Custom Object Development in Salesforce

What is an Object in Salesforce?

To explain Salesforce objects, it's best to start with the data model. A data model is an abstract model to organize the raw data into structured tables that can be read and understood by humans. The database tables are called objects in Salesforce and the columns are treated as fields, rows as records.These objects store information but if they are customized, they could give an organization a completely new set of functionalities.

Types of objects in Salesforce.

Salesforce has multiple type of objects, they are:

- Standard Objects
- Custom Objects
- External Objects
- Platform Events
- Big Objects

Standard Objects: Objects which are provided by Salesforce by default are called Standard Objects. You can log in and configure the environment straightaway with the help of these objects. These include Lead, Account, Users, Contact, etc. You can understand the Standard objects better by opening the Schema builder from Setup in Salesforce.

Custom Objects: Objects which are created by Salesforce users like us are called Custom Objects. These objects are usually specific to the company and can be used to implement a new function or an application inside Salesforce.

External Objects: External objects are mapped to an external data model stored outside Salesforce

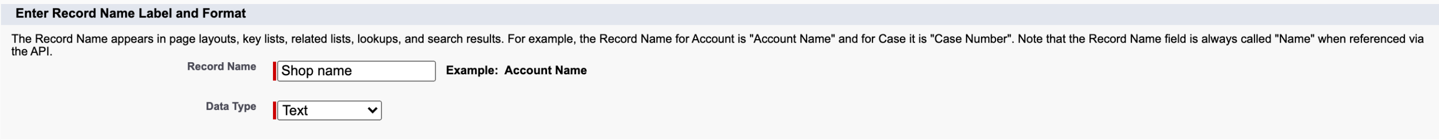
Platform Event: These connect business processes inside Salesforce to external systems and exchange real-time event data. Eg: Connecting a printer to Salesforce. When the event "ink is finished" happens, an order is placed to the vendor straightaway.

Big Objects: Big objects are designed specifically to store huge amounts of data. Big objects perform steadily even if there are 100 million records.

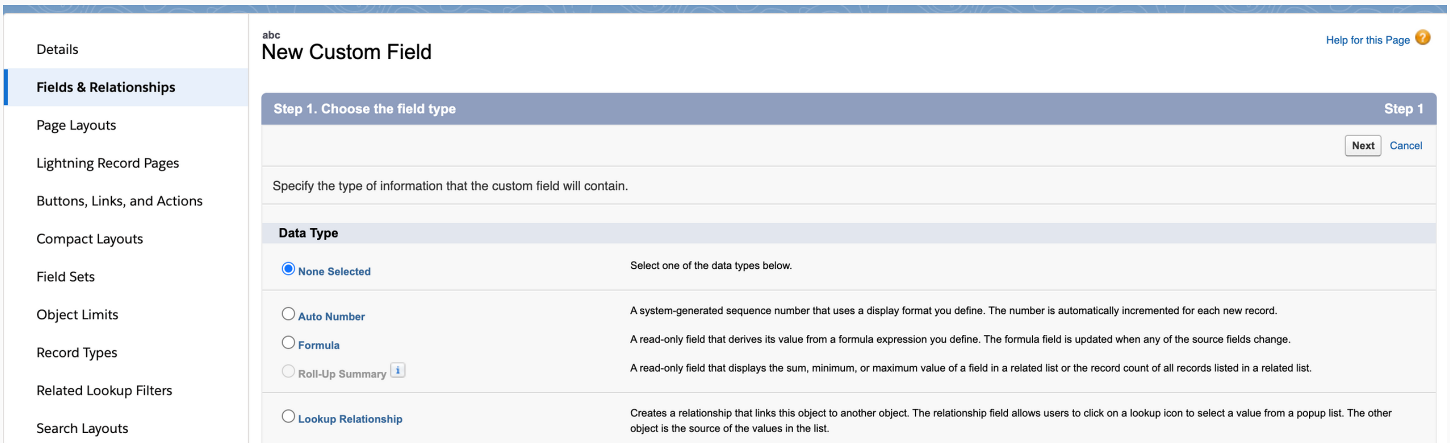
Custom Object Features

Standard objects from Salesforce do not always satisfy the needs of all organizations and that's when the custom objects can come in handy. The following are the features that are available on custom objects:

