# Day 1

Introduction to cloud Computing & CRM

Basic of Salesforce and its learning material

### **ABOUT SALESFORCE**

- Salesforce was founded in 1999 by Marc Benioff.
- It is an american cloud based software company (San Francisco, California).
- It is a **CRM Solution** that brings companies and customers together.
- Salesforce is the # first company that took CRM to the cloud, enabling companies to access all of their customer information online, from any device, anywhere in the world, 24/7.
- Salesforce is a single source of connect Sales, Service, Marketing automation, Commerce, IT,
   Analytics, application development and personalised experience.
- Salesforce architecture is so popular because of its multitenancy (multi-tenant Architecture).

#### **SALESFORCE ENVIRONMENT:**

**Production:-** (for end users)

**Development:-** (Where you develop new functionality)

**Testing:**- (Platform where you test your application)

### **Multi-tenant Architecture**

- Multi-tenant Architecture means one common application for multiple group or clients.
- Multiple salesforce users store their data on the same cloud but in their own space.
- The data of one client is secure and isolated from other groups or client.
- All data is stored in a single database schema for its customers.
- It is economical because resources and maintenance are shared.

For creating account (developers.salesforce.com)
For Account access (login.salesforce.com)
For Trailhead (trailhead.salesforce.com)
For help (help.salesforce.com)

Note:- Salesforce platform (Force.com)

## **Salesforce Products**

Sales Cloud

Service Cloud

Marketing Cloud

Commerce Cloud

force.com

## **CRM**

- Customer Relationship Management
- CRM is a strategy for managing an organization's relationships and interactions with customers and potential customers
- To understand customer's needs.
- To fill 360 degree gap between customer and organization
- It's a system that keeps your customer information in one place, so your team can manage your contact with your customers with this full history in mind.

#### **List some CRM Software**

- Salesforce CRM
- Microsoft Dynamics CRM
- Oracle CRM
- SAP CRM
- Nimble

# **Cloud Computing**

**Cloud computing** means that the applications are delivered over the Internet and run in any Web browser so that you can quickly and easily access them from anywhere with any de

OR

**Cloud computing** is the delivery of different services through the internet. It means using remote servers to store and access data instead of relying on local hard drives and private Data Centers.

### Some advantages of cloud computing :-

- No Hardware, No Software. Cloud computing applications are less expensive than desktop software because you only pay to use the software instead of having to buy, install, configure, and maintain it.
- It's effectively infinite in size, so you don't need to worry about it running out of capacity.
- Pay Per use/Efficiency/Cost Production
- Data Security
- Scalability & Flexibility(No. of Servers)
- Mobility
- Disaster Recovery
- No Infrastructure Maintenance
- Backup and restore data

### **Cloud computing models / Services**

- SaaS( Gmail,Fb)Software as a service
- PaaS(Force.com, HEROKU, Google App Engine)Platform as a service
- laas( Amazon, ECL, Rackspace) Infrastructure as a service
- Mbaas: Mobile Based as a service

**NOte:- In Paas you have to manage only (Applications, Data)** 

SaaS:-

- Software applications are managed by the provider of the cloud services.
- It can be accessed by organizations through a simple browser, which leads all the applications
  of the service provider.
- The clients do not have to worry about licensing or server Costs.

PaaS:-

- Dedicated software platforms are built and managed by the service provider to run & develop business applications.
- These platforms support every stage of creating a web application online.
- No additional software is Required.

## **Deployment modes of cloud computing**

- Public Cloud
- Private Cloud
- Hybrid Cloud
- Community Cloud
- Multi Cloud

#### **Public Cloud:-**

- It can be available to people across the world.
- The user has no control over the resources.

#### **Private Cloud:**-

- It can be accessed only within the limited premises.
- This cloud infrastructure is not provided to others.
- Cloud Services providers cloud infrastructure to particular Organization.

### **Hybrid Cloud:-**

- It has the ability to allow data or applications to move from one cloud to another cloud.
- API is used as an interface B/w Public and Private Cloud

## Q&A

#### What is Salesforce?

Salesforce is a Customer Relationship Management(CRM) platform that uses cloud technology to bring companies and customers together. It helps businesses to manage their customer's data, track their activities efficiently. It supports powerful, connected products for improving your marketing, sales, commerce, service, IT, and more. Salesforce CRM does not need any technical knowledge to set up and manage the same.

