Travel Approval App: From Idea to Application in 1 day

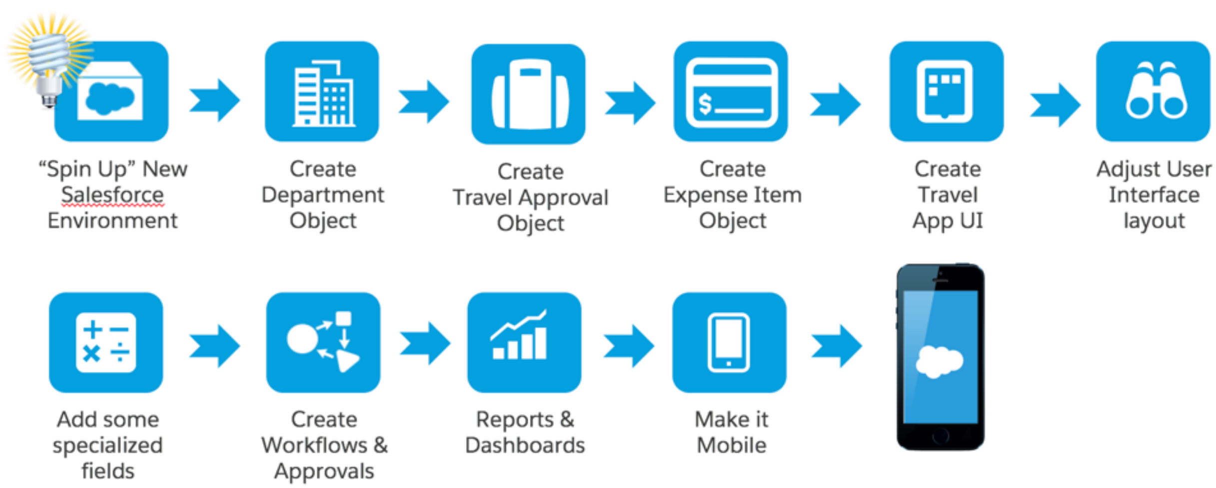
Introduction

Due to some recent abuse of un-warranted travel, your agency has decided to implement a travel approval process. Up until now, the agency had a travel approval process in place but it was based on emailing Excel files around. It also had no central repository and enforcement of the process resulting in no ability to report on travel approval activities across the agency. The agency needs to create an application where:

- Each employee must submit an electronic request in the system for future travel
- Each request includes a list of estimated expenses for airfare, hotel, rental car, etc…
- Each request must be approved by the employee's manager and all out-of-state travel must be approved by a travel coordinator
- Managers need reports and dashboards to track key travel request trends and KPIs

In addition, employees and managers must be able to access their travel requests, approvals, and dashboards via their tablet or smart phone while out of the office.

By the end of the workshop, you will have a working prototype of the new travel approval application. In this workshop, we will follow the following steps to build out the travel approval application.



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Sign up for a new Salesforce Developer Edition (DE) Org and Configure for Lightning Experience

Duration: 15 minutes

In this exercise, you will sign up for your own personal Salesforce Organization (Org) called a Developer Edition or "DE Org" and login with your credentials. Salesforce DE Orgs are fully featured Salesforce environments. They never expire and are free to use.

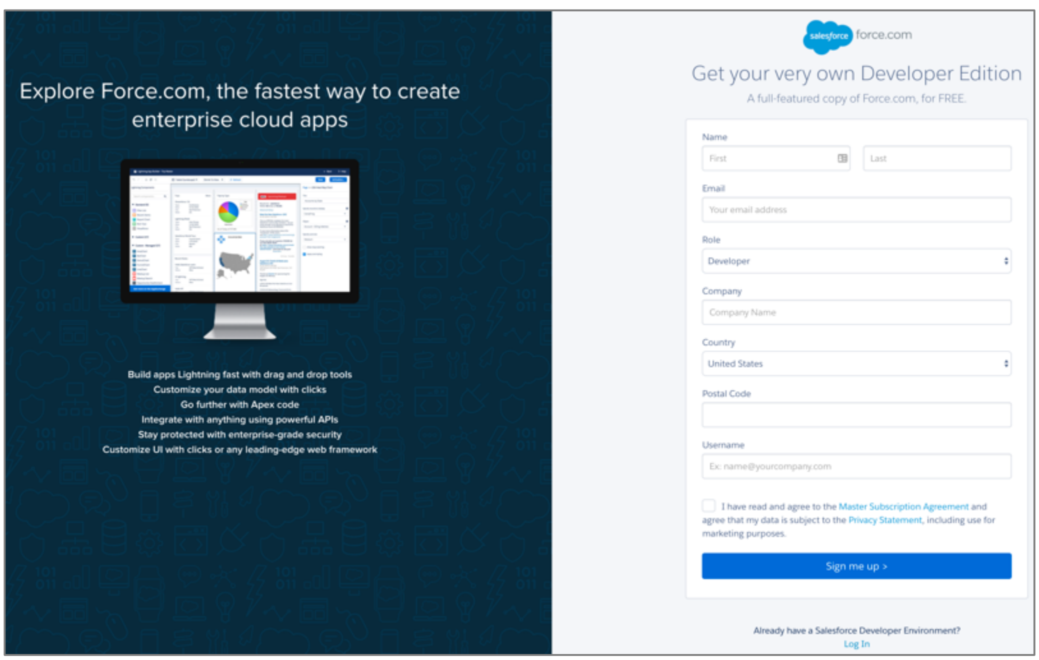
A DE Org lets you instantly start developing, testing and deploying your software-as-a-service application, and you don't need to touch a single server, as they're provisioned in the cloud. The Developer Edition comes with a number of applications pre-installed, including Salesforce CRM applications like Sales, Call Center, Marketing, and Content.

Limits for Developer Edition:

- 5.0 MB of Data Storage
- 20.0 MB of File Storage (attachments)
- 5000 API requests per 24 hours

Sign Up For a Developer Org

1. Open a web browser and go to **https://developer.salesforce.com/signup**



2. Enter the following details in the "Get your very own Developer Environment" signup form
   a. First Name
   b. Last Name

c. Email Address (**Note:** this should be an email address where you can log into during the workshop in order to view your welcome email and link to setup a password.)

d. Company Name

e. Country

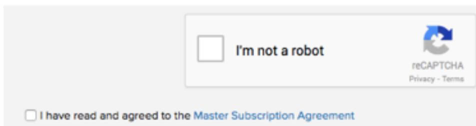
f. Postal Code

g. Write down your user name: ______________________ (example format: **<firstname>.<lastname>@<agency>.workshop**)

Note: This will be your user name for the DE Org. It needs to be in the "form of an email address." We highly suggest that you **DO NOT USE YOUR REAL WORK EMAIL ADDRESS AS YOUR DE ORG USER NAME**.

h. Check the box to agree to the terms of the Master Subscription Agreement

i. Click the "I'm not a robot" CAPTCHA check box

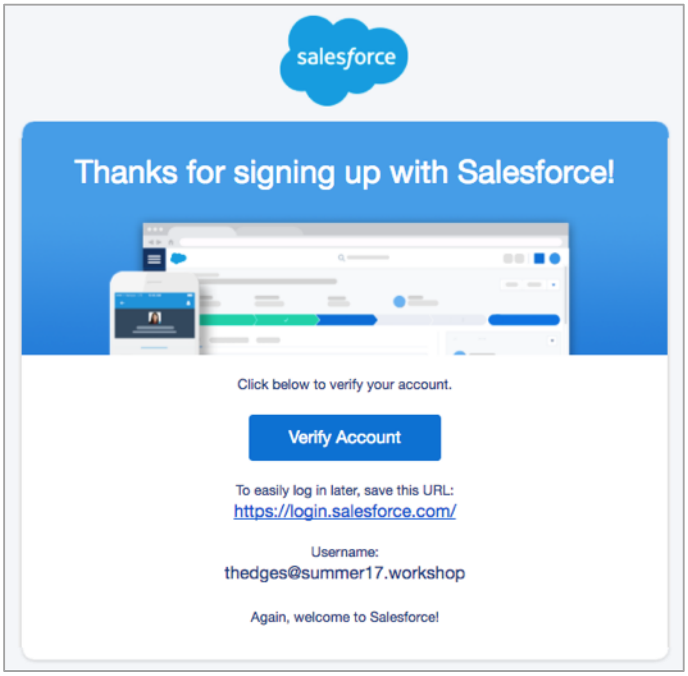


j. Click the **Sign me up** button

3. Next, you should see a screen indicating that you are Almost There!

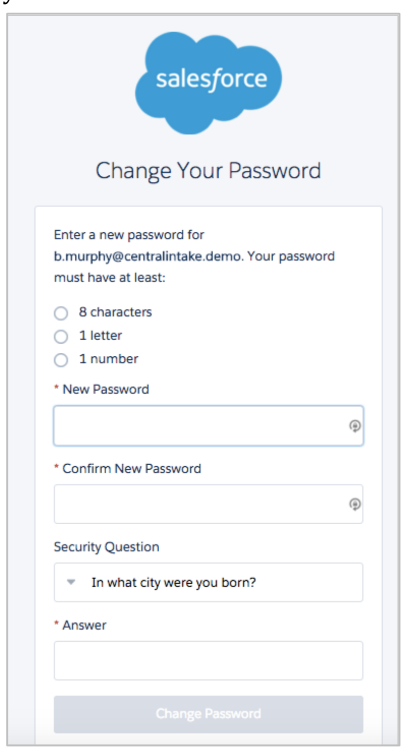
4. Log into your email account that you used above in **step 2c.**

a. You should have received an email that resembles the following:



Note: If you don't see the email, please check your email spam folder.

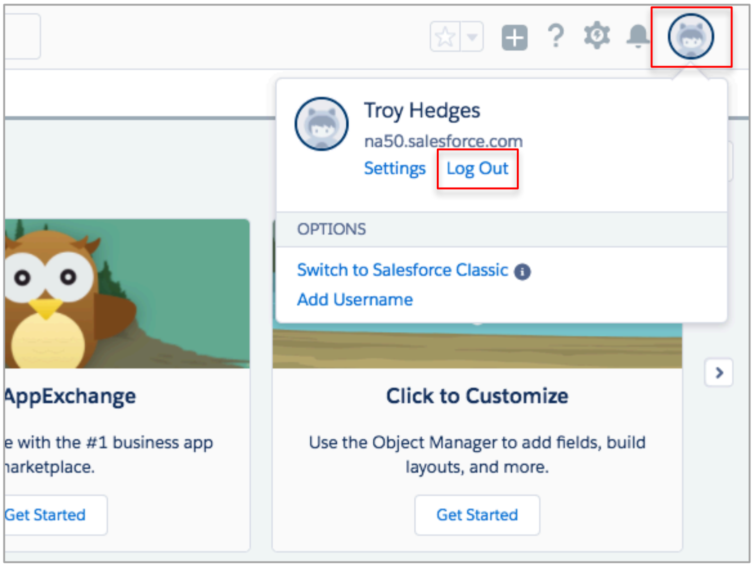
b. Click on the "**Verify Account**" button in the email in order to create your password. If successful, you should see a screen that looks like the following:



c. Enter the form details and click `Change Password.`

d. This should automatically log you into your Salesforce DE Org. Congratulations!

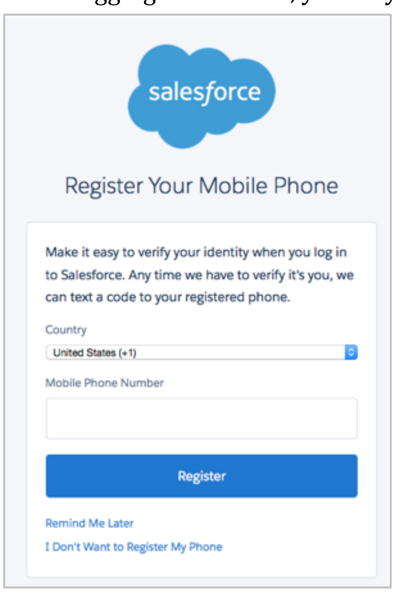
5. Now, we want to show you how to access and log into your DE Org in the future. In the upper right-hand corner, click on the person icon and select **`Logout`** from the popup window.



a. After logging out, you should already be at the Salesforce Login Page where you can re-enter your DE Org credentials. If you did not get directed back to the login page, don't worry. Just open a browser and go to the following URL: [**`https://login.salesforce.com`**](https://login.salesforce.com)

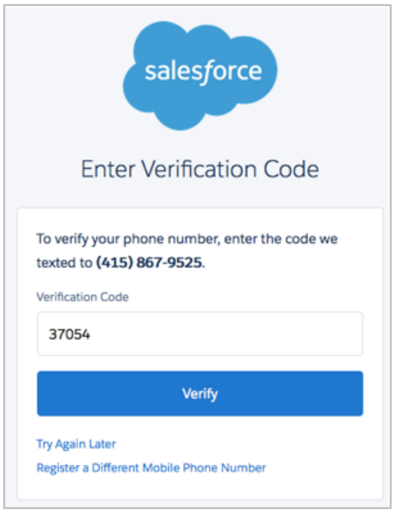
6. Re-login to Salesforce using your DE Org credentials.

   a. Enter your **`[ User Name ]`** & **`[ Password ]`** and click **`Log In`**
   b. When logging in this time, you may see this screen:



This is an example of Salesforce security controls asking you to register for an additional layer of authentication. Since Salesforce is a public cloud you can access our login page from any web browser or mobile device. If you log into Salesforce in the future from an IP address that we have not recognized since the last time you accessed your account, Salesforce will ask you to authenticate with a verification code that will be sent to your mobile phone. Pretty cool, eh? (By the way Salesforce will even let you specify an IP range for your organization so that you will only accept people logging in from an IP that falls within the range you specify.)

c. Enter your mobile phone number and click **`Register`**
d. You should see another screen asking you to enter your verification code as follows:



The verification code will be sent to your mobile phone via txt message. Enter the verification code and click **`Verify`**.

7. Congratulations once again! You should now be logged into Salesforce and situated on the **`Setup`** Screen.

Download Workshop Lab Files

Access the following URL to download the files you will need during the workshop. Unzip to a directory of your choice on your computer.

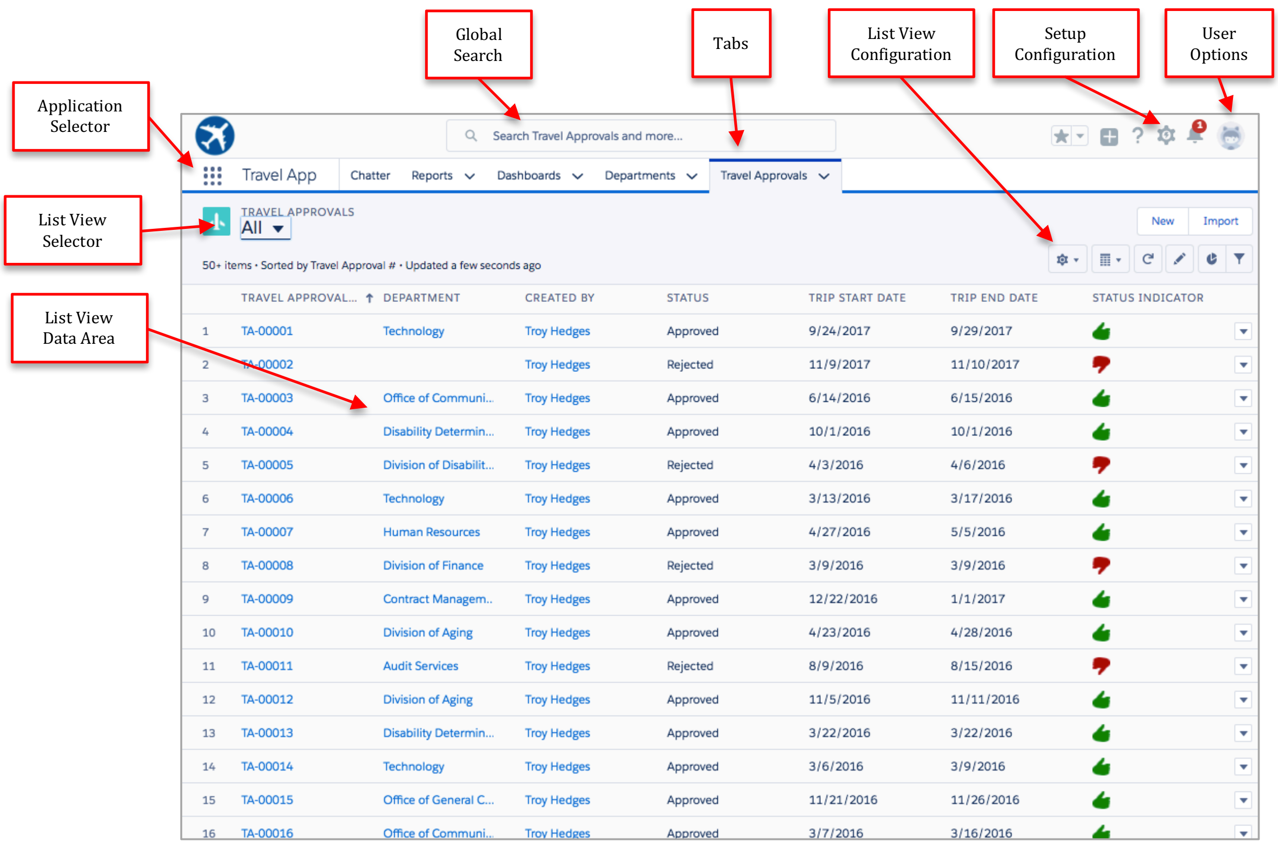
http://bit.ly/TravelAppWorkshop

Salesforce Terminology & Navigation: Orientation to the User Interface

Duration: 15 minutes

When learning a new application, platform or development paradigm for the first time, two of the most challenging things to learn are (1) Terminology and (2) Navigation. This following section will give you the tools you need to understand Salesforce terminology so you will be able to navigate and complete the subsequent exercises.

Below is a screenshot of the Travel Approval application you will build in this workshop. Highlighted are the main functional areas you will use in this workshop and a description of each is provided below.

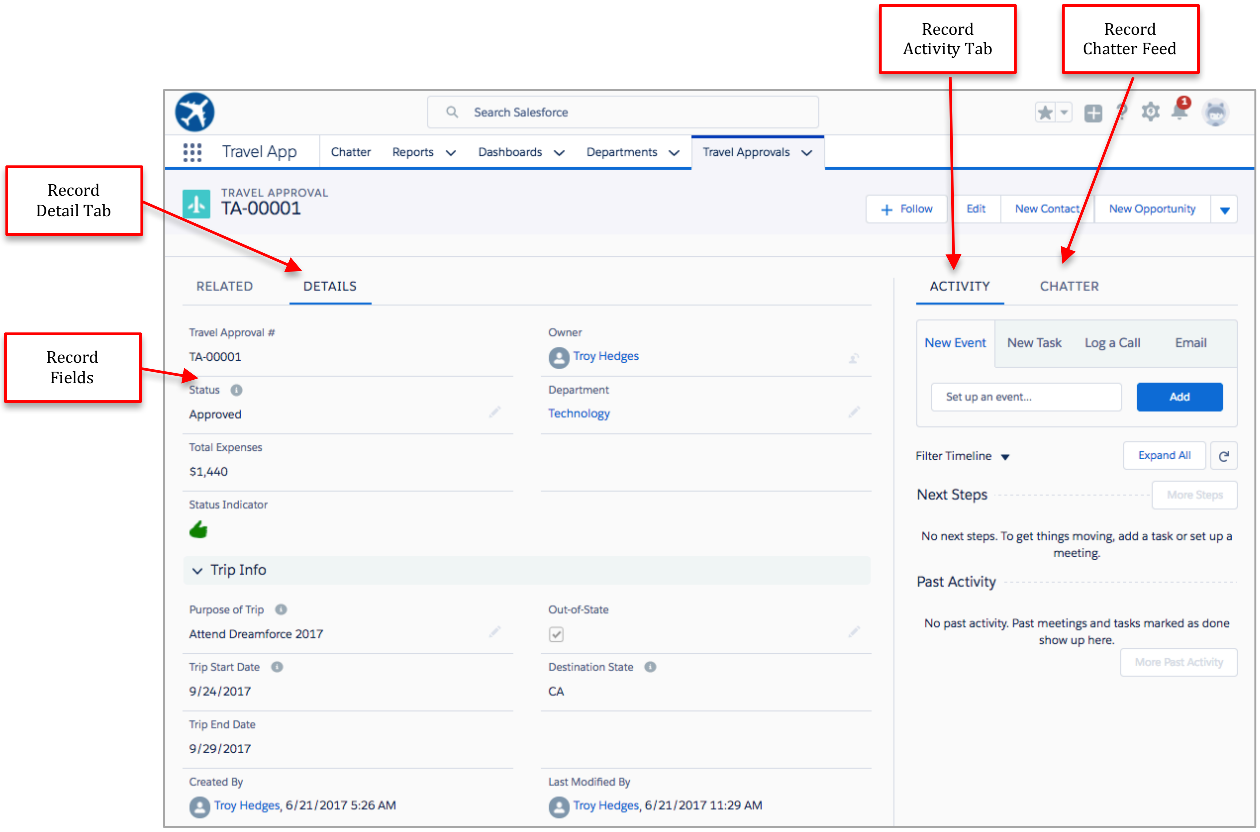


Salesforce user interface functional areas (starting in upper right):

- **User Options** – provides configuration options tied to your user account such as login session and user profile. You can logout of the system or edit your user profile for changing information like email address, password, contact information, time zone, etc…
- **Setup Configuration** – *Setup* is the place where Administrators will spend lots of their time when configuring Salesforce to meet their business needs. This is only provided to Administrators and provides access to all setup capabilities such as creating new applications, creating new custom objects and custom fields, creating users and user profiles, configuring page layouts, and many other options.

- **Global Search** – Salesforce has a rich Google-like search engine for easily finding information throughout the system. Salesforce will search across all data in the system and provide a response list that is grouped by object types for easily finding the information you need.
- **Application Selector** – Salesforce supports the ability to create many applications and provide access to users of the system via the built-in security model. A user can use the application selector to switch between applications that he/she has been given access to. In the workshop, we will be creating a new application that will be available in this menu.
- **Tabs** – a Salesforce application is made up of one or more tabs. When a user switches to a new application, the tabs will adjust based on which tabs have been configured for that application. Each Tab can be thought of as a logical business entity like an Account (Business), Contact (Person), Travel Request, Report and so on. The Tabs represent "data objects" or things you track in your business. Some data objects are delivered out-of-the-box in Salesforce and some will be "custom objects" that you create.
- **List View Selector** – A list view is a set of search conditions that display records that match the search conditions. For example, a view of contacts that have "Birthdays This Month" would filter your list of contacts based on a search for birthdays falling on a day in the current month. By default, Salesforce.com includes a number of views for each screen Tab/Object. The List View Selector allows you to switch between the list views that have been configured for that object.
- **List View Configuration** – this option provides capabilities to create new list views or modify existing list views. You can change such options as the title, the filter criteria, or the columns to show in the data table section. You will create a custom list view in this workshop to show open travel approvals.
- **List View Data Area** – this is the table area that shows all records that match the list view selected. As mentioned above, the list view will define the filter criteria and columns to show for the records that it finds.

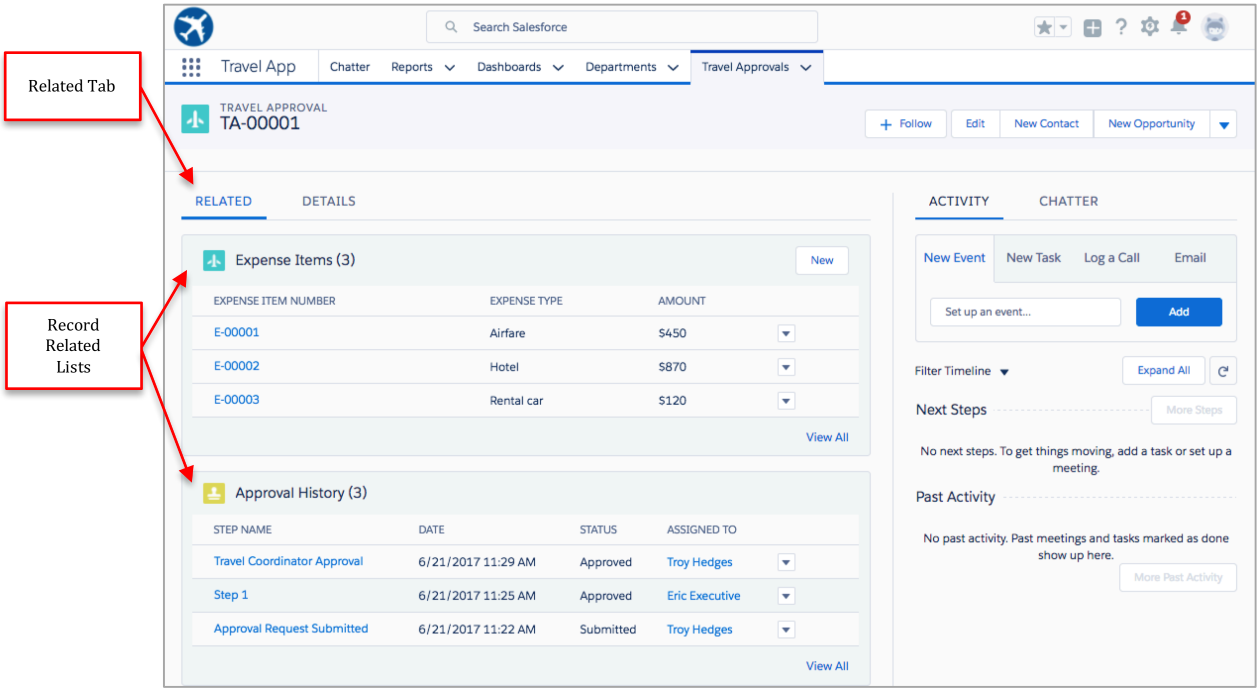
The typical interactions a user has with the Salesforce interface is to use the tabs to focus on the type of object you are interested in. You use configured list views to filter the records associated with that object where a record can be thought of as a row in a database. Then in the list view table section, you click on a record to drill in to the details of that record. Below is a sample screen that shows the details of a record.



Salesforce record detail user interface functional areas:

- **Record Detail Tab** – this tab shows the actual field information for the chosen record. The fields and field sections shown on this page can be configured by administrator and different views (i.e. page layouts) can be configured for different users. Thus, one user could have a different view of the field level data than another user.
- **Record Fields** – this is area where all fields are shown for the current record. As mentioned above, the fields shown on this area are totally configurable and different page layouts can be created to show different views to different users.
- **Record Activity Tab** –this is tab for users to enter activities such as logging a call, creating new tasks, or logging a meeting. This section also include a chronological timeline of the activities that have occurred and those that are scheduled in the future.
- **Record Chatter Tab** - Chatter is Salesforce's social collaboration tool that is native to the platform. With Chatter, you can collaborate with people both inside and outside your organization on individual records of data (e.g. Cases, Contacts, Referrals) and on common topics of interest using Chatter Groups. The Chatter "feed" allows a user to post comments, @Mention co-workers, add files, initiate polls, and perform "actions" such as creating a note, adding a task, updating a field, or sending an email. In addition, you can "follow" a record of data much the same way you can follow your favorite sports team on Facebook. When you follow a record in Chatter, anytime the record is updated, an entry is made on the Chatter "feed" so followers are instantly aware of the updates related to that particular record.

Salesforce includes a rich data modeling tool that allows you to define custom objects, custom fields, and relationships between objects. For example, you can relate objects in parent-child relationships such as an Expense Report related to child Expense Line Items. When viewing records in Salesforce, you have option to view the child objects related to your record. These related child objects are referred to "related lists" in the user interface. Below is screenshot of record where the related lists are being shown.

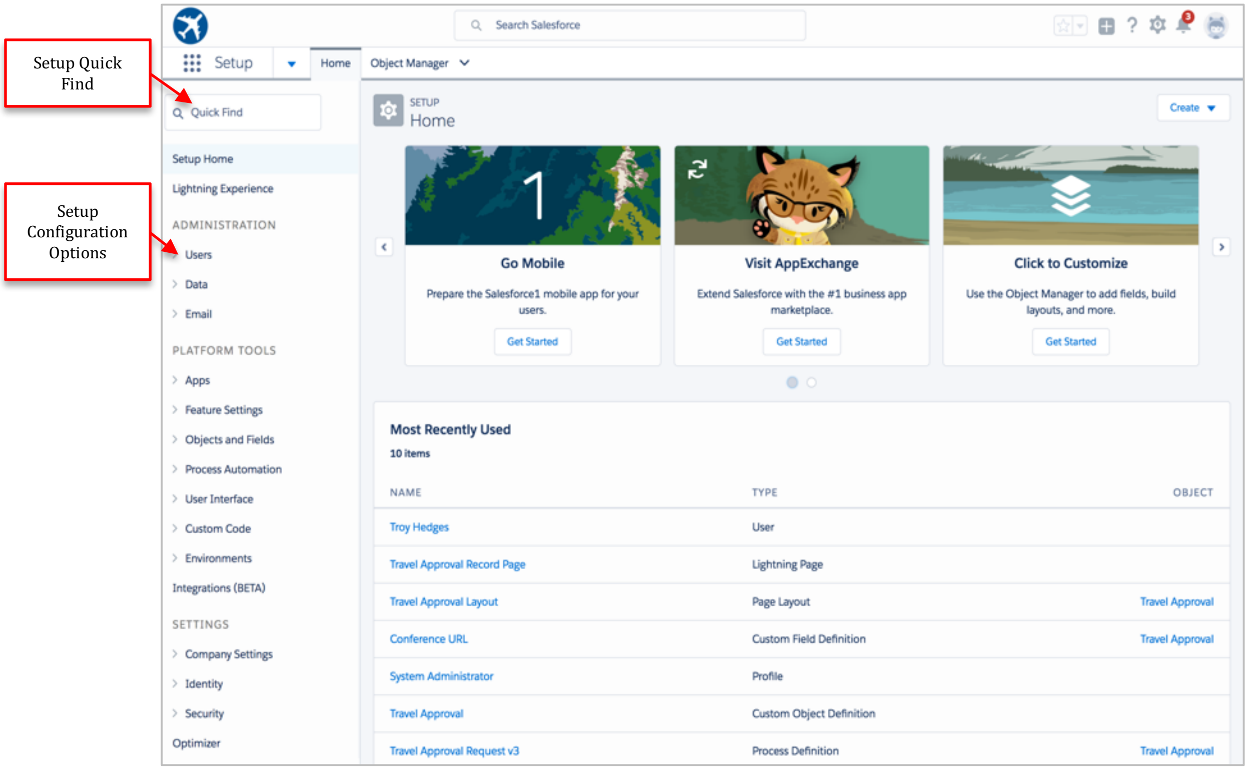


Salesforce user interface functional areas:

- **Related Tab** – click this tab to see the related lists (i.e. child objects) that are linked to this record
- **Related Lists -** related lists are a set of (child) related records associated, in this example, to the travel approval record you created. The Related List objects like (expense items, notes, approval history) have a relationship in the data model (schema) to the Travel Approval object. Related lists of records usually have either a 1:M, M:1 or M:M relationship with the parent object.

And lastly, the primary activities in this workshop is configuring Salesforce to create the Travel Approval application. Configuring Salesforce for creating new applications, objects, fields, business rules, approval processes, etc… are all done through the Setup configuration menu. You access the Setup menu using the gear icon in top-right of the screen and then selecting Setup Home. Below is sample screen of the Setup options with brief description.

Setup Configuration



Salesforce user interface functional areas:

- **Setup Configuration** - *Setup* is the place where Administrators will spend lots of their time when configuring Salesforce to meet their business needs. This is only provided to Administrators and provides access to all setup capabilities such as creating new applications, creating new custom objects and custom fields, creating users and user profiles, configuring page layouts, and many other options.
- **Setup Quick Find** – setup includes many configuration options and sometime it can be hard to remember where all the options are. Setup includes a "quick find" option where you can type in substring of setup option you want to access and it will filter the list so you can easily access it. ***Tip***: ***when using quick find, do not hit enter after typing in the setup item you are looking for.***
- **Setup Configuration Options** – down most of the left-hand side of the screen are all the setup options. This is where you do majority of the setup configuration in Salesforce. In the workshop, instructions will be provided on what configuration option to access to perform a given setup operation (i.e. create an object, create an approval process)

Create an Application, Object & Fields

Duration: 50-60 minutes

The Salesforce App Cloud makes it easy to build custom apps and databases in the cloud. In this lesson, you learn how to build a basic app with just a few clicks and then enhance the underlying database as you go along. You also learn how to validate data entry, create different field types and load data.

At the heart of this Travel Request app is what you want to manage and track: travel requests and associated expense estimates for your future travel. Remember that your Travel App will be associated with a group of tabs that expose different objects. For example one tab may be Departments to store all Department names, cost center codes, etc… You would also have another tab to access your Travel Approval object which could contain fields to store record id, trip purpose, start date, end date, expense totals, and so on. On Salesforce App Cloud, these data objects are called "custom objects." If you're familiar with databases, you can think of them as a table.

An object comes with standard fields and screens that allow you to list, view, and edit information about the object. But you can also add your own fields to track or list just about anything you can think of. When you complete this tutorial, you'll have a working app with its own menu, a tab, and a custom object that tracks Travel Requests, as well as screens that allow you to view and edit all of the associated information.

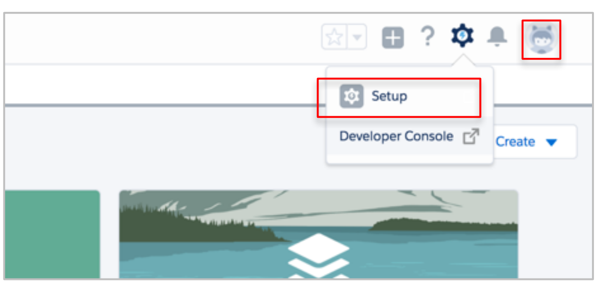
Build the Travel Request App

If you are not logged in to your Salesforce workshop environment:

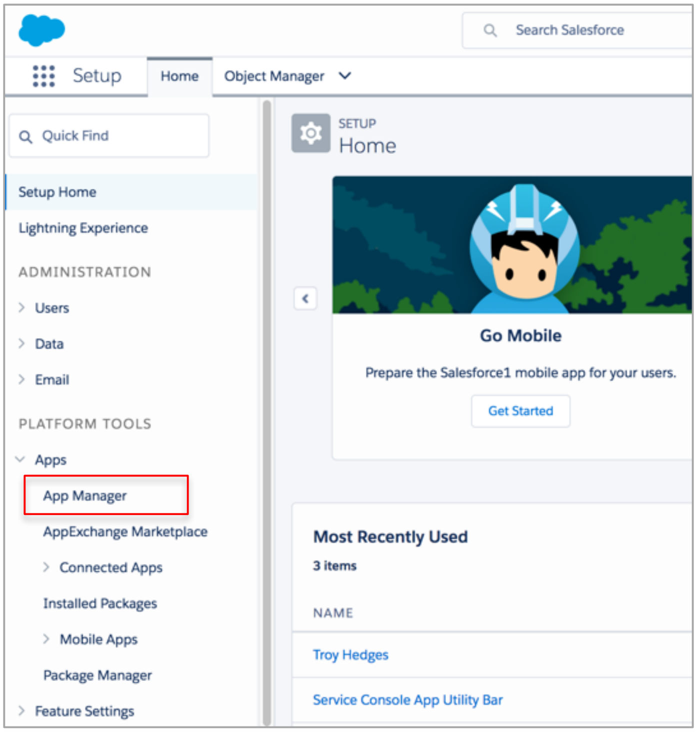
a. Launch your browser and go to https://login.salesforce.com
b. Enter your user name and password and click `Log In`

The first thing we need to do is create a Travel Approval app that provides us a view in to Salesforce of our specific travel related objects which we will create soon. Remember that a Salesforce application is a grouping of tabs that give you access to corresponding object data.

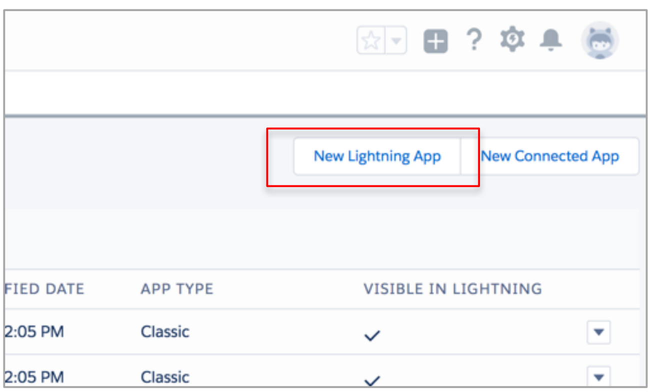
1. In upper-right of main window, click the gear icon and then **Setup**. This provides us access to all the setup options in Salesforce.



2. In left-hand side of main window, click on **Apps > App Manager**.



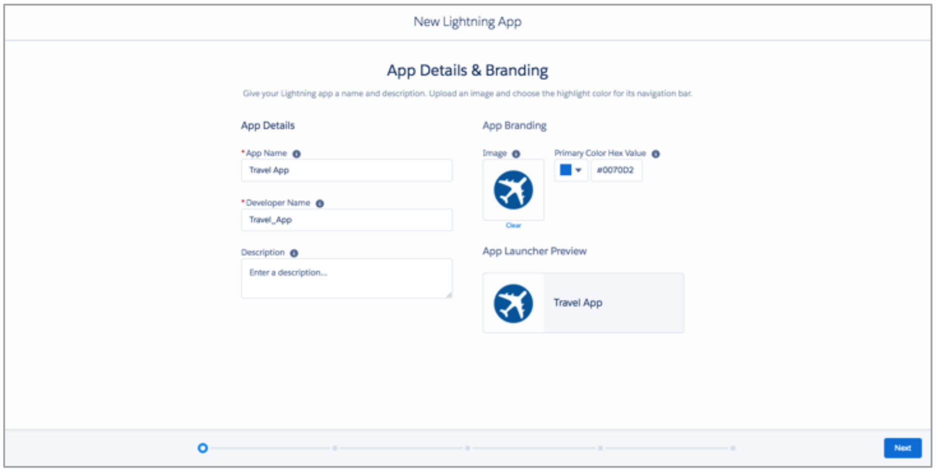
3. Click **New Lightning App** in upper-right.



4. On the "App Details & Branding" window, enter the following:

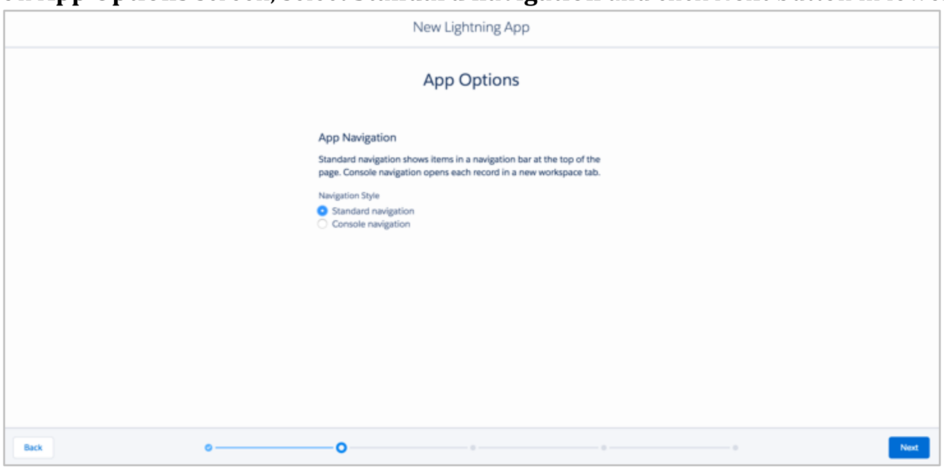
Parameter	Value
App Name	Travel App
Developer Name	Travel_App (this will automatically get set when you tab out of the App Name field)
Image	(set this to the travel.png image you downloaded as part of your workshop files)

Your screen should look like the following:

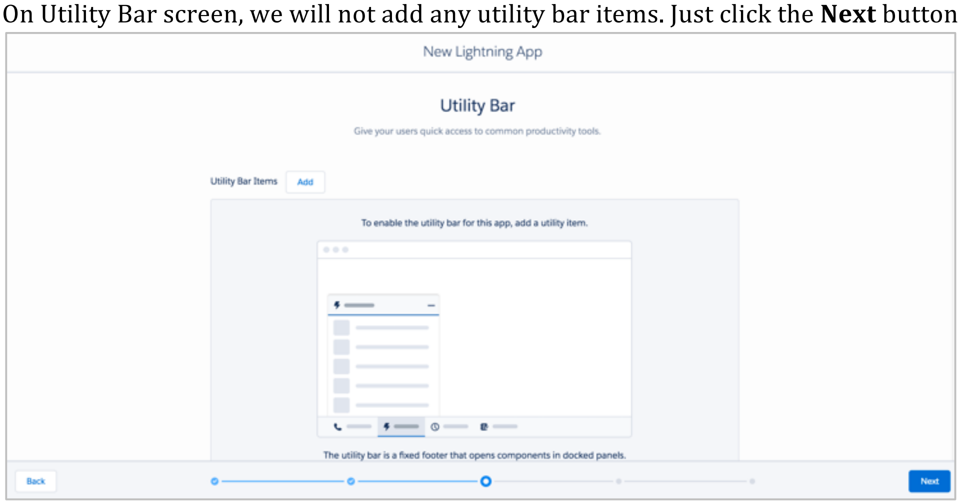


Click **Next** button in lower-right.

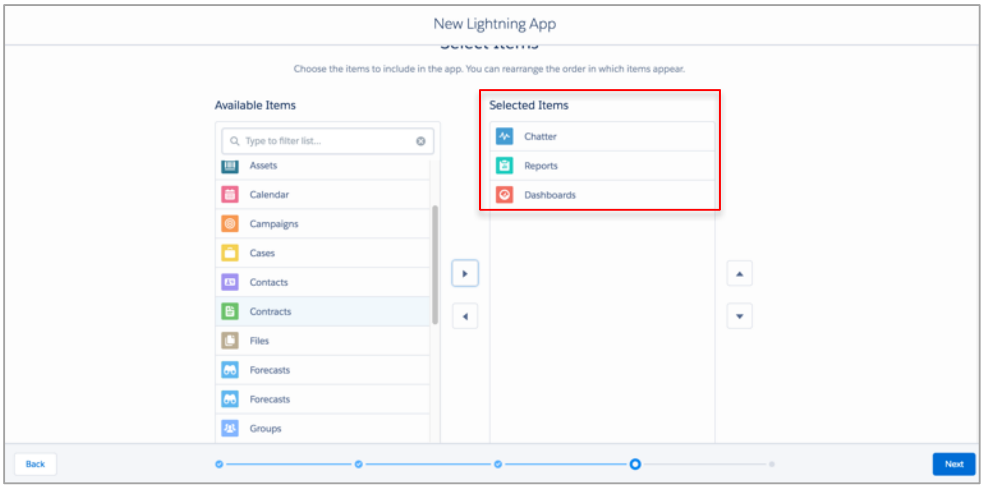
5. On **App Options** screen, select **Standard navigation** and click **Next** button in lower-right.



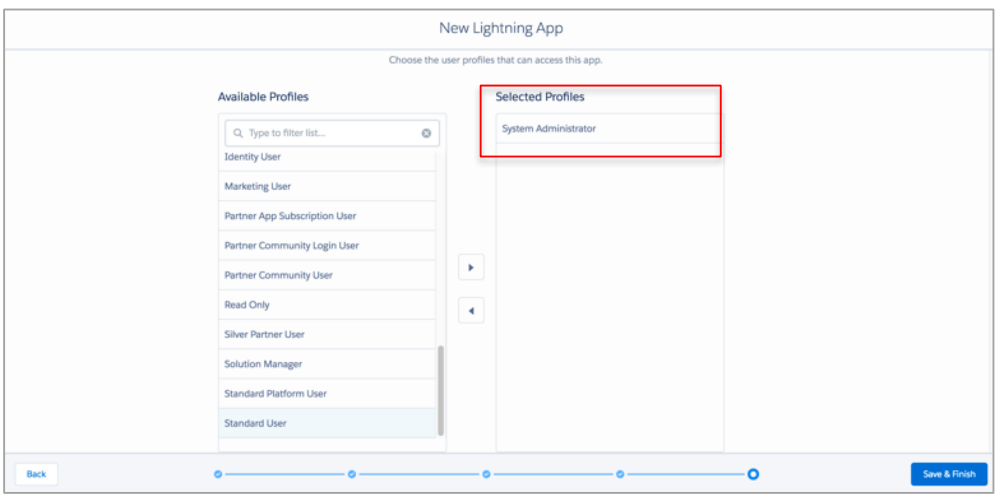
6. On Utility Bar screen, we will not add any utility bar items. Just click the **Next** button in lower-right.



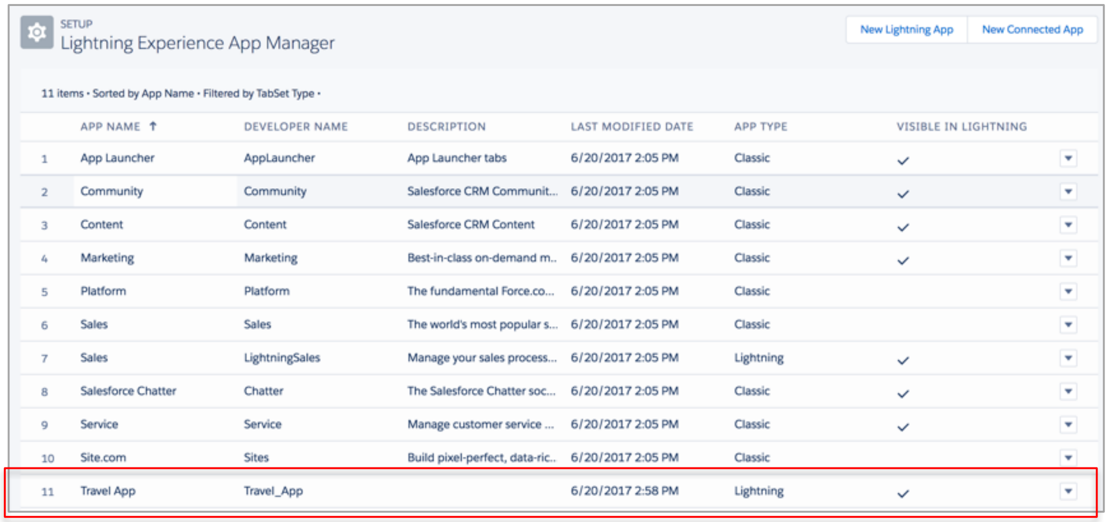
7. On **Select Items** screen, select the following items from the Available Items side and move them over to the Selected Items side: **Chatter, Reports and Dashboards**. Your screen should look like the following. Click the **Next** button in lower-right.



8. On the **Assing to User Profiles** screen, select **System Administrator** like the following screen. Click **Save & Finish** button in lower-right.



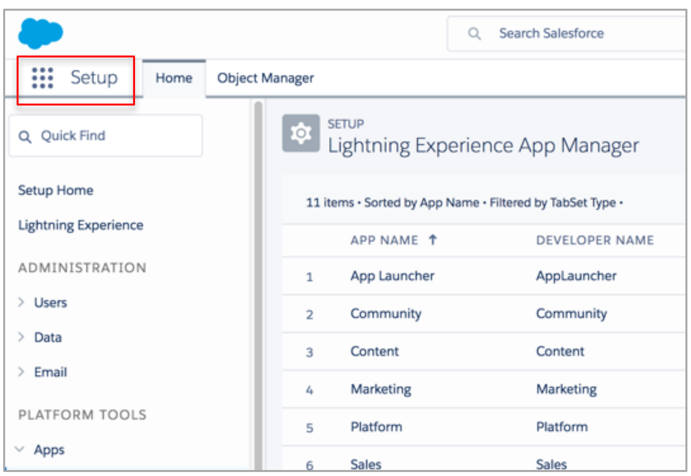
9. You should now have a new **Travel App** app at the bottom of your applications screen like the following:



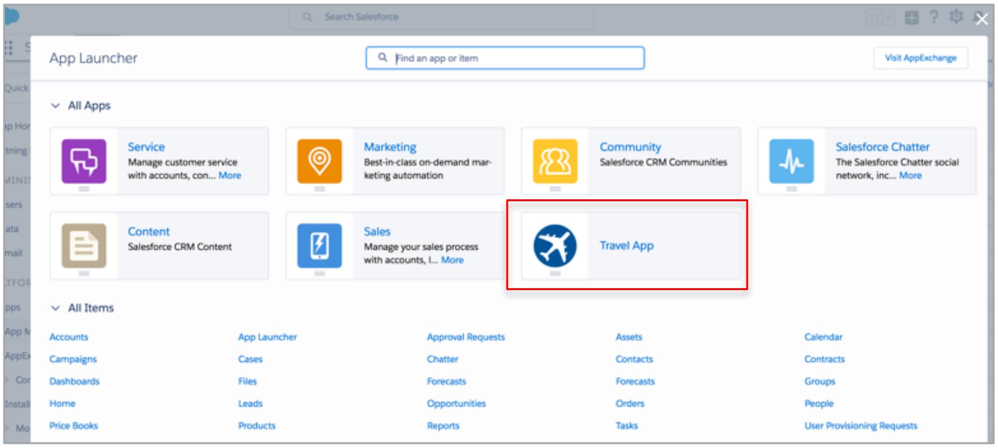
	APP NAME	DEVELOPER NAME	DESCRIPTION	LAST MODIFIED DATE	APP TYPE	VISIBLE IN LIGHTNING
1	App Launcher	AppLauncher	App Launcher tabs	6/20/2017 2:05 PM	Classic	✓
2	Community	Community	Salesforce CRM Communit...	6/20/2017 2:05 PM	Classic	✓
3	Content	Content	Salesforce CRM Content	6/20/2017 2:05 PM	Classic	✓
4	Marketing	Marketing	Best-in-class on-demand m...	6/20/2017 2:05 PM	Classic	✓
5	Platform	Platform	The fundamental Force.co...	6/20/2017 2:05 PM	Classic	
6	Sales	Sales	The world's most popular s...	6/20/2017 2:05 PM	Classic	
7	Sales	LightningSales	Manage your sales process...	6/20/2017 2:05 PM	Lightning	✓
8	Salesforce Chatter	Chatter	The Salesforce Chatter soc...	6/20/2017 2:05 PM	Classic	✓
9	Service	Service	Manage customer service ...	6/20/2017 2:05 PM	Classic	✓
10	Site.com	Sites	Build pixel-perfect, data-ric...	6/20/2017 2:05 PM	Classic	
11	Travel App	Travel_App		6/20/2017 2:58 PM	Lightning	✓

Let's now navigate to the **Travel App** application to see what it looks like so far. We will use the application selector to accomplish this.

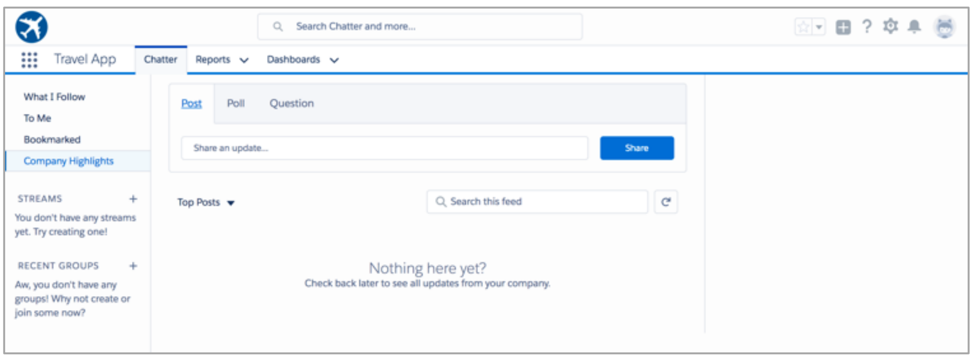
10. In top left of the Salesforce Lightning view, there is an application selector that has 9 dots and looks like following: . Click that and select the **Travel App** application.



11. An application selector window will pop-up. Click on the **Travel App** application to select it.

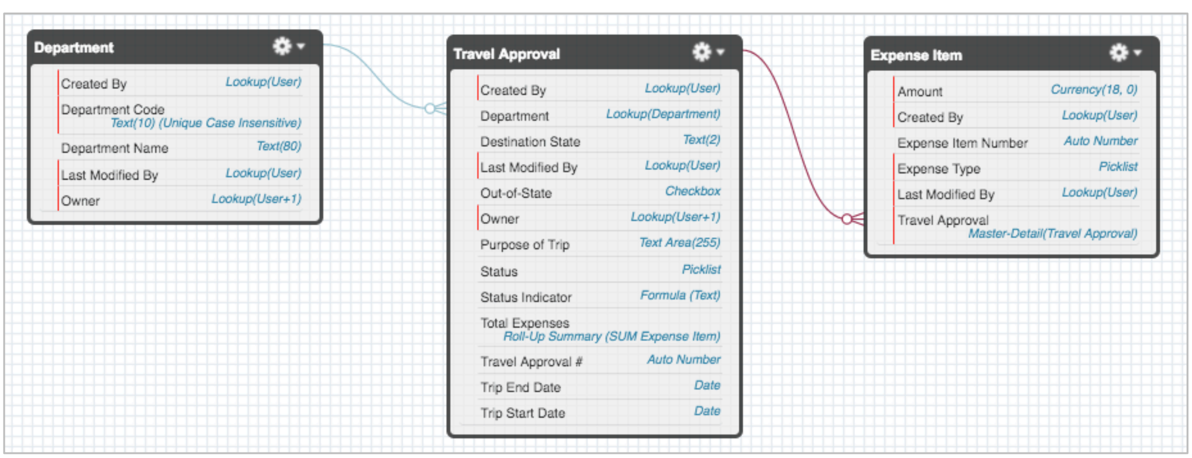


Your window should now look like the following. It currently has 3 tabs (Chatter, Reports, and Dashboards) as you defined during the create application wizard.



We will now create the objects for our data model. We will create the following objects in order:

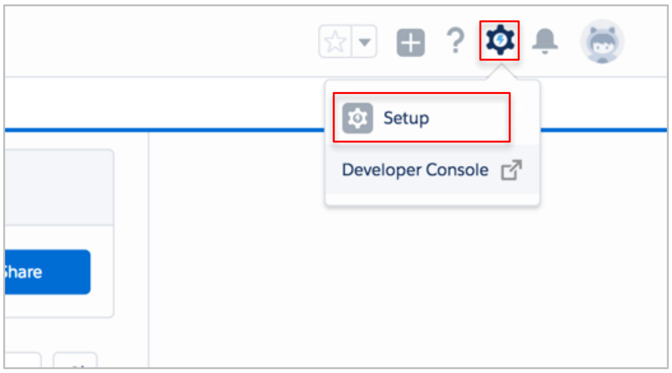
- **Department** - to store information about your departments such as name and cost center code
- **Travel Approval** – this is the main travel approval request object to store information about your future trip needing to be approved. It will include a link to your department and will have 1-to-many child expense items
- **Expense Item** – this is child object to Travel Approval and will contain estimates for the main expenses you expect to incur on your trip (i.e. airfare, hotel, rental car, etc…)



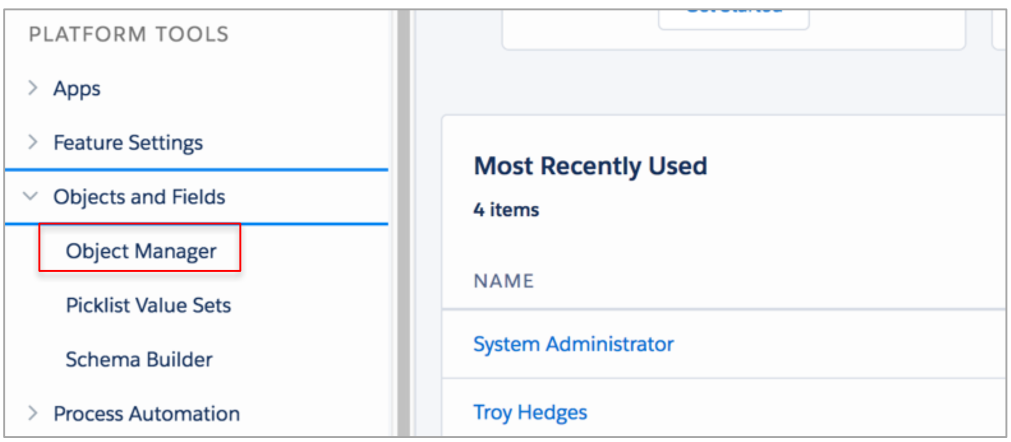
Create the Department object

We will start off by creating the Department object. Follow the steps below.

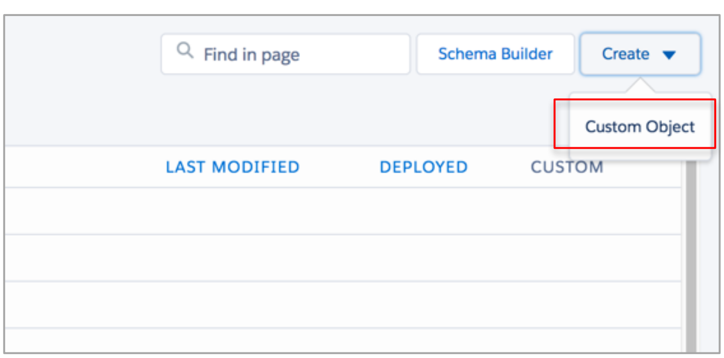
1. In upper-right of main window, click the gear icon and then **Setup**. This provides us access to all the setup options in Salesforce.



2. In left-hand side of main window, click on **Objects and Fields > Object Manager**. This will list out all the objects currently configured in your Salesforce environment.



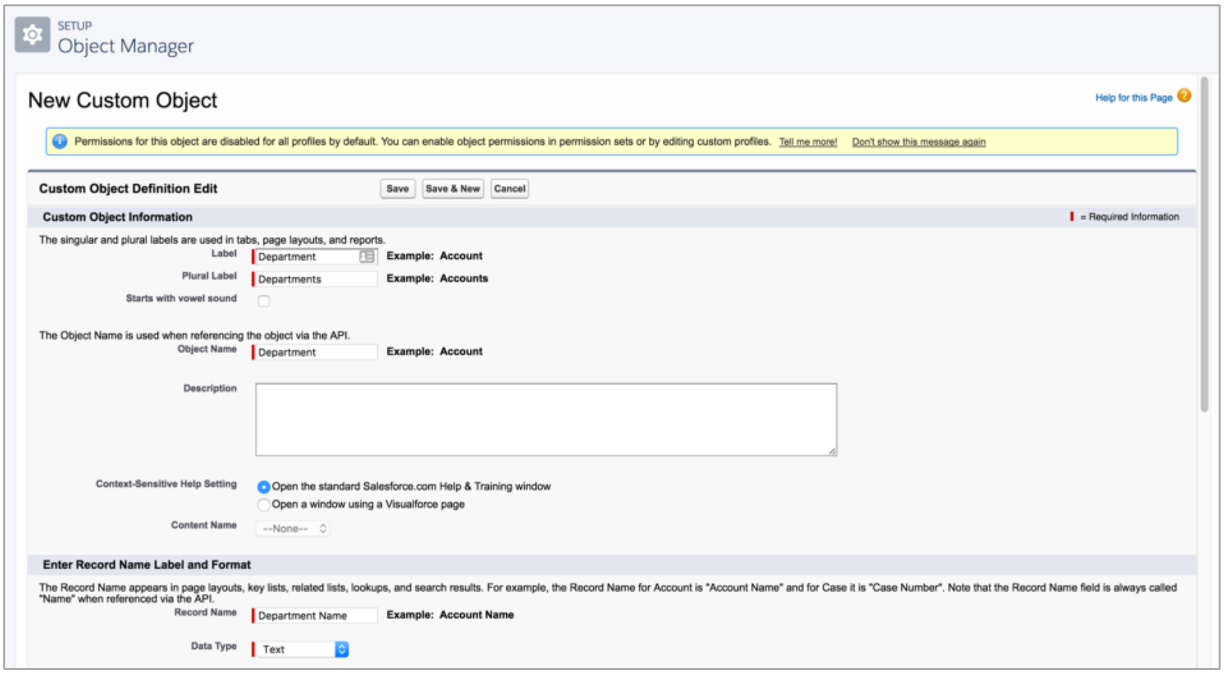
3. In upper-right, click **Create > Custom Object**:



4. We will now create the object to store the Department details. Enter the following values in to the form:

Parameter	Value
Label	Department
Plural Label	Departments
Object Name	Department (this will automatically get set when you tab out of the Label field)
Record Name	Department Name
Data Type	Text

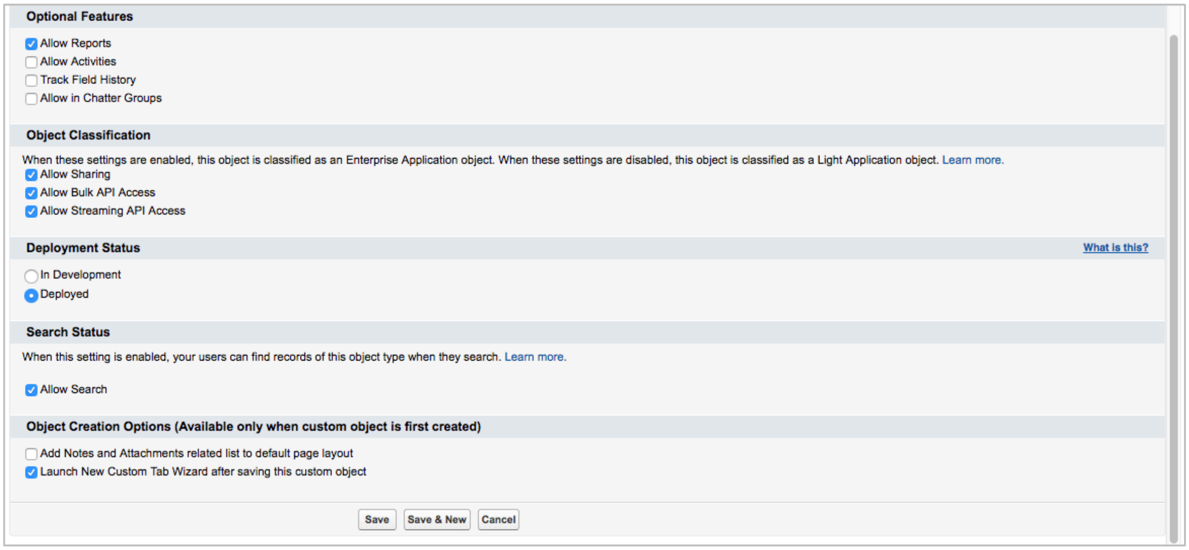
Your window should look like the following:



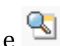
Don't click Save yet! We need to set a few more parameters first. Scroll down and select the following **additional** options:

- Allow Reports
- Allow Search
- Launch New Custom Tab Wizard after saving this custom object **WARNING! Make sure to check this box as it drives the next screens that will show.** If you forget this option, you can create a custom tab by selecting **Object Manager > Create > Custom Tab** to create a new tab later after your object has been created.