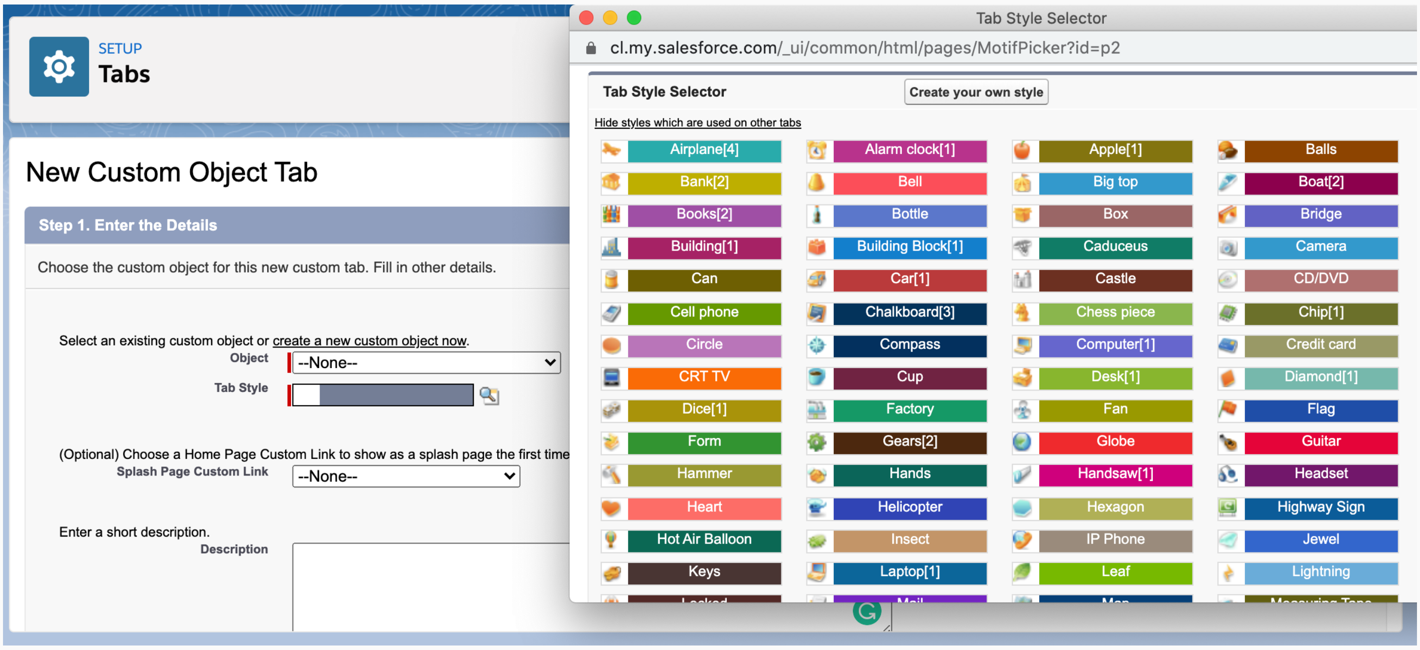
- While creating a custom object, you can import custom object records. This name appears in Salesforce pages, lists, etc. You can also monitor the tasks, events associated with the custom object records



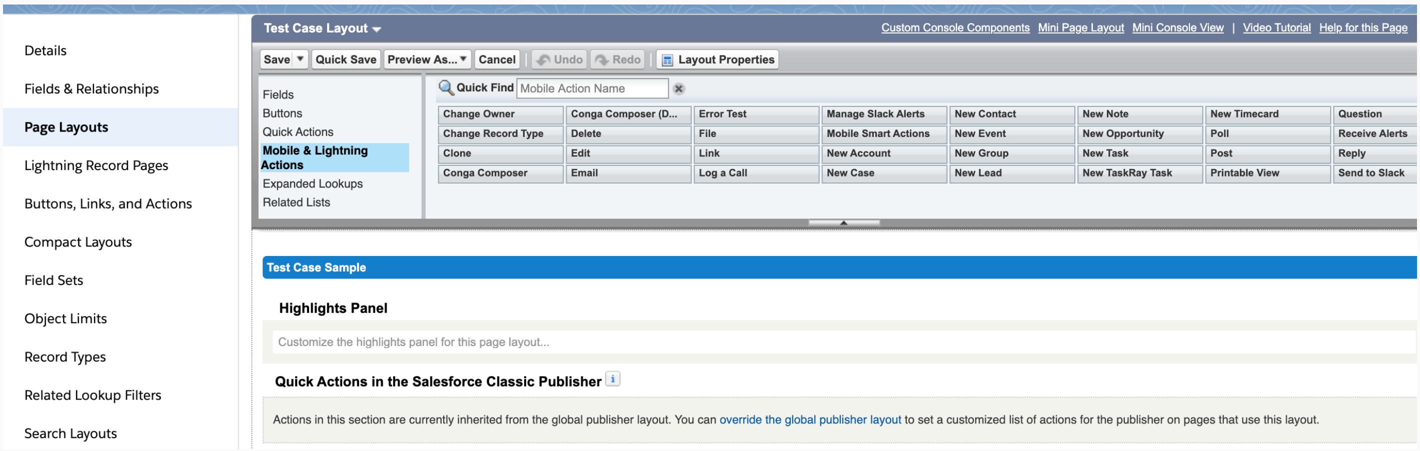
- You can create a custom field, it's like a subset of an object. It can be compared to the table's column and records can be compared to rows in a table.



- You can design a custom tab wherein the end-users can view the custom object data. This can be done during custom object creation, but also later if e.g. you do not want to create a custom object tab right away.



You can construct and design page layouts to your desire, and assign different layouts to different profiles. You can rearrange fields in different sections, remove fields that are not needed and also decide if you want certain fields to be mandatory or read only on the page layout.



If you check these checkboxes below during custom object creation, users can build reports and dashboards to analyze a specific custom object's data. They can create activities based on certain records like events or tasks. By enabling Track field history you can track changes on specific fields, and enabling "Allow in Chatter Groups" gives you the possibility to add records to a chatter group.

