MendIT Day

A hands-on walkthrough of Mendix Studio

Made w/

PASSION
SKILL
INNOVATION
AGILITY
LOVE
IMAGINATION
EXCITEMENT
SPEED
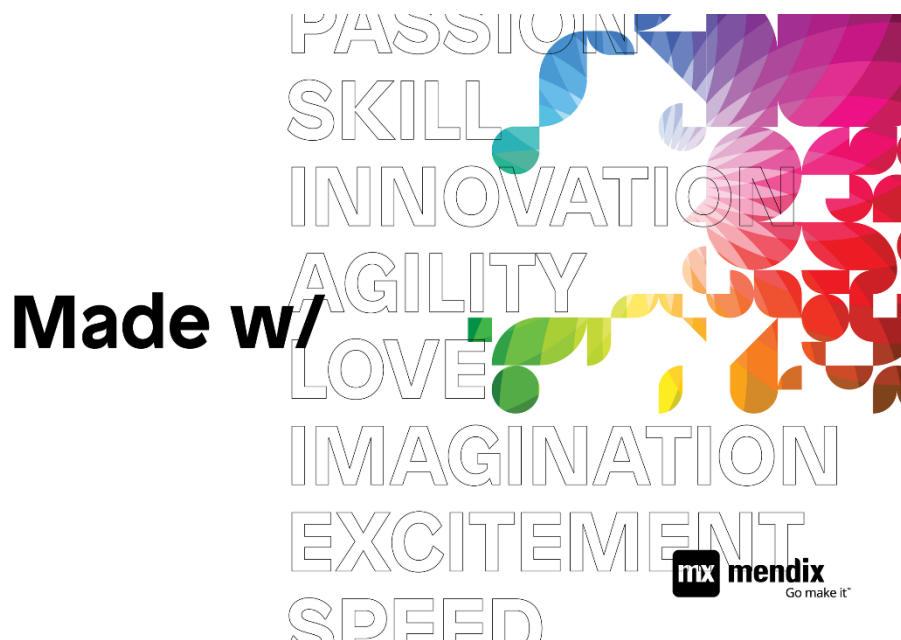
Created with & for Mendix Studio & Studio Pro version 9.18

Table of Contents

1 Hint & Prerequisites

1.1 HINT

The goal of this experience day and your hands-on walkthrough is to give you a feeling of *how fast* you can get into creating a scalable solution with the Mendix platform - within **three** hours!

This document version is specific, in terms of descriptions and screenshots, to Mendix 9.9.1. If there are specific items in this document that do not match your experience, feel free to ask your coach and teacher at any time.

Whenever you find typos, mistakes, or have suggestions for optimizations or updates of this document, especially when you do those exercises in the future on a newer release, your feedback is highly appreciated.

1.2 PREREQUISITES

The following prerequisites are required to be fully productive during the Experience Day. It's important to be prepared with the following:

1.2.1 A Laptop

You'll need your own laptop/PC running the latest version of Chrome, Firefox or Safari. From the laptop/PC you should be able to access the internet.
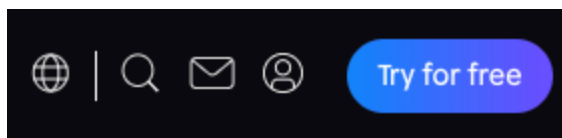
1.2.2 Installation of Studio Pro

During the installation of studio pro on your PC, you need local administration privileges.

https://marketplace.mendix.com/link/studiopro/

1.2.3 Create a Mendix Account

Head over to https://mendix.com and click the 'Try for free' button in the top-right corner

Enter your details and we are ready to start **making**.

2 Build Your First App!

2.1 APP OVERVIEW

Today we will be building a Responsive Web app to be used for tracking opportunities – an 'Opportunity Tracking' app. To date, your company has used Excel to track sales opportunities, but now the company wants to build a Mendix App to replace and improve the user experience.

Together, you and the sales team manager have defined the following user stories as requirements for the new app:

- As a sales manager, I want to view all sales opportunities so that I can track my activities digitally
- As a sales manager, I want to be able to edit opportunities so that I can keep the system updated
- As a sales manager, I want to filter the sales opportunities that are up for Loss Analysis so that I can review these cases easily
- As a sales manager, I want to see the location of a company on a map so that I quickly understand where the customer is located
- As a sales manager, I want the city to be filled automatically after entering a zip code so that I save time on data entry

Your UX team has already created two mock-ups to illustrate what the final app should look like:
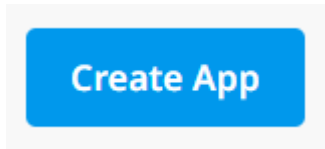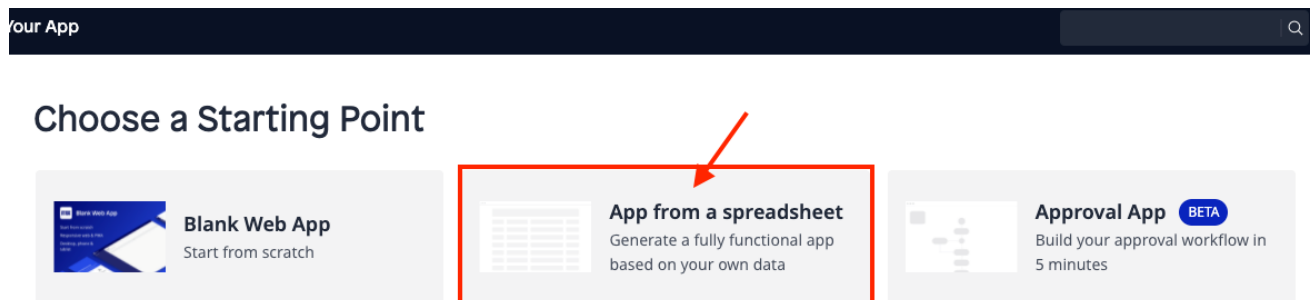

You will build this app from the existing Excel document, using its structure and data as a starting point.

2.2 CREATE THE APPLICATION

- Navigate to: https://sprintr.home.mendix.com/index.html

- Click the 'Create App' button

2.2.1 Select the "App from a spreadsheet" template

- Click the **"Select This Template"** button in the template "App from a spreadsheet" as shown below.
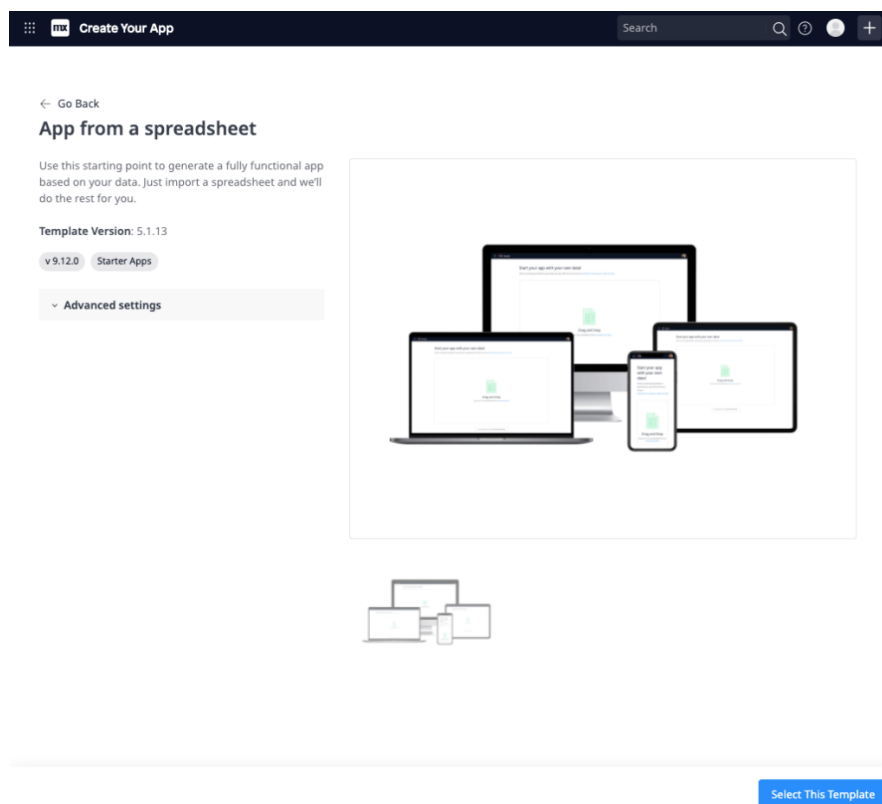
- Name your app, let it "**Opportunity Tracking**", select a project icon and click "***Create App***":

Customize Your App

Choose an App Name ⓘ

My First App

Choose an Icon

This will be shown in your list of apps. You can always customize this icon later in your App settings.

Select a background color and icon:

↻ Choose for me

Cancel   **Create App**
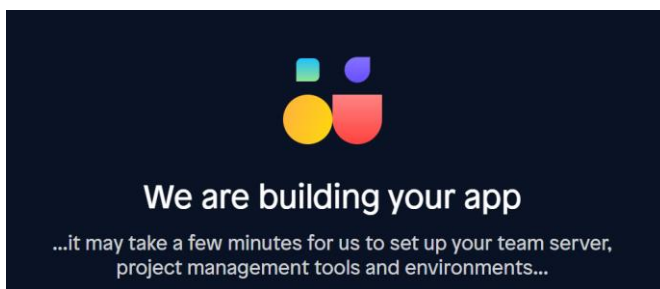
Your project environment and app are being built. This should only take a few moments.

2.2.2   Upload the spreadsheet

- Either drag the spreadsheet named *'MED Opportunity App Data.xlsx'* or browse for it.

Mendix will analyse the file, identify any relationships, and then create the framework and initial data of your app based on the data within the spreadsheet.

Data Import Preview

2 tables are ready to be imported. You can unselect any tables, columns and relations that you don't want to import. Read more about the data import preview

☑ OpportunityContact 🔗   ☑ Company 🔗

| ☑ Title	☑ FirstName	☑ LastName	☑ JobTitle	☑ Phone	☑ Email	Company ⓘ
Ms.	Louis	Sanders	CTO	7442066815	louis.sanders@puppywear.com	PuppyWear
Ms.	Katie	Slater	Manager	7442044815	katie.slater@ecoenergy.com	EcoEnergy
Mrs.	Dianne	Taylor	Manager	7442066816	dianne.taylor@ecoenergy.com	EcoEnergy
Mrs.	Rachael	Underwood	Sr. Manager	7442066829	rachael.underwood@plumtec…	PlumTech
Mr.	Craig	Walsh	Manager	7452066815	craig.walsh@everlake.com	Everlake
Mr.	Tim	Wilson	Manager	7442266815	tim.wilson@aquacool.com	Aquacool
Mr.	George	Dunphy	Sr. Manager	7442456815	george.dunphy@mendix.com	Mendix
Mr.	Rob	Roggers	CTO	7443066815	rob.roggers@aquacool.com	Aquacool
Mr.	Brendan	Chivers	Manager	7442066888	brendan.chivers@teleconnec…	Teleconnect
Mr.	Nick	Cross	Manager	7442066666	nick.cross@mendix.com	Mendix
Enumeration ⌄	String ⌄	String ⌄	Enumeration ⌄	Long ⌄	String ⌄	

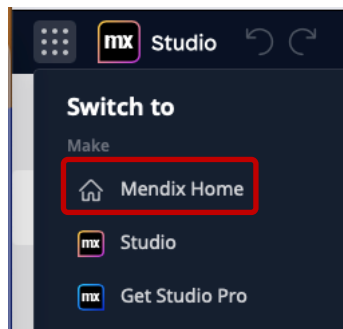**1 relation** found: 🔗 Manage Relations   ☑ Generate pages for my data   **Import Data**

