Data Modeling Exercise

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Outline

In this exercise, you will focus on creating the first entities in OutSystems. To do so, you will perform the following actions:

- Bootstrap an Entity and its data from an Excel file
- Create an Entity and its attributes
- Bootstrap data into an existing entity

Upon completion, you will end up with two entities and both will contain data that was bootstrapped from Excel files.

Resources

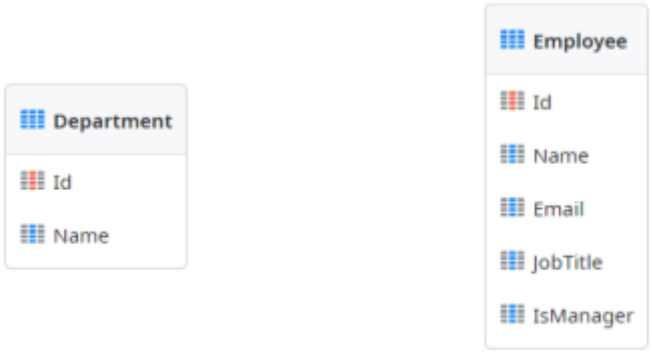
This exercise has some resources that are needed to complete it, two Excel files and an icon:

- Employee.xlsx
- Departments.xlsx
- Data-Modeling-Exercise-Icon.png

These files can be found in the Resources folder of this lesson materials. The Excel files will be used to bootstrap data to the Entities, while the icon is a suggestion to use when creating the application. Despite being optional, all the steps assume the use of this icon.

Scenario

In this exercise, you will create two entities: Department and Employee.



You will start from an empty canvas, so the first step consists of creating a new **Reactive Web App** and then add a **Blank** module. This blank module is where the entities will be defined.

After having the module created, using the **Import New Entities from Excel...** with the Departments.xlsx file, the Department entity will be created and the data bootstrapped from the Excel file and stored in the Entity.

The second entity (Employee) will be created manually with the following attributes

- Id (default)
- Name (mandatory)
- Email (mandatory and data type Email)
- JobTitle (length of 100 characters)
- IsManager (Boolean data type)

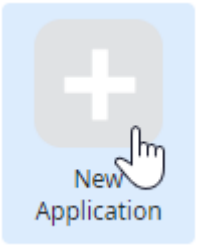
After creating the entity, its data from the Employees.xlsx file should be bootstrapped, using the **Bootstrap Data from Excel** action.

How-To

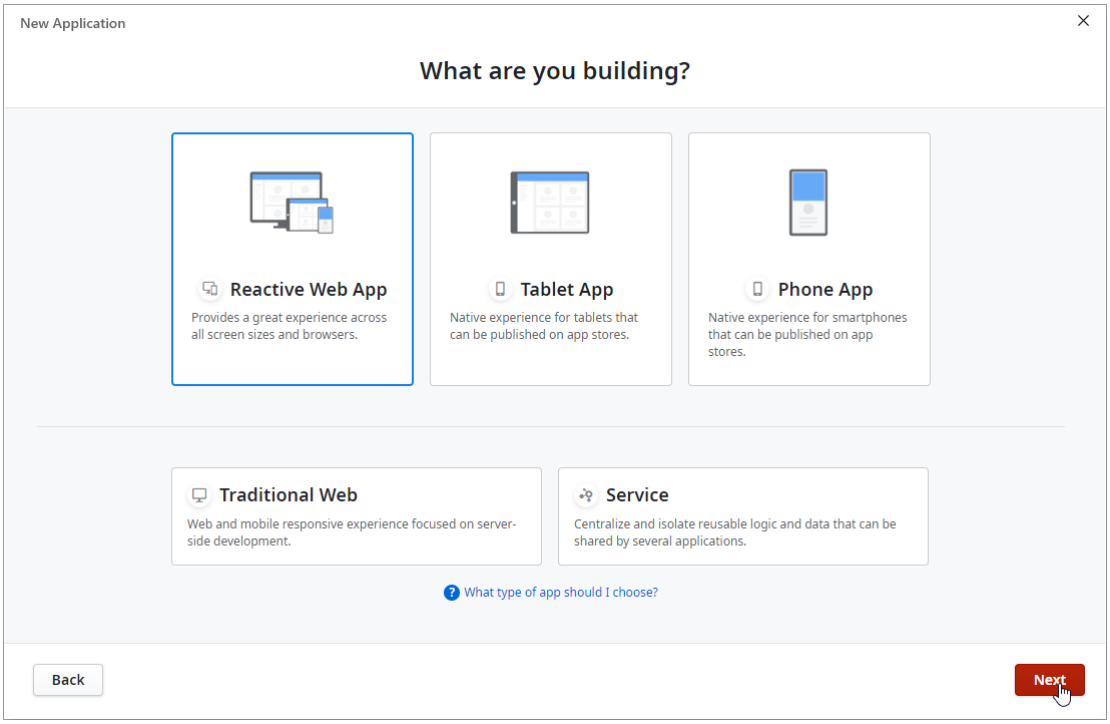
In this section, you will show you how to do this exercise, with a thorough step-by-step description. **If you already finished the exercise on your own, great! You don't need to do it again**. If you didn't finish the exercise, that's fine! We are here to help you.

