Working with the Common Data Service for Apps

Lab Time: 60 minutes

Lab Folder: C:\Student\Modules\07_CommonDataService\Lab

Lab Overview: In this lab, you will begin by using the PowerApps admin center to create a new PowerApps environment which is provisioned with a new CDS for Apps database. After creating the CDS for Apps database, you will inspect the set of standard entities and then you will create a canvas app to add, view and update contacts within the CDS. After that, you will use the new PowerApps preview support to create a model-driven app which is also designed to add, view and update contact data within the CDS database.

Lab Prerequisite: This lab assumes you completed lab 1 where you created a PowerApps plan 2 subscription and assigned a PowerApps plan 2 license to the primary Office 365 user account you have been using. If you have not already configured your Office 365 account with a PowerApps plan 2 license, you complete exercise 3 of lab 1 before you begin working on this lab.

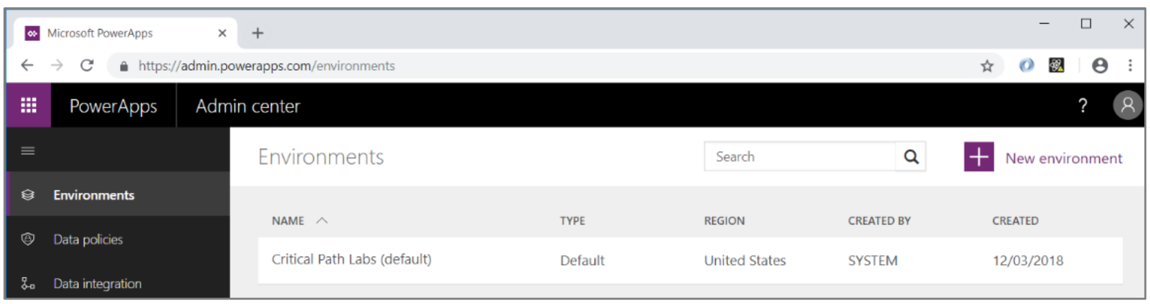
Exercise 1: Create a New PowerApps Environment with a CDS Database

In this exercise, you will create a new PowerApps environment with a new CDS database.

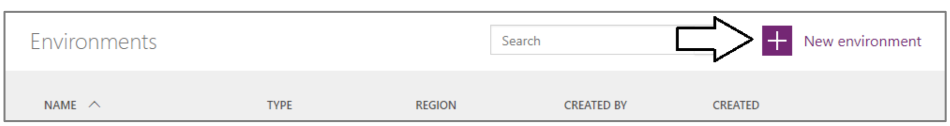
1. Create a new development environment with a CDS for Apps database.
   a) Navigate to the PowerApps admin center in the browser using the following URL.

   ```
   https://admin.powerapps.com/environments
   ```

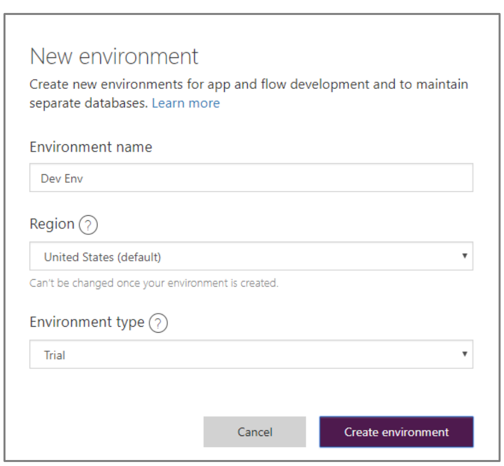
   b) If you see a yellow message about General Data Protection Regulation (GDPR), click the **x** on the right to dismiss it.



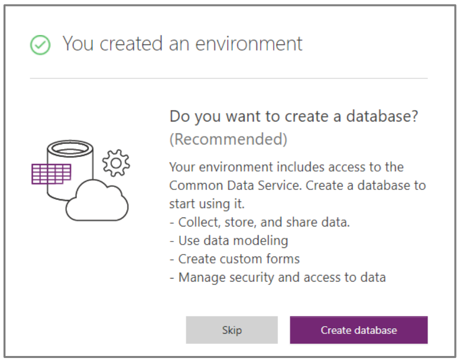
   c) Click the **New environment** button to begin the process of creating a new PowerApps environment.



   d) Enter an **Environment name** of **Dev Env** and an **Environment type** of **Trial** and then click the **Create environment** button.

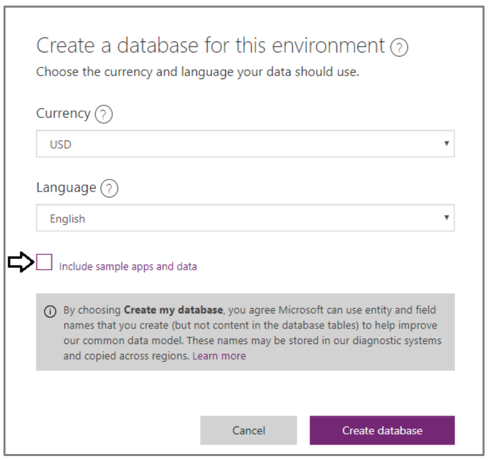


e) In the **You created an environment** dialog, click the **Create database** button.

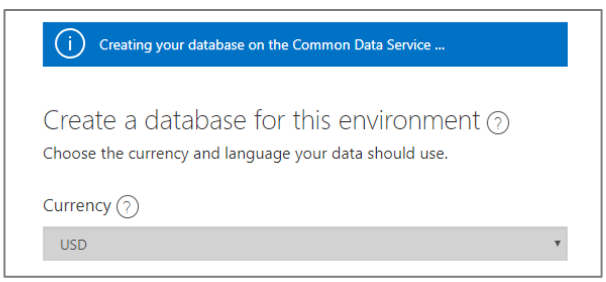


f) In the **Create a database for this environment** dialog, set the **Currency** to **USD** and the **Language** to **English**.

g) Uncheck the **Include sample apps and data** checkbox and then click the **Create database** button to continue.

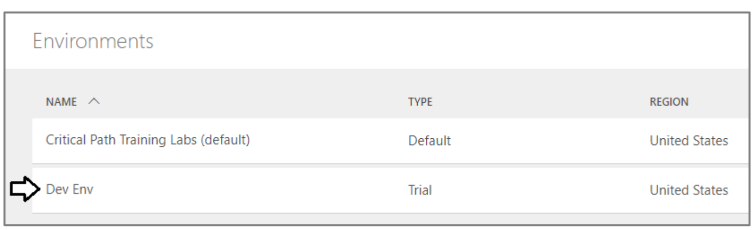


h) At this point, the process of provisioning the new CDS database has begun.



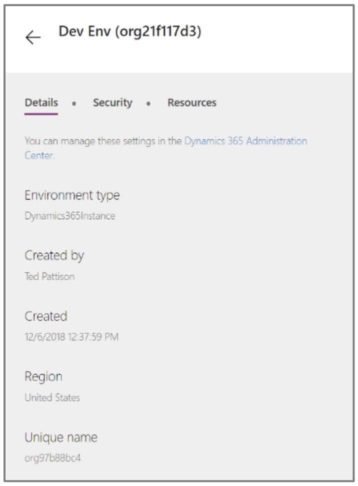
2. Examine the new CDS for Apps database

a) Wait 20-30 seconds for the provisioning to begin and then click link for the **Dev Env** environment in the **Environments** list



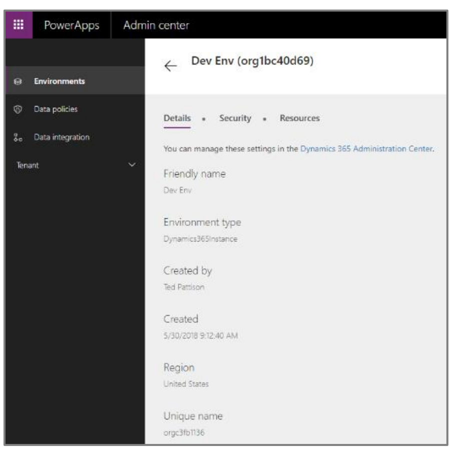
If you don't wait long enough, the page for the **Dev Env** environment might not look like the page below. If that is the case, wait another 30 seconds and give the page in the browser a hard refresh.

b) You should see on the Dev Env page that the environment has been given a unique ID beginning with **org** (e.g. **org21f117d3**).



It usually takes 5-10 minutes to provision a new CDS for apps database. This might be a good time to take a break and get a cup of coffee while the CDS database provisioning process completes.

c) Refresh the current page every minute or two until you see that the provisioning process has completed.



