  
            |--->Profile Name  
                |--->Edit
```

**Step 1.** Choose maximum Invalid Attempts

**Step 2.** Choose the lockout period

## How could an admin unlock the user account after exceeded the limits of invalid attempts?

There are 2 ways

- Reset the password
- Unlock the user.

## Business Hours:

- These are the days and hours during which your support team is available.
- We can set the business hours at organization level

### 3. Navigation

```
Setup  
|--->Administer  
    |--->Company Profile  
        |--->Business Hours  
            |--->Edit
```

**Step 1:** Choose the time zone

**Step 2:** Choose the Business Hours and Days.

## UseCase:

Set the Business hours for organization:

Time zone	:	IST 5:30 (Asia)
Monday	:	8:00 AM to 6:00PM
Tuesday	:	24 Hours
Wednesday	:	24 Hours
Thursday	:	10 AM to 10 PM
Friday	:	24 Hours
Saturday	:	24 Hours
Sunday	:	leave blank (Note: Blank indicates the holiday)

## Trusted IP Ranges under Network Access

When login into salesforce using external interfaces, Salesforce would request username ,password, verification code or security Token for granting access. To avoid this 5 digit verification code, set the Trusted IP ranges.

- Setting trusted IP ranges under Setup | Security | Network Access
- Now if you are connecting from a trusted network, it will grant access using username and password without verification code..
- If you login from external user interface, the security token is not required to login.

## Navigation:

```
Setup  
|--->Administer  
    |--->Security Controllers  
        |--->Network Access  
            |--->Set the IP Address
```

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## Login History:

**Note:** Admin can track the login issues related to the user from Login History.

### Setup

|--->Administer

|--->Manage Users

|--->Login History

## Q:: Which permissions are required to manage the users?

To view and manage the users, profile should have the below permission:

### View Setup and Configuration

#### Others permissions:

Permissions Required in Profile	What user can do with this permission?
Manage Roles	This permission is to create/edit/Delete roles
Manage Profiles and Permission set	This permission is to create/Edit/Delete profiles
Manage Password Policies	This permission is to change the password policies
<b>Manage Login Access Policies</b>	This permission is to control who can login
Manage IP Addresses	This permission is to create /Edit/Delete IP restrictions
ResetPasword and unlock users	This permission is unlock the user or reset the password
<b>Manage Internal Users</b>	This permission is used to create/Edit/Delete Internal user
<b>Manage users</b>	This permission is used to create/Edit/Delete both internal and external users
Manage Business Hours Holidays	Users with permission can create /edit business hours
Customize Application	To Create Apps , Object, Fields, Tabs or Visualforce Page, workflow and Approval process

#### Password Policies:

1. This will specify the rules of your password like
  - a. Minimum Length of password
  - b. Password format
  - c. Security Question to reset you password
  - d. How many old passwords should be remembered?  
i.e. your new password cannot be your last three passwords
  - e. Password expiry time.
  
2. **Navigation:** Setting password policies for all users in the Organization

### Setup

|--- Administer

|---Security Controls

|---Password Policies

**Ranjith Krishnan**  
**sfdcmeet@gmail.com**  
**SESSION 14**

**Profiles:**

1. Profiles in the salesforce controls what user can access and what user can see in the organization.
2. Every profile is designed for a specific license.
3. Profile Controls

- App Settings
- Tab
- Object
- Field Level Security
- Pagelayout
- General User Permissions
- Administrative Permissions (eg., Set up Menu, Report Creation, Add Users etc.,)
- Session Settings
- Password Policies
- Login Hours
- Login IP Ranges

4. There are **two types** of Profiles in salesforce.

- Standard Profiles - Provided by salesforce where we cannot be modify most of the permissions.
- Custom Profiles - Created by admin by cloning the standard profile and customize to meet needs.

**Example of Standard Profile:** System Administrator

Salesforce Platform user  
Chatter Free User

6. Custom Profiles: These are the profiles created by the users to meet the organizational business requirement.

**Note :** Every custom Profile is a clone of any one of the existing profile

7. Steps to create Custom Profile:

**Navigation:**

Setup

| -- Administer  
    | --- Manage Users  
        | -- Profiles  
            | -- New Profile

**Step 1:** Choose the existing profile.

**Step 2:** Check the License.

**Step 3:** Enter the Custom Profile Name.

**Step 4:** Save

**Step 5:** Click on Edit Button.

**Step 6:** Customize the permission you need and then **save**.

**Ranjith Krishnan**  
**sfdcmeet@gmail.com**

**Use Case:** Create below new profiles by cloning existing profile.

License Name	Existing Profile to be copied	Custom Profile Name
Salesforce	System Administrator	VP
Salesforce Platform	Salesforce Platform User	Sales Manager
Salesforce Platform	Salesforce Platform User	Sales Executive
Chatter Free	Chatter Free User	Customer

**Lighting:**

```
Setup
|---> Administration
    |---> Users
        |---> Profiles
            |--->New Profile
```

Step 1: Choose any one of the Profile Built on License you want

Step 2: Check the License

Step 3: Enter New Profile New

Step 4: Save

Step 5: Edit

Step 6: Modify the permissions

Step 7: Save

**Q: Can one profile be assigned for multiple users?**

ANS: Yes, We can assign one profile to any number of users.

**Q: If two users have same profile will they get same permissions?**

ANS: Yes, that is the purpose of assigning of same profile to multiple users.

**Q:Can we delete a standard Profile?**

ANS : No we cannot delete ,but we can customize to an extent.

**Q:Can we delete custom profile?**

ANS : Yes, we can delete

**Q::Which users can see the setup menu**

ANS: Users whose profile has **view setup and configuration** option enabled.

**Q:: Who can manage the profile ?**

ANS: Users whose profile has the following permissions

1. Manage profiles and permission sets
2. Customize the Application can create /edit /delete the profiles

**Q:: Can we deploy the profiles from sandbox to production ?**

ANS : No

**PERMISSION SET**

It is similar to profile but used to give extra permissions to user in addition to profile permission.

**Example:**

If there are users assigned with a profile called Sales User. This profile allows assignees to read, create, and edit leads. Some, but not all, of these users also need to delete and transfer leads. Instead of creating another profile, create a permission set.

**Navigation in Classic:** Administer --> Manage users -> Permission Set

**How to assign the permission set?**

**Step 1.** Go to user page

**Step 2.** Edit the section '**Edit Assignments**'

**Ranjith Krishnan**  
sfdcmeet@gmail.com

Ranjith Krishnan

**Ranjith Krishnan**  
sfdcmeet@gmail.com

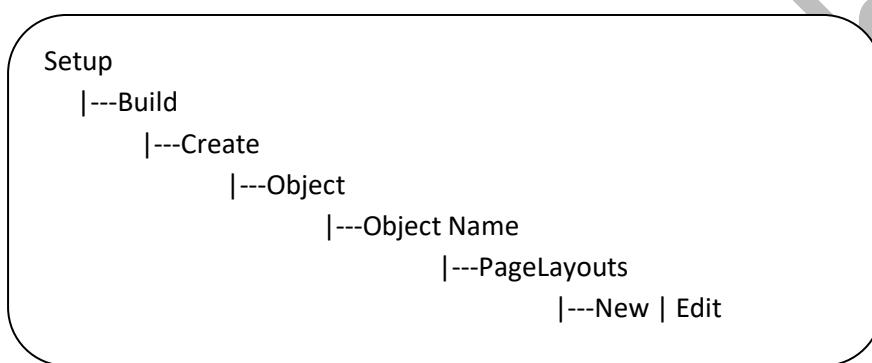
**Ranjith Krishnan**  
**sfdcmeet@gmail.com**  
**SESSION 15**

**PageLayout :** It is a drag and drop tool to edit the layout of object. Layout is where the object's data will be displayed to user's profile. In general,

1. This controls how an object data should be displayed to the profile does.
2. It controls which fields should be displayed.
3. In which order fields should be displayed.
4. In which format fields should be displayed.
5. Which buttons should be displayed on the detail page?
6. It controls the related list and fields in the related list.
7. More than 1 page layout can be created for an object.
8. One profile will have only one page layout on an object.
9. It has either 1 or maximum 2 column layout.
10. It is used to make the field as visible, read only, or required to the user's profile.

**Standard Navigation:**

Steps to create PageLayout:



Using above navigation, choose any of your custom object (Eg., Training) and do the below use cases to understand the use of page layout.

- 1: Add the Section to the pageLayout
- 2: Choose no Columns and Tab order
- 3: Choose the Fields
- 4: Specify the format of the fields on the Layout (Read | Write | Required)
- 5: Add the buttons to the layout.