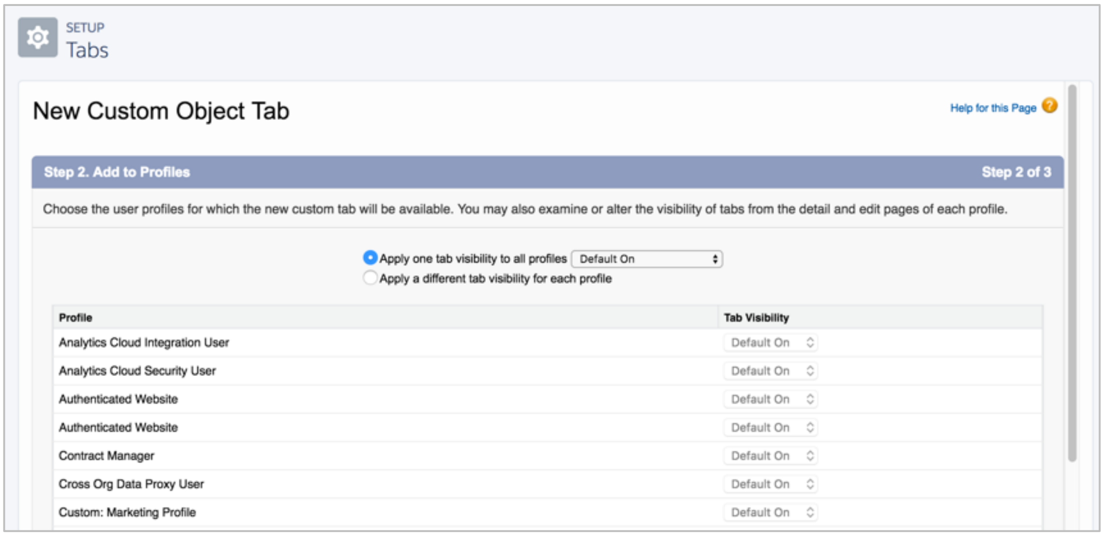
Your screen should look like the following:



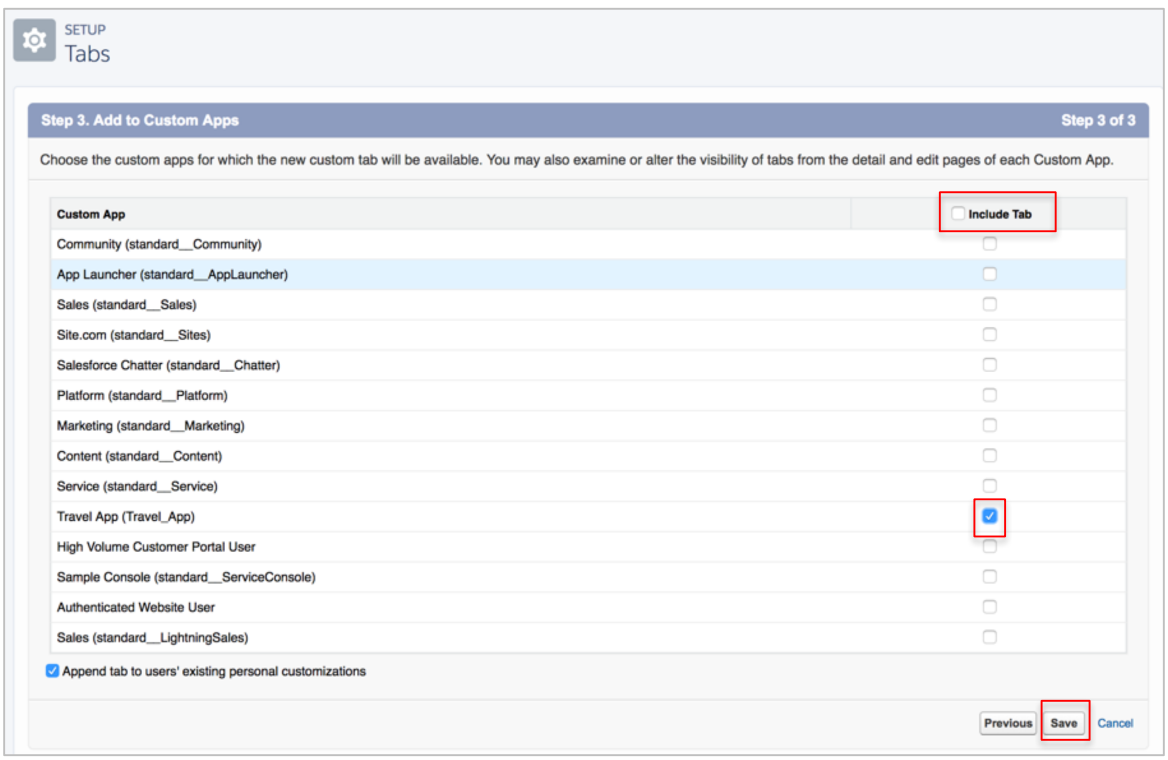
Click the **Save** button.

5. In the next three screens, you define your tab settings. Click on the  icon next to Tab Style field and select the **Books** style. Your screen should look like following. Click the **Next**.

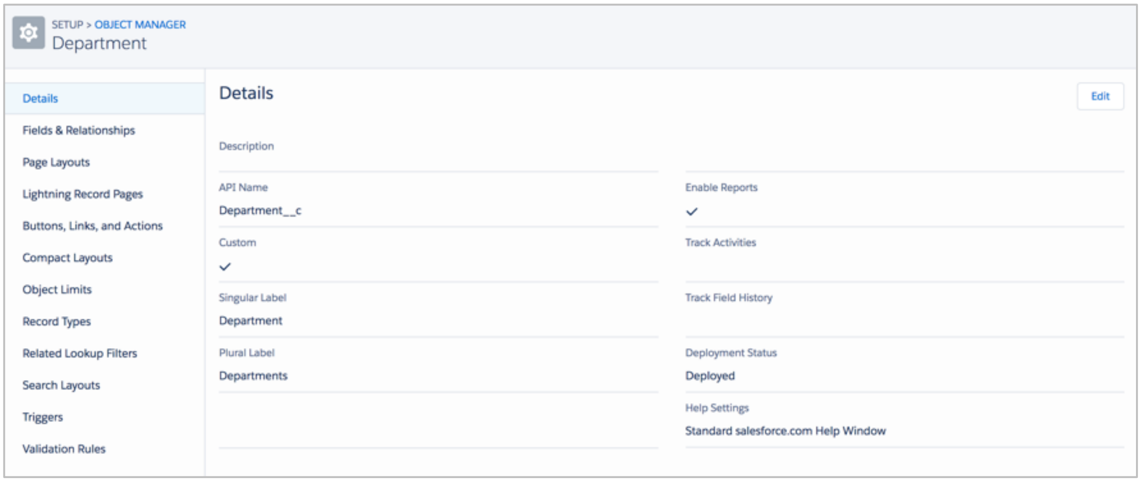
6. You are now presented with the screen that defines which user profiles can see this new tab. Don't change anything and just click the **Next** button in lower-right.



7. In the next window, you are presented with the list of applications to associate this tab to. Click the **Include Tab** option at the top of the column on the right to deselect all apps. Then just select the **Travel Approval** application from the list so that it is the only one selected. Your window should look like the following. Click **Save** button.

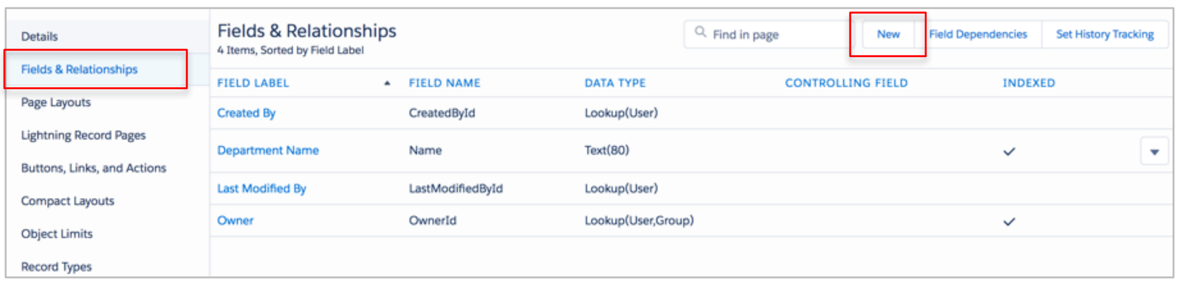


8. You are now directed to the standard object configuration page. This is where you can configure other aspects of the object (new fields, validation rules, etc…).

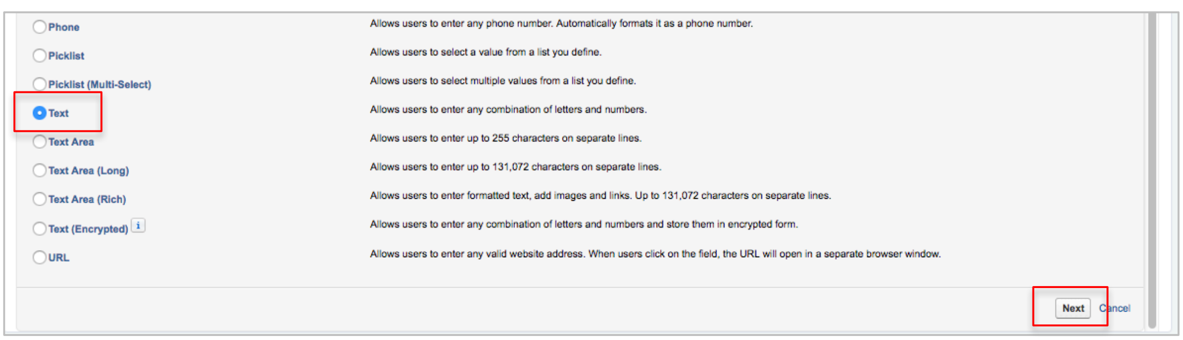


Next we will add one field to the Department object to store the department code.

9. Click on **Fields & Relationships** section on the left, and then click the **New** button to start the wizard to create a new field.



10. On step 1 of the New Custom Field screen, you need to select the data type for this new field. Salesforce supports many data types such as text, numeric, currency, phone, picklists, encrypted. URL and several long or rich text options. Click the **Text** option and select **Next** button.

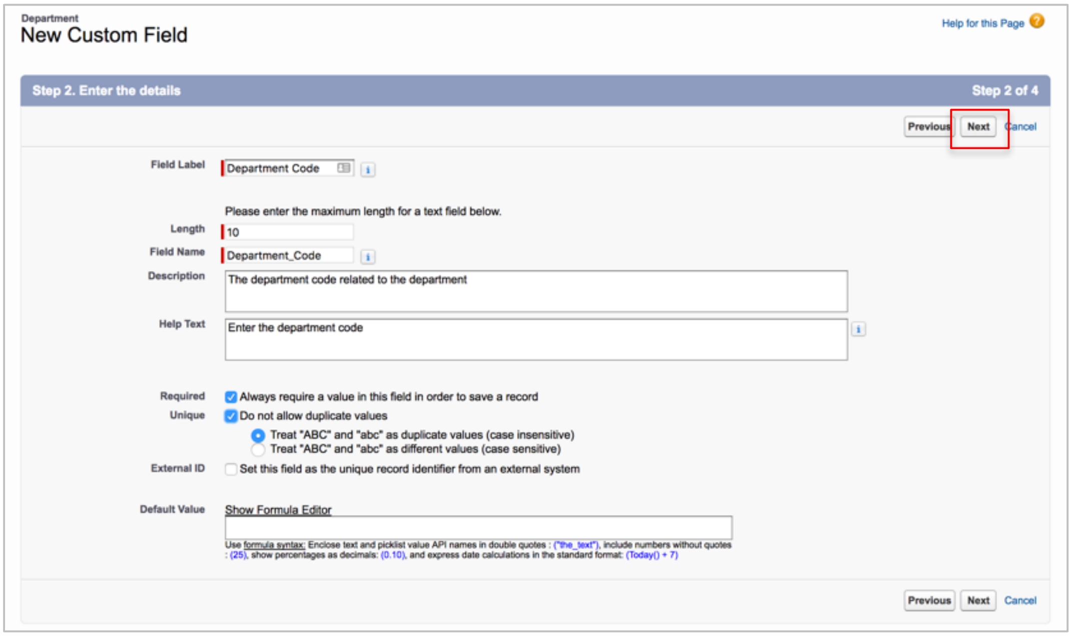


11. On the next screen, we will configure the field settings.

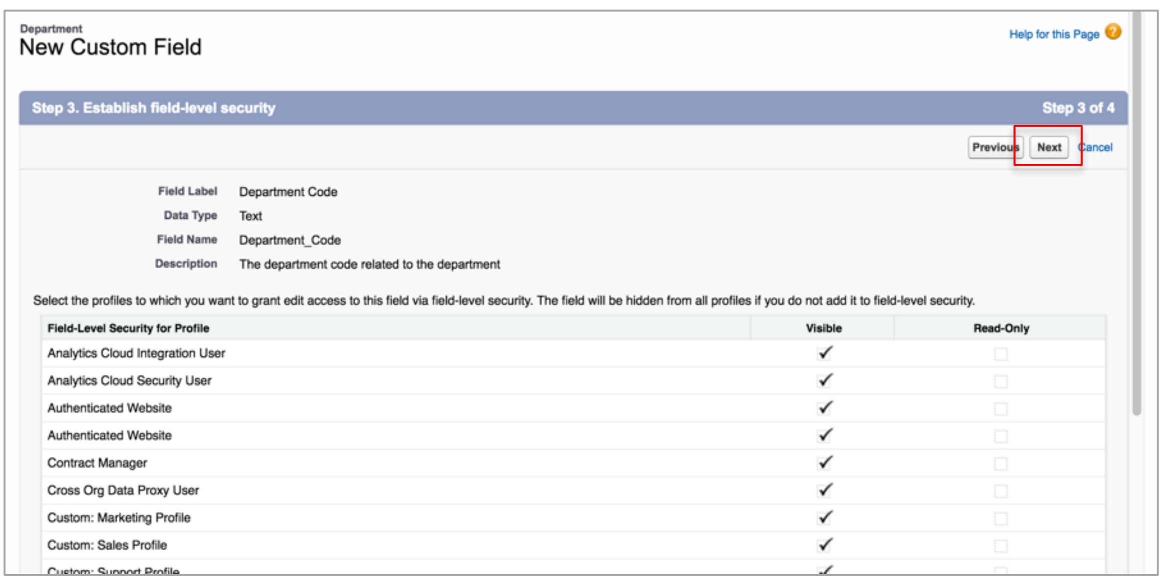
Parameter	Value
Field Label	Department Code
Length	10
Field Name	Department_Code (this will automatically get set when you tab out of the Field Label field)
Description	The department code related to the department
Help Text	Enter the department code
Required	*Select/check this field*

Unique	*Select/check this field. Select the **case insensitive** sub-option.*

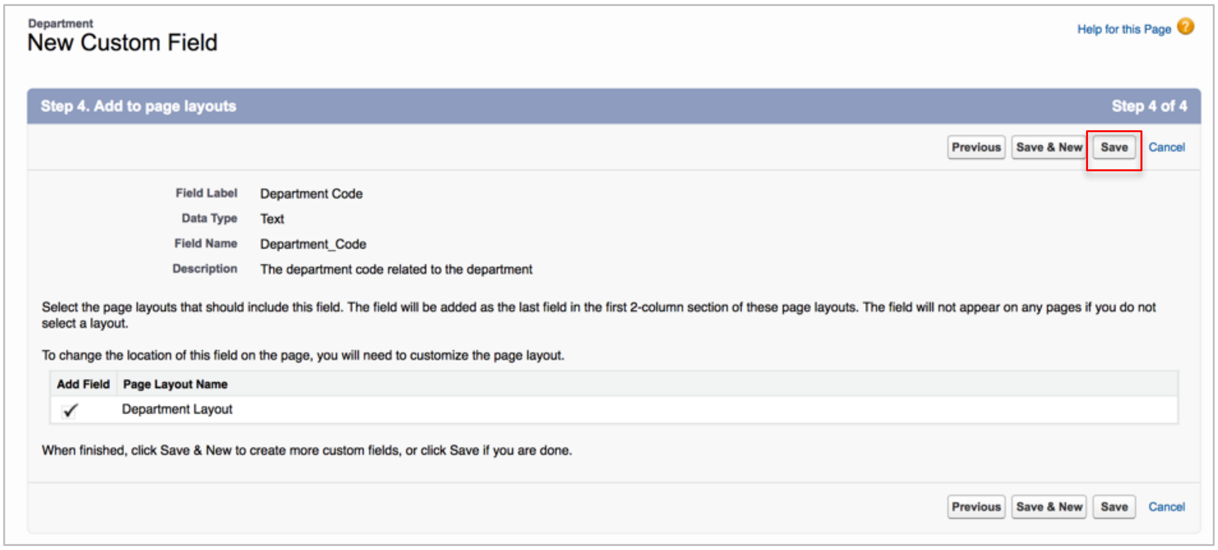
Your screen should look like the following. Click the **Next** button.



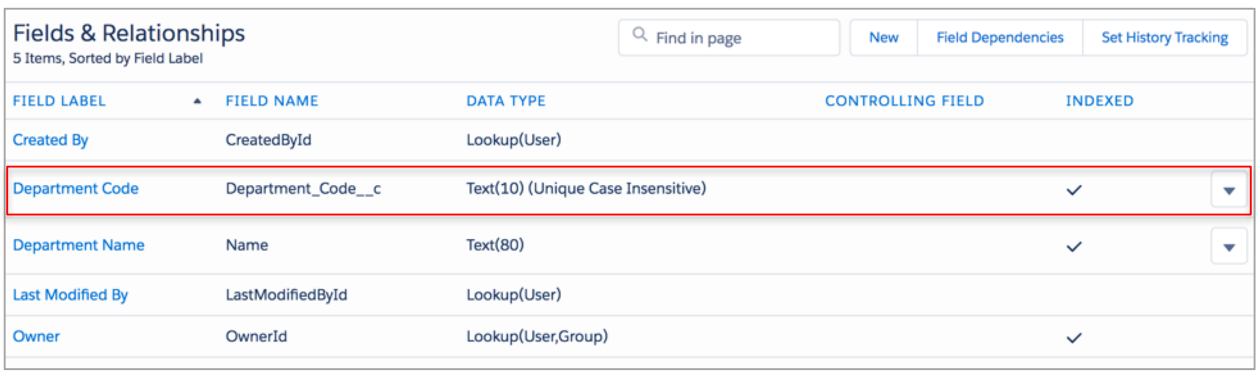
12. The next screen (step 3) sets field level security for this new field you are creating. In Salesforce, you have ability to indicate which user profiles have view, edit or no access rights for the custom field. Click **Next** button to accept the default values.



13. The next screen (step 4) adds the field to a page layout. Accept the default and click the **Save** button.



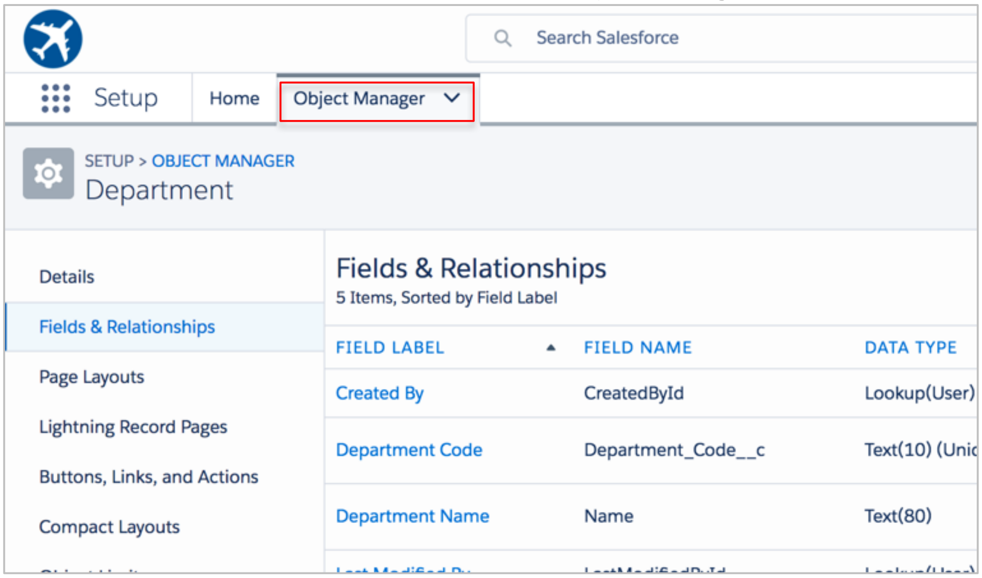
14. You end back on the object configuration screen for the Department object. You can see the new field we created (Department Code) in the **Field and Relationships** section:



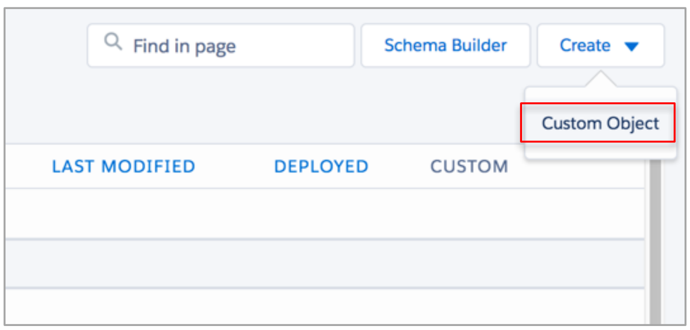
Create the Travel Approval object

We will now create the object to store the Travel Approval requests.

1. Near the top-left part of current window, click on **Object Manager** tab as shown below.



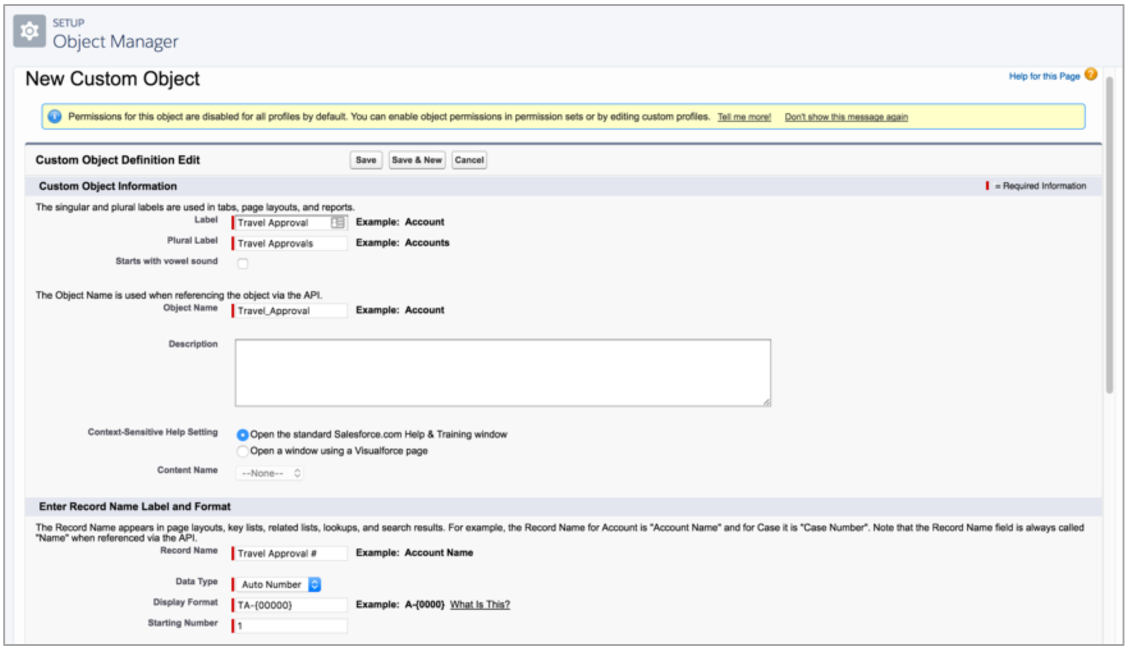
2. In upper-right, click **Create > Custom Object**:



3. Enter the following values:

Parameter	Value
Label	Travel Approval
Plural Label	Travel Approvals
Object Name	Travel_Approval (this will automatically get set when you tab out of the Label field)
Record Name	Travel Approval #
Data Type	Auto Number
Display Format	TA-{00000}
Starting Number	1

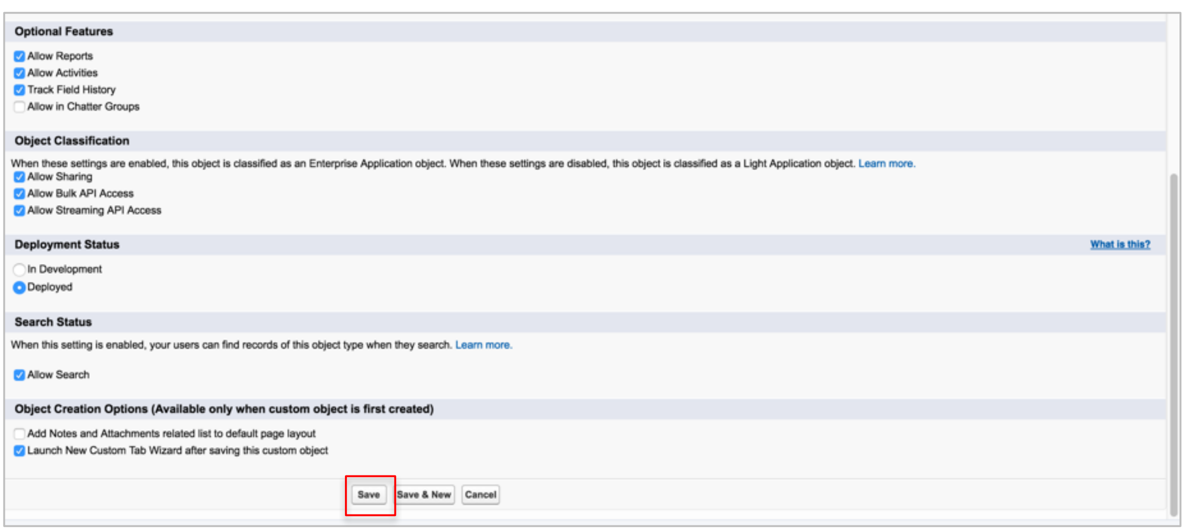
Your window should look like the following:



Don't click Save yet. We need to set a few more parameters first. Scroll down and select the following **additional** options:

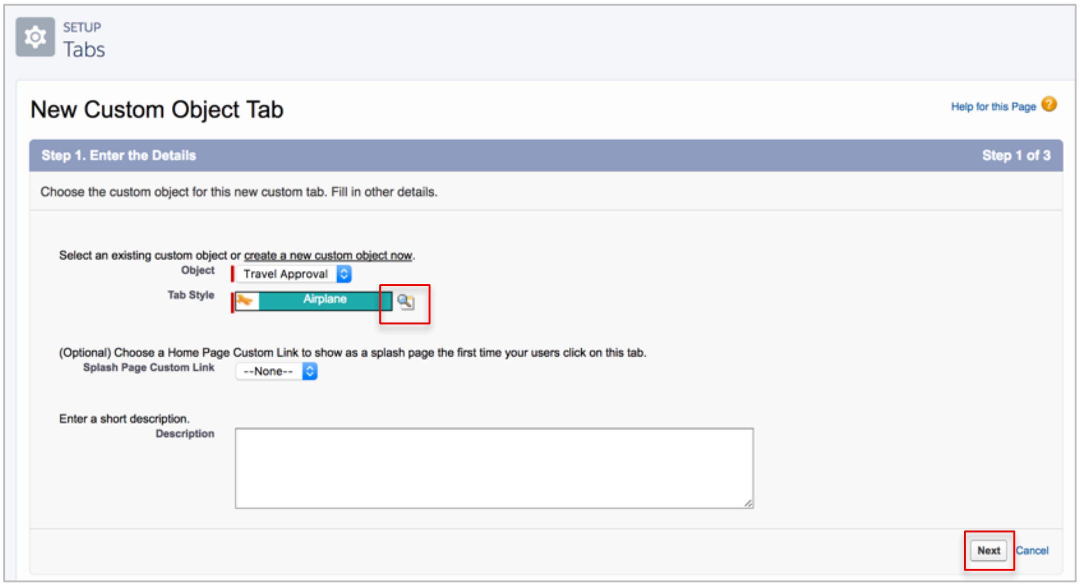
- Allow Reports
- Allow Activities
- Track Field History
- Allow Search
- Add notes and Attachments related list to default page layout
- Launch New Custom Tab Wizard after saving this custom object. **WARNING! Make sure to check this box as it drives the next screens that will show.** If you forget this option, you can create a custom tab by selecting **Object Manager > Create > Custom Tab** to create a new tab later after your object has been created.

Your screen should look like the following:

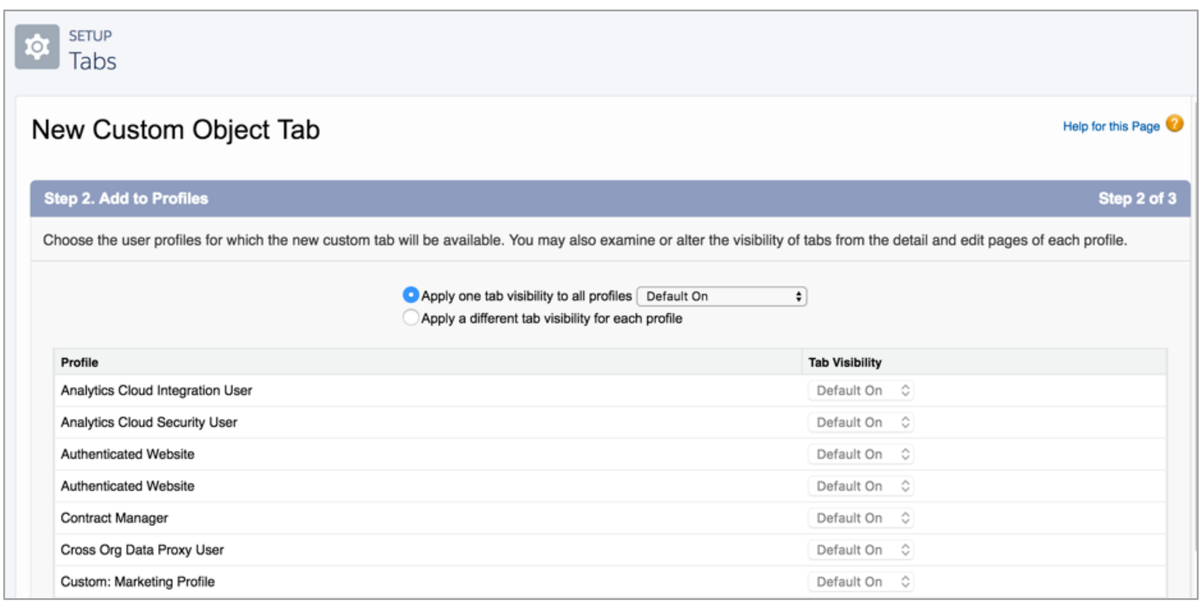


Click the **Save** button.

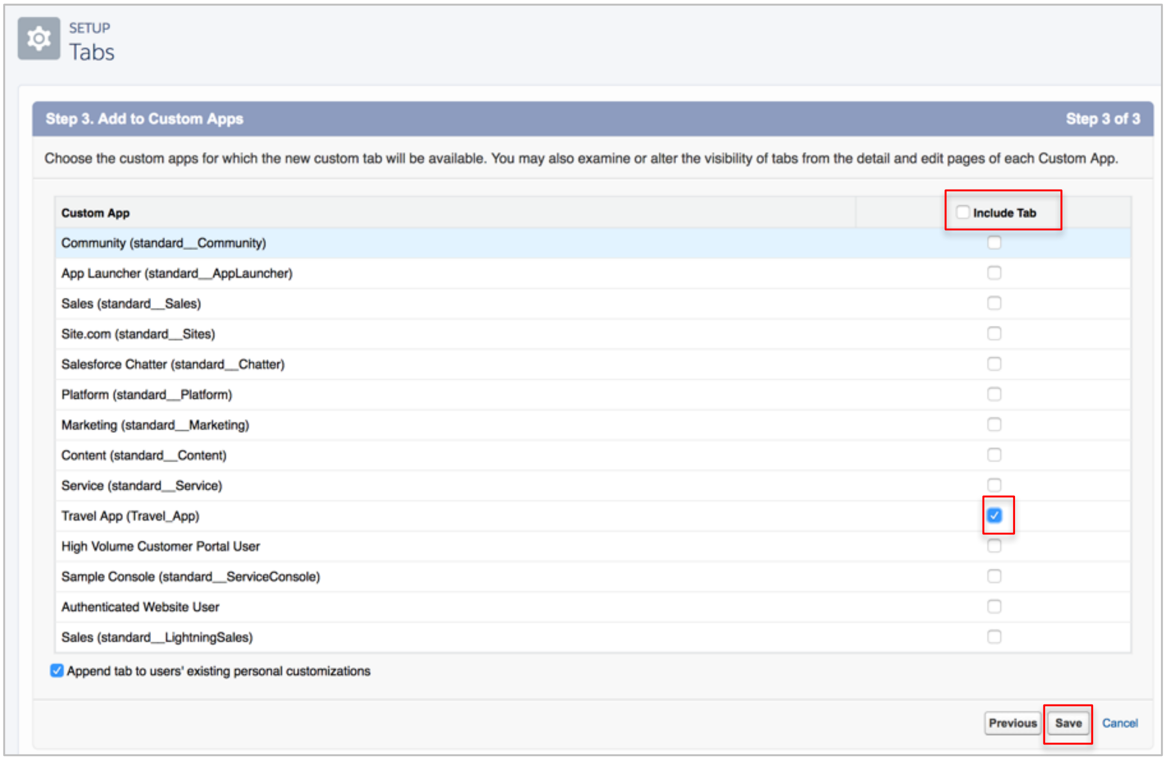
4. In the next three screens, you define your tab settings. Click on the  icon next to Tab Style and select the Airplane style. You screen should look like following. Click the **Next** button.



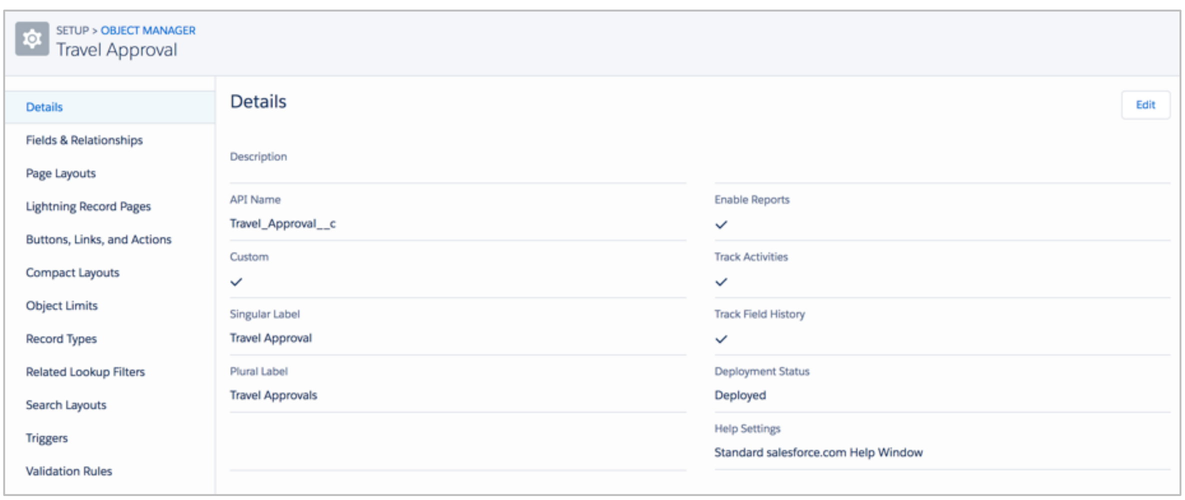
5. You are now presented with the screen that defines which user profiles can see this new tab. Don't change anything and just click the **Next** button in lower-right.



6. In the next window, you are presented with the list of applications to associate this tab to. Click the **Include Tab** option at the top of the column on the right to deselect all apps. Then just select the **Travel Approval** application from the list so that it is the only one selected. Your window should look like the following. Click **Save** button.

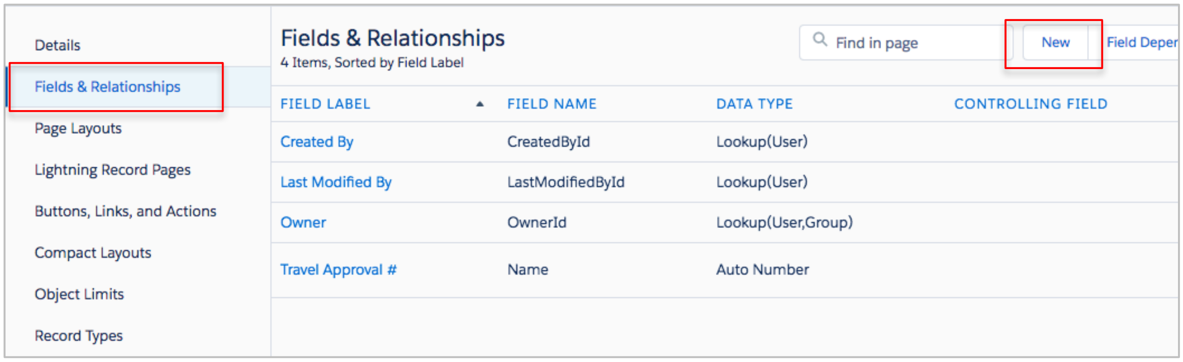


7. You are now directed to the standard object configuration page. As with the Department object we created earlier, this page allows you to continue editing the Travel Approval object to add more fields, create new or edit existing page layouts, and create validation rules.

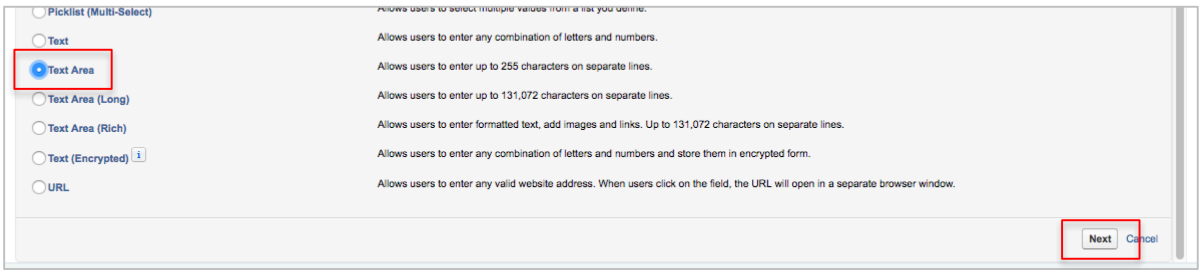


Next we will add additional fields to the Travel Approval object to store other information we need to track. The first field we will create is "Purpose of Trip".

8. Click on **Fields & Relationships** section on the left, and then click the **New** button to start the wizard to create a new field.



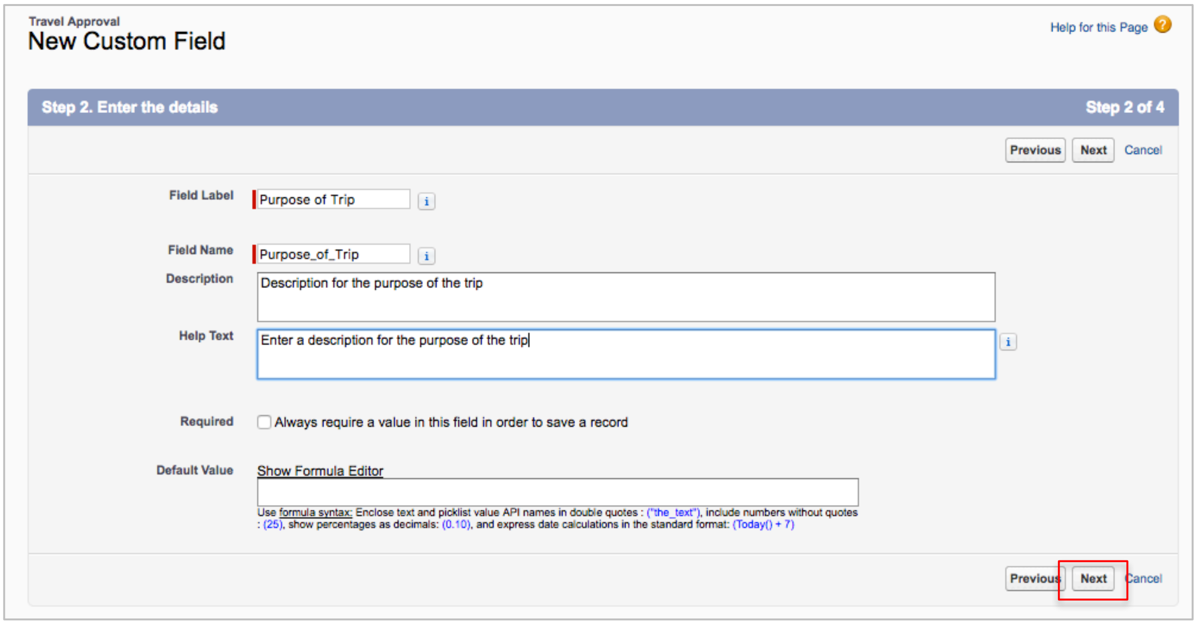
9. On step 1 of the New Custom Field screen, you need to select the field data type. Click the **Text Area** option and select **Next** button.



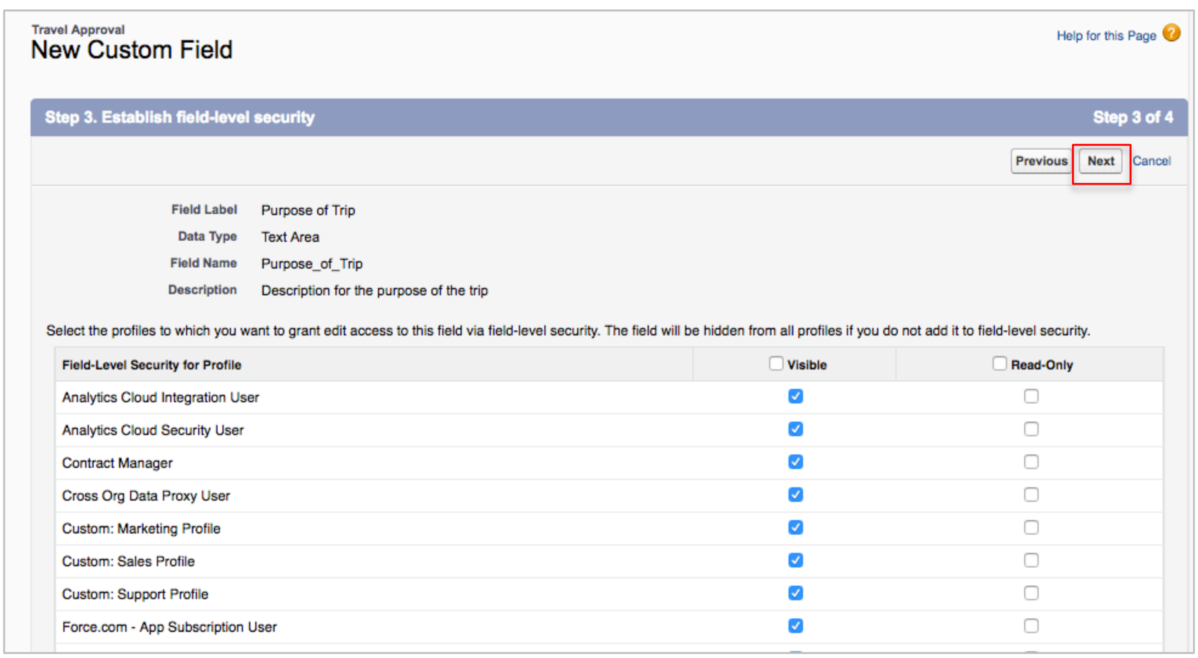
10. On the next screen, we will configure the field settings.

Parameter	**Value**
Field Label	Purpose of Trip
Field Name	Purpose_of_Trip (this will automatically get set when you tab out of the Field Label field)
Description	Description for the purpose of the trip
Help Text	Enter a description for the purpose of the trip
Required	*Leave this unselected/unchecked*

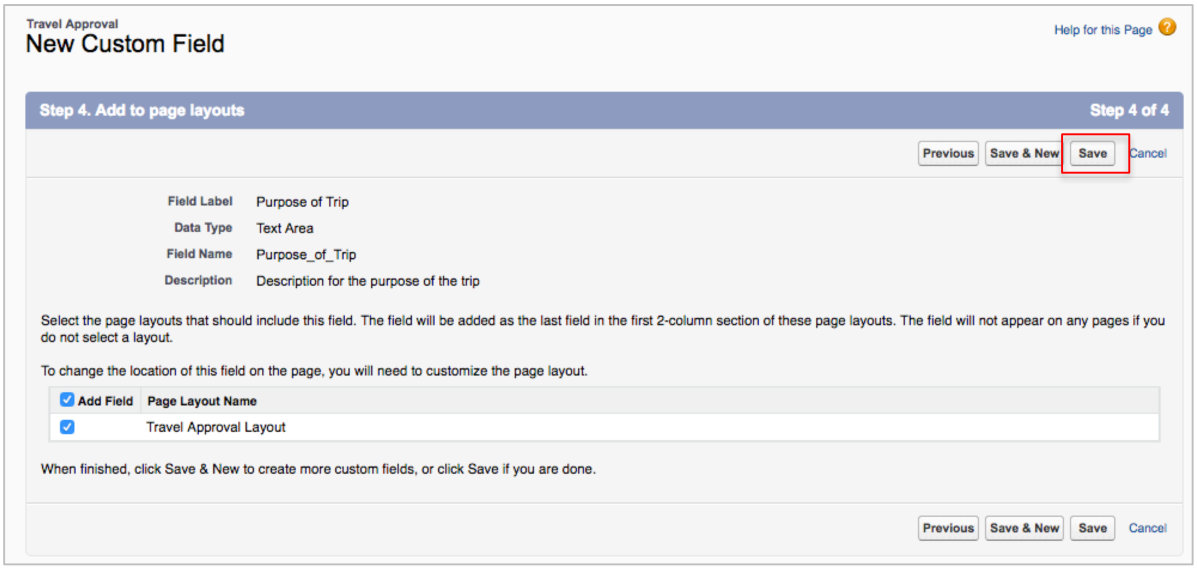
Your screen should look like the following. Click the **Next** button.



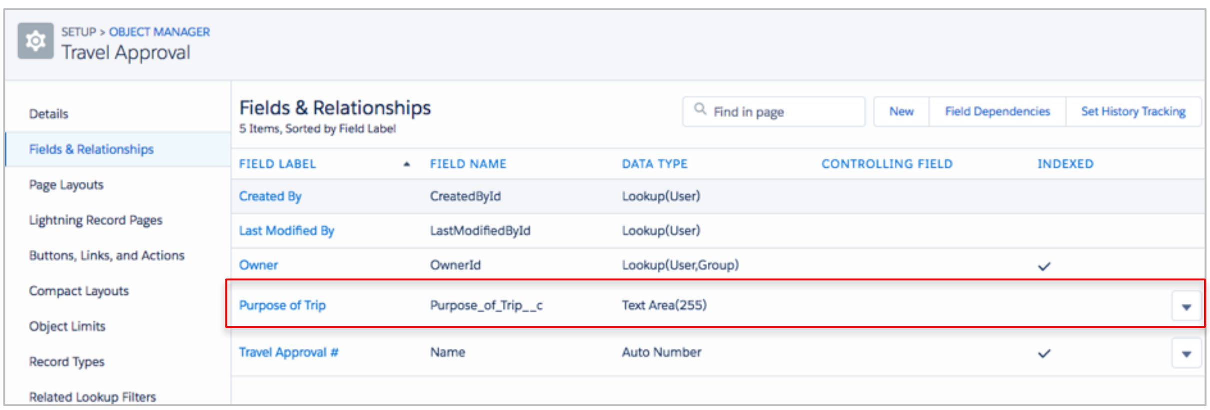
11. The next screen (step 3) sets field level security for this new field you are creating. In Salesforce, you have ability to indicate which user profiles have view, edit or no access rights for the custom field. Click **Next** button to accept the default values.



12. The next screen (step 4) adds the field to a page layout. Accept the default and click the **Save** button.



13. You end back on the object configuration screen for the Travel Approval object and are still on the **Fields & Relationships** tab. You can see the new field we created (Purpose of Trip) in the current list of fields for this object:



We will now create the remaining fields for the Travel Approval Object. The directions below will be in abbreviated form. Just follow steps 8 – 12 above for each new field you create with the noted differences.

14. Create the **Status** field.

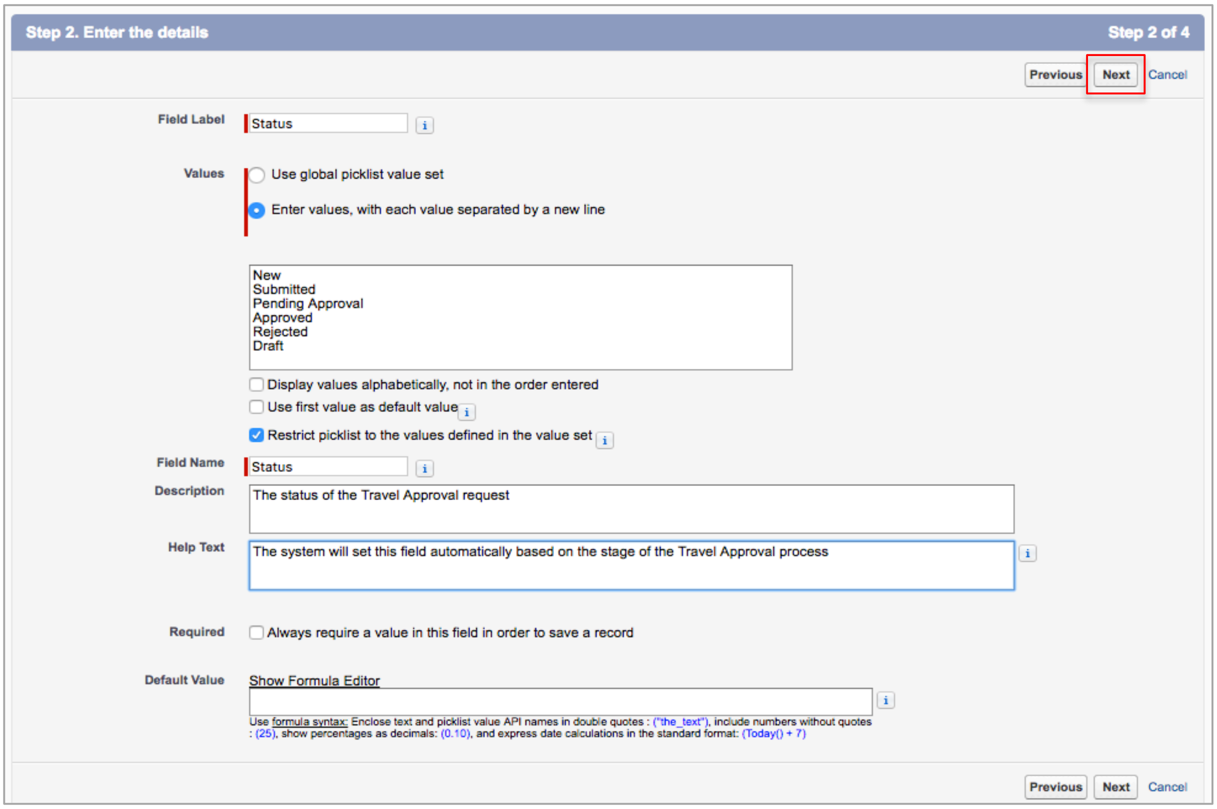
Step 1: Select **Picklist** data type

Step 2: Enter the following values for the field details

Parameter	Value
Field Label	Status
Values	Select the "Enter values, with each value separated by a new line" option. Enter the following status values in the text box with each separated on a new line
	New Submitted Pending Approval Approved Rejected Draft

Field Name	Status (this will automatically get set when you tab out of the Field Label field)
Description	The status of the Travel Approval request
Help Text	The system will set this field automatically based on the stage of the Travel Approval process
Required	*Leave this unselected/unchecked*
Restrict picklist to the values defined in the value set	*Leave this selected/checked*

The screen will look like following:



Click **Next**.

Step 3: Accept the default values. Click **Next**.

Step 4: Accept the default values. Click **Save & New**.

15. Create the **Trip Start Date** field

Step 1: Select **Date** data type

Step 2: Enter the following values for the field details

Parameter	Value
Field Label	Trip Start Date
Field Name	Trip_Start_Date (this will automatically get set when you tab out of the Field Label field)
Description	*Leave blank*
Help Text	The day the trip will begin
Required	*Leave this unselected/unchecked*

The screen will look like following:

Click **Next**.

Step 3: Accept the default values. Click **Next**.

Step 4: Accept the default values. Click **Save & New**.

16. Create the **Trip End Date** field

Step 1: Select **Date** data type

Step 2: Enter the following values for the field details

Parameter	Value
Field Label	Trip End Date
Field Name	Trip_End_Date (this will automatically get set when you tab out of the Field Label field)
Description	*Leave blank*
Help Text	*Leave blank*
Required	*Leave this unselected/unchecked*

The screen will look like following:

Click **Next**.

Step 3: Accept the default values. Click **Next**.

Step 4: Accept the default values. Click **Save & New**.

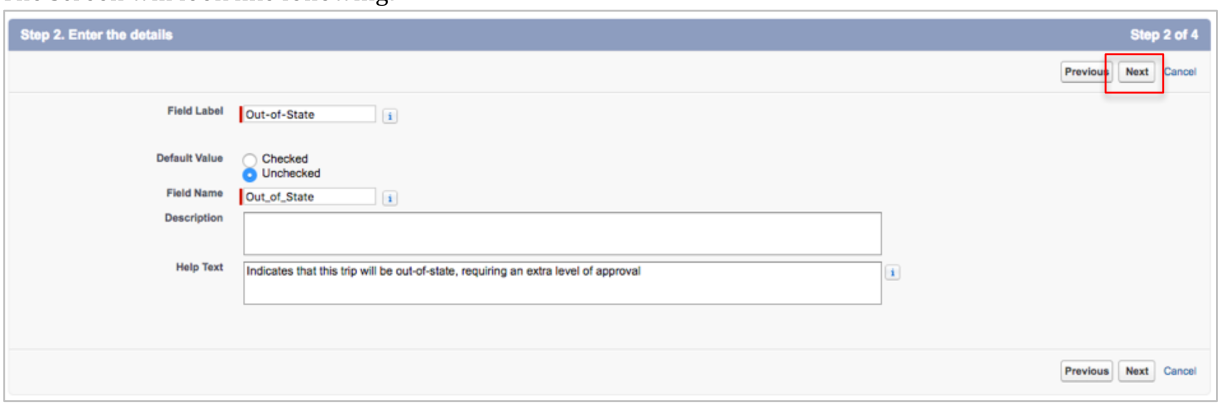
17. Create the **Out-of-State** field

Step 1: Select **Checkbox** data type

Step 2: Enter the following values for the field details

Parameter	Value
Field Label	Out-of-State
Default Value	Unchecked
Field Name	Out_of_State (this will automatically get set when you tab out of the Field Label field)
Description	*Leave blank*
Help Text	Indicates that this trip will be out-of-state, requiring an extra level of approval

The screen will look like following:



Click **Next**.

Step 3: Accept the default values. Click **Next**.

Step 4: Accept the default values. Click **Save & New**.

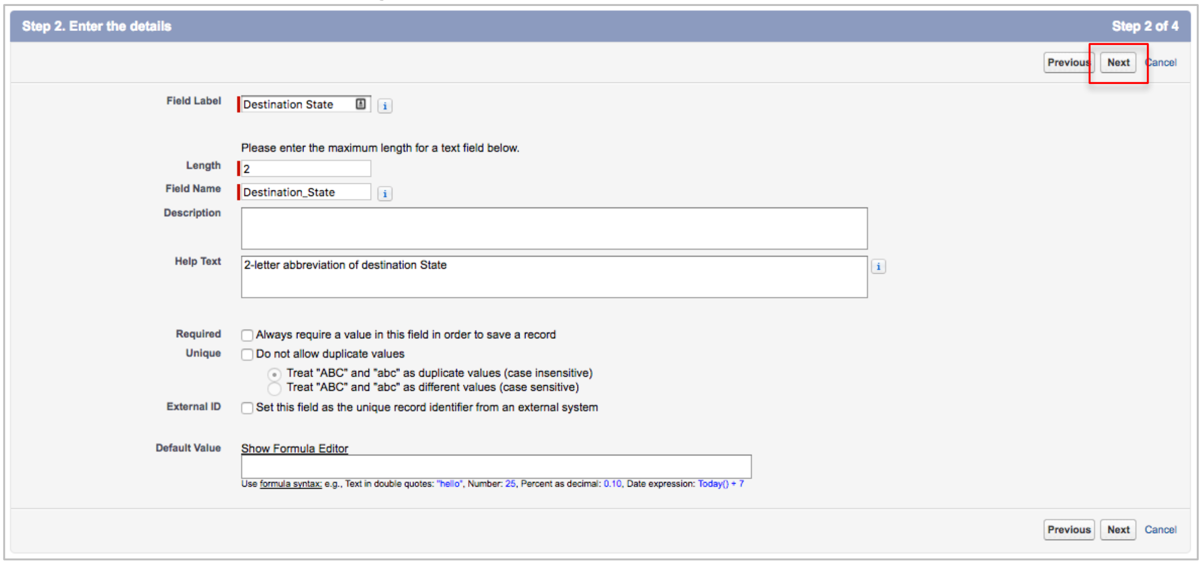
18. Create the **Destination State** field

Step 1: Select **Text** data type

Step 2: Enter the following values for the field details

Parameter	Value
Field Label	Destination State
Length	2
Field Name	Destination_State (this will automatically get set when you tab out of the Field Label field)
Description	*Leave blank*
Help Text	2-letter abbreviation of destination State
Required	*Leave this unselected/unchecked*
Unique	*Leave this unselected/unchecked*
External ID	*Leave this unselected/unchecked*

The screen will look like following:



Click **Next**.

Step 3: Accept the default values. Click **Next**.

Step 4: Accept the default values. Click **Save & New**.

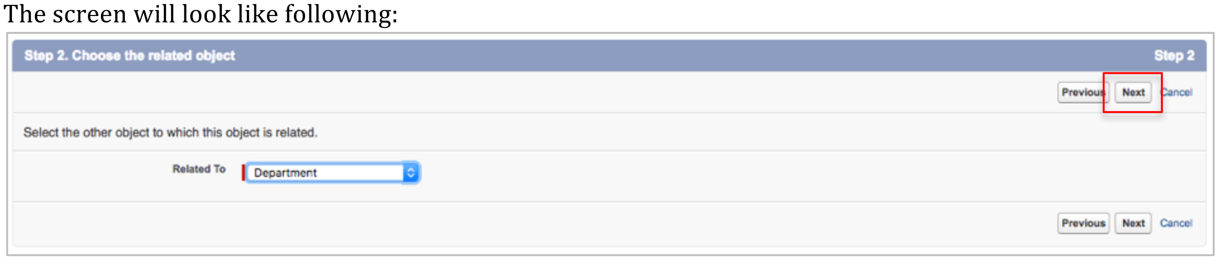
19. Create the **Department** field

Step 1: Select **Lookup Relationship** data type

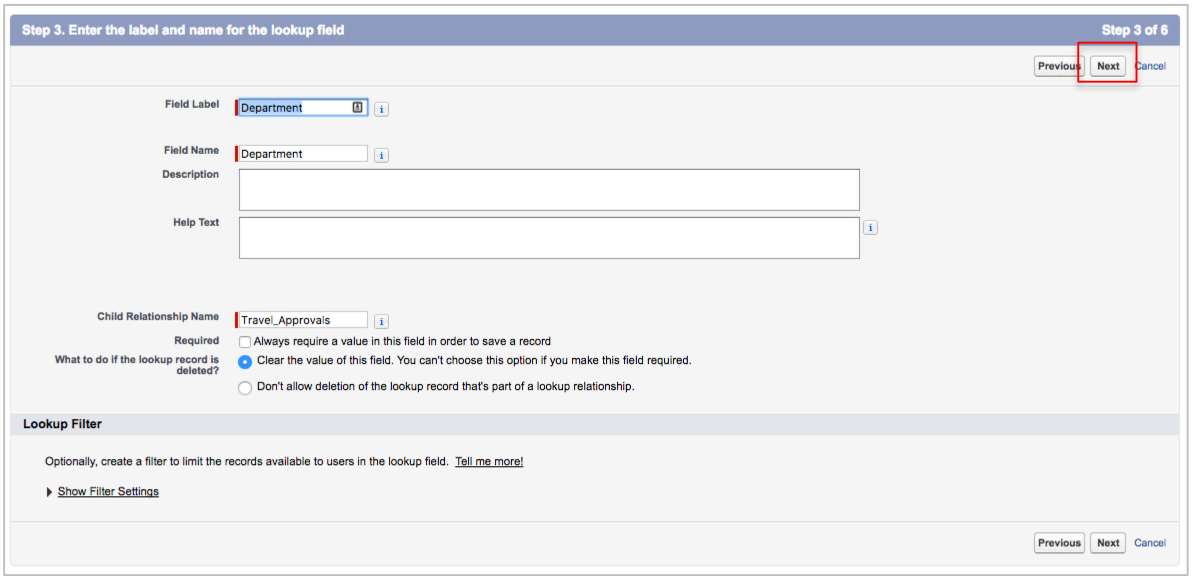
Step 2: Enter the following values for the field details

Parameter	Value
Related To	Department

The screen will look like following:



Step 3: Accept the default values. The screen should look like following:



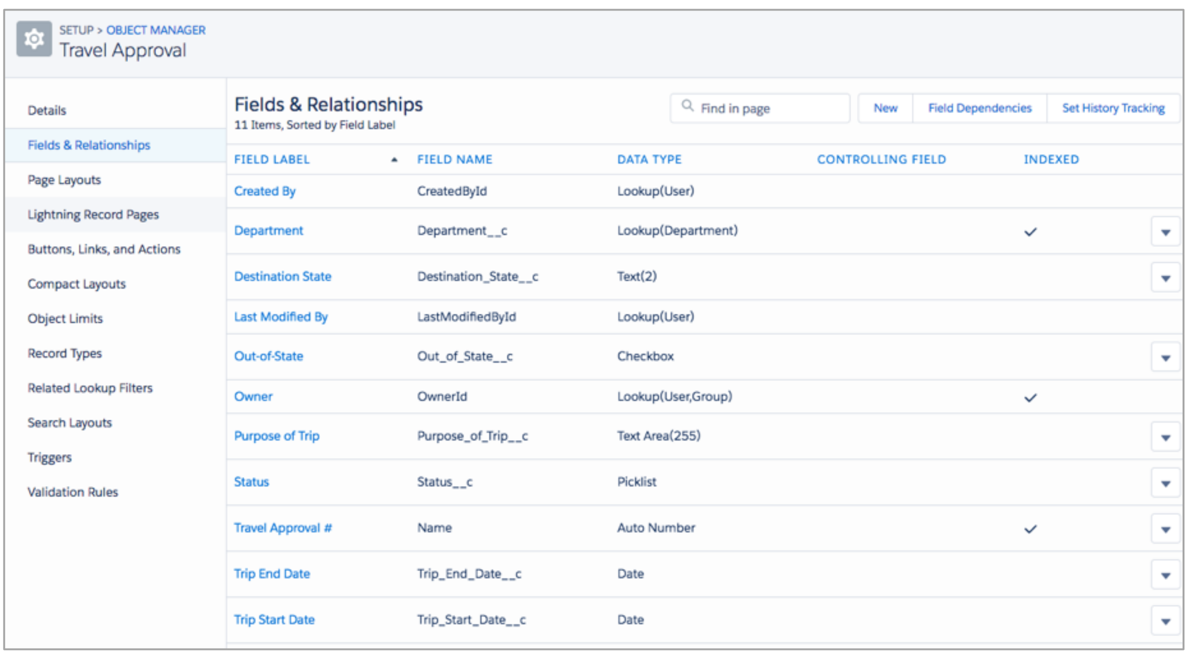
Click **Next**.