- Leave the ***Generate pages for my data*** check box checked. Click ***Import data***

- When the "***All done!***" popup is displayed, click ***Okay*** (skip the tour, you can always take the tour later!)
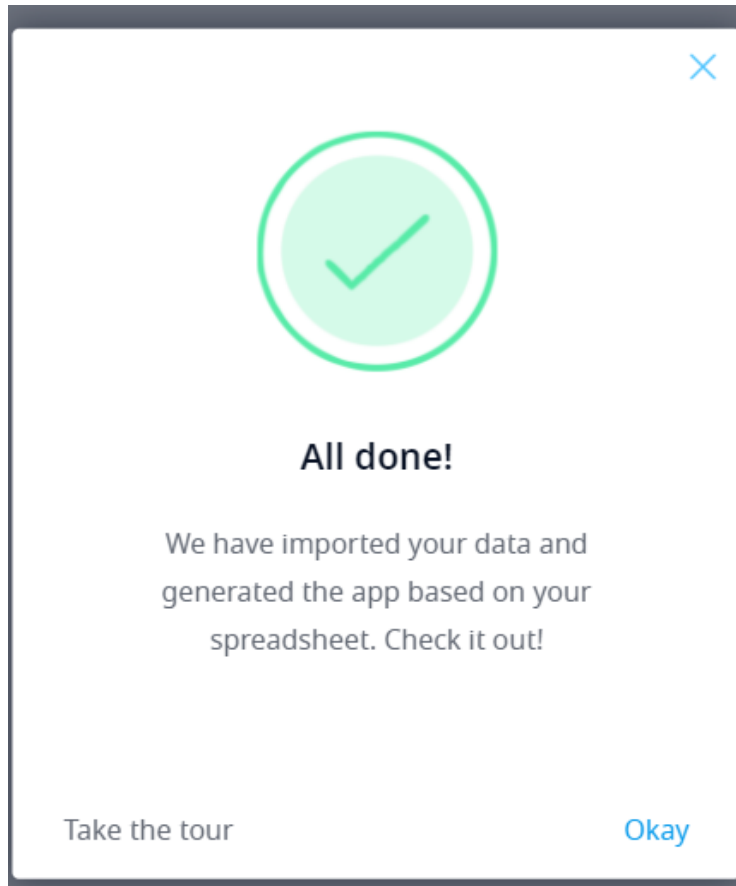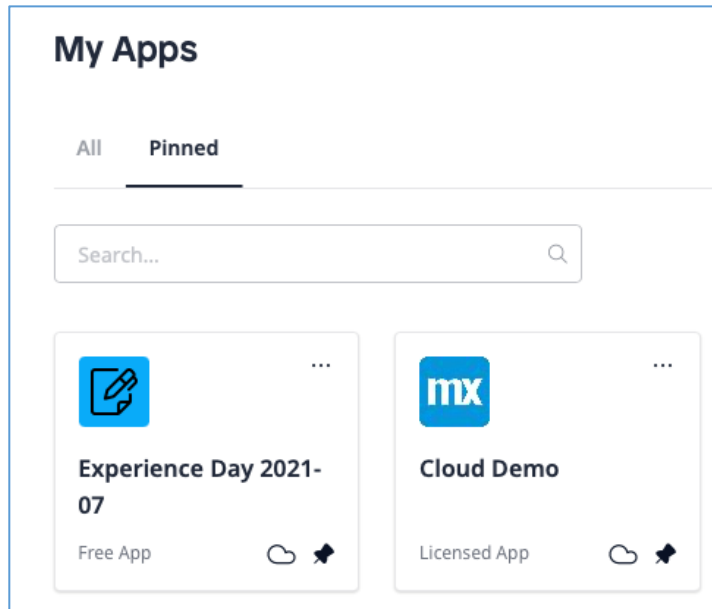
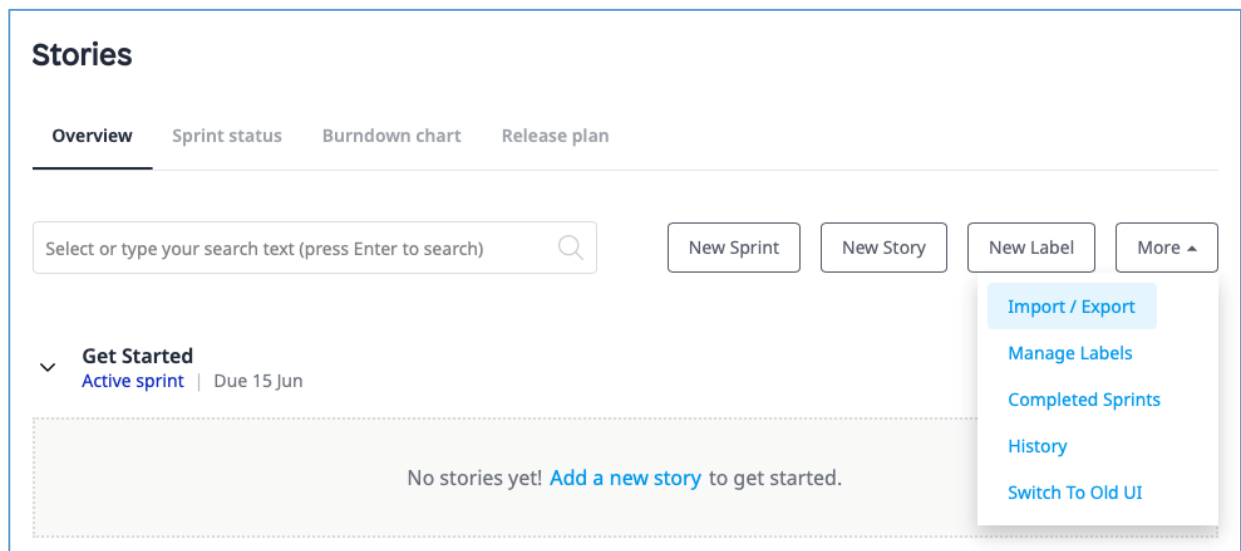## 2.3   ADD THE USER STORIES

- Go back to **Mendix Home**

- Open your **App** by clicking on it. You can 'Pin' it for easier access if you have a lot of other projects.
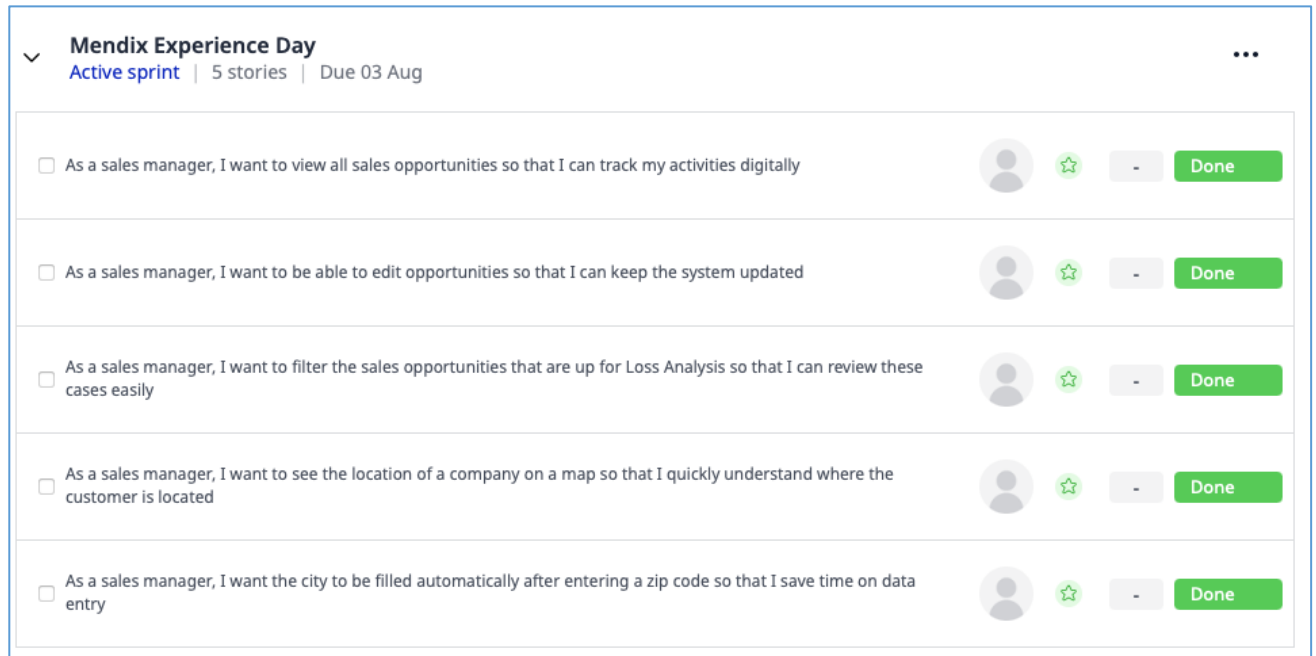

- Click on **Stories** and then click on **More > Import / Export**

- Select **Update stories from Excel** and then select the provided Excel file containing the user stories (***UserStories.xls)***

- Click **Import** to import the stories. You should see the following stories:

- Click **Next** and **Okay**

- Click on next to the **Get Started** sprint and select **Complete sprint** then click **Proceed**

The next sprint (**Mendix Experience Day**) will be started automatically.

- Click **Edit in Studio** to go back to Mendix Studio.