### Difference b/w Saas and Paas??

#### SaaS:-

- Software applications are managed by the provider of the cloud services.
- It can be accessed by organizations through a simple browser, which leads all the applications of the service provider.
- The clients do not have to worry about licensing or server Costs.

### PaaS:-

- Dedicated software platforms are built and managed by the service provider to run & develop business applications.
- These platforms support every stage of creating a web application online.
- No additional software is Required.

Salesforce.com is based on which cloud computing service?
Software as a service (SaaS)

### How many editions in salesforce?

Group.-

Professional.

Enterprise.

Unlimited.

### Explain the Force.com platform

Force.com is the entire framework and codebase on which the whole Salesforce application exists. We can also say that Salesforce is built on Force.com, which is a Platform as a Service (PaaS) that allows us to simplify the design, development, and deployment of cloud-based applications and websites.

## **Trailhead Badges & Important Links**

1.Salesforce CRM

(https://trailhead.salesforce.com/en/content/learn/modules/lex\_implementation\_basics)

2. Salesforce Platform Basics

(https://trailhead.salesforce.com/en/content/learn/modules/starting\_force\_com)

3.Trailhead Playground Management

(https://trailhead.salesforce.com/en/content/learn/modules/trailhead\_playground\_management)

4. Trailhead and Trailblazer Community

(https://trailhead.salesforce.com/en/content/learn/modules/trailhead\_basics)

# Day 2

Configuration in Salesforce

# **Configuration in Salesforce**

- Objects
- Fields
- Records
- Apps

**Objects:-** Objects are basically tables in which information is stored inside salesforce.

### **Object are of two Type**

- 1. Standard Objects
- 2. Custom Objects
- **Standard Objects:-** They are inbuilt objects which are provided by salesforce.

Eg. Account, Contact, Lead & many more.

- **Custom Objects:** They are customized objects which we create according to need of an organization. There is also an option for creating a tab while creating a object . Whenever custom objects are created salesforce gives us 3 things. A custom object will always have a postfix\_\_c. We can have maximum of 2000 custom object according to governor limits
  - 1. Tabular Structure
  - 2. Page Layout
  - 3. Code written in class(Controller)

**Fields:-** Data is arranged in objects inside fields.

Fields are also of two types

- Standard fields
- Custom fields

### → Standard Fields:-

- Inbuilt fields provided by salesforce once object is created in salesforce.
- Five standard fields we get by default
- Standard fields cannot be deleted

#### Custom fields:-

- They are customized fields with certain data type which we create our own according to needs of an organization.
- Custom fields are created according to governor limit. We can create maximum 500 custom fields per object.
- You can delete custom fields.
- ★ Records:- Records are just data inside fields.

**Apps(Application):**- It is a container for objects, tabs and functionality which consists of a logo,a name ordered set of tabs.

Application are two of types.

- 1. Standard Application
- 2. Custom Application
- **Standard Application**:- Which are already provided by salesforce. These applications can be accessed by those users who have Salesforce license.
  - **e.g**. sales, Marketing, Services.
- Custom Application:- A developer can create his/her own applications as per the client/custom need.

## Q&A

**Can we rename standard tabs & standard field labels?** 

Yes, we can rename standard tabs as well as standard field labels. by setup--->rename tabs and labels.

List examples of custom field data types?

Text, Pick list, Pick list (multi select), Date, Email, Date/Time, Date, Currency, Checkbox, Number, Percent, Phone, URL, Text Area, Geolocation, lookup relationship, master detail relationship etc.....

List things that can be customized on page layouts?

We can customize different things on page layout like, Fields, Buttons, Custom Links and Related Lists. We can also create sections.

What are the different ways to make a field as mandatory?
Field Level Security i.e. FLS
Page Layout level.
Validation Rule

# Trailhead Badges & Important Links

#### 1.CRM for Salesforce Classic

(https://trailhead.salesforce.com/en/content/learn/modules/admin\_intro\_crm\_basics)

### 2. Accounts & Contacts for Lightning Experience

(https://trailhead.salesforce.com/en/content/learn/modules/accounts\_contacts\_lightning\_experience)

#### 3. Accounts & Contacts for Salesforce Classic

(https://trailhead.salesforce.com/en/content/learn/modules/admin\_intro\_accounts\_contacts)

# DAY 3

# Relationship in salesforce

# Relationship

A relationship is a bi-directional association between two objects. Relationships allow us to create links between one object and another. Relationships are created by creating custom relationship fields on an object. This is done so that when users view records, they can also see and access related data.