- 6: Add the related list to the layout.
- 7: Specify the fields that need to be displayed on related list and then save.

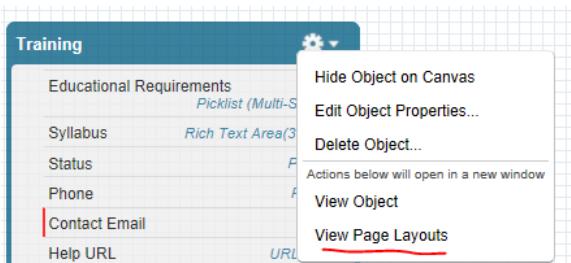
**Different Cases of Pagelayout**

1. If a field is universally required, we can NOT remove it from the pagelayout.
2. If a field is marked as read only in Field Level Security, then we cannot mark that field as required in Pagelayout. Reason, FLS here has restricted the edit access for the field.
3. The field is not required in edit page of field and marked as required in pagelayout.  
This case, User can still skip that field value when updates the object data through API (coding).
4. The field is optional in Pagelayout and is not required in edit page but made required through validation rules.  
This case, the field became strictly a required field (similar to universally required).
5. If the field is marked as required in page layout, then this required will be enforced only when user enters record through pagelayout.

Note : We can reassign the visibility of the field at page Layout

Field Level		PageLayout		
Visible	Read	Visible	Read	Final View
NO	NO		----Hidden----	Hidden
OK	NO	NO	NO	Hidden
OK	Ok	OK	NO	Read Write
Ok	Ok	NO	NO	Hidden
Ok	Ok	OK	OK	Read Write

Navigation in Schema builder to go page layout tool: Click on gear symbol at top right of training object and select view pagelaouts.



### MINI-Pagelayout :

1. It is a sub set of pagelayout. It means this will have fields that are part of the main pagelayout.
2. It will appear as pop up when you keep mouse hover on the record name field appears
  - i. in sider bar items.
  - ii. in console app layout
- This popup window is called mini-pagelayout .
3. Every Pagelayout has corresponding mini-page =layout.
4. When we assign the pagelayout to a profile, corresponding mini page layout will be assigned to the Profile

### Navigation to modify Mini-Pagelayout

Setup -> Build -> Create -> Object-> Object Name -> PageLayouts -> Choose the PageLayout -> Edit

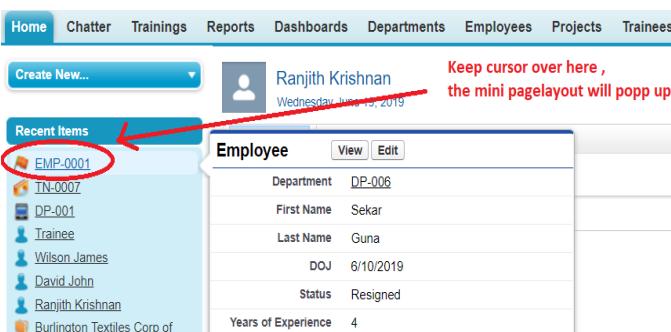
**Step 1.** Choose the Mini Page Layout from menu bar of page layout

Example: From the edit page of Page Layout of Employee\_\_c object



**Step 2.** Choose the fields.

**Step 3.** Save the mini page layout and Save the pagelayout. Now verify the same in side bar (click on Home Tab)



### Record Type

**Ranjith Krishnan**  
**sfdcmeet@gmail.com**

This helps to expose different picklist values and pagelayout to different users.

**Scenarios when do we need record type?**

An organization has team of HR people who will create job positions as record in a custom object called Position to recruit candidates for different departments. The object 'Position' has picklist field 'Functional Area' with below values .

**Functional\_Area\_\_c**

Information Tehnology

Sales

Support

Banking

Engineering

BPO

There are two different HR people. One group will work only to technical related job vacancies and other will work for non –technical position. Hence the requirement is to display the values such as Information Tech and Engineering to Technical HRs and other options for Non-Technical HRs for the same picklist field.

This can be implemented using the feature called Record Types.

**Steps to implement Record Type**

Navigation: Setup | Build | Create | Object

Then select the required object (here choose training object)

**Step 1:** Go to Record Type Section and click New button

**Step2:** Enter the name of the record type

**Step 3:** Assign to which profile needs access to this record type.

**Step 4:** Once the record type is created, you will find the entire picklist fields belong to the object would be available under this record type. Here, the Department picklist values will be available to select the options to be displayed.

**Step 5:** Save.

In this scenario, we need to create record types. One can be named as "Technical Position" and another one as "Non-Technical Position". Then customize the picklist field 'Functional Area' accordingly. This will display the record types as below when we click 'New' button under the tab to create the position record as below.



When record type 'Technical Position' is chosen and click continue, then the picklist list field 'Functional Area' will show only the options Information and Engineering as defined. Similarly for the Non-Technical Record Type.

**Ranjith Krishnan**  
**sfdcmeet@gmail.com**  
**SESSION 16**

**Why do we go for import and export data from Salesforce?**

1. Testing
2. Data from external system manually needs to be imported to Production Org
3. To test the sandbox with production data
4. To share salesforce data with external System.

**Tools available in Salesforce**

1. Data Loader
2. Import Wizard

**Acceptable File Format** -> Comma Separated files (CSV).

**Preparation of file or best practices**

1. **The first row should have the labels of the field.**
2. The field labels in the file and Object field label can be same to avoid manual field mapping.
3. Sort the file data and remove the duplicates
4. Keep the required field (for new record creation)
5. Keep the data with respect to validations
6. Process the data part by part if there is a bigger file to be processed.

**Example below:**

Account Name, Account Phone, Industry, AnnualRevenue  
ABC, 9840409999, Energy,  
CBD, 9840409991, Technology,  
ERD, 9840409997, 500

**DataLoader :**

This is a client application tool provided by salesforce to perform insert ,update,upsert,delete, export the data from salesforce to external system or external system to salesforce

**1. How to download the dataloader ?**

Setup -> Adminster -> DataManagement -> DataLoader -> Download dataloader for windows

**2. Steps to install Data Loader**

- a. Install Zulu OpenJDK version 11 for Windows in below url  
[https://cdn.azul.com/zulu/bin/zulu11.33.15-ca-jdk11.0.4-win\\_x64.msi](https://cdn.azul.com/zulu/bin/zulu11.33.15-ca-jdk11.0.4-win_x64.msi)  
Then install.
- b. From Setup, download the Data Loader installation file.  
The client application must be downloaded from  
**Setup --> Administer --> Security Controls -> Data Management -> Data Loader**
- c. Right-click the .zip file and select Extract All.
- d. In the Data Loader folder, double-click the install.bat file. If you get an unknown publisher error message, you can ignore it and run the file.
- e. Specify where to install Data Loader, and select whether to overwrite an existing Data Loader installation
- f. Specify whether to create a Data Loader launch icon on your desktop or a start menu shortcut. Data Loader completes the installation.

**3. How to login to dataloader?**

ANS: There are two ways to login to dataloader

- 1.Using OAuth
- 2.Using password

1. Using OAuth :

- a. Choose the environment type as (Production or Sandbox )

**Ranjith Krishnan**  
**sfdcmeet@gmail.com**

- b. Provide salesforce credential of user who want to login to dataloader
- c. Verification code will be sent to email
- d. Enter the verification code and click on Allow Access

## 2. Using Password

- a. Generate security token

UserName -> My Settings -> Personal -> Reset My security Token -> Reset SecurityToken

**Note :** Security token will be sent to registered email id of user

- b. Open the dataloader and choose password format

- c. UserName : salesforce username

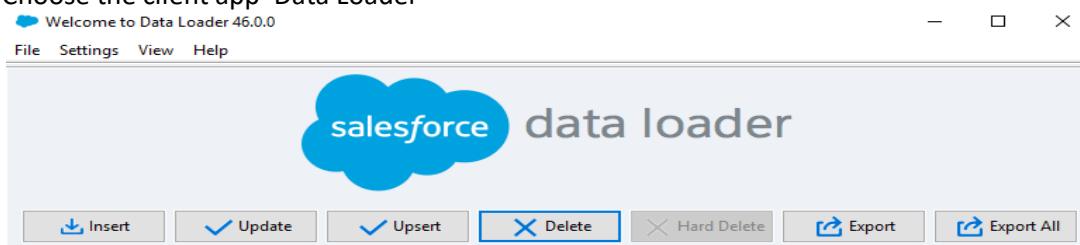
Password : salesforcepassword+securityToken

### Operations that can be performed in Data Loader