Create a Reactive Web App

1) Click the **New Application** icon.

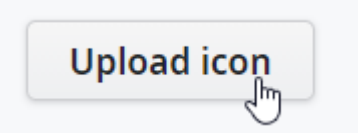


2) Select **Reactive Web App** as the application type.

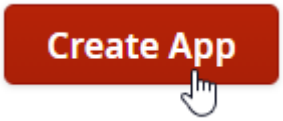


3) Set the application name to *Data Modeling Exercise*

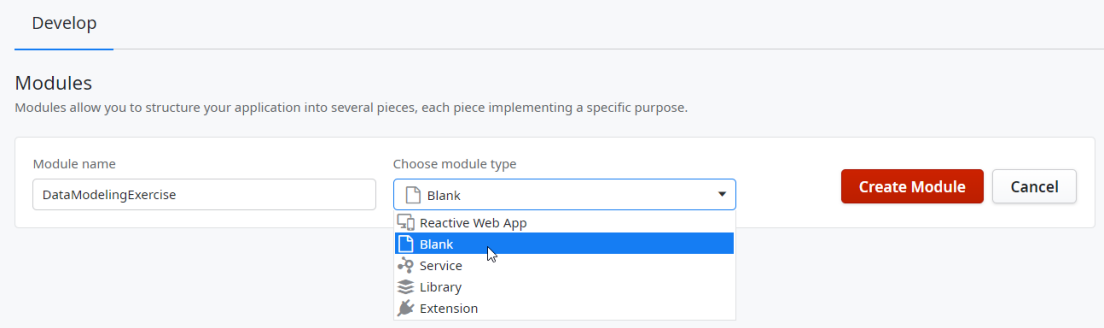
4) Click the **Upload Icon** and then select the *Data-Modeling-Exercise-Icon.png* icon from the Resources folder.



5) Click the **Create App** button



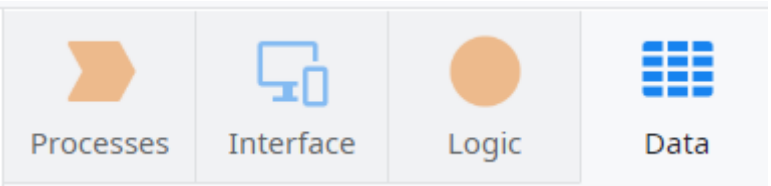
6) Select **Blank** as module type, then click the **Create Module** button



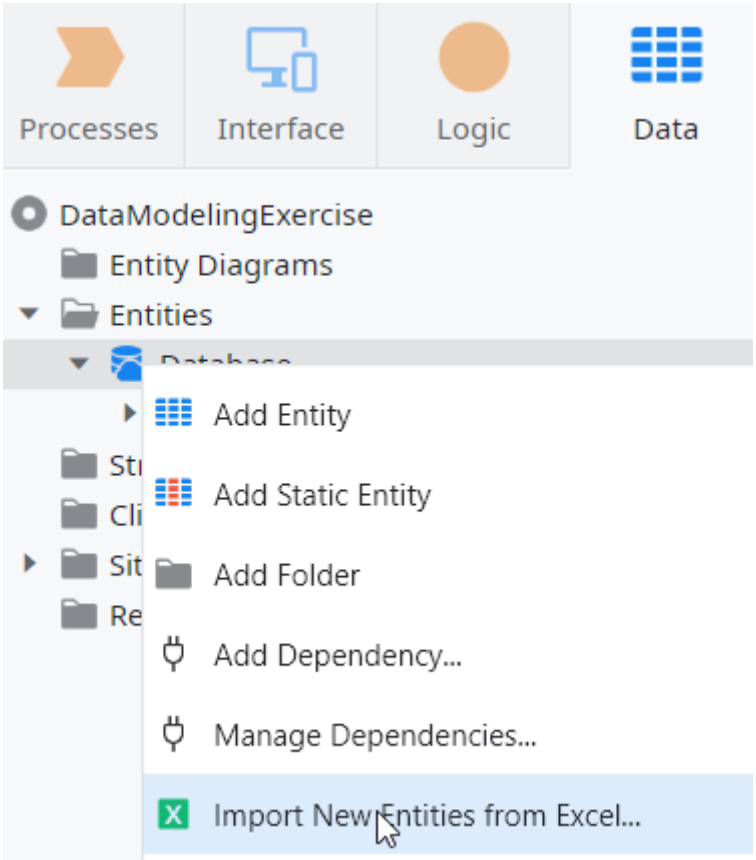
Bootstrap an Entity and its Data from Excel

In this section, you will create our first Entity automatically from the Excel file Departments.xlsx.