OR

Relationship Fields is need to remove data redundancy-- and data inconsistency.

- Data redundancy-->having repetitive data in any table.
- Data inconsistency-->mismatching of data.

Relationship is generally of six types:-

- 1. Self-relationship
- 2. Master-detail relationship
- 3. Lookup relationship
- 4. External lookup relationship
- 5. Many-to-many relationship (junction object)
- 6. Hierarchical relationship

### Self Relationship:-

Self-relationship simply means creating a relationship with itself. In this, we can relate an object with itself by look-up.

Example: Account object has a field called Parent Account which shows the self-relationship in Account. We can have a maximum of 25 self lookups.

### Master-detail relationship:-

- This relationship acts as a parent-child relationship. We use this type of relationship when we want to bound two objects closely dependent on each other.
- → Master detail relationship field is mandatory to be filled.it cannot be empty.
- → When a master record gets deleted, its related child/detail record automatically gets deleted.
- → We can have a maximum of 2 master/detail relationship per object.
- → The master object is the source of the values in the list.
- → The parent record controls the behavior of the child record regarding visibility and sharing.It means the security setting of a parent object applies to the child object.
- → When there is a master-detail relationship between two objects, you can create a unique type of field over the master object, called Roll-up summary. A roll-up summary field allows us to calculate values from child records, such as the number of child records linked to a parent record.
- Note: We can define this relationship in between custom objects and in between standard and custom objects. Note that, the standard object must be on the master side while creating relationships between standard and custom objects.

### Lookup relationship:-

- → In this, objects are loosely coupled.
- → When a parent's record gets deleted, the child remains in existence.
- → We cannot create a roll-up summary field in a lookup relationship.
- → Parent and child records have their own sharing and security settings in look-up relationships.
- → The Lookup relationship field is not mandatory by default but we can select a checkbox to make it mandatory in lightning.
- → We can have a maximum of 40 lookup per object.
- → To convert a master-detail to look-up we have to check that there is no roll-up summary field available and can convert a look-up to master-detail if lookup field in all records contains a value.

### Many-to-Many relationships:-

In many-to-many relationships, records of particular objects are linked to multiple records of different objects and vice versa. There is no such field as a many-to-many relationship in Salesforce, we can create a many-to-many relationship by creating two master-detail relationships with a common object. This common object can also be specified as the junction object.

### External relationship:-

This is a new field type that has been introduced with *Salesforce Connect*. To link an external object to another external object, we use the external relationship field. It supports standard look-up relationships that use 18 characters Salesforce Id for the association.

### **Roll-up summary:-**

- → Roll-Up Summary field are used to summarize data with any associated child object.
- → Roll-Up Summary field can only created for Master-detail Relationship.
- → Roll-Up Summary field can not be created for Lookup Relationship.
- → It Derives the data from child Object.
- → We can't change field type of a field that we reference in a roll-up summary field.
- → Auto numbers are not available here.
- → Roll-Up Summary fields are not available for mapping lead fields of converted fields.
- → We can have maximum of 25 rollup summary fields per master object.
- → Functions used in roll up summary.
  - Count: It calculates the total number of related records.
  - Sum: It totals the values of selected fields.
  - Min : Displays lowest value
  - Max : Displays the highest value.

### Q&A

- Is it possible to edit Roll up summary field value in a record?
  No. roll up summary fields are read only fields and they can not be edited.
- ♦ Is it possible to create Roll up summary field on parent object ?
  Yes, we can create Roll up Summary field on parent object only with master detail relation between objects.
- Can we convert the lookup relationship to Master Detail relationship? If so How can we convert? Yes, we can convert Lookup relationship to Master-Details Relationship. Conversion can be done only if all the fields have valid look-Up fields values only.'
- Can we create Master Detail relationship on existing records?
  Yes, It is possible to create Master-Detail Relationship on existing record. First we have to create Lookup relationship to a record then convert it to master-Detail Relationship.
- What are the main things need to consider in the "Master-Detail Relationship"?
  Cascade deletion of the child records is done when parent record is deleted in Master-Detail Relationship.

