

Create an Entity Exercise

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Create an Entity Exercise

In this exercise, you will focus on creating additional Entities to the **Employee Directory** app in OutSystems. To do so, you will perform the following actions:

- Create two Entities and its attributes
- Bootstrap data into the newly created Entities
- Create an Entity diagram for the Employee Directory data model

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

Resources

You will need the following two Excel files to complete this exercise.

- [Project.xlsx](#)
- [Department.xlsx](#)

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.

Scenario

In this exercise, you will start from the existing **Employee Directory** app, which has one module. Inside that module, you have the Employee Entity with data that was bootstrapped from Excel file in the previous exercise.

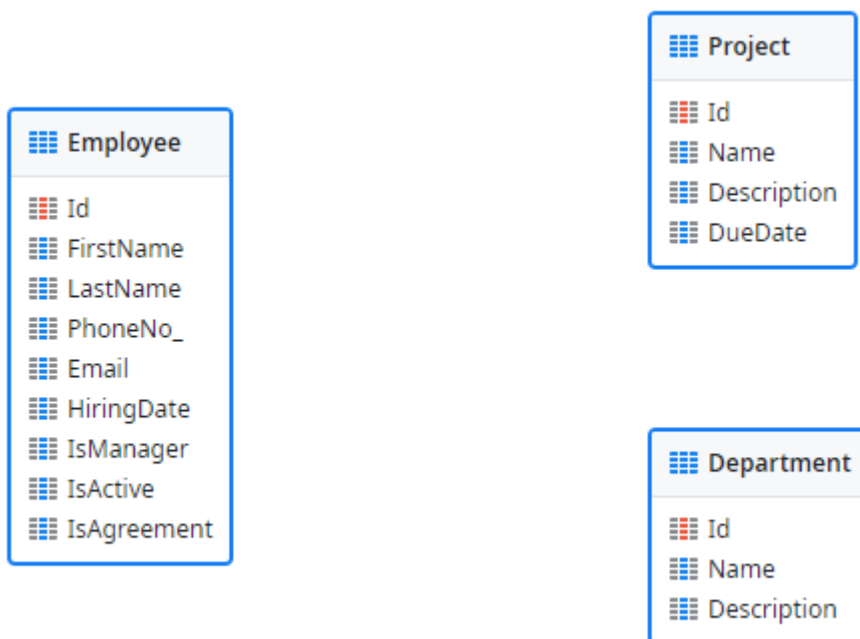
Starting from this application, in this exercise, you will create two additional Entities: **Project** and **Department**.

The first Entity (Project) will be created manually with the following attributes:

- Id (default)
- Name (mandatory)
- Description (mandatory, data type *Description*, length of 500 characters)
- DueDate (mandatory and data type *Date*)

The second Entity (Department) will be created manually with the following attributes:

- Id (default)
- Name (mandatory)
- Description (mandatory, data type *Description*, length of 500 characters)



After creating the Entities, its data from the [Project.xlsx](#) and [Department.xlsx](#) files will be bootstrapped, using the **Bootstrap Data from Excel** action.

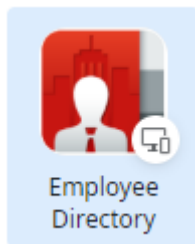
How-To

In this section, we 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.

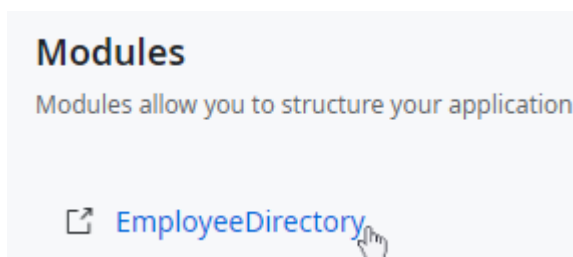
Getting Started

To start with this exercise, we need to open the Employee Directory App. Before proceeding, you must have Service Studio opened and connected to an OutSystems Environment (e.g. Personal Environment).

- 1) In the main window of Service Studio, click **Employee Directory** to open it.

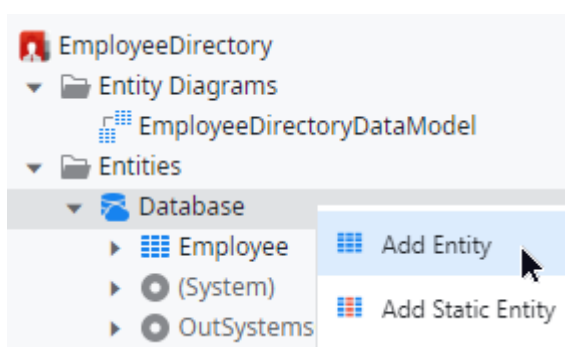


- 2) The application has only one module, open it!