1) Switch to the Data tab

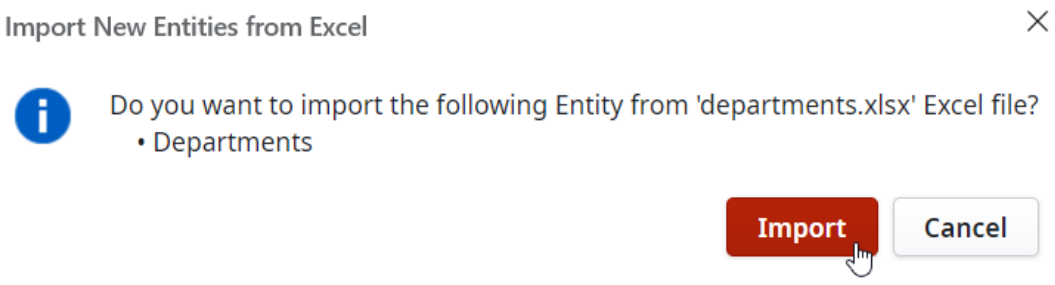


2) Right-click the Database element, then select **Import Entities from Excel...**



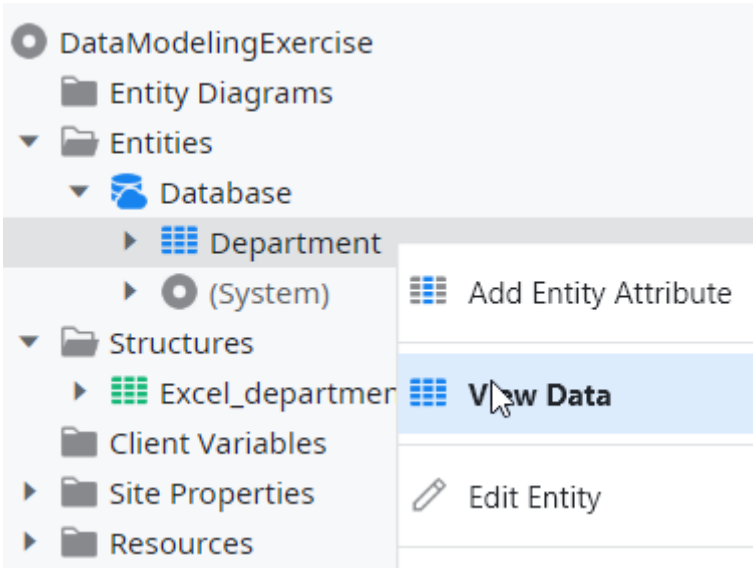
3) Locate the Department.xlsx file from the exercise Resources, and open it.

4) Click **Import** to create the Entity and the bootstrap logic (Timer)