SNo	Operation	Purpose
1	Insert	To insert new records into an object
2	Update	To update existing records
3	Upsert	To insert new record and update existing data in the same operations
4	Delete	To delete existing data <b>Note:</b> Deleted data will stay in recycle bin for 15 days
5	Hard Delete	To delete the data permanently without moving to recycle bin
6	Export	To export data from an object into an CSV file.
7	Export All	To export data from an object and its records from recycle bin (if exists) s into an CSV file.

### Steps involved in import process

Choose the client app 'Data Loader'



**Step 1:** Choose the operation (shown above) that you may need to perform

Choose the Login Method (OAuth or Password Authentication)

Steps	If insert	If Update	If Upsert	If Delete
Step 2	Select Object and the source CSV file	Select Object and the source CSV file	Select Object and the source CSV file	Select Object and the source CSV file
Step 3	Field Mapping between CSV file columns and the object fields	Choose existing map file if any or auto-map or manual mapping	Choose existing map file if any or auto-map or manual mapping	Choose existing map file if any or auto-map or manual mapping
Step 4	Choose file location to store the success and error log files	Choose file location to store the success and error log files	Choose file location to store the success and error log files	Choose file location to store the success and error log files
Step 4	Click Finish	Click Finish	Click Finish	Click Finish
Content of Source CSV	Fields to be inserted	Record Id / External ID and fields to be updated	Record Id / External ID and fields to be updated. New records to be updated.	Only record Id or external id of the records to be deleted

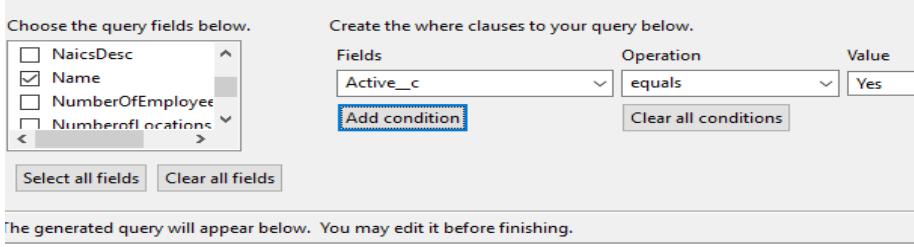
### Steps involved in export process

**Step 1:** Choose the operation that you may need to perform

Steps	Export / Export All

# Ranjith Krishnan

sfdcmeet@gmail.com

<b>Step 2</b>	Select Object and the target location to save the export data in CSV file
<b>Step 3</b>	Select the fields to be exported in CSV file and include filter conditions using 'Add Condition' button. <b>Example:</b>  <p>The screenshot shows two panels. On the left, a list of fields is displayed with checkboxes: NaicsDesc (unchecked), Name (checked), NumberOfEmployees (unchecked), and NumberOfLocations (unchecked). Below this is a 'Select all fields' and 'Clear all fields' button. On the right, a 'Create the where clauses to your query below.' panel shows a table with three columns: Fields (Active__c), Operation (equals), and Value (Yes). There is also an 'Add condition' button and a 'Clear all conditions' button.</p>
<b>Step 4</b>	Click Finish
<b>Content of Export file</b>	<b>If Export:</b> The file will have data ONLY from the object. <b>If Export All:</b> The file will have the data from the selected object and recycle bin if contains deleted records of the same object.

**Note :** All the Validations rules and required fields are respected while we insert the data

If there are any lookup field or master-detail field provide 18 character record id in the csv

## Data Import Wizard:

1. Data import wizard can be used to insert, update or upsert the data using built in Declarative wizard.
2. It will support all the Custom objects.
3. It will support import on following standard object (Account, Contact, Lead , Solution & Campaign Members).
4. It can support up to **50,000 records**.
5. It can avoid duplicate records while insert.
6. **Navigation:**
  - Setup -> Administer -> Data Management -> Import Wizard
  - Step 1: Choose the object.
  - Step 2: Choose the operation type as Insert ,Update,Upser
  - Step 3: Choose the source file
  - Step 4: Map the fields
  - Step 5: Save
7. It is a queue based operation.

	Import Wizard	Data Loader
1. Need to process more than 50,000 at a time	No	Yes
2. Need to insert unique leads	Yes	No
3. To avoid duplicated records based on standard field name	Yes	No
4. Object Supported	Account, Contact, Lead Solution and Campaign Members & Custom Object	All Standard & Custom Objects
5. Operations Supported	Insert, Update and Upser	Insert, Update, Upser, Delete, Hard Delete, Export & Export All
6. max records	50,000	5 Million

## Data Export Wizard:

**Navigation:** Setup -> Administer -> Data Management -> Data Export

1. We can export the data using the export wizard.
2. We don't have choice to choose which fields we want to export.
3. We don't have choice to apply the filter condition.

## **SESSION 18**

### **About Email Templates**

You can create four different types of email templates:

1. Text
2. HTML with letterhead
3. custom, and
4. Visualforce.

**Note:** All of these email templates can include text, merge fields, and attached files.

### **Create Text Email Templates**

Navigation in Classic: Setup | Administer | Communication Templates | Classic Email Templates

Click 'New Template' Button

1. Choose the Text template type, and click **Next**.
2. Choose a folder in which to store the template.
3. To make the template available for use, select the Available For Use checkbox.
4. Enter a name in Email Template Name. (if necessary, change the Template Unique Name).
5. Leave the default option in Encoding dropdown list.
6. Enter a Description for the template. Both template name and the description are for your internal use only.
7. Enter a Subject for the message.
8. Enter the text of the message with merge fields as below. Refer the next to choose the merge fields

Dear Manager,  
We have on boarded Customer with below Revenue.  
Customer Name: {!Account.Name}  
Annual Revenue: {!Account.AnnualRevenue}  
Industry: {!Account.Industry}  
Thanks,  
Sales Rep

9. If desired, enter merge fields in the template subject and text body. When you send an email, these fields are replaced with information from your records.

Here choose the Object name from Select Field Types under "**Available Merge Fields**" as marked in the screens show below

10. Click **Save**.

**Now template is ready and can be used in many places such as**

- Workflows
- Approval Process
- Process Builder
- Web-to-Lead
- Web-to-Case
- Email-to-Case or On-Demand Email-to-Case
- Assignment rules
- Escalation rules
- Auto-response rules

### **What is Merge Fields?**

Your template content can store fields that show field values from different objects. These merge fields automatically update in your content when the referenced field updates on the other object.

A merge field is a field you can put in an email template, mail merge template, custom link, or formula to incorporate values from a record.

Merge fields take the format of **{!ObjectName.fieldname}** in your template content.

### WHAT IS WORKFLOW?

Business Automation Feature in Salesforce used to automate repeated organization activities such as

1. Tasks you normally assign
2. Email we regularly send
3. Field Update
4. Sending info to external systems

Instead of doing this work manually, you can configure workflow to do it automatically.

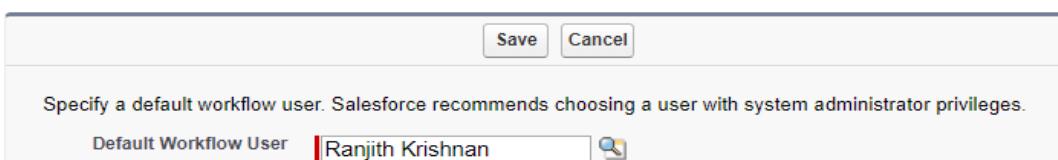
#### **Activities for examples, an organization would do regularly multiple times.**

1. Send email notification to sales group when new account is created.
2. Send sales management an email alert when a sales rep qualifies a large deal.
3. Send an email notification to sales group when an opportunity is closed lost.
4. Assign a follow up task to opportunity owner 5 days before the closed date if the opportunity is not closed.
5. Share information to external system whenever any new account is created
6. When Annual Revenue of account is greater than 5M then updates the rating field to hot.

#### **Before implementing this workflow:**

- i. To use in email action, create a custom email template if required to have standard message and merge fields from account object (Refer the email template topic in this doc and use the similar template here in this example). Use this email template to set standard message for email alert in workflow action.
- ii. Create a public Group 'Sales Team' and add some users. Select this group to send email alert.
- iii. Set Default Workflow User under Build | Create | Workflow Rules & Approval | **Process Automation Settings**

### **Process Automation Settings**



The screenshot shows a user interface for setting a default workflow user. At the top right are 'Save' and 'Cancel' buttons. Below them is a note: 'Specify a default workflow user. Salesforce recommends choosing a user with system administrator privileges.' A text input field contains the name 'Ranjith Krishnan', and there is a small magnifying glass icon to its right.

Select a Default Workflow User that you want Salesforce to display with a workflow rule when the user that triggered the rule is not active.