Step 4: Accept the default values. Click **Next**.

Step 5: Accept the default values. Click **Next**.

Step 6: Accept the default values. Click **Save**.

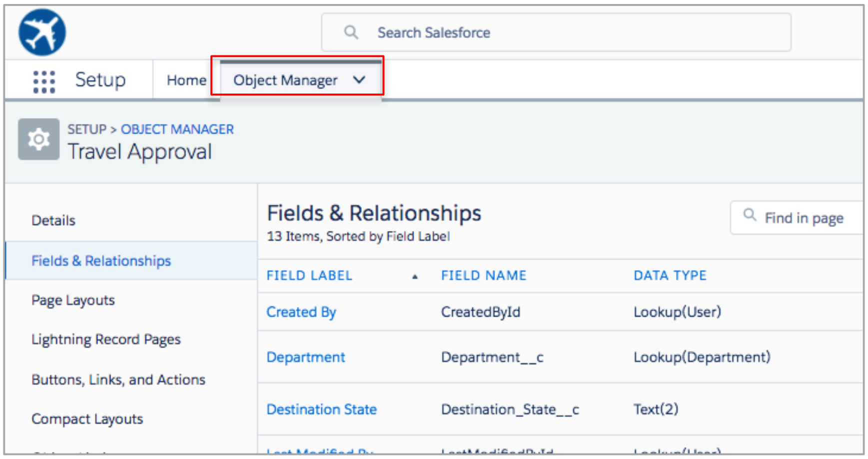
The Fields & Relationships section of the Travel Approval object should now look like the following:



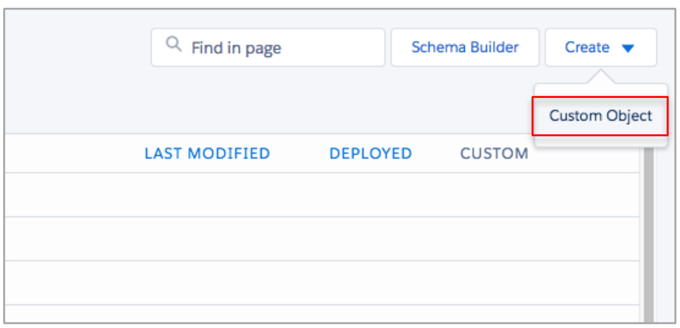
Create the Expense Item object

The last object we will create is the Expense Item object. This is where we will be able to provide estimates for our trip such as airfare, hotel, or rental car.

1. In upper-left side of current window, click on **Object Manager** tab to take you back to the page to manage your object definitions.



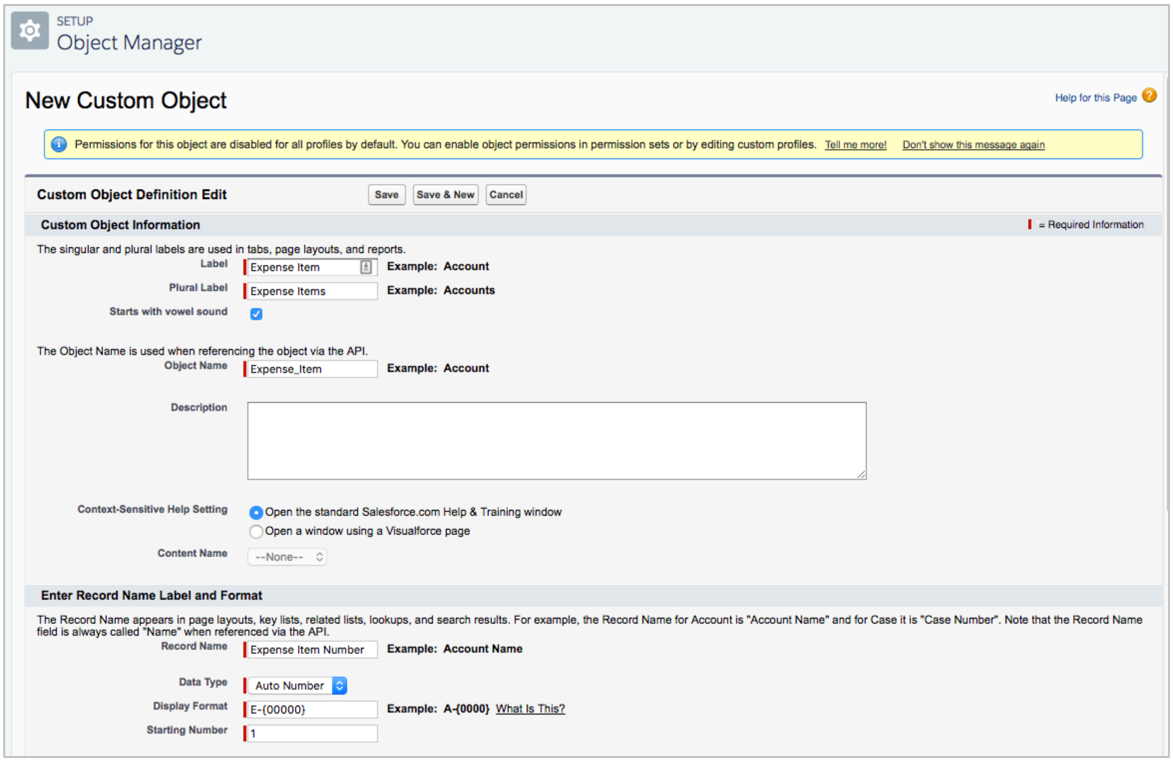
2. In upper-right, click **Create > Custom Object**:



3. Enter the following values:

Parameter	Value
Label	Expense Item
Plural Label	Expense Items
Starts with vowel sound	*Check/select this option*
Object Name	Expense_Item (this will automatically get set when you tab out of the Label field)
Record Name	Expense Item Number
Data Type	Auto Number
Display Format	E-{00000}
Starting Number	1

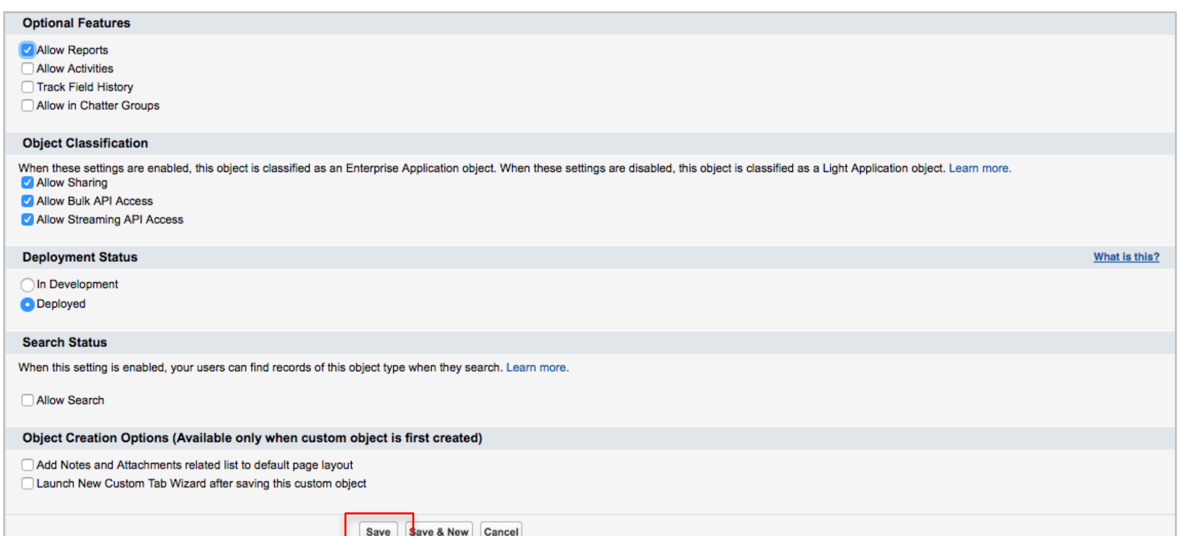
Your screen should look like the following:



Don't click Save yet. We need to set a few more parameters first. Scroll down and select the following **additional** options:

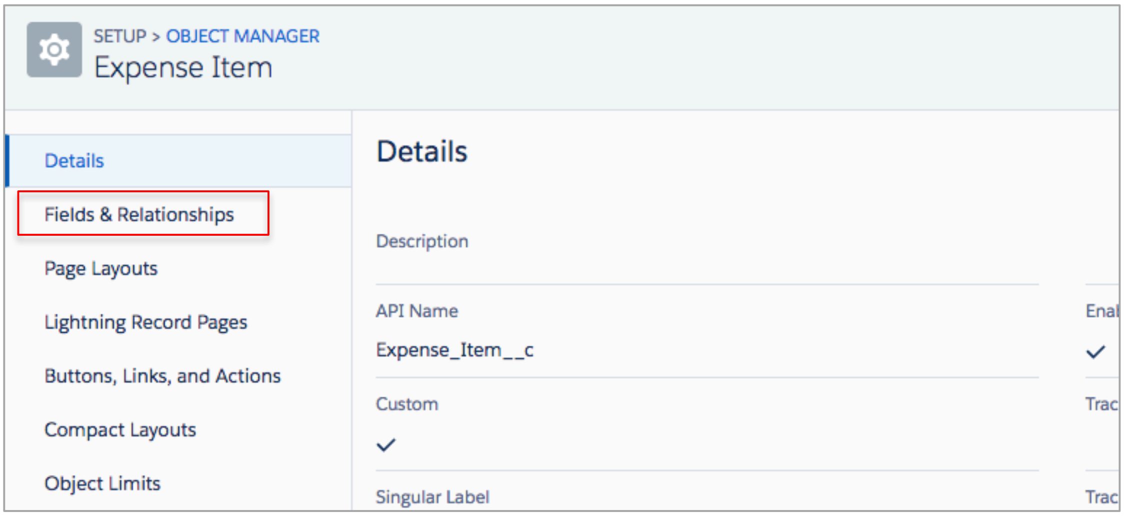
- Allow Reports

Your screen should look like the following. Note that we **DO NOT** select the "Launch new Custom Tab Wizard after saving this custom object" option. We do not select this option as we do not want a separate tab for just **Expense Items**. Users will use the **Travel Approval** tab to navigate to specific records and then drill down to expense items from the select travel approval. This will make sense later when you test your application.



Click the **Save** button.

4. You are now directed to the standard object configuration page for this new Expense Item. We will now create the remaining fields for the Expense Item object. First, we need to make sure we are in the Fields & Relationships section of the object editor. Click on the **Fields & Relationships** tab on left-hand side of page.



For the fields to create on the Expense object, the directions below will be in abbreviated form. As we did for the Travel Approval object, just follow steps 8 – 12 above for each new field you create with the noted differences.

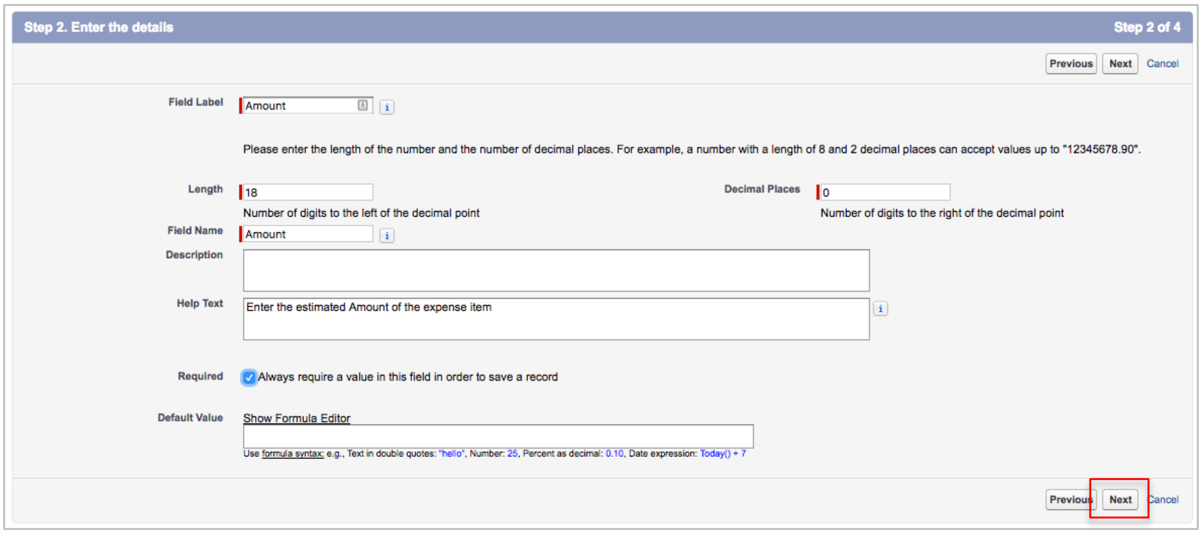
5. Create the **Amount** field.

Step 1: Select **Currency** data type

Step 2: Enter the following values for the field details

Parameter	Value
Field Label	Amount
Length	*18*
Decimal Places	0
Field Name	Amount (this will automatically get set when you tab out of the Field Label field)
Description	*Leave blank*
Help Text	Enter the estimated Amount of the expense item
Required	*Select/check this field*

The screen will look like following:



Click **Next**.

Step 3: Accept the default values. Click **Next**.

Step 4: Accept the default values. Click **Save & New**.

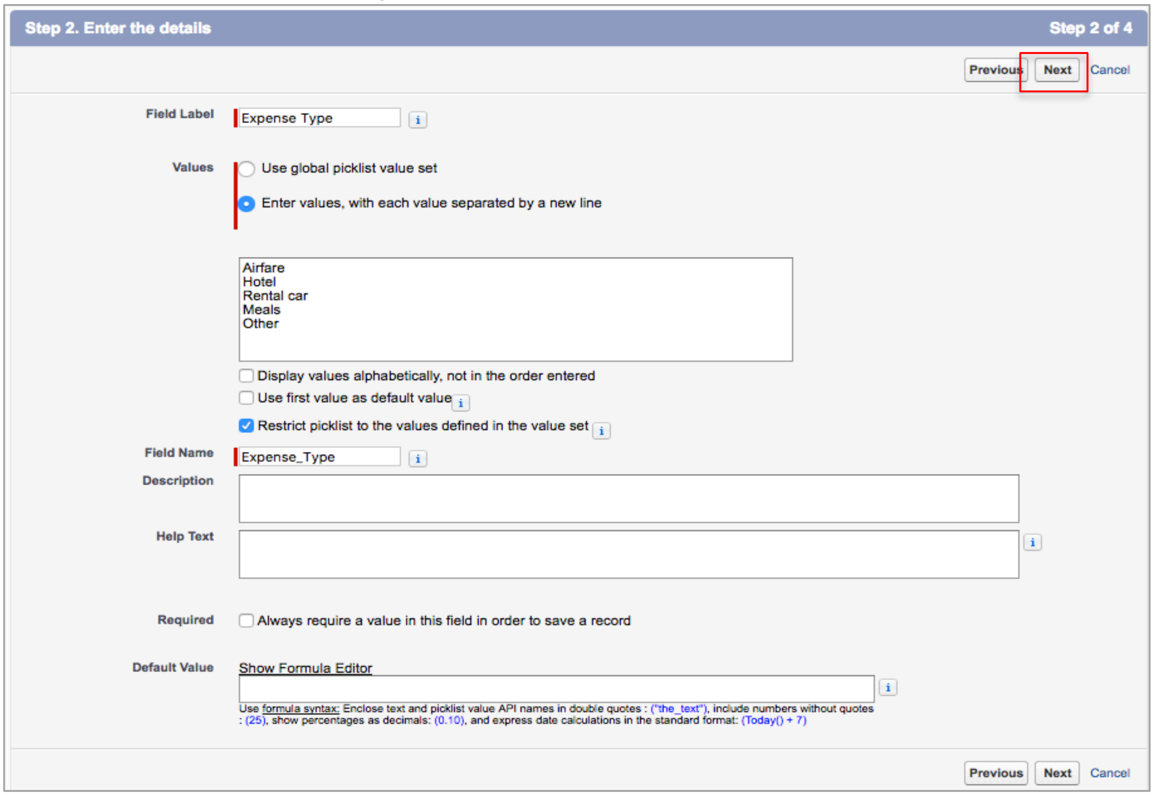
6. Create the **Expense Type** field.

Step 1: Select **Picklist** data type

Step 2: Enter the following values for the field details

Parameter	Value
Field Label	Expense Type
Values	Select the "**Enter values, with each value separated by a new line**" option. Enter the following status values in the text box with each separated on a new line
	Airfare Hotel Rental car Meals Other
Restrict picklist to the values defined in the value set	*Leave this selected/checked*
Field Name	Expense_Type (this will automatically get set when you tab out of the Field Label field)
Description	*Leave blank*
Help Text	*Leave blank*
Required	*Select/check this option*

The screen will look like following:



Click **Next**.

Step 3: Accept the default values. Click **Next**.

Step 4: Accept the default values. Click **Save & New**.

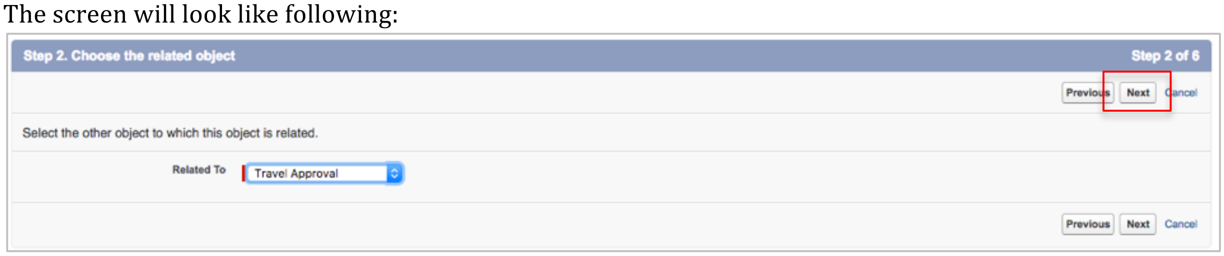
7. Create the **Travel Approval** field.

Step 1: Select **Master-Detail** data type. Click **Next**.

Step 2: Enter the following values for the field details

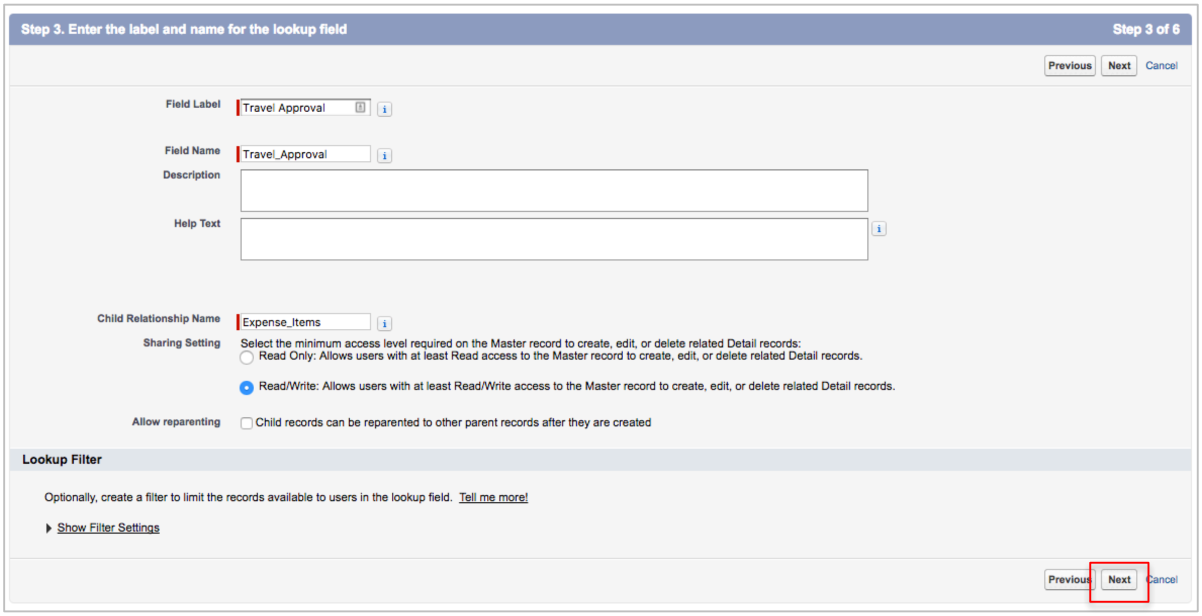
Parameter	Value
Related To	Travel Approval

The screen will look like following:



Click **Next**.

Step 3: Accept the default values. Click **Next**.

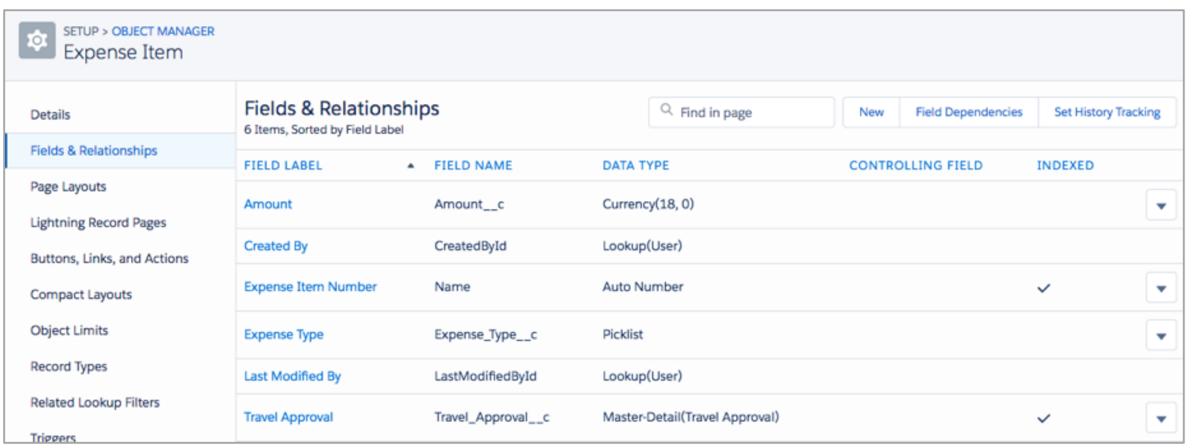


Step 4: Accept the default values. Click **Next**.

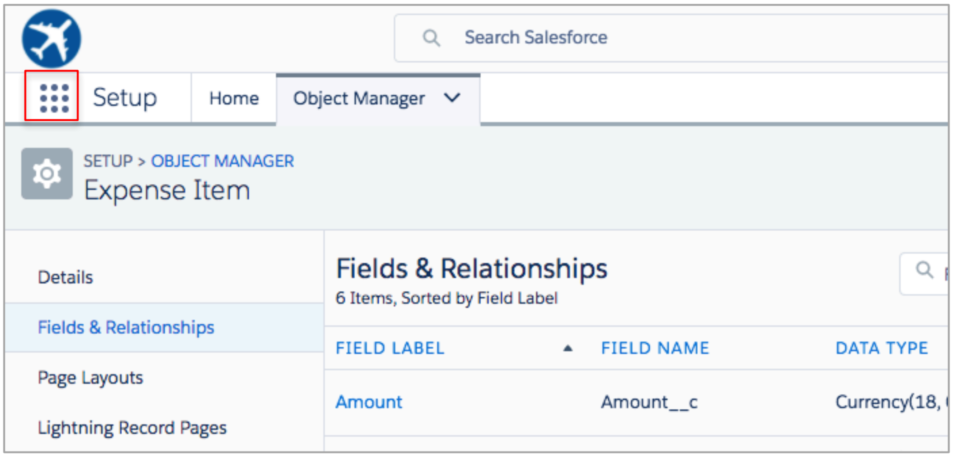
Step 5: Accept the default values. Click **Next**.

Step 6: Accept the default values. Click **Save**.

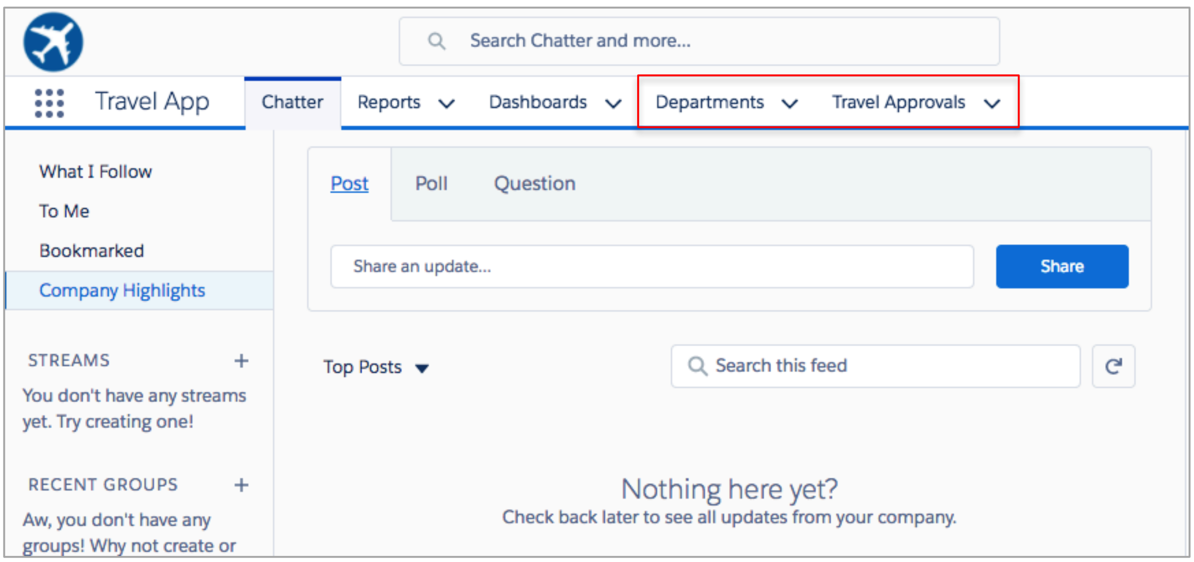
You should now have Expense Item object configured with the following fields:



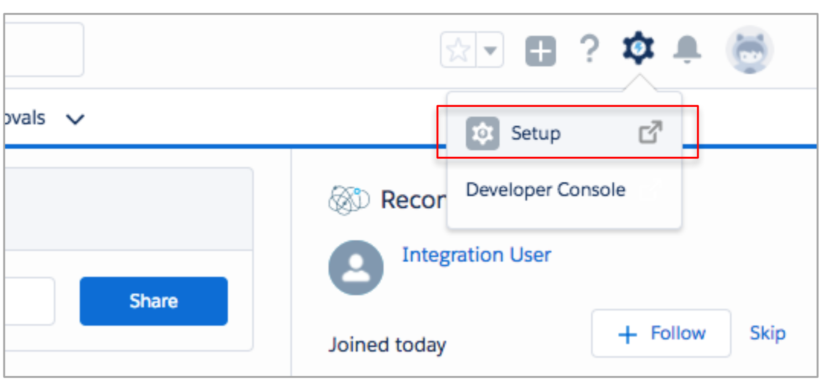
8. As a last step, let's see how the Travel Approval application looks. You are currently in the Setup application and you'll need to use the application selector to transition back to the Travel Approval application. Click on the icon (i.e. waffle iron) in top-left, and then select your **Travel App** from the pop-up window.



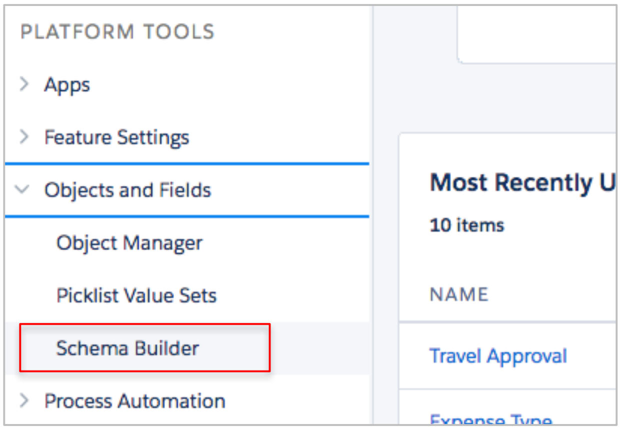
You should now see your Travel Approval app with the two new tabs that you created that



NOTE (optional step): If you like to visually create data model using a graphical ERD designer, this is possible. You will need to navigate to the Setup application to use the ERD tool. Select the gear icon in top-right and select **Setup**.



Then in the left hand side, click on **Objects and Fields > Schema Builder** on the left hand side.



This will open up a graphical designer where you can see the details of all objects and the relationships between them. To filter down the list of objects to just those we have just created above, do the following:

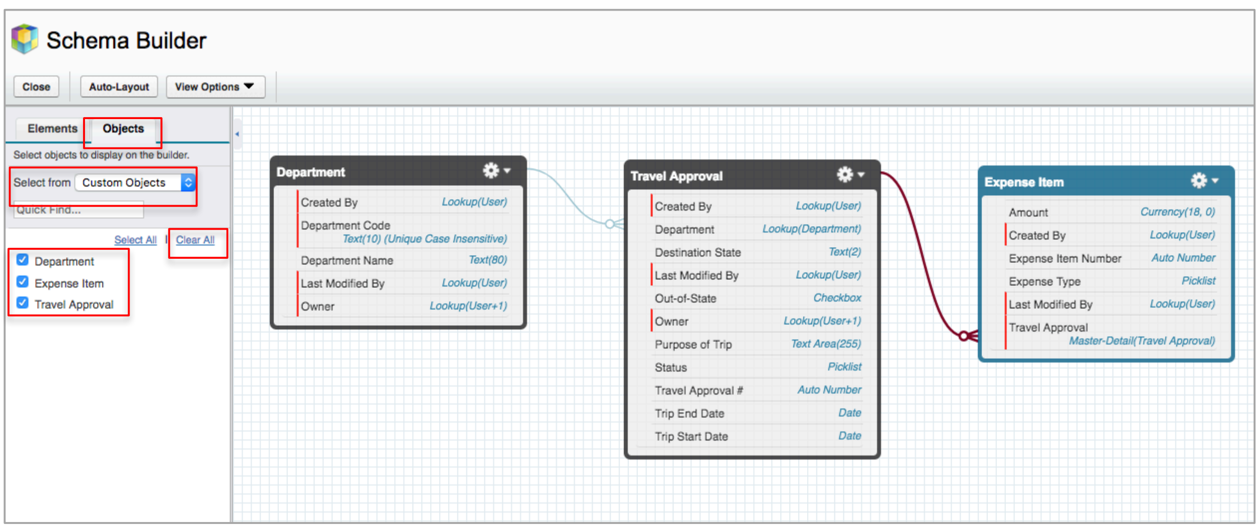
a. Click on the **Objects** tab on left-hand side (this tab should already be selected by default)

b. Click the **Clear All** link to clear all selected objects

c. Select **Custom Objects** from the "Select from" drop down list.

d. Select checkboxes for the **Department, Travel Approval, and Expense Item** objects from the list on left-hand side

e. You can then drag the 3 object tables on the canvas to organize them as below or use the **Auto-layout** button near top-left;



When done, use the top-left **Close** button to go back to the Setup options.

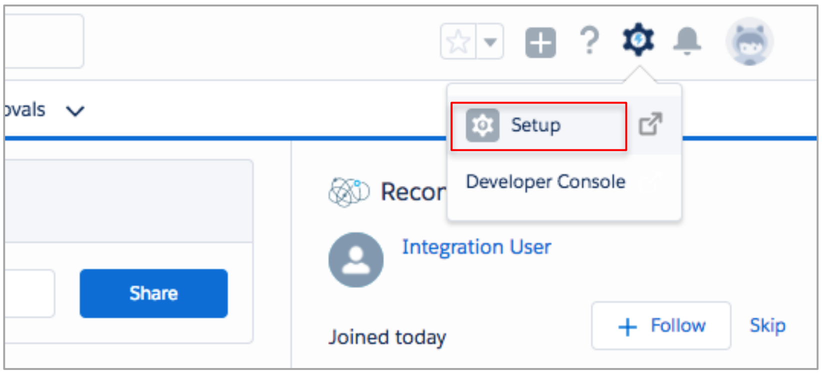
Try out the application

We now have a fully functional application. We've built the data model and in parallel behind the scenes the actual user interface was created for you. Also for those agencies that will need to integrate with Salesforce, a full SOAP and REST API layer was automatically created for you to integrate with your Travel Approval objects from/to other systems.

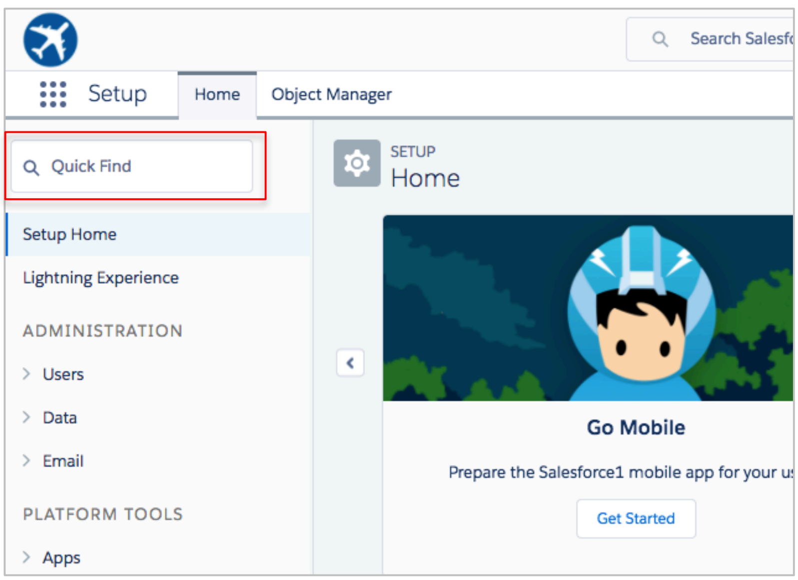
Import Departments

Before we test out our application, let's first load some sample data in to our Departments object.

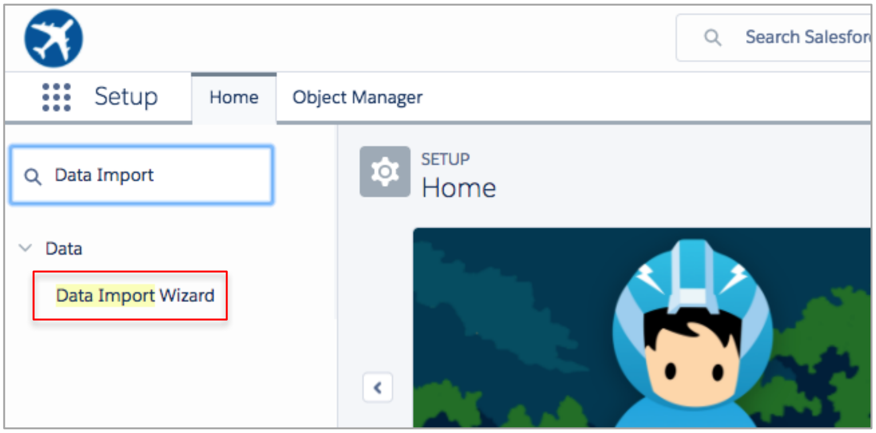
1. Go to the Setup options by selecting the gear icon in top-right and select **Setup**.



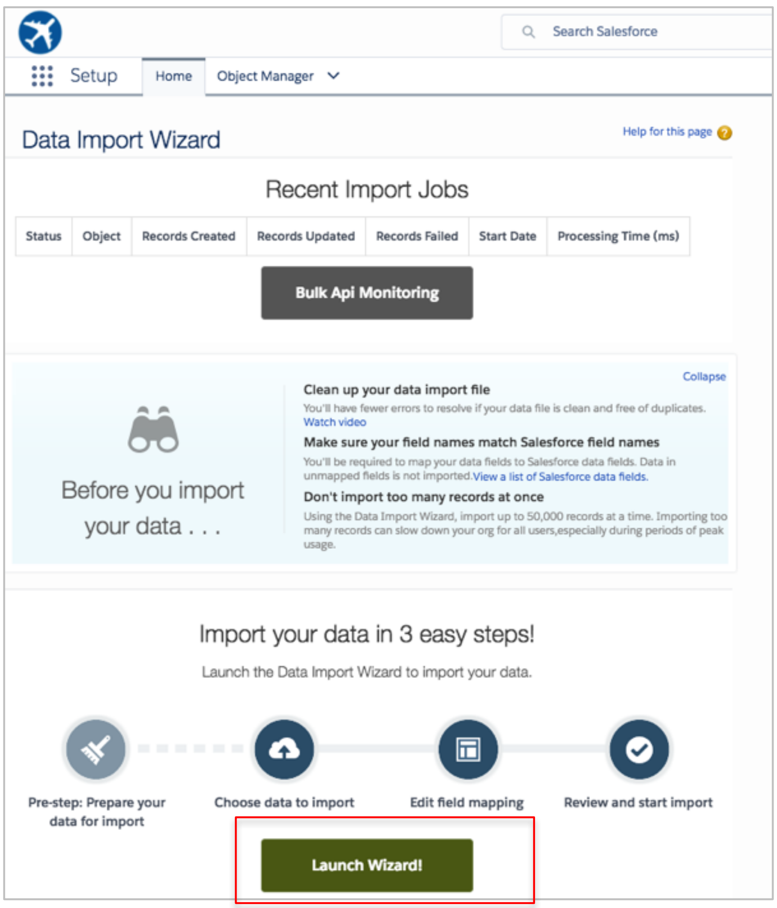
2. In the Quick Find search box, type in "Data Import"



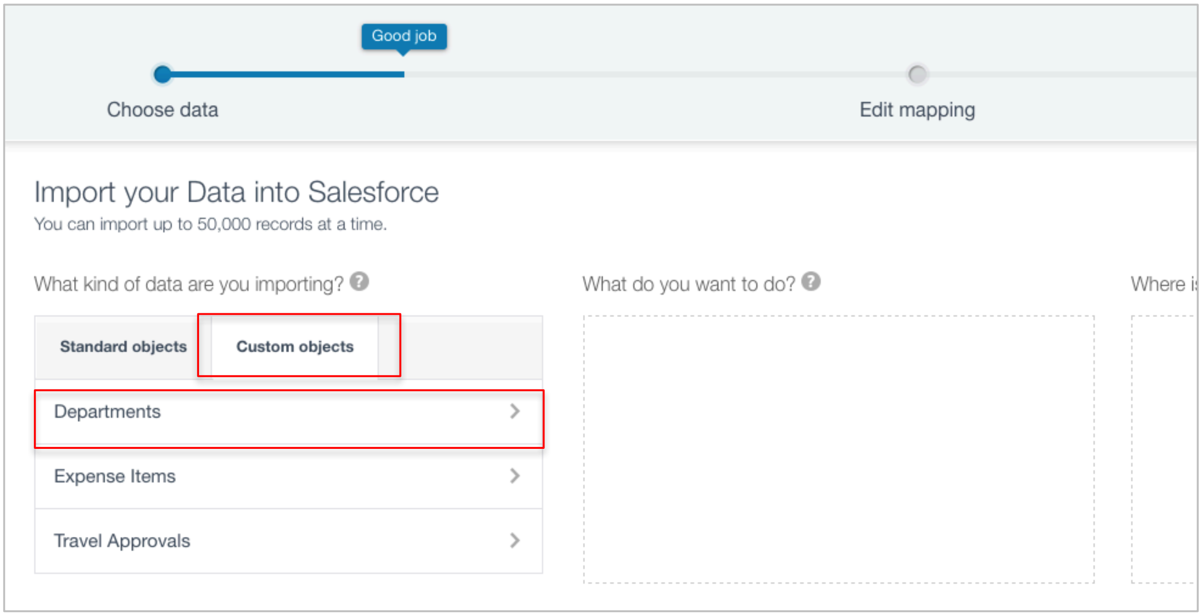
3. This should filter down the results to following. Select the **Data Import Wizard** option.



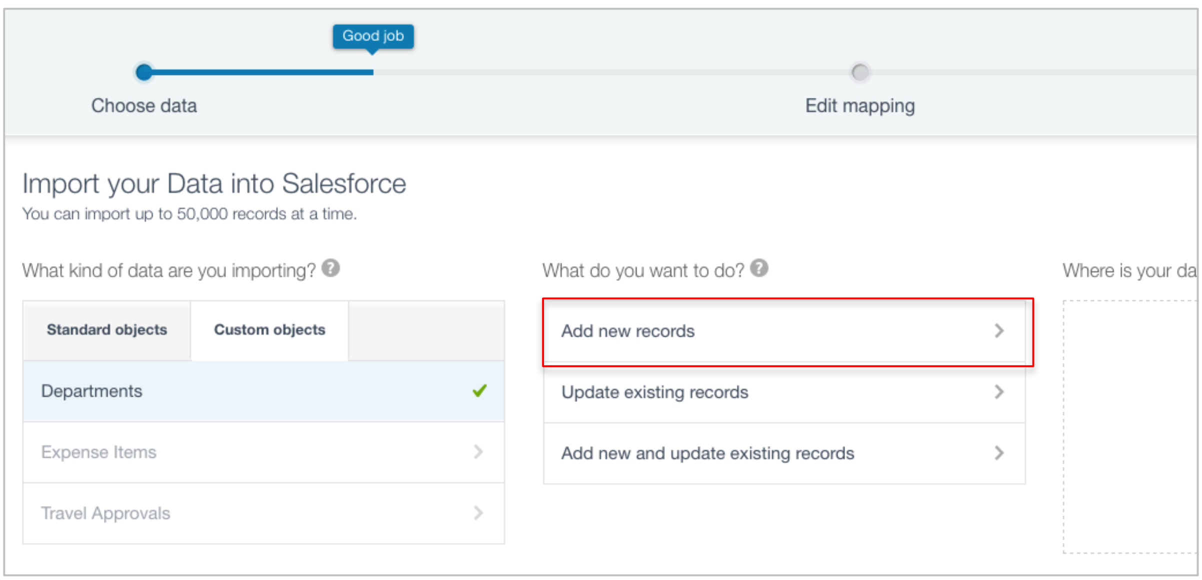
4. You are now presented with window like the following. Select the **Launch Wizard!** button.



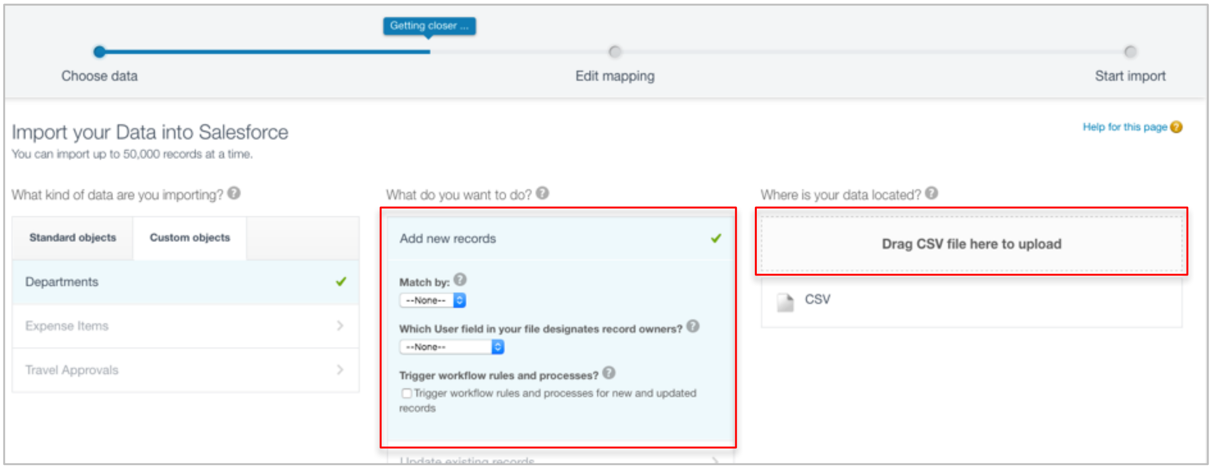
5. First we need to select the object we want to import data to. Select **Custom Objects** tab and select the **Departments** object.



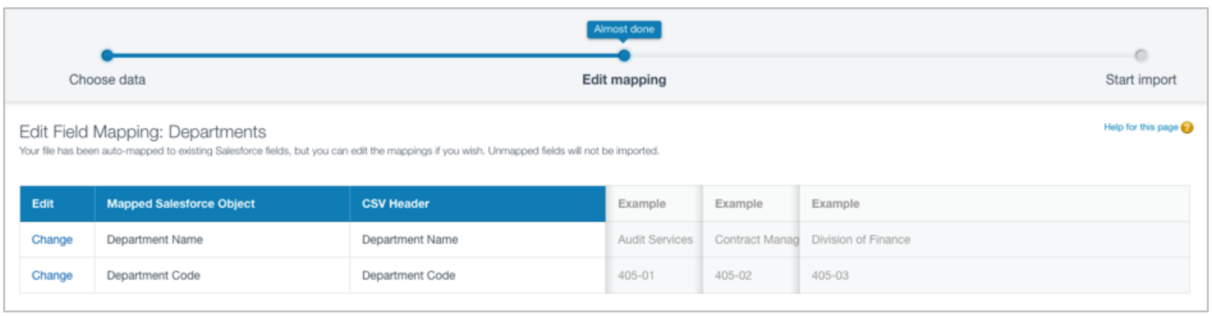
6. Next select the **Add new records** option from middle part of screen.



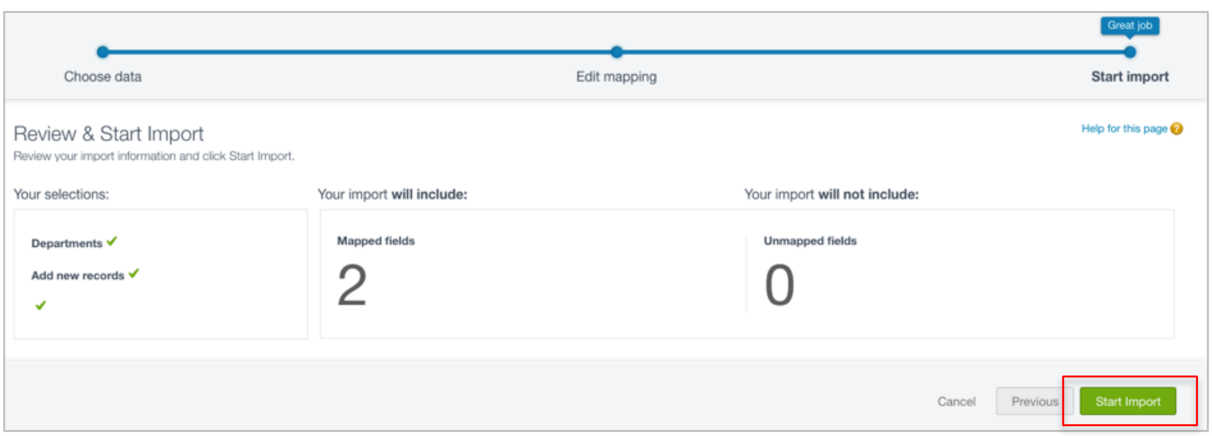
7. Leave the two options in the Add new records to "—None—" as show below. Drag and drop the **Departments.csv** file to the "**Drag CSV file here to upload**" section as defined below or click on the CSV icon and browse to select your file. Select **Next.**



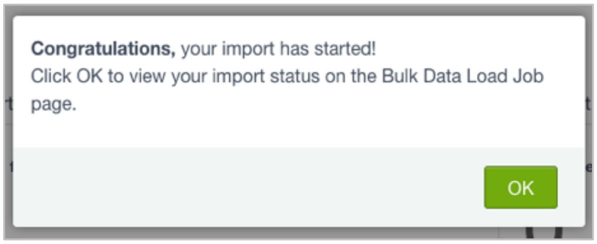
8. Next, you will need to map the fields in the CSV file to the fields on your object. Since the names in the CSV file are the same as your object, these will be automatically mapped as shown below. Click the **Next** button.



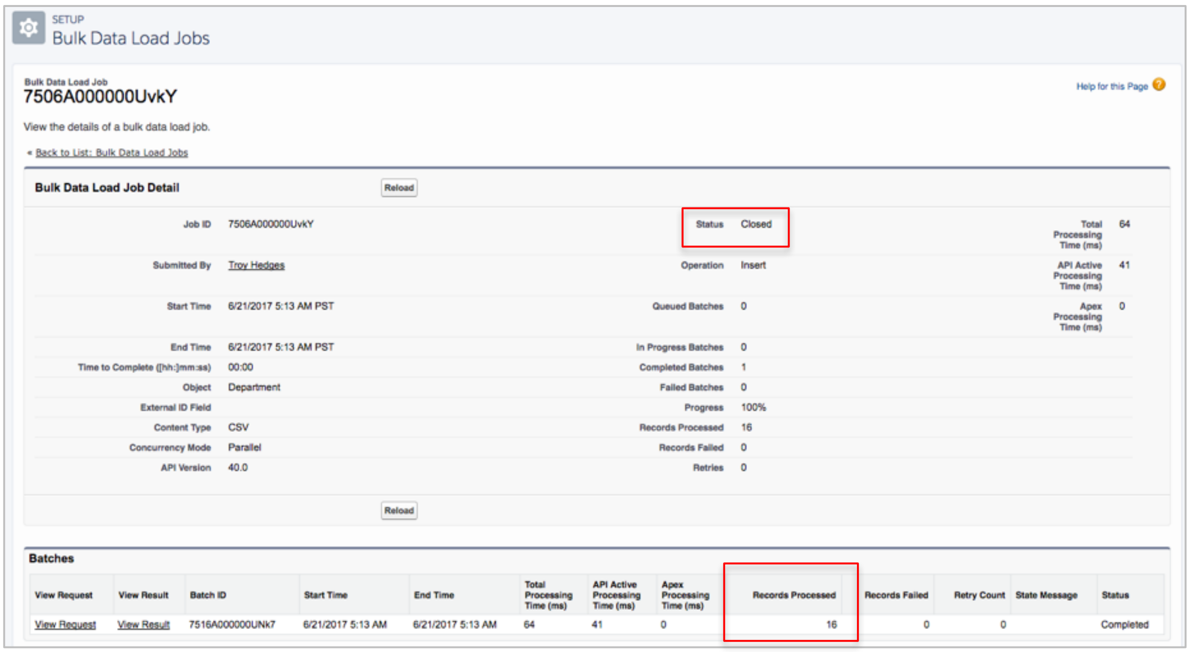
9. The next screen will give you summary of your data import and should look like the following. Click the **Start Import** button.



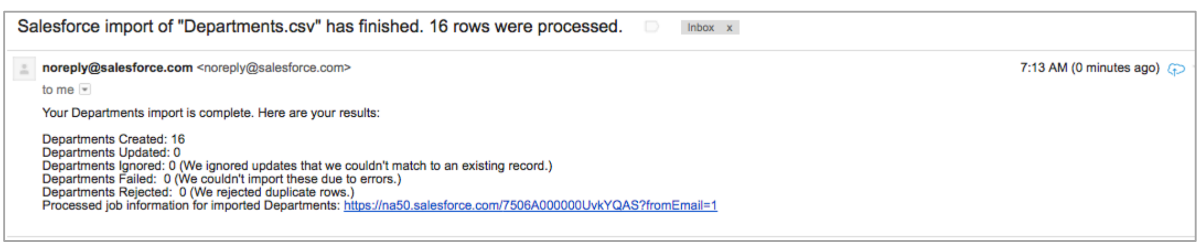
10. You should get a popup like the following. Click **OK** button.



You will now be taken to the bulk import summary window. This shows the process has completed (i.e. Closed) and that 16 records have been successfully imported or processed.



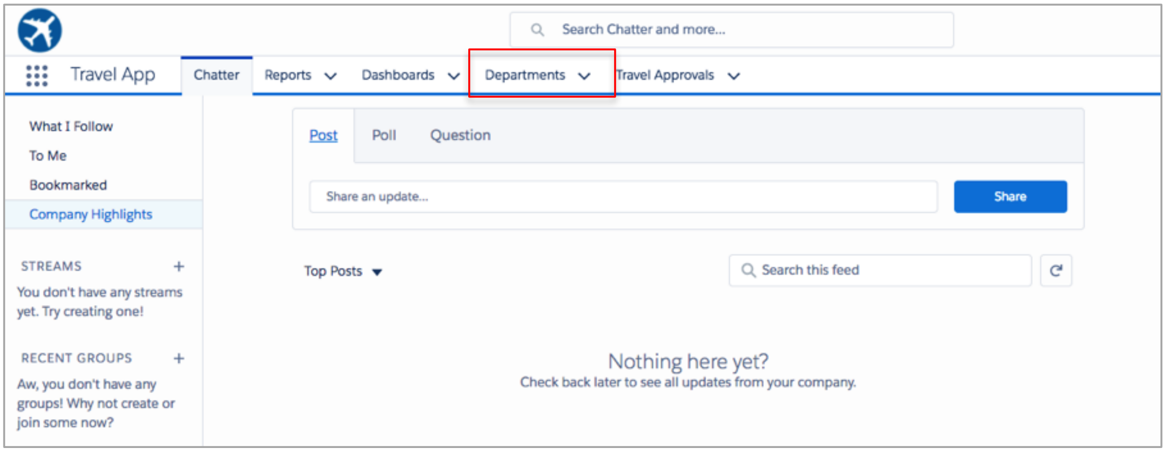
You shoud also get an email notification like the following



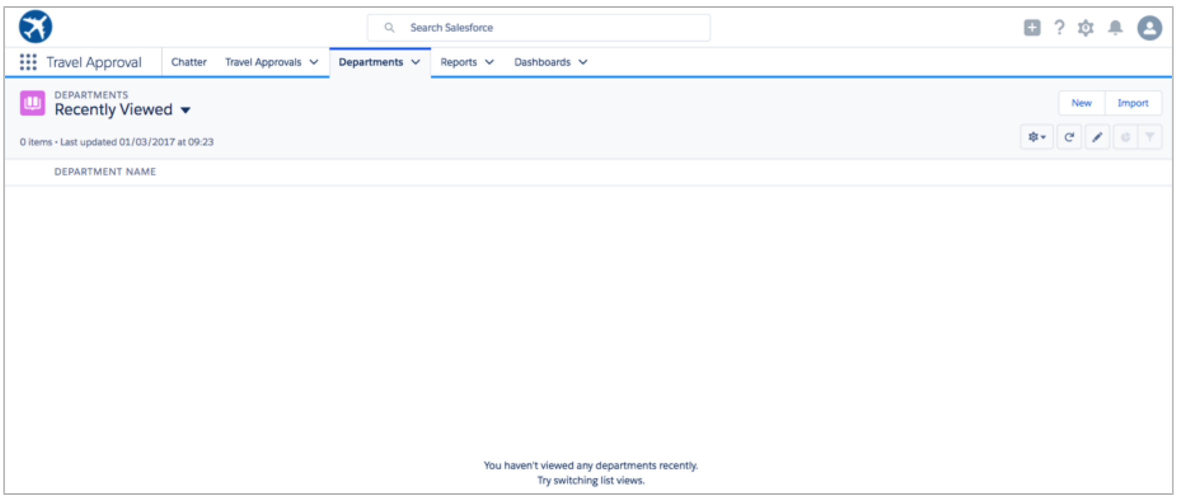
Test Application

We can now test out the application…

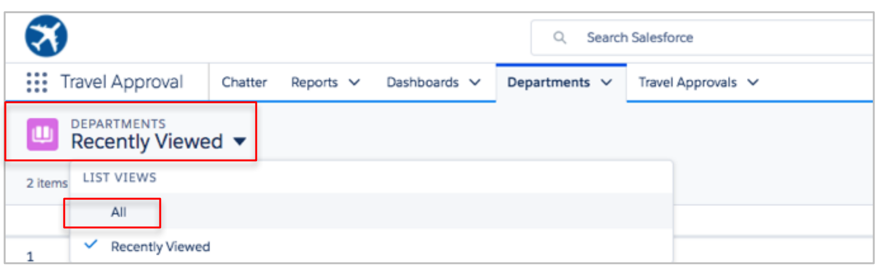
1. Navigate back to your Travel Approval application. (hint: use the application selector in top-left).
2. At the top of the screen, click on the **Departments** tab.



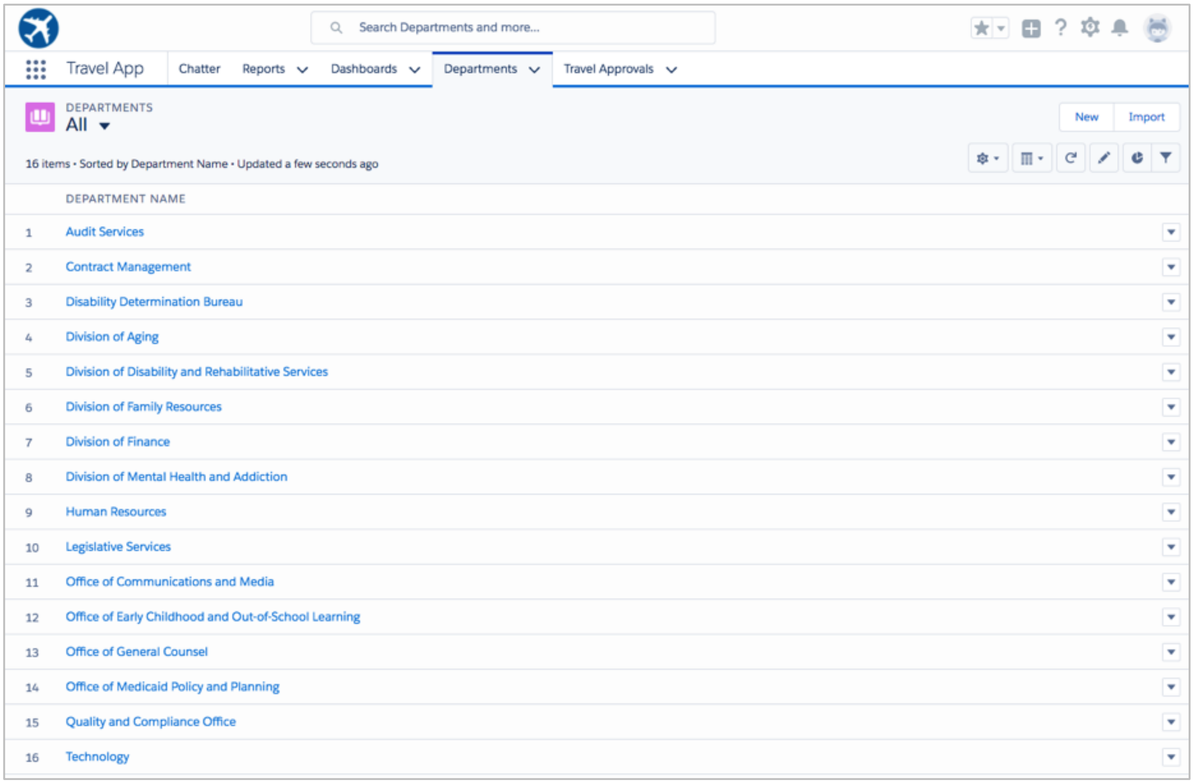
You will be presented with Recently Viewed list. This list should be blank since we have not viewed anything yet.



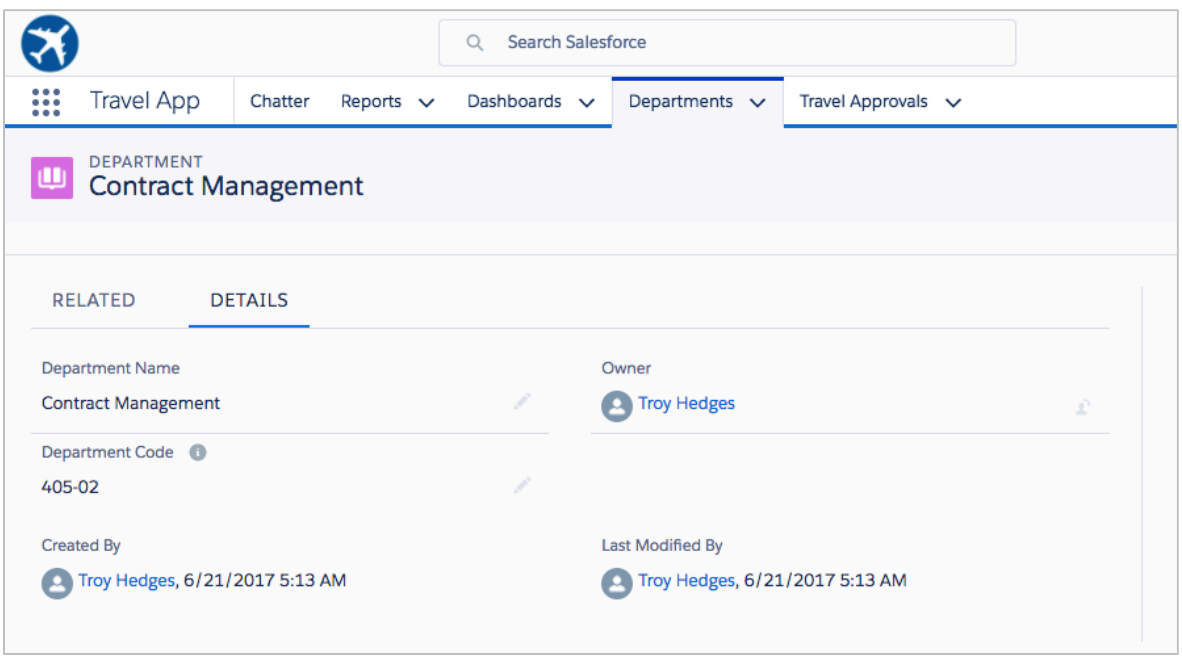
Let's view all the Departments. Click on the **Recently Viewed** option and select **All** from the drop-down options.



We now see we have a full list of Departments that were loaded from our data import of the CSV file. Notice the list only shows the Department Name for now. We can add other fields as columns to the list and will do so later in the workshop.