2.4 ADD THE ABILITY TO VIEW ALL OPPORTUNITIES

2.4.1 Configure the Home Page Layout
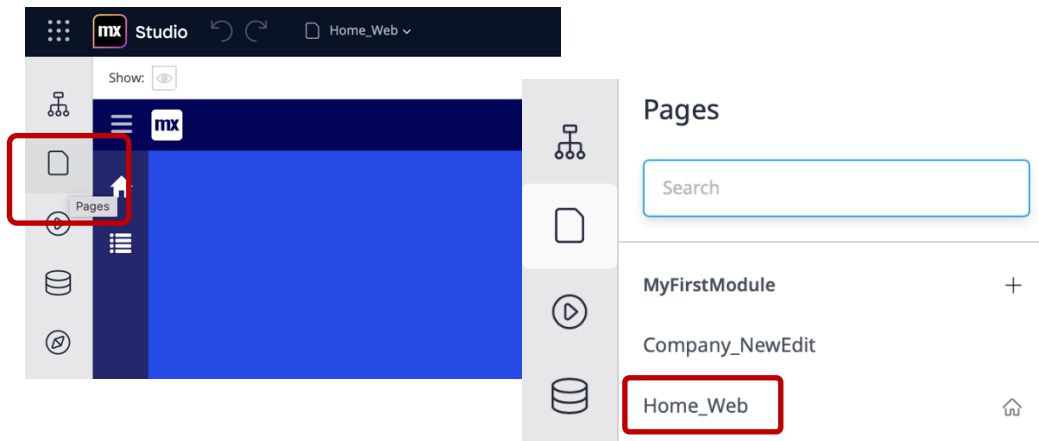
- Remove the *Manage Data* container from the page by selecting it and **clicking** the **delete** button:
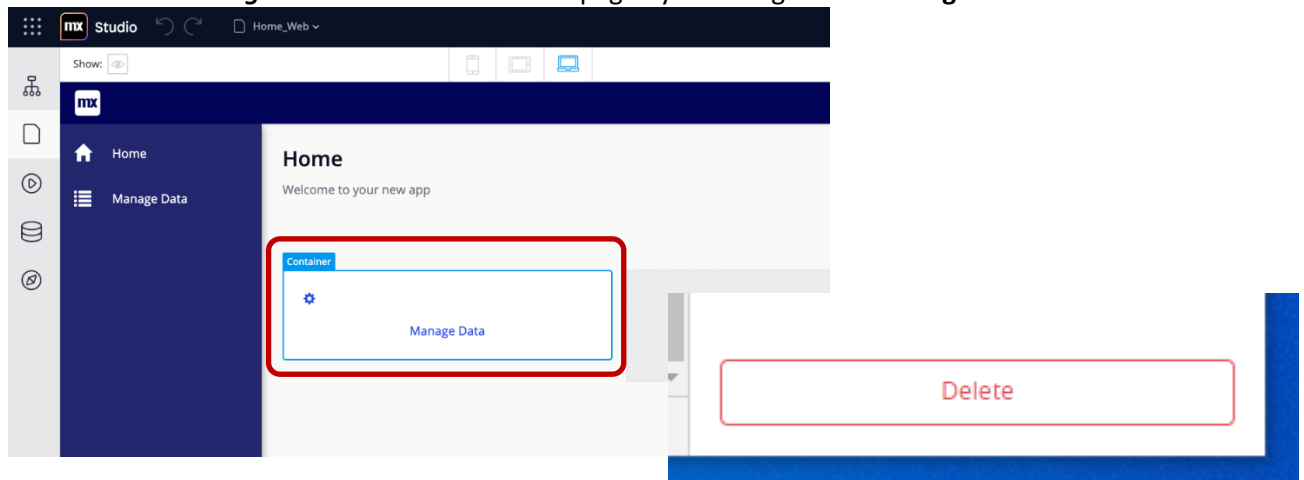
- We just need one column. Therefore, select one column and **delete** it:
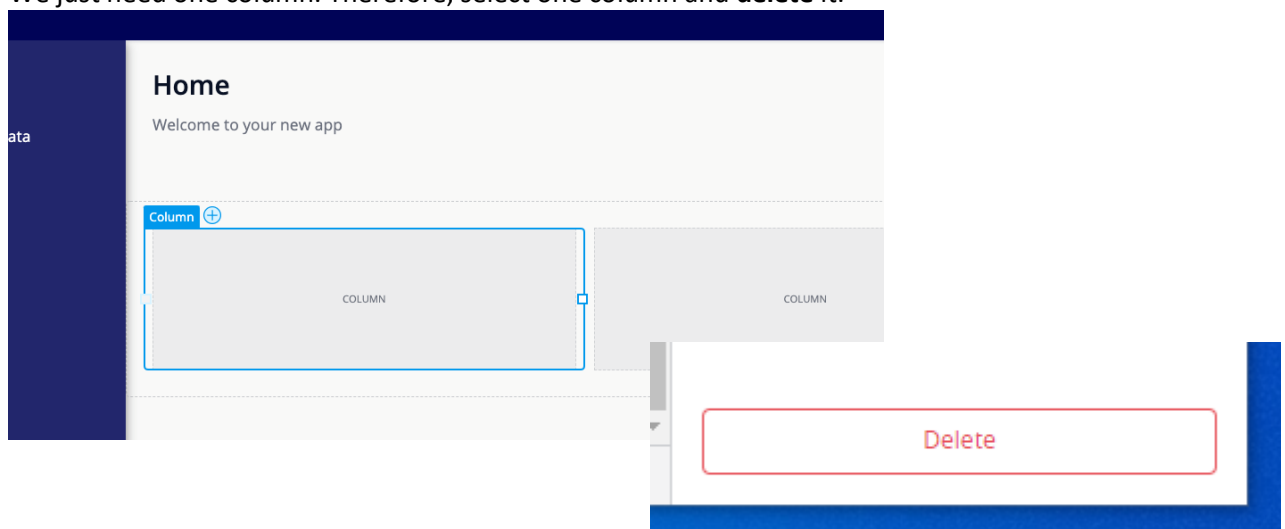
- Delete the existing header (by deleting the **container**)
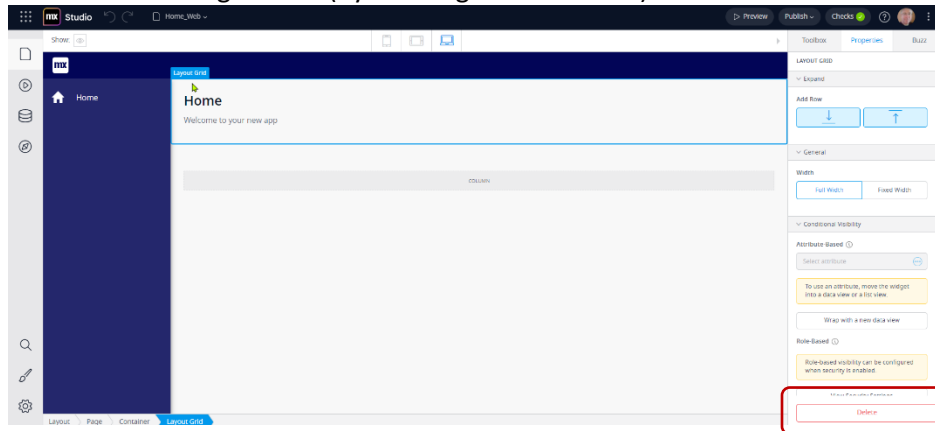
- Choose the *Heroheader* from the *Toolbox / Building Blocks* tab – by searching for "hero".
- Drag and drop it into the empty container
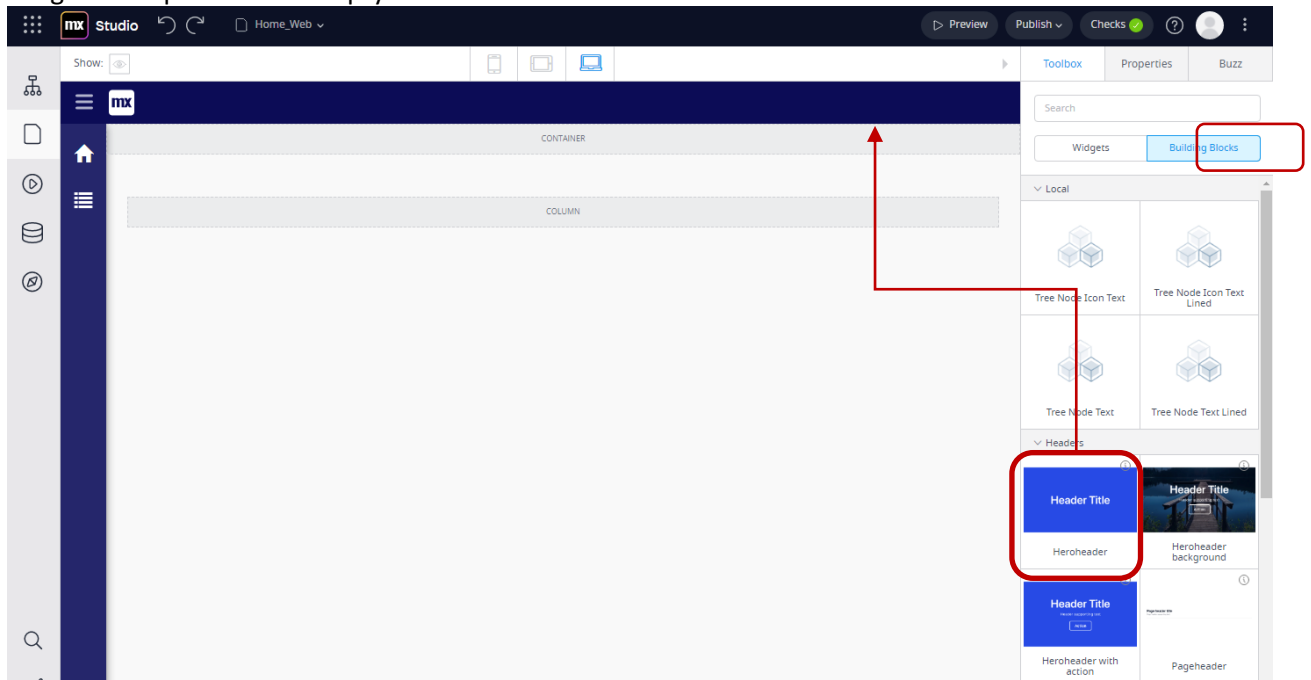
- Click on the header and edit it. Change the heading to '*Opportunity Tracking App*' and change the *Render Mode* to *H3*
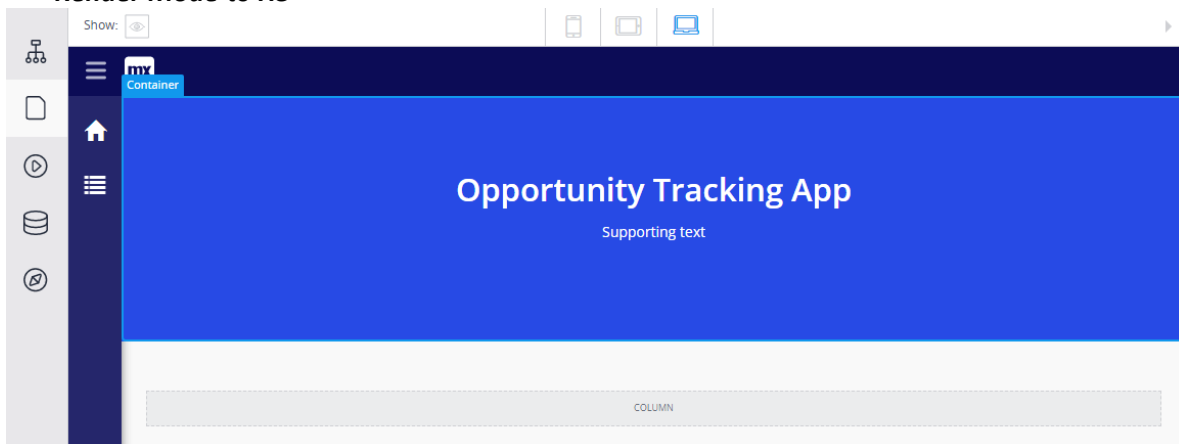
- Add a **Tab Container** to the column by dragging it from the **Toolbox/Widgets** pane and into the column container. You can find the **Tab Container** faster when typing **tab** into the search field.
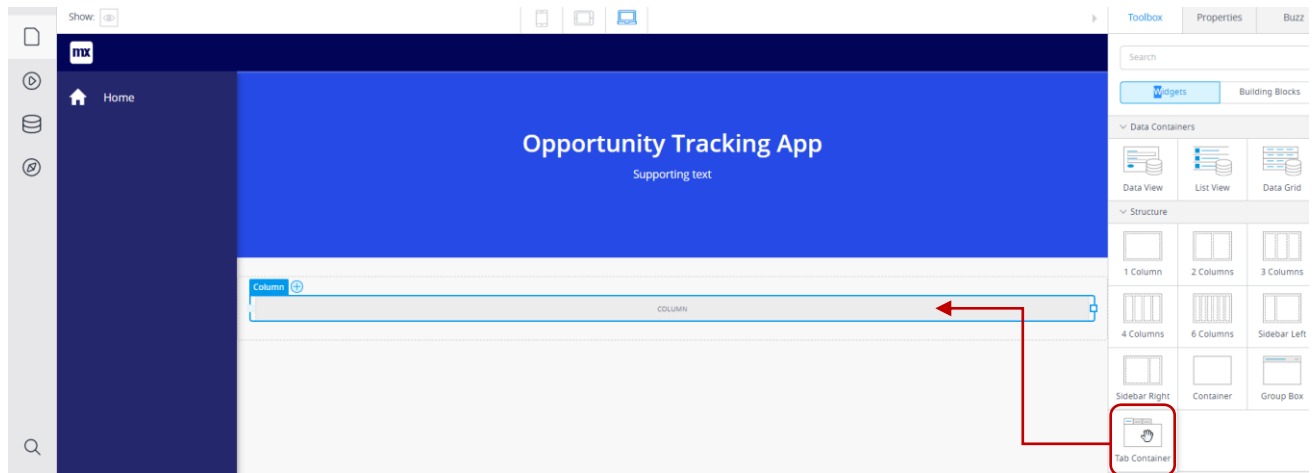
- Rename the first tab to '**To be called**'
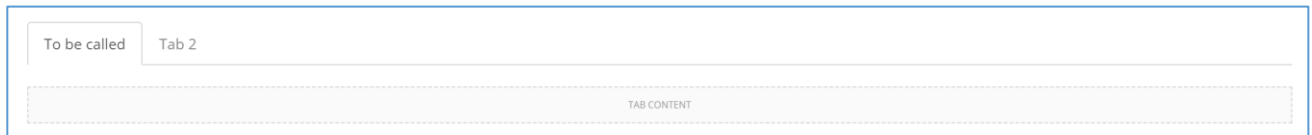
2.4.2   Add Dynamic Data to the Opportunities Overview Page