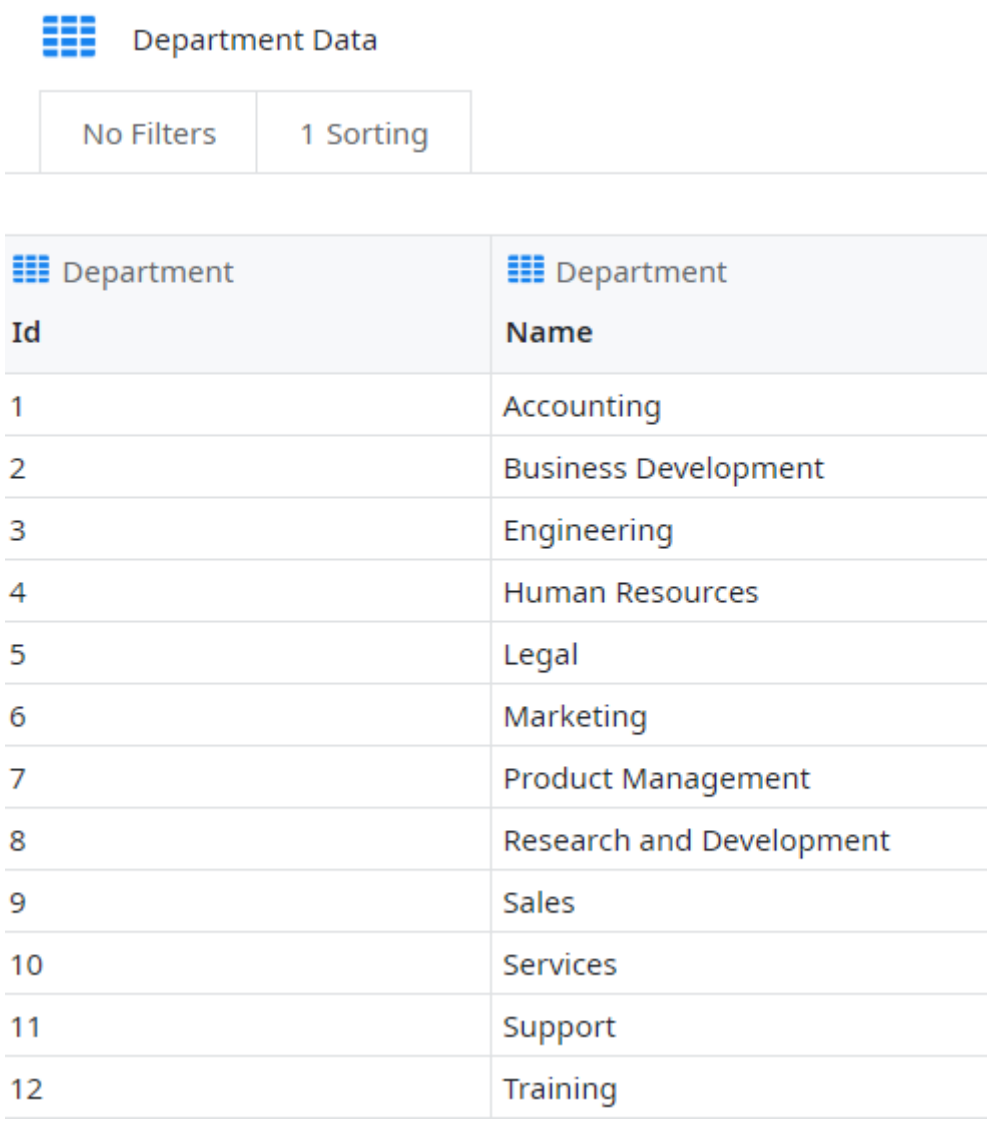


5) Publish the module to save the changes to the server

6) Right-click the **Department** entity and choose **View Data**



7) The loaded data should be displayed:

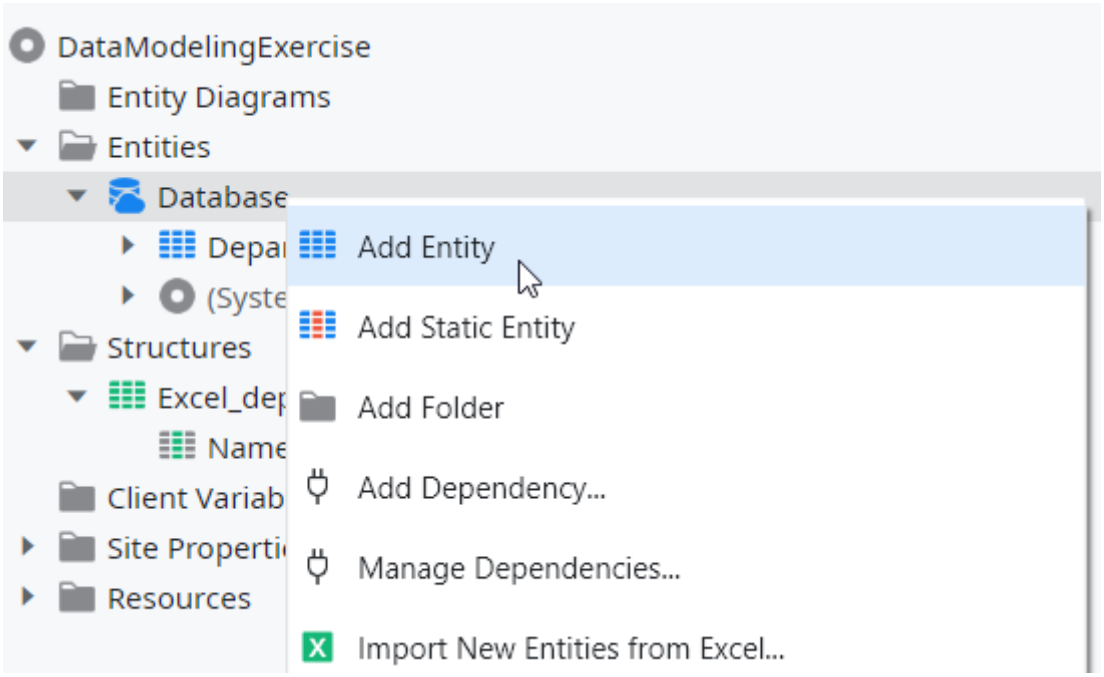


Department Id	Department Name
1	Accounting
2	Business Development
3	Engineering
4	Human Resources
5	Legal
6	Marketing
7	Product Management
8	Research and Development
9	Sales
10	Services
11	Support
12	Training

Create an Entity

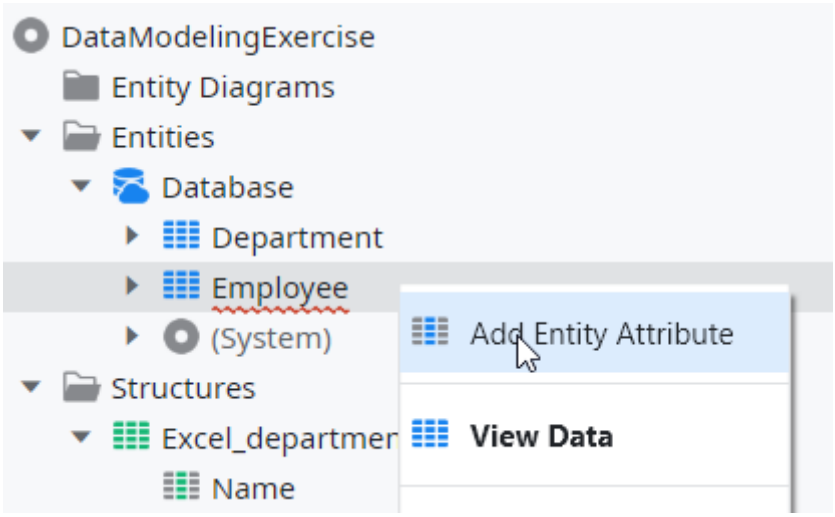
In this section, you will create the Employee Entity, and all its attributes, manually.