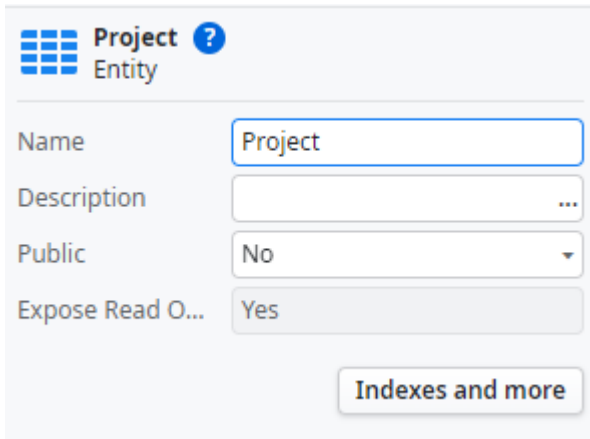


Creating Entities

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

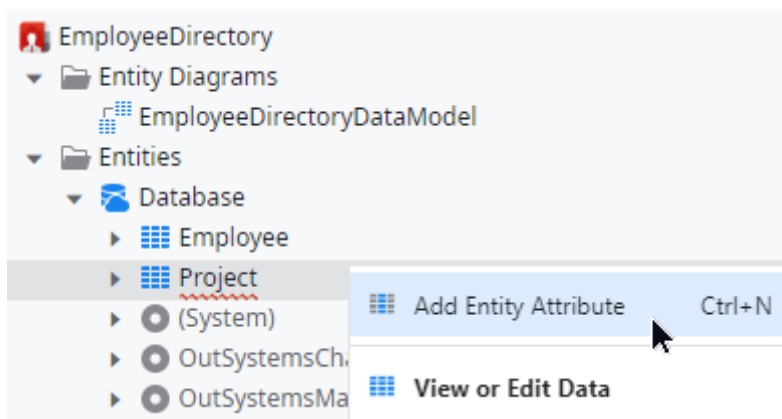


- 2) Set the Entity **Name** to *Project* in the properties window.

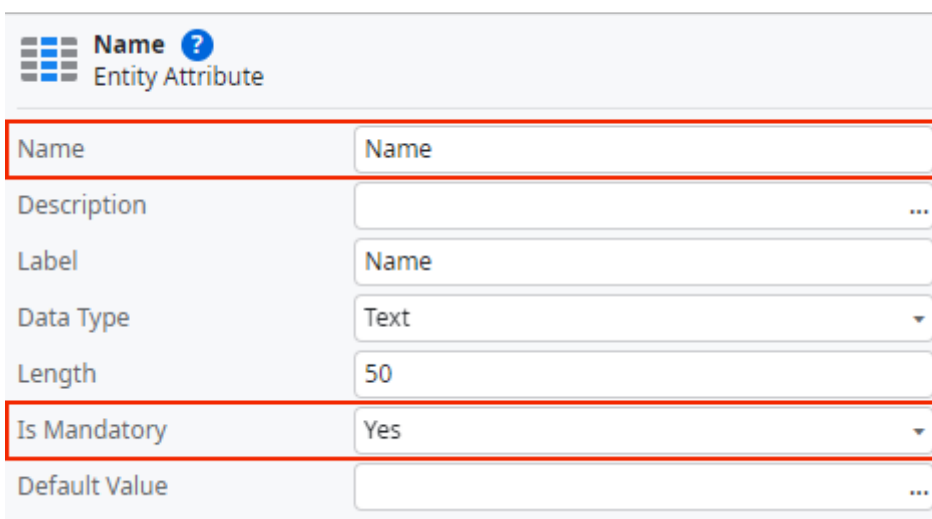


The screenshot shows the 'Project' Entity properties window. The 'Name' field is set to 'Project'. The 'Description' field is empty. The 'Public' dropdown is set to 'No'. The 'Expose Read O...' field is set to 'Yes'. There is a button labeled 'Indexes and more' at the bottom.

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



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



The screenshot shows the 'Name' Entity Attribute properties window. The 'Name' field is set to 'Name'. The 'Description' field is empty. The 'Label' field is set to 'Name'. The 'Data Type' dropdown is set to 'Text'. The 'Length' field is set to '50'. The 'Is Mandatory' dropdown is set to 'Yes'. The 'Default Value' field is empty.