Things to Consider before Creating Custom Objects

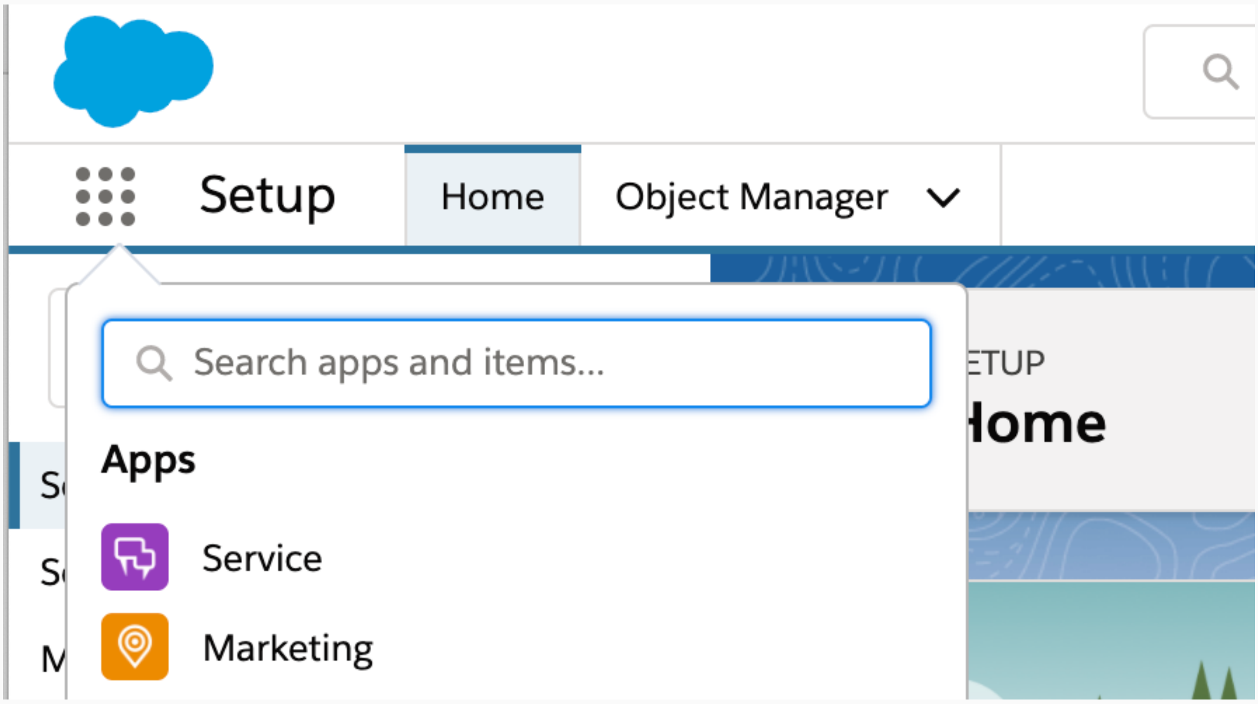
- Before creating a custom object and its associated fields, page layout, etc, decide what the object **relationships** are.
- Also, decide the **name** of the object, it is mandatory and it's always helpful when you have a thoughtful name for the object.
- Don't skip steps in the custom object creation wizard, especially the **import** step. You might end up creating a custom object with the default field from the spreadsheet template.
- When you create a custom object, ensure to set appropriate Read, Create, Edit and Delete **permissions** for different user profiles.
- Only Salesforce admin can create a custom object, but later on, the admin can assign or **delegate** the control to non-admin users. You can further create queues to hand out the ownership of records/rows to multiple users.
- When creating an object from a spreadsheet, **do not** try to create a field with the following field types, they are not supported in Salesforce:
  - Auto Number
  - Formula
  - Roll-Up Summary
  - Lookup Relationship
  - Master-Detail Relationship
  - External Lookup Relationship
  - Text Area (Rich)
  - Text (Encrypted)
  - Time

Creating a new Object in Salesforce

You can create new custom objects in Salesforce in three ways.

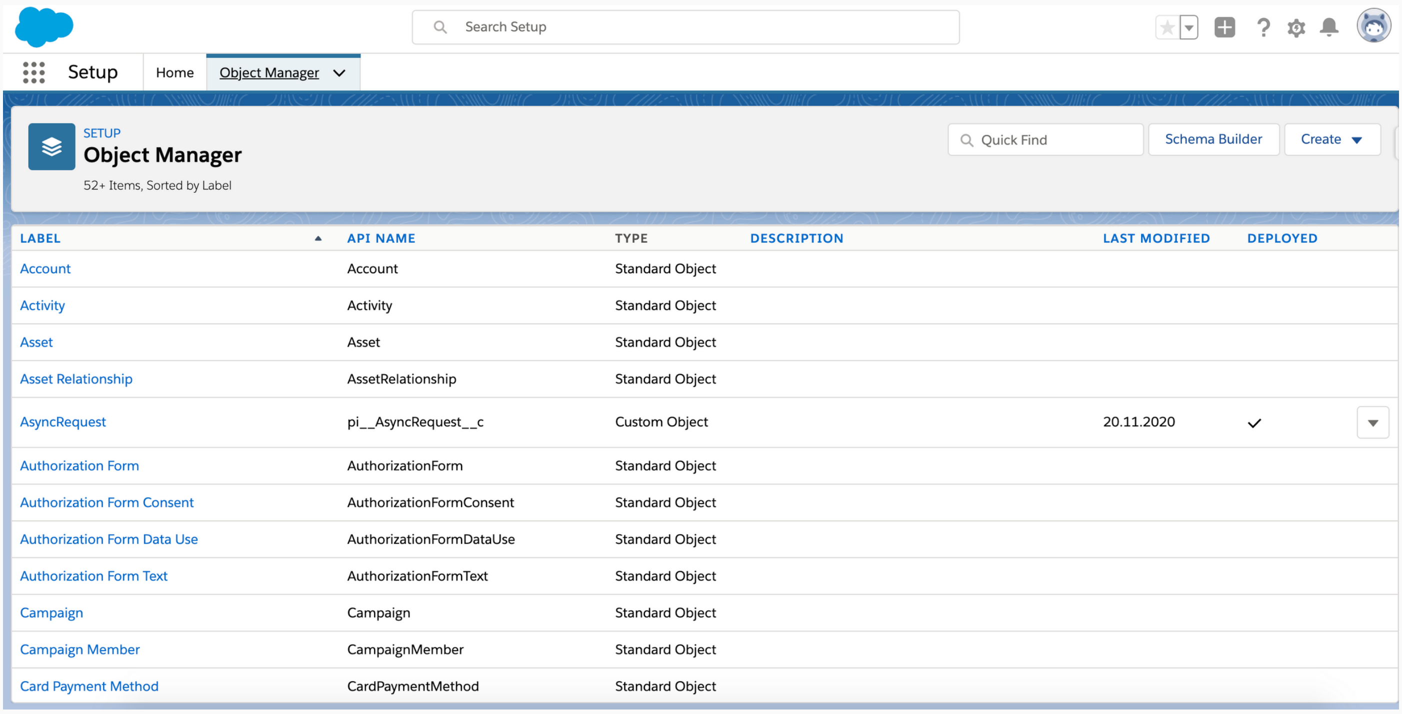
01 Using Salesforce Lightning Experience

You can manage objects within the Salesforce Object Manager. You can find the App Launcher icon on the left side of the navigation bar in Lightning Experience.