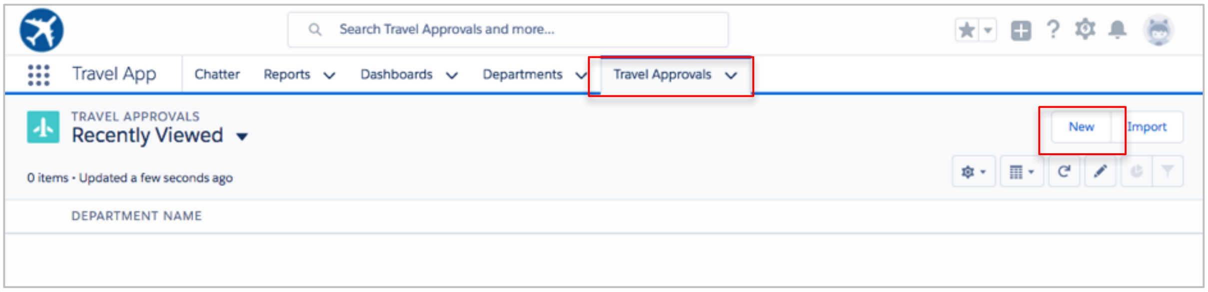


3. Click on one of the departments to drill down in to the Department details. For example, click on "**Contract Management**". This will take you to the screen below. Notice that the department details include the Department Code field we created along with some default fields like who created and last modified the record and associated date/time stamp. It also shows who currently "owns" the record.



Now let's create a sample **Travel Approval** and associate a few **expense estimates** to it.

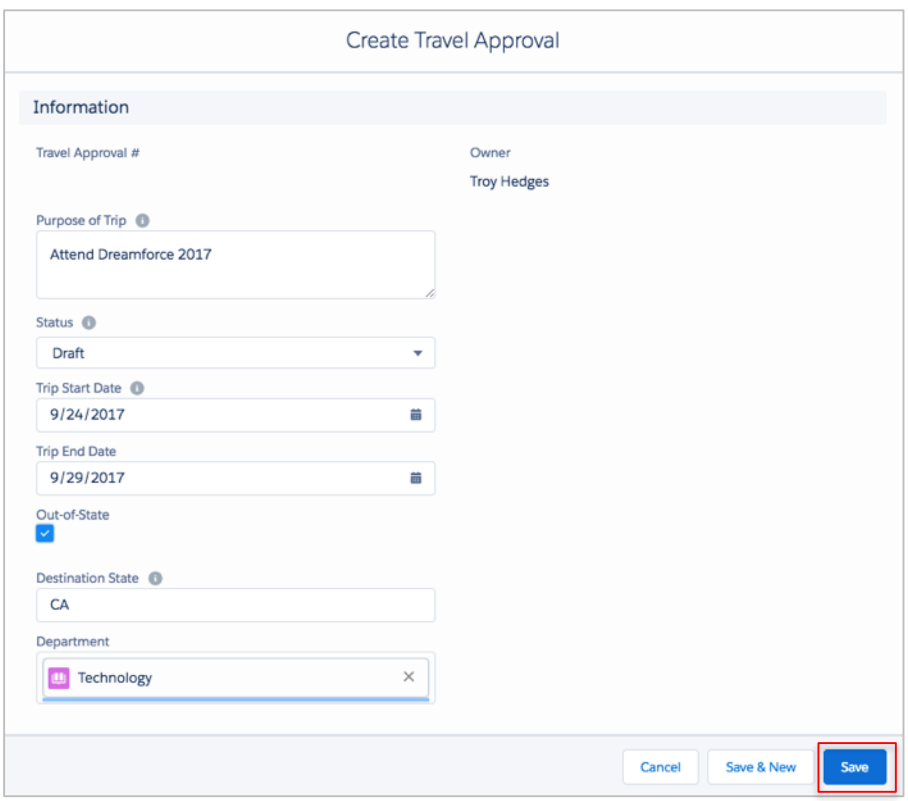
4. Click on the **Travel Approvals** tab. The **Recently Viewed** list should be empty the first time you access it since we have not accessed or created any approval requests yet. Click the **New** button on right-hand side.



5. A window will pop-up for us to enter all the details for our travel approval request. Let's enter the following details:

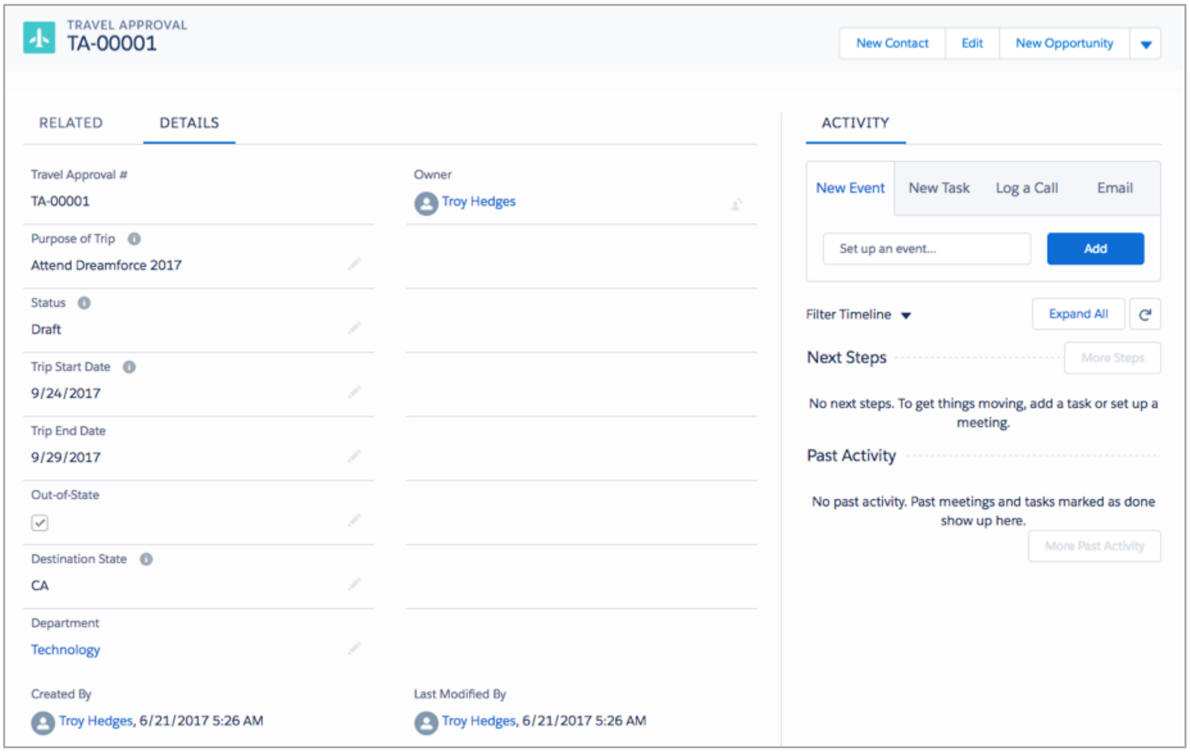
Parameter	Value
Purpose of Trip	Attend Dreamforce 2017
Status	Draft
Trip Start Date	9/24/2017 *(pick any date you want)*
Trip End Date	9/29/2017 *(pick any date you want)*
Out-of-State	*Check/select this option*
Destination State	CA
Department	Technology

The window should look like the following:

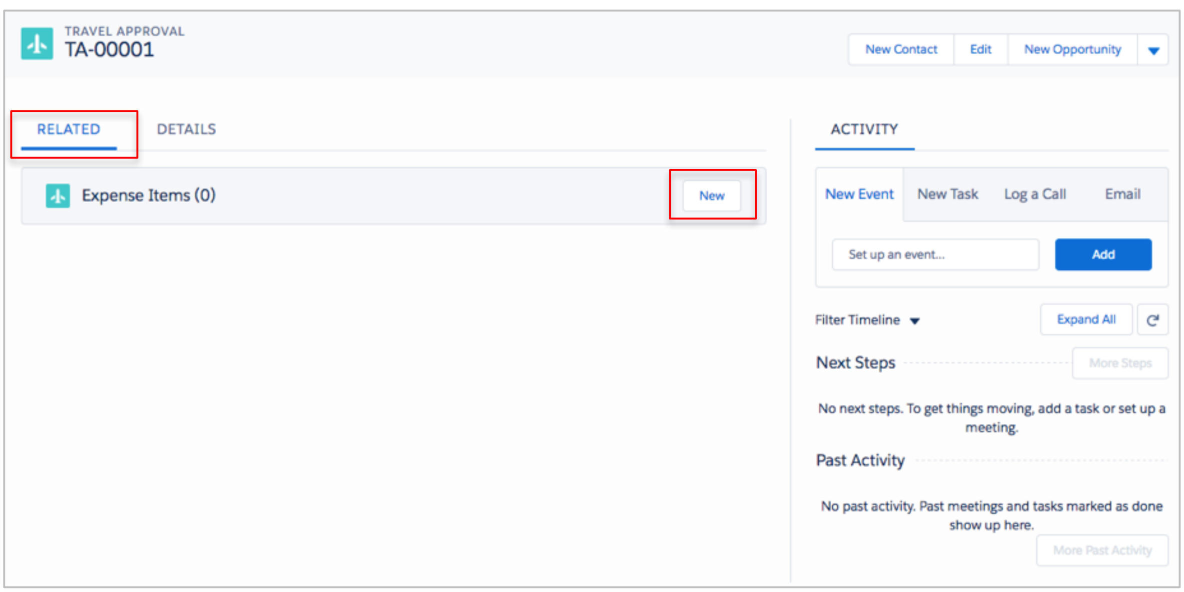


Click the **Save** button.

You should now have a travel approval record like the following



Next let's create a couple expense estimates for airfare and hotel to associate with this Travel Approval. Click the **Related** tab as highlighted above.

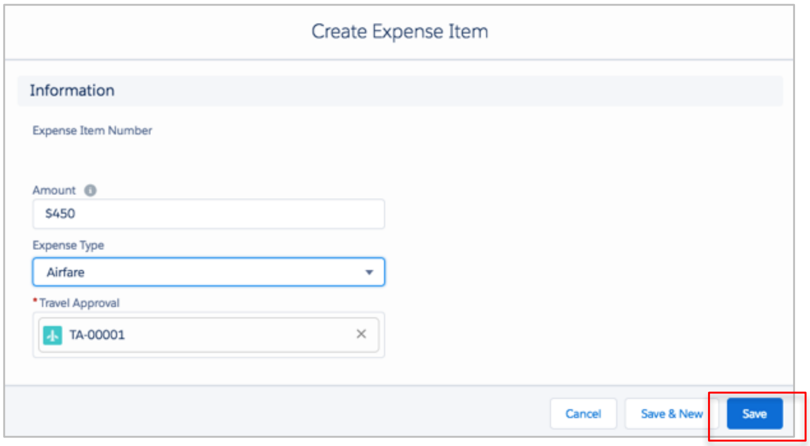


Click the **New** button next to Expense Items section. A window pops up to enter details for your expense estimate. Enter the following:

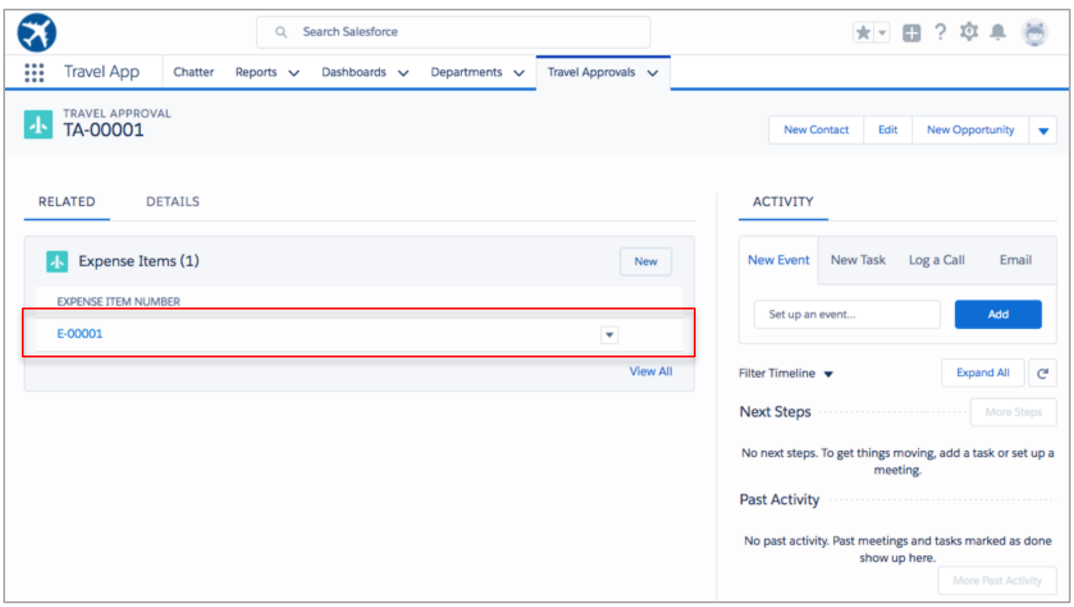
Parameter	Value
Amount	450

Expense Type	Airfare

Your window should look like the following:



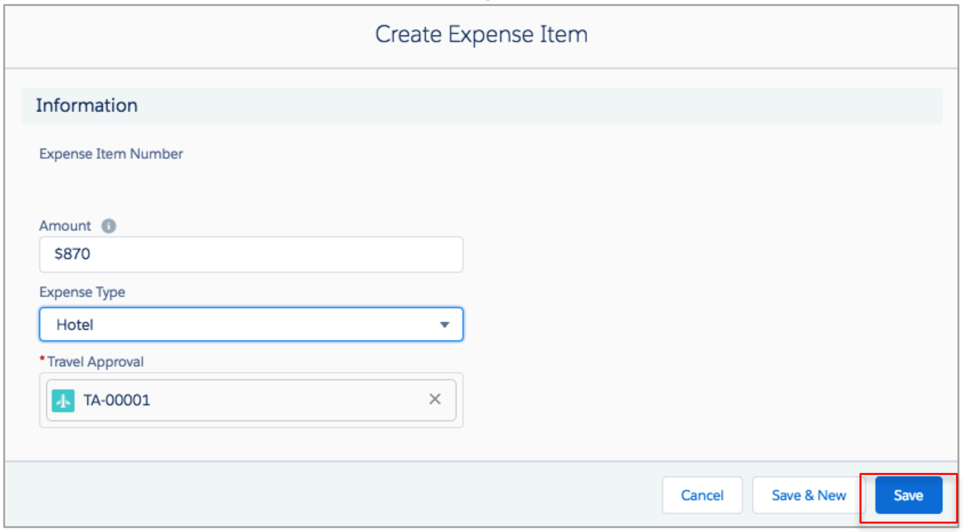
Click **Save** button. You will get a little pop-up indicator that the record was saved and you now will see a new entry in the Expense Items list. Right now it only shows the Expense Item number but we will add extra columns later in the workshop.



6. Let's create one more expense estimate for the hotel. Click the **New** button and create expense item with following values.

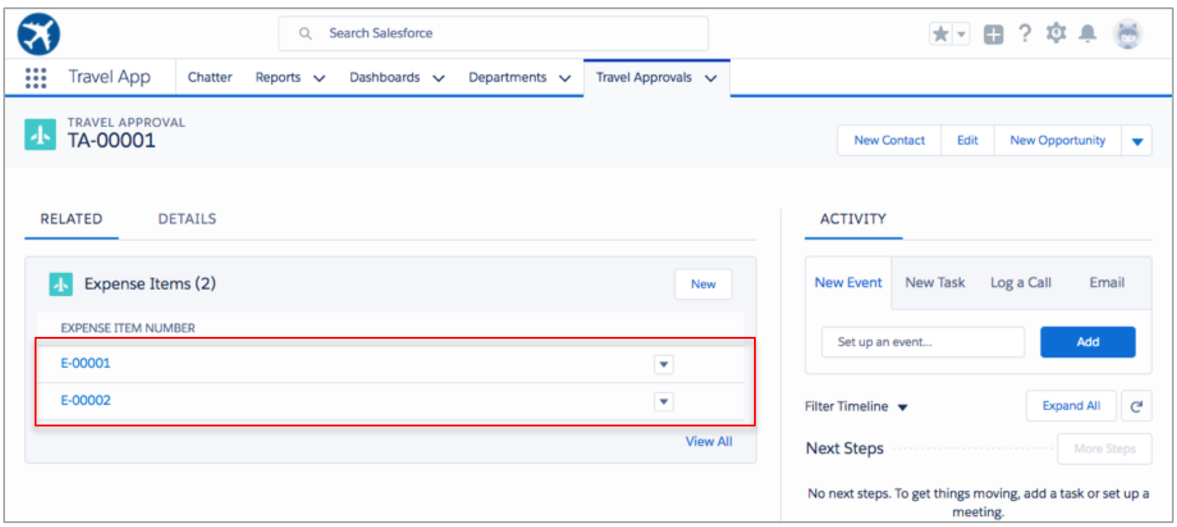
Parameter	**Value**
Amount	870
Expense Type	Hotel

Your window should look like the following:



Click **Save**.

We now see two expense line items in the **Expense Items** related list.



Remember that you can easily traverse between items by just click on the link to the record. In above window, we can just click on the DETAILS tab to get to the travel approval details. We can click on one of the Expense Item Number links to drill down to the expense item. Try navigating around in your app and ask the instructor if you have any questions.

Modify the User Interface

Duration: 45 minutes

Salesforce provides many capabilities to adjust the user interface to your needs. Many adjustments can be made through configuration menus and drag-and-drop page layout editors. All with no coding required; however, if your agency has advanced user interface requirements beyond what can be accomplished with standard configuration, you definitely have the ability to have your developers develop custom interfaces or components that can be added to your screen. For this workshop, we are focused on the non-coding approach to modifying the user interface.

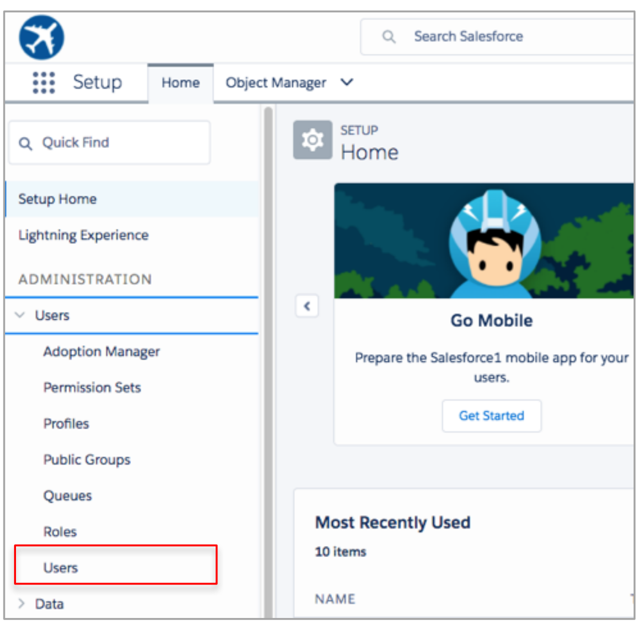
In this section, you will customize the following user interface options:

- **Create and Modify List Views** – you will modify existing record lists (i.e. Recently Viewed) to add new columns and will create a new list view from scratch
- **Adjust the Travel Approval Page Layout** – you will modify a page layout by using the page layout editor to drag-and-drop fields on the page and using sections to group fields
- **Edit Related List Columns** – you will modify the Travel Approval page to show new columns for related objects (i.e. Expense Items). This is accomplished but editing the page layout for the Travel Approval object.
- **Enable Record Collaboration** – you will turn on Chatter collaboration so that people can collaborate on a record versus having separate email conversations

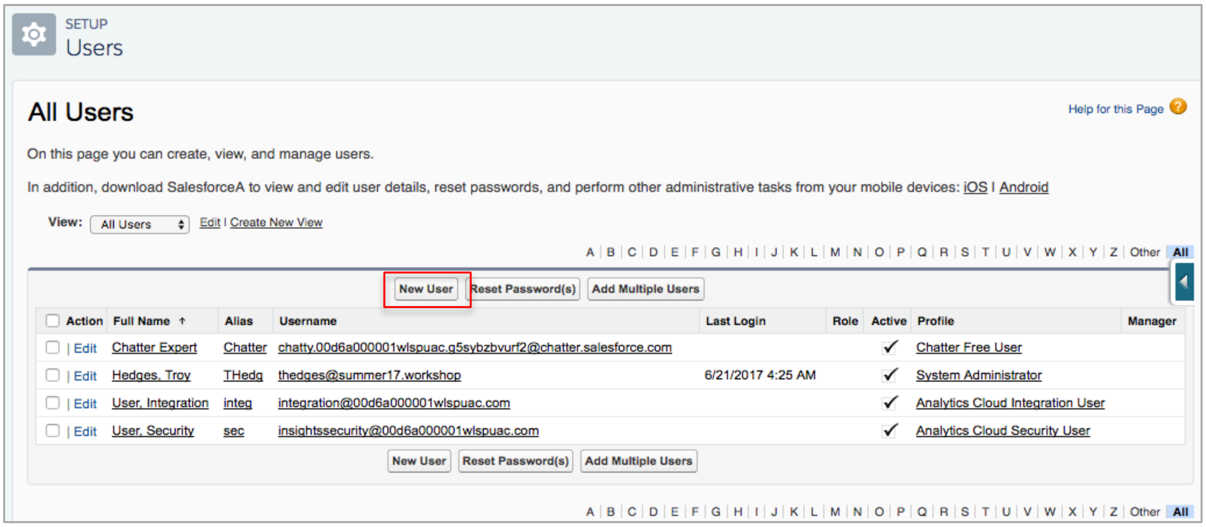
Create A Demo User

Before we jump in to editing list views, we will first create a second user in your Salesforce environment that will be utilized later in the workshop.

1. Access Setup by clicking the gear icon in upper-right and select **Setup**.
2. Click **Users > Users** in left-hand side.



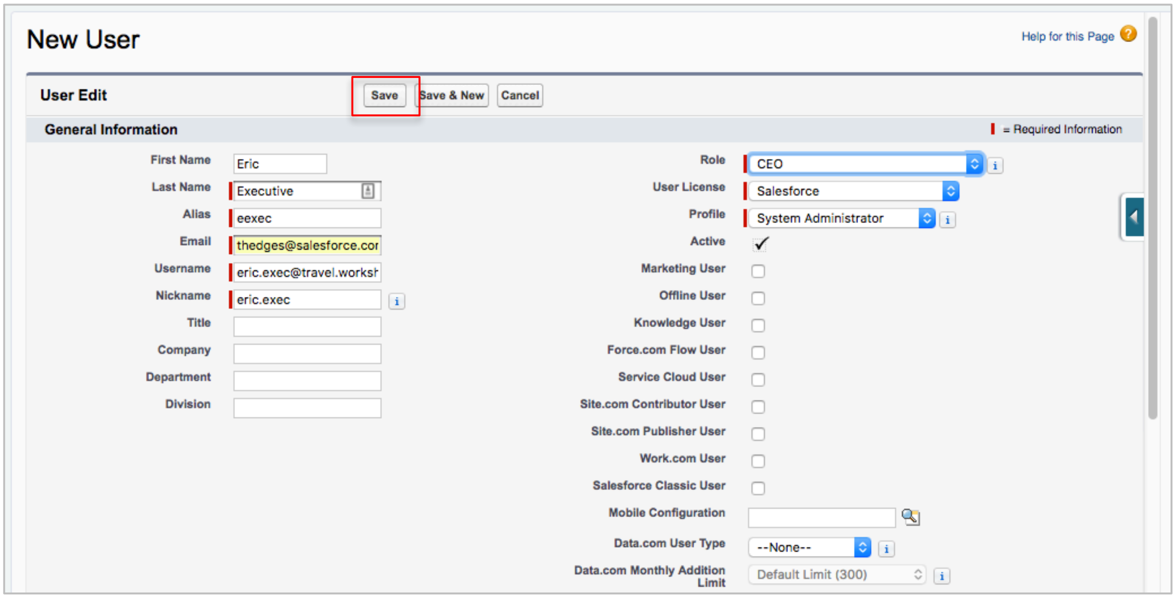
3. Click **New User** button near the middle of the screen.



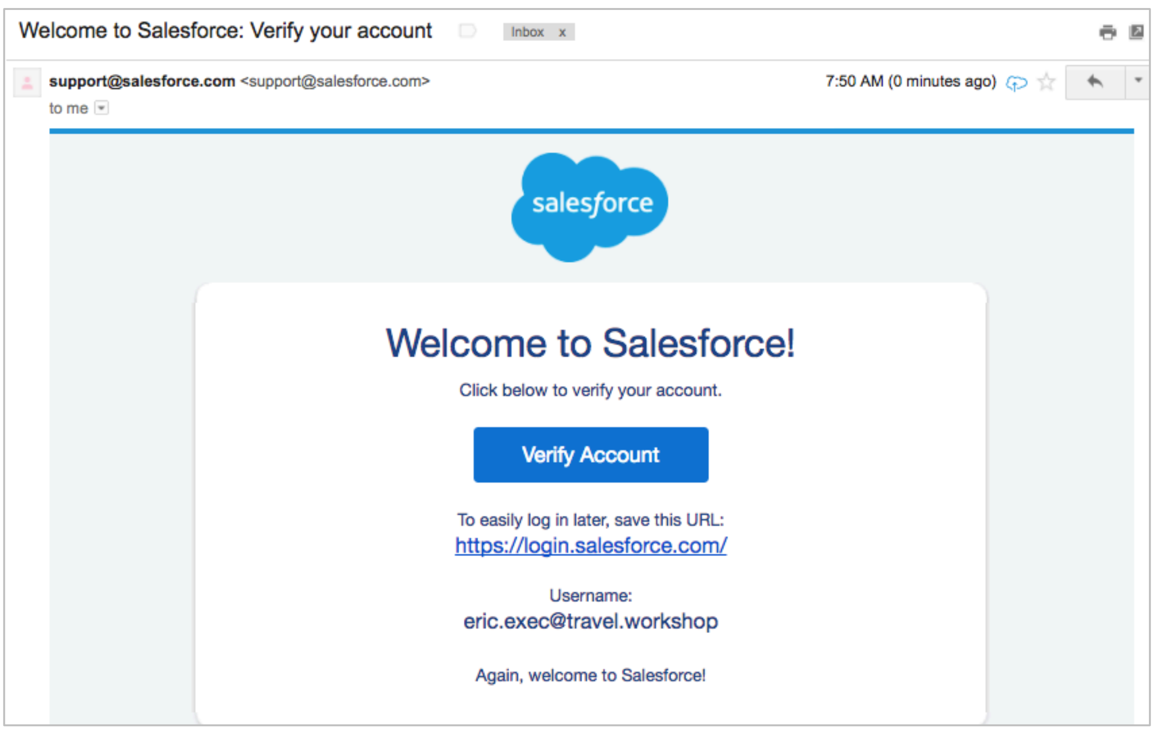
4. Fill out the new user screen with following parameters:

Parameter	Value
First Name	Eric
Last Name	Executive
Alias	eexec
Email	**(put in your real email address that you can access from workshop)**
Username	Usernames must be unique across ALL of Salesforce. Pick a username like: • **eric.<yourlastname>@<youragency>.workshop** • ...or create a username of your choice that should be unique
Nickname	eric.exec
User License	Salesforce
Role	CEO
Profile	System Administrator
Timezone	Optional: **(pick your time zone)**

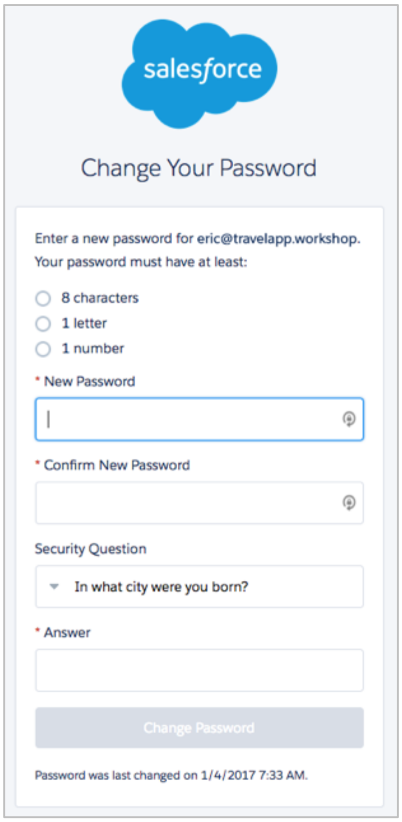
Your window should look like following:



5. Click **Save** button. You should receive an email like the following.



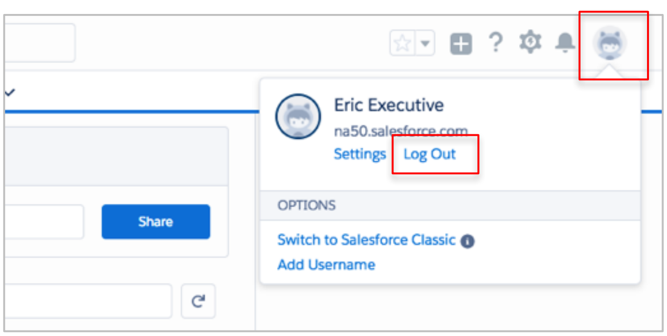
6. Click on the **Verify Account** button in the email to confirm this new user. You will be presented with screen like following:



7. Enter a password and security question (make sure you can remember them) and select **Change Password** button.

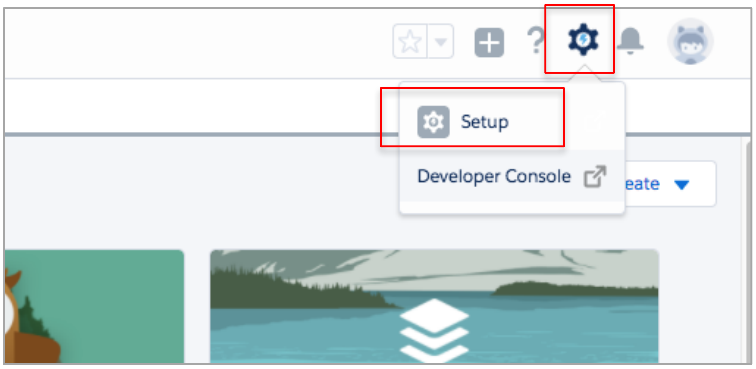
   You will now be logged in to the system as Eric Executive.

8. To continue the workshop as yourself, click on person icon in top-right and select **Log Out**.



9. Navigate to https://login.salesforce.com and login with your workshop user credentials.

10. Access Setup by clicking the gear icon in upper-right and select **Setup**.



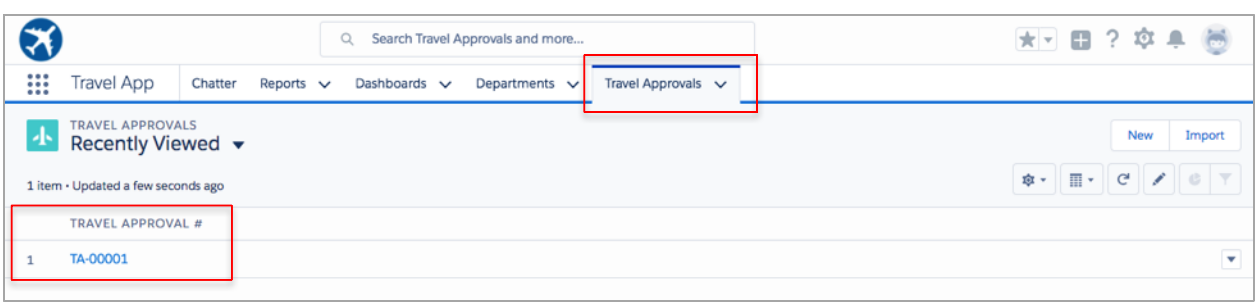
Let's now set Eric Executive as your manager. This will be used in our approval process used later to route your travel approval requests to your manager as first level approval step.

11. Click **Users > Users** in left-hand side.
12. Select your user account in the list provided (i.e. click on your name in the All Users list)
13. Click the **Edit** button near middle of page.
14. Scroll down to the **Approver Settings** section near the bottom of the page. Set your manager as Eric Executive by clicking the magnifying glass icon and selecting Eric from list.

15. Click **Save** button to save your user record.

Edit a List View

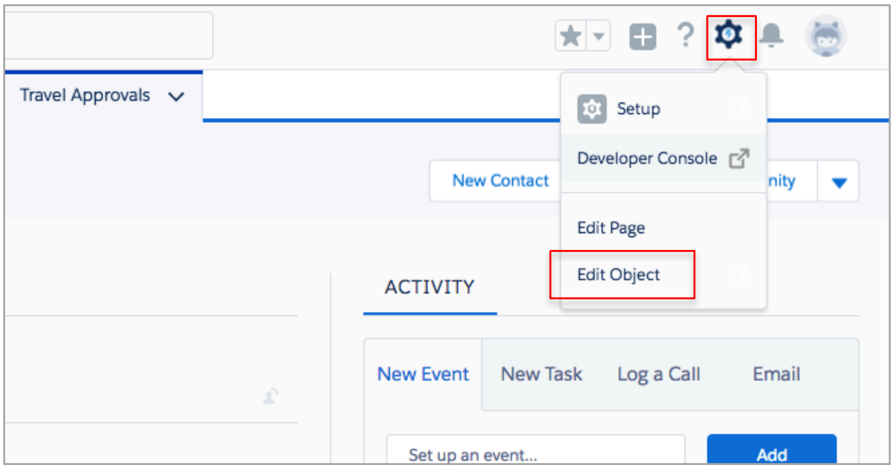
Before we jump in to editing your Travel Approval screen, you might have noticed that when you click on the Travel Approvals tab that it currently only shows the Travel Approval # field and no other columns. Give it a try and verify that you see screen like the following (i.e. navigate to your **Travel App** and click on the **Travel Approvals** tab):



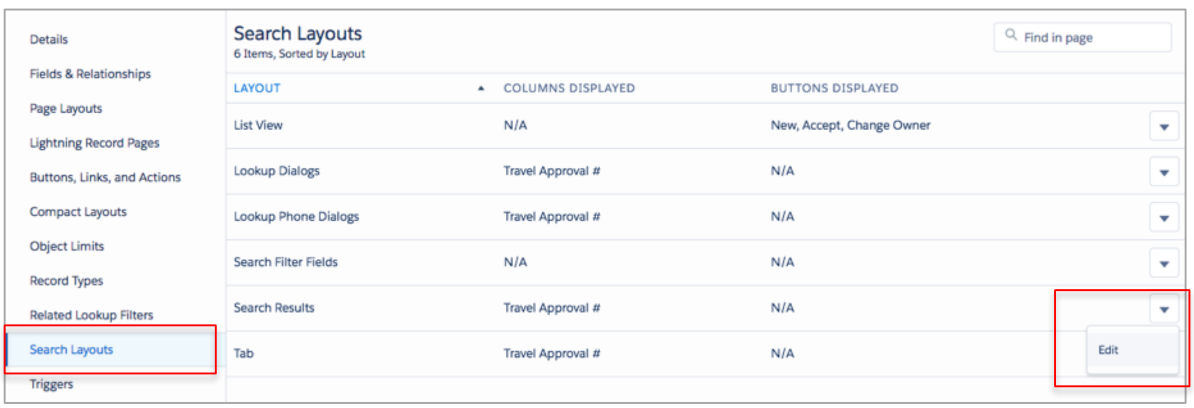
You can switch between different list views by selecting the current list view and selecting another from the drop down list.

1. Let's first add some columns to the **Recently Viewed** list view which by default only shows the **Travel Approval** # field. Click on the travel approval record you created earlier (should be **TA-00001**) so that you are now on the record detail page.

2. In top-right, click on gear icon and then **Edit Object**. This will load the object configuration page for the **Travel Approval** object.



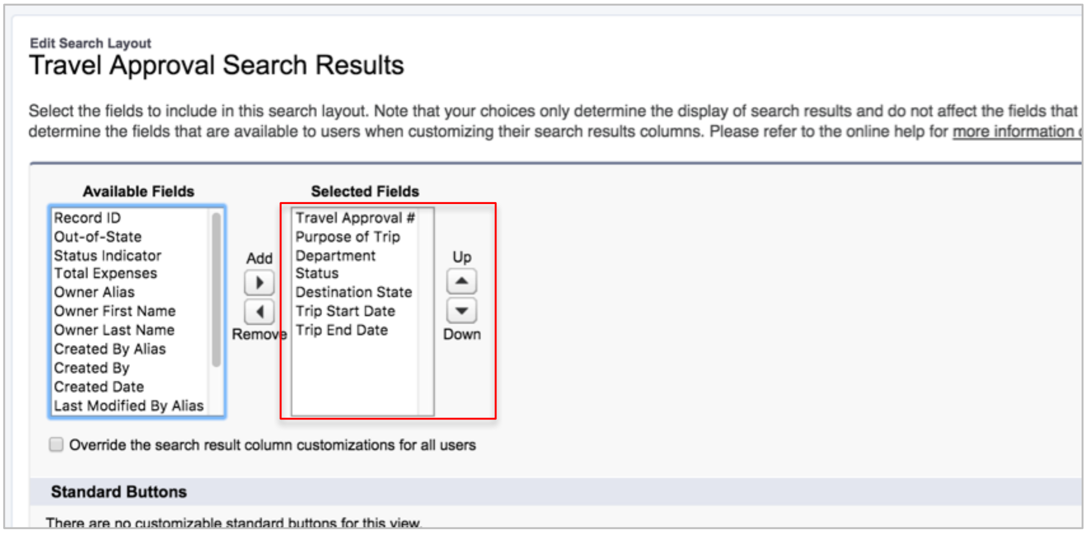
3. On left-hand side, click on the option **Search Layouts**. Click on the on the end of the **Search Results** row and select **Edit** from the drop-down.



4. Let's now add the columns we want to show on the **Recently Reviewed** list view. Select the following columns and using the arrows, move them from left-hand side to the right-hand side.

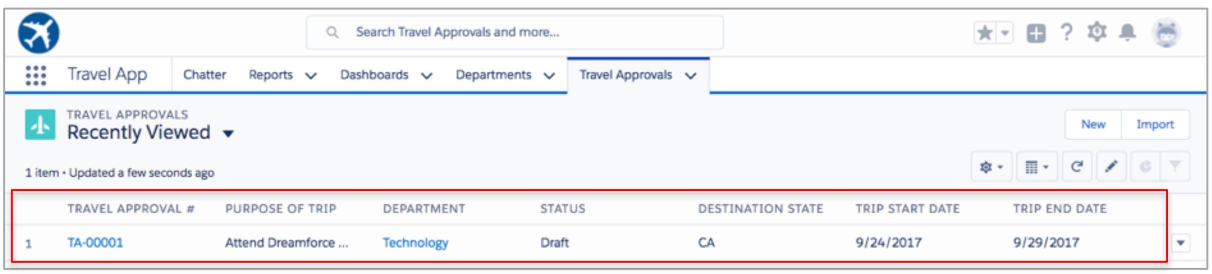
   - Purpose of Trip
   - Department
   - Status
   - Destination State
   - Trip Start Date
   - Trip End Date

   Your screen should look like the following:



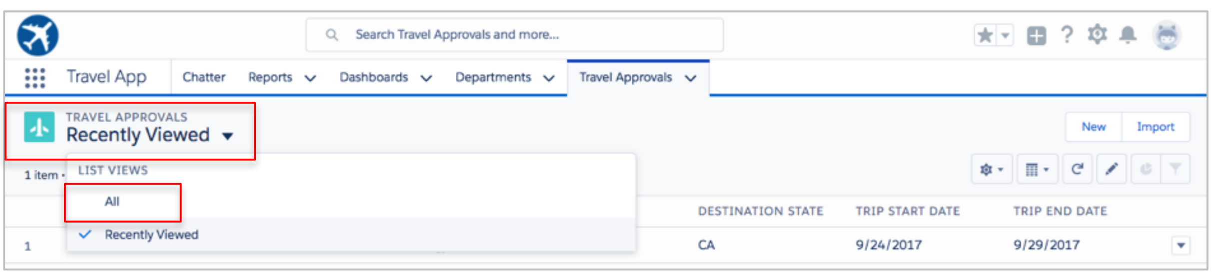
Click **Save** button.

5. Navigate back to your **Travel App** and click on the **Travel Approvals** tab to get back to your Recently Viewed list view. It should look like the following:

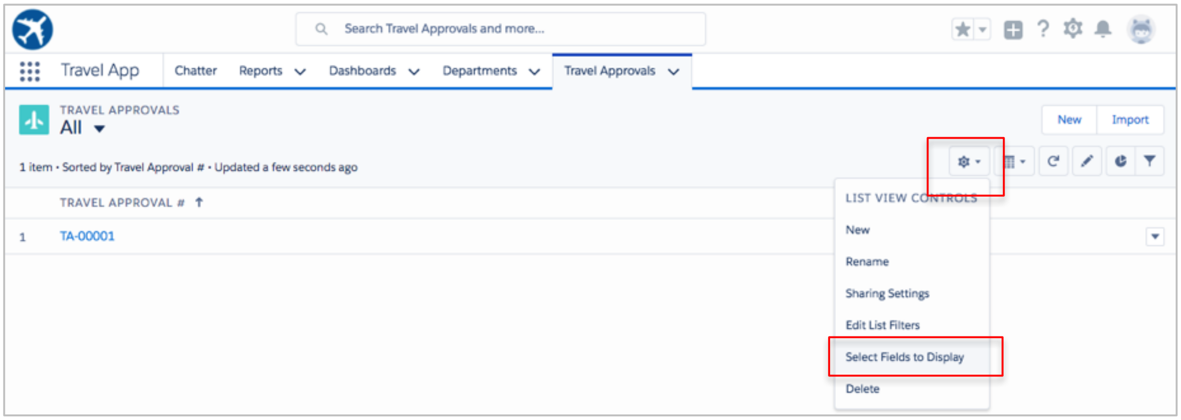


There is also another default list view named **All**. Let's switch to that list view to add some more columns to it also.

6. Select the List View selector (should say **Recently Viewed**) and pick **All** from the drop-down options.



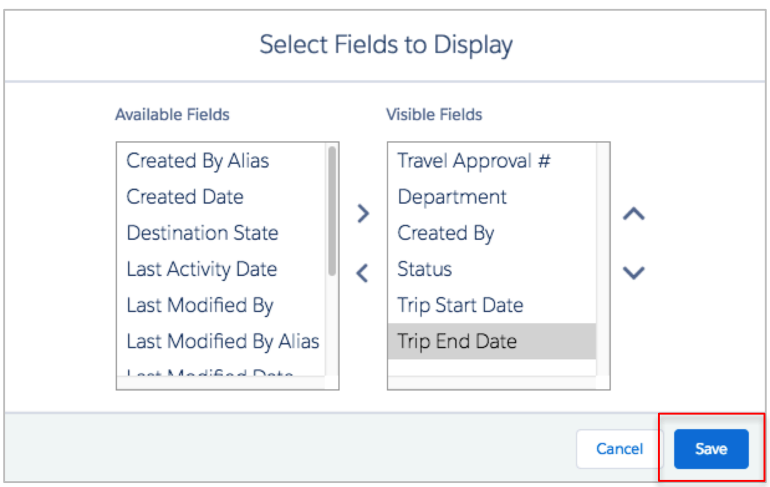
7. To add some more fields to show for this list view, click the gear icon on right and then select **Select Fields to Display** from drop-down.



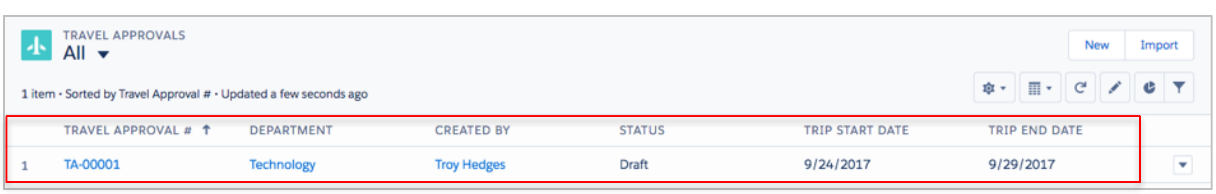
8. Add the following fields to the list by selection them in the left-hand column and using the arrows to the right-hand side. Once you have moved your columns to right-hand side, you can adjust the order of the columns by using the up/down arrows.

   - Department
   - Created By
   - Status
   - Trip Start Date
   - Trip End Date

   Your screen should look like the following:

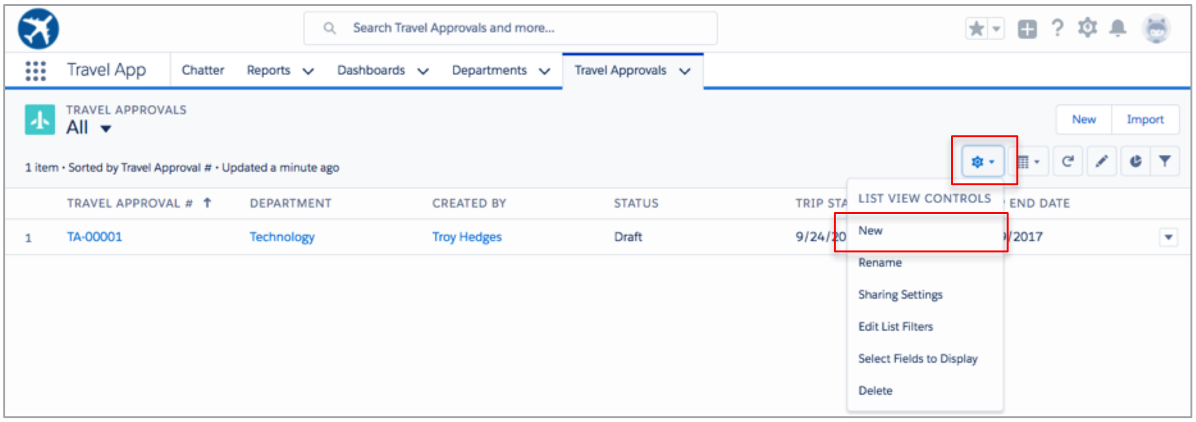


9. Select **Save** button and your list view should look like the following.

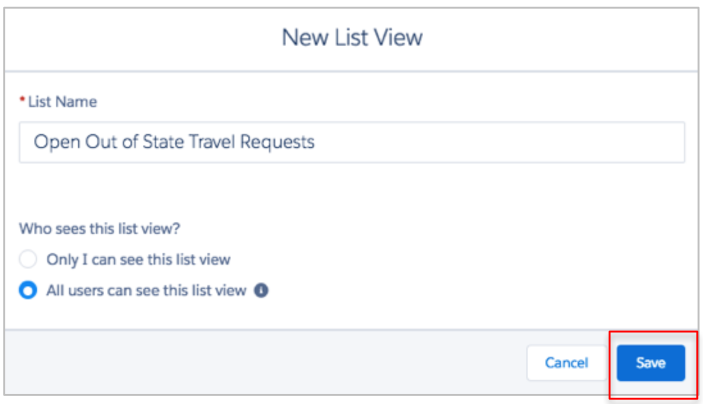


You can also create a custom List View for your own needs. It can be private only to you or you can make it accessible to other users. Let's say we want to create a List View to show all open "Out of State" travel requests (i.e. have not been approved or rejected).

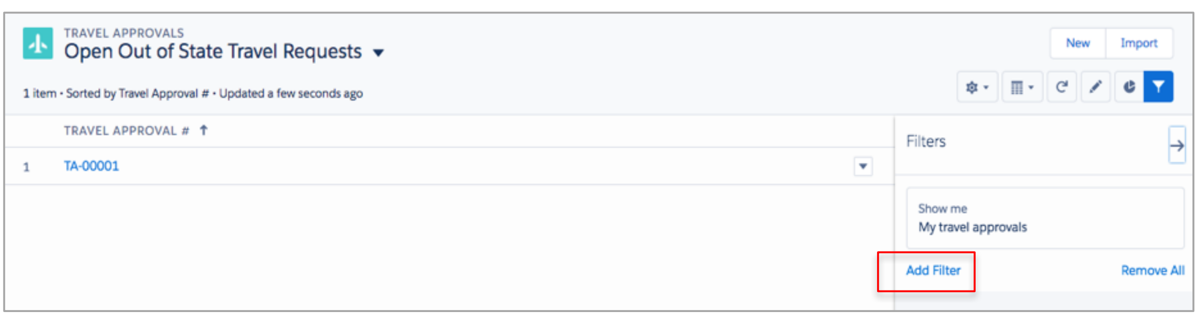
10. Click the List View gear icon and select **New** option.



11. Name the new list view "**Open Out of State Travel Requests**" and make sure that **"All users of the system can see this list view"** is selected. Your configuration window should look like following. Click the **Save** button.



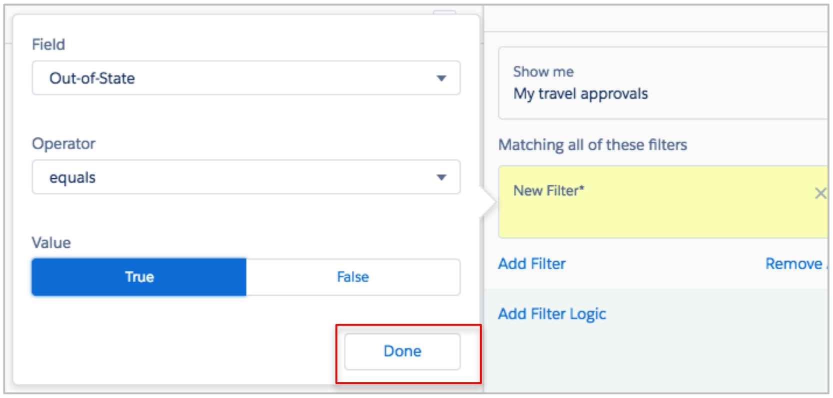
12. Your screen will now look like the following. Let's first add a filter to the list view to only show out-of-state requests that are not Closed. On right-hand side of screen, click the **Add Filter** button.



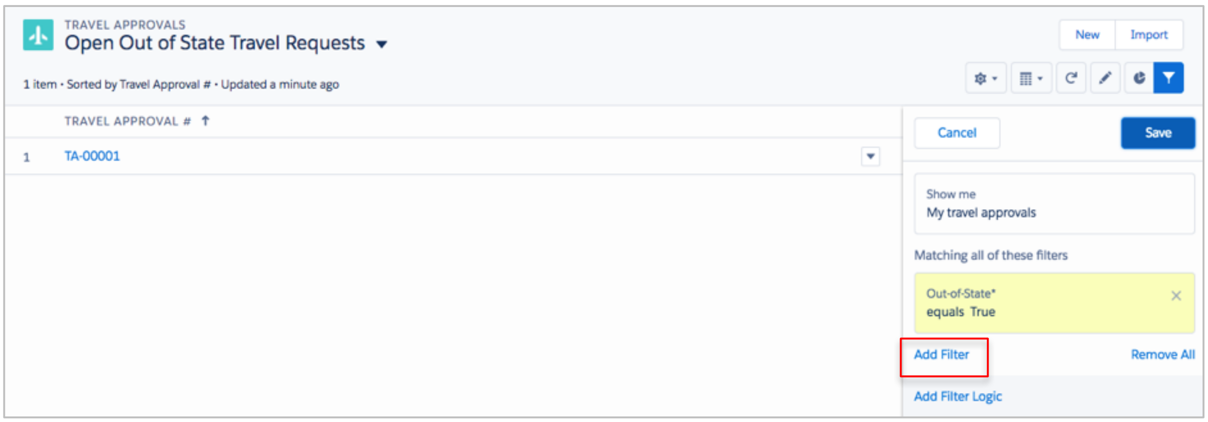
Select the following values for the filter:

Parameter	Value
Field	Out-of-State
Operator	equals
Value	true

Your screen should look like the following. Click the **Done** button.



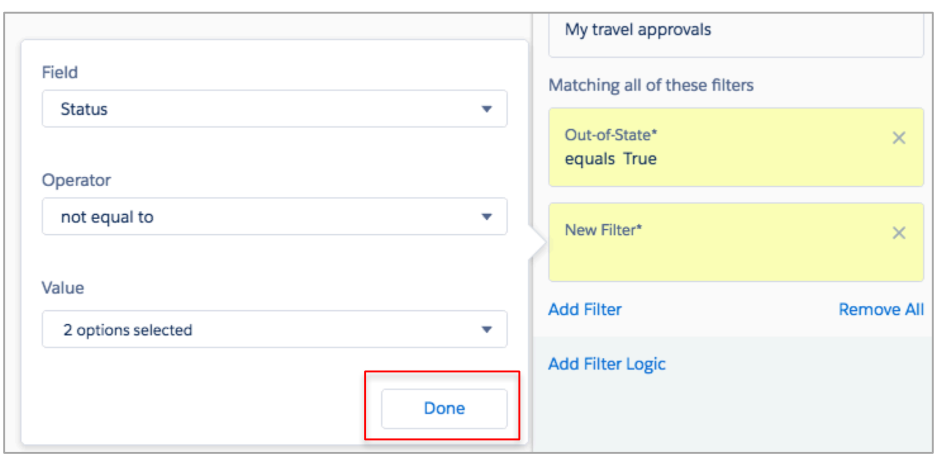
Your screen should now look like the following



13. Now let's add another filter criteria to filter out any Approved or Rejected (i.e. non-open) travel requests. Click the **Add Filter** button again. Configure the filter as follows:

Parameter	**Value**
Field	Status
Operator	not equal to
Value	Select **Approved** and **Rejected** options

Your screen should look like the following. Click **Done** button when complete.

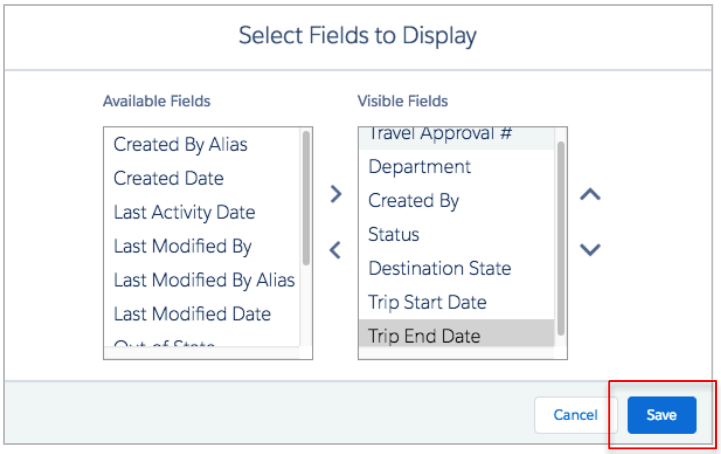


14. Your screen should now look like the following. Click the **Save** button when filters are complete.

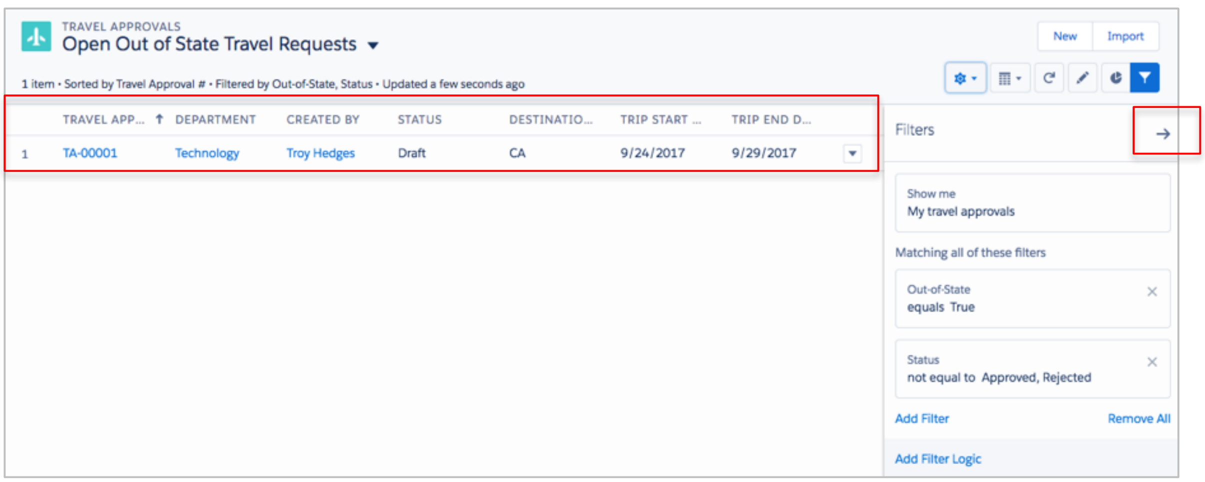
15. As we did earlier, let's add some columns now to this list view. We'll add the same columns as we did earlier. Click the List view gear icon on right and then select **Select Fields to Display** from drop-down.

16. Select the following fields to display
    - Department
    - Created By
    - Status
    - Destination State
    - Trip Start Date
    - Trip End Date

    Your screen should look like the following:



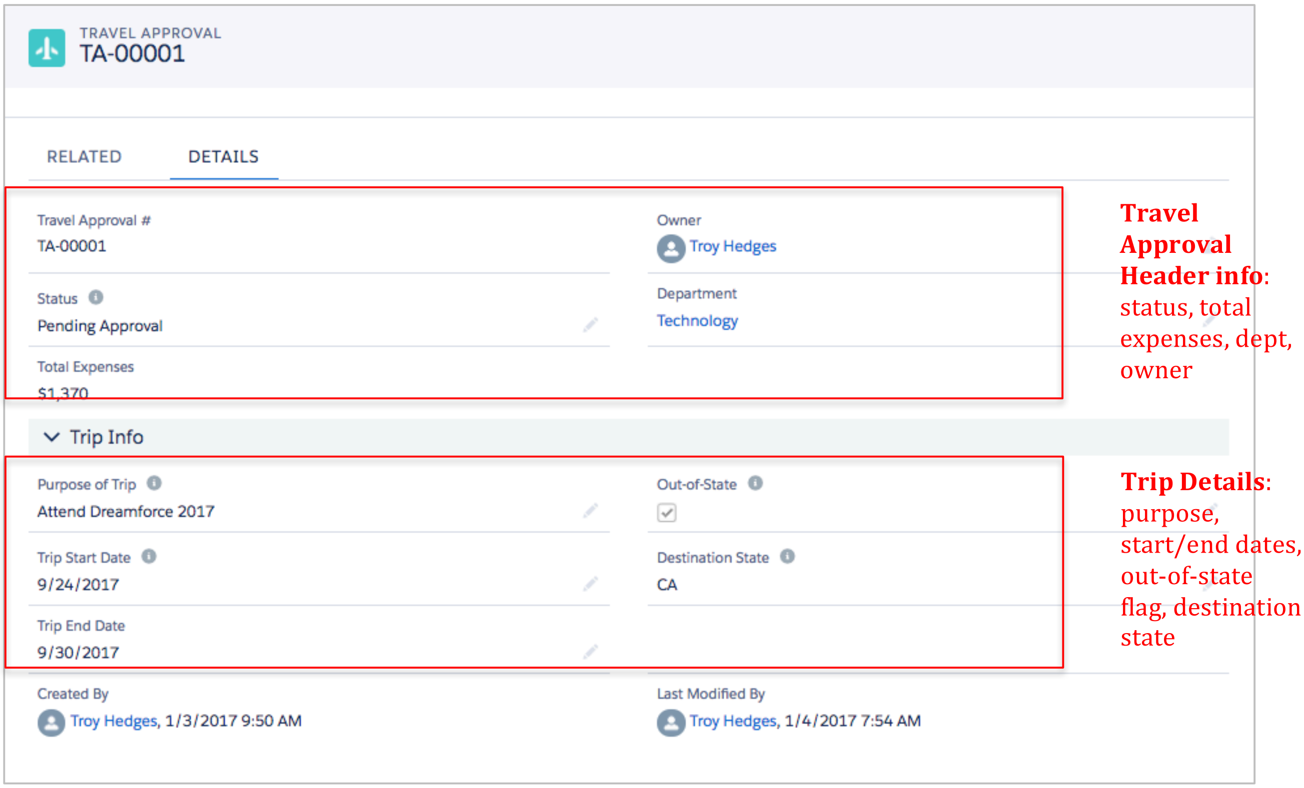
Click **Save** button. Your screen should now look like following. You can hide the List View filters by click on the arrow  on right hand side.



Edit the Travel Approval page layout

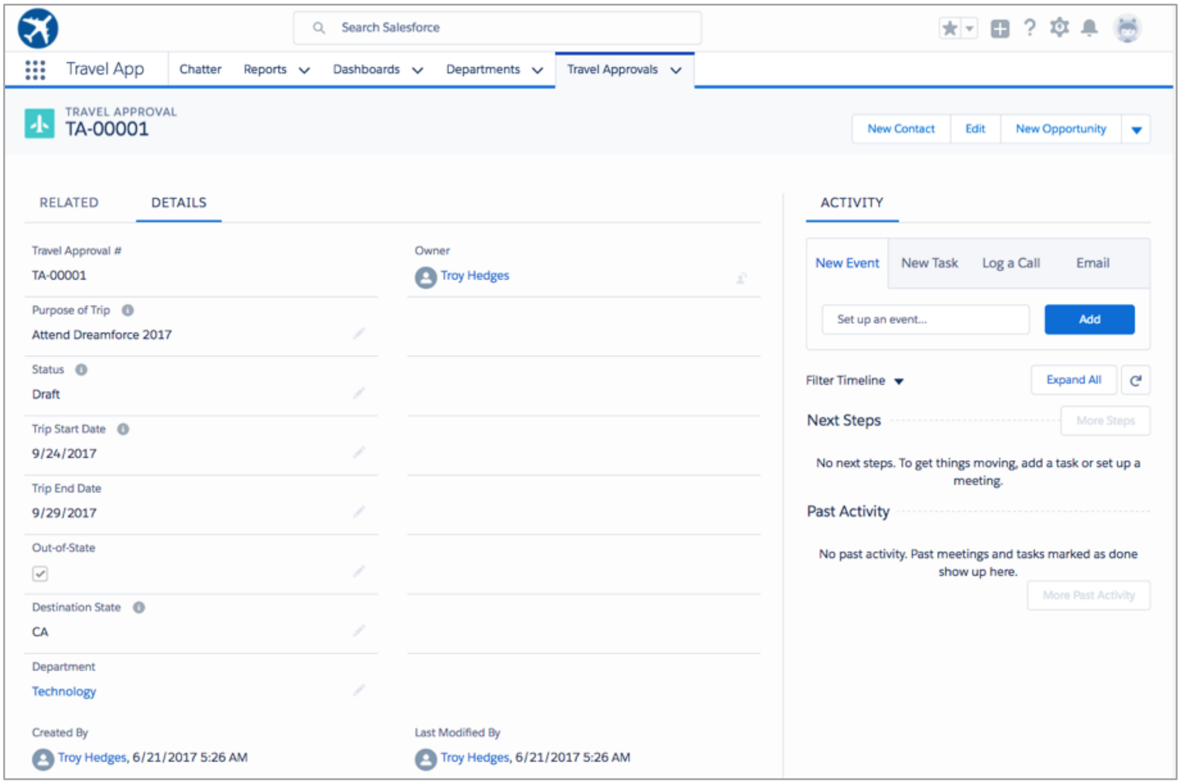
You may have noticed from trying out the app, that all of the fields on your **Travel Approval** or **Expense Item** record are aligned in a single column and are slotted in the order in which they were created. This is the default behavior of the new field wizard, but it's not practical for how your users will want to use the system. As a result, your agency business analyst has asked that you group fields together logically in order to assist users better with data entry.