- Add a **List View** to the **To be called** tab (tab 1) by dragging a **List View** data container from the **Toolbox/Widgets** pane into the column within the tab (called **List View Content**):
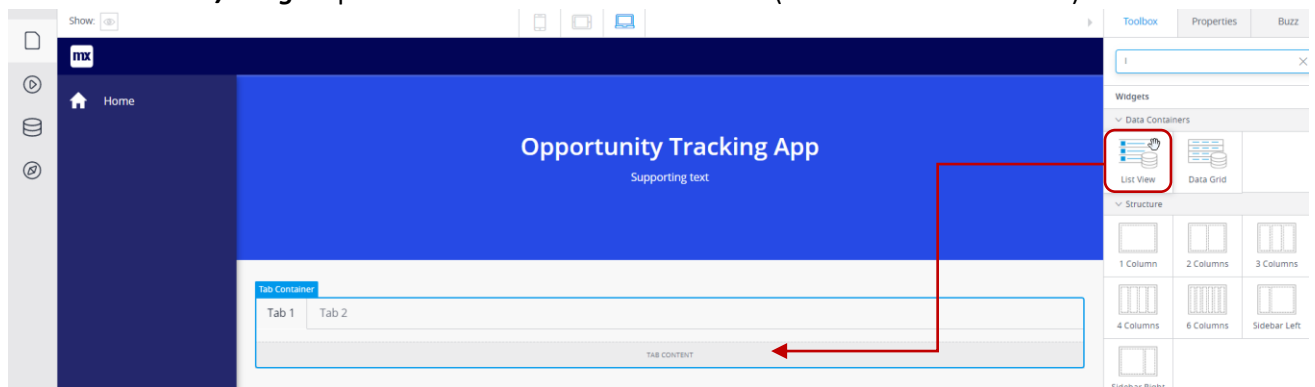
- In the **Data Source** configuration screen that appears, select database and the entity **Opportunity Contact**
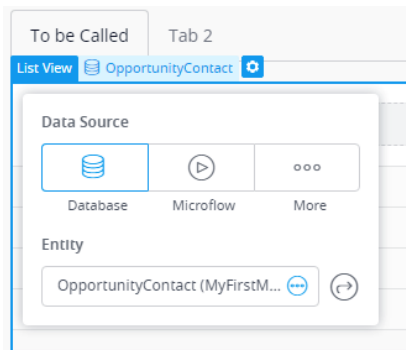
You can always switch the Data Source configuration panel on and off by clicking ⚙️ .

Here you can see that you can attach, not only data sources, but also elements such as microflows and other Mendix assets, to a specific component.

After this step the page looks like the following:
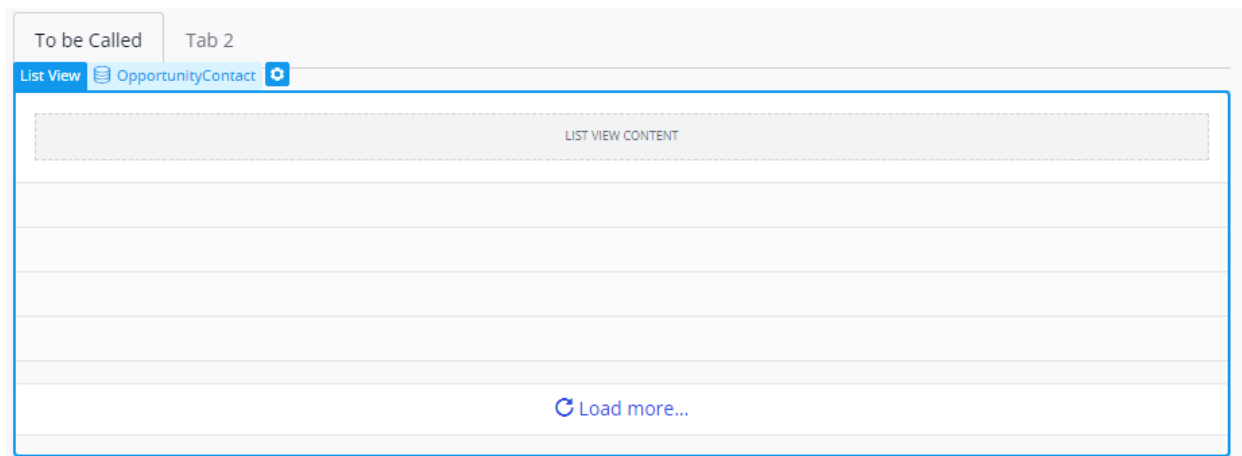
- Configure the list to have a 4-column layout by dragging a **4 Columns** widget from the structure section of the **Toolbox/Widgets** pane into the **List View Content** section of the **List View**.

rev20220401_MX991_hn
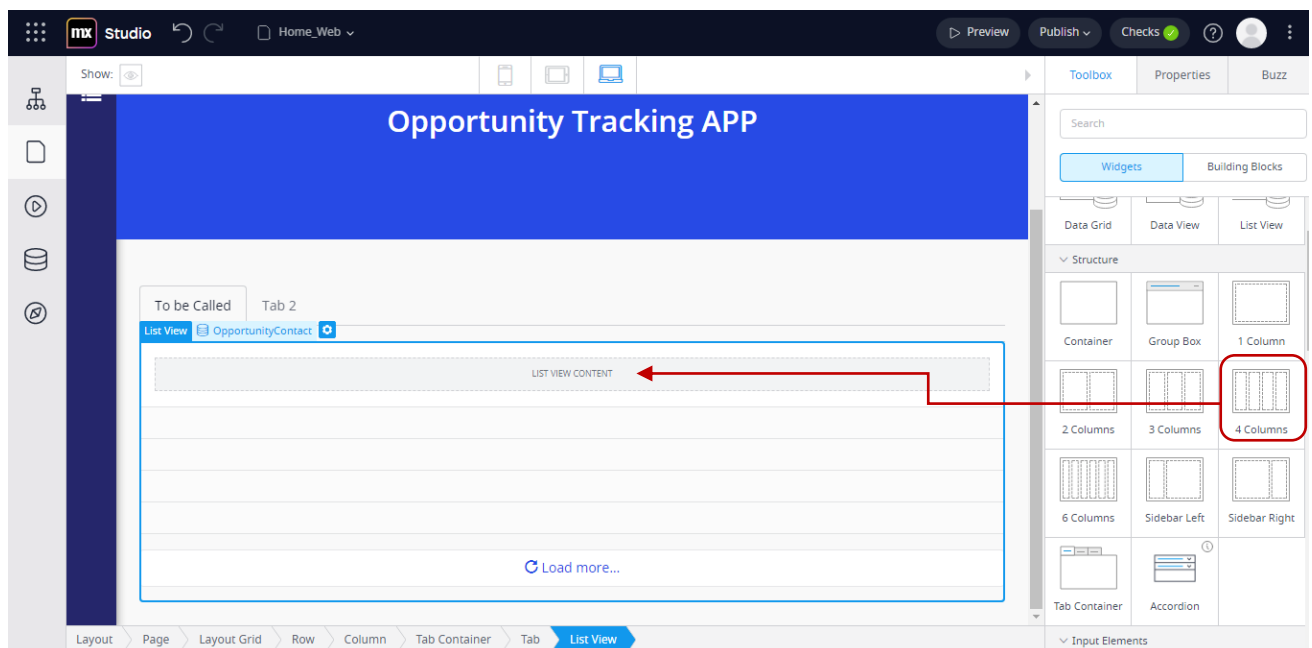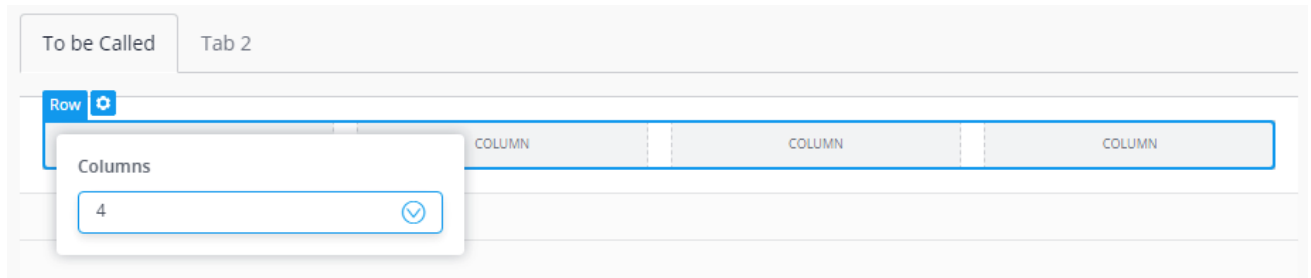
Within that popup window you can change the number of columns.

When clicking somewhere outside of the selected row container, e.g. into the toolbox on the right, this popup window disappears.

- From the toolbox drag a *Text* widget (note: not a text box) into <u>each</u> of the first 3 column containers.
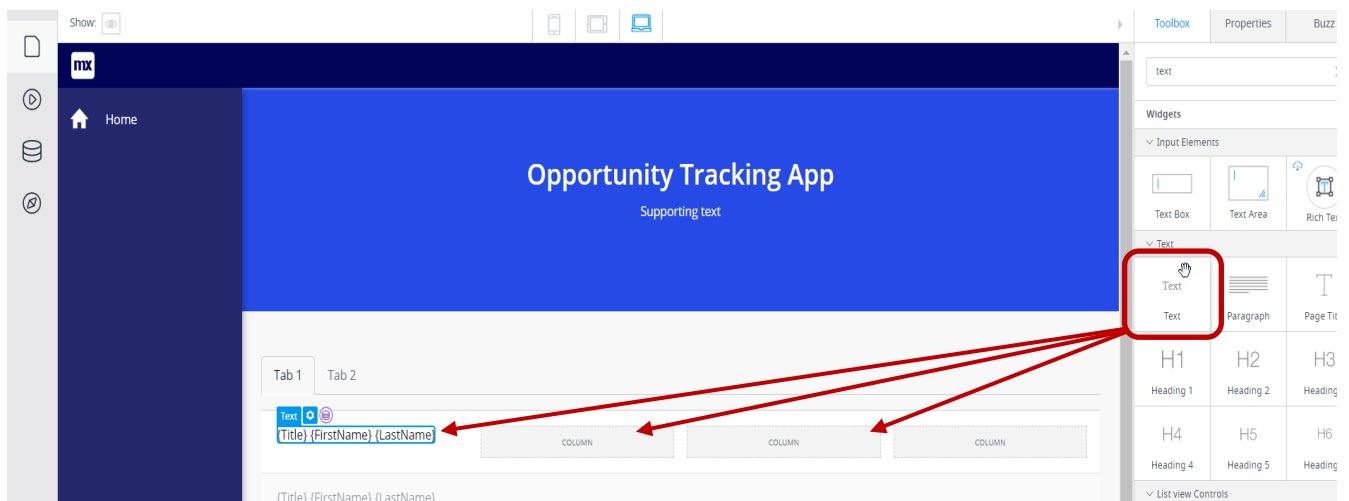
- From the toolbox drag a *Text* widget (note: not a text box) into <u>each</u> of the first 3 column containers.