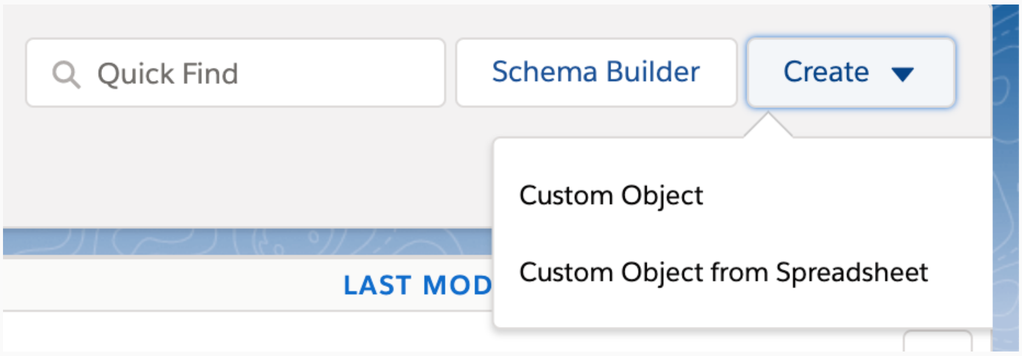


If you don't find this icon, then you are in Salesforce Classic mode. You can switch modes by clicking on the avatar/profile picture and pressing the "Switch to Salesforce Lightning" button. In Classic creating objects is similar to Lightning but you need to click on your User Name on the top right > Go to Setup > type "Object" in the quick find box > Objects below create > New Custom Object

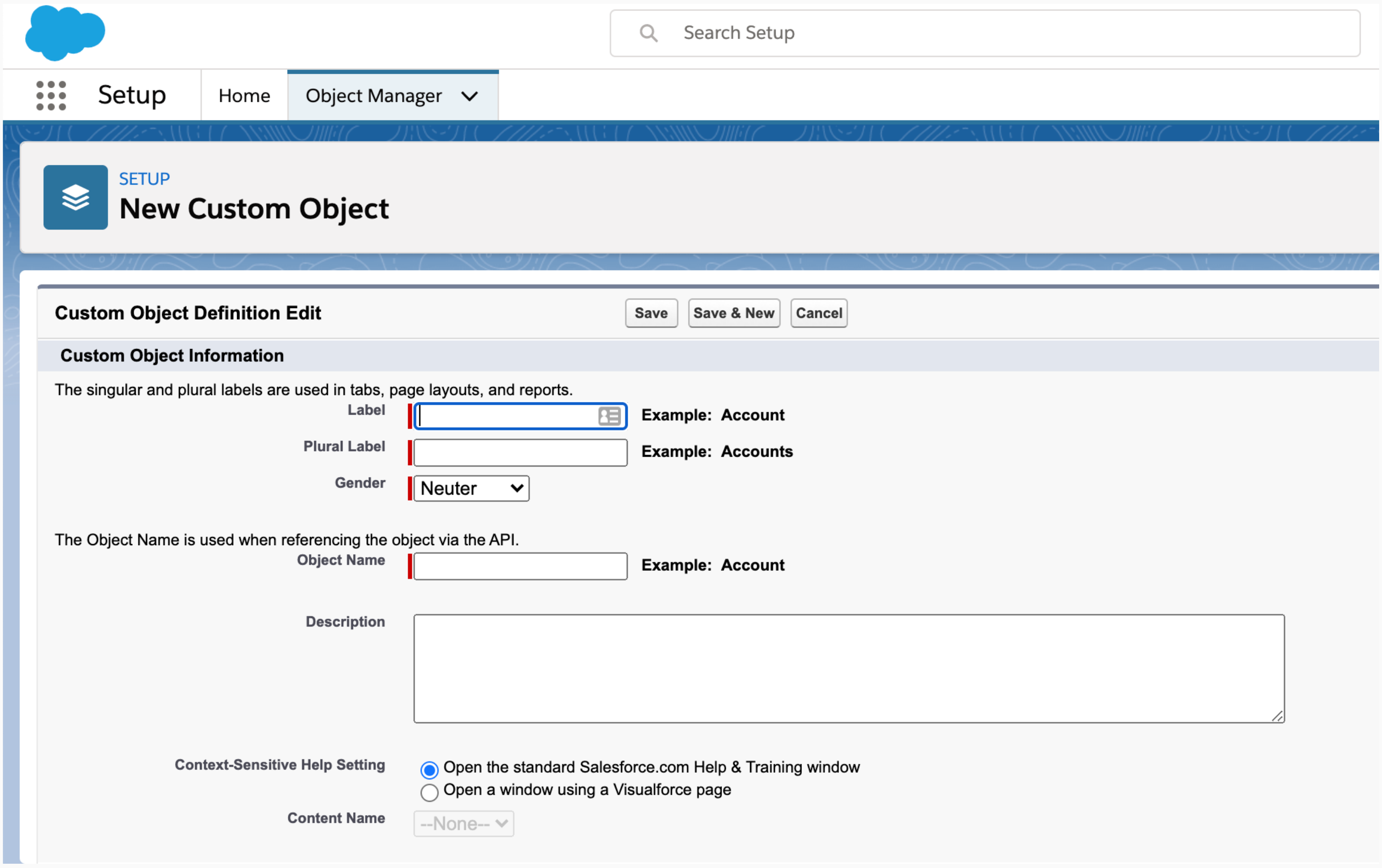
To open Object Manager in Lightning go to the top right corner and click the gear > go to Setup > Object Manager > Create Custom Object



You can create a Custom Object from Object Manager. On the top right corner, there is a “Create” button.