The following graphic show how the business analyst would like the Travel Approval fields to appear as well as the grouping:

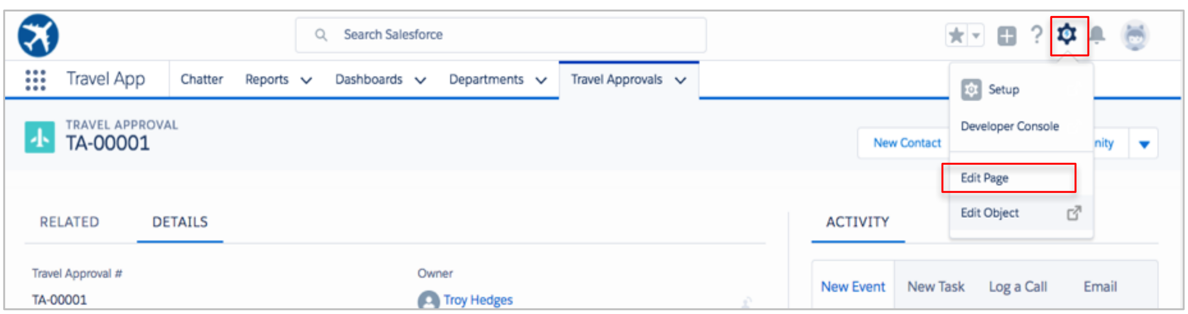


We will now adjust the Travel Approval user interface as defined above.

1. Drill down to the Travel Approval we created earlier (i.e. click on Travel Approvals tab and click on the record you created which should be labeled "TA-00001"). Your screen should look similar to following:

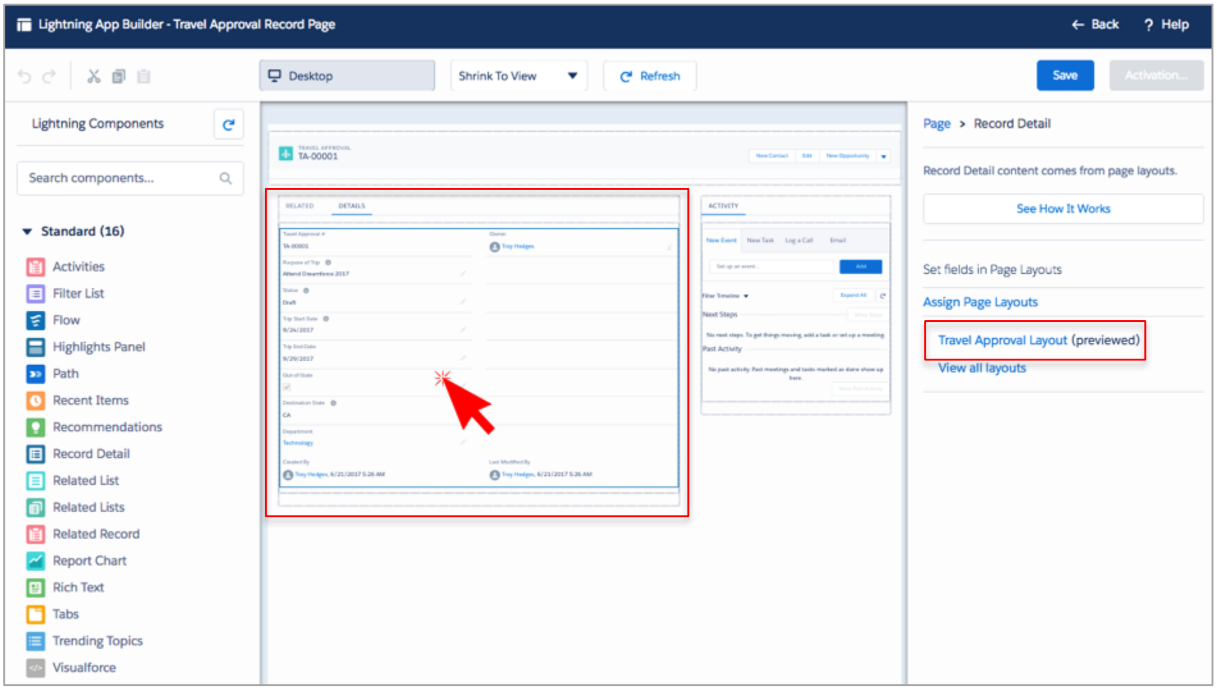


2. To edit the current page layout, click the setup gear icon in upper-right and select **Edit Page.**

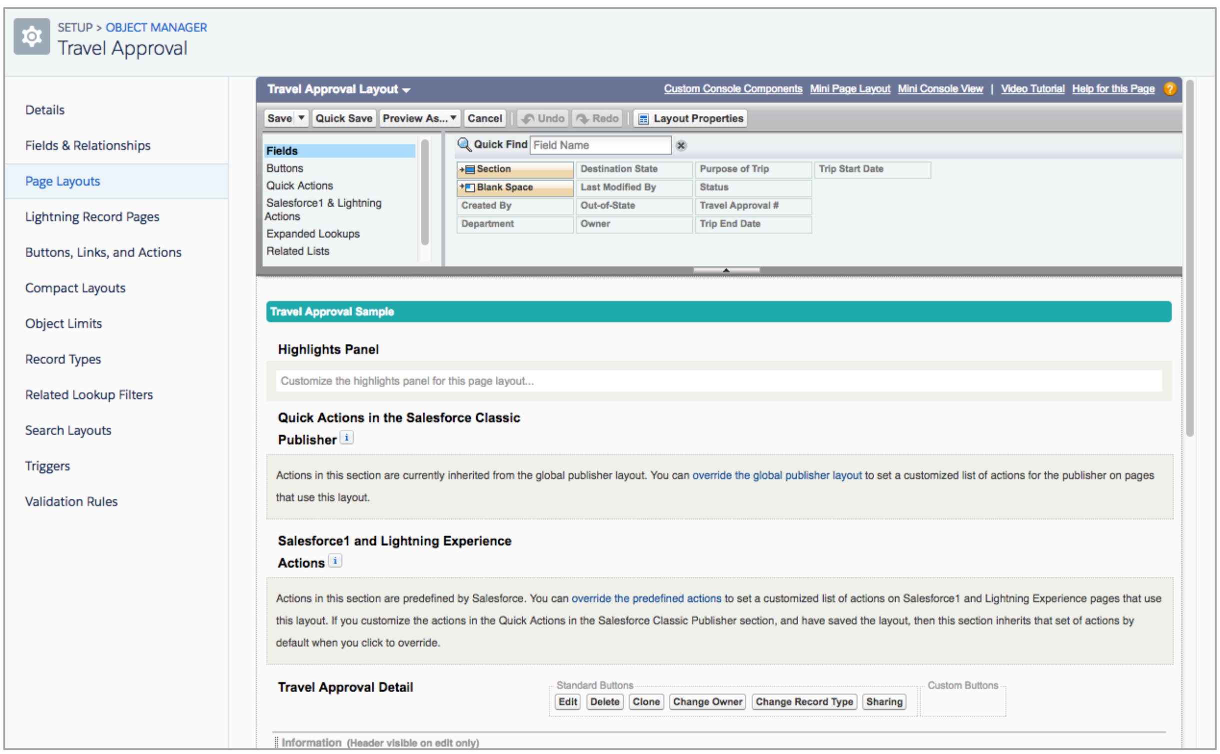


3. The next screen that loads is the **Lightning App Builder** that allows you to modify the components that show on the page. With the new Lightning Experience, your admins and developers have the ability modify which components are shown on a given page or even new pages themselves. In the screen below, you have components on the left-hand side that can be dragged-and-dropped on to the page. We will not be adding any components during this workshop.

   As shown in below diagram, **left-click once in the middle of the form to select it**. You should see a light blue border around the form. On the right-hand side, click on **Travel Approval Layout (previewed).**

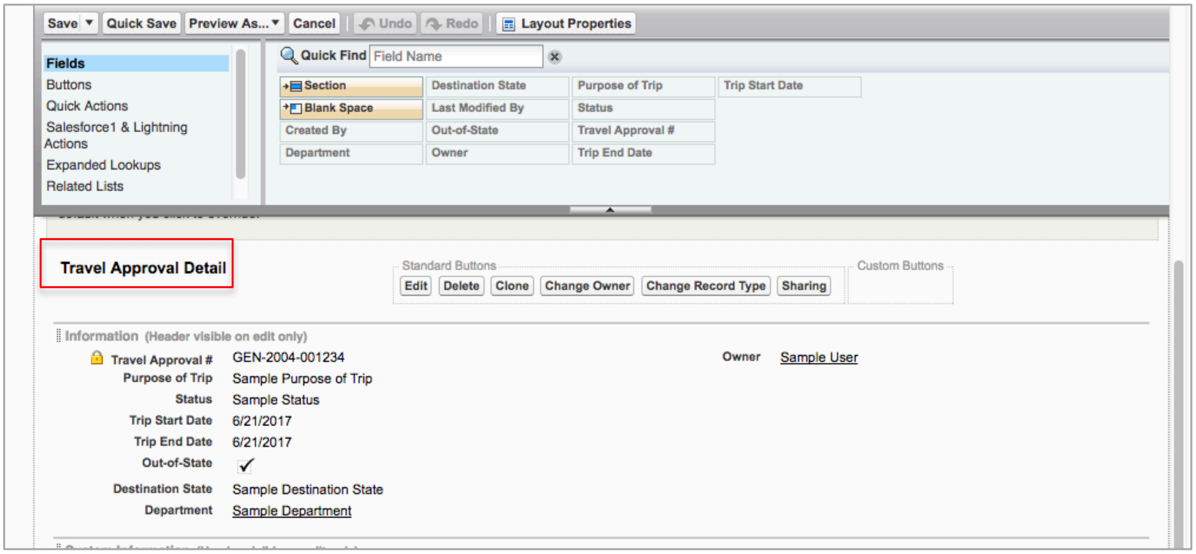


You are now taken to the page layout editor as shown below.

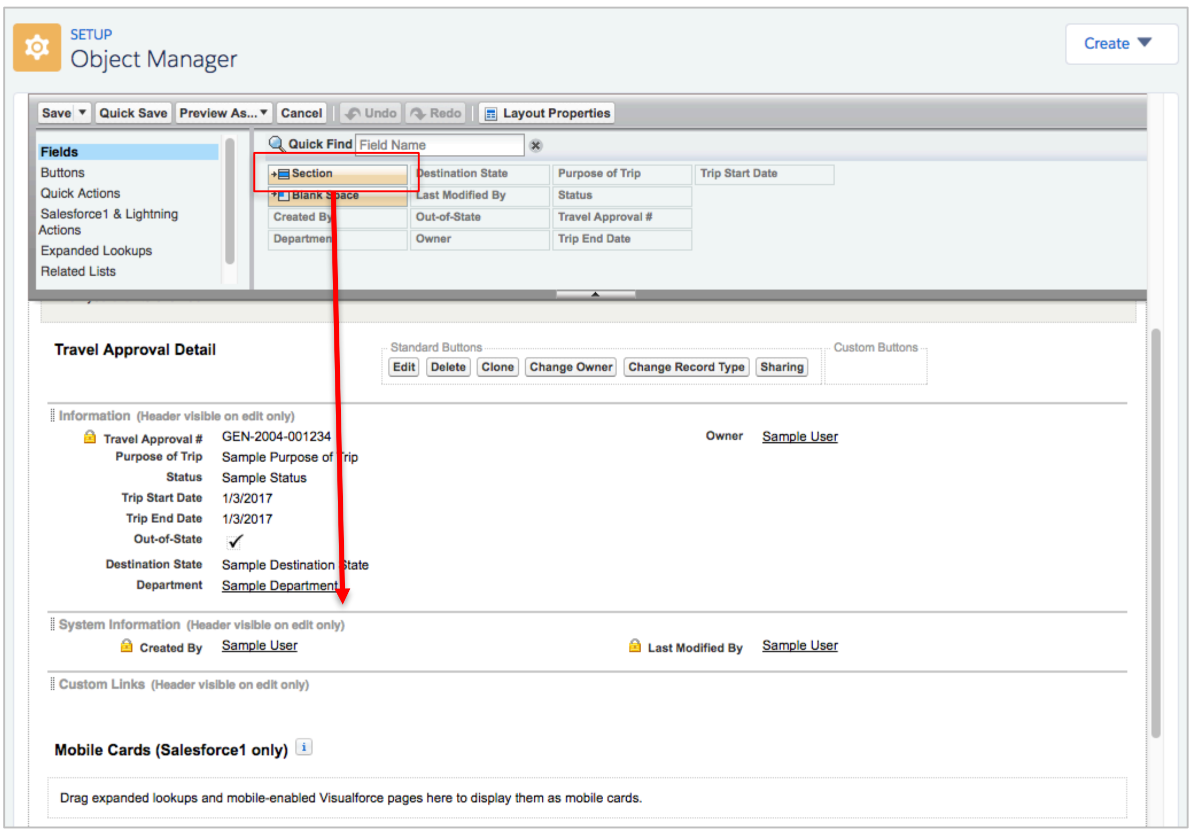


The layout editor allows you to configured which fields, buttons, or related lists to show on your page.

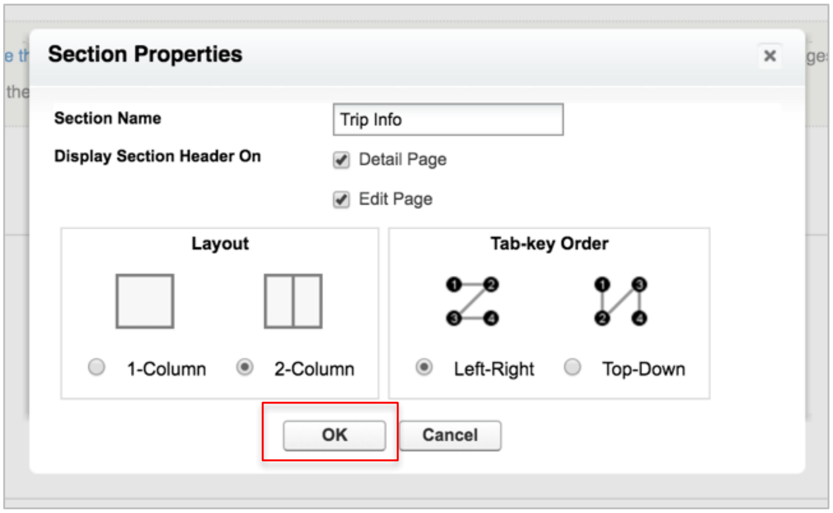
4. Scroll down until you can see the **Travel Approval Detail** section like the following. We will now change the order and position of some of the fields along with creating a new section to group the trip detail fields.



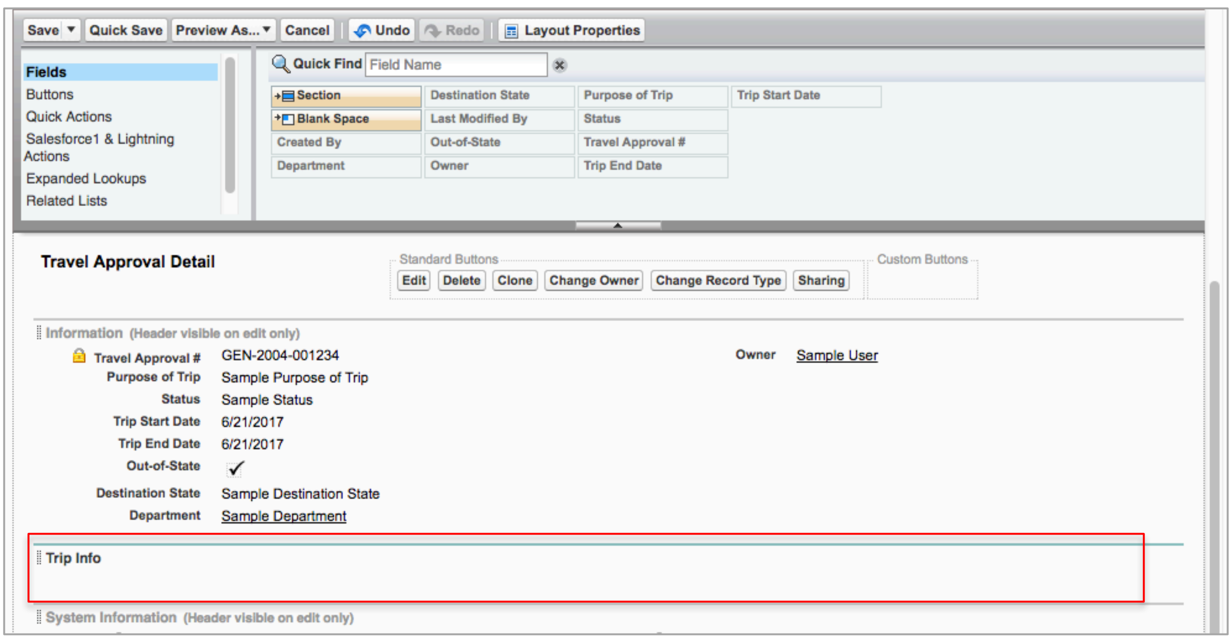
5. Let's first create a new section on the form called "Trip Info". Drag-n-drop a field section (which allows us to group a set of fields) down on the page directly below the **Department** field. When dragging over the page, you will get a visual indicator of where you can drop the new section.



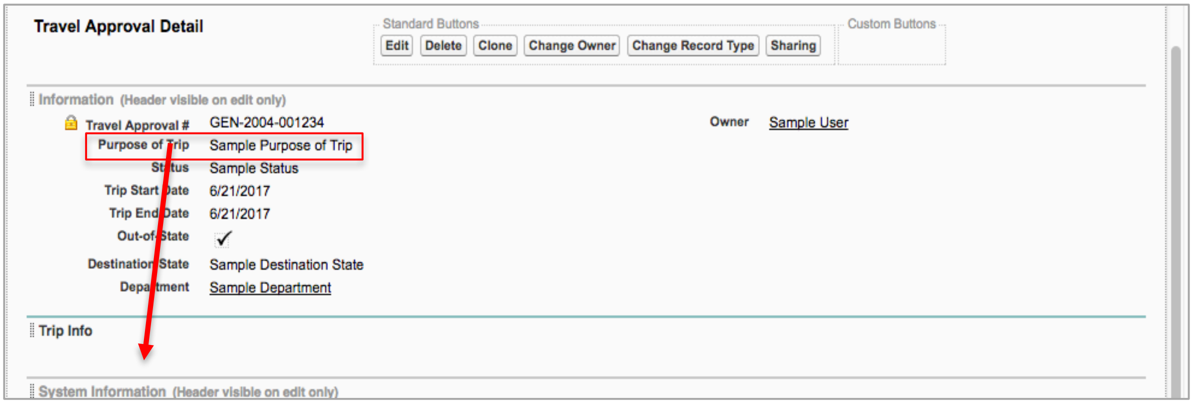
A pop-up like the following will show to allow us to configure this new section.



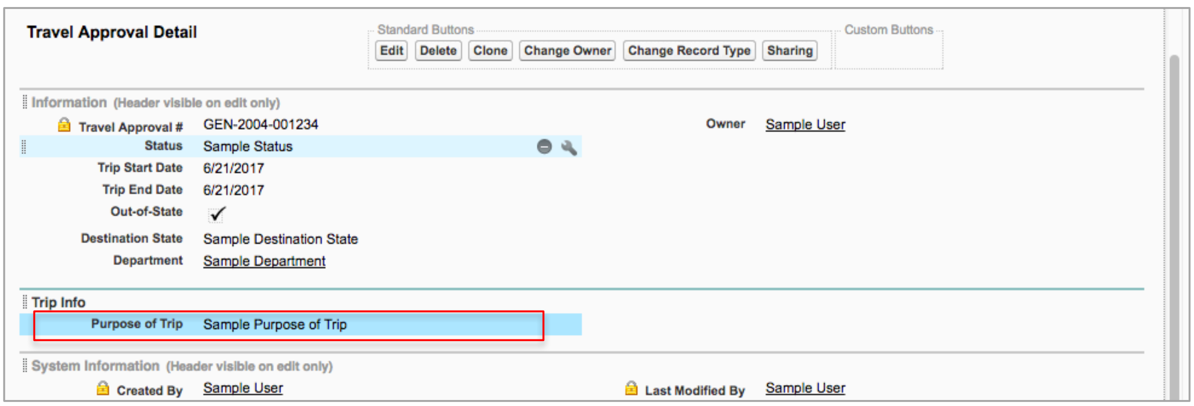
6. Name the section "**Trip Info**" and leave the rest of the settings at their default values. Click **OK** button when complete. Your window will look like the following with the new section added.



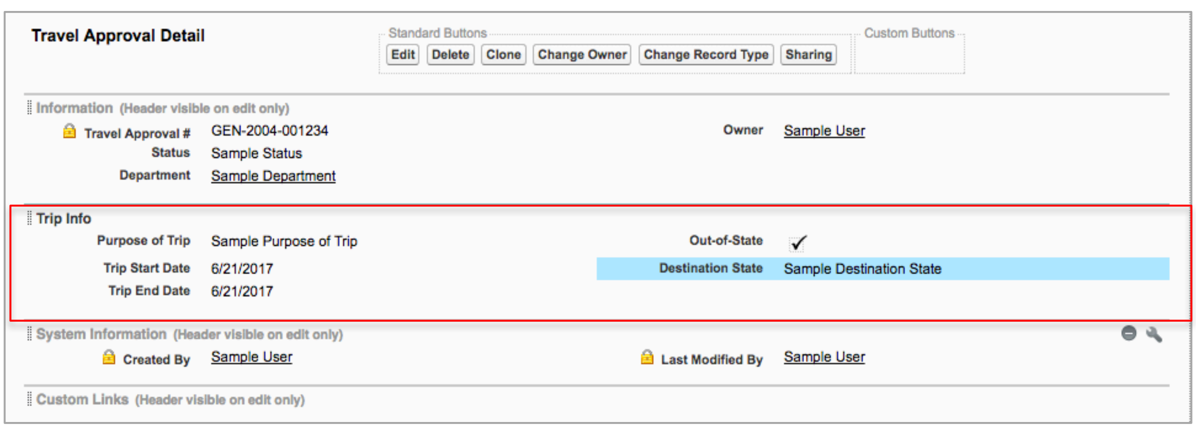
7. Now let's reorganize some of the fields on the page. Drag the field **Purpose of Trip** down to the **Trip Info** section.



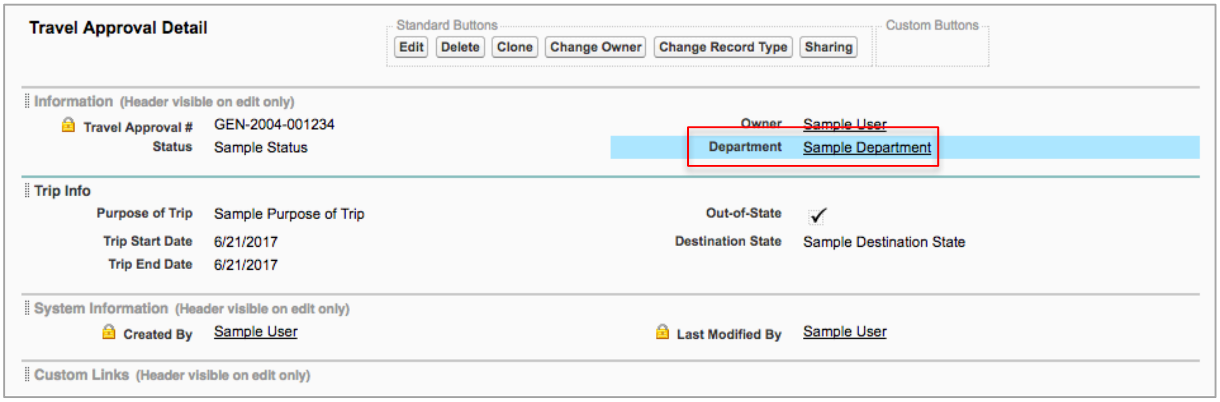
Your screen should look like following.



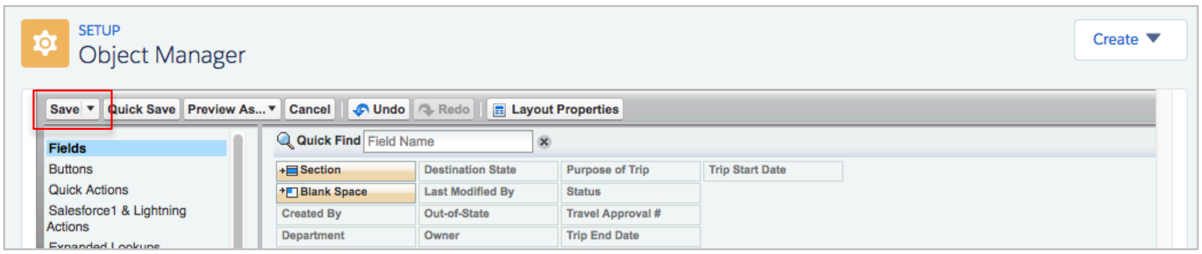
8. Like you did above, now drag the following fields from the top section of from down to the new ***Trip Info*** section: **Trip Start Date, Trip End Date, Out-of-State, and Destination State**. Set them in the appropriate columns as shown in the image below. After you have moved all your fields, your window should now look like following.



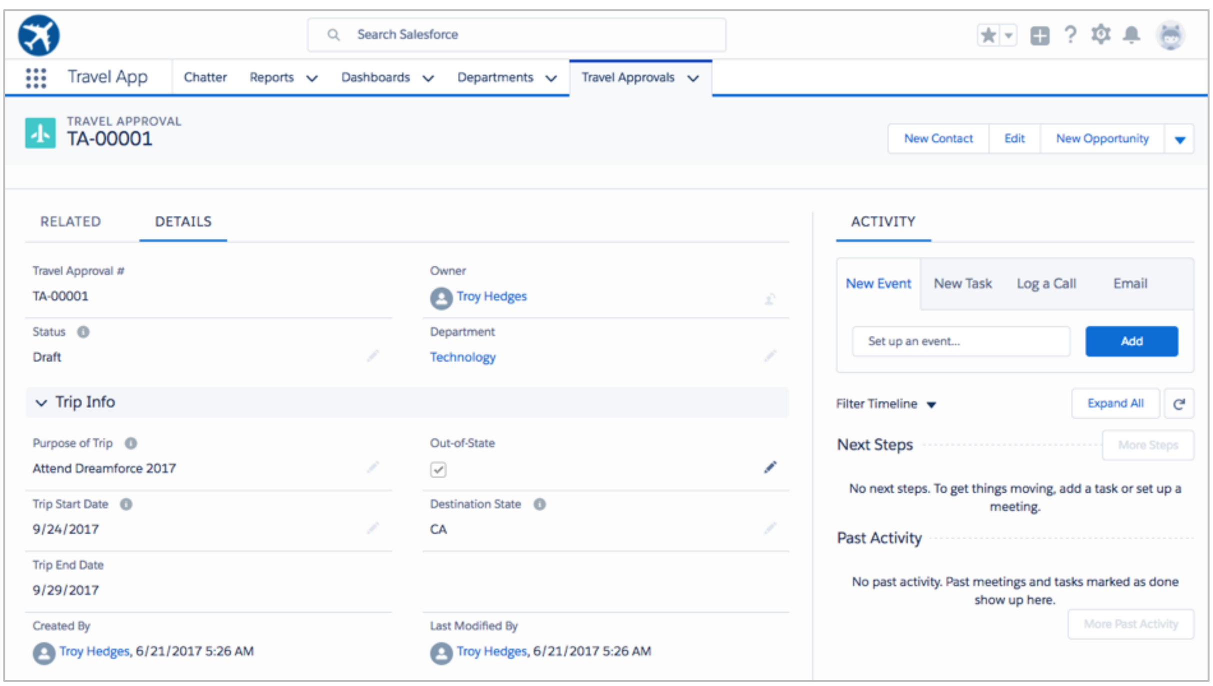
9. Next let's drag the Department field in the top section over to the right column in the top section. The screen should look like following:



10. Now click the **Save** button in top part of edit screen to save your modified page layout.

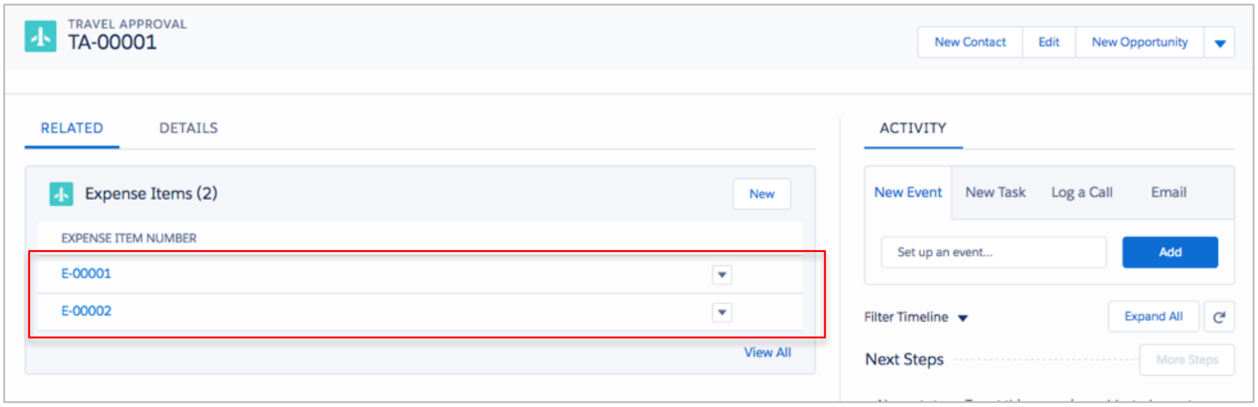


11. Navigate back to one of your Travel Approval records and look at the page. It should now look like the following (**note**: you may need to refresh your browser for the new changes to show up).

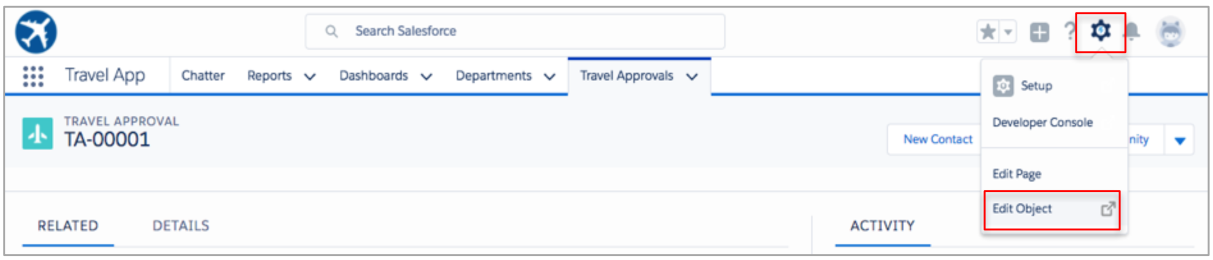


Edit the Expense Item related list on Travel Approval page

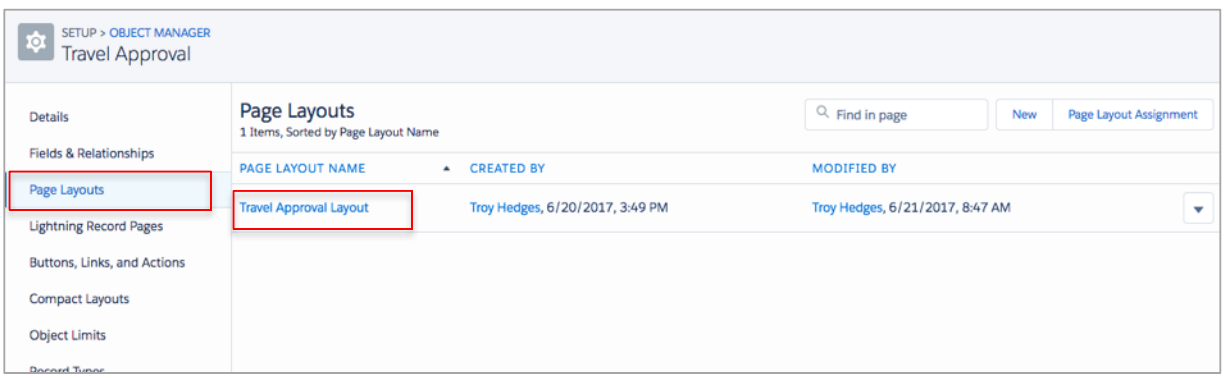
If you remember, when we view the Expense Items from one of our Travel Approval records that it showed expenses like the following screenshot. It is only showing the Expense Item Numbers and **not** other fields/columns. Let's change the related list for expense items to show some other columns so we can see details of each expense item without having to drill-down to those records.



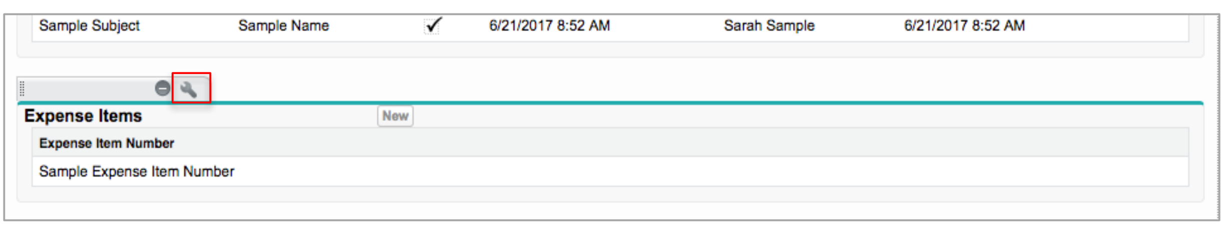
1. Click the setup gear icon and select **Edit Object**.



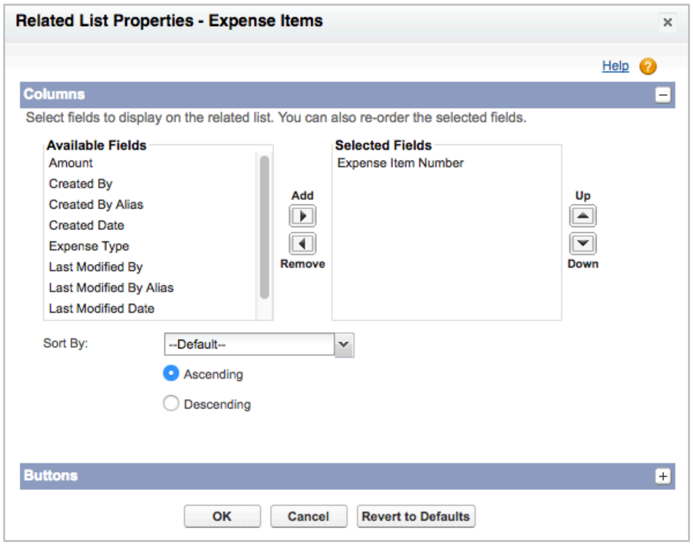
2. Select **Page Layouts** on left-hand side and select **Travel Approval Layout** to edit the page layout.



3. We are now back to the page layout editor we used earlier (notice that you used a different path to get here). Scroll down to the bottom until you can see the Expense Items related list.



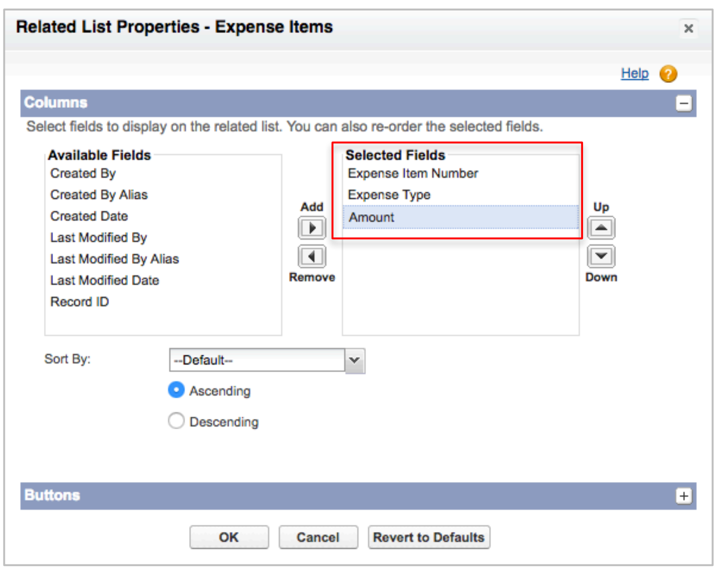
4. Click the wrench icon in the header tab for that section to configure Expense Items related list. The following window will pop-up.



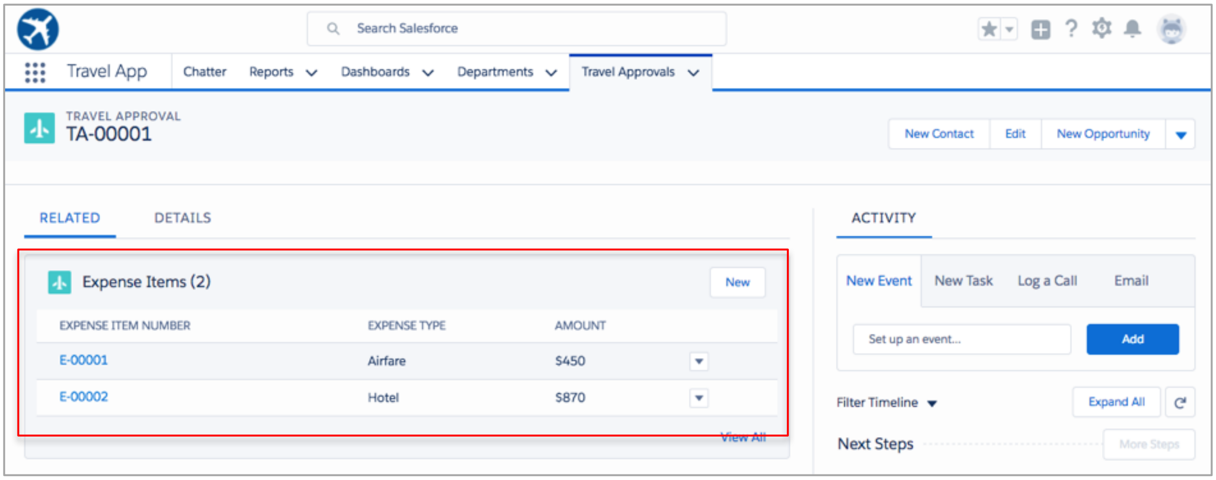
In this screen you can move any fields on the Expense Items object to the right column so they show in the related list. Let's add the following fields to the right column:

- Expense Type
- Amount

Your screen should look like the following:



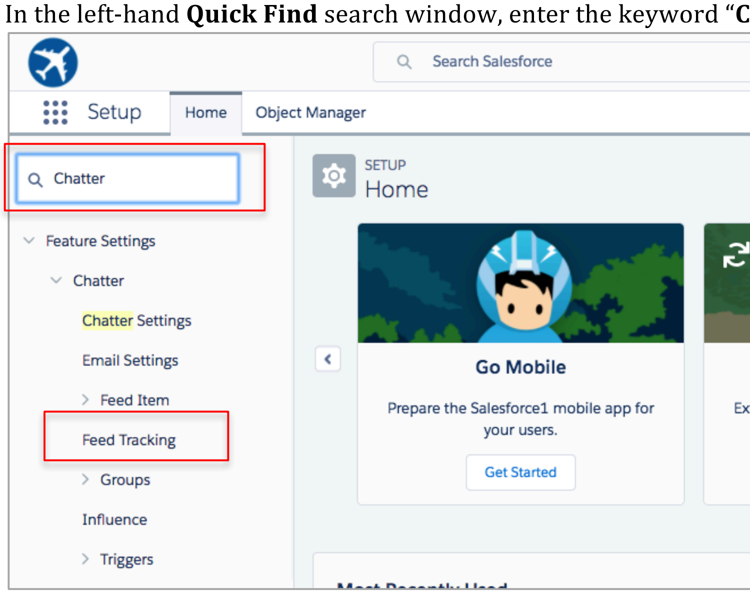
5. Select **OK** button to save your column changes. Then click **Save** in top-left on the page layout to save your changes for the page.
6. Navigate back to a Travel Approval record and look at the related lists. You should now see the extra columns you added to the expense item related list. NOTE: You may need to refresh your browser screen for the changes to show up.



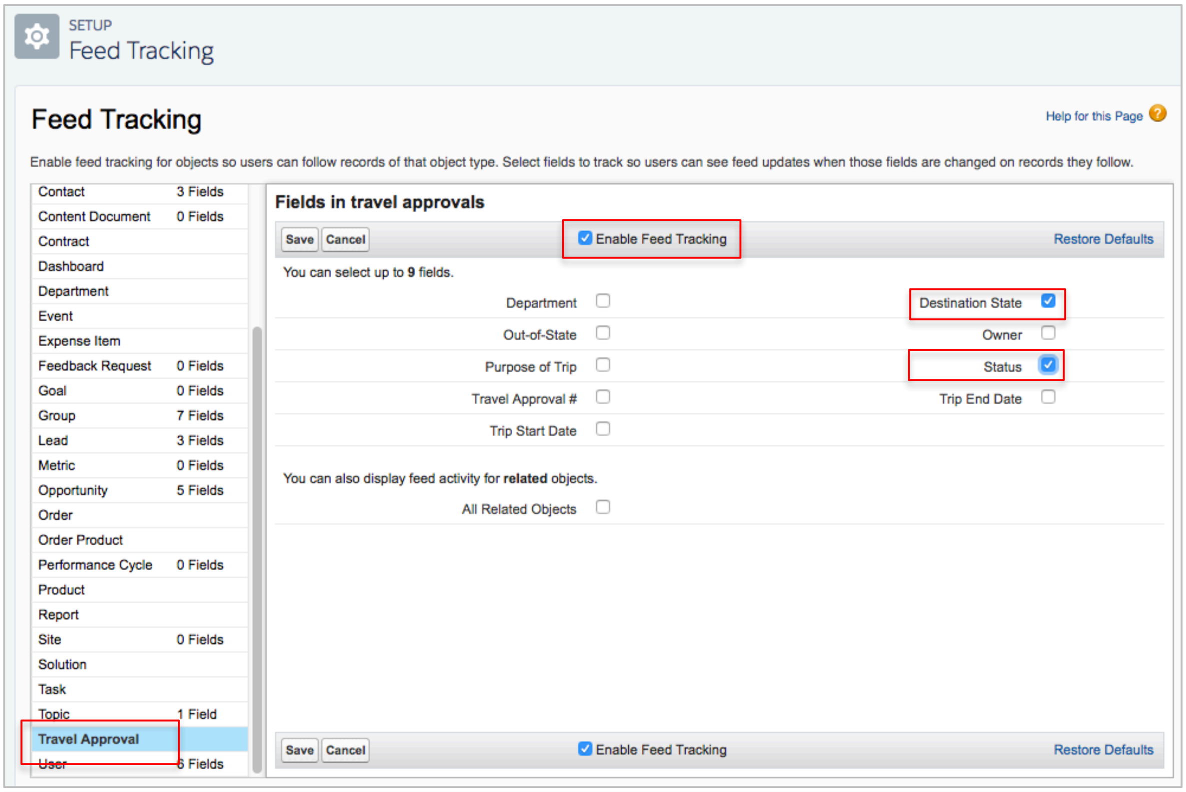
Enable Record Collaboration

Salesforce includes built in capabilities to collaborate. This includes being able to collaborate around a single record in Salesforce.

1. Access Setup by clicking the gear icon in upper-right and select **Setup**.
2. In the left-hand **Quick Find** search window, enter the keyword "**Chatter**".



3. Select **Feed Tracking**. You should now be presented with the Feed Tracking window configuration window. In the left-hand side of window is a list of objects, pick **Travel Approval**.



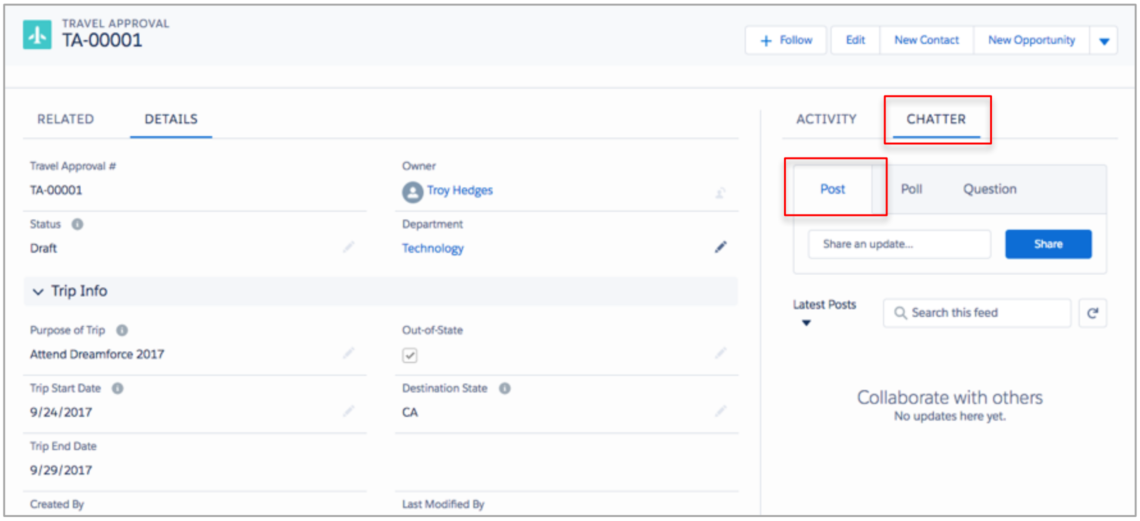
4. Click the **Enable Feed Tracking** checkbox near the middle of the screen.
5. Also click on a few fields like **Destination State** and **Status**. Selecting these will result in a message being posted to the record's chatter feed any time one of the checked fields changes. This is a way to keep people alerted of changes to the records.
6. Click **Save** button.

You have now configured Chatter collaboration capabilities for the Travel Approval object.

NOTE: In the window above, you could have also selected more fields if you wanted to track changes to those fields in the chatter feed.

Test Collaboration

1. Navigate back to the **Travel App** and click on the **Travel Approvals** tab. Select a travel approval record. You should see a record detail page like below.
2. For record collaboration, notice on right-hand side of the record details page that you have a tab called **Chatter**. Click on this tab.

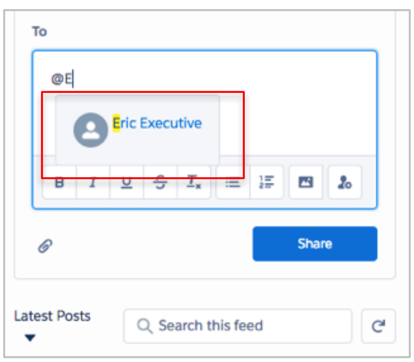


By default you have option to make a Post, submit a Poll for feedback or ask a Question. Let's post a comment to your manager about this travel approval request.

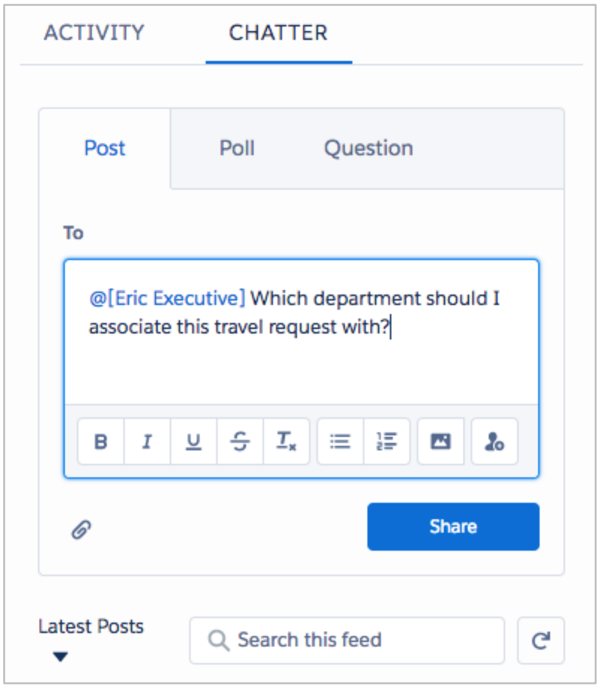
3. Click on the **Post** sub-tab. Click in the area with label "Share an update…"
4. Enter a Chatter post like the following:

@[Eric Executive] Which department should I associate this travel request with?

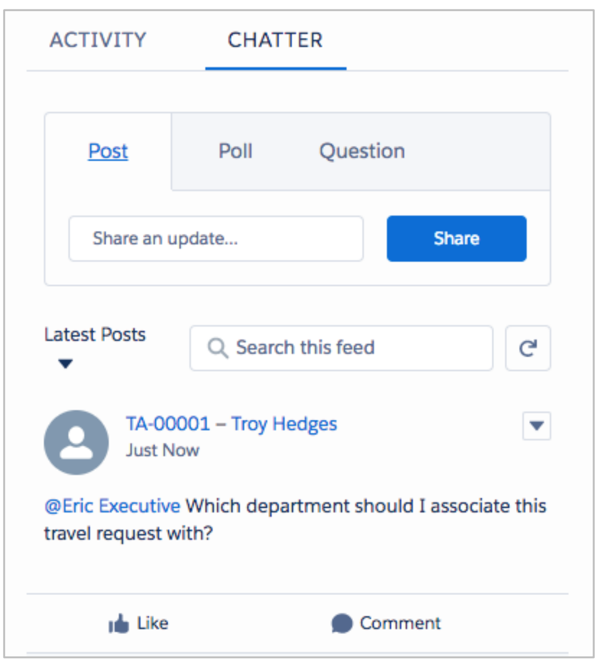
You will notice when you type "@E" characters that a pop-up window shows and provides you a list of users that start with "E". Select Eric from the card that pop-ups.



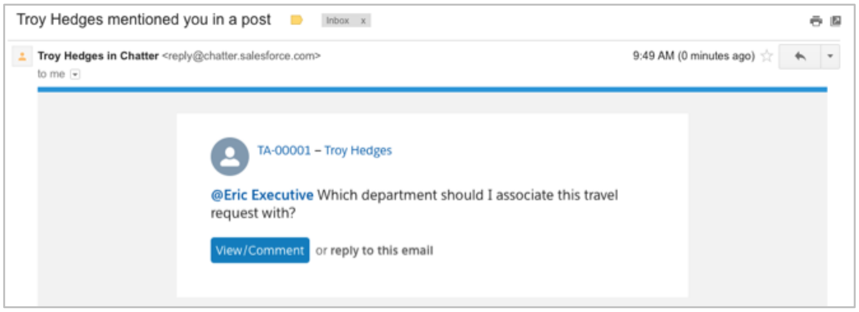
Your window should look like following. Click **Share** button to send this post.



The window will look like following. Eric will receive an email and notification that he has been directly mentioned.



You should have also gotten an email similar to below


Troy Hedges mentioned you in a post
Inbox x
Troy Hedges in Chatter <reply@chatter.salesforce.com>
to me
9:49 AM (0 minutes ago)
TA-00001 – Troy Hedges
@Eric Executive Which department should I associate this travel request with?
View/Comment
or reply to this email

Add Business Logic

Duration: 50 minutes

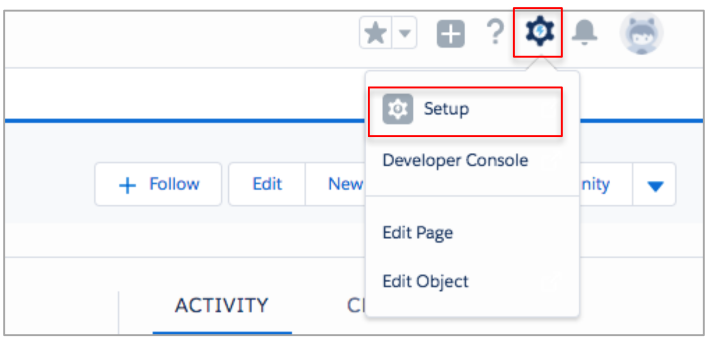
Now that you have the primary functionality of the travel approval application built, let's now add some business logic to address the following areas:

- **Enforce data integrity** – enforce that trip end date is greater or equal to the start date
- **Create Summary Fields** – create a travel approval field that automatically sums up all expense costs
- **Create Formula Fields** – create a field that shows a visual indicator for
- **Create Workflow** – set the out-of-state flag for any out-of-state trip
- **Approval Process** – all travel approvals need to be submitted for approval

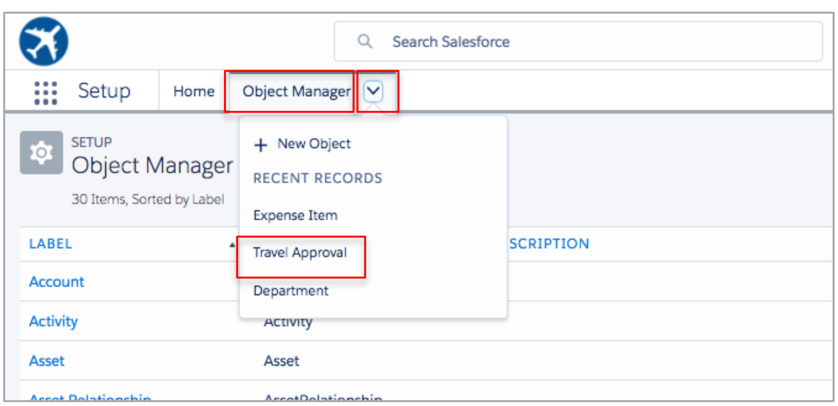
Create Validation Rules to Enforce Future Dates

Let's now create a validation rule to enforce that a trip end date must always be >= the trip start date.

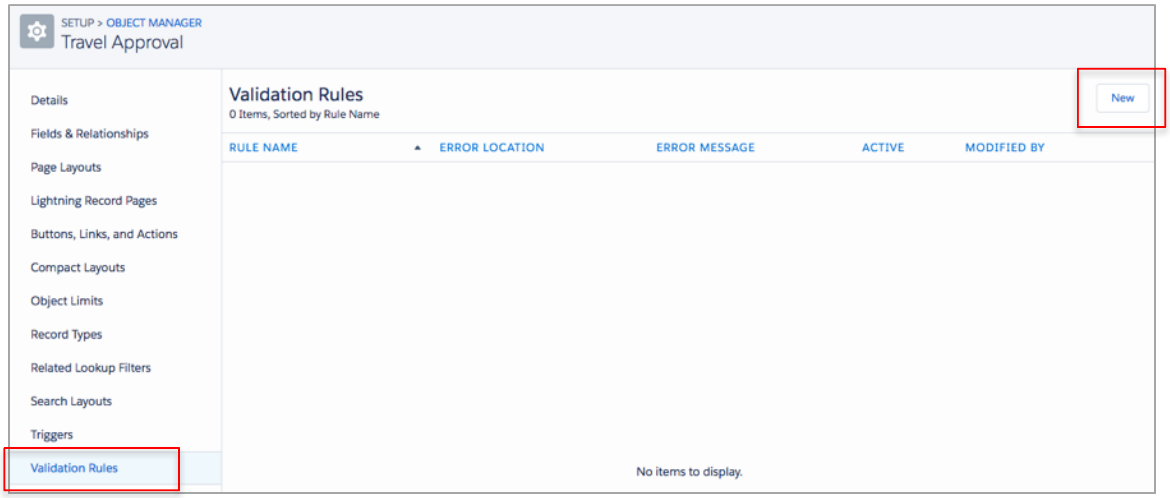
1. Access Setup by clicking the gear icon in upper-right and select **Setup**.



2. Next we need to open the configuration screen for the Travel Approval object. Click on **Object Manager** and then click on the icon. This will give you a list of recent objects you have edited.

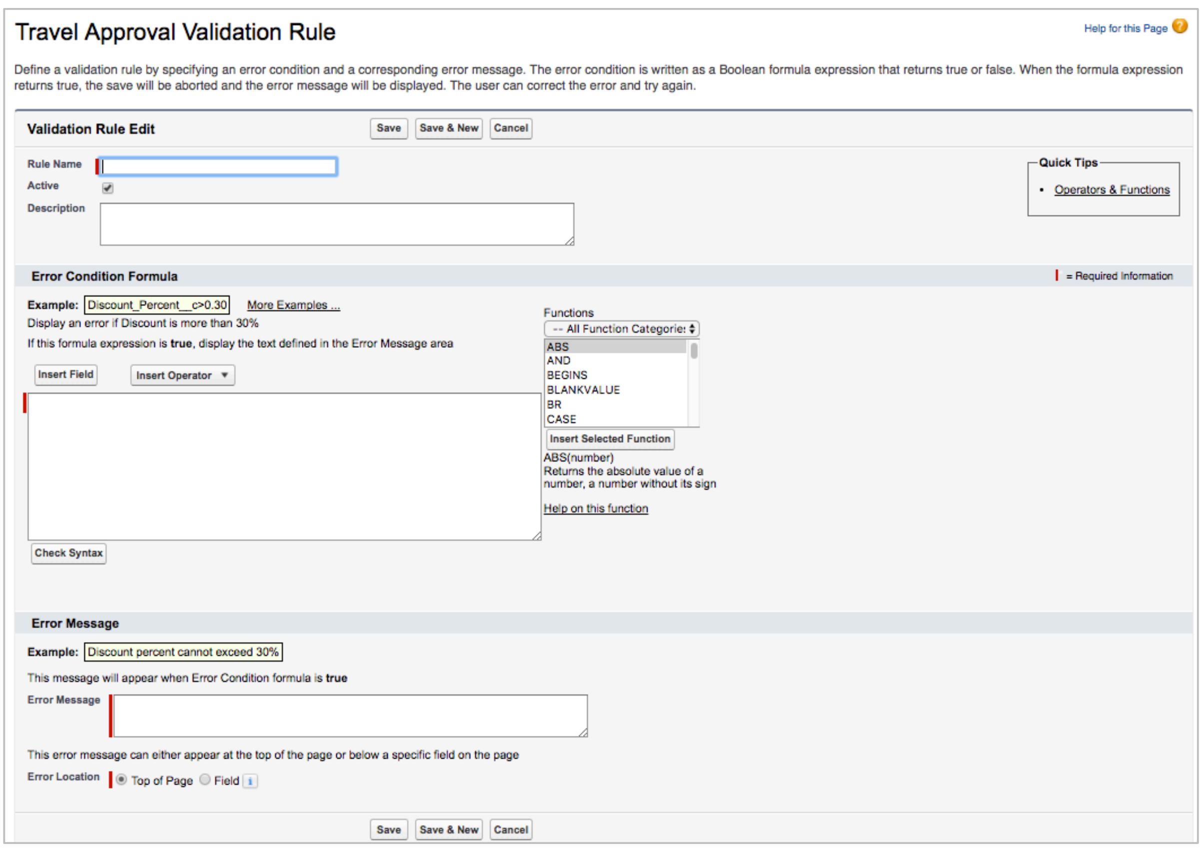


3. Click on the **Travel Approval** object from the drop-down list.
4. You should now be on the configuration page for the Travel Approval object. Click on the **Validation Rules** option on left-hand side. It should currently be empty like the following.



We will now create a validation rule to enforce that trip end date must be equal or greater than the start date.

5. Click the **New** button on right-hand side of the Validation Rules section. A rule configuration window will open like the following:

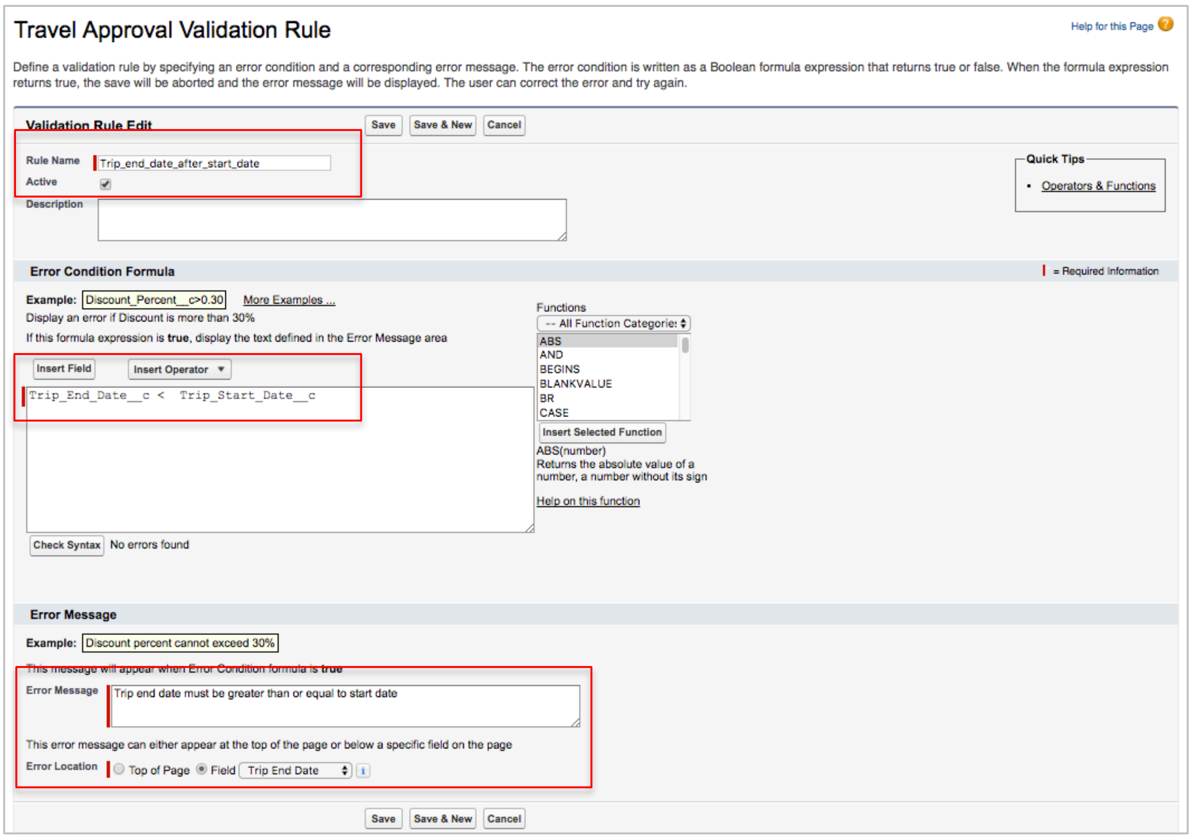


6. Create a new validation rule with the following

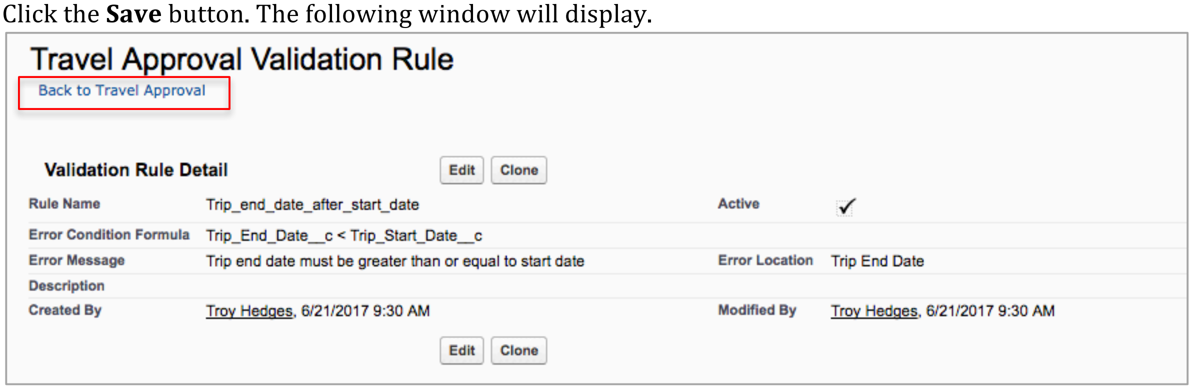
Parameter	Value
Rule Name	Trip end date after start date
Active	*Make sure to keep this selected/checked.*

Condition Formula	Trip_End_Date__c < Trip_Start_Date__c **NOTE:** When writing a validation rule, your condition formula should return "true" for your false condition.
Error Message	Trip end date must be greater than or equal to start date
Error Location	Select Field and pick "Trip End Date" as the location for the error

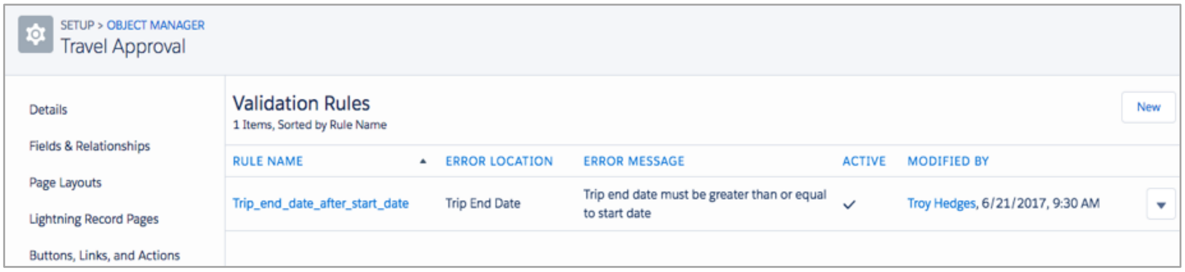
Your screen should look like the following



7. Click the **Save** button. The following window will display.



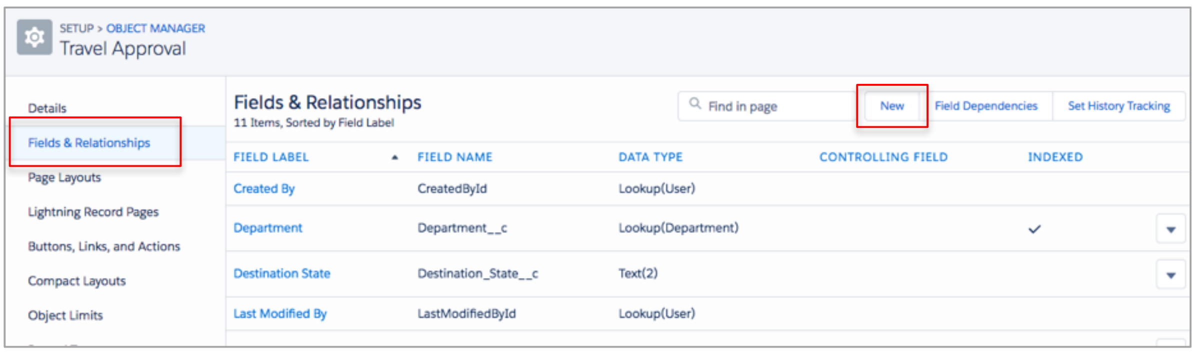
8. Click the **Back to Travel Approval** link directly under your rule title. Your screen should look like the following:



Create Expense Total Roll-up Summary Field

Next we will create a field on the Travel Approval object that automatically sums up the total amount of expenses from the related Expense Items. Salesforce has a field called a roll-up summary field that provides this functionality.