- What happens to detail record when master record is deleted?
  When master Record is deleted, it's detail records are also deleted.
- What happens to child record when a master record is deleted in Lookup Relationship?
  Child records are not deleted.
- **♦** A custom object contains some records, now my requirement is to create field in this object with master detail relationship.
  - No. we can not create master detail relationship first create lookup relationship and associate lookup fields for every parent record and then convert this to Master detail relationship.
- Can we create both master detail relationship and Lookup Relationship at a time? Yes, we can create.
- Can we set owner field on detail object? The Owner field on the detail object is not available and is automatically set to the owner of its associated master record.

- Can we do allow reparenting in master detail relationship by default? By default, records can't be reparented in master-detail relationships. Administrators can, however, allow child records in master-detail relationships on custom objects to be reparented to different parent records by selecting the Allow reparenting option in the master-detail relationship definition.
- Can standard object be on the detail side of relationship with custom object? Standard object cannot be on the detail side of a relationship with a custom object.
- For which standard objects we can have master detail relationship?

  We cannot create a master-detail relationship in which the User or Lead objects are the master.

Very Important

What type of relationship in standard accounts and contacts? Accounts and Contacts have a lookup Relationship but this relationship has a property called (CascadeDelete to true).

# Trailhead Badges & Important Links

1.Customize a Salesforce Object

(https://trailhead.salesforce.com/content/learn/projects/customize-a-salesforce-object)

2.Data Modeling

(<a href="https://trailhead.salesforce.com/content/learn/modules/data\_modeling">https://trailhead.salesforce.com/content/learn/modules/data\_modeling</a>)

3. Company-Wide Org Settings

(https://trailhead.salesforce.com/en/content/learn/modules/company\_wide\_org\_settings)

# Day 4

- Formula's
- Sales Cloud

### **Formula Field**

- This is read only field whose value is derived from expression.
- It is used to display some calculated values.
- We cannot edit values of formula fields.
- It is automatically updated once field involved in formula, changes its values.
- Values of formula fields depends on other fields.
- 1. Set grade field to A OR B according to marks.

```
IF ( Marks__c >= 80 && marks__c <= 90, "Grade A",
IF ( Marks__c >= 70, "Grade B" ,"Grade C") )
```

2. Calculate CTC according to basic salary.

```
salary*12
```

3. Function to add a month in given date is: addmonths(date,months\_to\_be\_added).

### Sales Cloud:-

To maintain sales activities in an organisation objects involved in sales cloud.

Campaign

Lead

Account

Contact

**Opportunity** 

Reports

**Dashboards** 

**Product** 

Contracts

**Orders** 

**Activity** 

 Campaign → A Salesforce Campaign is a group of Leads and Contacts exposed to specific marketing communication(s). It stores essential performance metrics and means salespeople can quickly see the customers and prospects that received marketing activity. **2.** Lead $\rightarrow$  To hold information of potential customers.

It is raw information which needs to be worked on.

Leads can be generated by different marketing campaigns.

**3.** Account  $\rightarrow$  It is the authority with whom we are making a deal.

Lead if qualified will be converted into account.

An account can have multiple contacts and opportunities.

Business accounts can store information about companies

Person accounts store information about individual People.

**4. Contact**→ Stores information of users who are involved in deal.

Lead if qualified will be converted into contact.

Contact can be associated with account.

A contact can have association with single account.

5. Opportunity → This object stores information of deal.we can use this information to create future deals

Opportunity can be associated with account.

An opportunity can have association with single account.

\* every record in salesforce objects have record owner.

# Q/A

### What are dependencies in Salesforce?

The filters that allow user to change the contents of a picklist based on the value of another field.

### Can checkbox perform like controlling field?

Yes possible, Controlling field should be Check box or pick list

### What can a Sales Cloud do?

To help your salespeople sell smarter and faster by centralizing customer information.