Now you have created a development environment with a new CDS database. In the next exercise, you will inspect the set of standard entities that are automatically added to every new CDS database.

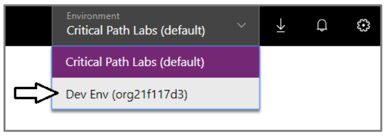
Now you will take a minute to inspect the standard entities that are included in each new CDS database.

1. Inspect the standard CDS entities.

   a) Navigate to the PowerApps home page at https://web.PowerApps.com.

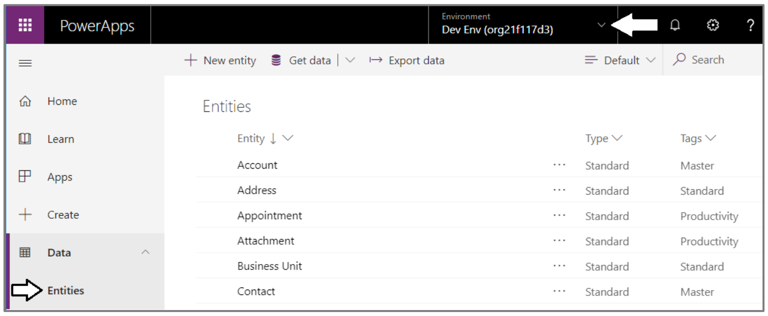
   b) Locate the **Environment** menu in the upper, right which shows the current environment you are using.

c) Drop down the Environment menu and select the **Dev Env** environment you created in exercise 1.

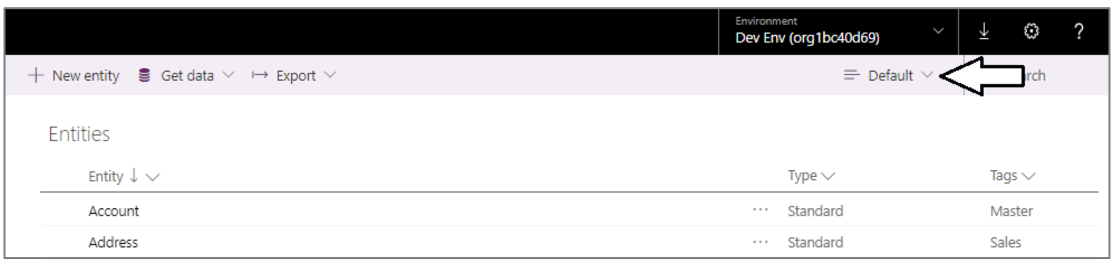


d) You should now be running within the context of the **Dev Env** environment.

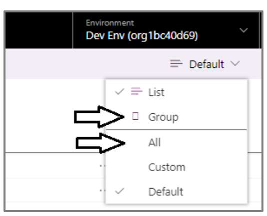
e) Click on the **Entities** link in the **Data** section of the left navigation and examine the entities that are displayed.



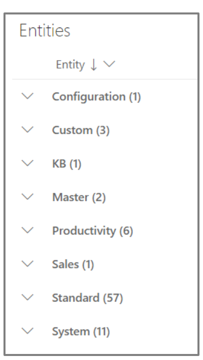
f) Locate the view menu for the **Entities** page in the upper, right corner which should initially be set to **Default**.



g) Drop down the view menu and select **Group** and **All** to display all entities separated into groups.



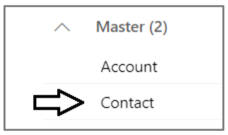
h) You should now see all the standard entities are organized in groups.



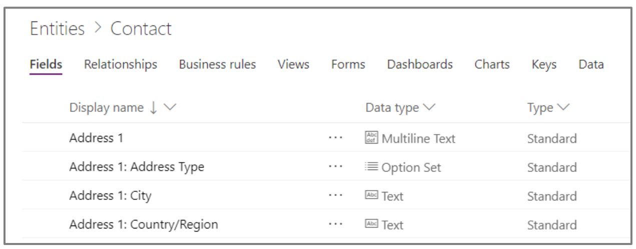
i) Expand the **Master** group and you should see this group contains two important entities named **Account** and **Contact**.

2. Take a closer look at the **Contact** entity.

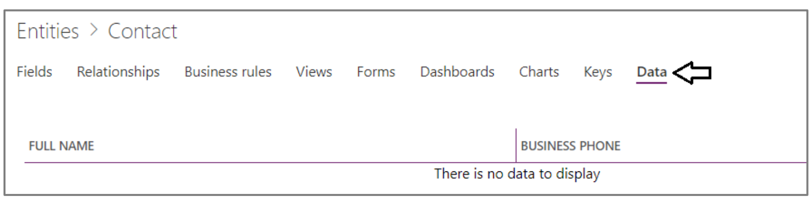
a) Click on the link for the **Contact** entity.



b) Examine the Fields list to see what fields are included with the **Contact** entity.



c) Click the **Data** tab to verify that the **Contact** entity currently contains no data.



Exercise 2: Create a Canvas App to Manage Contact Entity Data

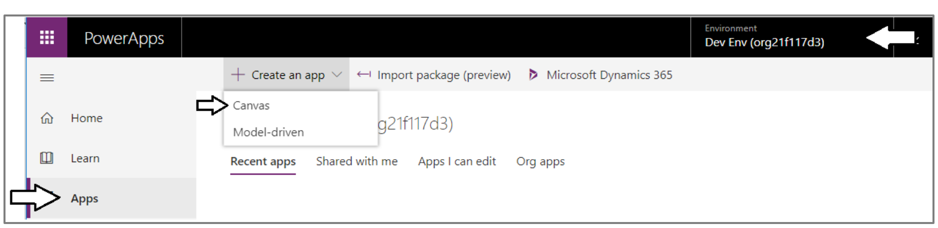
In this exercise, you will create a canvas app to manage **Contact** entity data.

1. Create the new Canvas app using PowerApps Studio.

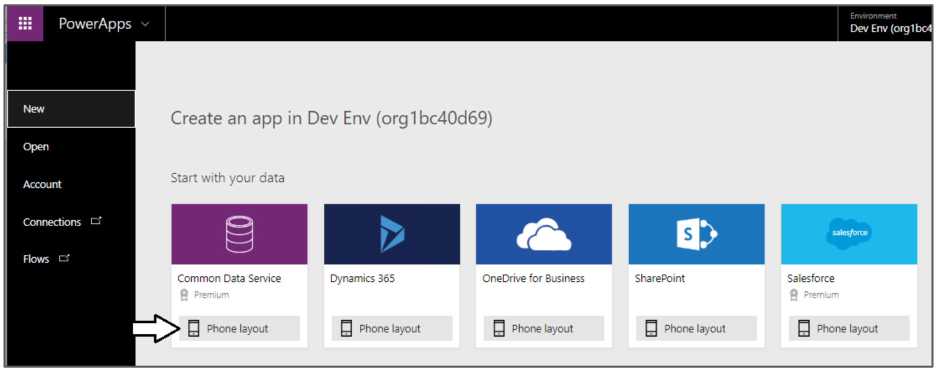
a) In the PowerApps portal at https://web.powerapps.com, make sure you are running in the **Dev Env** environment.

b) Click the **Apps** link in the left navigation. The Apps list should be empty at this point.

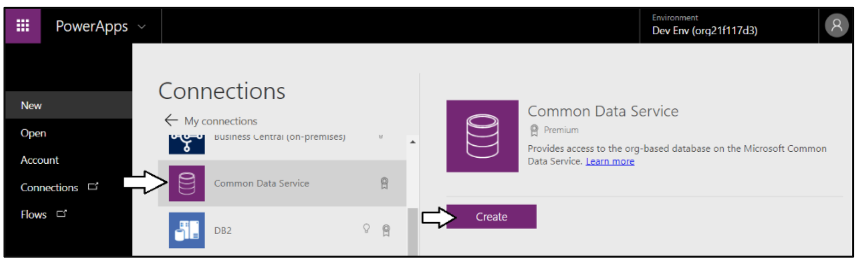
c) Click the **+ Create an app > Canvas** menu command to begin the process of creating a new canvas app.