1. You should still be in the object manager for the **Travel Approval** object. Select **Fields & Relationships** section on left-hand side.



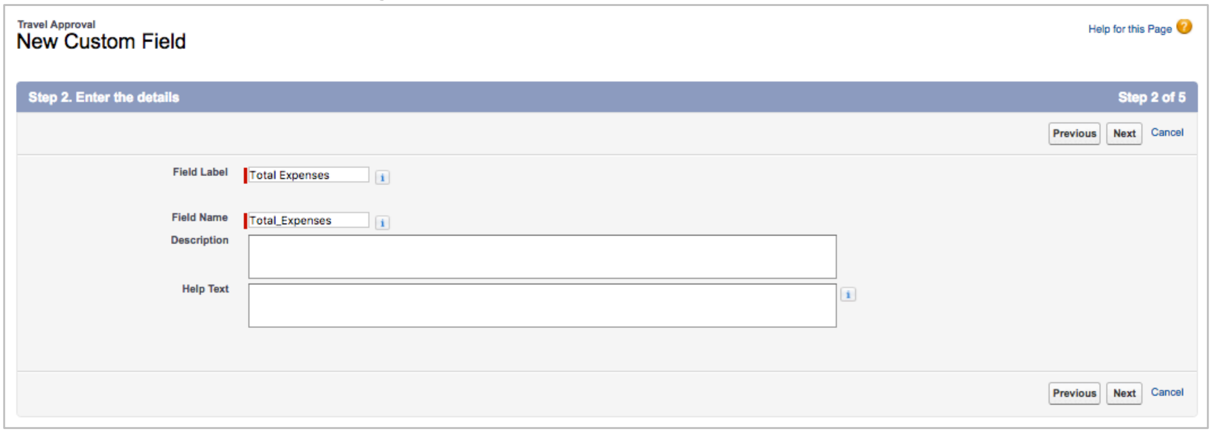
2. Click the **New** button to create a new field.

   Step 1: Select **Roll-Up Summary** data type. Click **Next**.

   Step 2: Enter the following values for the field details

Parameter	Value
Field Label	Total Expenses
Field Name	Total_Expenses (this will automatically get set when you tab out of the Field Label field)

The screen will look like following:



Click **Next**.

Step 3: Configure the roll-up calculation as follows:

Parameter	Value
Summarized Object	Expense Items
Roll-up Type	SUM (and select "Amount" for the Field to Aggregate)
Filter Criteria	All records should be included in the calculation

Your window should look like the following:

Click **Next.**

Step 4: Accept the default values. Click **Next**.

Step 5: Accept the default values. Click **Save**.

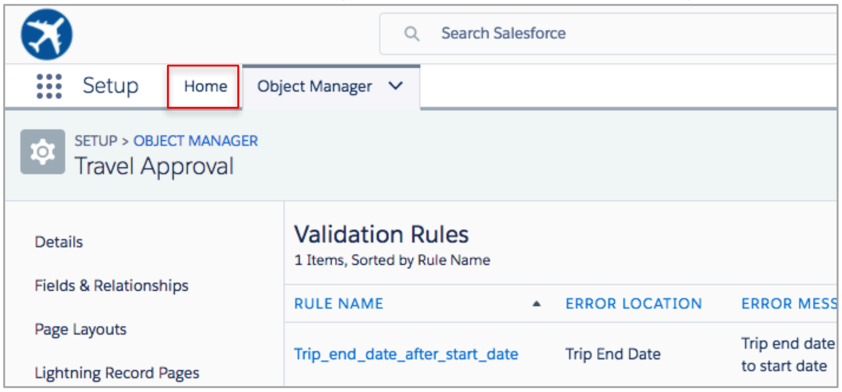
You now have a new field on your Travel Approval object that will automatically sum up your expenses. It has been automatically added to your page layout also.

Create Formula Fields to Show Status Indicator

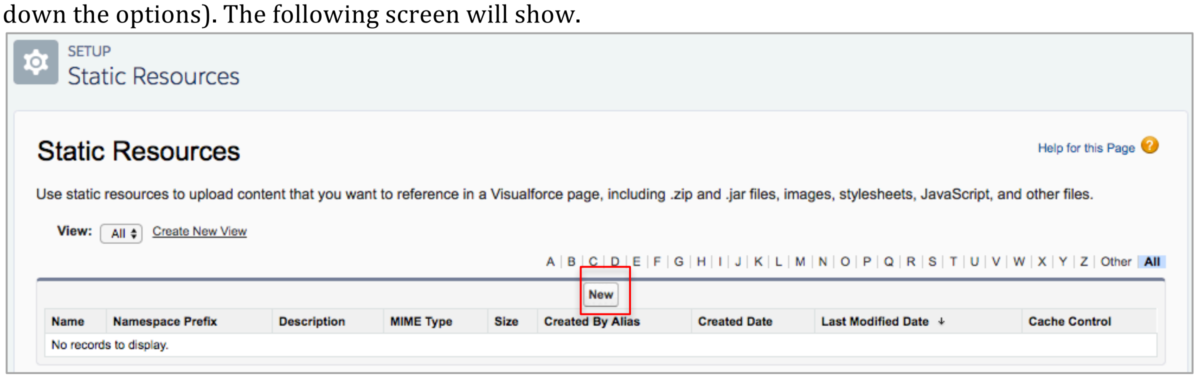
Next we will create a field on the Travel Approval object that will show a visual indicator (i.e. image file) based on the value of the Status field. For example, we will show one field for Draft approval and a different image for Approved approvals. This provides a quick and simple way for users of the system to get an indicator to the status of a travel approval.

First, we need to upload a zip file to your Salesforce environment that contains all the images we will use. You should have a file titled **StatusImages.zip** that is part of your workshop files you downloaded at the beginning of the workshop. We will now upload that zip file as a static resource file in Salesforce.

1. Click on the **Home** tab to navigate back to the main setup page.



2. In left-hand side, click **Custom Code > Static Resources** (or type in "Static" in the Quick Find to filter down the options). The following screen will show.



3. Click the **New** button that is near middle of the screen.

4. Set the following parameters for your static resource:

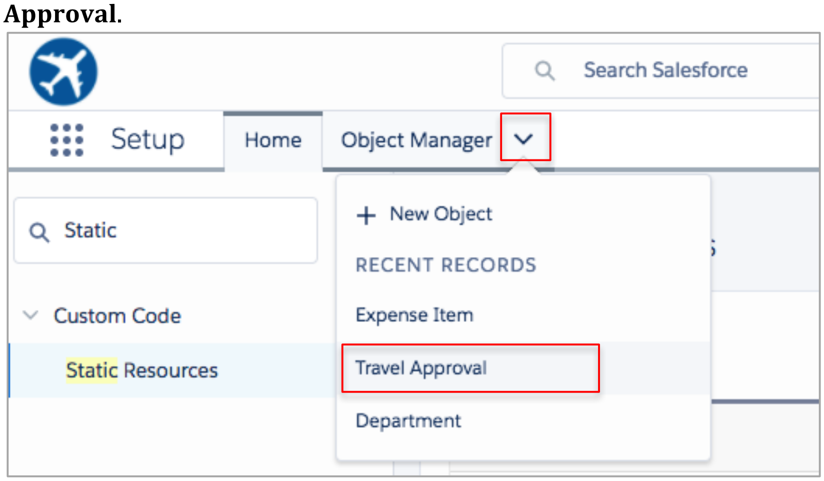
Parameter	**Value**
Name	StatusImages (IMPORTANT: there are no spaces and the 'S' and 'I' are capitalized)
File	*Select your StatusImages.zip file on your computer*
Cache Control	Public

Your screen should look like the following:

5. Click the **Save** button.

   Next we will create the new field on the Travel Approval object to show an image based on the Status field. For this, Salesforce has a formula field data type that can be used.

6. In the tab sections near top left of screen, click on the icon next to the **Object Manager** tab. This provides a shortcut to the Object Manager for the recent objects you have edited. Click on **Travel Approval**.



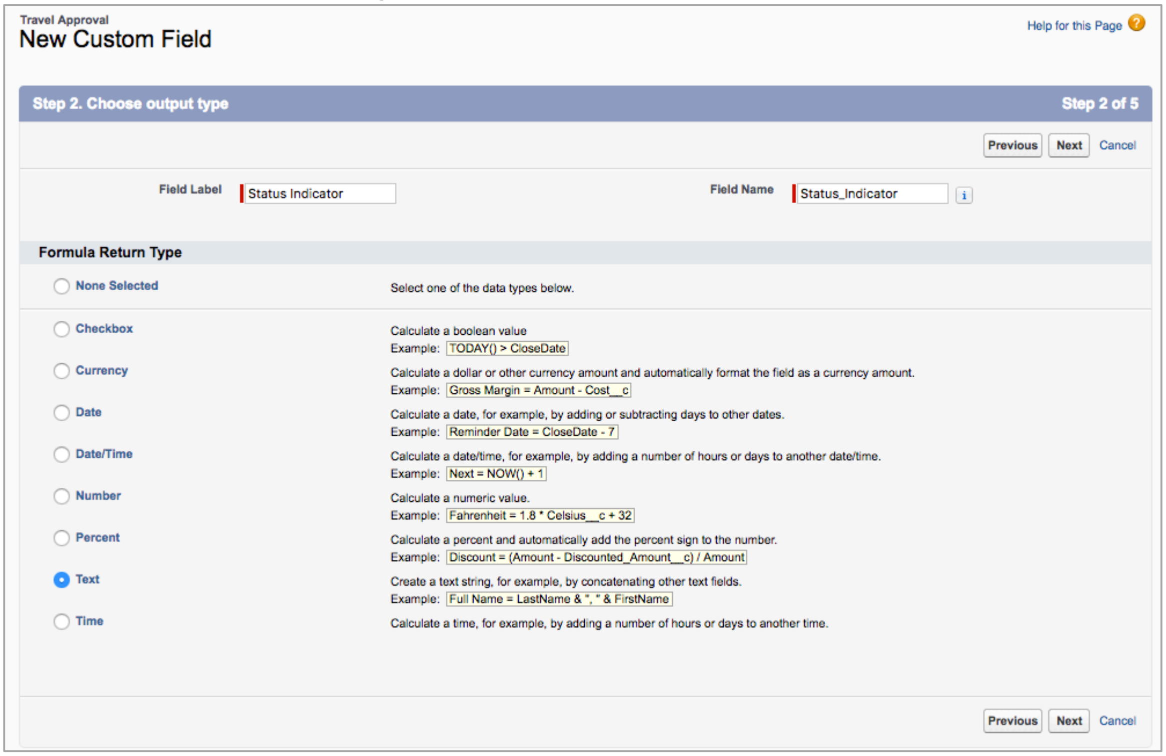
7. Select the **Fields & Relationships** section on left-hand side of screen.
8. Click the **New** button to create a new field.

   Step 1: Select **Formula** data type. Click **Next**.

   Step 2: Enter the following values for the field details. Click **Next**.

Parameter	Value
Field Label	Status Indicator
Field Name	Status_Indicator (this will automatically get set when you tab out of the Field Label field)
Formula Return Type	Text

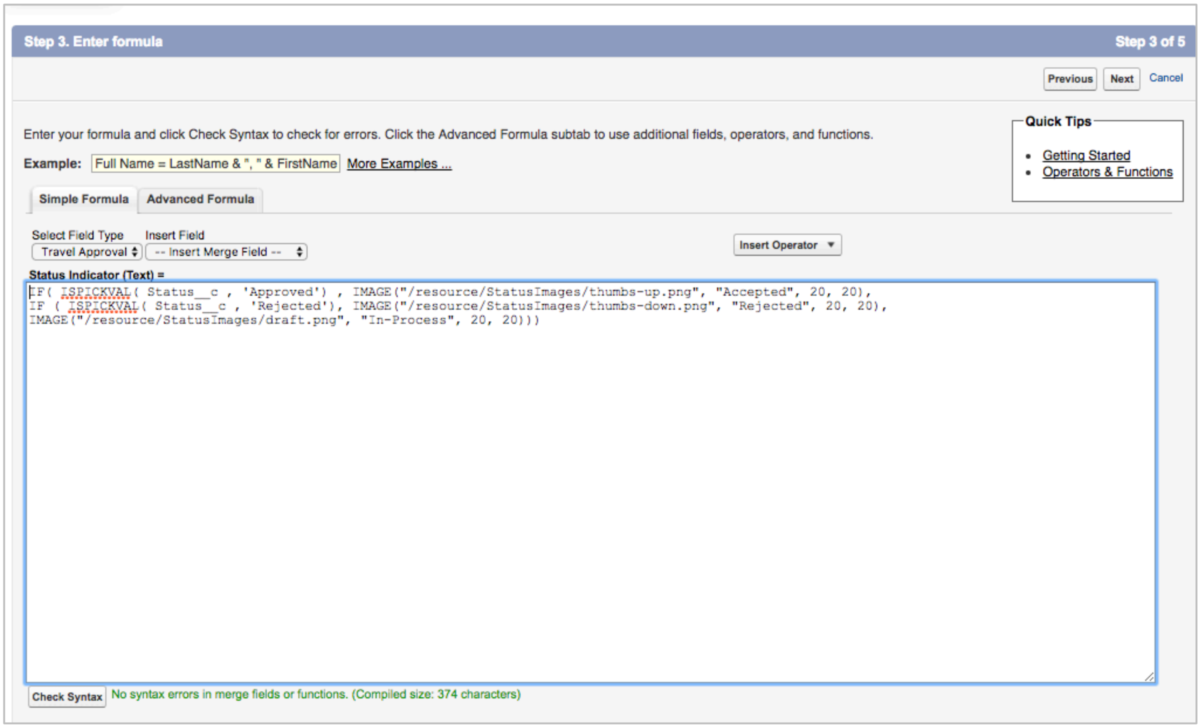
The screen will look like following:



Step 3: Enter the following formula (if you want to copy in this formula, it has been saved in a filed named "**Status_Indicator_Formula.txt**" that you downloaded earlier). Click **Next.**

```
IF( ISPICKVAL( Status__c , 'Approved') , IMAGE("/resource/StatusImages/thumbs-up.png", "Accepted", 20, 20),
IF ( ISPICKVAL( Status__c , 'Rejected'), IMAGE("/resource/StatusImages/thumbs-down.png", "Rejected", 20, 20),
IMAGE("/resource/StatusImages/draft.png", "In-Process", 20, 20)))
```

Your window should look like the following:



Click **Next.**

Step 4: Accept the default values. Click **Next**.

Step 5: Accept the default values. Click **Save**.

You now have a new field **Status Indicator** setup on your **Travel Approval** object.

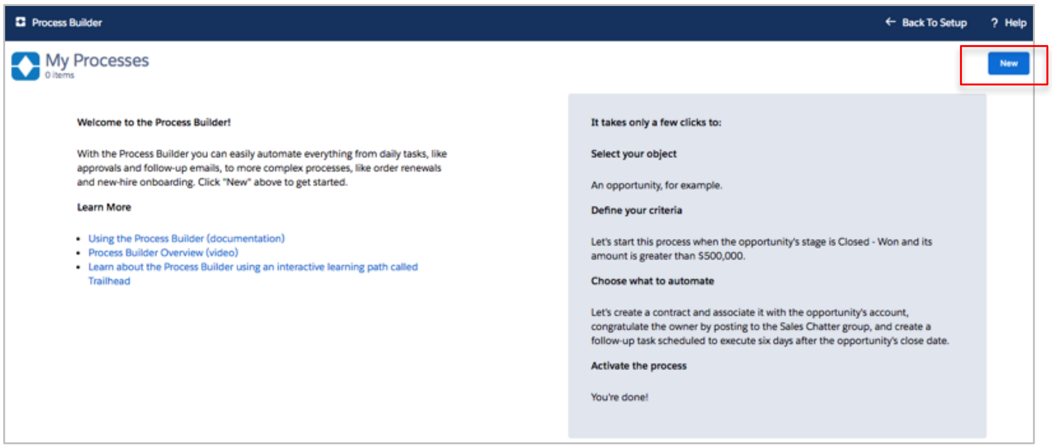
Create Workflow to Set Out of State field based on State

The last business rule functionality we will implement before testing our application is a rule to set the **Out-of-State** checkbox field on the **Travel Approval** object if out-of-state travel has been chosen. Salesforce provides workflow capabilities that provide a declarative, drag-n-drop design environment to build our business process logic. The Salesforce Lightning Process Builder is the next generation of Salesforce workflow that allows you to automate the following capabilities:

- creating or update a record
- send email alert
- invoke a visual flow which includes user interface
- post to Chatter to alert followers of a record or to record some event
- invoke a sub-process
- submit record for approval
- invoke Apex code for highly customized logic implemented in programming langugage

Let's now create a process that uses the **update record** process builder action to set the out-of-state flag:

1. Access main Setup page by click on the Home tab.
2. On left-hand side, select **Process Automation > Process Builder** (or use the Quick Find and search on "Process"). You should see a window like the following:

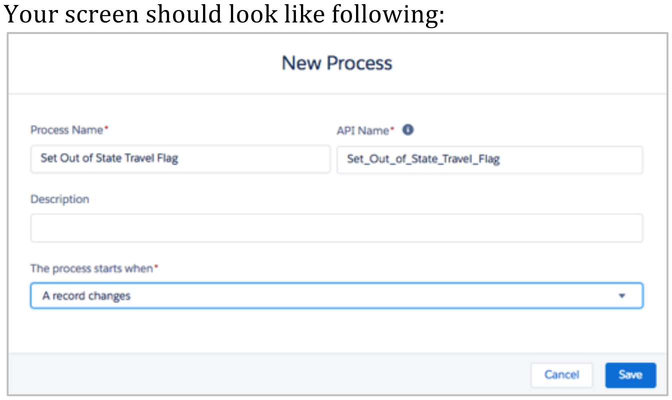


3. Click the **New** button in upper right.

4. Create a new Process with the following parameters.

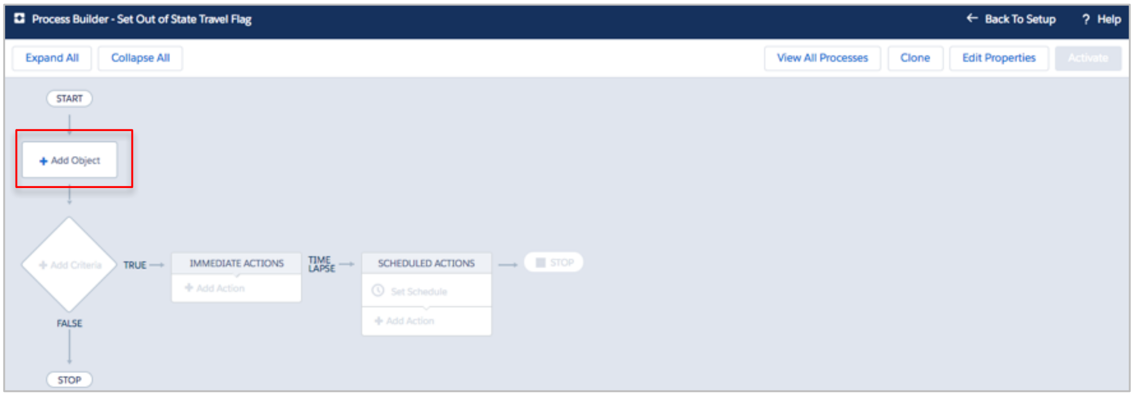
Parameter	Value
Process Name	Set Out of State Travel Flag
API Name	Set_Out_of_State_Travel_Flag (this will automatically get set when you tab out of the Process Name field)
Description	*Leave blank*
The process starts when	A record changes

Your screen should look like following:

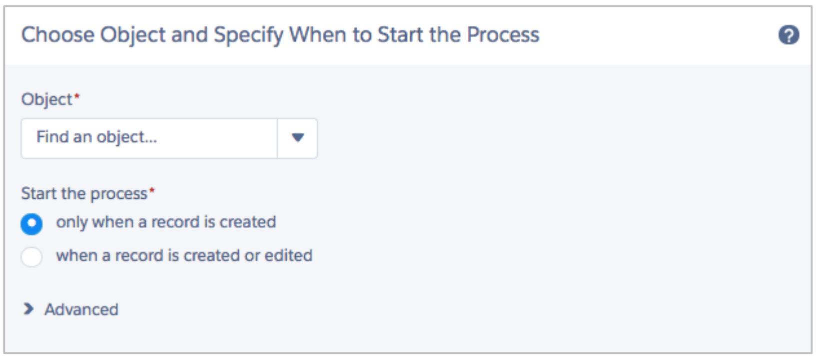


Click **Save**.

5. You will now be presented with the Process Builder design window as shown below.



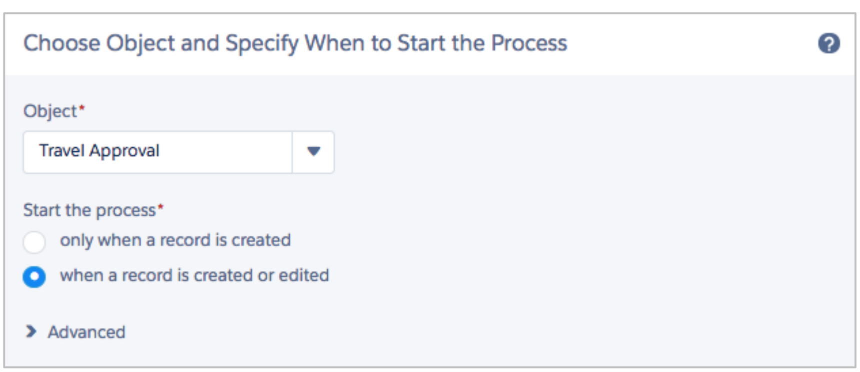
6. First click on the **Add Object** box. This is where we configure which object we want this process rule to run when a record is created or modified. A window will show on right-hand side like following:



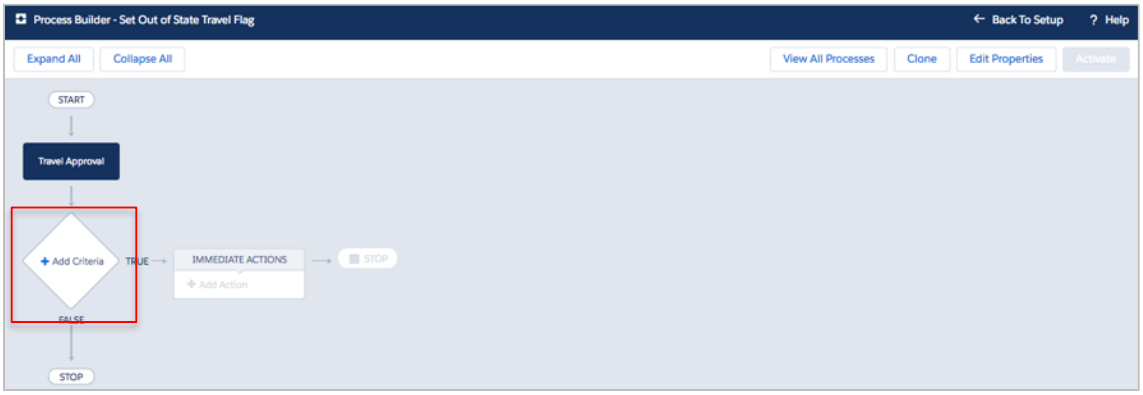
7. Set the following parameters

Parameter	Value
Find an object...	Travel Approval
Start the process	Choose "When a record is created or edited" option
Advanced	*Do not change*

Your window should look like following. Click **Save** button.



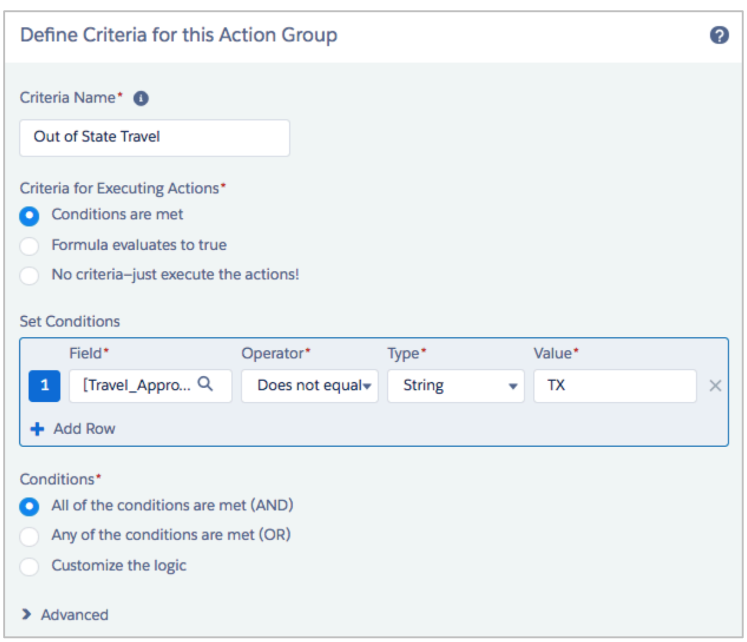
8. Next click on the **Add Criteria** icon on the process designer.



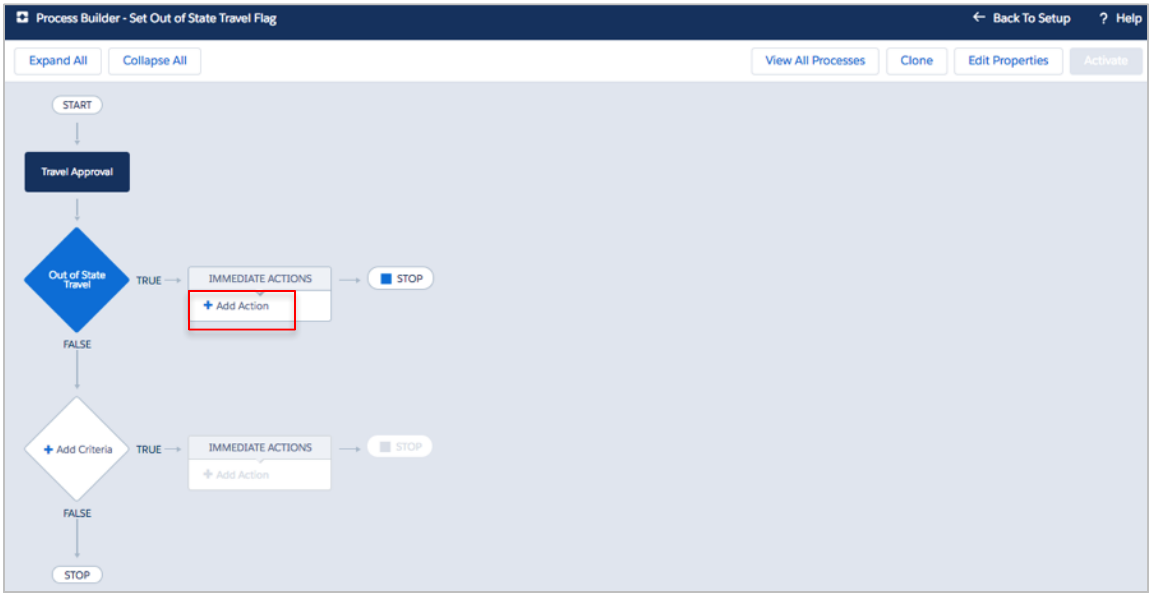
9. You will have a pop-up window where you configure your criteria when your processing logic will execute. Configure the window with following options:

Parameter	Value
Criteria Name	Out of State Travel
Criteria for Executing Actions	Conditions are met
Set Conditions	*Create a rule:* **Destination_State__c** Does Not Equal **TX**
Conditions	All of the conditions are met (AND)
Advanced	*Do not change*

Your window should look like the following:



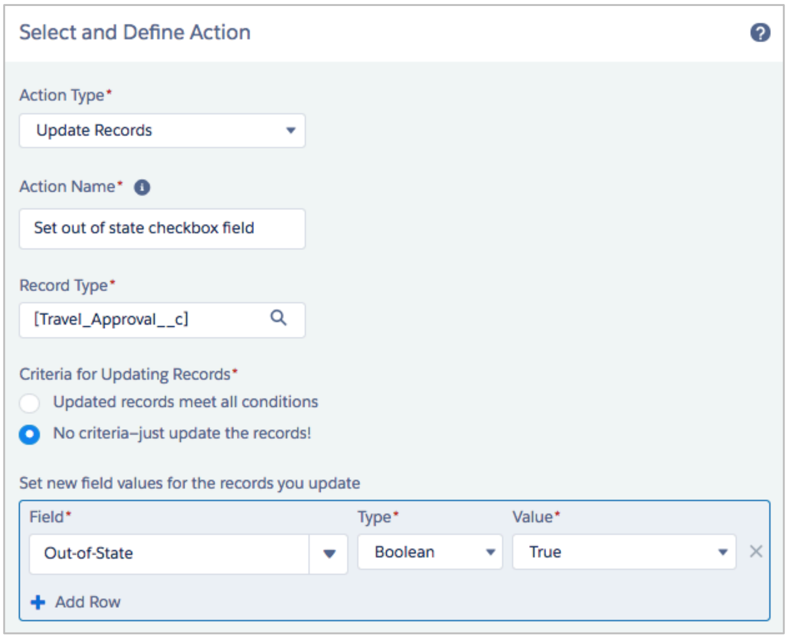
10. Click **Save** button. Your window will now look like the following:



11. Click on the **Add Action** link in the IMMEDIATE ACTIONS section to the right of the "Out of State Travel" decision box.
12. In the pop-up configuration window, set the following parameters:

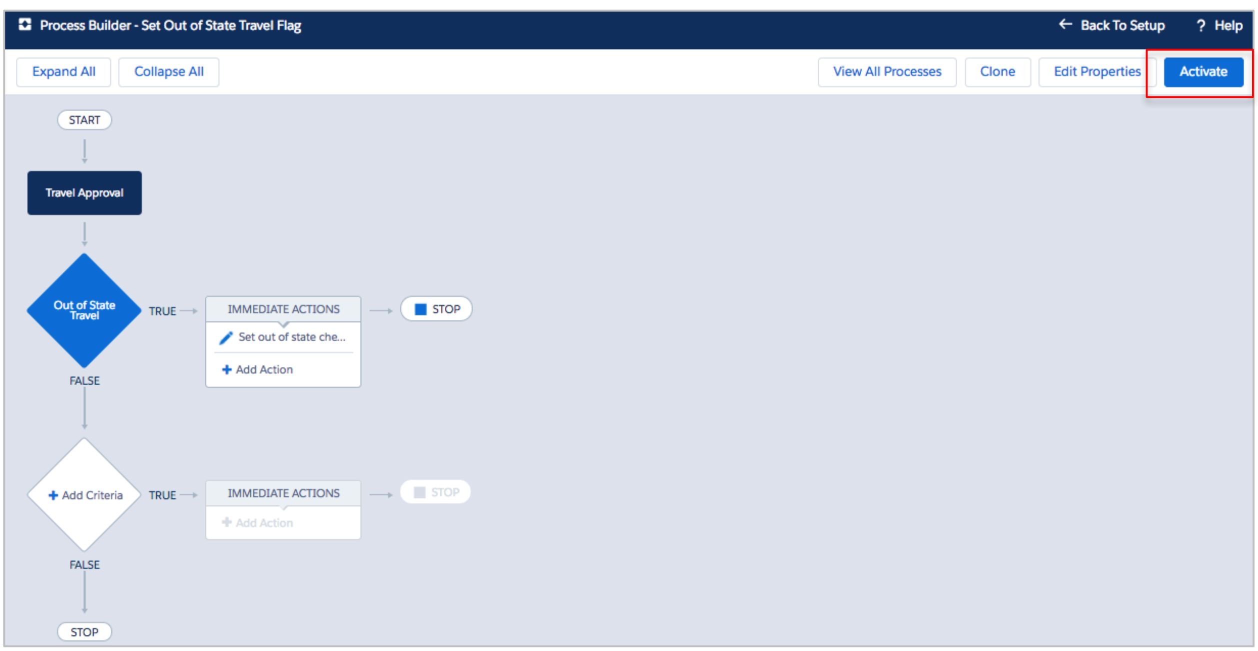
Parameter	**Value**
Action Type	Update Records
Action Name	Set out of state checkbox field
Record Type	Choose "Select the Travel_Approval__c record that started your process" option
Criteria for Updating Records	No criteria-just update the records!
Set new field values for the records to update	*Set formula: **Out-of-State = true*** **use the Boolean operator as shown below*

Your window should look like the following:



Click **Save** button.

You have now configured a business process that will set the Out-of-State checkbox for any travel outside your agencies' state. Your process will look like following.



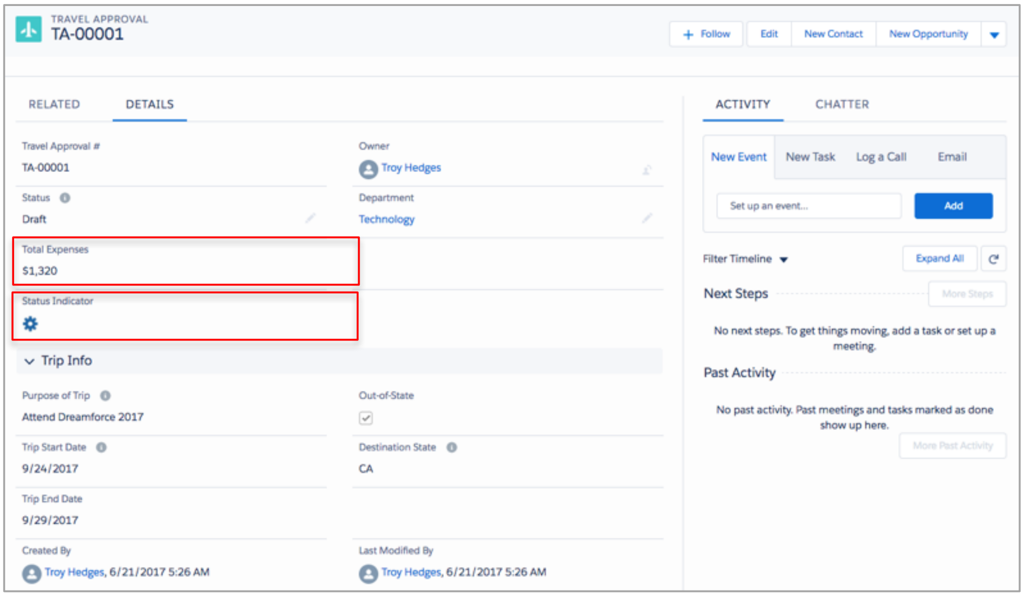
One last step is needed for this process.

13. Click the **Activate** button in upper-right. Click **Confirm** on the pop-up window.

Test Your Application

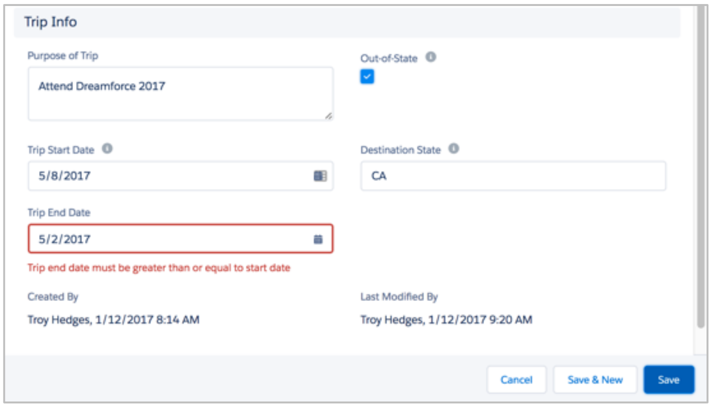
Let's test out all the changes you have made.

1. Navigate to the travel approval record you created earlier (i.e. select your **Travel App**, click on **Travel Approvals** tab and then select a record from the list).
2. One of the first things you should notice is the **Total Expenses** roll-up summary field that was added to your record detail page (NOTE: You may need to refresh your browser for latest changes to show up). This should show the expense item totals. Also directly below that is the **Status Indicator** formula field that will show an image based on the Status value you select.

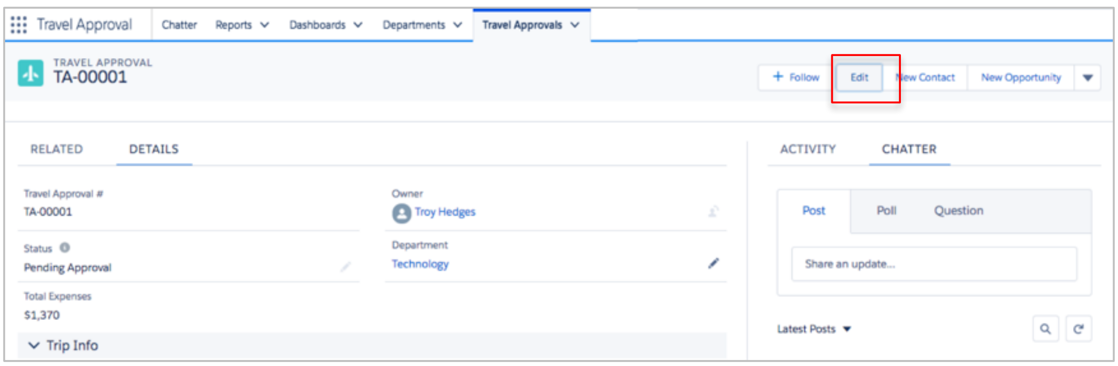


3. Try adding a new expense item or changing the amount for an existing expense (via the RELATED tab on the travel approval record). You will see this total amount automatically adjust accordingly. Change the Status value and see the image change.
4. Try adding the Status Indicator field to your list view columns so it provides an easy visual clue to your users the status of each travel approval. Do you remember how to edit your list views?

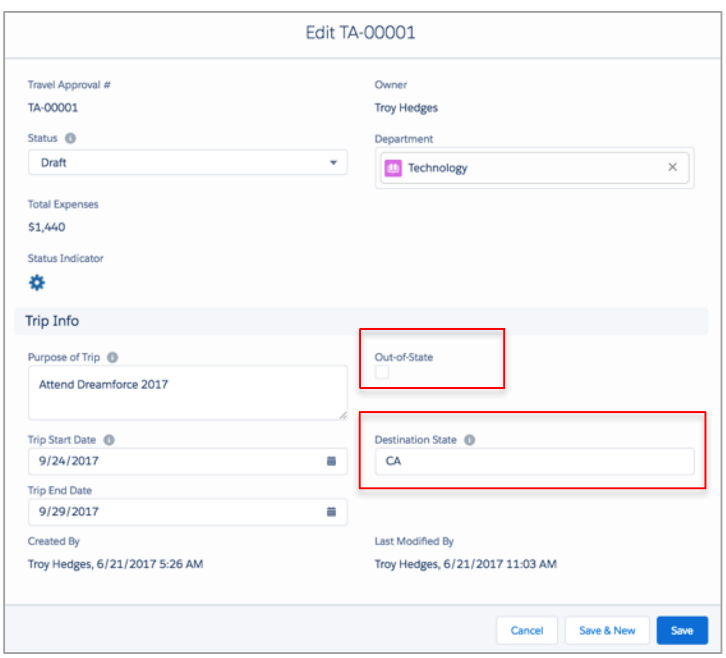
5. Next let's test the trip start and end date validation rules. Try editing your travel approval (use **Edit** button in top right) and setting a trip end date that is before the trip start date. Click the **Save** button. You should see a warning indicator like the following. Click **Cancel** button to exit.



6. Lastly we will check the processing logic to automatically set the Out-of-State checkbox for any out of state travel in case the employee forgot to check it. On your record detail page, click the **Edit** button.



7. Edit the record so that it has a **state that is not your primary state** and **un-select the Out-of-State checkbox** (since "TX" was chosen in configuration above, "CA" was chosen for this example). Your window should look similar to following:



8. Click **Save** button.

9. Notice that when the record was saved, the Out-of-State checkbox was selected. This was set by the process builder workflow you created earlier to enforce your business logic.

   Test: Try setting the Destination State to your primary state and saving the record. What did you notice if the Out-of-State checkbox was checked before you saved it?

Create Approval Process

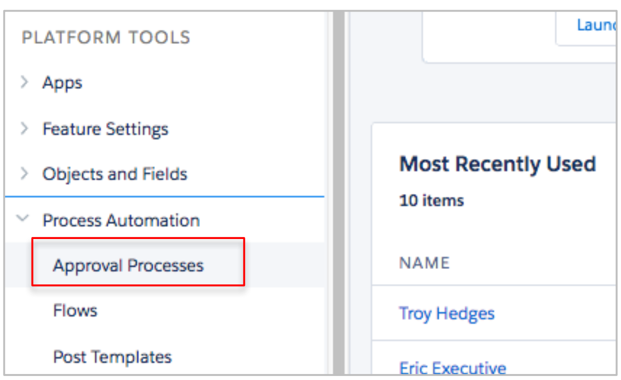
Salesforce includes built in approval process capabilities. An approval process is an automated process your agency can use to approve records in Salesforce. An approval process specifies the criteria a record must meet before it can be submitted for approval, the steps necessary for a record to be approved, and who must approve it at each step. A step can apply to all records included in the process, or just records that have certain attributes. An approval process also specifies the actions to take when a record is approved, rejected, recalled, or first submitted for approval.

We'll create an approval process that all travel approvals must follow. We'll keep it simple and have the following logic:

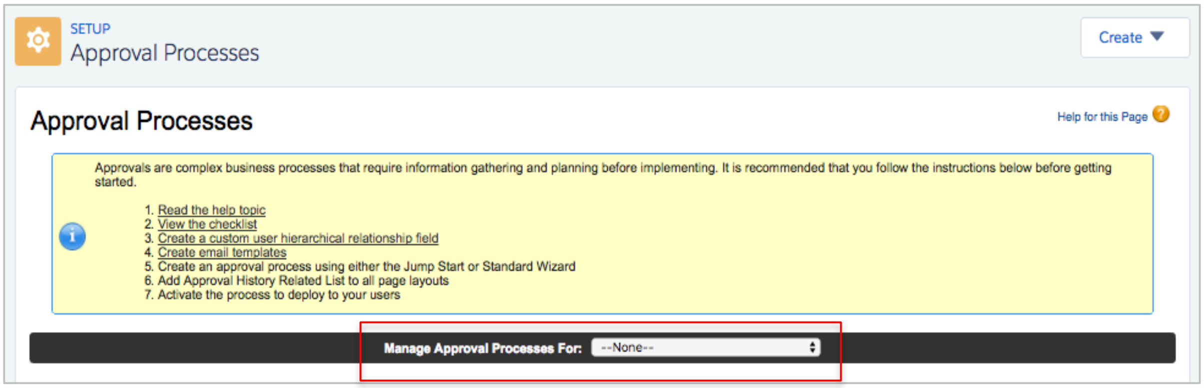
- All travel approvals will be sent to the employee's direct manager for approval.
- If the trip is out-of-state, the approval will also be sent to a travel coordinator for approval. If not out-of-state, this step is skipped.

Let's begin.

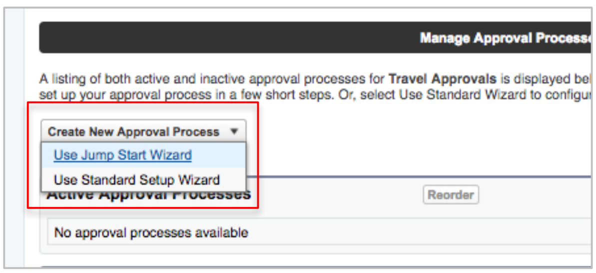
1. Access Setup by clicking the gear icon in upper-right and select **Setup**.
2. Select **Process Automation > Approval Processes** from left-hand side.



3. You should be presented with screen like below. Click on the **Manage Approval Processes For** option near bottom of screen and select **Travel Approval** from the drop-down list.



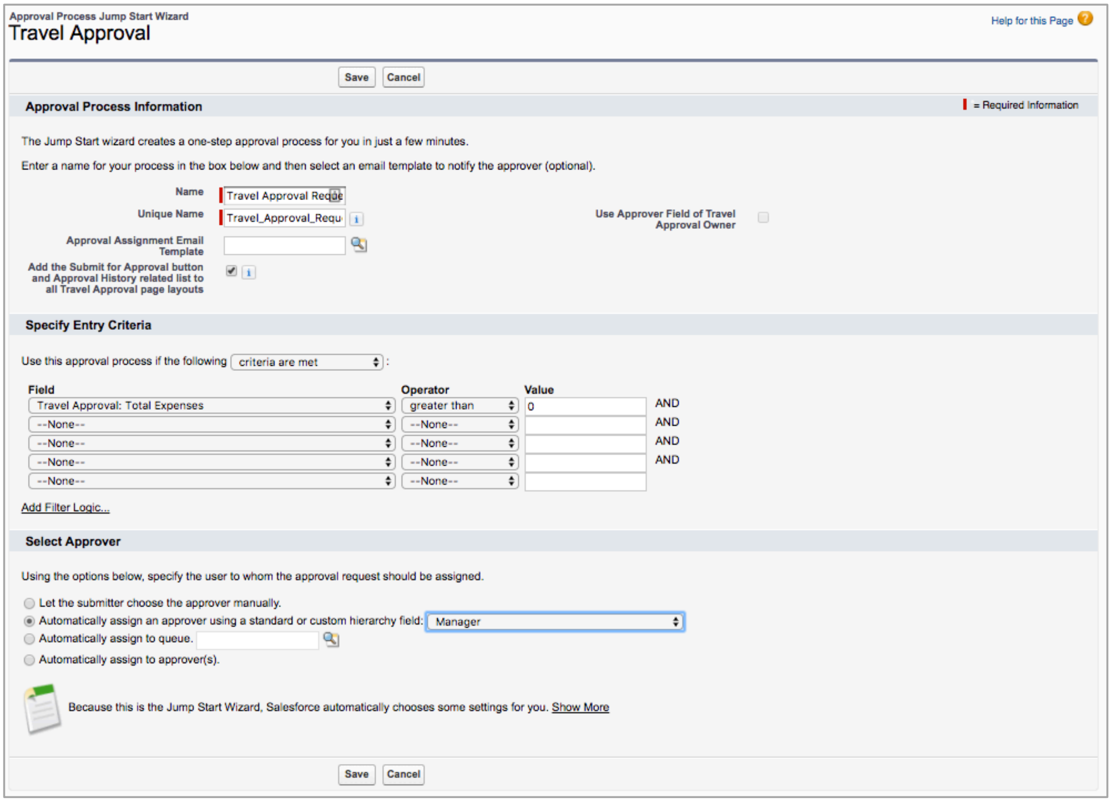
4. Click on the **Create New Approval Process** button and select **Use Jump Start Wizard** option.



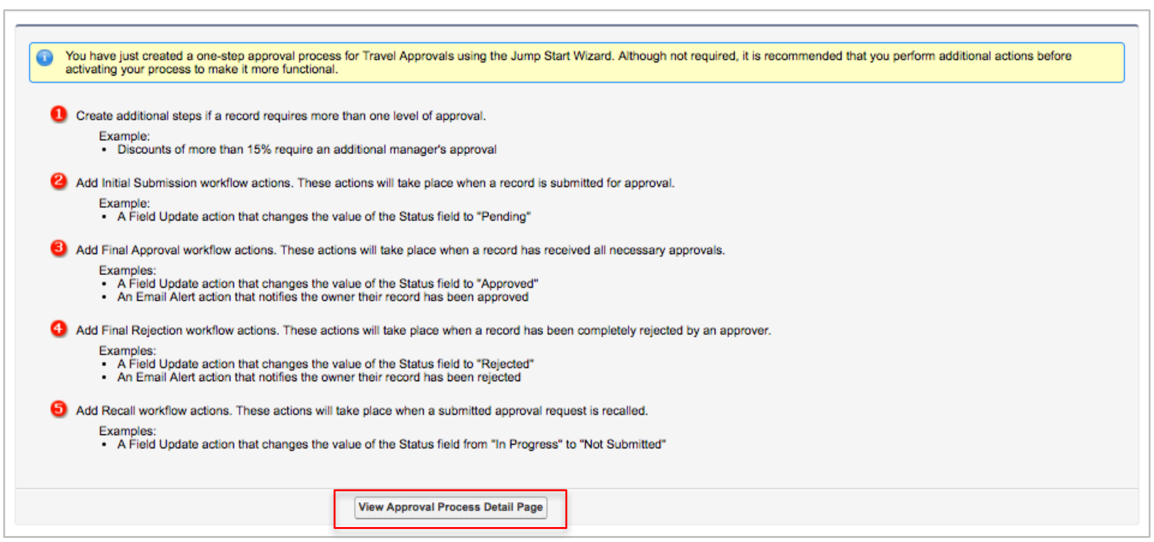
5. Set the following parameters for the main configuration screen for the approval process:

Parameter	Value
Name	Travel Approval Request
Unique Name	Travel_Approval_Request (this will automatically get set when you tab out of the Name field)
Approval Assignment Email Template	*Leave blank*
Add the Submit for Approval button and Approval History related list to all Travel Approval page layouts	*Leave this selected/checked*
Use Approver Field of Travel Approval Owner	*Leave unselected/unchecked.*
Specify Entry Criteria	*Select "criteria are met"* *Set criteria:* **Travel Approval: Total Expenses** greater than **0**
Select Approver	*Select "**Automatically assign an approver using a standard or custom hierarchy field**"* *Select "**manager**" from the option list*

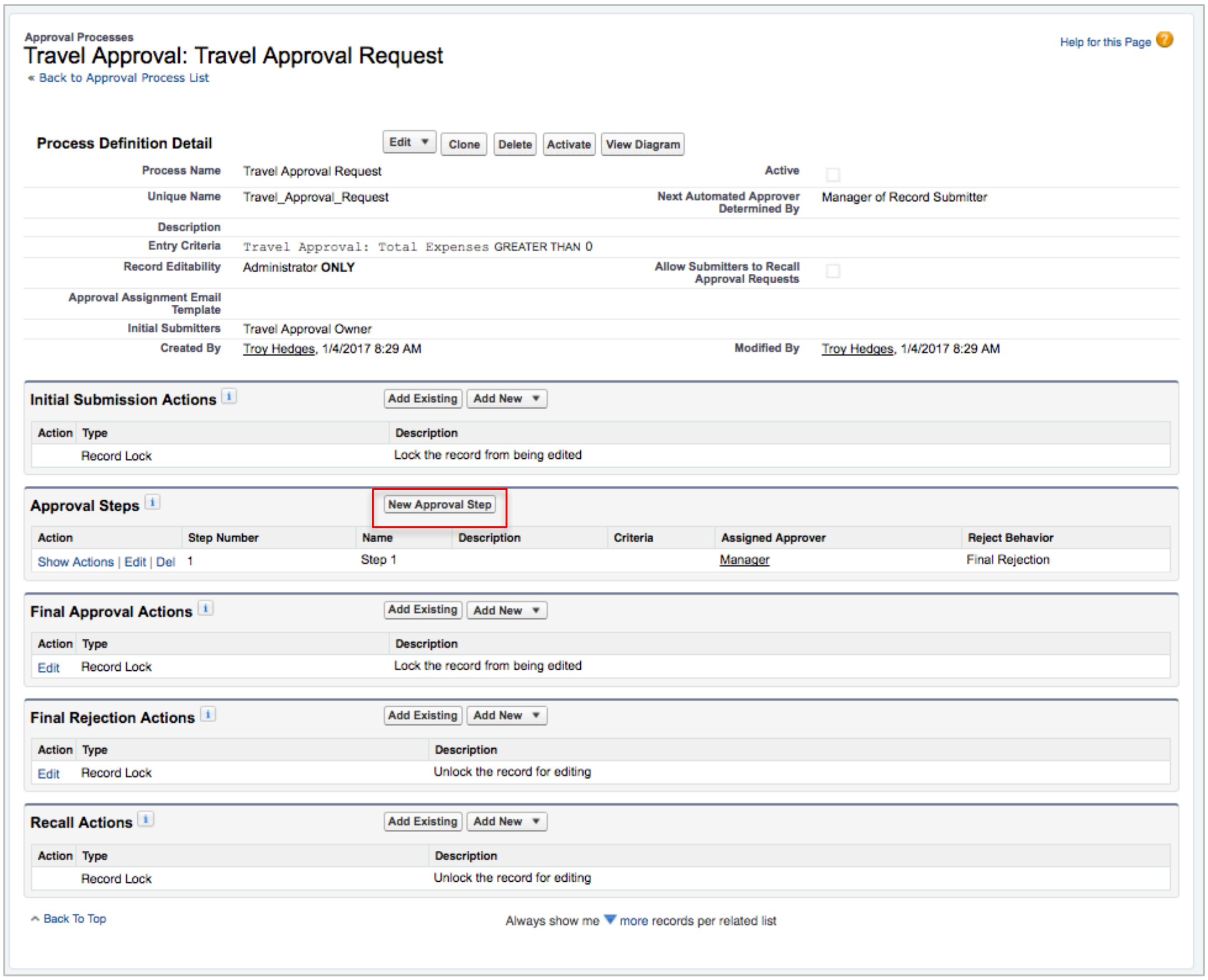
Your window should look like following:



6. Click **Save** button.
7. You will see a screen like following. Click the **View Approval Process Detail Page** button.



Screen will now look like the following:

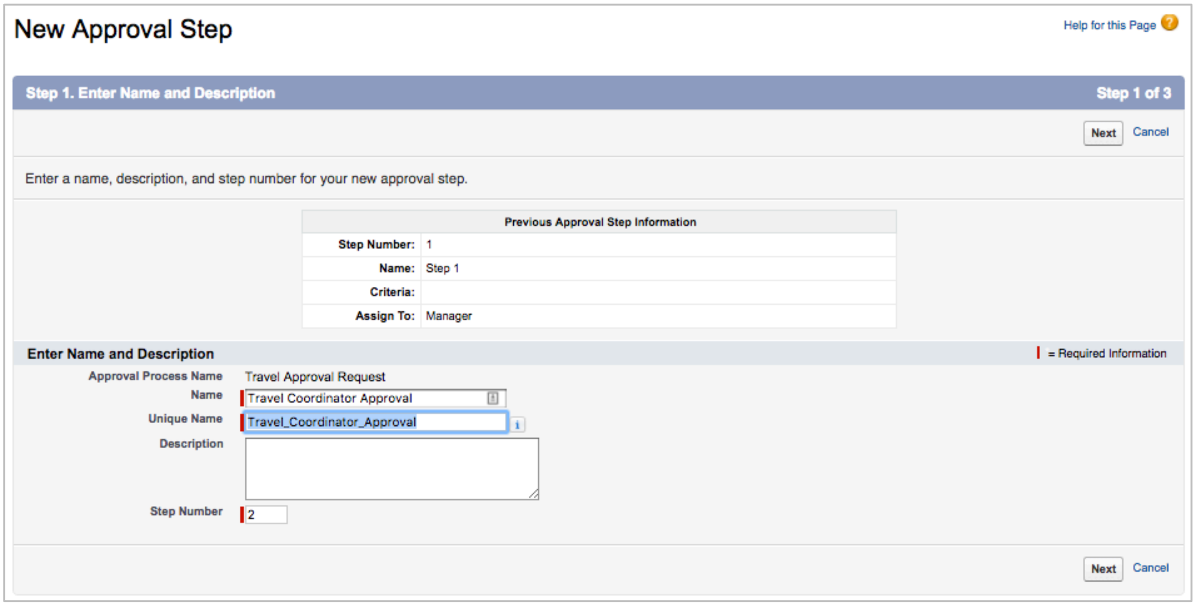


8. Notice in the Approval Steps section that it already created a rule to route all approvals to a user's manager. Now we just need to create another approval step to send out-of-state travel to a travel coordinator.

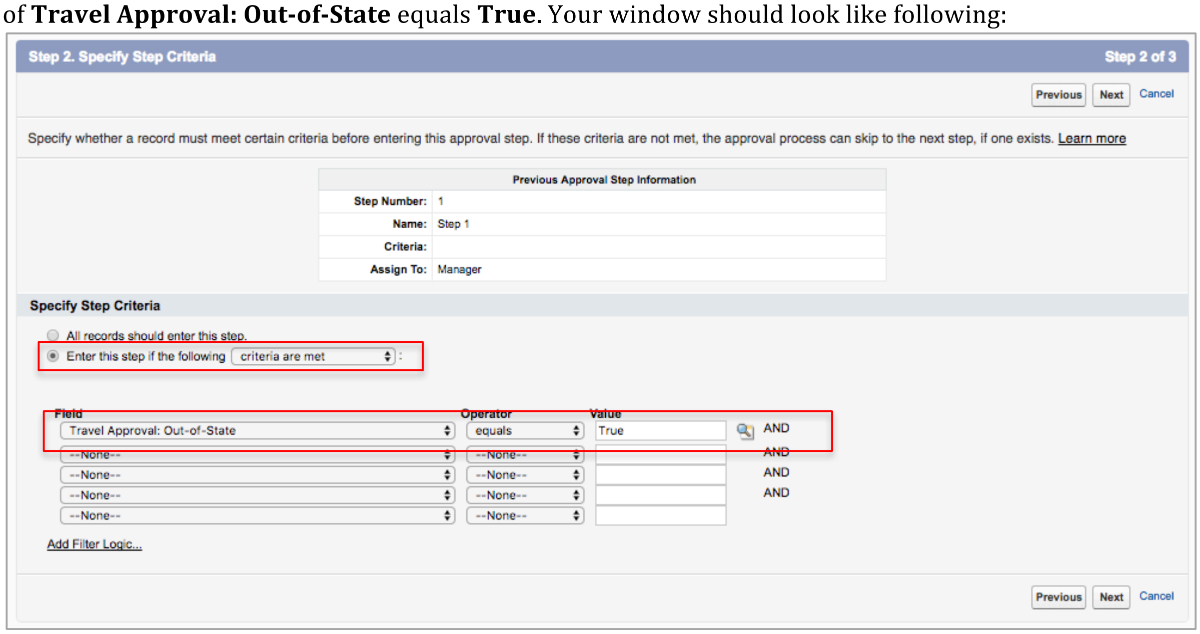
9. Click the **New Approval Step** button in the **Approval Steps** section (you can find this around middle of page). Enter the following details:

Parameter	Value
Name	Travel Coordinator Approval
Unique Name	Travel_Coordinator_Approval (this will automatically get set when you tab out of the Name field)
Step Number	*2*

Your window will look like following:



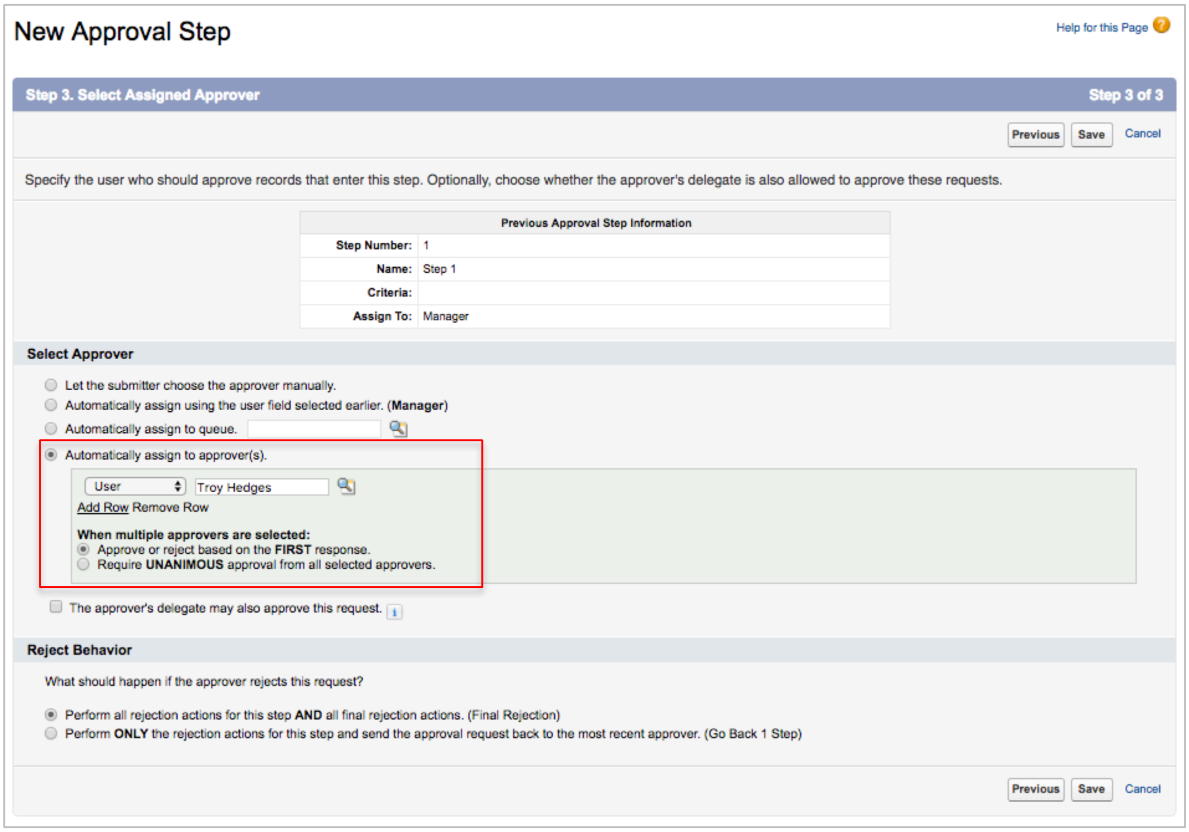
10. Click **Next** button.
11. On next screen, select the **Enter this step if the following "criteria are met"** option. Set criteria formula of **Travel Approval: Out-of-State** equals **True**. Your window should look like following:



12. Click **Next** button.
13. Select the **Check Automatically assign to approver(s)** option. Select "User" from the drop-down and select yourself as the travel coordinator.