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# Q/A

Create a Formula field called commission on opportunity object. Calculate the commission on amount, if amount > 100000 then commission should be 0.09 otherwise it should be 0.03
IF(Amount > 100000, 0.09, 0.03)

Create a formula field called commission amount on opportunity object. Calculate the commission amount based on commission percentage

IF(Amount>100000, Amount\*0.09, Amount\*0.03)

Create a sales commission on opportunity when stage='Closed-Won' and amount>500000, 0.002% otherwise 0.001%

IF(ISPICKVAL(Stagename, 'Closed-Won') && Amount>500000, Amount\*0.003, Amount\*0.001)

### **Trailhead Badges & Important Links**

1. Picklist Administration

(https://trailhead.salesforce.com/en/content/learn/modules/picklist\_admin)

2.Leads & Opportunities for Salesforce Classic

(https://trailhead.salesforce.com/content/learn/modules/admin\_intro\_opptys\_leads)

3.Leads & Opportunities for Lightning Experience

(https://trailhead.salesforce.com/en/content/learn/trails/lex\_admin\_implementation

**4.Lightning Experience Customization** 

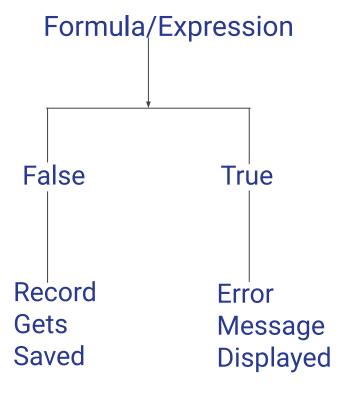
(https://trailhead.salesforce.com/en/content/learn/modules/lex\_customization)

# Day 5

- Validation Rule
- Lookup Filters

### **Validation Rules:-**

- ➤ Validation rules verify that data entered by users in records meets the standards you specify before they can save it. A validation rule can contain a formula or expression that evaluates the data in one or more fields and returns a value of "True" or "False."
- It involves two steps:
  - error condition(Formula/Expression)
  - o error message
    - can be displayed on top of page.
    - can be displayed in front of any field.
- It also maintains the data quality.
- Avoid storing of unnecessary data.
- One way of making a field as mandatory.
- Whenever validation rules is true it shows an error.
- If validation rules fails data will not get saved in object.
- Currently 100 active Validation rules per object are limited.



### **Dependency Fields:-**

First create two fields and then Create dependency between them. Fields whose values depends on other field is called Dependent Field. Field which populate values in other field is called controlling field.

### **Lookup Filter**

- Lookup is a very simple feature in Salesforce, but also powerful, with just a few clicks you can relate an object to another object easily as a parent-child relationship.
- However, in some business needs, the system should NOT look up ALL parent records so the salesforce offers Lookup Filter criteria and even better you can define the logic
- Lookup filters **limit the records available in the lookup**. A lookup filter can reference other fields on the same record (source); fields on the records of the lookup object (target); fields on the user's record, profile, and role; and fields on records directly related to the target object.
  - Field In the filter criteria, you cannot select fields of the long-text type (such as Description and Resolution). Also, you cannot select the Created By, Last Modified By, Owner, Record Type, Inactive, IsActive, Template for, and System Template fields.
  - Operator The operators shown are based on the selected field type.
  - Field value You can either define a specific value for the field or map the field value to the
    value of a field on the selected console.

- You can define multiple criteria for each lookup filter. By default, the AND logic is applied on the filter criteria, but you can change the filter logic based on your requirements. The lookup pop-up window shows only those records that match the filter criteria.
- By default, the AND logic is applied to the filter criteria, which means that only the records that meet all of the filter criteria are shown in the lookup pop-up window. You can replace AND with OR and add more conditions to the filter logic by using the defined filter criteria.

Data Types: Data types are used to specify the different sizes and values that can be stored in a variable

### Apex supports the following data types -

- 1. Primitive (Integer, Double, Long, Date, Datetime, String, ID, or Boolean)
- 2. Enums
- 3. sObject
- 4. Classes and Interfaces
- 5. Collections (Lists, Sets and Maps)

# Q/A

Why use Lookup Filter

Use lookup filters to enforce data quality and increase usability within object relationships.

- What does Validation rules contains :
- Validation rule name
- Description field
- Field Condition
- Error Message
- ❖ Validation rule which allows to leave phone number blank if status is 'Not-Contacted',if status is working contacted then phone no should be checked and cannot be blank

ISPICKVAL(Status, 'Working-Contacted') && ISBLANK(Phone)

Validation rule that checks if the industry is not selected then lead should not be converted into an opportunity

ISBLANK(TEXT(Industry )) && isConver

OR

AND(ISPICKVAL(Industry , ' ') , isConverted)

### **Salesforce Security Model**

System-level-security(Applicable on entire System): Before login security

- Authentication : you can login using salesforce credentials, or using linkedIn(oAuth)
- Authorization: It includes login hours, IP Range, Password Policies.