- Add the following entity attributes to the first column: **Title**, **FirstName** and **LastName**.

The easiest way to do this is:
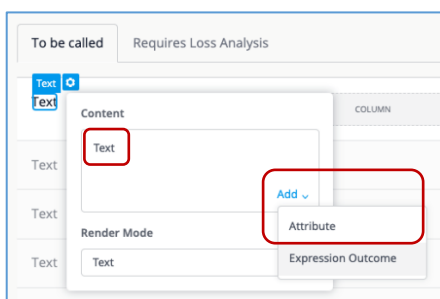
- Click in the **Text** element in **Column 1.**

- Inside of the popup Content screen select the "Text" by double- clicking it – like shown in the left picture –

- and **delete** the selected element.

- Click **Add → Attribute.**

- In the next popup window select the Attribute **Title** and either press the button **Select,** or double-click that **Title** element.

- Do the same for **FirstName** and **LastName**.

The Content field will now look like this:

- For column 2 and 3 type the following fixed text and add text attributes in the same way as for column 1:
  Hint: Do not add attributes by typing in the text {xxx}, but by using the **+ Add → Attribute** *dropdown like before.*

Column 2:
{…/Company/Name}

Column 3:
Estimated Value: {EstimatedValue}
Due Date: {Due_date}

Whenever you are struggling with selecting the correct element or component or container, you can help yourself by navigating within the breadcrumb bar at the bottom.

The result will look like this:
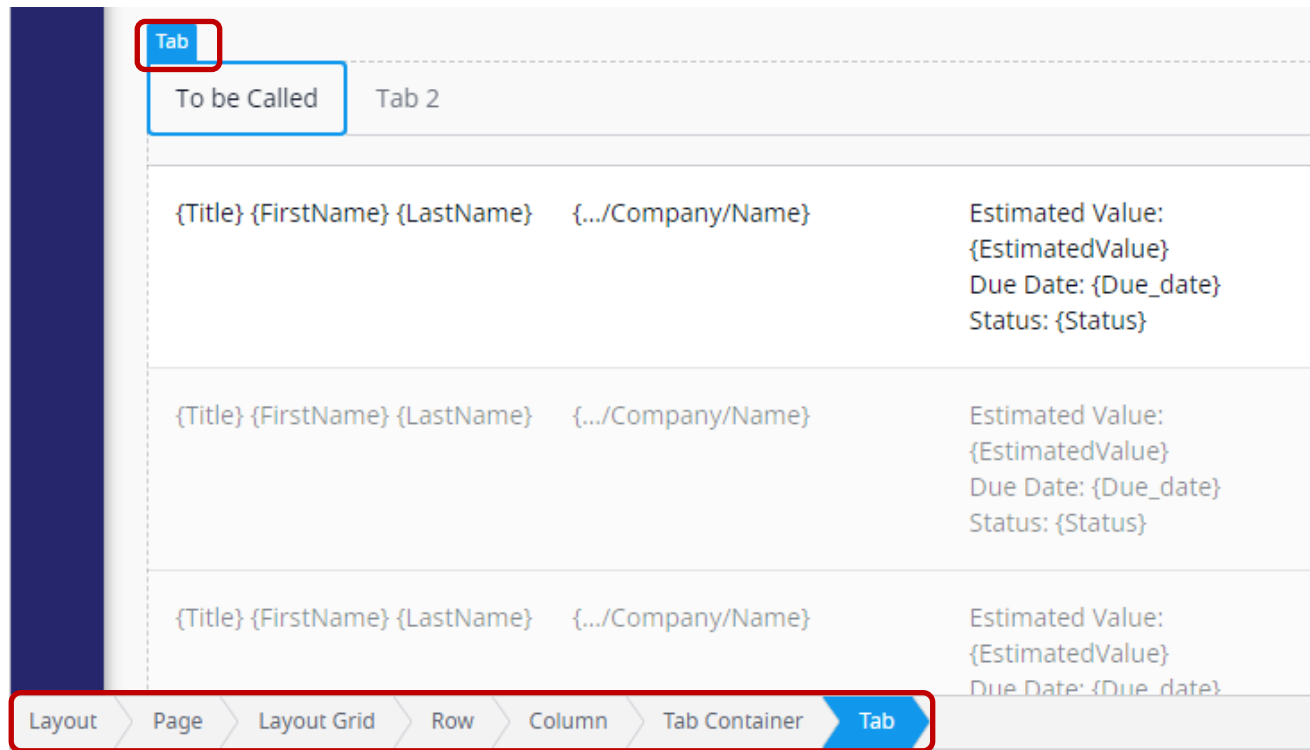
- Preview your application by clicking the **Preview** button at the top:
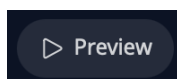
Assuming there are no errors, you'll be able to see how your app is coming along.
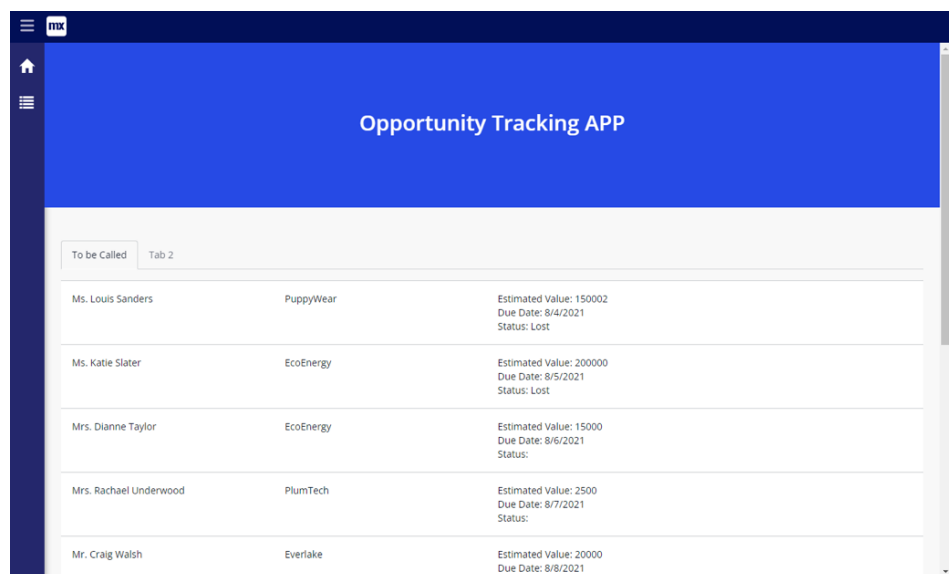
- Please also test how it is presenting across multiple screen types:

2.5   ADD A STATUS ATTRIBUTE TO EACH OPPORTUNITY

2.5.1   Update the Opportunity Contact Entity

- End your preview by clicking 'Close Preview' in the upper right corner ➔ It goes back to the edit mode.

- In the navigation pane on the left, click the **Domain Models** Icon - that is where all the related data is managed.

- Select **MyFirstModule**
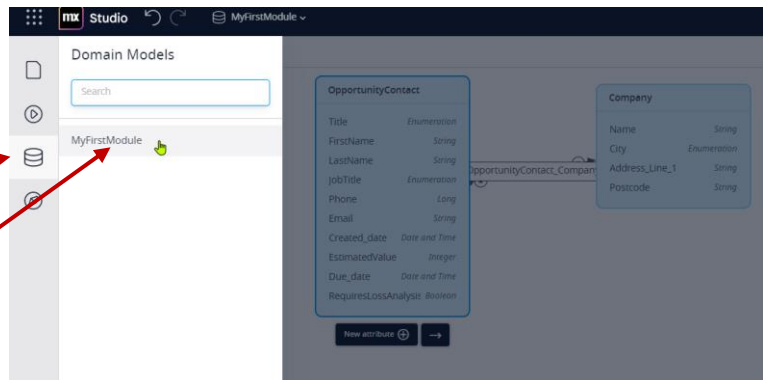
- Select the **OpportunityContact** entity and click the **New attribute** button below the entity.

- Set the name to '*Status*' with a Type of '*Enumeration*'.
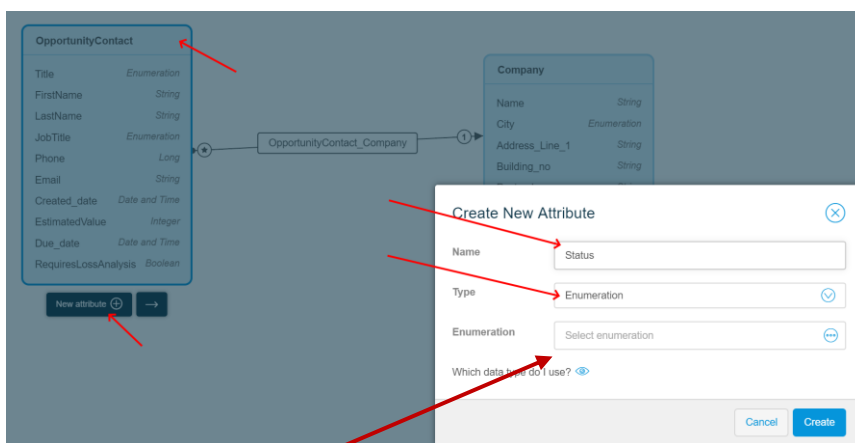
- Click **Select Enumeration,** then **Create New Enumeration**

- Click **Add Item** to add a new enumeration item with both a caption and name of *'Open'* - Don't click **Create**

- Add 3 additional enumeration items **'Won'**, **'Lost'**, **'Postponed'** by clicking **Add item** three times and adding the related caption and name fields.

- Click **Create** button twice.

After that, you can see the new **Status** attribute within the **OpportunityContact** entity, displayed in the domain model.

2.5.2 Add the Status Field to the Opportunity List

- Please return to the **Home_Web** page and add the **Status** field to the 3rd column of the "**To be called**" opportunity tab list:

2.6   ADD THE CAPABILITY TO CREATE AND EDIT OPPORTUNITIES

2.6.1   Add an Edit Button to the *To Be Called* Opportunity List

We now want the ability to edit any of our opportunities by clicking a button on the row of the opportunity. This button should open another page (which doesn't currently exist), in which we can <u>edit</u> the record.