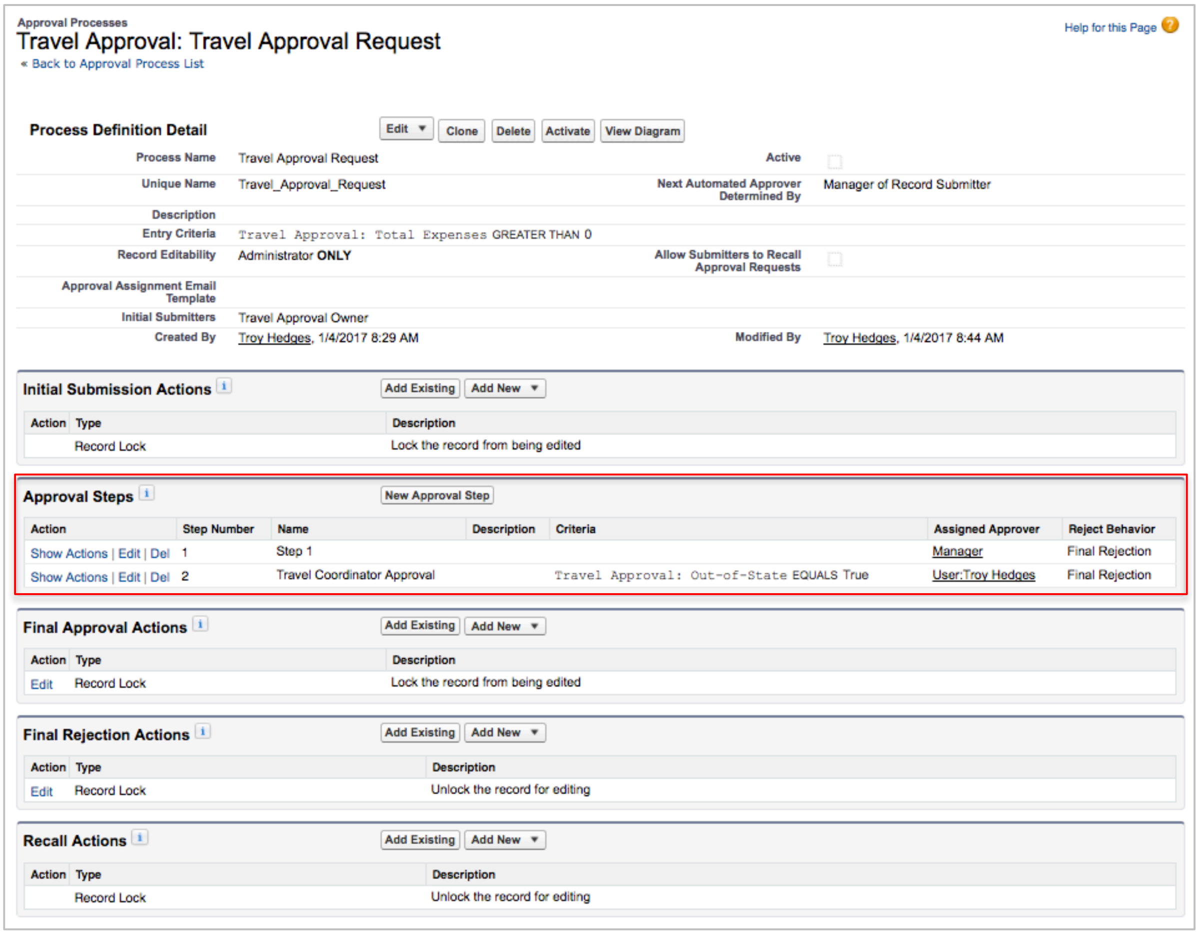
    NOTE: Obviously in real-world, a user would NOT be selected as an approver of their own request. Salesforce demo orgs are limited to two Salesforce users. Since we have already used those two (for yourself and Eric Executive), we don't have another user account to create for the travel coordinator. For this workshop, we'll just use your user account for the travel coordinator.

Your screen should look like the following:

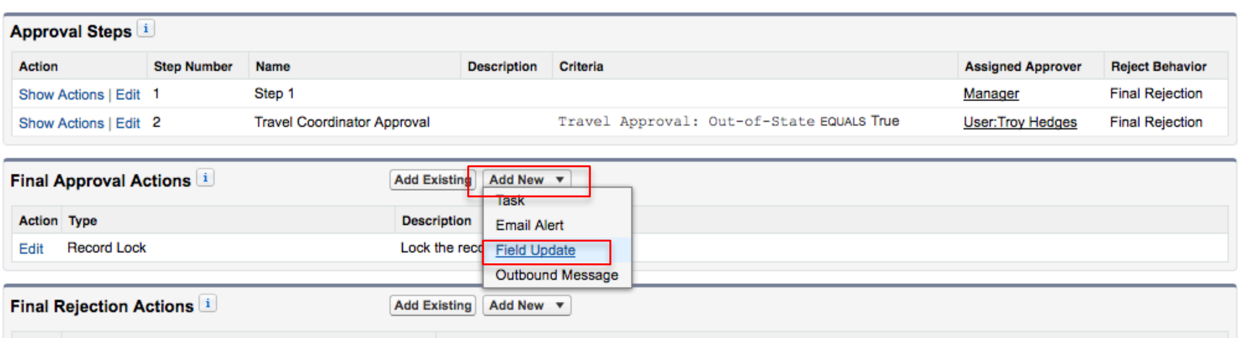


14. Click **Save** button.
15. You will be presented with following window. Select the **No, I'll do this later. Take me to the approval process detail page to review what I've created** option and select **Go**.

16. Your approval process should now look similar to following with the second approval step for sending out-of-state travel to the travel coordinator.



17. Next, let's add logic to set the status of the approval request based on if it was "Approved" or "Rejected". We do this by creating a Final Approval action and a Final Rejection action. Let's start by creating an action if the request was approved by all approvers. Click on the **Add New** button in the Final Approval Actions area in the approval process form. Select **Field Update** from the drop-down list.

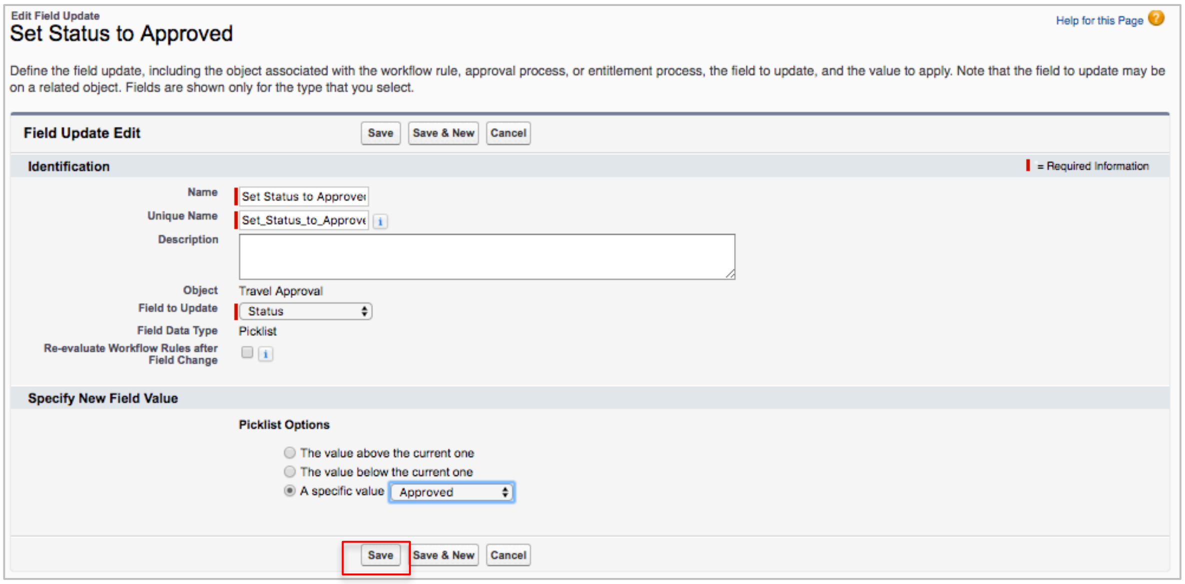


18. In the **New Field Update** form, enter the following details:

Parameter	Value
Name	Set Status to Approved
Unique Name	Set_Status_to_Approved (this will automatically get set when you tab out of the Name field)
Field to Update	Status

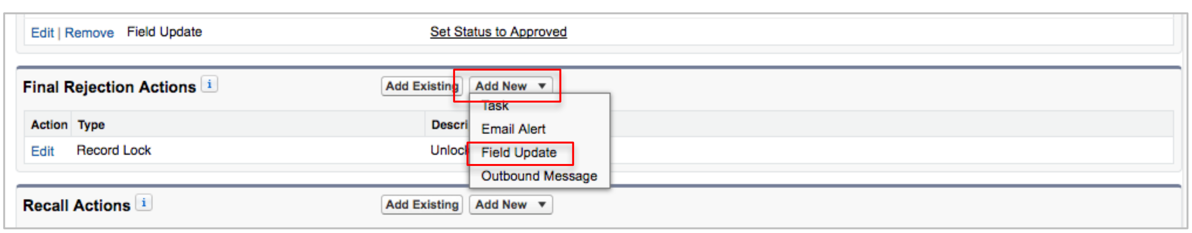
Re-evaluate Workflow Rules after Field Change	*Leave un-checked*
Picklist Options	Select option **"A specific value"** and select **"Approved"** from drop-down list.

Your form should look like following:



Click the **Save** button. The Final Approval Actions section should look like the following:

19. Next, let's set status value to "Rejected" if any approver rejects the travel approval request. Click on the **Add New** button in the Final Rejection Actions area in the approval process form. Select **Field Update** from the drop-down list.

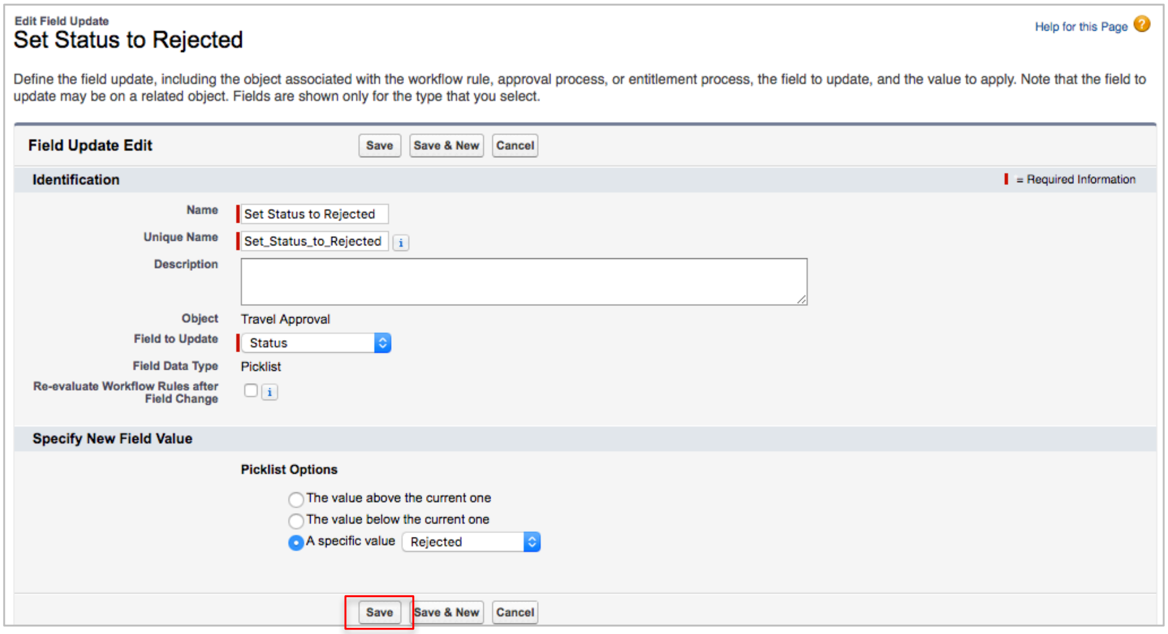


20. In the **New Field Update** form, enter the following details:

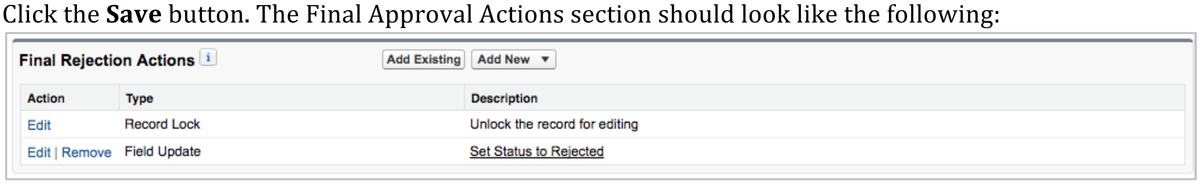
Parameter	Value
Name	Set Status to Rejected
Unique Name	Set_Status_to_Rejected (this will automatically get set when you tab out of the Name field)
Field to Update	Status
Re-evaluate Workflow Rules after Field Change	*Leave un-checked*
Picklist Options	Select option **"A specific value"** and select **"Rejected"** from drop-

	down list.

Your form should look like following:



Click the **Save** button. The Final Approval Actions section should look like the following:

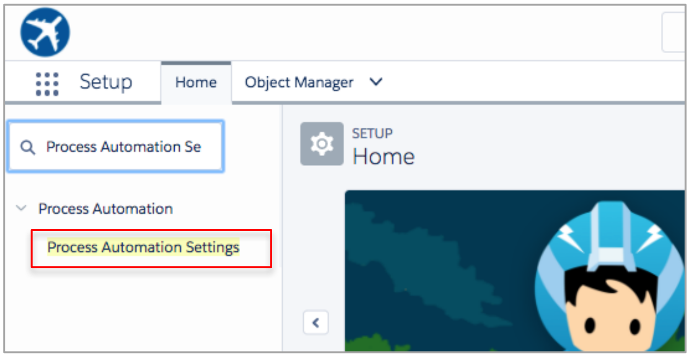


21. Last thing to do is activate this approval process. Click the **Activate** button near top-middle of page. Select **OK** in the pop-up window to confirm activation. Your approval process should now have the Active flag checked.

Enable Email Approval Response

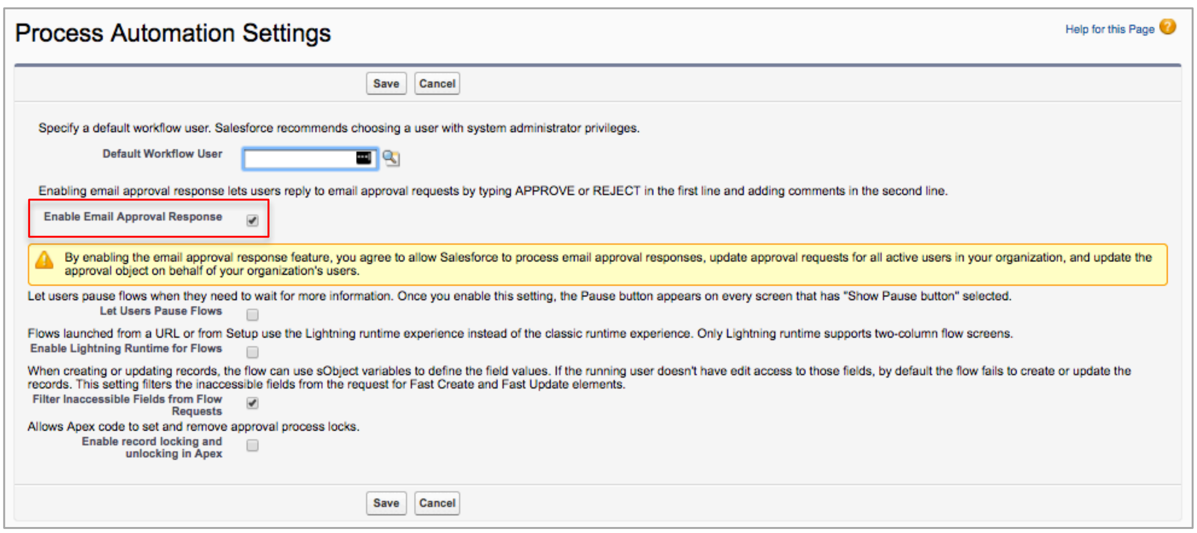
Along with being able to approve or reject travel approvals directly inside Salesforce, it is also possible to allow users to approve via email. When an employee submits their travel approval, an email is sent to the next approver in the approval process to notify them of the request. That email will include a URL link to the travel approval record so that the approver can access the details very easily. It is also possible to allow the approver to just respond to the email with text like APPROVE, YES, REJECT, NO, etc… We will now enable this for your approval process.

1. Navigate to setup by clicking gear icon in top-right and then enter “**Process Automation Settings**” in the quick find box.



2. Click on the **Process Automation Settings** link as highlighted above. The Process Automation Settings will show.

3. Make sure the option **“Enable Email Approval Response”** is selected/checked.

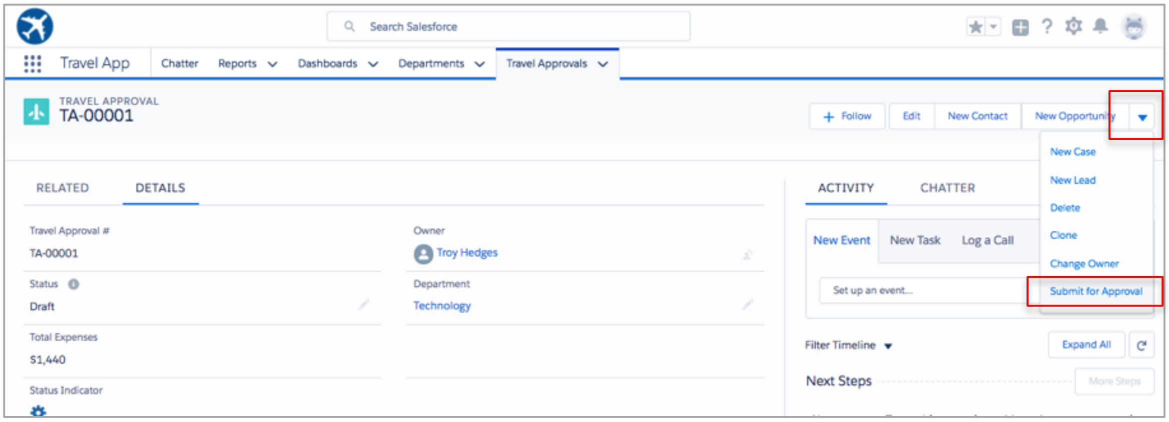


4. Click the **Save** button.

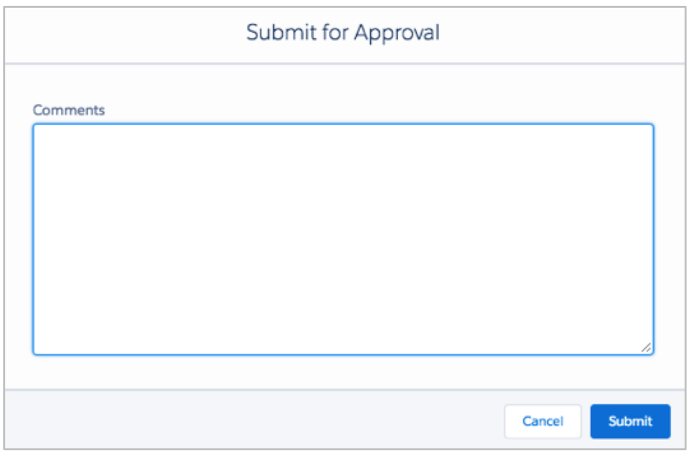
Test Your Approval Process

1. Navigate to one of your travel approval records (i.e. navigate back to your Travel App, select Travel Approvals tab, and select a record from list). Make sure this is a travel approval record that has at least one expense item and a total expense amount > $0.

2. Let’s now submit this travel request for approval. In top right of screen, select the ▼ option and select **Submit for Approval.**

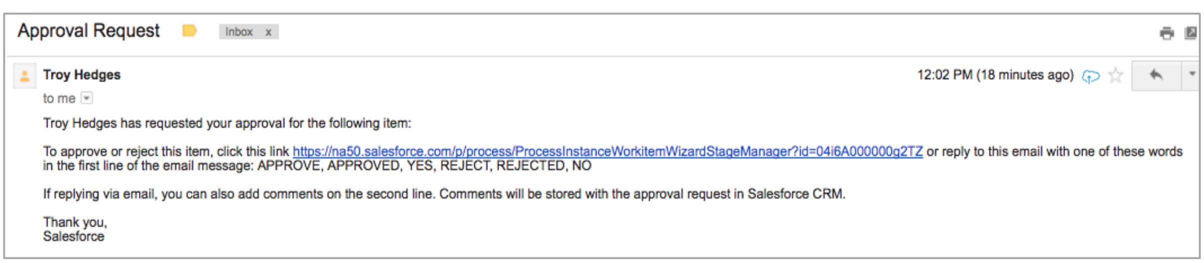


3. You will be presented with the following pop-up. Enter a comment of your choice and click the **Submit** button.

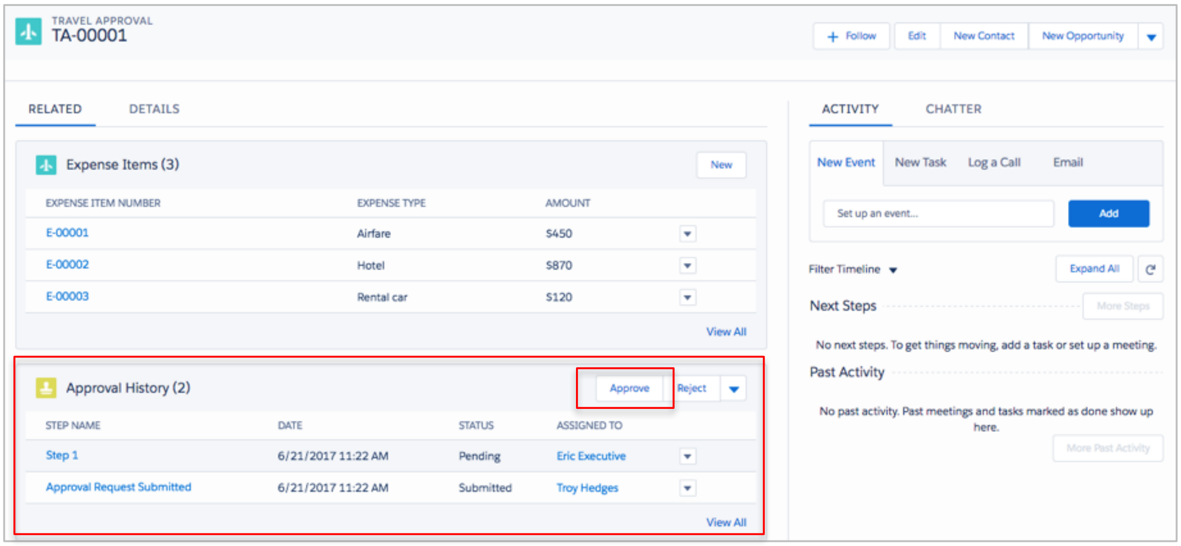


4. You should receive an email alert like the following that is letting Eric Executive know that he has a travel approval to process. Notice that it provides a link to directly access the Travel Approval record so that Eric could review. Also the email includes option to just respond to the email and replay with text like APPROVE, YES, REJECT, NO.

   We won't do anything with this email at this point…

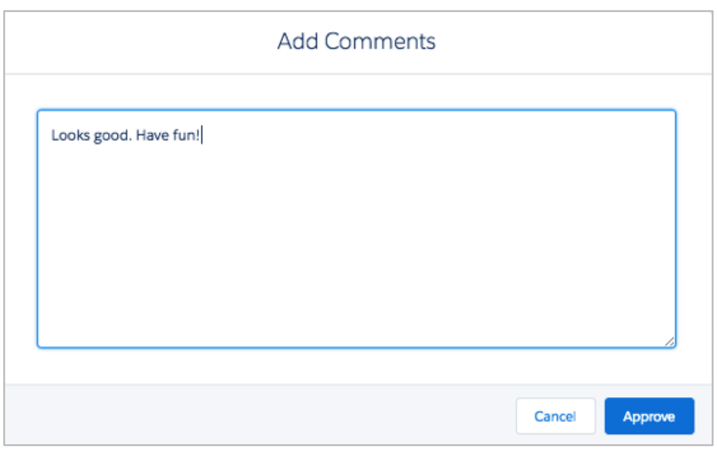


5. On your Travel Approval record, click on the **RELATED** tab and you can see the new section titled "Approval History" that has details of your approval submission. It should indicate that it is waiting on Eric Executive.

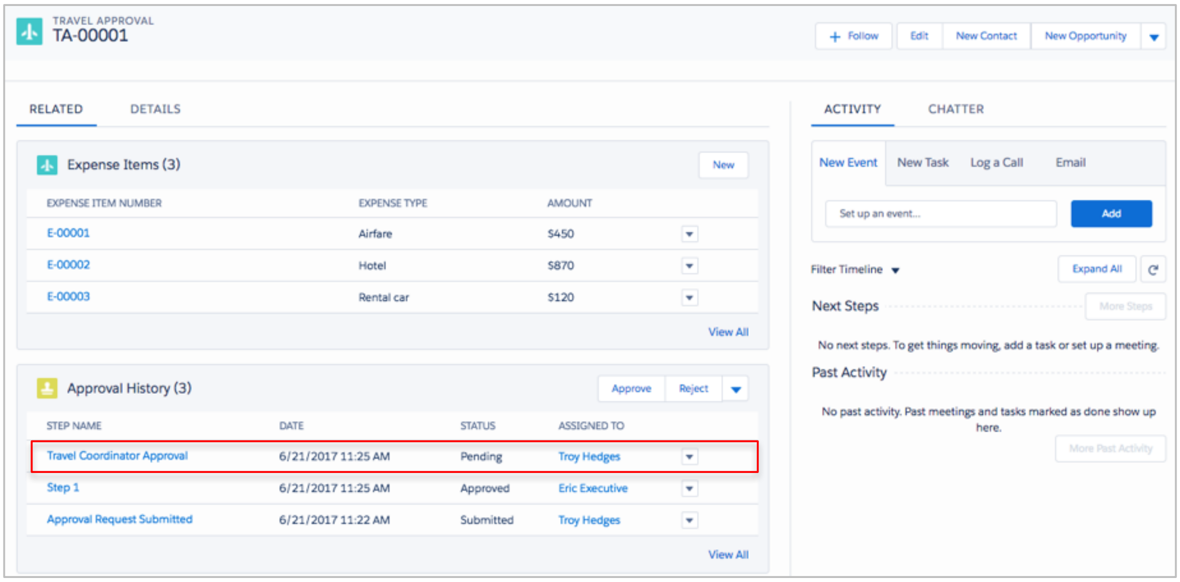


At this point you could log out of Salesforce and log back in as Eric Executive. You could find this travel approval record (or click on the link in the email) and could see the same view as above. For sake of keeping the workshop on time, we will just use your current user to approve this process. Since you are a System Administrator, you have authority to approve any requests even if they are pending on other users.

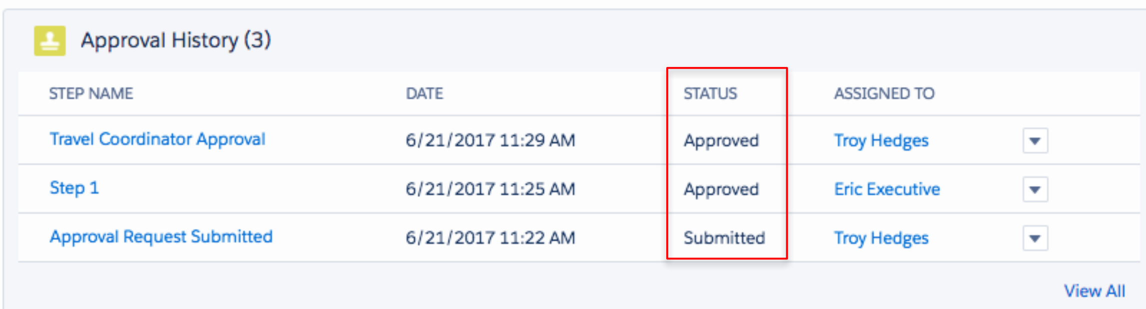
6. Click the **Approve** button that is in top-right of **Approval History** section.
7. In the pop-up window, enter a comment like "Looks good. Have fun!" and click the **Approve** button once again.



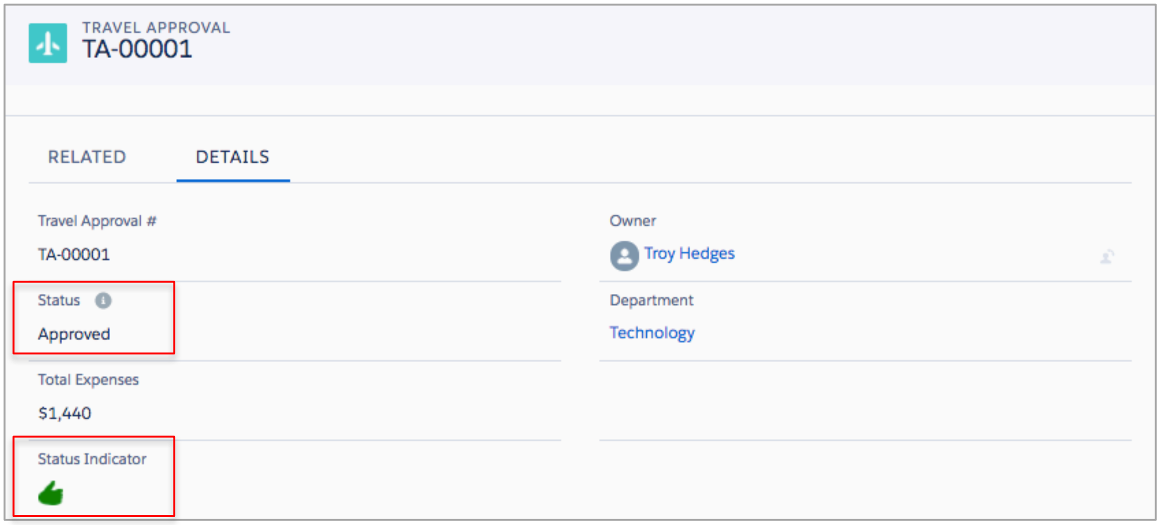
8. The screen should now look like the following. Since this was for out-of-town travel, the approval was sent to the Travel Coordinator (remember…this is the logic we defined for the Approval Process). The approval is actually pending on yourself (since you are acting as the travel coordinator…obviously this wouldn't be the case in a real world implementation).



9. As you did above, click on the **Approve** button in the **Approval History** section to finish the approval.
10. Enter a comment in the pop-up window and select **Approve** button.
11. The **Approval History** section should now look like the following:

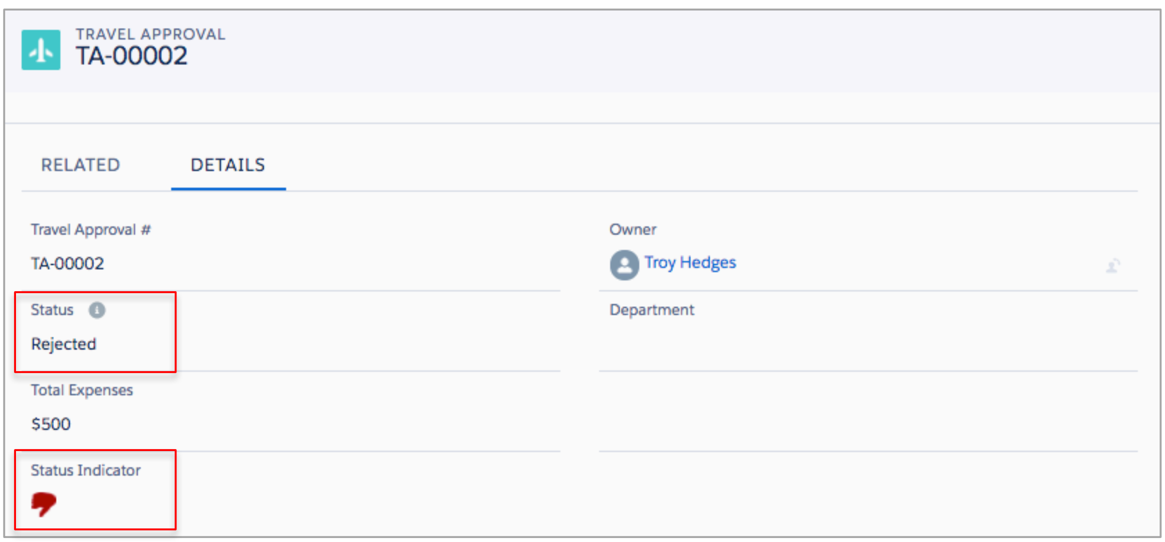


12. Click on the **DETAILS** tab for your travel approval record. You should also notice the status value has been updated to **Approved** and the Status Indicator field now shows a green thumbs-up icon.



13. Pick or create another travel request record and submit it for approval. Check your email and respond to the email with "REJECT".

    Navigate back to this travel approval record (or just click on the link in the email). You should get status value of Rejected and a red thumbs down icon. NOTE: It may take up to 1 minute for the email response to be processed so you may need to refresh your browser a couple times to see the change.



Analyze with Reports and Dashboards

Duration: 25 minutes

How great would it be to get a report in your inbox every morning that shows the number of open travel requests waiting on your approval? Or access a report that provides all the key information of your travel approvals across your departments and their status? And, perhaps you'd like to see that information displayed as a graphical chart via a dashboard from your desktop or from mobile phone. Good news because that is all possible.

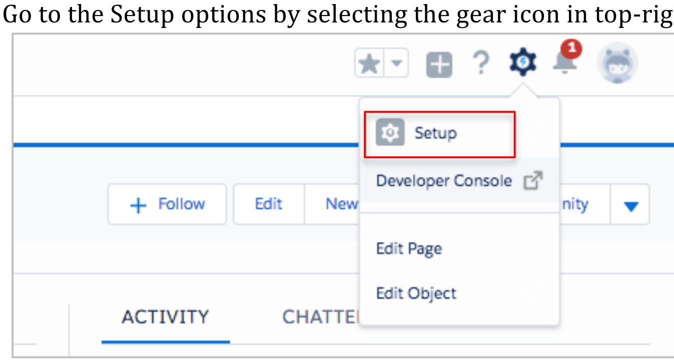
This lab section introduces you to reports and dashboards. Once you've defined your reports, you can place them on a dashboard, so you can see all your key metrics at a glance. Salesforce Reports and Dashboards lets you see what's important to you, exactly how and where you want to see it.

The Travel Approval app you created earlier includes Reports and Dashboard tabs, where you can create, edit, run, and schedule reports or dashboards. We will start by creating a simple report that shows number of travel approval requests by department. Will then create a second report to show number of open travel approvals generated over time. Lastly, we'll add these two reports to show as visual components on a dashboard.

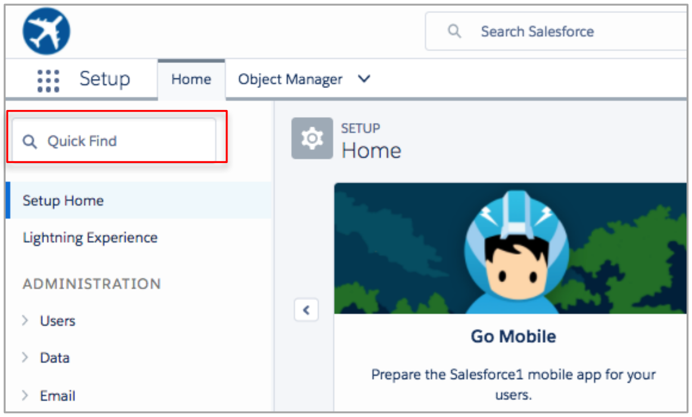
Load Data

Let's first load some sample Travel Approval records so that our reports and dashboards have some data else they will not be much fun with just 1 or 2 records to show.

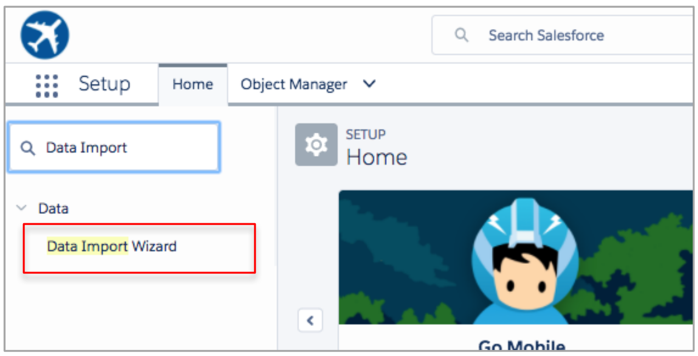
1. Go to the Setup options by selecting the gear icon in top-right and select **Setup Home**.



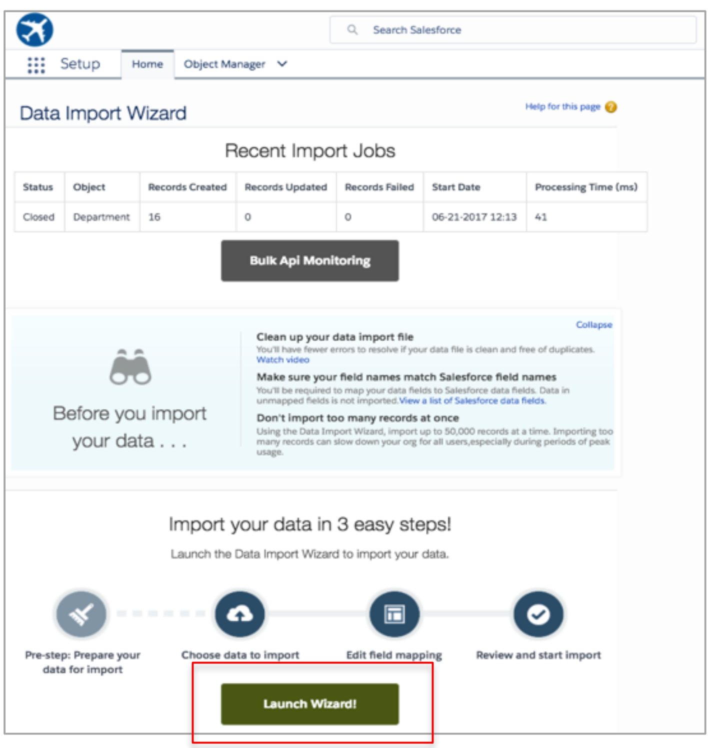
2. In the Quick Find search box search box, type in "Data Import"



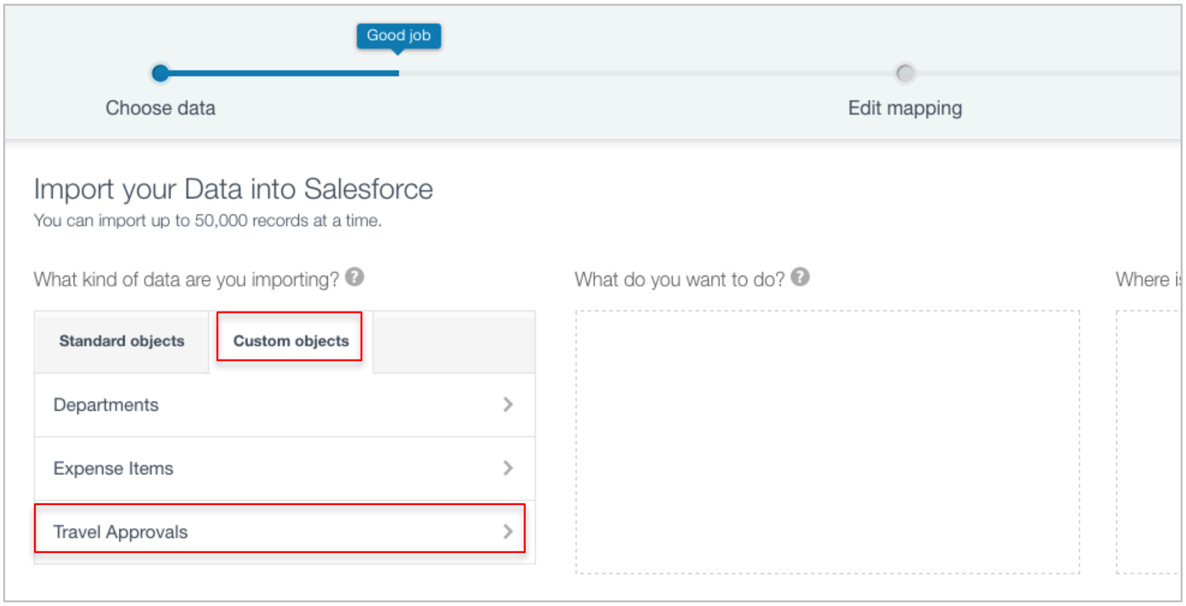
3. This should filter down the results to following. Select the **Data Import Wizard** option.



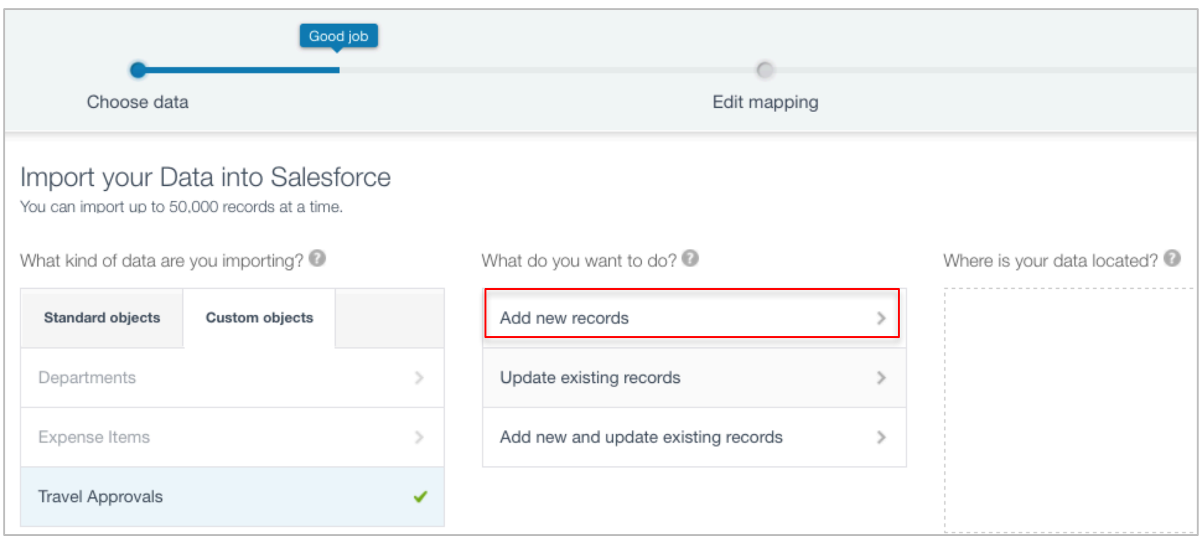
4. You are now presented with window like the following. Select the **Launch Wizard!** button.



7. First we need to select the object we want to import data to. Select **Custom Objects** tab and select the **Travel Approval** object.

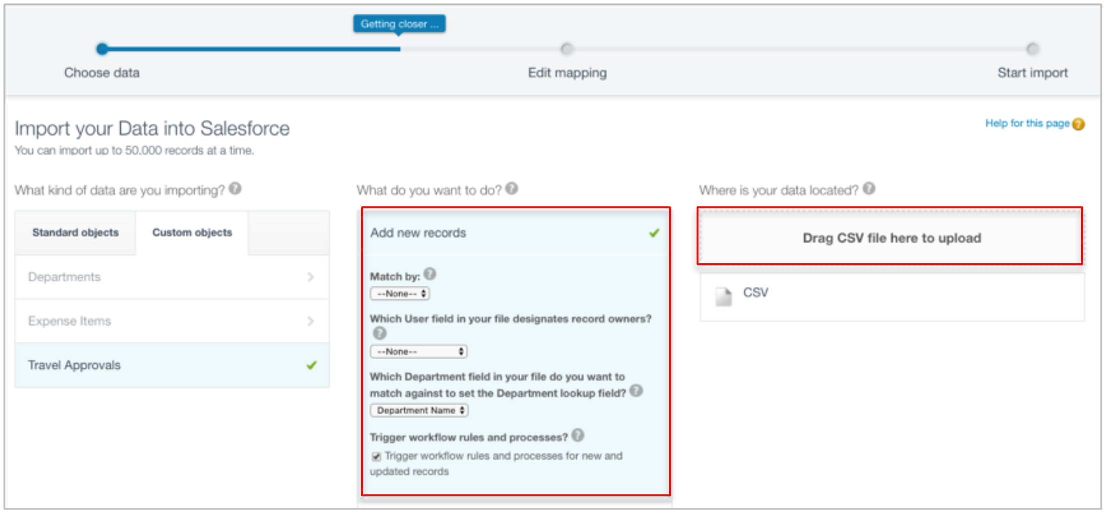


8. Next select the **Add new records** option



9. On the Add new record screen, there are 3 primary options to select:

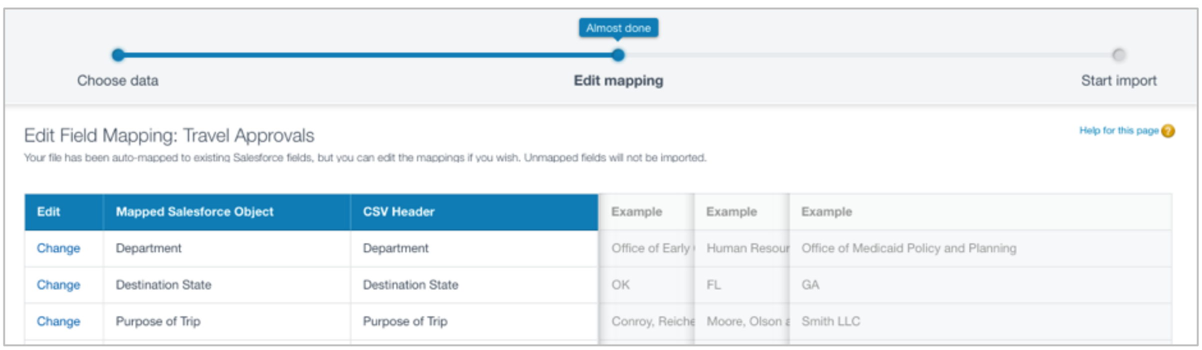
    a. Leave the first two options to **"—None—"** as show below.
    b. For the "**Which Department field in your file….**" option, select "**Department Name**" from the drop-down list.
    c. Make sure **Trigger workflow rules and processes for new and updated records** is checked/selected



10. Drag the "**TravelApprovals.csv**" file to the **Drag CSV file here to upload** section.

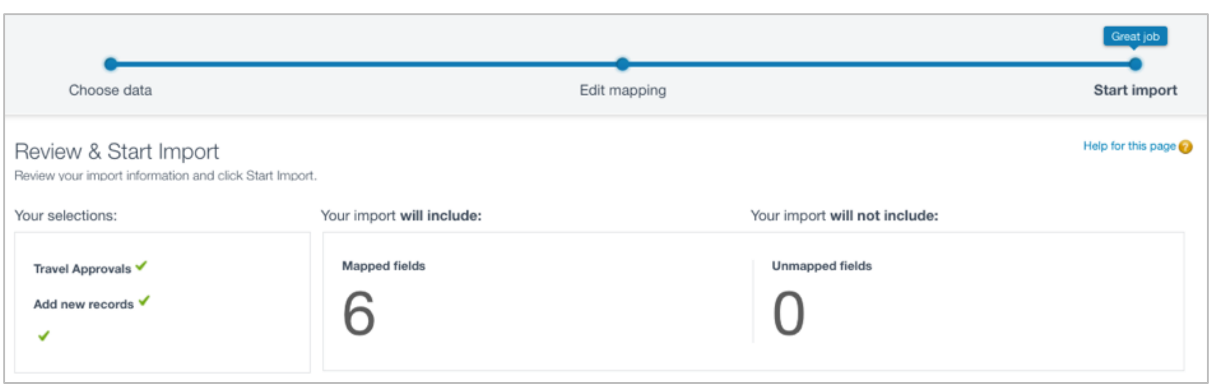
11. Select **Next.**

12. Next, you will need to map the fields in the CSV file to the fields on your object. Since the names in the CSV file are the same as your object, these will be automatically mapped as shown below.

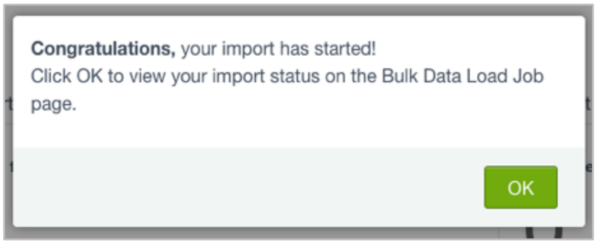


Click the **Next** button.

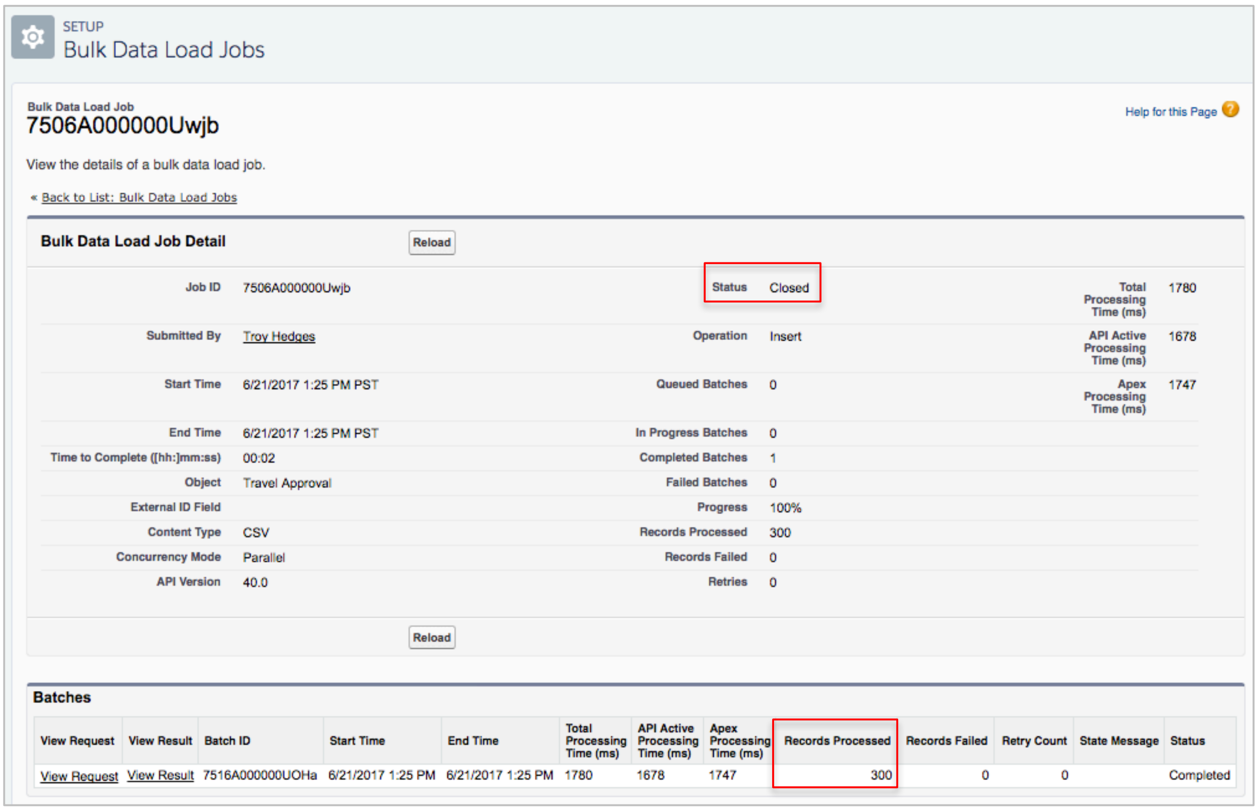
13. The next screen will give you summary of your data import and should look like the following. Click the **Start Import** button.



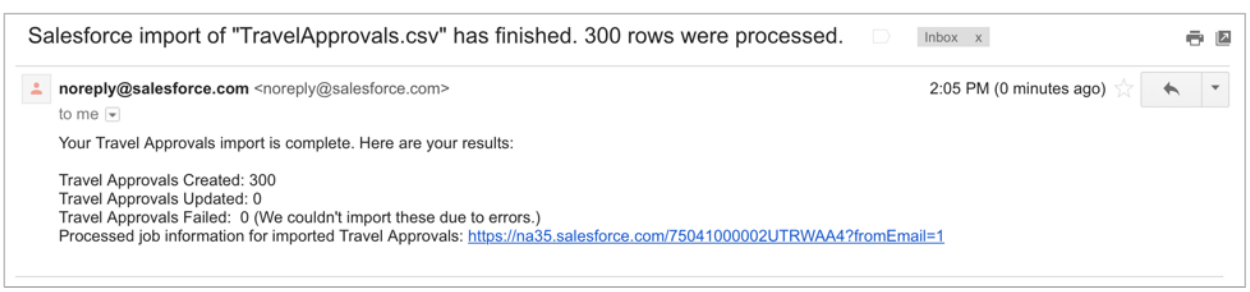
14. You should get a popup like the following. Click **OK** button.



You will now be taken to the bulk import summary window. This shows the process has completed (i.e. Closed) and that 300 records have been successfully imported or processed.



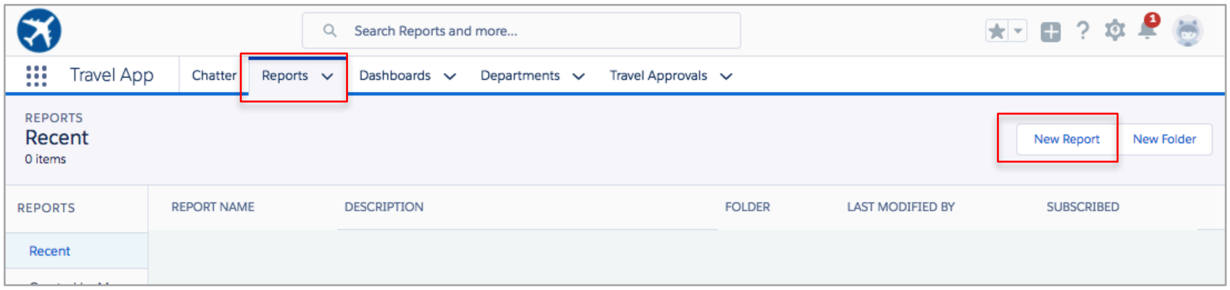
You will also get an email notification like the following



Create Reports

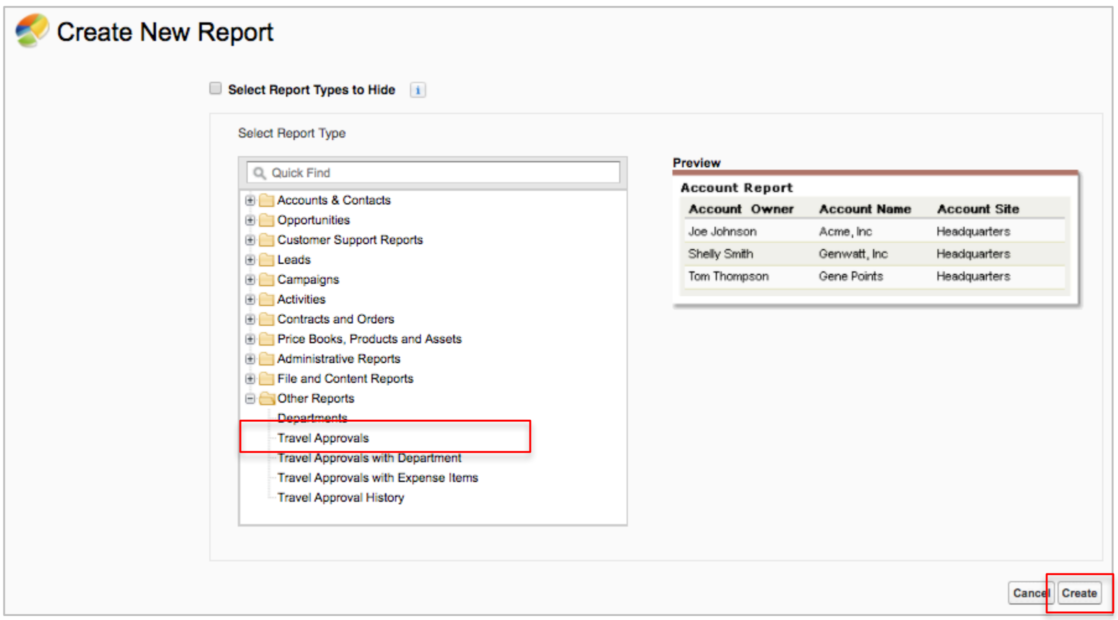
Next we will create a report to show number of travel approval requests by department.

1. Navigate to your **Travel App** and click the **Reports** tab.



2. Click **New Report** button in top-right side of screen.

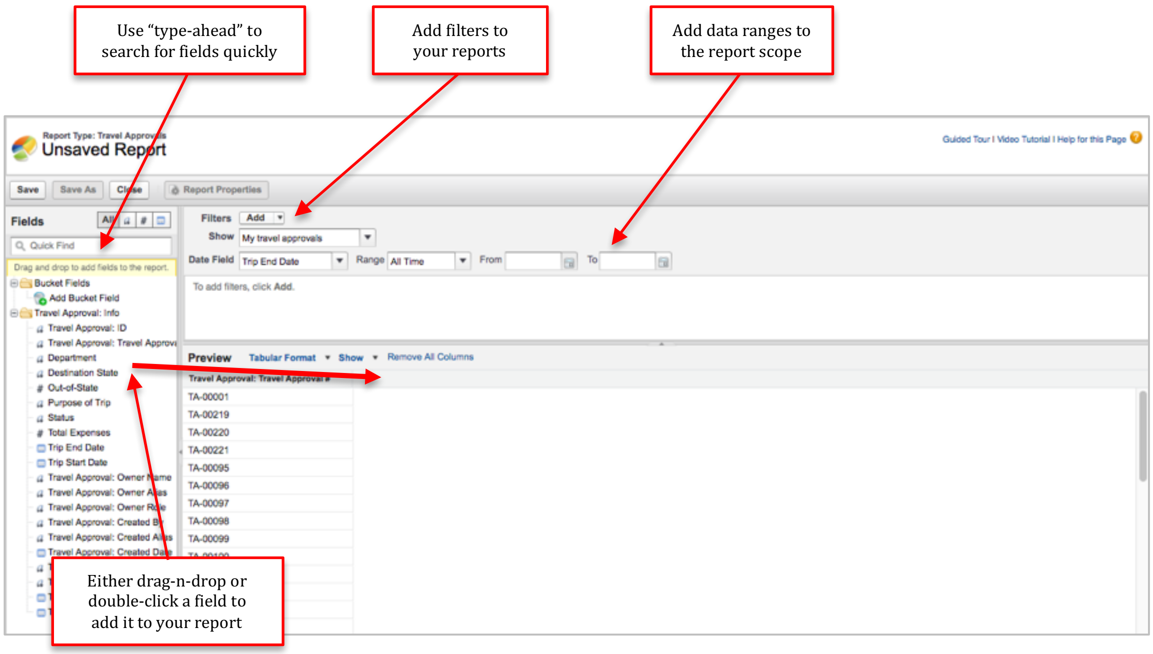
3. In the **Create New Report** screen, open the folder titled **Other Reports** and select **Travel Approvals** within that folder.