1) In the Data tab, right-click the **Database** element, then select **Add Entity**.

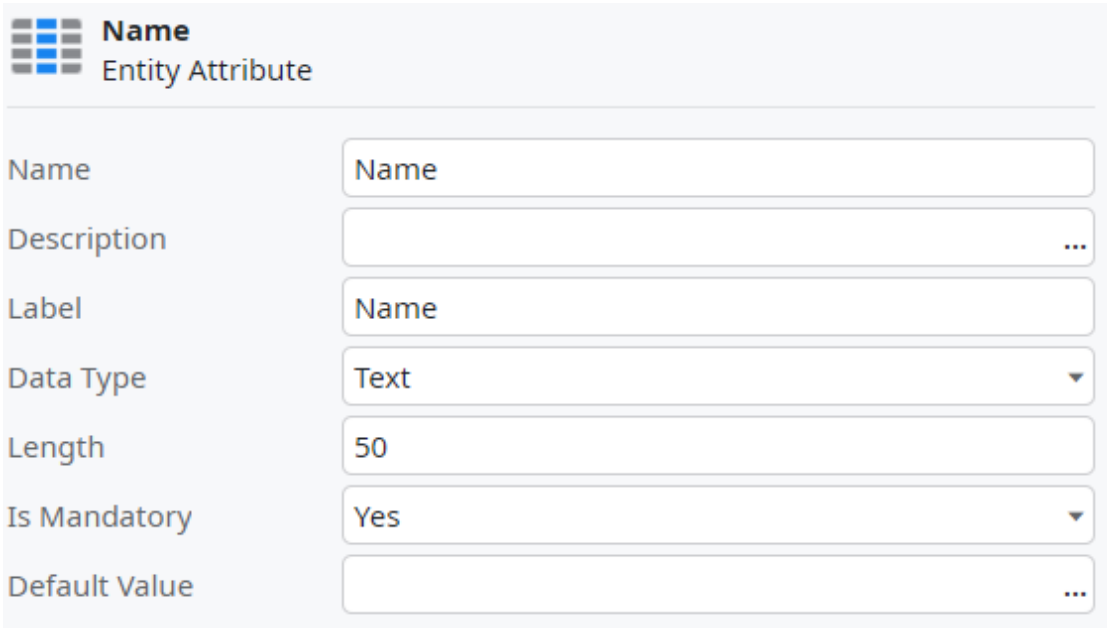


2) Set the Entity **Name** to *Employee*.

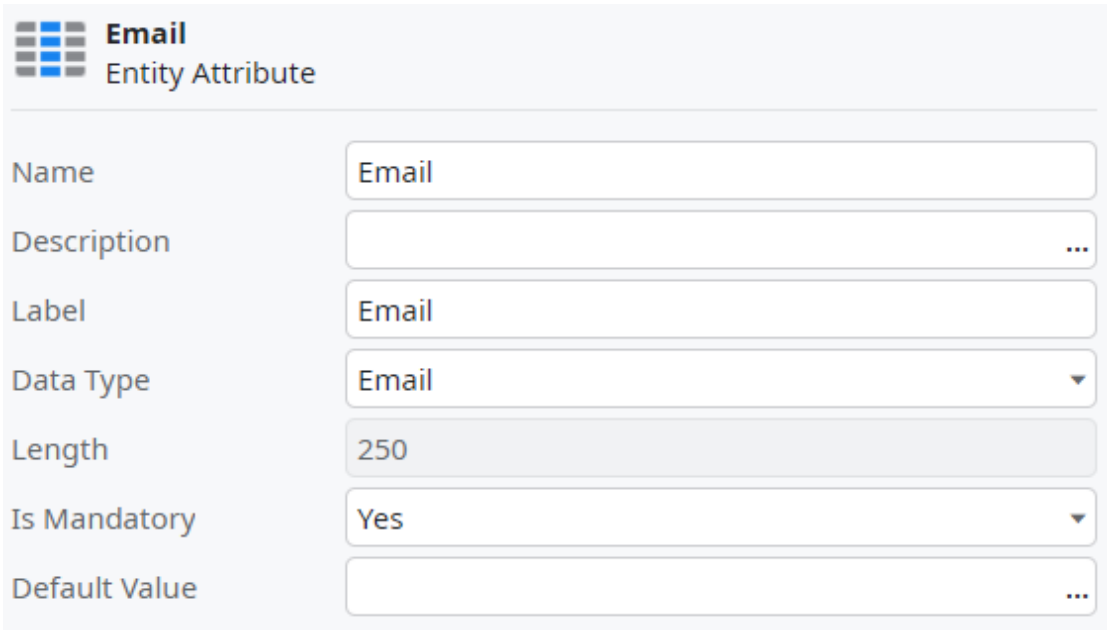
3) Right-click the Employee entity, and select **Add Entity Attribute**.