- Drag an **Open Page** button widget onto the 4ᵗʰ column on the **To be called** tab of the Home page
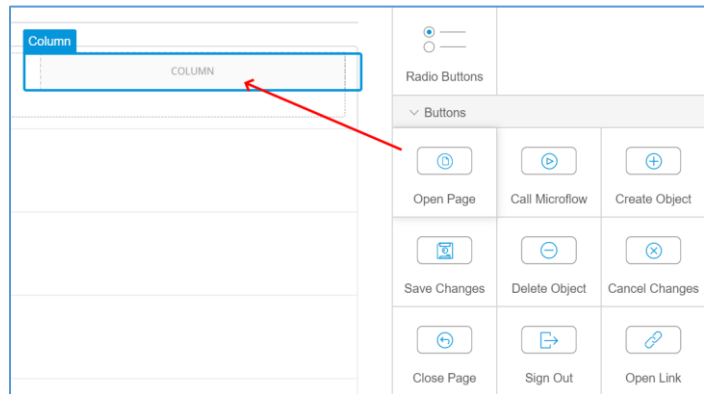
2.6.2   Create the Opportunity Contact Edit Page

A configuration box will appear.

The **On Click Action** should be already set to **Page**, the **Create Object** slider should be off.

- Change the **caption** to 'Edit'
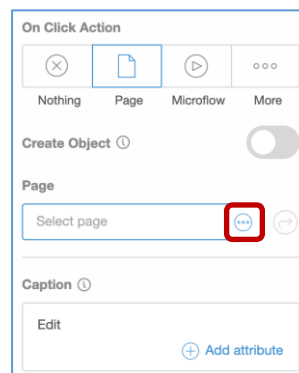
- Click the **Select page** element **(…)**
- Click the button **Pages ('+')**
- Set the **title** of the new page to '**OpportunityContact_Update'**
- Set **Layout** to **PopupLayout**.
- Select the **Form Vertical** template
- Make sure, that the **Pre-fill page contents based on the OpportunityContact entity** option is checked.
- Click **Create** button
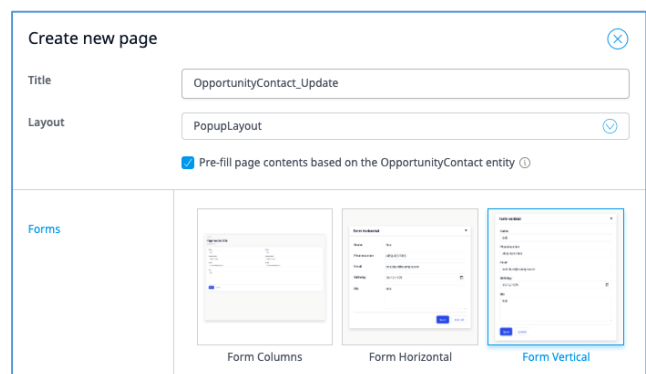
You'll see that Mendix generates the **_OpportunityContact_Update_** page.

It pre-populates it with all the attributes from the **_OpportunityContact_** entity.

2.6.3 Set the Relevant Opportunity Contact Edit Page Fields to Read-Only

- On the **_OpportunityContact_Update_** page, set the relevant fields to be **_Read-Only_** by first selecting the field and then setting the **_Read-Only_** option from the **_Editability_** section in the **_Properties_** pane.

- Repeat this for the fields:
  Title, First Name, Last Name, Job Title, Phone, Email, **_Created Date, RequiresLossAnalysis_**

- Check how things are looking and if **_Edit_** works, by previewing and testing your app!
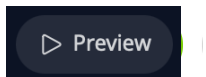
Which Elements can you change? Will you see the saved results?

2.7   ADD BUSINESS LOGIC TO FLAG OPPORTUNITIES REQUIRING FURTHER ANALYSIS

2.7.1   Change the Save Button to Call a Microflow

By default, a Save button (such as the one auto-created by Mendix on the **OpportunityContact_Update** page) saves all changes and returns to the previous page.

In our application one of the requirements is to add business logic to make sure <u>all lost opportunities above 150,000 are marked for '**Lost Analysis Review'**</u>.

We'll do this by creating a <u>Microflow,</u> that is triggered when the Save button on the **OpportunityContact_Update** page is clicked.

- Close your preview. Select the *Save* button on the *OpportunityContact_Update* page and change the *On Click Action* (in the *Properties* pane on the right) to *Microflow*
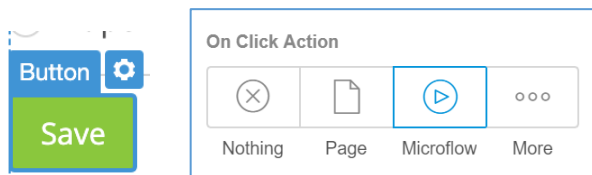
- Click *Select Microflow*   then *Create Microflow* and name it *ACT_OpportunityContact_Save*

We now have a new Microflow ready to be configured. Note: you can navigate to the application's Microflows from the Microflow icon in the left-hand menu

2.7.2 Build the Business Logic in the *ACT_OpportunityContact_Save* Microflow

The requirement on this Microflow is to identify whether the Opportunity Contact record being saved meets the criteria of being over 150,000 with a status of 'Lost'. If true, then mark the record's 'Requires Loss Analysis' field to true, otherwise set it false. Finally, save the record to the database and close the page.

- Drag a **Decision** item from the toolbox into the Microflow **ACT_OpportunityContact_Save** and drop it on the arrow:

- Select the **Decision** element and change the caption to **'>150,000 & Lost?'.**
  This is just a label for the decision to remind us what's happening inside.

- Click **Configure condition** and start typing

When start typing you will be assisted by suggestions, like shown in the right picture...

- At the end, you should result with the following expression, then click **Save**.

$OpportunityContact/Status = MyFirstModule.Status.Lost
and
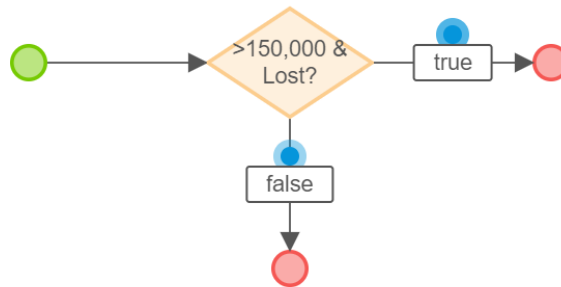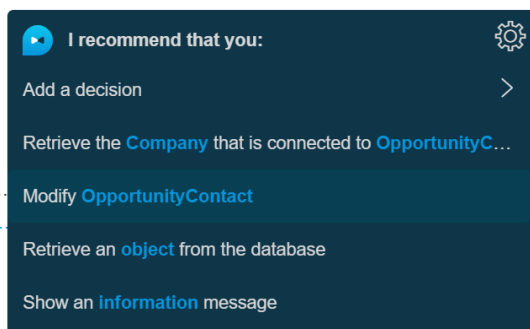$OpportunityContact/EstimatedValue > 150000

You'll now see two blue dots appear.

This is Mendix Assist, our AI-based helper.

It will make recommendations as to what to do next.

- Click on the blue dot above the true path and select *Modify OpportunityContact*

- Click '**Thanks, I understand'** on the Mendix Assist message, since we don't want to learn more about Mendix Assist right now.
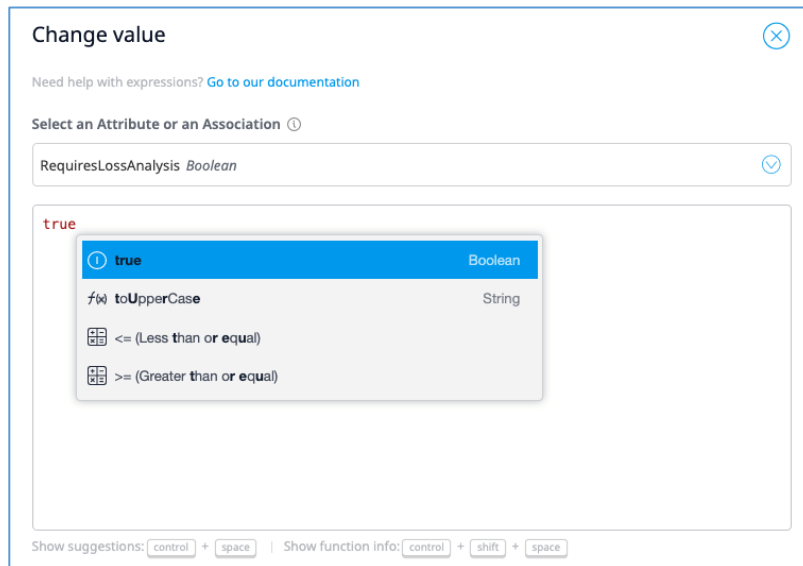
Mendix Assist will automatically add a *Change Object* activity to the Microflow.

- Select this new item and click *Add New Value* under *Change Members* in the Properties Pane
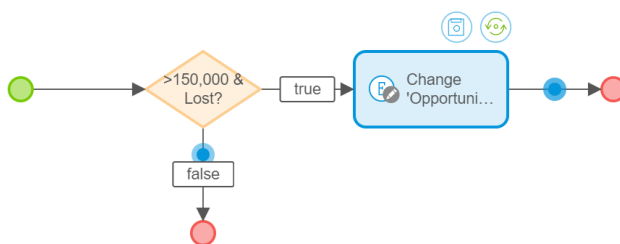
- Select *RequiresLossAnalysis* as the attribute and *true* as the expression, click *Add.*

- Select the **Change Object** activity we've just configured and copy it (using **CTRL-C** and **CTRL-V**) into the false branch.

- Select the newly created object, change the expression within (Clicking **"..."** and **Edit**) to *false*.
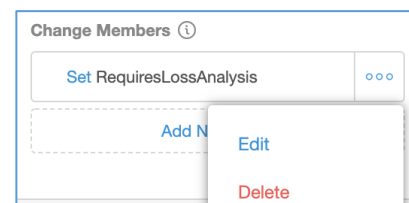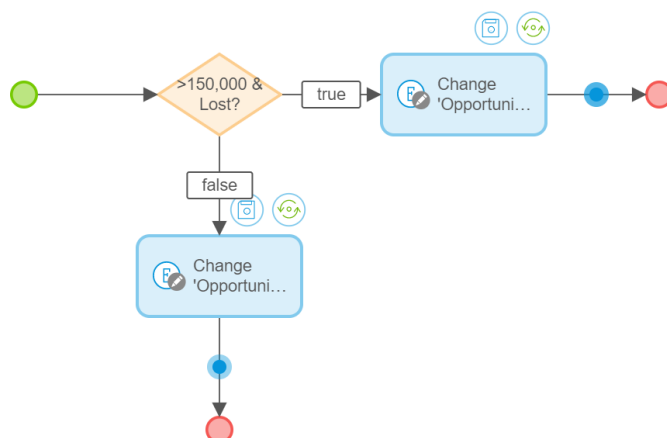

- Now add a **Merge** element to the true path after the **Change** Activity and followed by a **Close Page** activity.

- Delete the end element (red dot) at the end of the false branch.

- Connect the **Change Object** activity to the **Merge** element (by drag a line from the border and drop the line on the merge element):
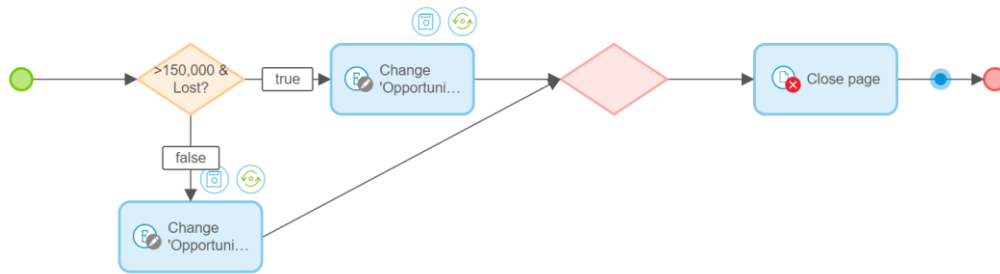
Now create a message for when we encounter the >150 000 & Lost condition.