4. Click **Create** button in lower-right.

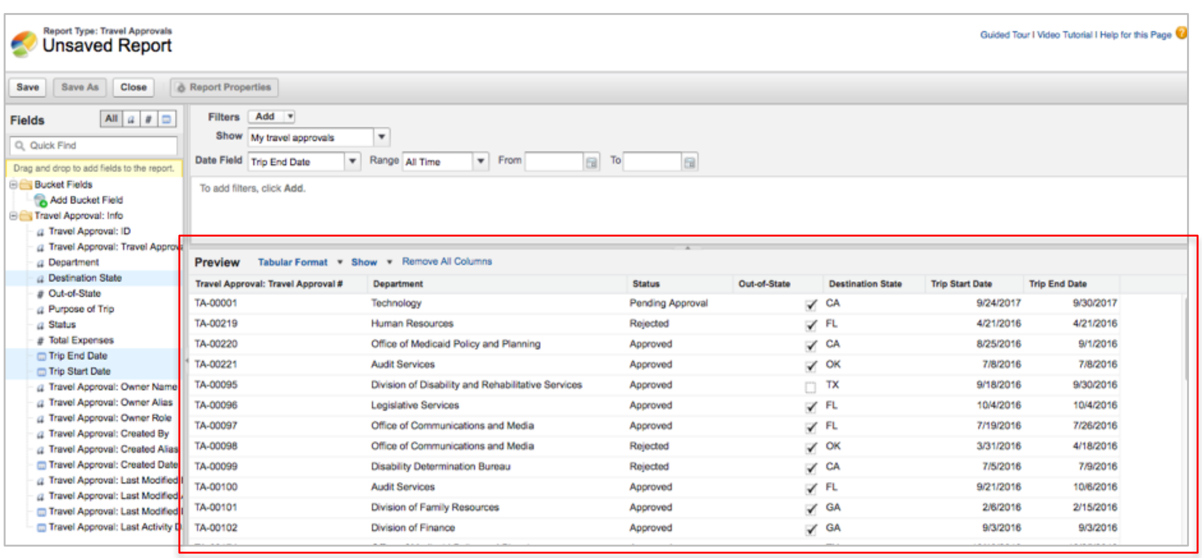
5. You are now presented with the report builder. The report builder provides a drag-and-drop interface to easily build and customize your reports. The report builder consists of 3 main sections:
   - **Fields Section** – on the left-hand side is all the fields you have accessible to create your report. You can easily scroll throw the list of fields and drag them over to the preview section to add them to your report. Or if you want to delete fields from your report, just drag them from preview section back to this fields section.
   - **Filter Section** – this section allows you to define all the filters for your report to filter down to exactly the data you want to include. You have options to filter by any field available on an object include some built-in date/time filters that allow you to apply an automatic sliding window for "current quarter" or "current fiscal year".
   - **Preview Section** – this section is the primary data table section of your report. This is where you define the columns/fields for your report along with any data groupings which drive your dashboard visual components.

Review the notes provided on the report builder screen shot below. Ask your lab instructor if you have any questions.

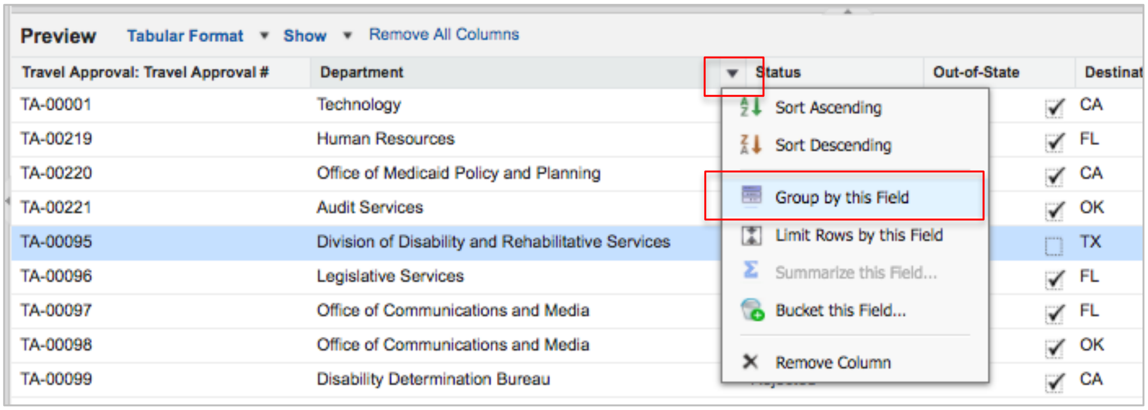


6. Let's drag the following fields from the left-hand side to the columns in the report:
   - Department
   - Status
   - Out-of-State
   - Destination State
   - Trip Start Date
   - Trip End Date

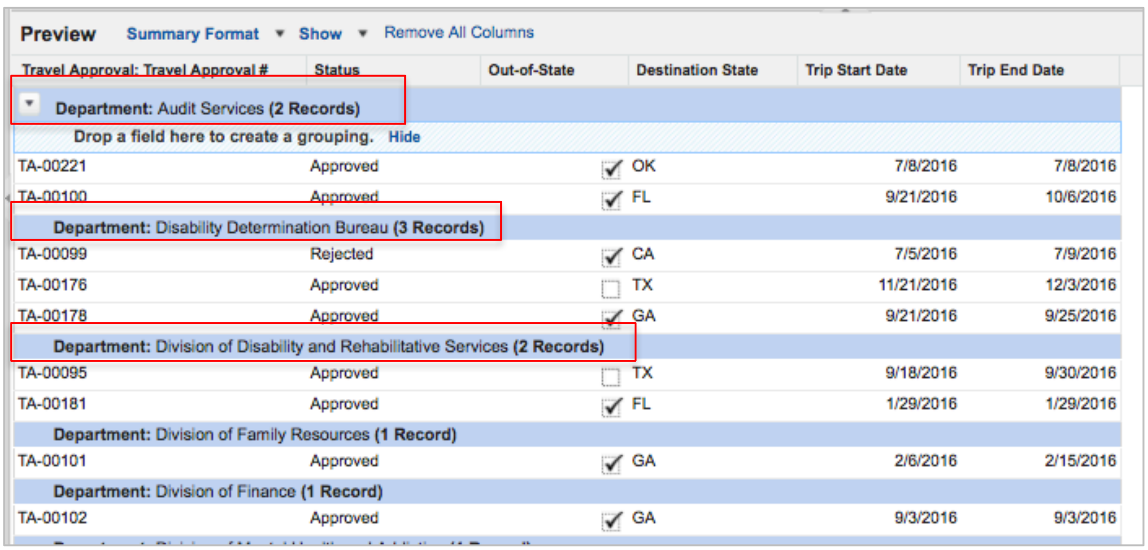
   Your report should now look like the following:



7. In the main report table section, left-click on the **Department** column and select "**Group by this Field**"



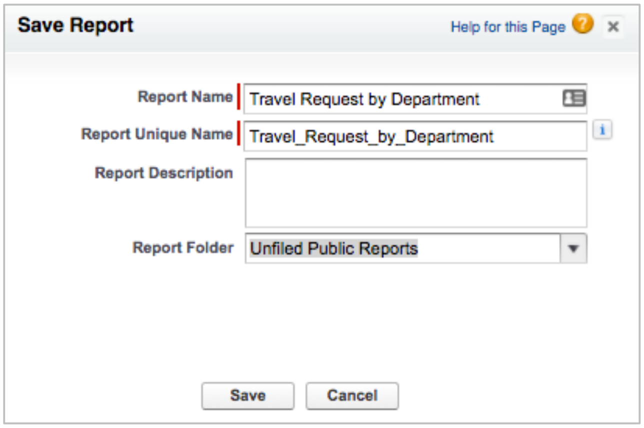
8. The report will now be grouped by Department



9. Click the **Save** button near top-left of Report Builder and set the following parameters for the report

Parameter	**Value**
Report Name	Travel Requests by Department
Report Unique Name	Travel_Requests_by_Department (this will automatically get set when you tab out of the Name field)
Report Description	*Leave blank*
Report Folder	Unfiled Public Reports

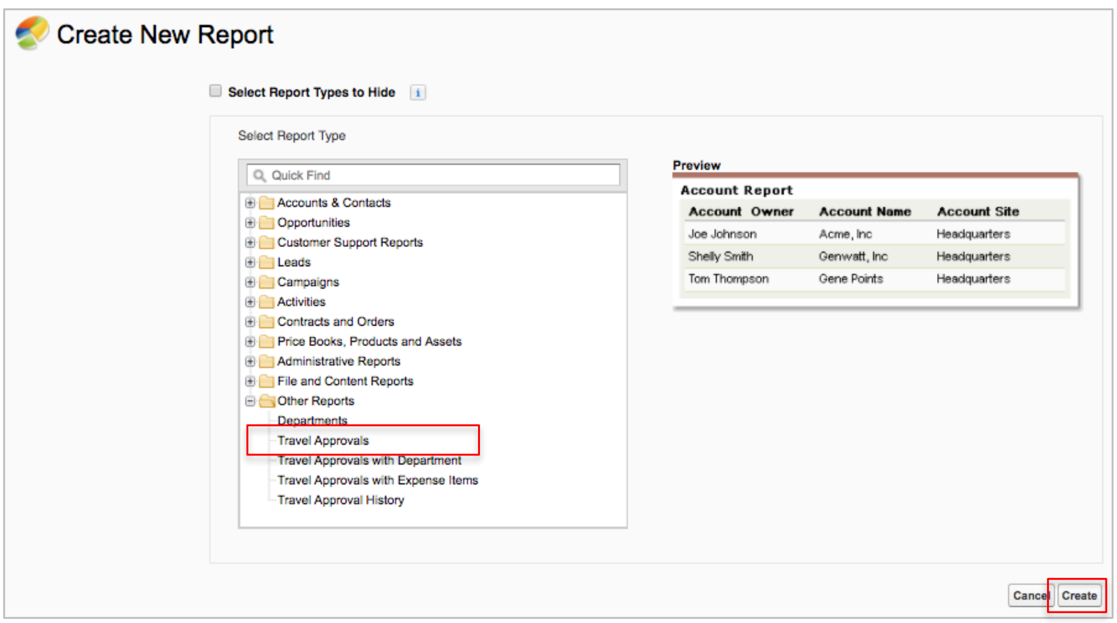
Your screen will look like following:



10. Click the **Save** button.
11. Click **Close** button then click **Save & Close** button.

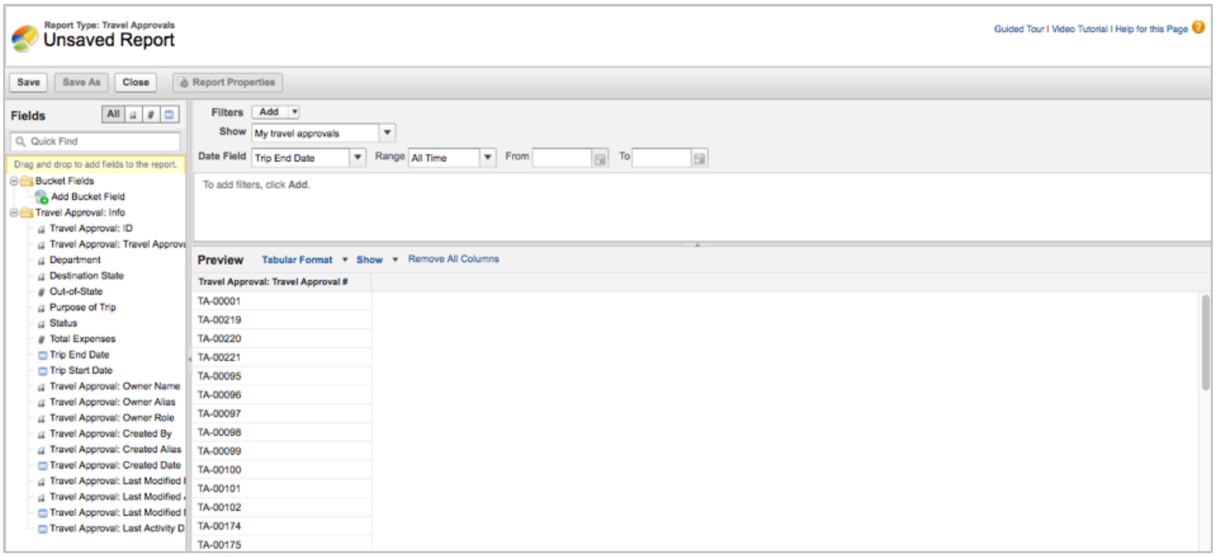
    Let's create another report for our dashboard.

1. Click **New Report** button in top-right side of screen.
2. In the **Create New Report** screen, open the folder titled "**Other Reports**" and select **Travel Approvals** within that folder.



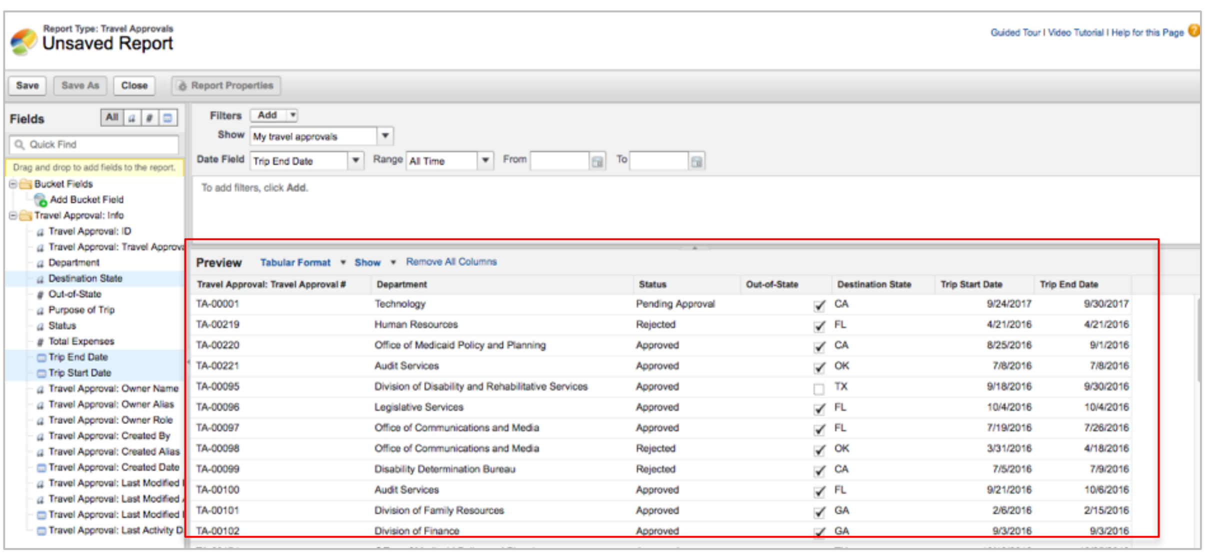
3. Click **Create** button in lower-right.

4. You are now presented with the report builder.

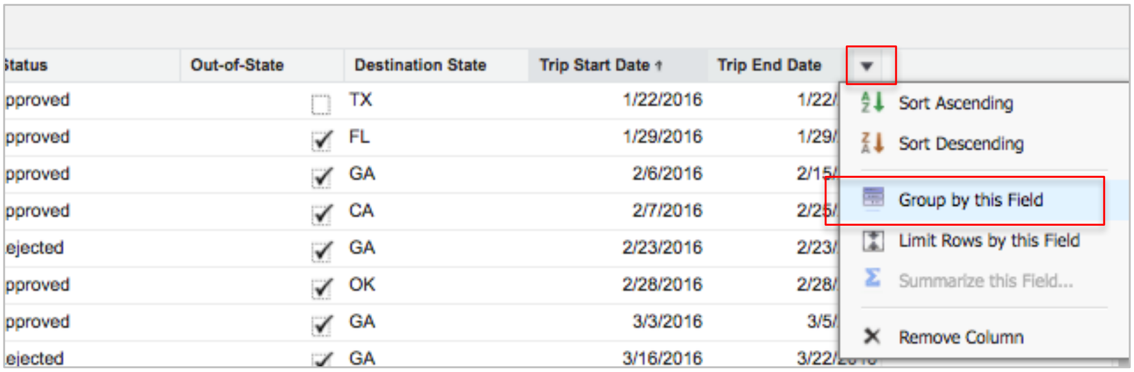


5. Let's drag the following fields from the left-hand side to the columns in the report:
   - Department
   - Status
   - Out-of-State
   - Destination State
   - Trip Start Date
   - Trip End Date

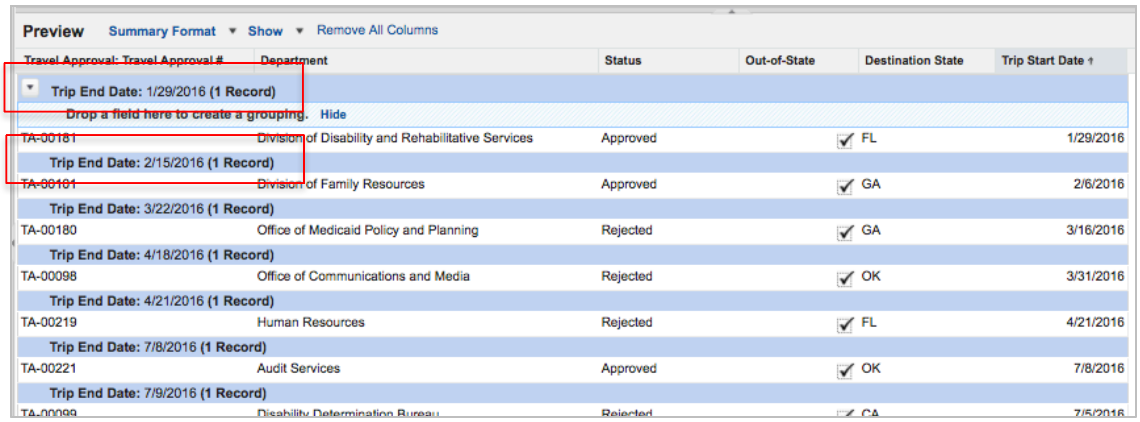
Your report should now look like the following:



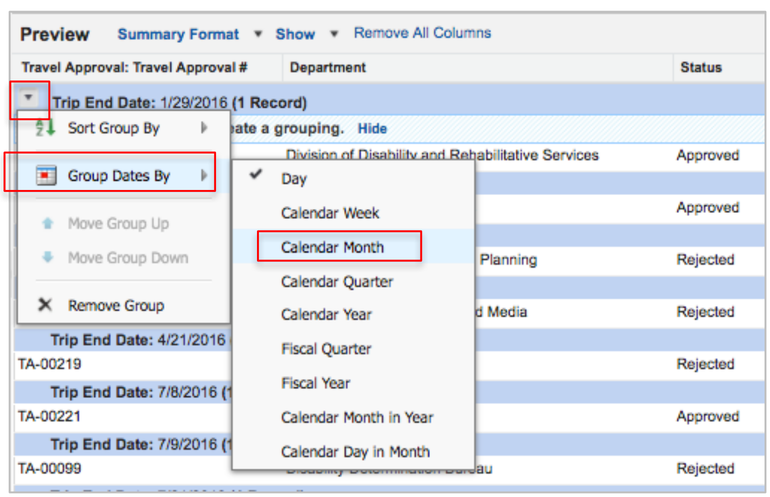
6. In the main report table section, left-click on the **Trip End Date** column and select "**Group by this Field**"



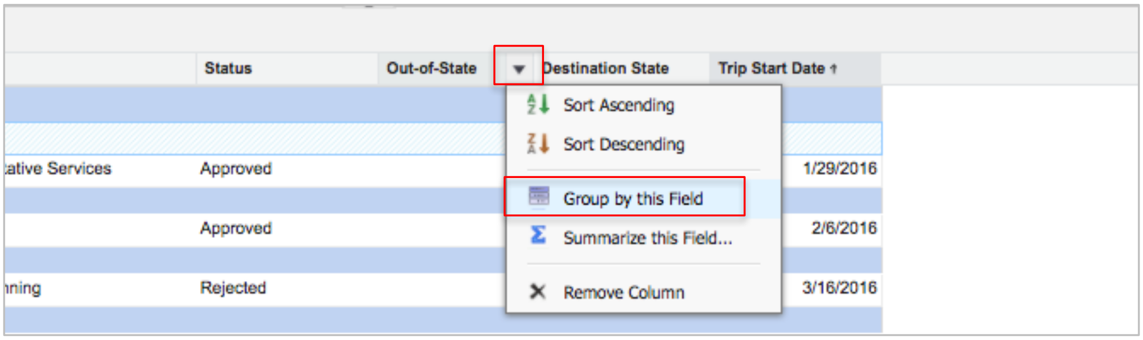
7. Your chart should now look like following.



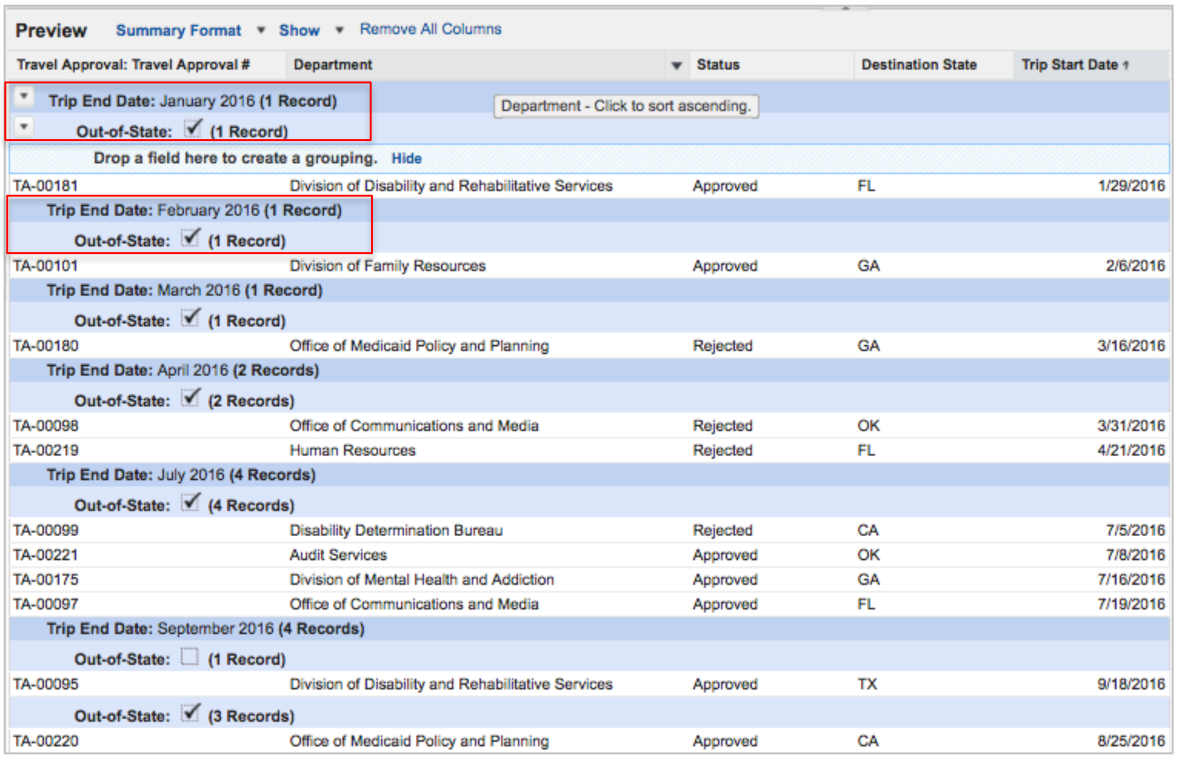
8. Instead of grouping by each individual day, let's group by calendar month. Click the little icon next to Trip End Date and select **Group Dates By > Calendar Month**.



9. Next, click on the **Out-of-State** column and select "**Group by this Field**"



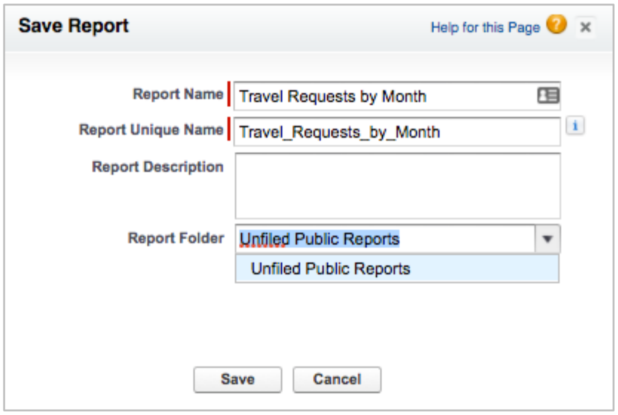
10. The report will now be grouped by Calendar Month and then Out-of-State flag.



11. Click **Save** to save the report.
12. Set the following parameters for the report

Parameter	Value
Report Name	Travel Requests by Month
Report Unique Name	Travel_Requests_by_Month (this will automatically get set when you tab out of the Name field)
Report Description	*Leave blank*
Report Folder	Unfiled Public Reports

Your screen will look like following:

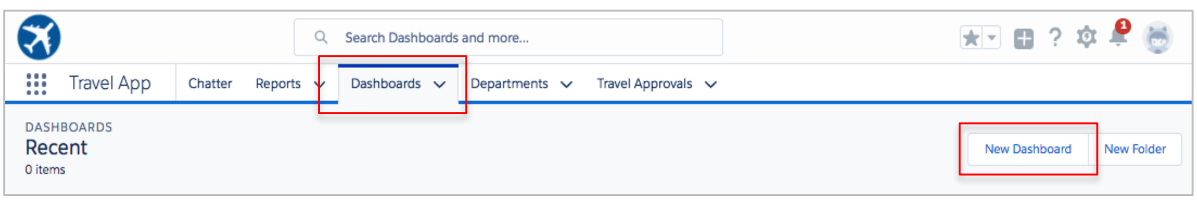


13. Click **Close** button then click **Save & Close** button.

    We now have two reports that we can use as basis for our dashboard.

Create Dashboard

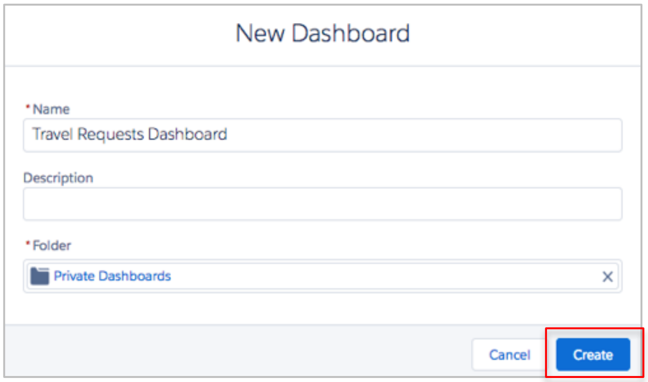
1. Click the **Dashboards** tab.



2. Click **New Dashboard** button in top-right side of screen.

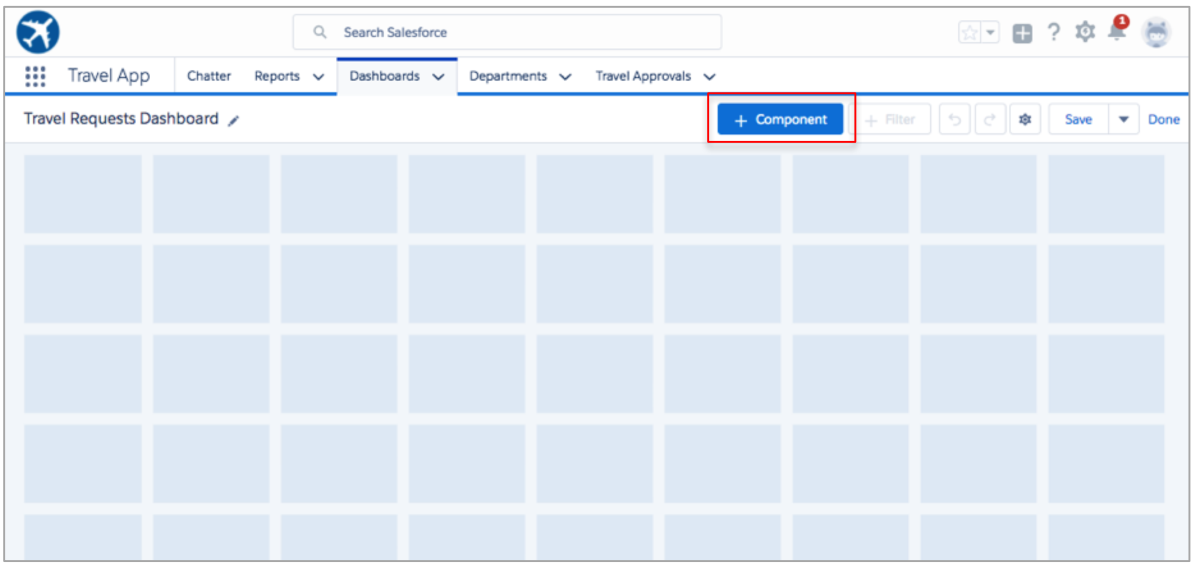
3. A window will pop-up with information to create the new dashboard. Enter the following parameters:

Parameter	Value
Name	Travel Requests Dashboard
Description	*Leave blank*
Folder	Private Dashboards

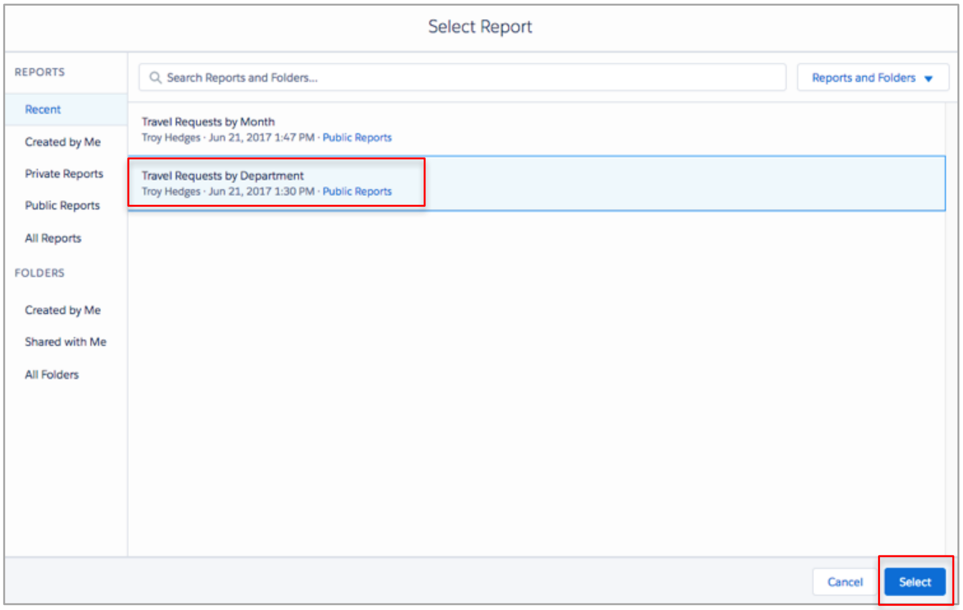


4. Click the **Create** button.

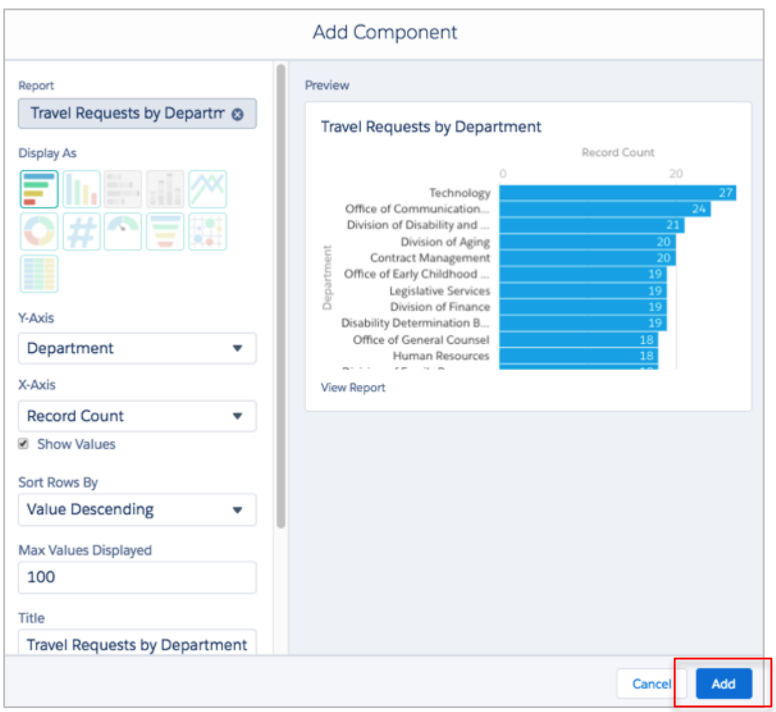
   You will now be presented the dashboard builder with grid layout. You can now add reports to your dashboard and move them on to different sections of the dashboard. You can also stretch the components across the grid to have the exact layout of components you need for your dashboard.



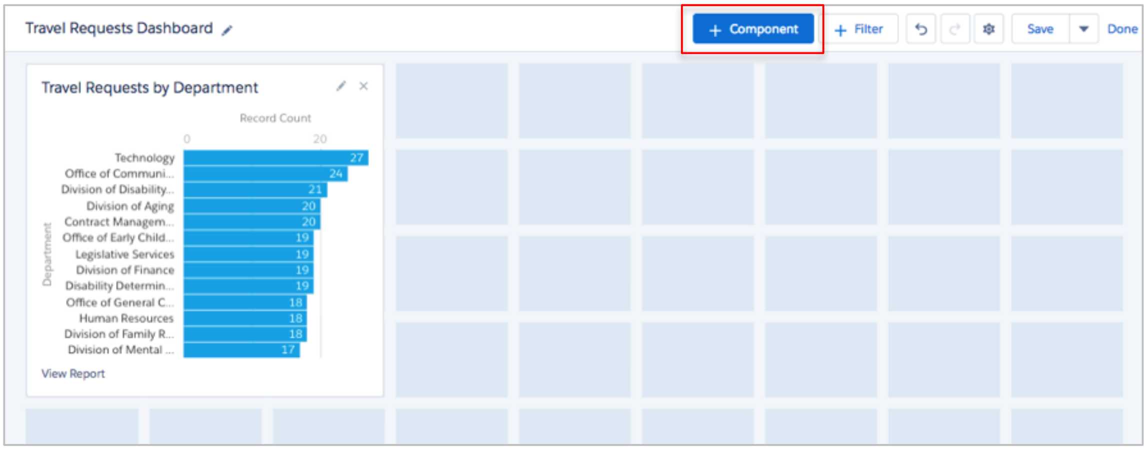
5. Click the + **Component** button. A window like the following will open.



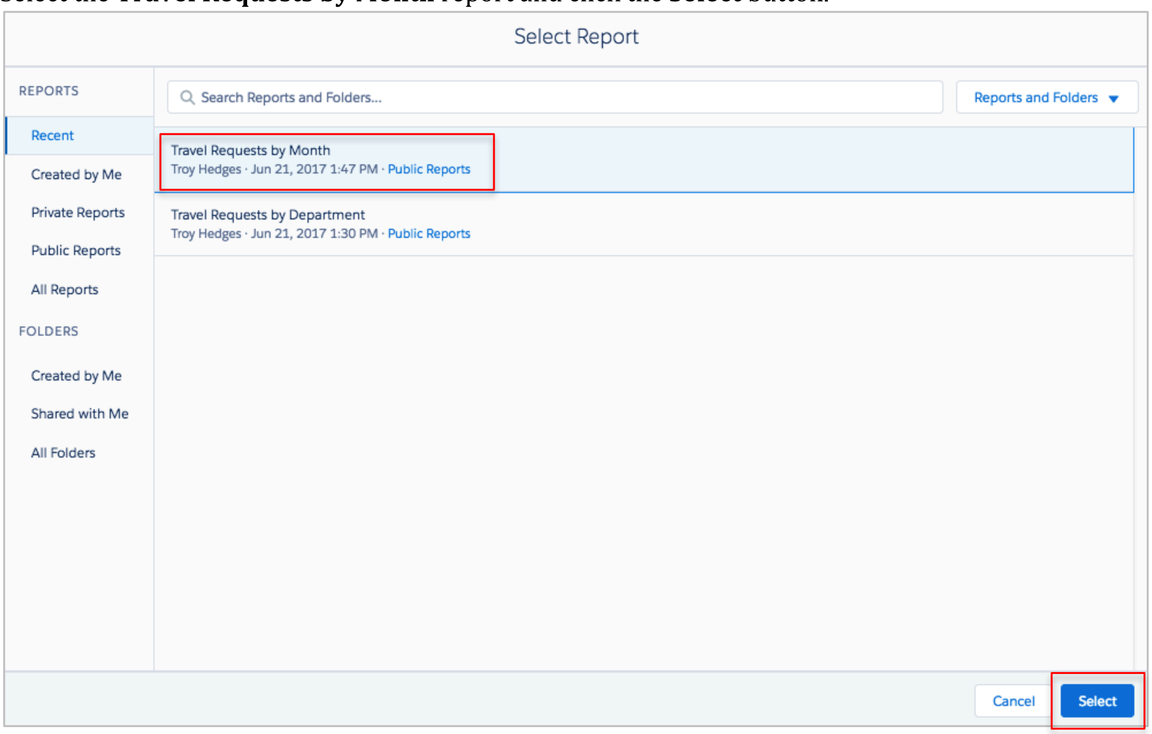
6. Click on the **Travel Request by Department** report and click the **Select** button. You will then be presented with option to configure your widget.



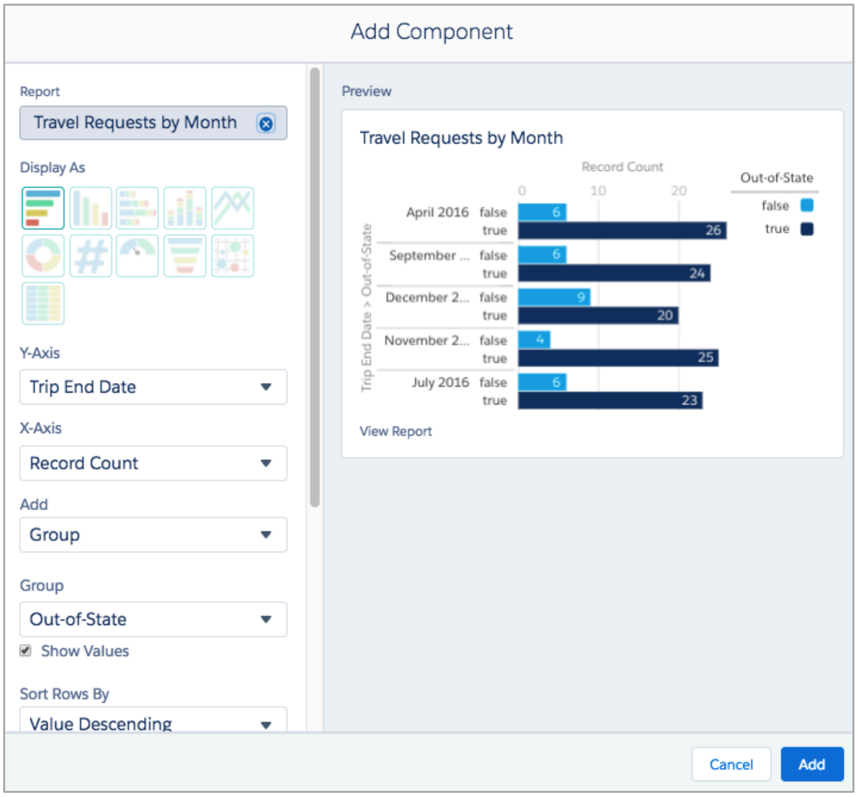
7. Keep the default values and select **Add**. Your dashboard will look like the following with your new component added.



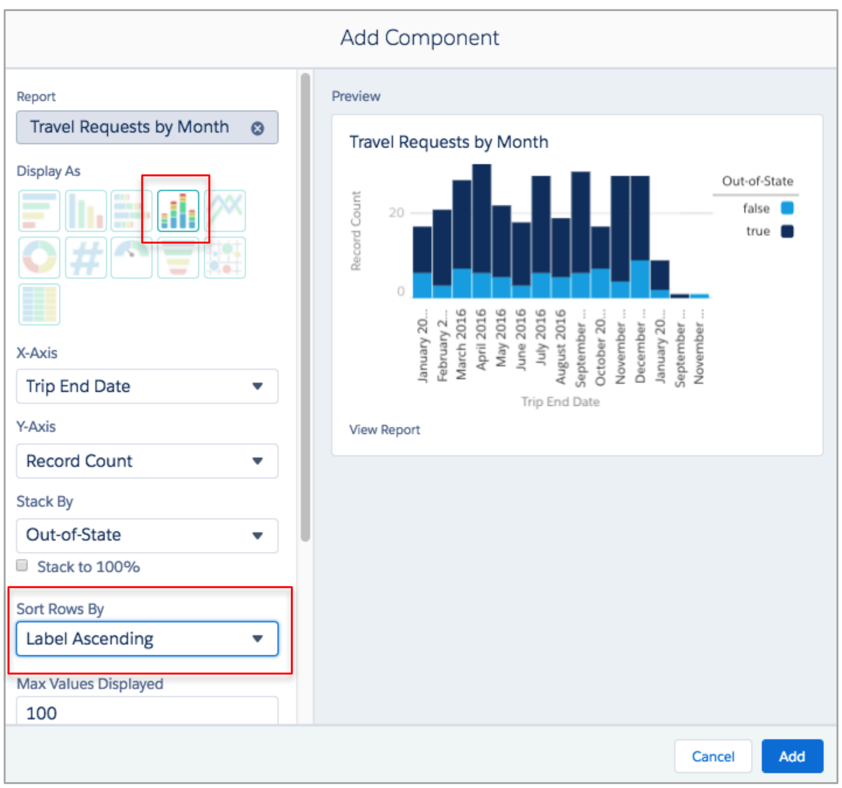
8. Click the + **Component** button again to add our other report.
9. Select the **Travel Requests by Month** report and click the **Select** button.



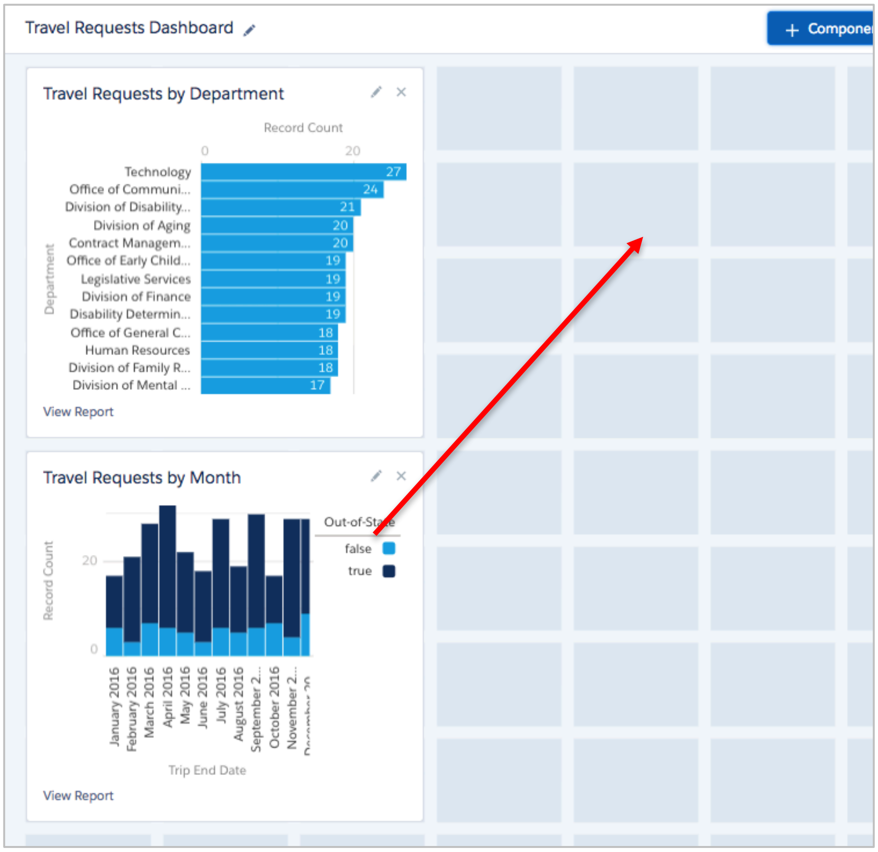
You will first be presented with screen like following.



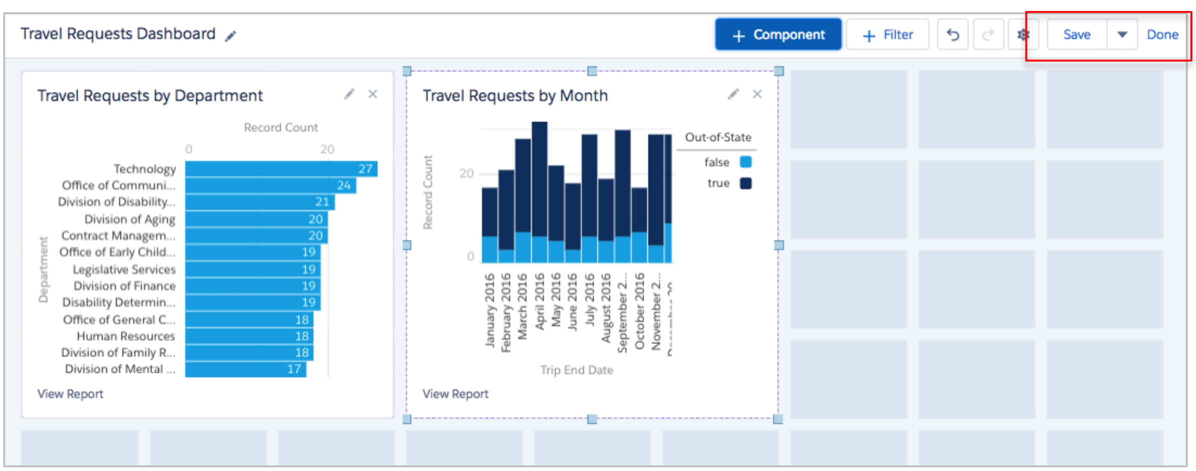
10. Let's make this a vertical, stacked bar chart that sorts data from oldest to newest. Select the stacked bar chart in the **Display As** section. Then select sorts rows by "**Label Ascending**". Your screen should look like following.



11. Click **Add** button. At first, the charts sit in vertical column like following. Drag the chart on the bottom and position to the right of the first chart we added.



Screen should now look like following.



Notice that you have a very flexible grid structure. Play around with stretching your dashboard components to various shapes on the grid.

12. Click the **Save** button and then the **Done** link in upper-right side of screen. Your dashboards will look like below. For real world scenario, you could add other reports to the dashboard and show data/KPIs from multiple objects from your database.

DASHBOARD
Travel Requests Dashboard
As of -- Viewing as Troy Hedges
Refresh
Edit
Travel Request by Department
Record Count
0
20
Department
Technology
27
Office of Communicatio...
24
Division of Disability and...
21
Contract Management
21
Division of Finance
20
Division of Aging
20
Disability Determination ...
20
Office of General Counsel
19
Office of Early Childhoo...
19
Legislative Services
19
Human Resources
18
Division of Family Resour...
18
Division of Mental Healt...
17
View Report
Travel Requests by Month
Record Count
20
0
January 2016
February 2016
March 2016
April 2016
May 2016
June 2016
July 2016
August 2016
September 2...
October 2016
November 20...
December 20...
January 2017
September 2...
Trip End Date
Out-of-State
false
true
View Report

Access with Mobile Device

Duration: 15 minutes

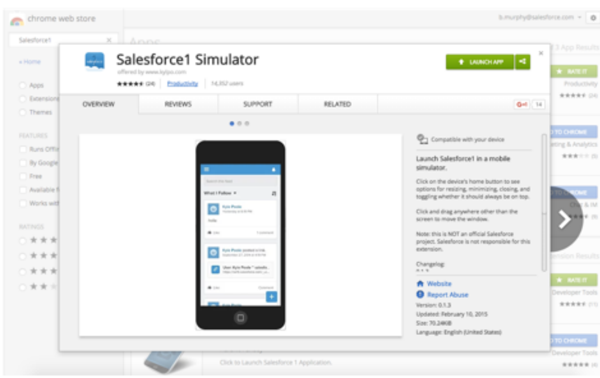
The simple app you created is **already** accessible as a mobile app. What? That's right! Most things you create in Salesforce are immediately available via a mobile device, giving your users full access to the information they need, no matter where they are. As you continue to develop this app, everything you do in the full site is reflected in the **Salesforce1 mobile app**.

For the Travel Approval use case, you can imagine employees using the Salesforce1 mobile app to create approval requests, collaborate with manager using Chatter, or a manager being able to approve requests while on the go.

You can access the Salesforce1 app in two ways by either downloading the app from the Apple App Store or from the Android Marketplace; or you can use the Salesforce1 Mobile App simulator found in the Chrome Web Store.

Download & install the native app for your phone or the simulator for Google Chrome:

- App Store for iOS: **`http://apple.co/1bJ6BlC`**
- Google Play for Android : **`http://bit.ly/18QsTGG`**
- Chrome Web Store Salesforce1 Simulator: **`http://bit.ly/1Fr2b3d`**

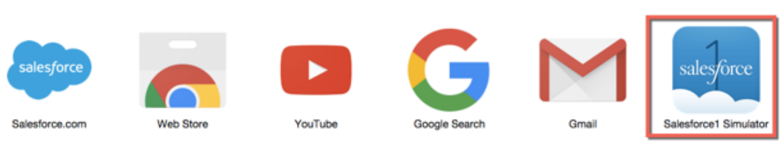


Access the Salesforce1 Mobile App using the Salesforce1 Simulator

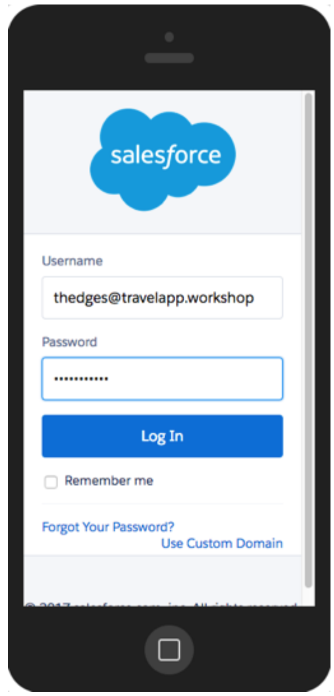
1. Open a new **`Google Chrome browser Tab`**

2. Access **`Google Apps`** in your Chrome Browser

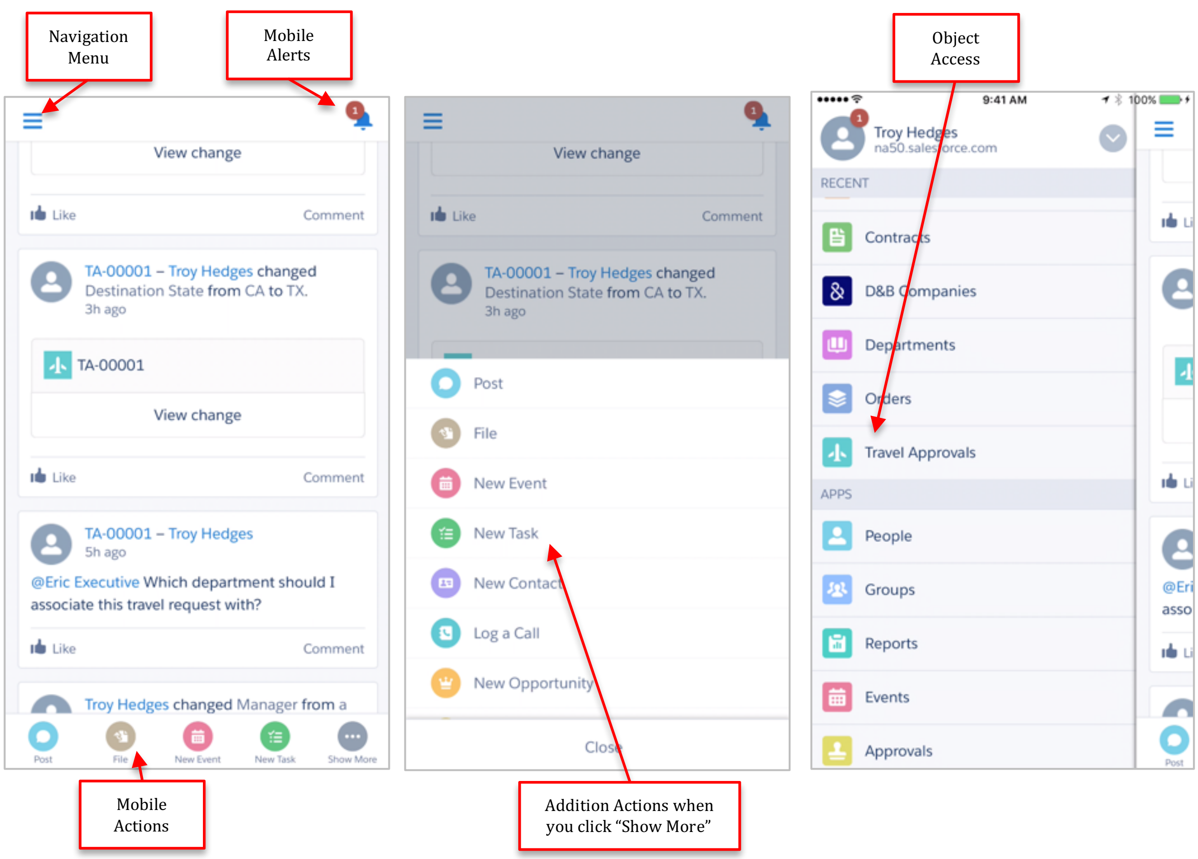
3. Click on the **`Salesforce1 Simulator`** icon



4. Enter your same User Name and Password for your DE Org and click **`Log In`**. You might be asked to verify your mobile device.

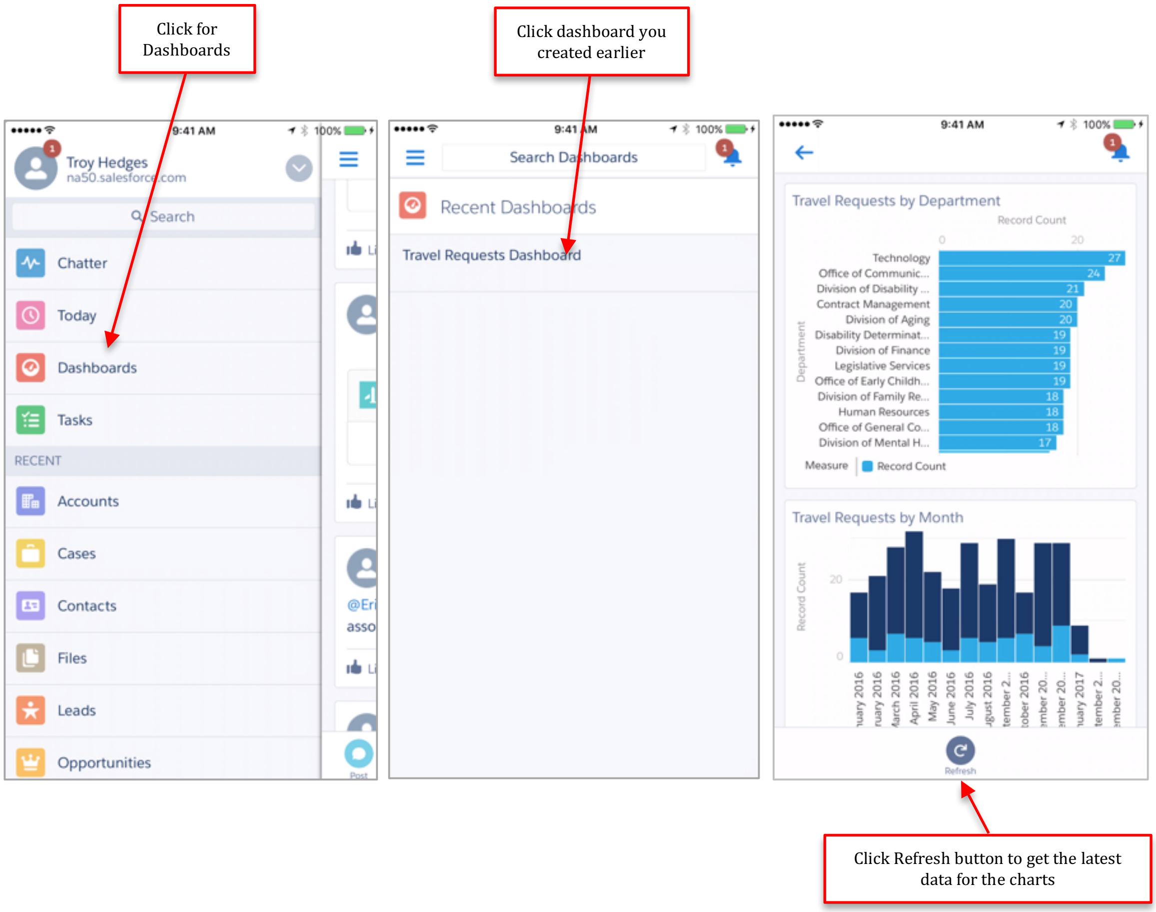


5. Upon logging in, you will be on the Chatter Feed screen. Scroll up and down to see the activity that you have already generated based on the information you have entered. You should see your first chatter post you made to Eric Executive regarding your travel approval. Take a few moments to review the graphic below for mobile app functions and terminology.



6. Click the icon in the top left corner to open the navigation menu (or Tap if using the Apple or Android version of the app)

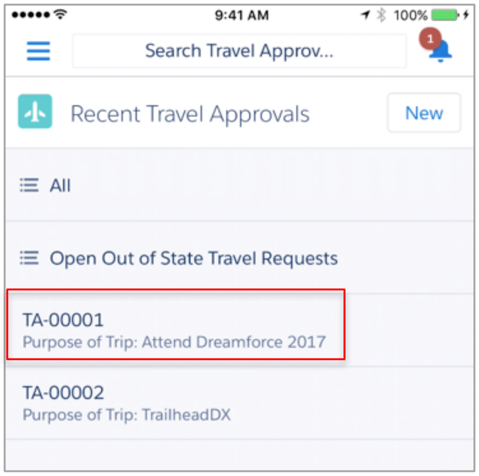
7. Scroll down and select **Dashboards**



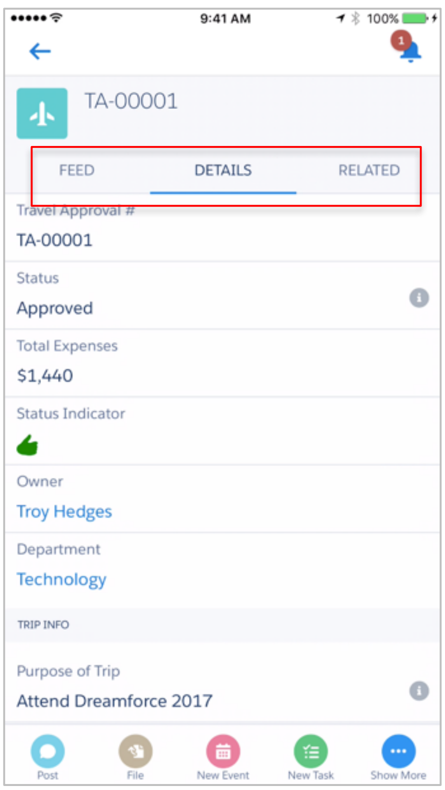
8. Click the icon in top-left corner to move back to main mobile screen. Click the in the top-left corner to open the navigation menu.

9. Scroll down and click **More** under the **RECENT** section.

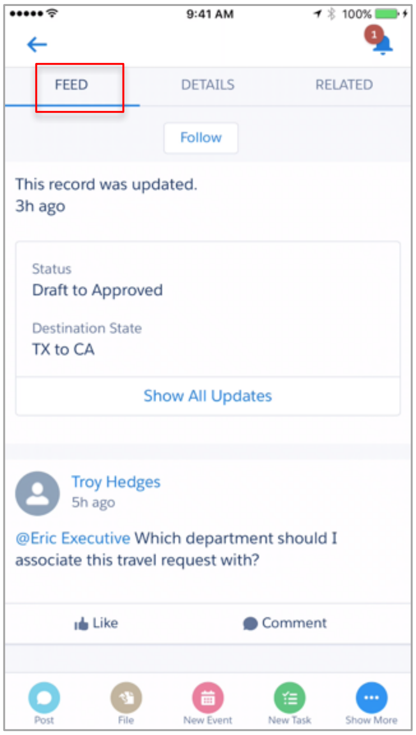
10. Scroll down until you see **Travel Approvals** and click on it. You should see your list views you edited/created (i.e. All & Open Out of State Travel Requests) along with the recent travel approval records you created.



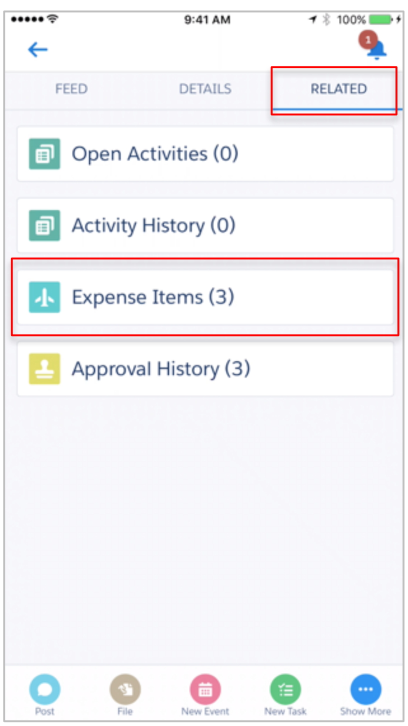
11. Click on one of the **Travel Request** records to access its details. Click on the **FEED, DETAILS** and **RELATED** tabs if you are using the simulator. If you are using iOS or Android device, you can swipe left-and-right to switch between the tabs.



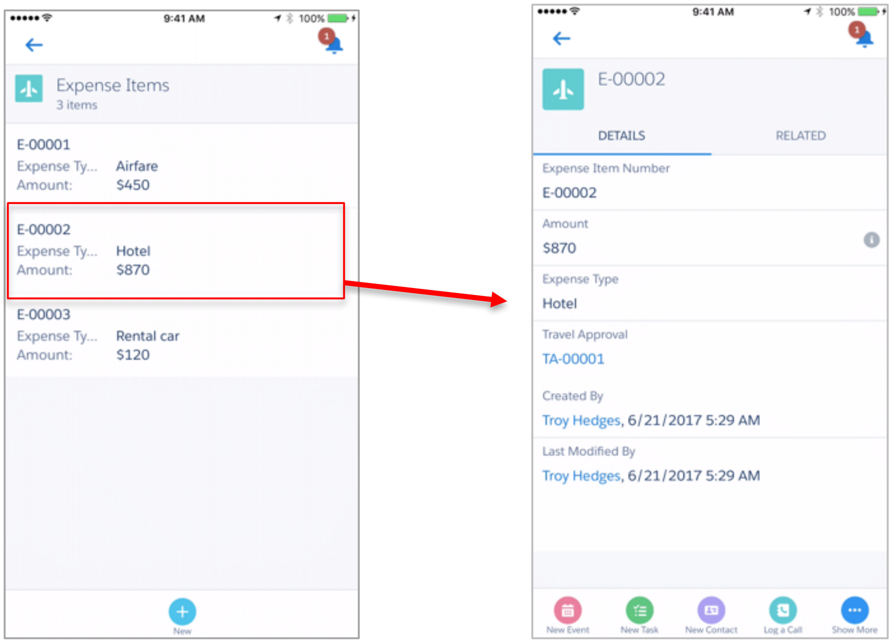
12. Navigate to the **Feed** tab. You should see Chatter post you did earlier to Eric Executive**.**



13. Navigate to the **RELATED** tab. You will see all related lists including the Expense Item object which in this examples shows that you have "2" items created for this travel request. Click on **Expense Items**.



14. You will now see your list of expense items for this travel approval. Click on one to see the details for that expense item.



15. To edit the expense, select the **Show More** quick action in bottom-right. On the pop-up options, select **Edit**. You will then be taken to the edit screen for your selected expense item.