#### **Steps involved in implementing the workflow**

##### **Navigation:**

Lightning Experience: Setup Home | Process Automation | Workflow Actions | Workflow Rules

Classic: Setup | Build | Create | Workflow Rules & Approval | Workflow Rules

**Step 1:** Choose the object on which the process to be set.

**Step 2:** Set the criteria

- i. Evaluation Criteria
- ii. Rule Criteria

**Ranjith Krishnan**  
**sfdcmeet@gmail.com**

**Step 3:** Set the actions to be fired **immediately** or on **particular time** when the criteria in Step 2 is met.

The below Actions can be fired using workflow feature

1. Send Email Alert
2. Assigning a Task
3. Update Field values
4. Send message to external system (referred as Outbound Message).

The Evaluation Criteria (**From Step 2**) helps to decide when the rule criteria must be evaluated whether for new record or when modified the existing record. There are three evaluation criteria settings are available in workflow as below.

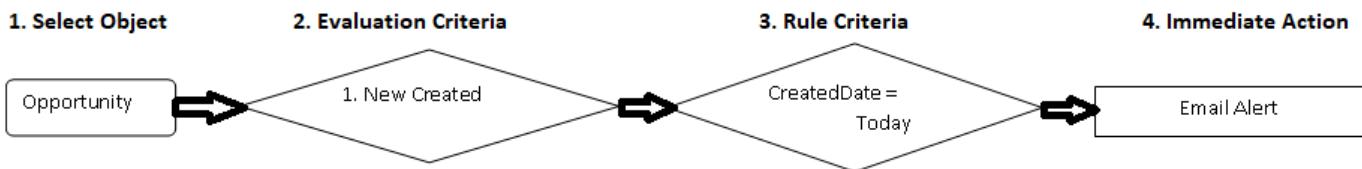
1. New Created
2. Created and Every time it is edited
3. created, and any time it's edited to subsequently meet criteria

**Note:** When Evaluation Criteria is 2 (Created and Every Time it is edited), then it is **NOT** allowed to add time-dependent workflow action.



**When Evaluation Criteria 2 is chosen, the time dependent actions can not be set.**

**1. Scenario for Immediate Action:** Send email notification to sales group when new account is created.



**Under Step 4: Choose Email Alert and enter values as below**

Fields	Value	Comments
Unique Name	Email to Sales Team about new account	Enter a unique name to refer to this component in the API.
Object	Account	If available, choose an object for this email alert.
Email Template	Email to Manager Template	Choose an email template that we created already with merge fields
Recipient Type	Choose the public Group "Sales Team"	Select who receives this email alert in the <b>Available Recipients</b> list and click <b>Add</b> .
Additional Emails		Enter up to five additional email addresses for recipients who aren't Salesforce users, leads, or contacts.
From Email Address	Select Current User's email address	

**About From Email Address Field**

**Ranjith Krishnan**  
**sfdcmeet@gmail.com**

**Ranjith Krishnan**  
**sfdcmeet@gmail.com**

Either the default workflow user or a previously configured and then verify the organization-wide address. This field lets you use a standard email address for your organization (such as support@company.com) instead of the default **From** field, which is the email address of the person who updates the record.

#### To set organization Wide Address

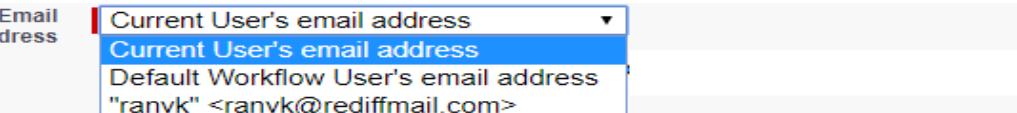
Go to Setup | Administer | Email Administration | Organization-Wide Addresses

#### Add your email (other than users email address assuming this as an email for company) and verify Organization-Wide Email Addresses

An organization-wide email address associates a single email address to a user profile. Each user in the profile can send email using the same display name and email address.

Organization-Wide Email Addresses				
Add				
Actions	Display Name	Email Address	Allowed Profiles	Status
<a href="#">Edit</a>   <a href="#">Del</a>	ranvk	ranvk@rediffmail.com	System Administrator	Verified

This will then appear in From Address field in Email Alert as follows



Make this address the default From email address for this object's email alerts. [i](#)

If you select **Make this the default From email address for this object's email alerts**, this email address overrides the **From Email Address** for all email alerts associated with that object. You can still customize individual email alerts to use a different **From Email Address**.

Now click done and activate the workflow. Unless it is activated, workflow will not be evaluated and hence no actions will be fired.

#### Workflow Rule Send message to Sales Team about new Account

Workflow Rule Detail	
<a href="#">Edit</a>	<a href="#">Delete</a>
<a href="#">Clone</a>	<a href="#">Activate</a>
Rule Name	Send message to Sales Team about new Account
Active	<input type="checkbox"/>
Description	Send message to Sales Team about new Account
Rule Criteria	Account: Created Date EQUALS TODAY

#### How to test this work flow?

Step 1: Create a new Account record

So per the action, the email should be been sent to

#### Scenario to understand the Evaluation Criteria

Workflow on Opportunity object to send Email Alert when

Criteria: Amount > 5000

#### When Evaluation Criteria is 1: New Created

Event	Record Field Values	Will action be taken? (Yes / No)
New Opportunity ABC is created	Amount = 4000	No
Opportunity ABC is modified	Amount = 5500	No
New Opportunity CDE is created	Amount = 6000	Yes

#### When Evaluation Criteria is 2: created, and every time it's edited

**Ranjith Krishnan**  
**sfdcmeet@gmail.com**

**Ranjith Krishnan**  
**sfdcmeet@gmail.com**

Event	Record Field Values	Will action be taken? ( Yes / No )
New Opportunity CCC is created	StageName = Prospecting , Amount = 3000	No
Opportunity CCC is Modified	StageName = Negotiating, Amount = 5200	Yes
Opportunity CCC is Modified	StageName = Quote, Amount = 5200	Yes
Opportunity CCC is Modified	StageName = Quote, Amount = 5200 Next Step = 'Verify with Quote PM'	Yes

**When Evaluation Criteria is 3: created, and any time it's edited to subsequently meet criteria**

Event	Record Field Values	Will action be taken? ( Yes / No )
New Opportunity EEE is created	Amount = 5200 StageName = Prospecting	Yes
Opportunity EEE is Modified	StageName = Negotiating Amount = 5200	No
Opportunity EEE is Modified	Amount = 10000	No
Opportunity EEE is Modified	Amount = 4000	No
Opportunity EEE is Modified	<b>Amount = 5400</b>	Yes

**Scenario:** Assign a follow up task to open opportunity's owner 5 days before the closed date

Name of the Workflow	Follow up Task to Opportunity Owner before closed
Object	Opportunity
Evaluation Criteria	Created, and any time it's edited to subsequently meet criteria
Rule Criteria (Filter)	Opportunity Fields: Stage != 'Closed Lost' OR 'Closed Won'
Immediate Actions	None
Time Dependent Action	<b>Time Trigger</b> : 5 Days before the Closed Date <b>Action</b> : Assign the Task <b>Task Assign To:</b> <Choose the owner field of Opportunity> <b>Due Date</b> : 3 Before the Closed Date <b>Subject</b> : Follow up customer <b>Status</b> : High

**For time dependent action,** we need to first Time Trigger (5 Days before the Closed Date) then will have to add action as below before adding the action.

Workflow Time Trigger Edit

Workflow Rule	Rule to send Task for 1Open Sales Deals
5	Days
Before	Opportunity: Close Date
<input type="button" value="Save"/> <input type="button" value="Cancel"/>	

The valid range is **0 to 999** days or hours.