Custom objects can also be created when you go to the gear in the top right corner > Setup > Setup Home > Create > Custom Object. This shortcut allows you to create new custom objects without opening the object manager.



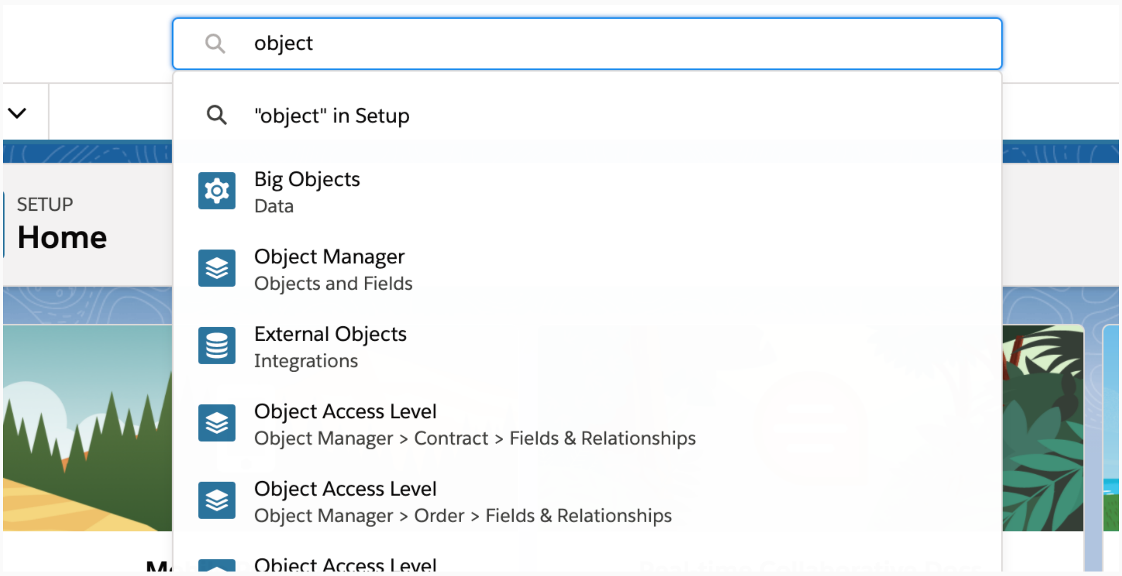
While creating a custom object there are certain fields that need to be completed.

Field	Description
Label	Label is used to refer to the object in a page or user interface.
Plural Label	The plural name of the object. If you create a custom tab for this object, this name is used by Salesforce for the object.
Gender	If it is appropriate for your company's default language, specify the gender of the label. This field appears if the organization-wide default language expects gender.
Starts with a vowel sound	If it's appropriate for your organization's default language, you can indicate whether "an" or "a" has to be used before the label.
Object name	A unique ID or a name used to refer to the object when using the API. Only alphanumeric characters, underscore are allowed and there shouldn't be any spaces, consecutive underscores.
Context-Sensitive help setting	Defines the URL that displays when a user clicks Help for this Page from the object record's home page (overview), edit, and detail pages, list views, and related lists. This setting doesn't affect the Help link at the top of a page. That link always opens the Help window. - To display the standard Salesforce Help available for any custom object record, select Open the standard Salesforce Help & Training window. - To display custom object-level help for your custom object, select Open a window using a Visualforce page and then select the Visualforce page to use as the target of the context-sensitive help link from that custom object's pages.
Record name	The name which is used in page layouts, list views, related lists, and search results.

Data type	The type of field (text or auto-number) for the record name. Records that have unique IDs instead of names are auto-numbered and always a read-only field.
Display format	For an auto-numbered record, you can pick the display format. You have up to two sets of curly brackets.
Starting Number	For an auto-numbered record, you can enter the number to use when creating the first record for this custom object.
Allow Reports	When enabled the data in the custom object records to become available for reporting purposes.
Allow Activities	Allows users to associate tasks and scheduled calendar events related to the custom object records.
Allow in Chatter Groups	Allows users to add records of this custom object type to Chatter groups.
Enable Divisions	If your organization has divisions enabled, select this option to enable the custom object for the divisions.
Available for Customer portal	Makes the custom object available to all portal users. This option is available only if your company has a customer portal.
Track field history	Enables your company to track the changes to fields on the custom object records.
Allow Sharing, Allow Bulk API Access	This setting when enabled makes the custom object an Enterprise Application object. When this setting isn't enabled, the custom object is a Light Application object.
Allow Streaming API Access	When Allow sharing setting is enabled, you must also enable Allow Bulk API Access and Allow Streaming API Access.

Deployment Status	Indicates whether the custom object is visible to other users or its still in development or testing stage
Add Notes & Attachments	This setting allows users to attach notes and PDF, photo attachments, etc to the custom object records. This option is present only when you are creating a custom object.
Launch the New Custom Tab Wizard	You can start the custom tab wizard after you save the custom object with this field.
Allow Search	To allow your users to find a custom object's records when they search, you can create a custom tab set to Default On or Off.