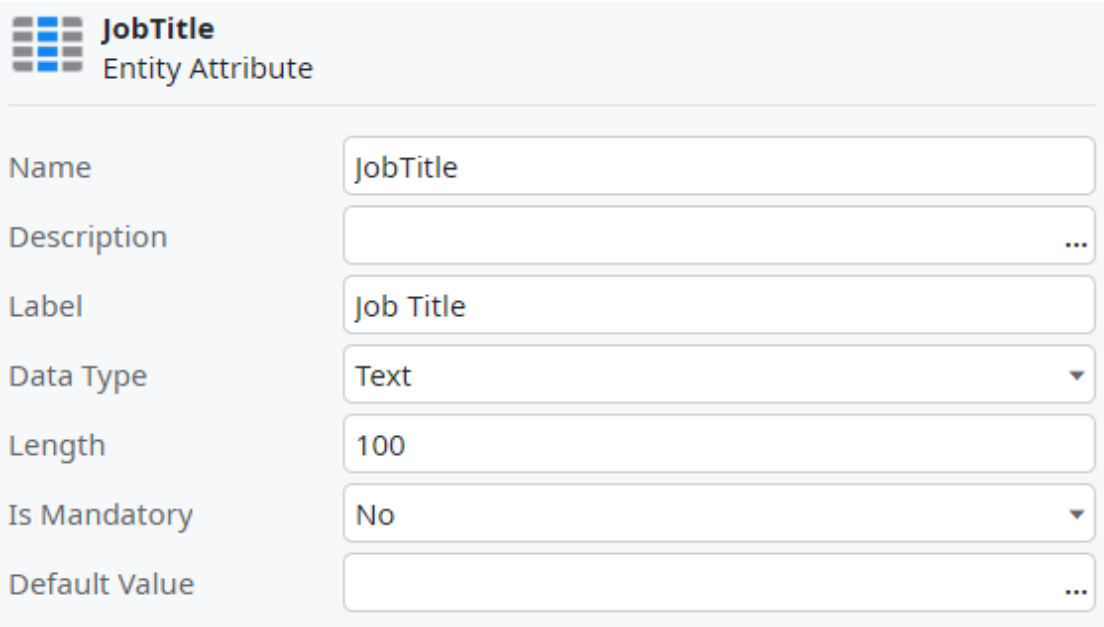
4) Set the new attribute **Name** to *Name*, and set it as mandatory.



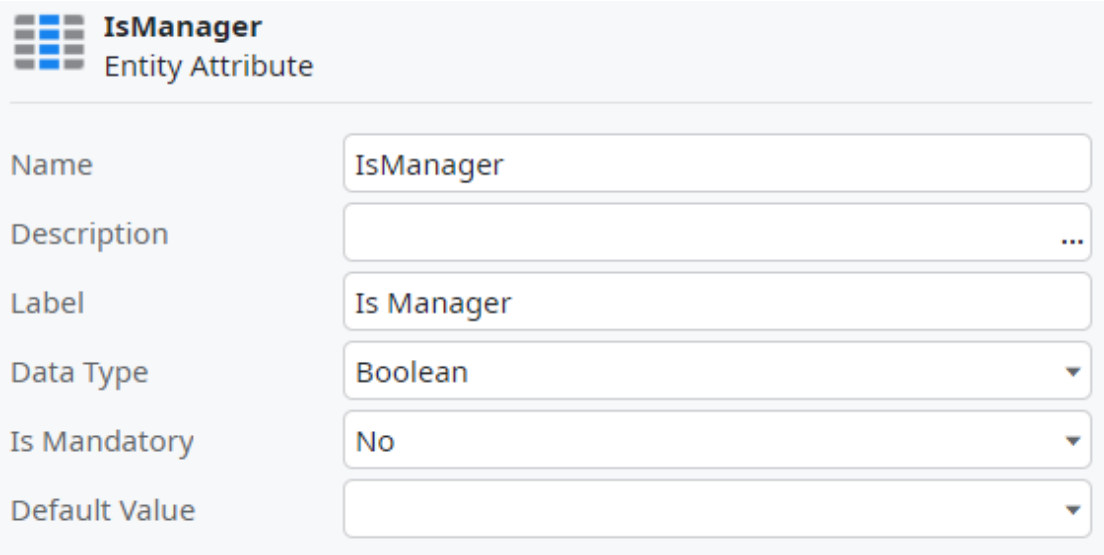
5) Add another attribute named *Email*, and set it as mandatory.



6) Add another attribute named *JobTitle* with a **Length** of *100*.



7) Add another attribute named *IsManager* with *Boolean* Data Type.