Then add action "Task Assign"

**Scenarios to understand the Time-Dependent-Workflow Action**

**Ranjith Krishnan**  
**sfdcmeet@gmail.com**

**Ranjith Krishnan**  
**sfdcmeet@gmail.com**

**Example of opportunity workflow rule with time-based workflow action**

**Workflow rule name:** Big Opportunity

**Evaluation criteria:** Created, and every time it's edited to subsequently meet criteria

**Rule criteria:** Amount > 1000

**Time trigger:** 5 Days before Close Date

**Time-based workflow action:** Update next step to "Review Amount with VP of Sales"

Assume current date on which all events occur is **5/16/2019**

Event	Record field values	Time-based workflow queue
1. An Opportunity record is created. The workflow rule's evaluation criteria and rule criteria <b>are not</b> satisfied.	<b>Amount = 500</b> <b>Close date = 5/31/2019</b>	No entries
2. The Amount on the Opportunity record is modified. The workflow rule's evaluation criteria and rule criteria <b>are</b> now satisfied.	<b>Amount = 3300</b> <b>Close date = 5/31/2019</b>	Automatically added entry: <b>Workflow rule name:</b> Big Opportunity <b>Scheduled date:</b> 5/26/2019 12:00 AM
3. The Close Date on the Opportunity record is modified. The workflow rule's evaluation criteria and rule criteria <b>are still</b> satisfied.	<b>Amount = 3300</b> <b>Close date = 6/30/2019</b>	Automatically updated entry: <b>Workflow rule name:</b> Big Opportunity <b>Scheduled date:</b> 6/25/2019 12:00 AM
4. The Close Date on the Opportunity record is modified. The workflow rule's evaluation criteria and rule criteria <b>are still</b> satisfied.	<b>Amount = 3300</b> <b>Close date = 5/18/2019</b>	Automatically updated entry: <b>Workflow rule name:</b> Big Opportunity <b>Scheduled date:</b> 5/13/2019 12:00 AM
5. The Amount on the Opportunity is modified. The workflow rule's evaluation criteria and rule criteria <b>are no longer</b> satisfied.	<b>Amount = 800</b> <b>Close date = 5/18/2019</b>	Entry removed

### Monitor Pending Workflow Actions

- From Setup, enter Time-Based Workflow in the Quick Find box, then select **Time-Based Workflow**.
- Click **Search** to view only the pending actions that match the criteria. The filter options are:
  - Workflow Rule Name:** The name of the workflow rule.
  - Object:** The object that triggered the workflow rule. Enter the object name in the singular form.
  - Scheduled Date:** The date the pending actions are scheduled to occur.
  - Create Date:** The date the record that triggered the workflow was created.
  - Created By:** The user who created the record that triggered the workflow rule.
  - Record Name:** The name of the record that triggered the workflow rule.
 The filter is not case-sensitive.

### To cancel pending actions:

- Select the box next to the pending actions you want to cancel.
- Click **Delete**.

### About Field Update Action Page

From Setup, enter Field Updates in the Update box, and select **Field Updates**. Then use these settings to configure your field update.

**Field Update Edit**

**Identification**

Name	Update grade to senior
Unique Name	Update_grade_to_senior
Description	(empty)
Object	Employee
Field to Update	Employee Grade
Field Data Type	Picklist
Re-evaluate Workflow Rules after Field Change	<input checked="" type="checkbox"/> If enabled, all workflow rules on the same object are re-evaluated after the field update in this workflow. Any workflow rules whose criteria are met as a result of the field update will be triggered.

**Specify New Field Value**

**Picklist Options**

- The value above the current one
- The value below the current one
- A specific value --None--

### To understand the 'Re-evaluation Workflow Rules Field Change' checkbox, consider workflows on Account Object

Workflow Name	Re-evaluate checkbox	Criteria	Field Update Action	Action (Yes/No)
WF1	Yes	Site = X	Site = A	Yes
WF2	Yes	Site = A	Site = B	Yes
WF3	Yes	Site = B	Site = C	Yes
WF4	Yes	Site = C	Site = D	Yes
WF5	Yes	Site = D	Site = E	Yes
WF6	Yes	Site = E	Site = X	Yes

**WF1 will not fire again since only 5 more workflows will be re-evaluated next to initial update.**

**Also the workflow once run in the cycle will not be run again in the same transaction.**

**Note:** In workflow Field Update, we can update current object fields and its master object fields.

If there are objects Department\_c (master) and Employee\_c in master-detail relationship.

If workflow on Employee\_c object, then we can update the fields in Employee\_c and its parent Department\_c fields.

**Ranjith Krishnan**  
**sfdcmeet@gmail.com**

**Order of Execution:** Field updates occur before email alerts, tasks, and outbound messages.

**Ranjith Krishnan**  
**sfdcmeet@gmail.com**

## SESSION 19

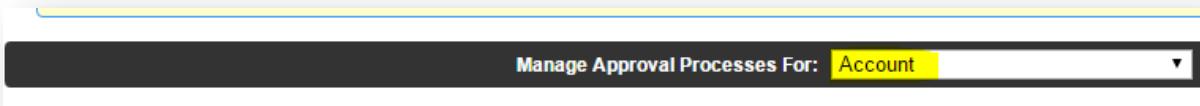
### Approval Process

An approval process automates how records are approved in Salesforce. An approval process specifies each step of approval, including who to request approval from and what to do at each point of the process.

#### Navigation:

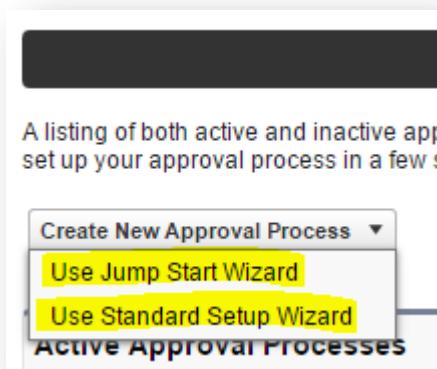
Setup ---- Build --- Create --- Workflows & Approval Process ---- Approval Process

#### 1. Select the Object to define the approval process (whose record is to be submitted for approval)



Salesforce provides two types of wizard to create the approval process:

- Jump Start Wizard:** This wizard is used to create a simple approval process or one-step approval process. This wizard allows you to quickly create an approval process where everything will be available on the same screen; you do not have to move from one screen to another.
- Standard Wizard:** This wizard is used to create complex approval processes. It consists of certain setup wizards that allow you to define your process, and another particular setup wizard that allows you to define each step in the process.



#### 1. PROCESS DEFINITION

**Step 1.** Enter the name of the approval process to be unique among the object on which approval process is defined.

**Step 2. Control Which Records Apply to an Approval Process**

Option	To enter the approval process...
criteria are met	The record must meet the filter criteria. Entry Criteria is based on Current Object Field and its <b>Master Object Fields</b> (Only MD Relationships allowed) and on currently logged in user fields.
formula evaluates to true	The formula must return True. Some functions aren't available in approval process formulas. Entry Criteria is based on Current Object Field and its <b>parent Object Fields</b> (Master-Detail or Lookup) and on currently logged in user fields.

#### Step 3. Choose an Automated Approver throughout an Approval Process

Associate a hierarchy field—such as the user's manager—with an approval process. When selected, the field is available as an assigned approver option for approval steps. You can always select a hierarchy field here but not use it for any approval steps.

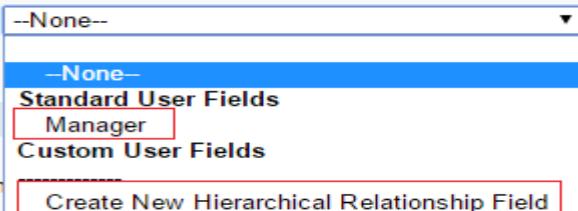
### Step 3. Specify Approver Field and Record Editability Properties

When you define approval steps, you can assign approval requests to different users. One of your use this option for any of your approval steps, select a field from the picklist below. Also, when a n be able to edit it. However, you may choose to also allow the currently assigned approver to edit th

#### Select Field Used for Automated Approval Routing

Next Automated Approver Determined By

Use Approver Field of Account Owner



#### Record Editability Properties

- Administrators ONLY can edit records
- Administrators OR the currently assign

If Selected	Description
--None-	Then approval requests aren't automatically assigned based on a field. Instead, you manually specify a user to approve all approval requests.
Manager	Then approval requests are automatically assigned to manager of an user as per the user page.
Custom New Hierarchical Relationship	Then a new custom field of lookup to user object will be created. Then the approval requests are automatically assigned to the user specified in this custom hierarchy field.

Use Approver Field of Object Owner (highlighted in red). If selected, the first executed approval step sets the approver to the value of Field (Manager Field) on the record owner's user record—instead of the submitter's user record.

#### Specify Who Can Edit Locked Records

When a record is submitted for approval, it's locked to prevent users from editing it during the approval process. Use the record editability properties to determine who can edit records that are locked in this approval process.

Option	Description
Administrators ONLY...	Default. Lets users edit the record that's pending approval only if they have: <ul style="list-style-type: none"> <li>▪ The "Modify All" object-level permission for the given object, or</li> <li>▪ The "Modify All Data" permission</li> </ul>
Administrators OR...	Lets the assigned approver and admins edit the record.

#### Record Editability Properties

- Administrators ONLY can edit records during the approval process.
- Administrators OR the currently assigned approver can edit records during the approval process.

### Step 4. Choose Approval Request Notification Templates

When an approval process assigns an approval request to a user, Salesforce sends the user an approval request email. If Approvals in Chatter is enabled, Salesforce also posts the approval request to Chatter. Choose templates for each of these notifications.