You can then search for the new tab or object in the Quick Find Box like any other standard object.

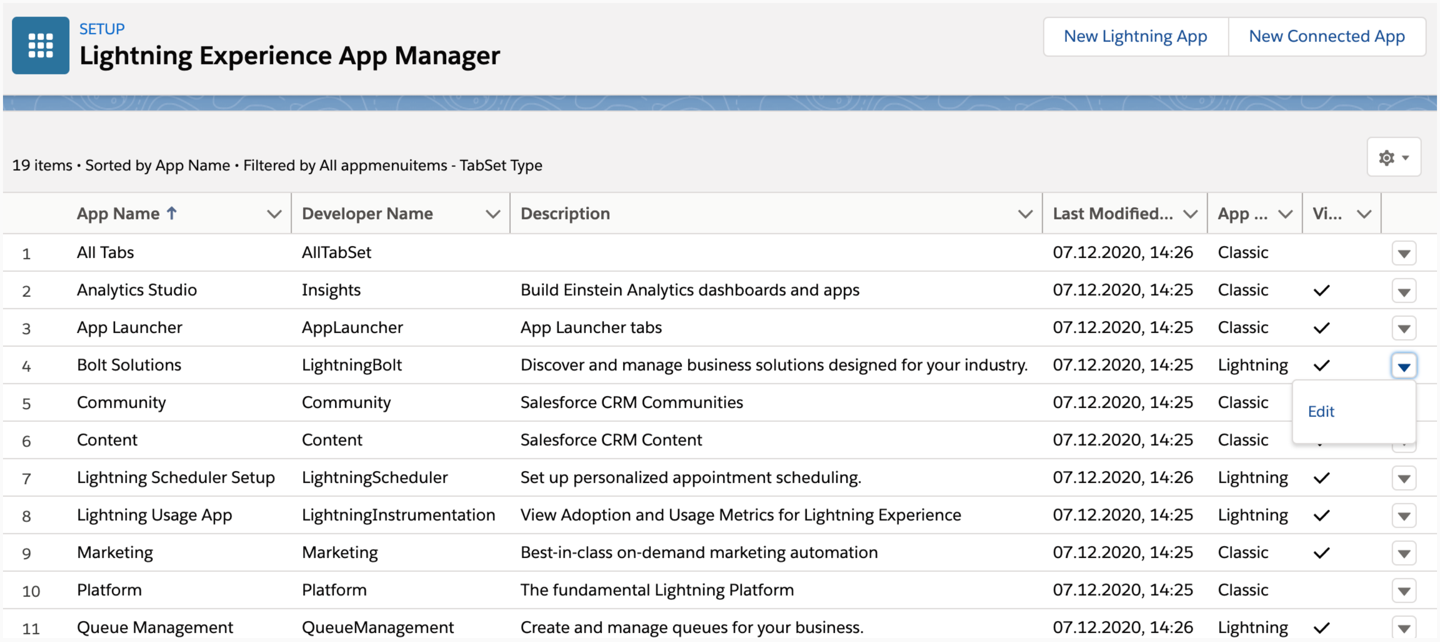


02 Create Custom Objects from Spreadsheet

In Salesforce Lightning Experience, you can create multiple custom objects at a time by importing a spreadsheet. If you don't want to create objects manually and enter fields one by one this option comes in handy.

Similar to the above, **click the gear in the top right corner › Go to Setup › Object Manager** and press the Create button on the right-hand corner. This time use the **"Custom object from Spreadsheet" button.**

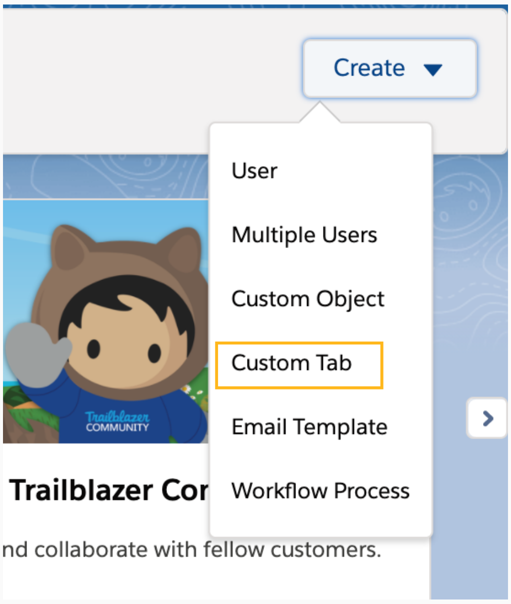
Alternatively, you can enter the App Manager in the Quick Find box on the left-hand side. Here you will find a list of apps. Once you press **Edit**, a wizard opens and here you can import custom object data from .xlsx, .csv, or Google Sheet