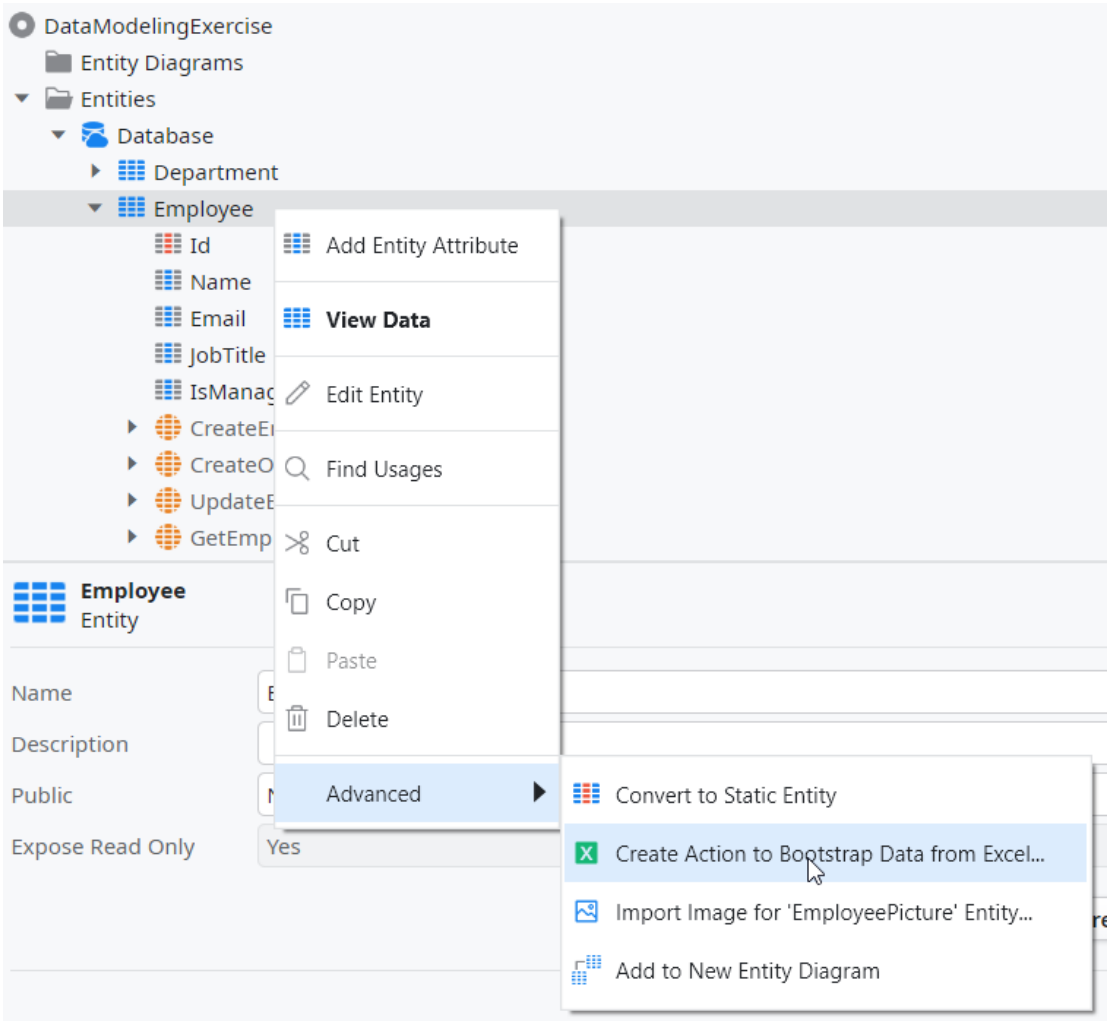


8) Publish the module.

Bootstrap Data into an Entity from Excel

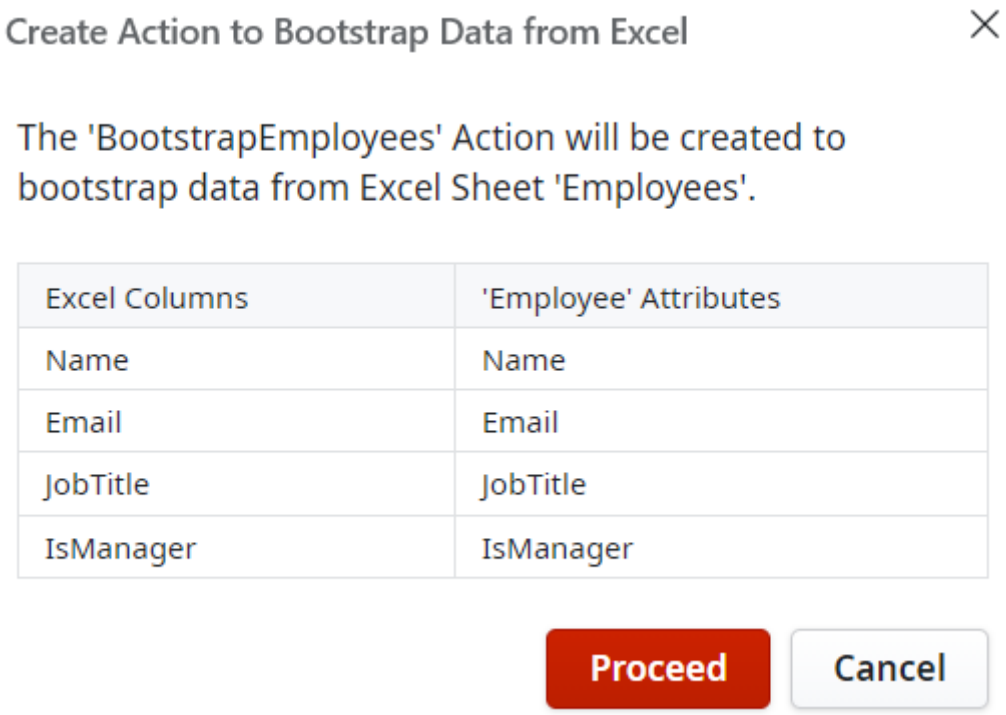
Finally, you have the Entity created, but with no data. Let's use the Employees.xlsx file to bootstrap some data to the Employee Entity.