Application-Level-Security (Applies to those users who have access to an application) : After login Security

Object level Security can be implemented using:

**Profile**: Collection of settings and permissions that determine which data and features in the platform user will have access. It defines the job function of a user. Every user must assigned a profile.

#### **Profile Can Control:**

- Object Permissions
- Field permissions
- Page Layout

- Login hours
- Tab settings
- App settings
- Apex class access
- Visualforce page access
- Login IP Range
- Record Type

**Standard Profiles**: These are for standard users only. These profiles are read only.

**Custom Profiles**: These are cloned profiles we can clone standard profiles and then make some changes to that profile. In custom profiles we can perform both read and write operations.

**OAuth:** It is open protocol to enable user to login from other secure API Partners

- → OAuth client makes Authorization request
- → Authorization server authorizes

**Record Level Security:** Record Level Security in Salesforce determines which individual records users can view and edit in each object they have access to in their profile.

The permission on a record is always evaluated according to a combination of object, field, and record-level security permission. When object- versus record-level permissions conflict, the most restrictive settings win.

### Salesforce provides 4 ways to implement it:

- Organization-Wide Default
- Role Hierarchy
- Sharing Rules
- Manual Sharing

### Organization Wide Defaults:

Organization-Wide default or Organization-Wide sharing settings determine the baseline level of access for all records of an object. Organization-wide defaults can never grant users more access than they have through their object permissions .Organization-Wide defaults should be most restrictive in record level security because other record-level security implementations only grant additional accesses, they cannot restrict the access of records provided by Organization-Wide defaults.

### Organization-Wide defaults can be set to any of the 3 below:

### 1. Public Read/Write:

All users can view, edit, and report on all records.

### 2. Public Read-Only:

All users can view and report on records but not edit them. Only the owner, and users above that role in the hierarchy, can edit those records.

#### 3. Private:

Only the record owner, and users above that role in the hierarchy, can view, edit, and report on those records.

**Role Hierarchies**: Every Salesforce organization maintains a role hierarchy for the organization using Salesforce. This role hierarchy defines the hierarchy of the users working in the organization. Salesforce Role Hierarchies can be used to extend the record access automatically so that.

- If the "Grant Access Using Hierarchies" option is disabled for a custom object then only record owners and users granted access by the organization-wide defaults have access to the object's records. However users such as with the "View All" and "Modify All" object permissions and the "View All Data" and "Modify All Data" system permissions can still access records they do not own.
- "Grant Access Using Hierarchies" option is enabled for all objects and it can only be changed for custom objects.

**Sharing Rules**: Sharing rules in Salesforce are used to create automatic exceptions to the Organization-Wide Default settings for the users who do not own the record.

They should be applied to the objects whose org-wide defaults are set to Public Read-only or Private because sharing rules can only extend the access they cannot restrict the access provided by Organization-wide defaults.

There are 2 types of Sharing Rules in Salesforce based on which records to be shared:

#### 1. Owner Based:

Owner based shares the records owned by certain users. Owners can be identified through public groups, roles and roles, and sub-ordinates.

### 2. Criteria Based:

Criteria based shares the records that meet certain criteria.

**Manual Sharing**: In Salesforce Manual Sharing, records are shared individually with other users by using the share button on the record. Salesforce Manual Sharing allows the users to share the record to users who would not have access to the record any other way

Sometimes, granting access to one record includes access to all its associated records. For example, if you grant another user access to an account, the user automatically has access to all the opportunities and cases associated with that account.

### To grant access to a record, you must be one of the following users.

- The record owner
- A user in a role above the owner in the hierarchy (if your organization's sharing settings control access through hierarchies)
- Any user granted Full Access to the record
- An administrator

If a user transfers ownership of a record, Salesforce deletes any manual shares created by the original record owner, which can cause users to lose access. When account ownership is transferred, manual shares created by the original account owner on child records, such as opportunities and cases, are also deleted.

- Grant Access to Records with Manual Sharing in Lightning Experience
- Grant Access to Records with Manual Sharing in Salesforce Classic
- Viewing Which Users Have Access to Your Records in Salesforce Classic
- Viewing Which Users Have Access to Your Records in Lightning Experience