- Drag a **Show Message** activity into the true path <u>before the merge occurs</u>.

- Set the message (in the **Template** element) to be something like ***This opportunity was lost and is estimated to be above 150 000. This has been flagged as requiring loss analysis***.
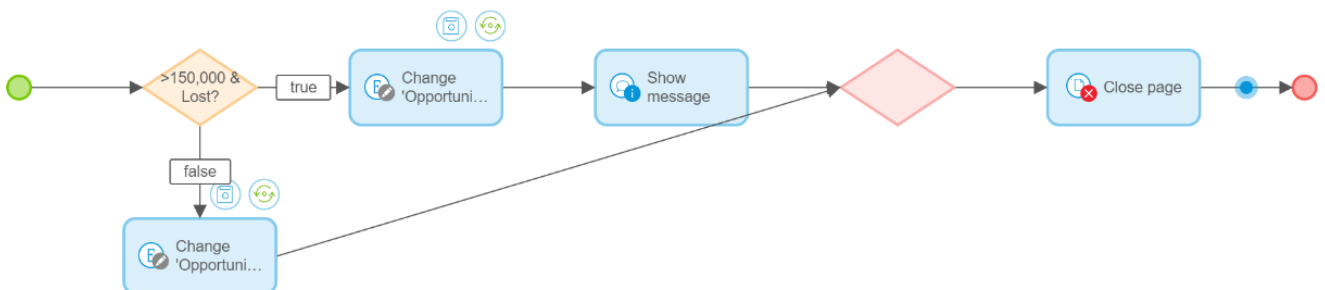
- Finally return to the ***OpportunityContact_Update*** page and change the button's caption to *'Save'* (the button was automatically renamed to *'Microflow'* when we changed its action type).

- Perform a final test of your app using **Preview** and try to enforce that message.
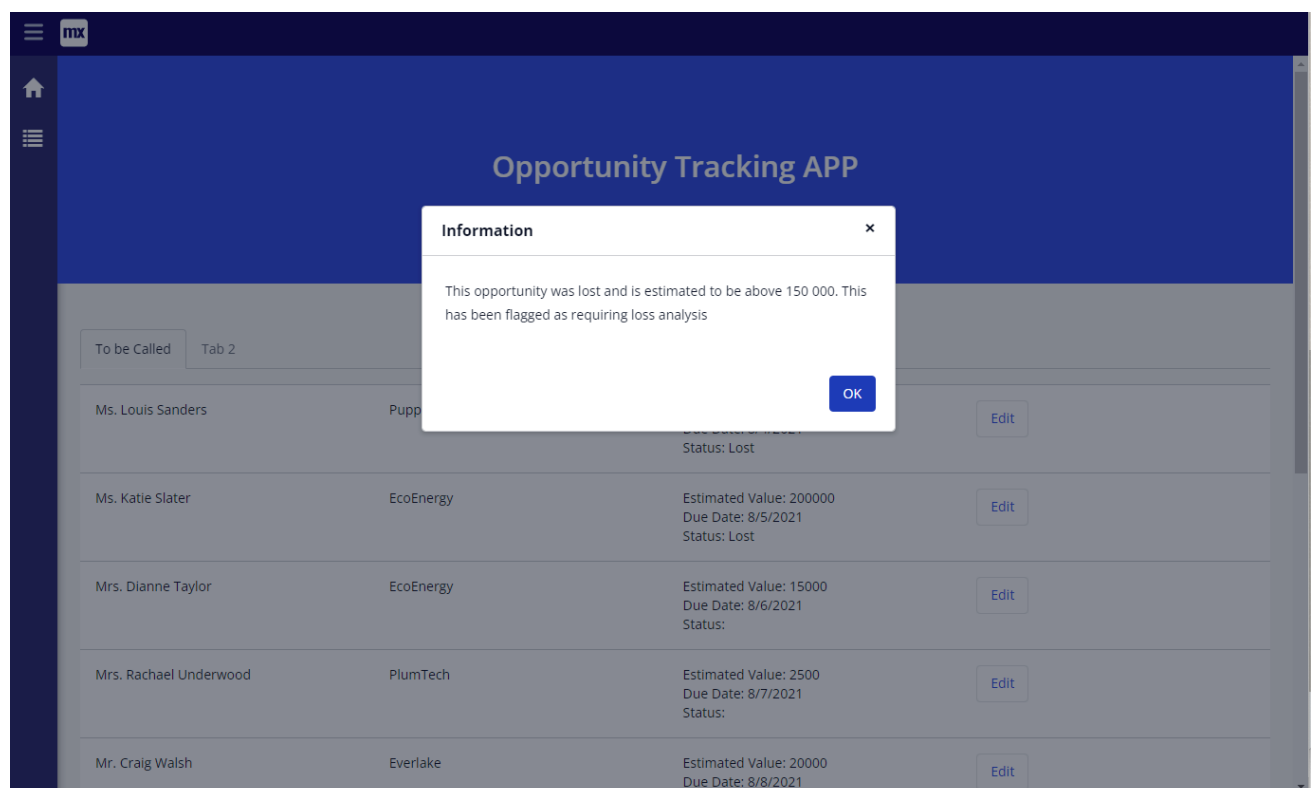
## 2.8 ADD A SCREEN TO VIEW OPPORTUNITIES REQUIRING FURTHER ANALYSIS

### 2.8.1 Fill the existing Requires Loss Analysis Tab

Now let's implement the filter regarding *RequiresLossAnalysis* within our home page.

- First, go back to the "To Be Called" tab, select the "List View" and press Command + C to copy the list view.
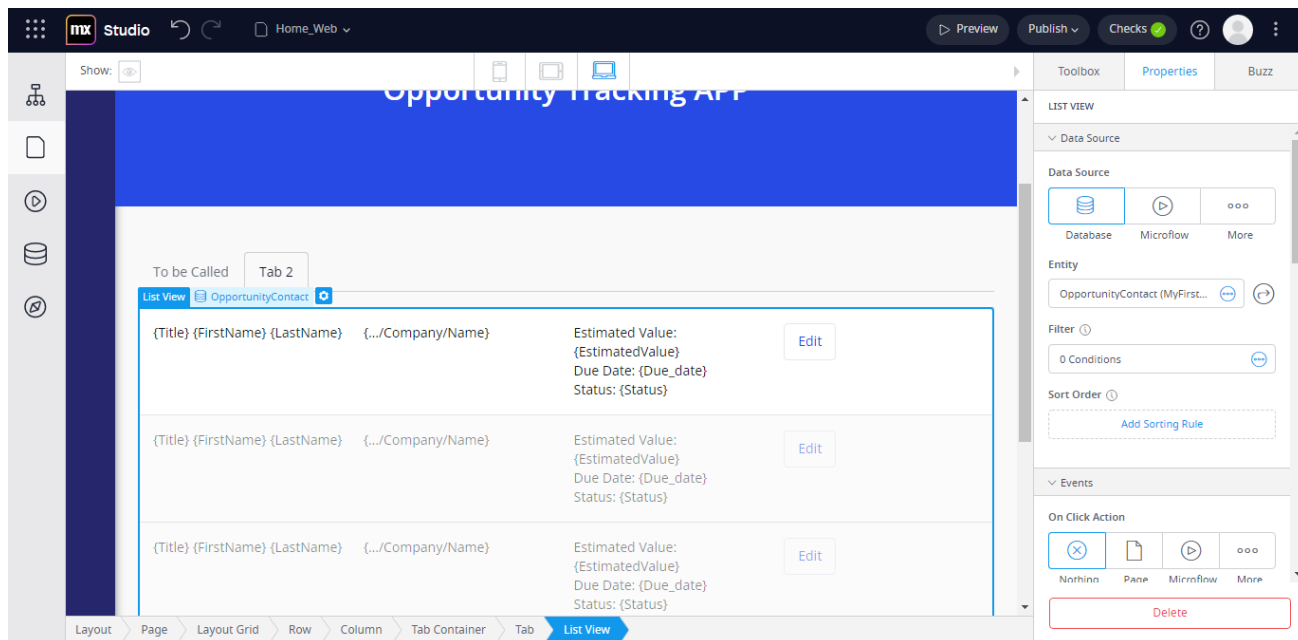
- Now click to select on Tab 2 and paste the List View that was copied into Tab 2 "Tab Content"