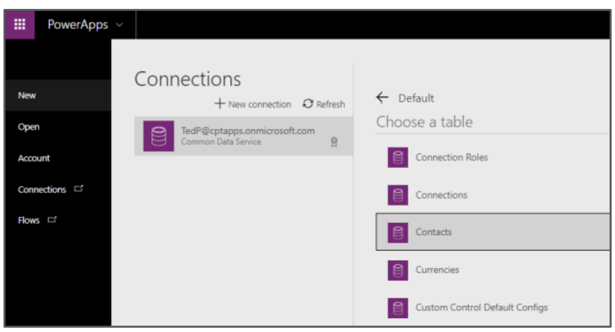
d) On the **Create an app page**, locate the **Common Data Service** tile and click the **Phone layout** button inside it.



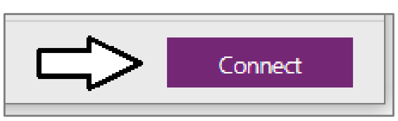
e) When prompted to create a new Common Data Service connection, click the **Create** button to continue.



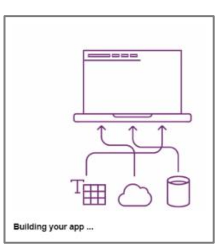
f) In the **Choose a table** section on the **Connections** page, select the **Contacts** table.



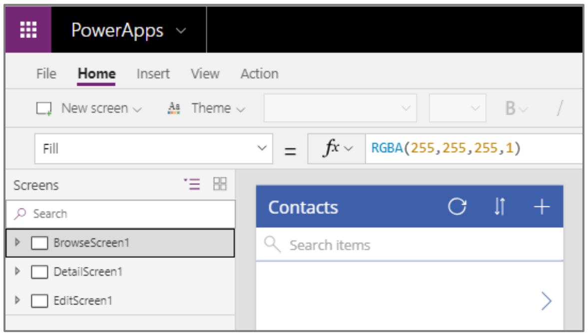
g) Once you have selected the **Contacts** table, click the **Connect** button.



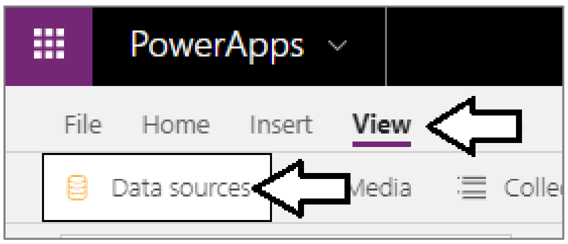
h) At this point, PowerApps will take 20-30 seconds to create the new PowerApps project.



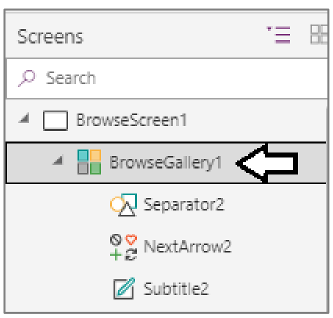
i) When PowerApps has finished creating the new canvas app project, you should see the app project has been created with a browse screen, a view detail screen and an edit screen as shown in the following screenshot.



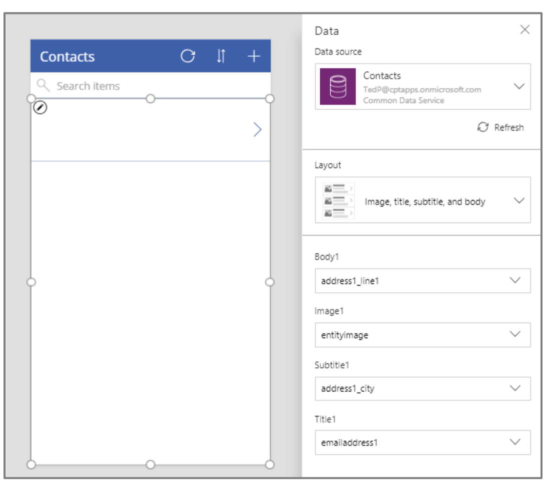
j) Select **BrowseScreen1** in the left navigation. Click **View** and then click **Data sources** in the ribbon to display the **Data** pane.



k) With the **Data** pane showing, select the **BrowseGallery1** control in the left navigation.

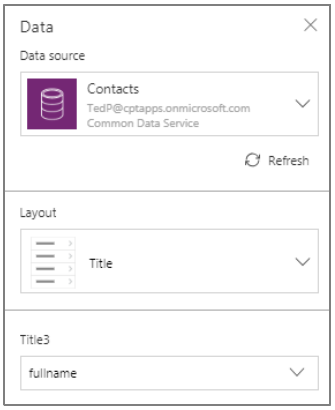


l) The Data pane should now display the **Layout** and fields used by the gallery control.

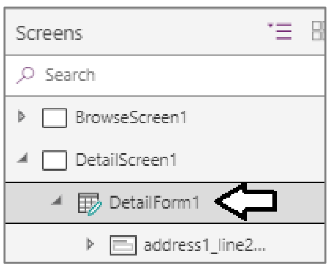


m) Update the Layout for the gallery to **Title**.

n) Configure the **Title3** gallery control to bind to the CDS field named **fullname** as shown in the following screenshot.



o) With the **Data** pane showing, use the left navigation to select **DetailForm1** in **DetailScreeen1**



p) The **Data** pane should now display a **Fields** list showed the fields included on **DetailForm1**.

q) Reorganize the fields in the Fields list to display the following fields in this particular order.

i) Contact

ii) Full Name

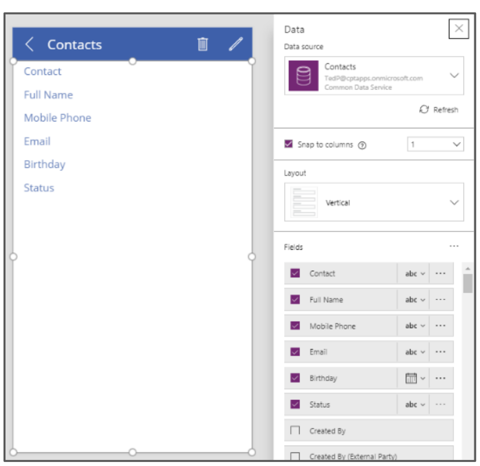
iii) Mobile Phone

iv) Email

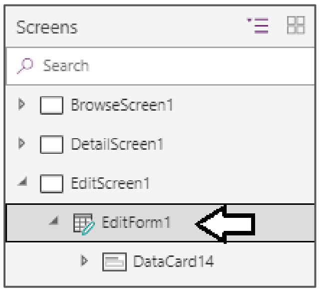
v) Birthday

vi) Status

r) The **Fields** list for **DetailForm1** should match the **Fields** list shown in the following screenshot.



s) With the **Data** pane showing, use the left navigation to select **EditForm1** in **EditScreeen1**



t) The **Data** pane should now display a **Fields** list showed the fields included on **EditForm1**.

u) Reorganize the fields in the **Fields** list for **EditForm1** to include the following fields in this particular order.

i) Last Name

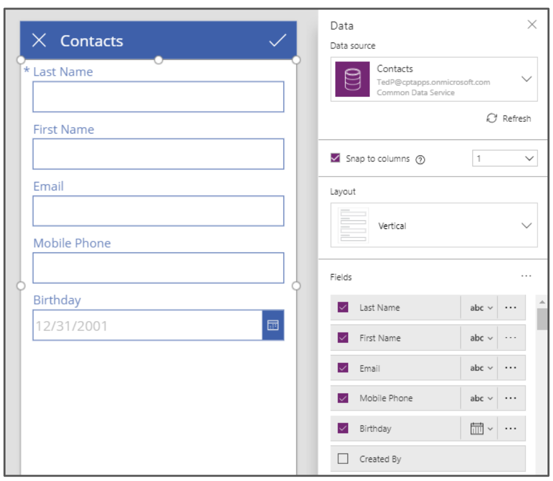
ii) First name

iii) Email

iv) Mobile Phone

v) Birthday

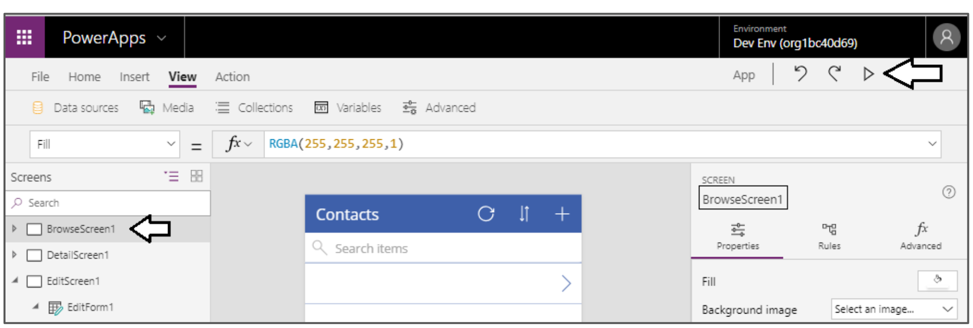
v) The **Fields** list for **EditForm1** should match the **Fields** list shown in the following screenshot.