1) Right-click the Employee Entity, then select **Advanced > Create Action to Bootstrap Data from Excel...**



2) Locate the **Employee.xlsx** file and open it.

3) Validate that the four entity attributes were mapped to the four columns in the Excel file

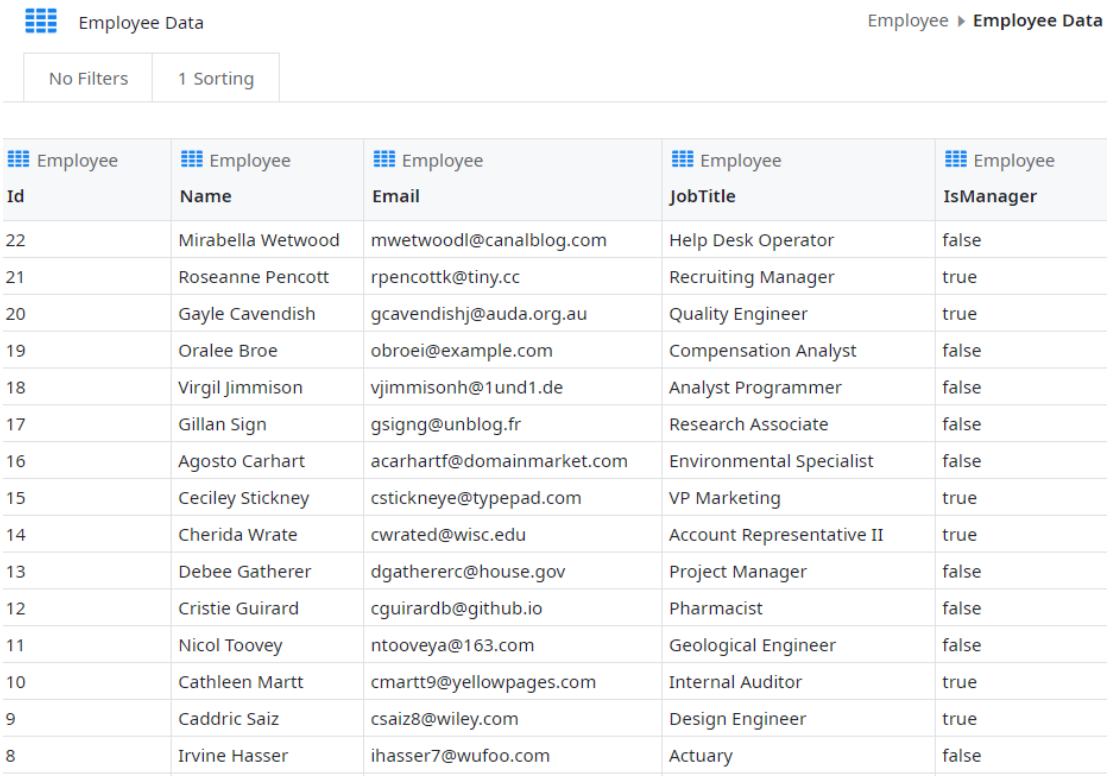


4) Click **Proceed**.

5) Publish the module.

6) Right-click the **Employee** entity then select **View Data**.

7) The data from the Excel file should appear on the data previewer.



Employee Data

Employee ▸ **Employee Data**

No Filters | 1 Sorting

Employee Id	Employee Name	Employee Email	Employee JobTitle	Employee IsManager
22	Mirabella Wetwood	mwetwoodl@canalblog.com	Help Desk Operator	false
21	Roseanne Pencott	rpencottk@tiny.cc	Recruiting Manager	true
20	Gayle Cavendish	gcavendishj@auda.org.au	Quality Engineer	true
19	Oralee Broe	obroei@example.com	Compensation Analyst	false
18	Virgil Jimmison	vjimmisonh@1und1.de	Analyst Programmer	false
17	Gillan Sign	gsignng@unblog.fr	Research Associate	false
16	Agosto Carhart	acarhartf@domainmarket.com	Environmental Specialist	false
15	Ceciley Stickney	cstickneye@typepad.com	VP Marketing	true
14	Cherida Wrate	cwrated@wisc.edu	Account Representative II	true
13	Debee Gatherer	dgathererc@house.gov	Project Manager	false
12	Cristie Guirard	cguirardb@github.io	Pharmacist	false
11	Nicol Toovey	ntooveya@163.com	Geological Engineer	false
10	Cathleen Martt	cmartt9@yellowpages.com	Internal Auditor	true
9	Caddric Saiz	csaiz8@wiley.com	Design Engineer	true
8	Irvine Hasser	ihasser7@wufoo.com	Actuary	false