- Rename the other tab to '*Requires Loss Analysis'*

- On the right properties pane, go to the properties tab, you can see an element named **Filter**. Please click on the button with the three dots
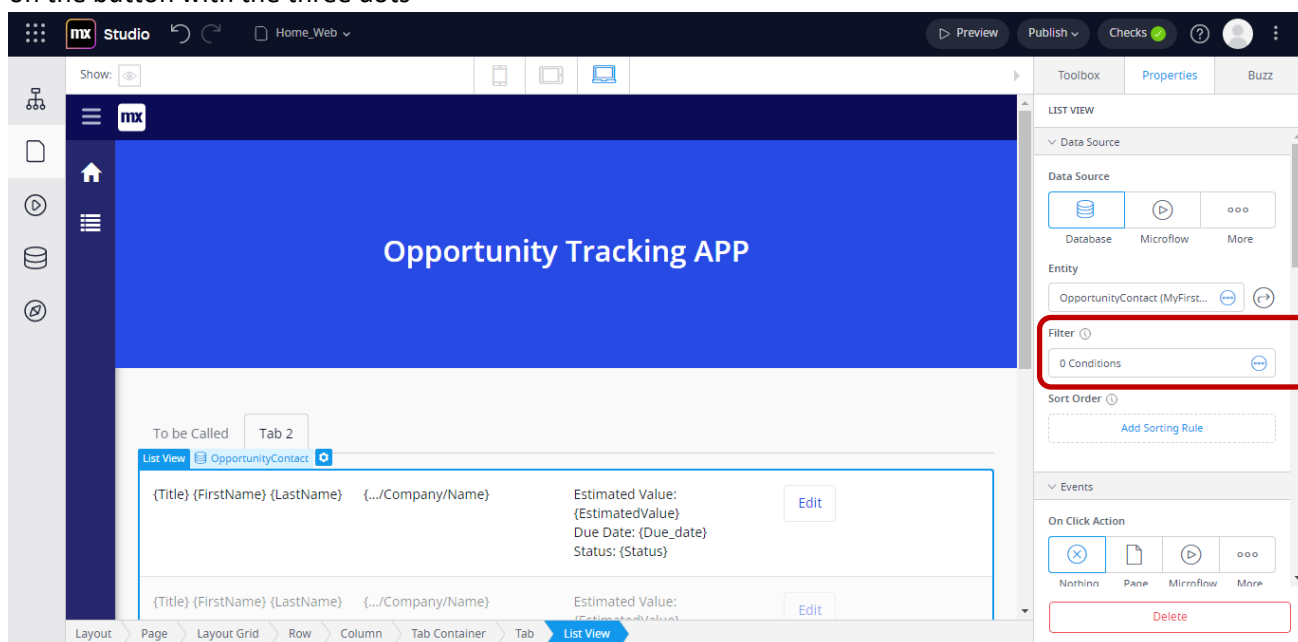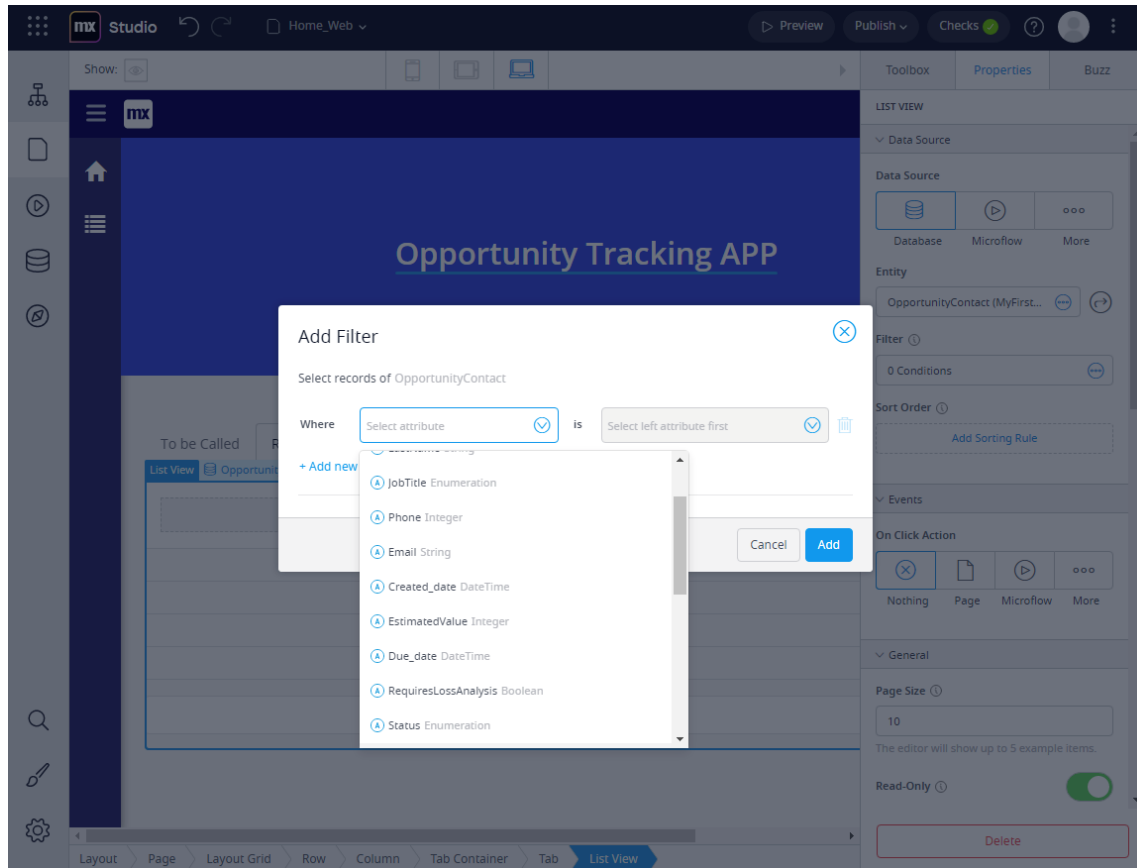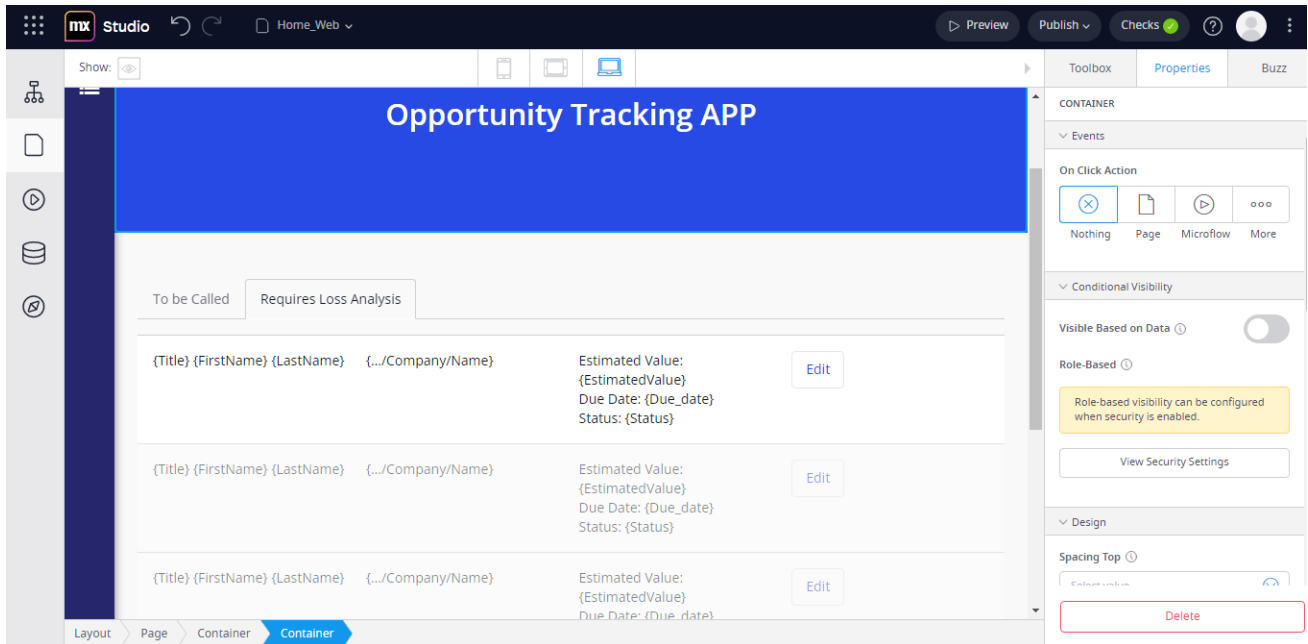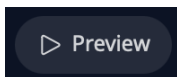
- In the pop-up screen, select the attribute *RequiresLossAnalysis* and make sure that only the values of '**true**' are considered by this constraint. This setting is also shown in below picture:
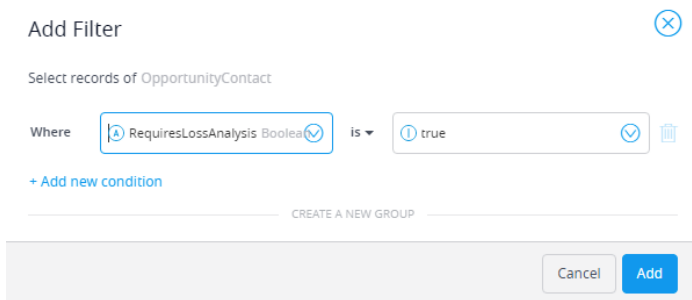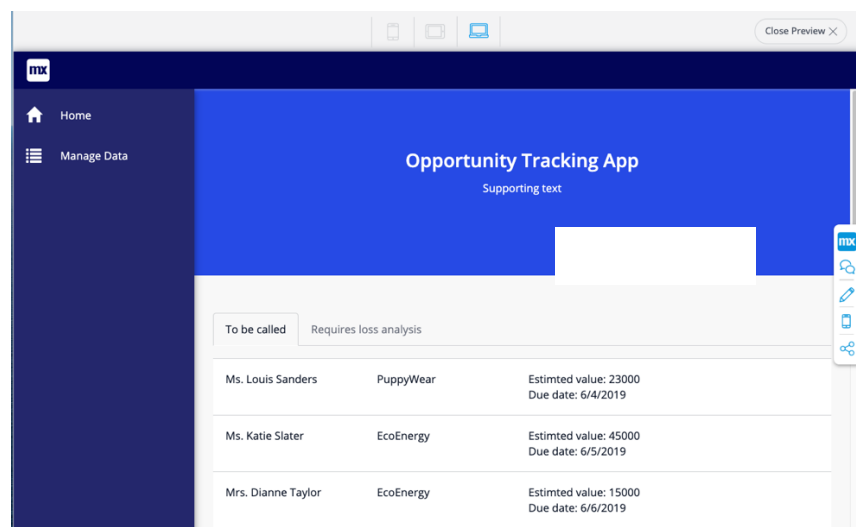

The result will look like this:

- Preview your application by clicking the **Preview** button at the top:
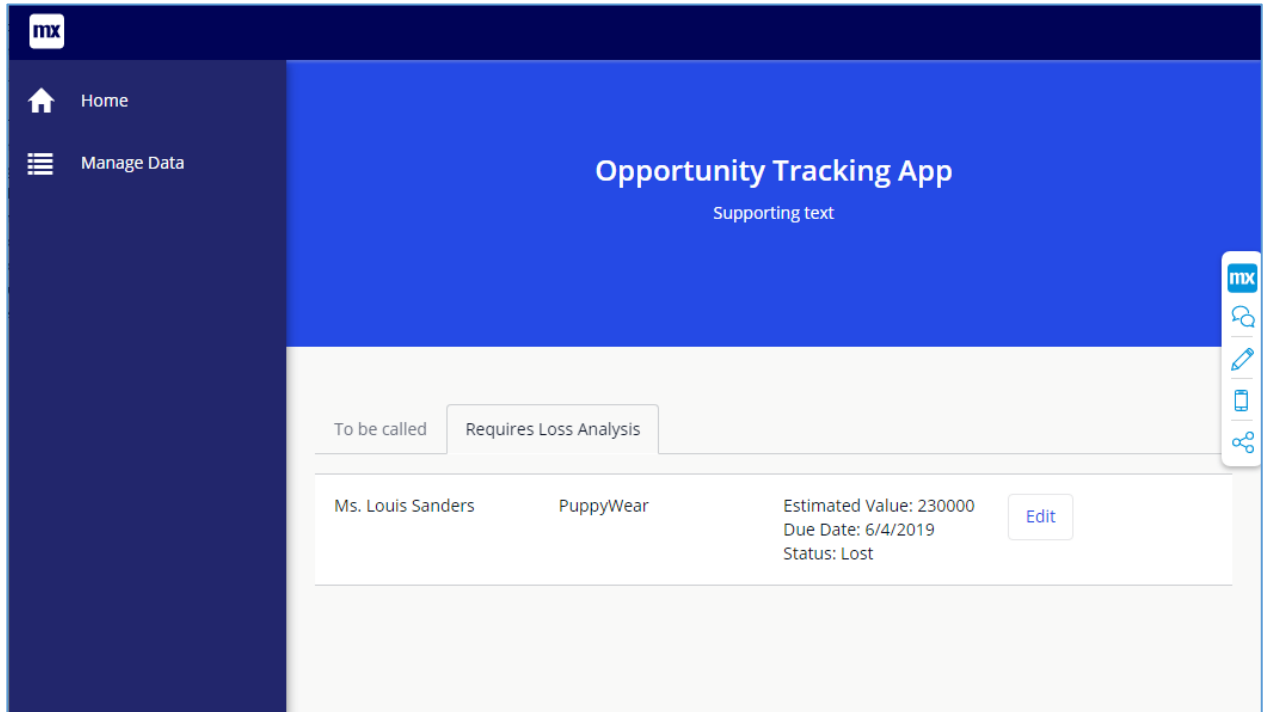

Assuming there are no errors, you'll be able to see how your app is coming along.

- Please also test how it is presenting across multiple screen types:

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And we are done when we can run our Home page with the latest changes locally, like shown below:

- Edit some rows on the 1st tab to make sure you produce some losses with values over 150 000. Observe how these opportunities appear in your 2nd tab.

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Time to celebrate

Congratulations

You successfully built your first app
with **Mendix**

Go Make it

3 Useful Links

Mendix Solution Gallery: https://gallery.mendix.com/

Mendix Marketplace: https://marketplace.mendix.com/

Mendix Documentation: https://docs.mendix.com/

Atlas UI: https://atlas.mendix.com/

Mendix Academy: https://academy.mendix.com

Mendix Evaluation Guide: https://www.mendix.com/evaluation-guide/