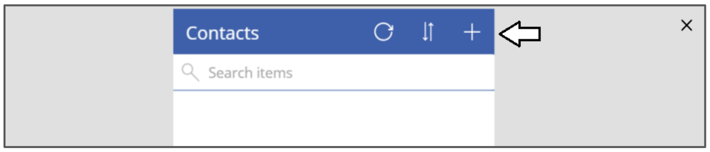
You have now completed building the new app and now it's time to test it out.

2. Test it out the application by running it and adding a new contact.

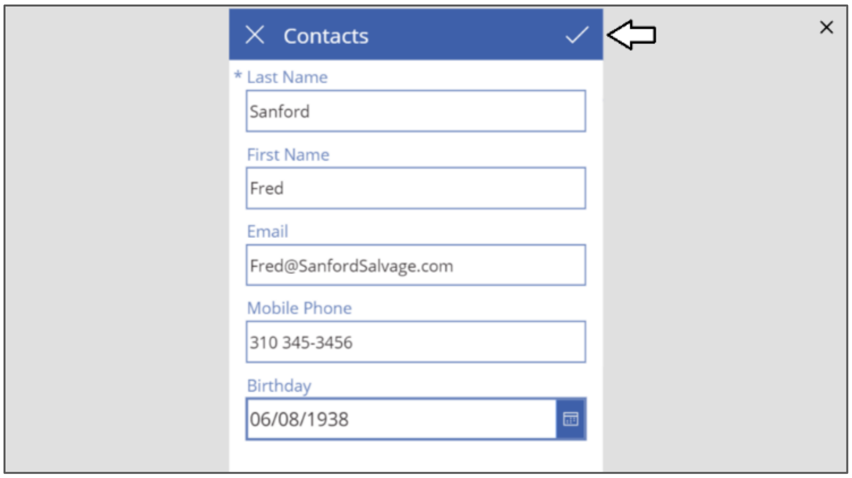
a) Select the startup screen named **BrowseScreen1** in the left navigation and then click the **Play** button to run the app.



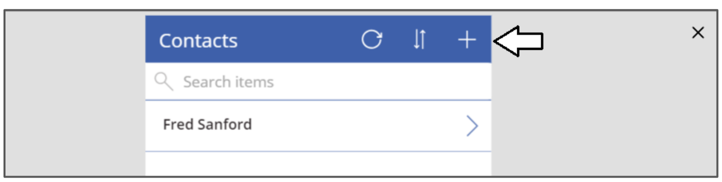
b) When the app starts and display the startup browse screen, click the **+** button to create a new contact.



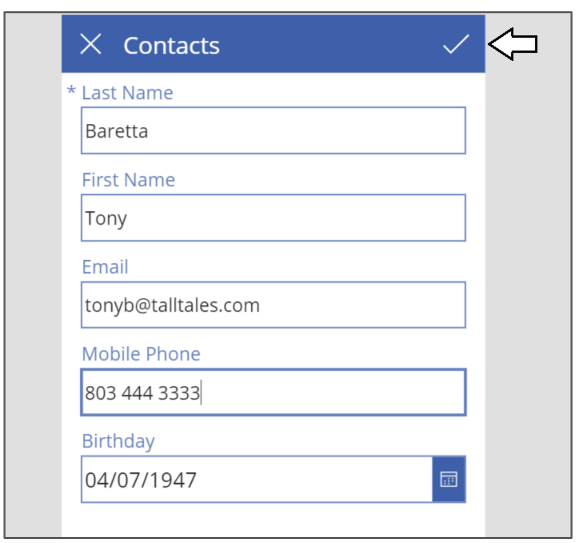
c) Enter sample data for a new contact like the data shown in the following screenshot and then click the Checkmark button to save your changes and create a new contact.



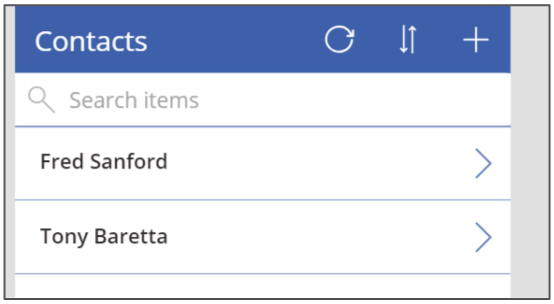
d) Once the new contact is created, the app should redirect you back to the browse screen which displays the new contact.



e) Follow the same steps to create and save a second contact in the CDS for Apps database.

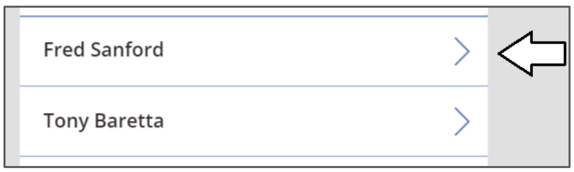


f) When you are done, you should now see two new contacts in the browse screen.

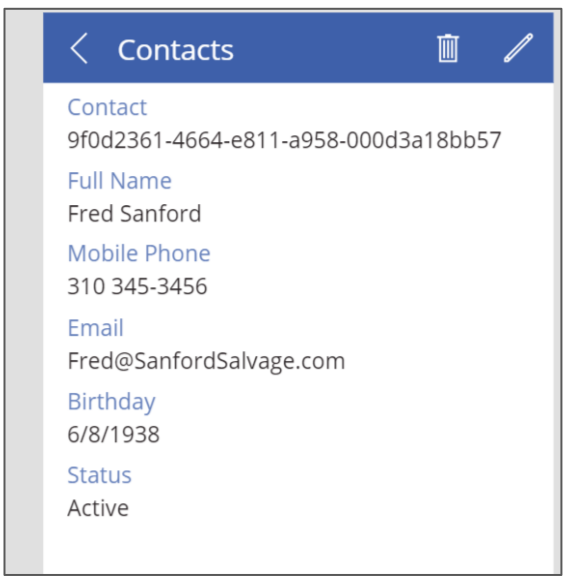


3. Test the details screen.

a) Click the **>** button for one of the new contacts to navigate to the app's detail screen.

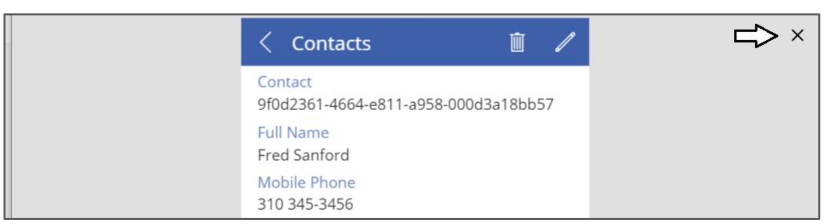


b) On the detail screen, you should see the details for a specific contact.



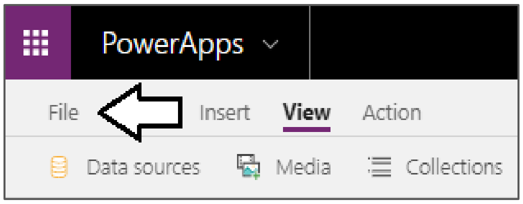
Note that the **Contact** field contains a GUID that serves as the ID (*i.e. primary key*) for the contact record. Generating a new GUID and assigning it to the **Contact** column is handled behind the scenes by the Common Data Service whenever a new contact is created.

c) Quit the running app by clicking the **x** button in the upper right corner of the page to return to your app in PowerApps Studio.



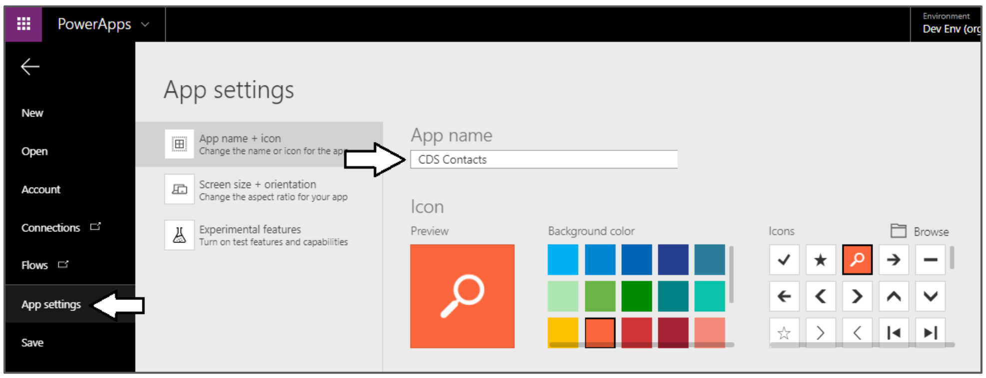
4. Save your work by saving the app in the cloud.

   a) In PowerApps Studio, click the **File** menu.