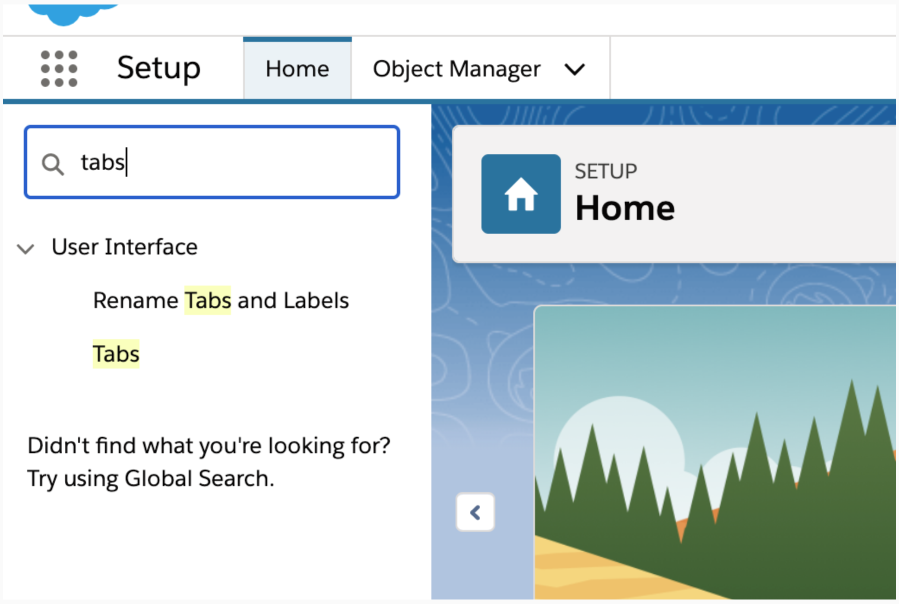


	App Name	Developer Name	Description	Last Modified...	App ...	Vi...
1	All Tabs	AllTabSet		07.12.2020, 14:26	Classic	
2	Analytics Studio	Insights	Build Einstein Analytics dashboards and apps	07.12.2020, 14:25	Classic	✓
3	App Launcher	AppLauncher	App Launcher tabs	07.12.2020, 14:25	Classic	✓
4	Bolt Solutions	LightningBolt	Discover and manage business solutions designed for your industry.	07.12.2020, 14:25	Lightning	✓
5	Community	Community	Salesforce CRM Communities	07.12.2020, 14:25	Classic	
6	Content	Content	Salesforce CRM Content	07.12.2020, 14:25	Classic	
7	Lightning Scheduler Setup	LightningScheduler	Set up personalized appointment scheduling.	07.12.2020, 14:26	Lightning	✓
8	Lightning Usage App	LightningInstrumentation	View Adoption and Usage Metrics for Lightning Experience	07.12.2020, 14:25	Lightning	✓
9	Marketing	Marketing	Best-in-class on-demand marketing automation	07.12.2020, 14:25	Classic	✓
10	Platform	Platform	The fundamental Lightning Platform	07.12.2020, 14:25	Classic	
11	Queue Management	QueueManagement	Create and manage queues for your business.	07.12.2020, 14:26	Lightning	✓

Salesforce understands an object's field labels from a spreadsheet row that you mention. Every field must be mapped without fail to create a custom object successfully. If you miss the import step in Wizard, it creates an empty custom object. It will pull all the fields from the template .xlsx or .csv. Once the custom object is created, a custom object tab is also created.

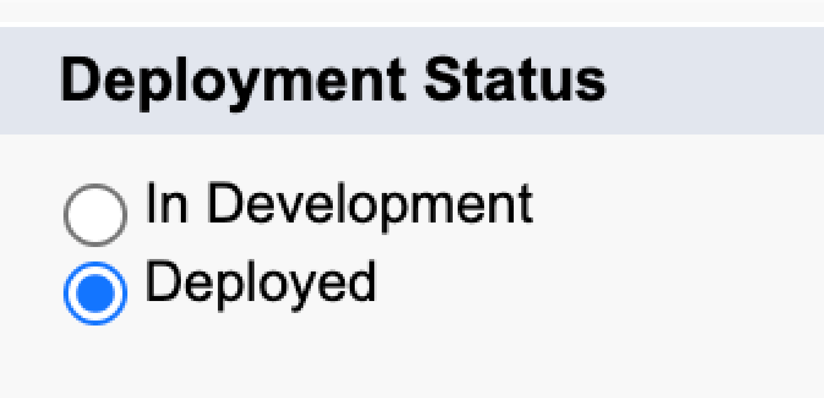
A tab is an interface that Salesforce users can use to view, modify, create records or entries. You can create or edit tabs from the **gear in the top right corner › Setup › Quick find box › Type "Tabs" › Go to Tabs › Custom Object Tabs › New**





It is also way easier if you just use the shortcut mentioned above. Go to the **gear in the top right corner > Setup > Setup Home > Create > Custom Tab.**

Sometimes, you might not want to display the custom object straight away, you might be configuring or testing it still. In this case, you can set the deployment status to "In development"