- 5) Add another attribute named *Description* with a **Length** of 500 and set it as mandatory.

Description ? Entity Attribute	
Name	Description
Description	...
Label	Description
Data Type	Text
Length	500
Is Mandatory	Yes
Default Value	...

- 6) Add another attribute named *DueDate*, and set it as mandatory.

DueDate ? Entity Attribute	
Name	DueDate
Description	...
Label	Due Date
Data Type	Date
Is Mandatory	Yes
Default Value	...

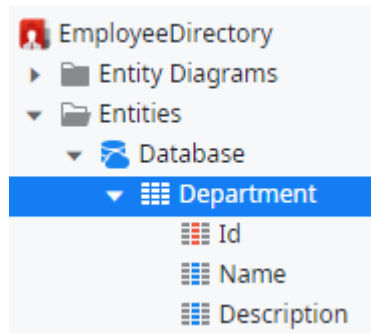
- 7) Publish the module.



- 8) Similarly, create another Entity and set the Entity **Name** to *Department*.
- 9) Add the following attributes to the Department Entity.

- Name (mandatory)

- Description (data type *Text*, length of 500 characters, and not mandatory)

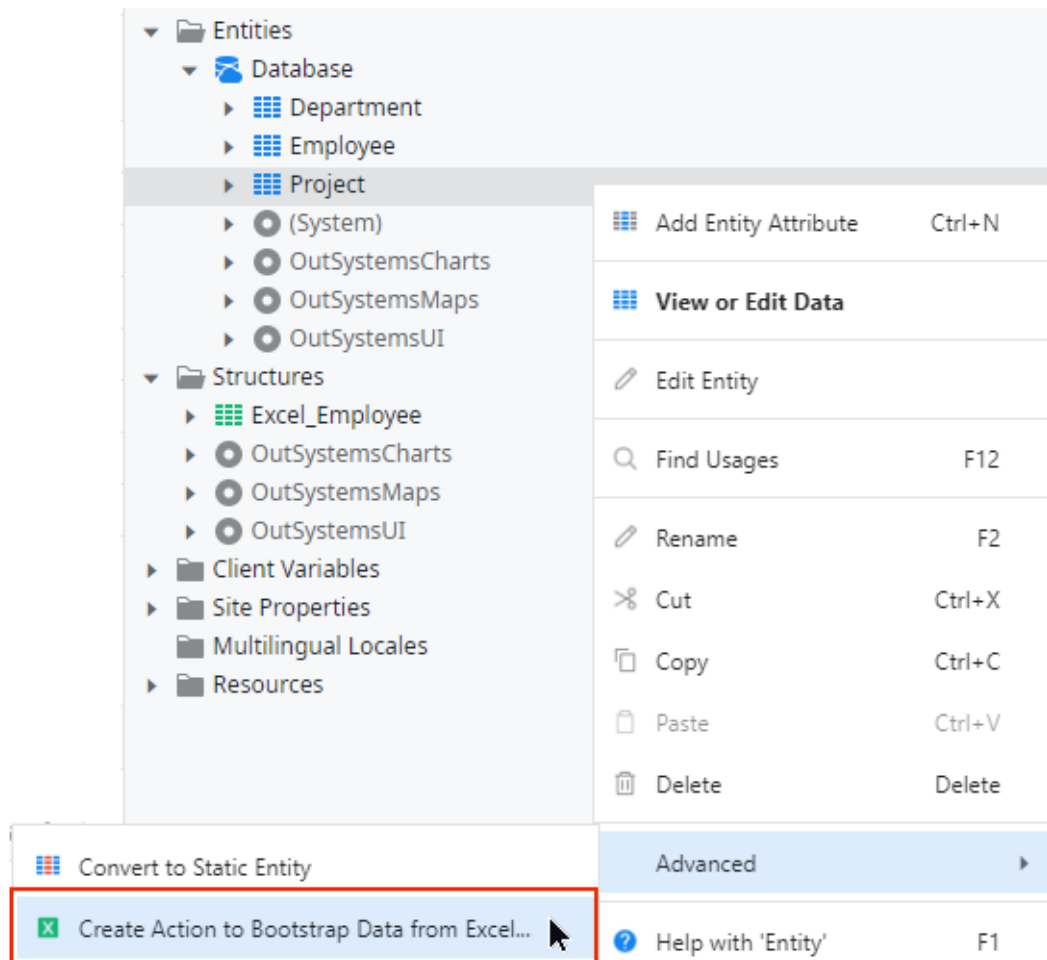


10) Publish the module to save the changes.