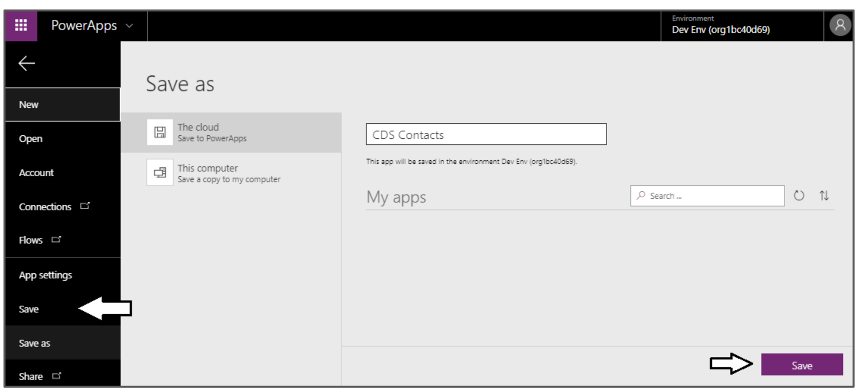


   b) Click on the **App settings** link in the left navigation and enter an **App name** of **CDS Contacts**.

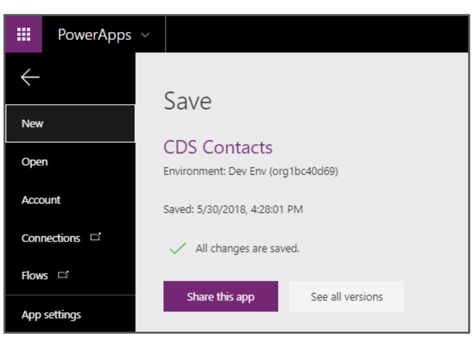
   c) Select an **Icon** and a **Background color** of your liking.



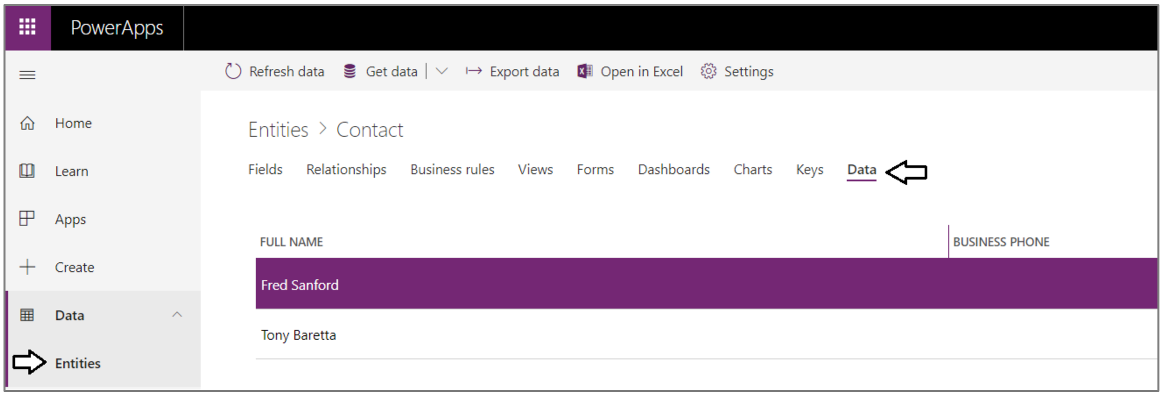
   d) Click the **Save** link in the left navigation and then click the **Save** button in the bottom right corner of the **Save as** page.



   e) The Save page should now display a message indicating that *All changes ae saved*.



5. Inspect the Data view of the **Contact** entity.
   a) Return to the PowerApps portal and click the Data > Entities
   b) Locate and click he **Contact** entity.
   c) Click the **Data** link at the first right to see your new contacts.

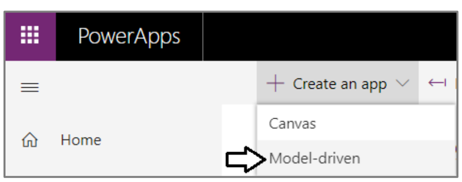


You have now created a classic-style app in PowerApps which is now known as a Canvas app. Next, you will create a second app using the new model-driven app support. While model-driven apps are still in preview, it will give you a good sense of the difference between canvas apps and model-driven apps.

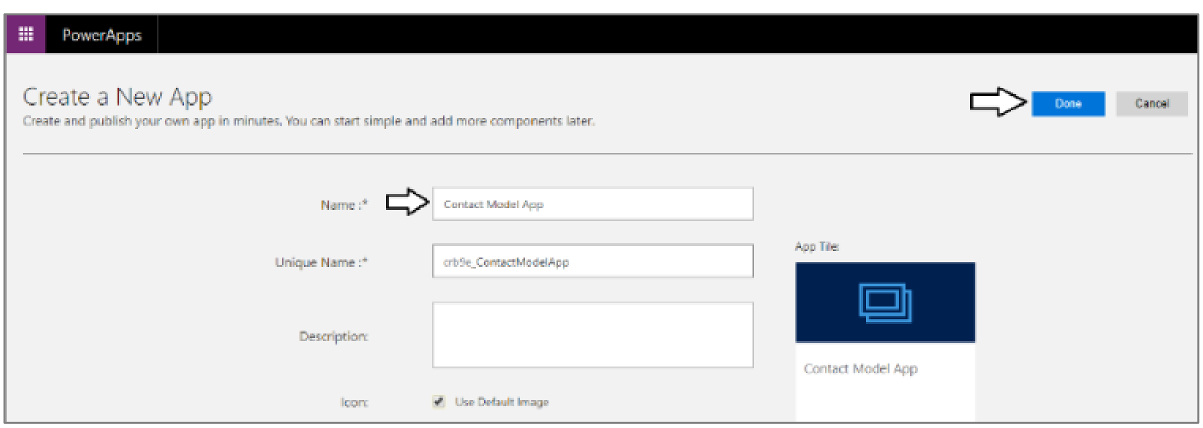
Exercise 3: Create a Model-driven App to Manage Contact Entity Data

In this exercise, you will create a new model-driven app using the new preview support in PowerApps Studio.

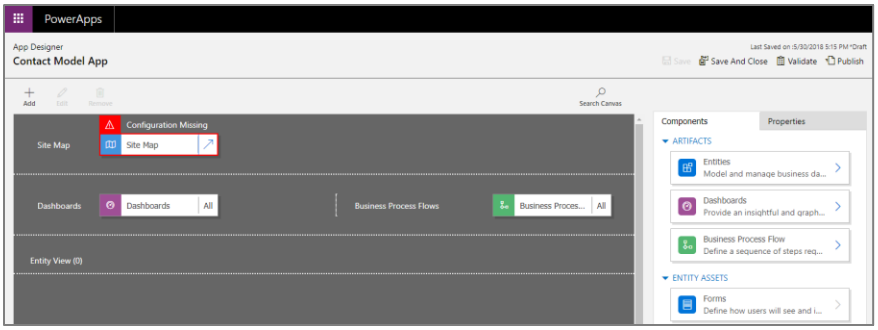
1. Create the new Canvas app using PowerApps Studio.
   a) In the PowerApps portal at https://web.powerapps.com, make sure you are running in the **Dev Env** environment.
   b) Click the **Apps** link in the left navigation.
   c) Click the **+ Create an app > Model-driven** menu command to begin the process of creating a new model-driven app.



   d) On the **Create a New App** page, enter a **Name** of **Contact Model App** and then click the **Done** button.