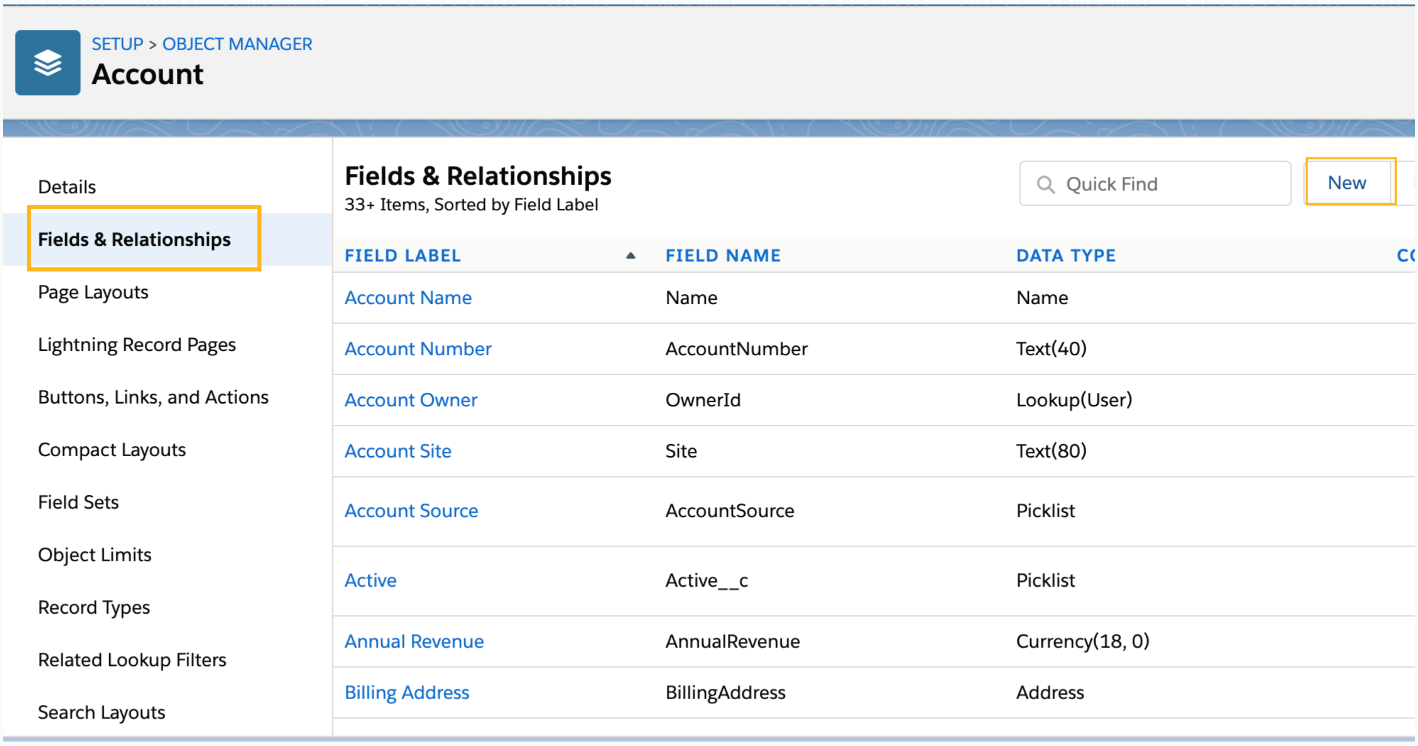


03 Using Salesforce Classic Experience

You can create custom objects in Salesforce Classic mode as well. Go to Setup and enter Objects in the Quick Find box. Similar to lightning mode, click New custom Object and follow the wizard to create an object.

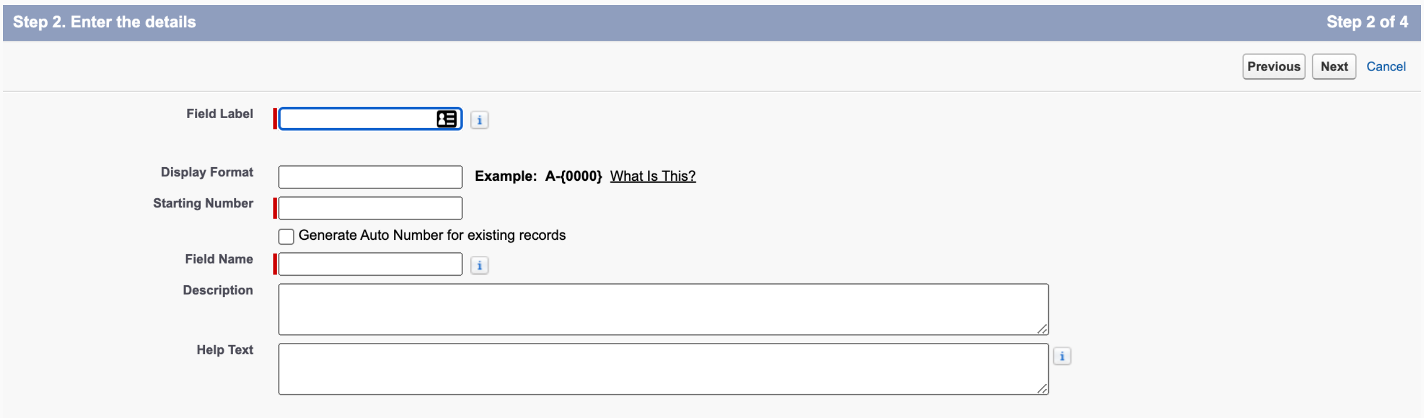
Custom Fields Creation

One of the features in custom objects is the custom field. You can create Custom Fields to add more clarity to business information. To do this from **Setup -> Object Manager -> Open any object -> In Sidebar click Fields & Relationships -> Create New**



Step 1: There are multiple Data Types that are available in Salesforce, once you pick the type of information that the custom field will contain for eg: Email you can proceed and create the Custom Field.

Step 2: Here you need to enter the label, Field Name, etc, and mark if this field is mandatory or not. You also can say if this field can have duplicate value.



Step 3: In this step, you assign which user profile needs to view the field. You can also make the field Read-only for certain user profiles.

Step 4: In the last step, you need to mention which page layout needs to have the field displayed.

As we saw in Step 1, custom fields can be created to store information that is exclusive to your company. You can also create a custom relationship field to connect your custom object to a Standard object in Salesforce. Custom objects by default include the below list of Standard fields:

Field	Description
Created by	User name of the person who created the Object
Currency	If multiple currency is enabled, the currency of the custom object's record
Division	You can segment the organization's data into divisions. Custom objects are assigned to the Global Division by default if there is no relationship to other records. If there is a master-detail relationship then the object inherits.
Last Modified By	User name of the person who last edited the Object.
Name	Unique id for the object, this should be a meaningful name for the object.
Owner	The owner of the custom object is specified here.

Reference Links

https://trailhead.salesforce.com/en/content/learn/modules/data_modeling/objects_intro

https://www.salesforcetutorial.com/salesforce-objects/#:~:text=Standard%20Objects%3A%20The%20objects%20provided,us%20are%20called%20custom%20objects.

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