Field	Description
-------	-------------

**Ranjith Krishnan**  
**sfdcmeet@gmail.com**

Field	Description
<b>Approval Assignment Email Template</b>	Choose a custom email template to use when notifying approvers that an approval request is assigned to them. Or leave blank to use the default email template. The approval process uses the same template for every assignment email—no matter which approval step it's for.
<b>Approval Post Template</b>	Available only when Approvals in Chatter is enabled. Choose an approval post template to use when notifying approvers via a post in their Chatter feed. Leave blank to use the default post template for this object or, if there isn't one, the system default template.

**Note**

 If email approval response is enabled, be sure that the email template you use describes how to correctly use both response options: clicking the link and replying by email. If the user doesn't respond correctly (for example, if the user misspells approve or types it on the wrong line), Salesforce doesn't register the user's response.

#### Step 5. Design the Approval Request Page

The approval page is where an approver responds to an approval request. Customize which fields appear on that page and in which order. This page is used only for this approval process.

Option	Description
<b>Selected Fields</b>	Specifies which fields to display on the approval request page. Keep in mind that approvers could view this page on a mobile device. Select only the fields necessary for users to decide whether to approve or reject records.
<b>Display approval history information...</b>	If selected, the approval request page displays the approval history of the associated record.
<b>Security Settings</b>	Controls whether users have to log in to Salesforce to see the approval request. <b>Allow approvers to access the approval page only from within the application (Recommended)</b> Default. Users log in to Salesforce to view the approval page. <b>Allow approvers to access the approval page only from within the application, or externally from a wireless-enabled mobile device</b> Users can access an external version of the approval page from a browser, including browsers on mobile devices, without logging in to Salesforce. If selected, you can't add approval steps that let users manually select the next approver.

#### Step 6. Specify Who Can Submit Records to an Approval Process

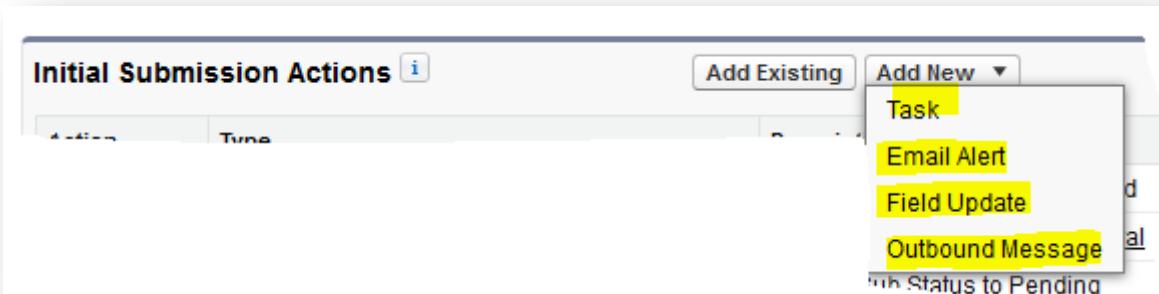
Only specified individuals or roles can submit a record for approval.

You can also let submitters recall an approval request.

<b>Submitter Type</b>	Select a type or search to populate the Available Submitters list.
<b>Allowed Submitters</b>	If the user who submits a record for approval isn't included in this list, the record doesn't enter this approval process—even if the record meets the entry criteria.
<b>Allow submitters to recall approval requests</b>	If selected, submitters can recall their approval requests. If unselected, only admins can recall requests. This option is useful for situations where things can change on the submitter's side while waiting for an approval. For example, an opportunity could be lost after the user submits it for approval.

## 2. INITIAL SUBMISSION

Specify Actions for INITIAL SUBMISSION. The actions are highlighted below.



### Add an Approval Step to an Approval Process

Approval steps define the chain of approval for a particular approval process. Each step determines which records can advance to that step, who to assign approval requests to, and whether to let each approver's delegate respond to the requests. The first step specifies what to do if a record doesn't advance to that step. Later steps specify what happens if an approver rejects the request.

#### Steps are executed in the order specified.

##### 1. Control Which Records Apply to an Approval Step

Control which records are part of the approval step by setting the step's criteria. You can also specify what happens to records that don't meet the step's criteria.

##### 2. Identify Assigned Approvers for an Approval Step

Specify who to send an approval request for this step to.

##### 3. Specify Rejection Behavior for an Approval Step

Configure what happens if an approver rejects a request. The final rejection actions for the approval process determine the first step's rejection behaviour.

## 3. APPROVAL STEPS

### Control Which Records Apply to an Approval Step

Control which records are part of the approval step by setting the step's criteria. You can also specify what happens to records that don't meet the step's criteria.

The screenshot shows a "Specify Step Criteria" dialog box. It contains two radio buttons: one selected ("All records should enter this step.") and one unselected ("Enter this step if the following criteria are met"). Below these buttons is a text input field containing "criteria are met" with a dropdown arrow. To the right of the input field is a "else" label followed by another dropdown arrow. Below the input field are two red circles, each containing a white number: "1" and "2".

#### Criteria Options

If all records go through this approval step, leave **All records should enter this step** selected.

If only certain types of records should enter this process, select **Enter this step if the following...** and choose the appropriate option (1).

## (2) Else Options for Approval Step Criteria

If you specified filter criteria or entered a formula, choose what happens to records that do not meet the criteria or if the formula does not return True.

**Note**

 You can't change your selection after the approval process has been activated, even if you deactivate the approval process.

Option	Description
<b>approve record</b>	Approves the request and performs all final approval actions.
<b>reject record</b>	Rejects the request and performs all final rejection actions. This option is available only for the first step in the approval process.
<b>go to next step</b>	Skips this step and goes to the next step. Available only when there's a later step. When you apply this option in the first step, keep in mind: <ul style="list-style-type: none"><li>▪ If the record doesn't meet the criteria for any subsequent steps, the record is rejected.</li><li>▪ If you delete all later steps, Salesforce rejects the record.</li></ul> When you apply this option in another step, keep in mind: <ul style="list-style-type: none"><li>▪ If you delete all later steps, Salesforce ends the process.</li></ul>

Identify Assigned Approvers for an Approval Step

**Step 3. Select Assigned Approver**

Specify the user who should approve records that enter this step. Optionally,

**Select Approver**

Let the submitter choose the approver manually.  
 Automatically assign using the user field selected earlier. (**Manager**)  
 Automatically assign to approver(s).

The approver's delegate may also approve this request. 

If Multiple Approvers

**Select Approver**

Let the submitter choose the approver manually.  
 Automatically assign using the user field selected earlier. ([Manager](#))  
 Automatically assign to approver(s).

User	<input type="text"/>	
Related User	<input type="text" value="--None--"/>	
User	<input type="text"/>	

[Add Row](#) [Remove Row](#)

**When multiple approvers are selected:**

Approve or reject based on the **FIRST** response.  
 Require **UNANIMOUS** approval from all selected approvers.

The approver's delegate may also approve this request. [i](#)

<b>Select Approver</b>	<p>Specify who to assign the approval to.</p> <p><b>Let the submitter choose the approver manually. (default)</b></p> <p>Prompts the user to select the next approver.</p> <p><b>Automatically assign an approver using a standard or custom hierarchy field.</b></p> <p>Assigns the approval request to the user in the field displayed next to this option.</p> <p>You select this field when you configure the approval process.</p> <p><b>Automatically assign to a queue.</b></p> <p>Available only for objects that support queues. Assigns approval requests to a queue.</p> <p><b>Automatically assign to approver(s).</b></p> <p>Assigns the approval request to one or more specific users, specific queues, or users related to the submitted record. You can add up to 25 per step.</p>
<b>When multiple approvers are selected:</b>	<p>Available only when Automatically assign to approver(s) is selected.</p> <p><b>Approve or reject based on the first response.</b></p> <p>The first response to the approval request determines whether the record is approved or rejected.</p> <p><b>Require unanimous approval from all selected approvers.</b></p> <p>The record is approved only if everyone approves the request. If any approvers reject the request, the approval request is rejected.</p>
<b>The approver's delegate may also approve this request</b>	<p>Users can identify a delegate in their approval settings. Delegated approvers can't reassign approval requests; they can only approve or reject them.</p>

#### **4. ACTIONS**

Finally specify actions for FINAL APPROVAL, REJECTION and RECALL.

Final Approval Actions <span style="font-size: small;">i</span>		Add Existing	Add New ▾
Action	Type	Description	
Edit	Record Lock	Lock the record from being edited	

Final Rejection Actions <span style="font-size: small;">i</span>		Add Existing	Add New ▾
Action	Type	Description	
Edit	Record Lock	Unlock the record for editing	

Recall Actions <span style="font-size: small;">i</span>		Add Existing	Add New ▾
Action	Type	Description	
Edit	Record Lock	Unlock the record for editing	

#### **Specify Rejection Behaviour for an Approval Step**

Configure what happens if an approver rejects a request. The final rejection actions for the approval process determine the first step's rejection behaviour.