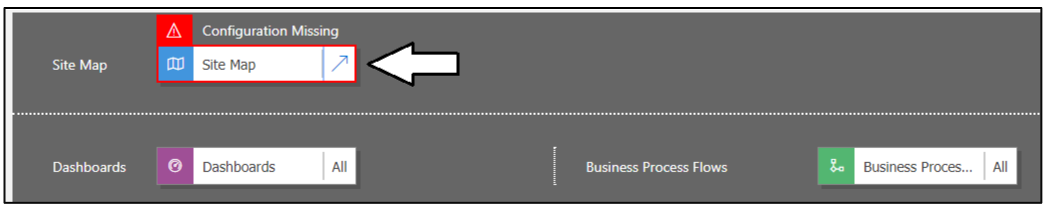


2. You should now see the new model-drive app in the new preview **App Designer** as shown in the following screenshot.

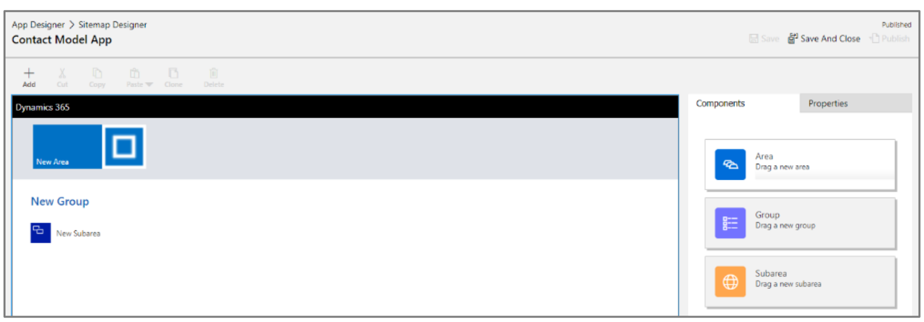


Note that the app is not ready to run because there is a red error indicator above the app's site map component. You must make some changes to the site map before you can run this model-driven app.

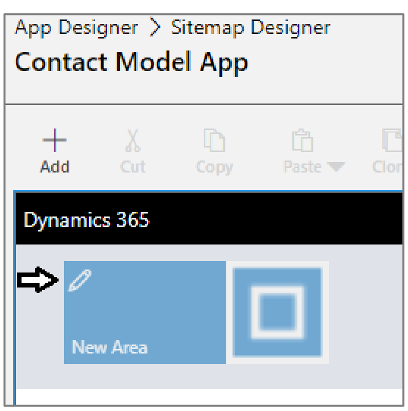
3. Configure the model-driven app's site map.
   a) Click on the button with the arrow on the left side of the Site Map to open the site map in the Site Map Designer.



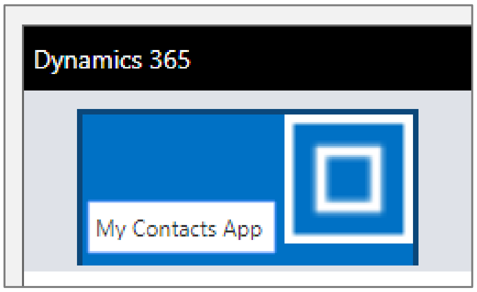
   b) You should now see the site map for your app open in the **Site Map Designer**.



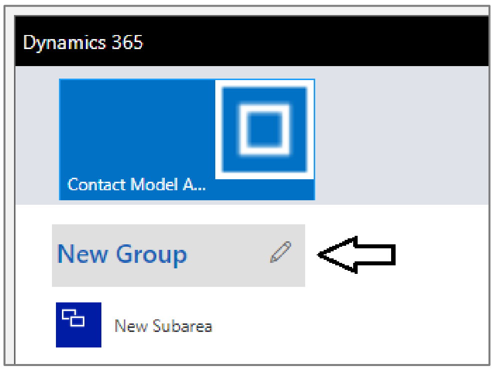
   c) In the Site Map Designer, hover the mouse over **New Area** and click the pen icon to move the area into edit mode.



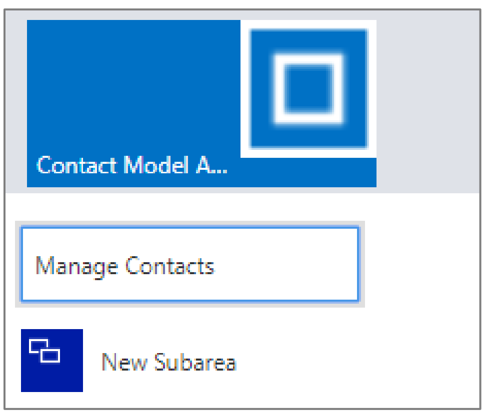
d) Change the text caption for the area from **New Area** to **My Contacts App**.



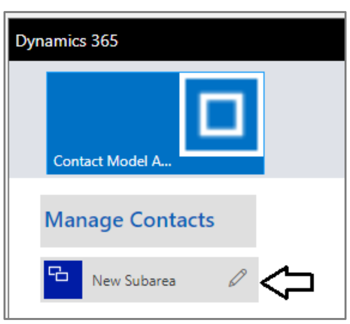
e) Hover the mouse over the group named **New Group** and click the pen icon to move the group into edit mode.



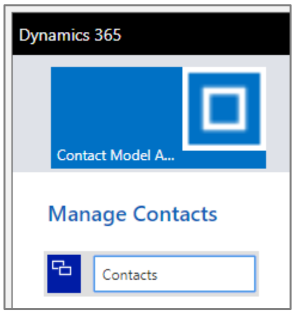
f) Change the text caption of the group from **New Group** to **Mange Contacts**.



g) Hover the mouse over the subarea named **New Subarea** and click the pen icon to move the subarea into edit mode.



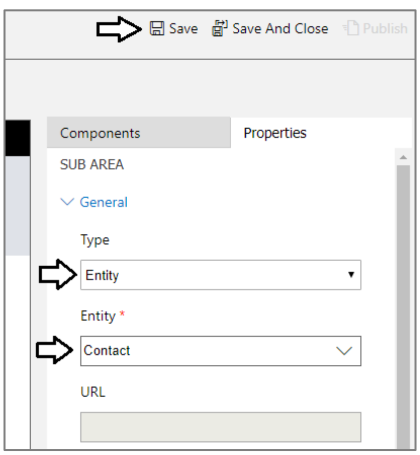
h) Change the text caption of the subarea from **New Subarea** to **Contacts**.



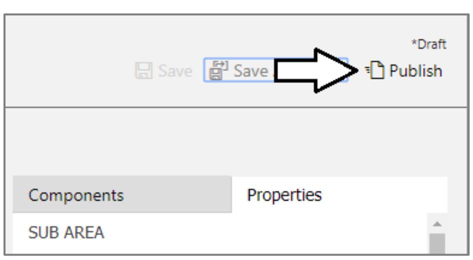
i) Select the **Contacts** subarea with the mouse and then inspect the **Properties** pane on the right side of the browser window. You will see a few red messages indicating that you must make some changes before the site map will work correctly.

j) In the **Properties** pane for the **Contacts** subarea, set the **Type** property to **Entity** and then set **Entity** property to **Contact**.

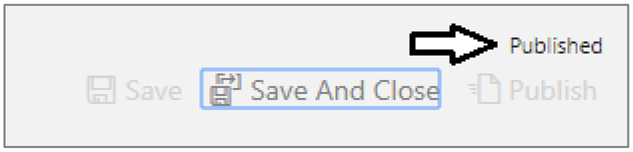
k) Click the **Save** button at the top of the **Properties** pane to save your changes to the app's site map.



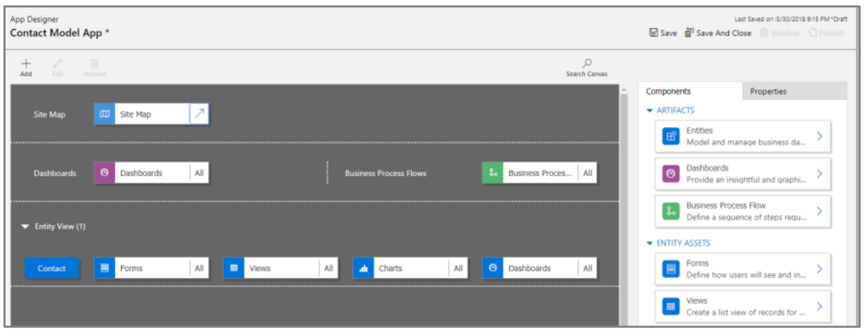
l) After you have saved the site map, click the **Publish** button to publish the site map.



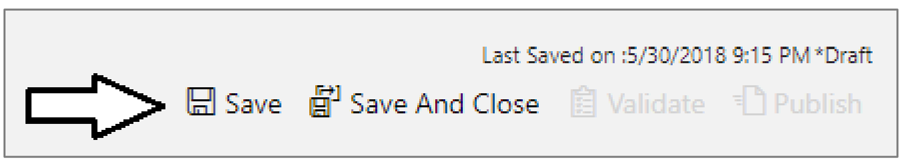
m) After publishing, you should see a message indicating the site map has been published. Click the **Save and Close** button to close the **Site Map Designer** and navigate back to the **App Designer**.