Bootstrap Data into an Entity from Excel

Although you have the Entities created, they have no data. Let's use the [Project.xlsx](#) and [Department.xlsx](#) files to bootstrap some data to the Project and Department Entities, respectively.

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



- 2) Locate the [Project.xlsx](#) file and open it.

- 3) Validate that the three Entity attributes are mapped to the three columns in the Excel file, then click **Proceed**.

Create Action to Bootstrap Data from...

×

The 'BootstrapProjects' Action will be created to bootstrap data from Excel Sheet 'Project'.

Excel Columns	'Project' Attributes
Name	Name
Description	Description
Due Date	Not included in the bootstrap action

Proceed

Cancel

- 4) Publish the module.



- 5) Right-click the **Project** Entity then select **View or Edit Data**.

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

Project Data				Project • Project Data
No Filters 1 Sorting				
Project Id	Project Name	Project Description	Project DueDate	
7	Task Manager	Web application for customers to manage their tasks. This application will allow people to submit tasks, set priorities and manage the teams working on those tasks.	2020-12-01	
6	Expenses	Web application to allow internal employees and subcontractors to submit their expenses and the managers to approve / reject them.	2020-10-31	
5	Travel Portal	Web application for managing travel requests.	2020-05-31	
4	Secret Mobile B2C	Top secret B2C mobile application. This project is need to know basis.	2021-02-28	
3	Directory	Internal web application to manage all the employees, including their department, birthdays and benefits.	2020-10-31	
2	Sales	Internale web application to manage the sale of the products and services	2023-12-12	
1	Vacation	Internal app to indicate vacations on the calendar	2024-03-12	

- 6) Similarly, bootstrap the data from the [Department.xlsx](#) file to the **Department** Entity.
- 7) Publish the module.
- 8) Right-click the **Department** Entity then select **View or Edit Data**.

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

Department Data

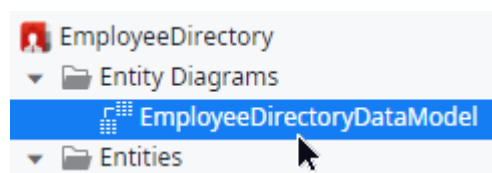
Department » Department Data

No Filters 1 Sorting

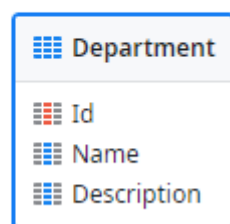
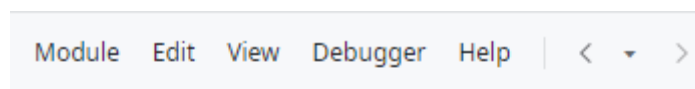
Department Id	Department Name	Department Description
11	Support Training	Identifies, investigates, and resolves users problems with computer software and hardware.
10	Services	a cost center that provides services to the rest of a company.
9	Sales	Responsible for selling products or services for a company.
8	Research and Development	Research and development (R&D) is when businesses gather knowledge to create new products or discover new ways to improve their existing products and services.
7	Product Management	Encompasses a broad set of ongoing strategic responsibilities.
6	Marketing	A division within a business that helps to promote its brand, products, and services.
5	Legal	Responsible for keeping that company's operations compliant with all the relevant laws and regulations. It is made up of lawyers and legal experts and is considered to be the comp
4	Human Resources	A group that is responsible for managing the employee life cycle (i.e., recruiting, hiring, onboarding, training, and firing employees) and administering employee benefits.
3	Engineering	In charge of developing innovative devices to bring advanced materials into the world and designing, introducing, preserving, and improving plants for stable and efficient producti
2	Business Development	Strives to increase an organization's capabilities and reach in pursuit of its financial and other goals.
1	Accounting	Deals with the entire aspect of accounting, from financial statements preparations, accountant ledger maintenance, payroll to billing and customer payments, etc.

Create Entity Diagram

- 1) In the Data tab, under **Entity Diagrams**, double-click the **EmployeeDirectoryDataModel** to open it.



- 2) Drag the **Department** Entity to the previewer.



3) Similarly, drag the **Employee** and the **Project** Entities to the previewer.

Employee
Id
FirstName
LastName
PhoneNo_
Email
HiringDate
IsManager
IsActive
IsAgreement

Project
Id
Name
Description
DueDate

Department
Id
Name
Description

4) Publish the module to save the changes.



Congratulations! with this, you've effectively performed the following tasks.

- Create two Entities and its attributes
- Bootstrap data into the newly created Entities
- Create an Entity diagram for the Employee Directory data model