Option	Description
Perform all rejection actions...	Rejects the request completely even if previous steps were approved. Salesforce performs all rejection actions specified for this step and all final rejection actions.

**Ranjith Krishnan**  
sfdcmeet@gmail.com

**Ranjith Krishnan**  
sfdcmeet@gmail.com

## SESSION 20

**The Process Builder** is a drag and drop lightning tool that helps you easily automate your business processes. Process automation feature to automate the below activities

SNO	Action Type	Purpose
1	Create a Record	Create a record by manually entering values or by using the values of related records.
2	Invoke a Process	Invoke a process from another process. With invocable processes, you have the option of reuse so that you don't spend your time on repetitive work.
3	Post to Chatter	Post to the feed of a user, a Chatter group, or the record that started the process.
4	Quick Action	Create a record, update a record, or log a call by using a quick action that you or another admin created for your organization.
5	Flows	Start an autolaunched flow from your process to automate complex business processes. Create flows to perform logic and have events trigger the flows via processes without writing code.
6	Email Alert	Easily send an email from a process by using an email alert. Email alerts are configured outside of the Process Builder and contain the standard text, list of recipients, and template for an email.
7	Send a Custom Notification	Send customized notifications when important events occur. Alert an account owner if a new support case is logged while trying to close a deal, or send a notification for a workflow built entirely with custom objects.
8	Submit record for approval	Submit the record that started the process for approval.
9	Update Records	Update one or more records that are related to the record that started the process by manually entering values or by using the values from related records.
10	Call Apex Code from a Process	Add customized functionality to your process by calling Apex from the process.
11	Quip	Manage the quip documents.

### Navigation and Details of Options:

#### **Classic**

Setup -> Build -> Create -> Workflow & Approvals -> Process builder

#### **Lightning**

Setup -> Process Automation Tools -> Process Builder

**Step1: Click on NEW to create new process**

**Step 2: Naming the process**

The process starts when \*

Select One

Select One

A record changes

A platform event message is received

It's invoked by another process

- ❖ When select a **Record Changes**, the process would fire when we create or modify the record.

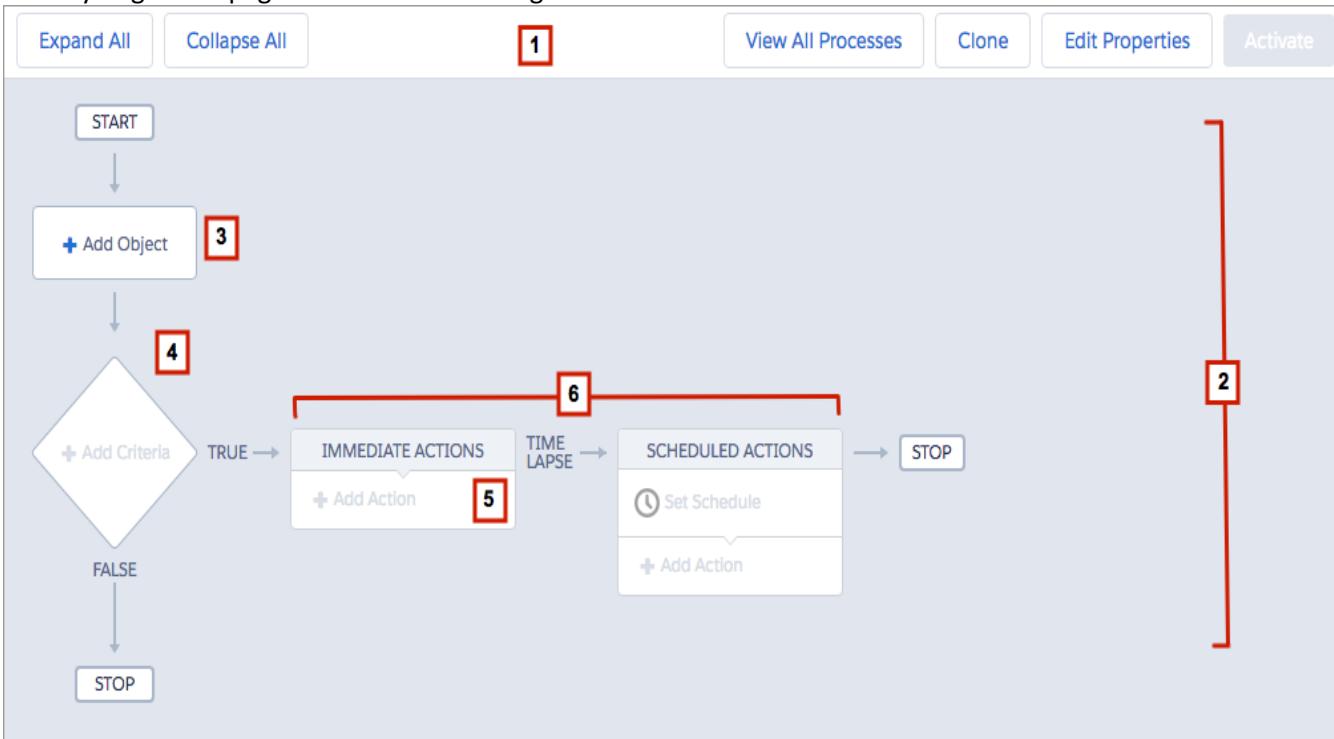
**Ranjith Krishnan**  
**sfdcmeet@gmail.com**

- ❖ When **A platform event message is received** is chosen, the process will fire when the message is received for the defined platform event.

**Note:** Platform events capability is based on event-driven messaging architecture which enables Salesforce to send out information to external system when event occurs or consume event published by external system.

- ❖ The last one will be **invoked by another process**.

Now you get to a page that looks something like this.



#### Button Bar (1)

Use the button bar to:

- Expand or collapse actions on the canvas
- Open the process management page
- Create an inactive copy of the current process
- Edit or view the properties of the current process
- Activate or deactivate the current process

**Canvas (2)** The canvas is the main workspace for a process. On the canvas, you can define: The records that the process should evaluate

- (3) You identify the object and specify the changes to that object's records that cause the process to run.
- (4) One or more criteria nodes

Each criteria node includes conditions that are used to evaluate the record. A criteria node evaluates based on filter criteria—such as whether the value for the Amount field is greater than \$1000—or based on a formula. You can also simply execute the associated actions without evaluating the record.

- (5) One or more actions

If the criteria are met for the record that starts the process, the criteria node's associated action group (6) either executes **immediately** or according to the **schedule** defined for the action.

#### **USE CASE: Create a simple process that creates a contract record and a follow-up task when a high-value opportunity is closed and won.**

1. From Setup, enter Process Builder in the Quick Find box, click **Process Builder**, and then click **New**.
2. Name the process Opportunity Management. The API name updates to Opportunity Management when you tab out of the Name field.
3. For the description, enter If a high-value opportunity is closed and won, create a draft contract and a follow-up task for the account owner.

**Ranjith Krishnan**  
**sfdcmeet@gmail.com**

4. Click Save.

#### **STEP 1: Choose the Object**

5. Click **Add Object** to associate your process with an object and specify when to start the process. For this process, let's choose Opportunity and start the process when the record is created or edited.

**Tip** When you're selecting objects or fields, you can type to filter the list of options. For example, type Opp and then select Opportunity from the filtered list.

The screenshot shows a configuration interface for a process. At the top, it says "Choose Object and Specify When to Start the Process". Below that, there is a section labeled "Object\*" with a dropdown menu showing "Opportunity". Under "Start the process\*", there are two options: "only when a record is created" (unchecked) and "when a record is created or edited" (checked). At the bottom left, there is a link "» Advanced".

6. Click Save.

#### **STEP 2: ADD CRITERIA**

Define the criteria that must be true before the process can execute the associated actions. For this process, we want to check whether the opportunity has been closed and won, as well as if it's high-value. For this example, "high-value" means it's worth more than \$250,000.

1. Click **Add Criteria** and Name the criteria "Opportunity Won".
2. Leave **Conditions are met** selected to evaluate specified field values for the opportunity record.
3. Set the first filter condition. The process needs to check whether the opportunity has been closed and won.
  - a. Click in the Field box (1), choose **Opportunity > Stage**, and click **Choose**.
  - b. For the operator (2), leave **Equals** selected and For the type (3), leave **Picklist** selected.
  - c. For the value (4), select **Closed Won**.
4. Set the second filter condition. The process needs to check whether the opportunity is high-value.
  - a. Click **Add Row (5)**. Then click in the Field box, select **Opportunity > Amount**, and then click **Choose**.