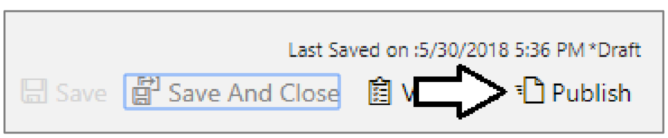
n) You should now see the App Designer and the red error indicators that were displayed in the site map earlier should be gone.



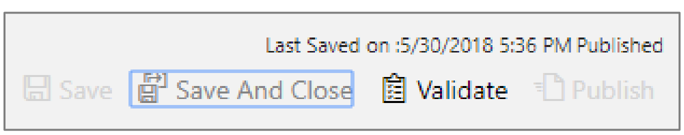
o) Save the new app by clicking the **Save** button.



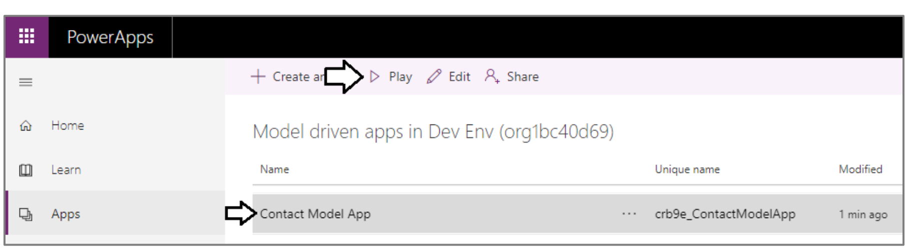
p) After saving the app, click the **Publish** button to make it available for running and testing.



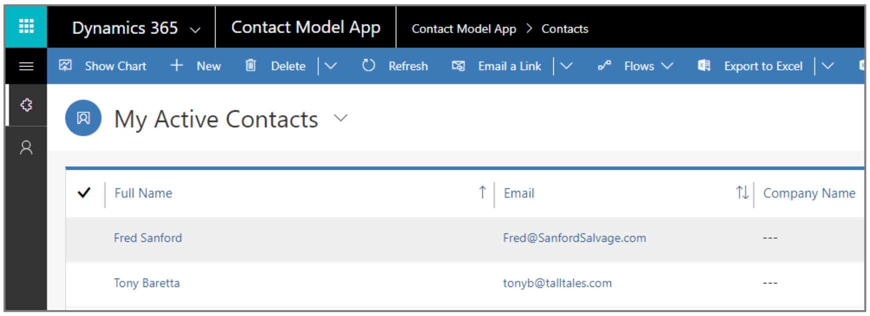
q) Click the **Save and Close** button to close the **App Designer**.



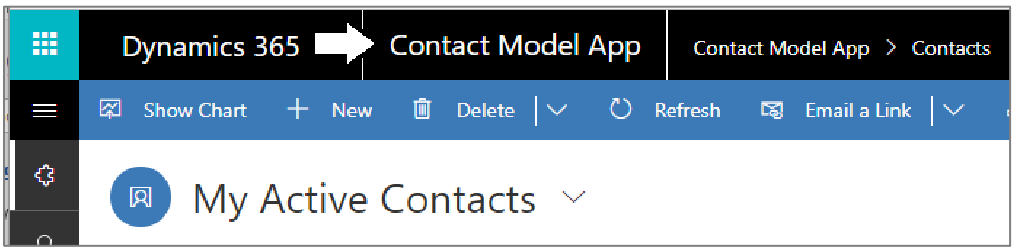
4. Run the model-driven app to test it out.
   a) You should be able to see your new app named **Contact Model App** in the list of **Model driven apps in Dev Env**.
   b) Select the app named **Contact Model App** and then click the **Play** button from the toolbar above.



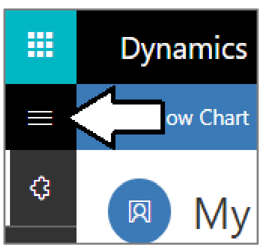
c) When the app starts, you should see it displays a view named **My Active Contacts**.



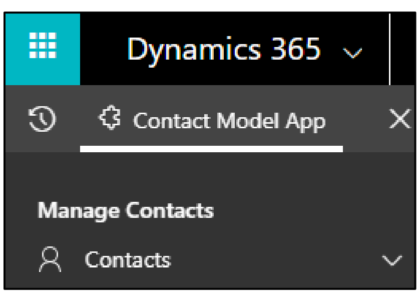
d) Note the top navigation menu displays the name of your area (i.e. **Contact Model App**) and your subarea (i.e. **Contacts**).



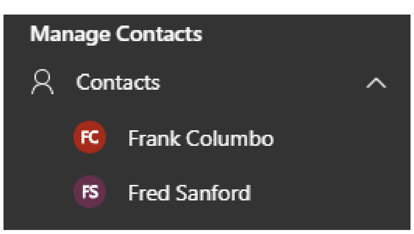
e) Click the Site Map menu with the 3 horizontal lines in the left navigation to examine the app's site map



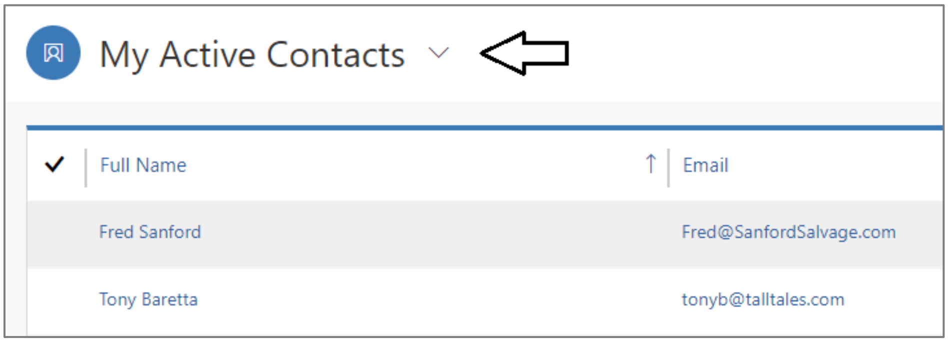
f) You should now see the site map with your area, group and subarea.



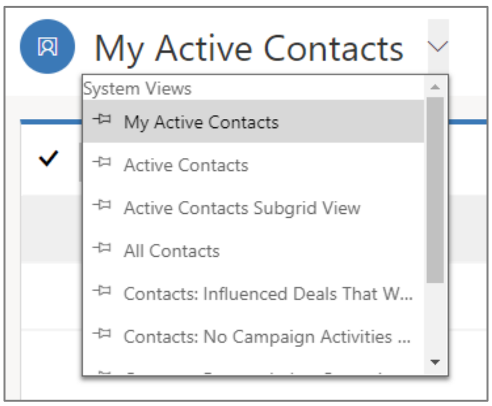
g) If you expand the Contacts subarea, you should see the contacts that you have added to the CDS database.



h) Click on the view menu to the right of **My Active Contacts** to change the view.

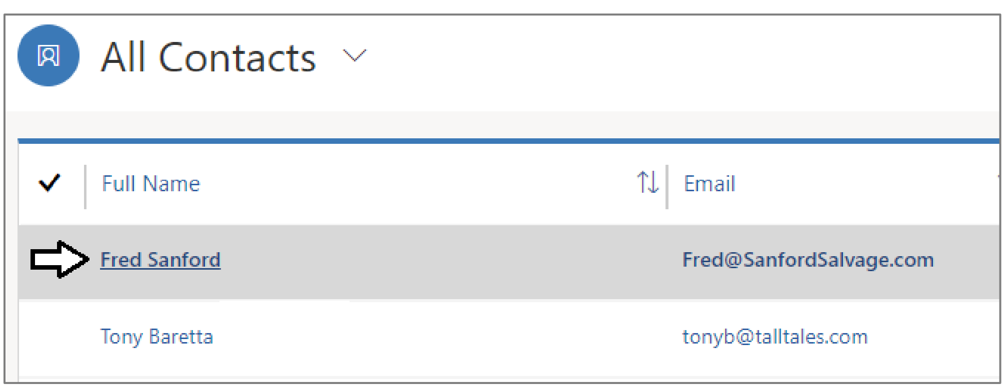


i) When you drop down the view menu, you should see all the views that are include with the standard **Contact** entity.