  - b. For the operator, select **Greater than**, then For the type, leave **Currency** selected and enter \$250,000.00.

**Ranjith Krishnan**  
**sfdcmeet@gmail.com**

**Define Criteria for this Action Group**

Criteria Name \* 

Opportunity Won

Criteria for Executing Actions \*

- Conditions are met  
 Formula evaluates to true  
 No criteria—just execute the actions!

**Set Conditions**

Field *	Operator *	Type *	Value *	X
1 [Opportunity...  ]	1 Equals 	2 Picklist 	3 Closed Won 	4 
2 [Opportunity...  ]	2 Greater than 	3 Currency 	250,000.00 	
<b>+ Add Row</b>  5				

Conditions \*

- All of the conditions are met (AND)  
 Any of the conditions are met (OR)  
 Customize the logic

**Advanced**

Do you want to execute the actions only when specified changes are made to the record? 

- Yes

5. In the Conditions area, leave **All of the conditions are met (AND)** selected. This field lets you specify which combination of the filter conditions must be true for the process to execute the associated actions.
6. Click **Advanced** and select **Yes** (6). When you select this option, the process ignores record changes that aren't relevant to your defined criteria. For example, if a user edits the record by adding a description, the process won't execute the associated actions.

**Note: This setting isn't available if:**

- Your process starts only when a record is created.
- Your process starts when a record is created or edited and the criteria node doesn't evaluate any criteria.
- The criteria node evaluates a formula, but the formula doesn't include a reference to the record that started the process.
- Your process uses the **IS CHANGED** operator in a filter condition.

Click **Save**.

**STEP 3: ADD ACTIONS**

**3(a) Action is to create a contract.**

Now let's define the actions that execute when the criteria are met. When an opportunity is closed and won and the amount is greater than \$250,000, the process creates a draft contract record associated with the opportunity's account and a follow-up task for the associated account's owner.

First up, let's **create a contract**.

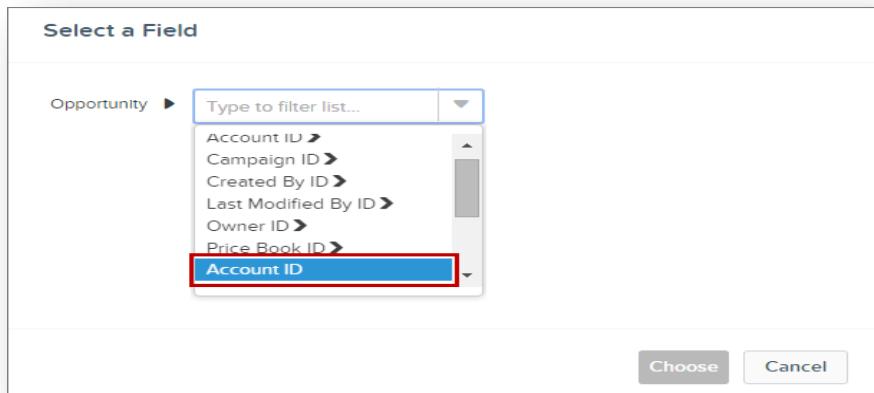
1. Under Immediate Actions, click **Add Action**.
2. For the action type, select **Create a Record**.
3. Name the action **Create Draft Contract**.
4. For Record Type, select **Contract**.

Certain fields are required when you create a record. When you select the object that you want to create a record for, the Process Builder automatically displays rows for each of that record's required fields. When you select **Contract**, a row for **Account ID** shows automatically.

5. Associate the new contract with the opportunity's parent account by selecting a value for **Account ID**.

**Ranjith Krishnan**  
**sfdcmeet@gmail.com**

- a) For type, select **Reference**.
- b) Click in the Value box to choose a value.
- c) Select **Opportunity > Account ID** and then click **Choose**.



6. Make sure the new contract is a draft. In the Value for Status, select **Draft** from the drop-down list

The screenshot shows the 'Set Object Variables' section of a process builder. It contains two rows:

- Row 1: Field 'Account ID' is set to Type 'Reference' with Value '[Opportunity].AccountId'.
- Row 2: Field 'Status' is set to Type 'Picklist' with Value 'Draft'.

A '+ Add Row' button is located at the bottom left of the table.

7. Click **Save**.

**3(b) Create a high priority follow-up task** for the associated account's owner. We'll use a schedule so the owner can follow up with the account six days after the opportunity closes.

First, set up a schedule. A schedule lets the process know that it must wait to execute the associated actions. Because you can configure multiple schedules for the same criteria node, each schedule has its own list of actions to execute.

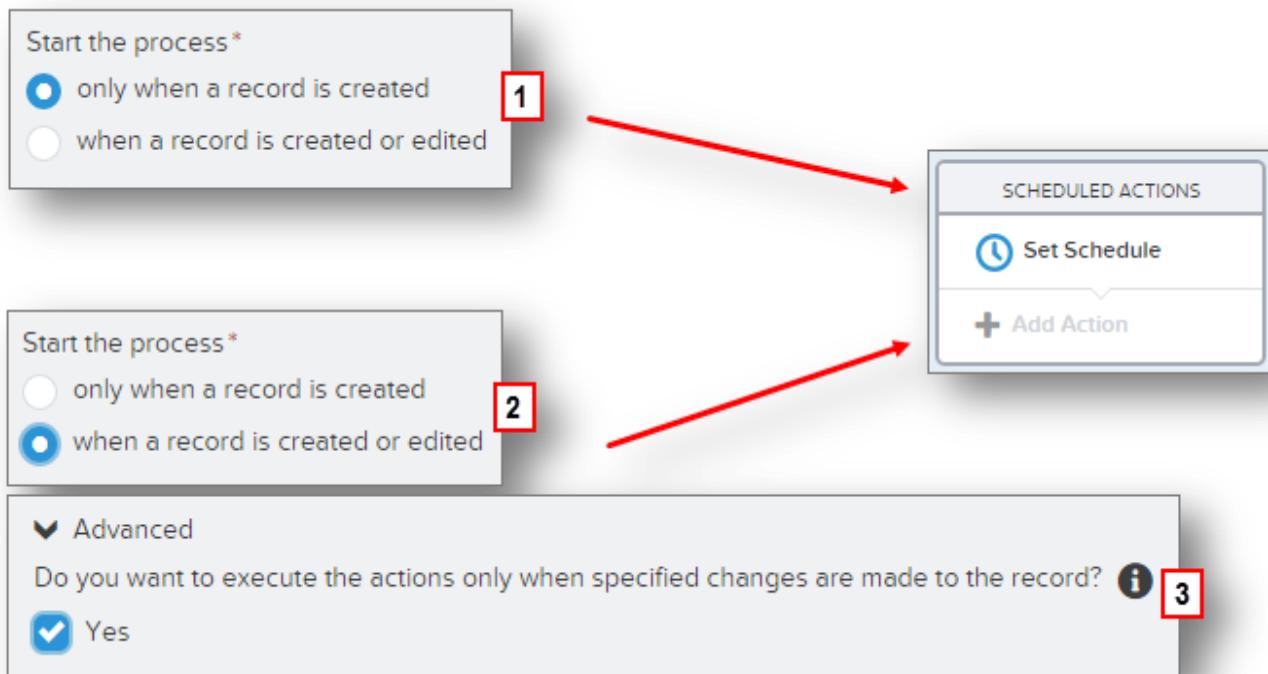
Note:

To add **scheduled actions** to your process, you have two options:

- Start the process only when a record is created

**Ranjith Krishnan**  
**sfdcmeet@gmail.com**

- Start the process **when a record is created or edited**. In addition, select the advanced option to execute actions only when specified changes are made.



- Under Scheduled Actions, click **Set Schedule**.
- Set the schedule for six days after the opportunity closes.
- Click **Save**.

Now that you have a schedule, add the task creation action to it with values for task fields.

**Assigned to ID:** Opportunity > Account ID > Owner ID

**Priority:** High

**Status:** Not Started

PER-ORG LIMIT	ESSENTIALS OR PROFESSIONAL EDITION	ENTERPRISE, UNLIMITED, PERFORMANCE, OR DEVELOPER EDITION
Active record change processes and rules per object  Rules include workflow rules, escalation rules, assignment rules, and auto-assignment rules.	50	50
Total processes	5 per process type	4,000 per process type
Active processes	5 per process type	2,000 per process type
Criteria nodes that are evaluated and actions that are executed at runtime per process	2,000	2,000

**NOTE:** Refer the videos for examples on other actions and Admin Exercise Document.

**Ranjith Krishnan**  
**[sfdcmeet@gmail.com](mailto:sfdcmeet@gmail.com)**