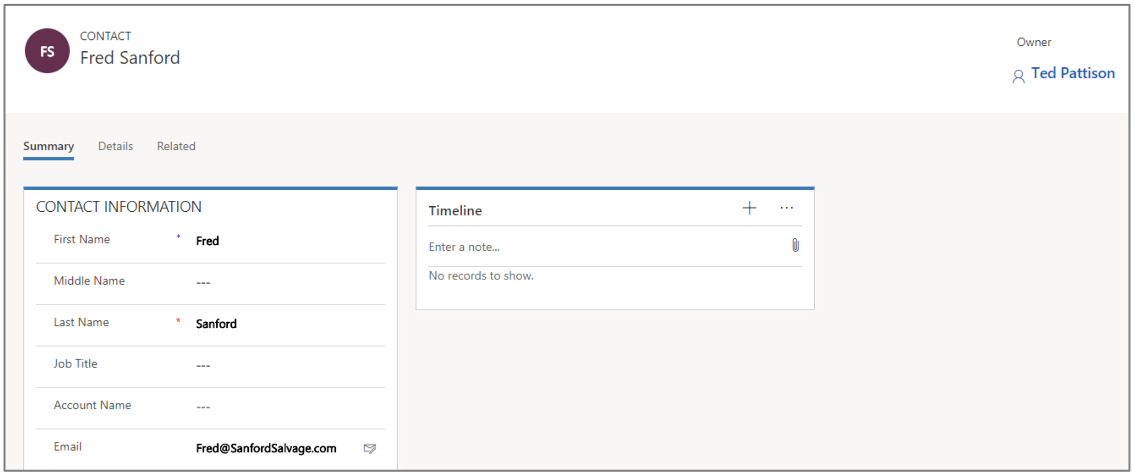


j) Using the view menu, change the view from **My Active Contacts** to **All Contacts**.

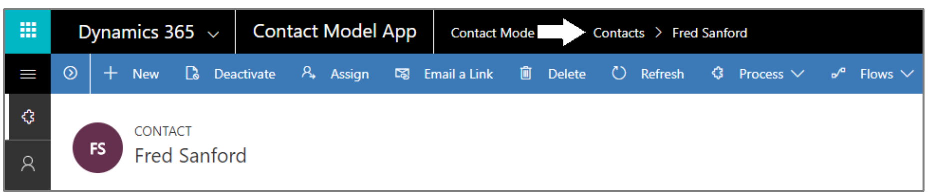
k) In the **All Contacts** view, click on one of the **Full Name** of one of the contacts you created.



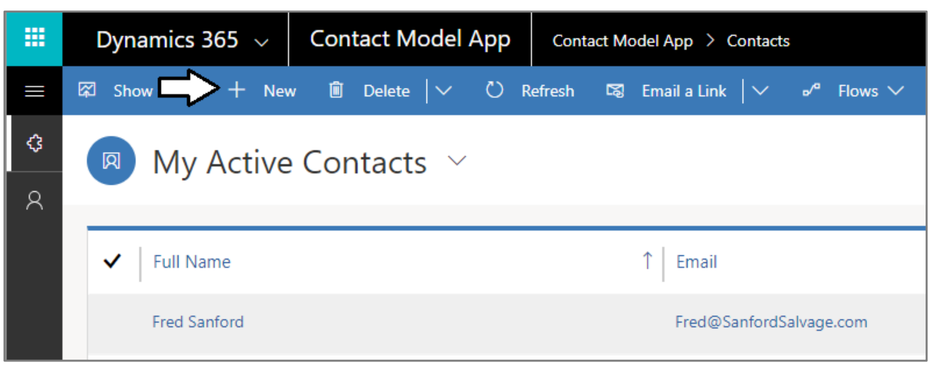
l) You should now see the default form used for the **Contact** entity. Note that you can edit the contact in this view. There is no save command because any edit you make is saved automatically.



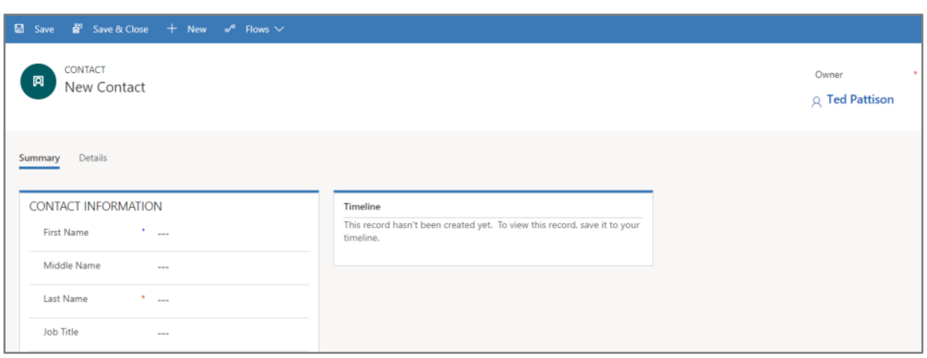
m) Use the top navigation click **Contacts** to move from the form showing one contact back to the My Active Contacts view.



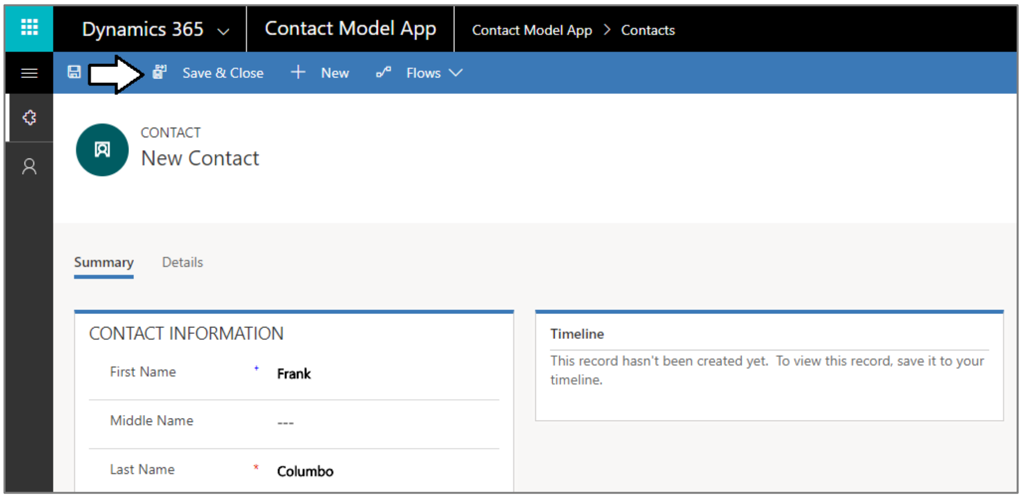
n) Create a new contact by clicking the **+ New** button in the toolbar.



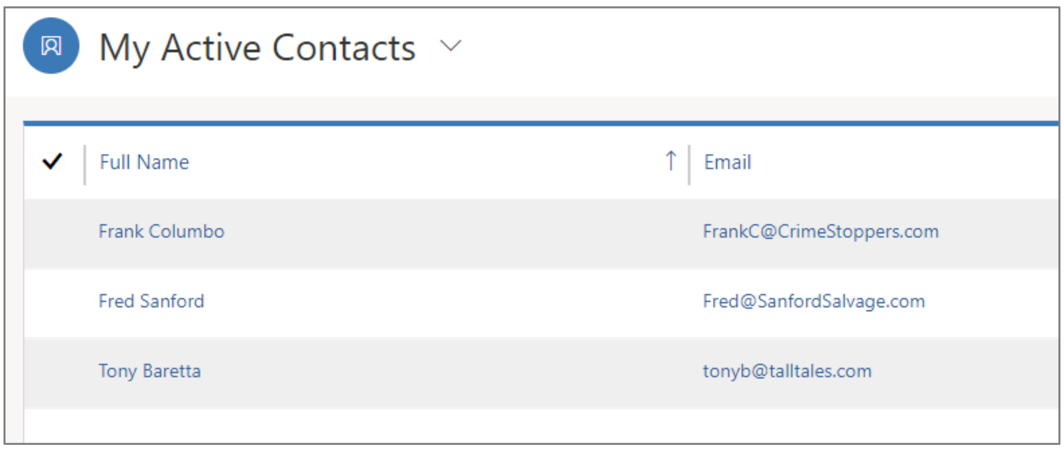
o) You should now see the empty **New Contact** form which allows you to enter the data for a new contact.



p) Enter sample data for another contact and then click the **Save & Close** button.



q) You should see that the new contact has been added to the My Active Contacts view.



Congratulations. You have just created and tested a simple model-drive app. You have now reach the end of this lab.