Aggregates 101 Exercise

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Outline

In this exercise, we will focus on creating a few Aggregates. These aggregates will answer the following questions:

- Are there any Employees without Email?
- How many Departments exist that start with the letter "T"?
- What is the Name of the **first** Employee when sorted alphabetically?
    - And, what is the name of the **last** employee?

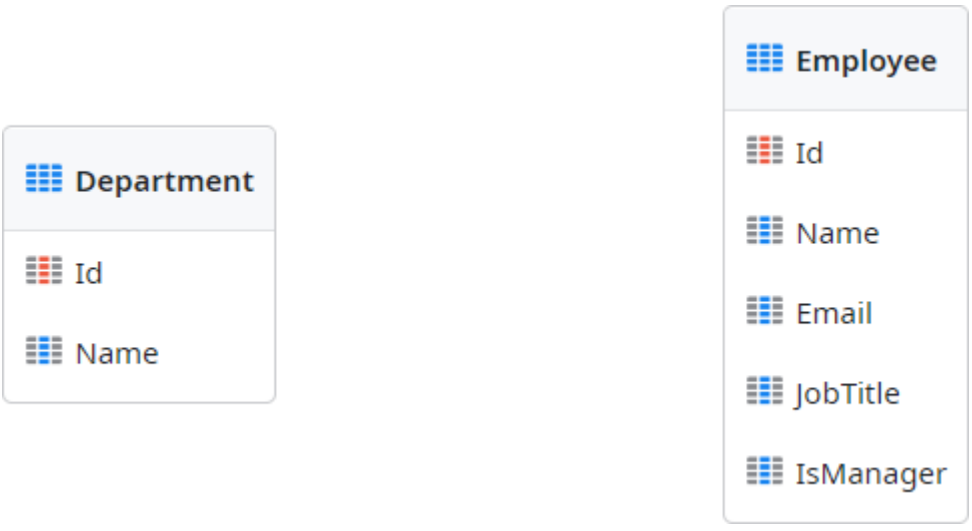
Upon completion, we'll have created a few aggregates that will be capable of answering questions that could be needed in an application.

Resources

This exercise has a Quickstart application already created. This application has everything needed to start the exercise. This quickstart application can be found in the Resources folder of this exercise, with the name **Aggregates 101 Exercise.oap**.

Scenario

In this exercise, we'll start from an existing application with one module. Inside that module, we have two Entities, both of them populated with some data.



Besides the logic to import the data, the module also has a Server Action created, called **Aggregates101Exercise**. This Action will be used to create the Aggregates that answer the questions above.

To recap, we'll create an Aggregate to answer each one of the following questions:

- Are there any Employees without Email?
- How many Departments exist that start with the letter “T”?
- What is the Name of the **first** Employee when sorted alphabetically?
    - And, what is the name of the **last** employee?

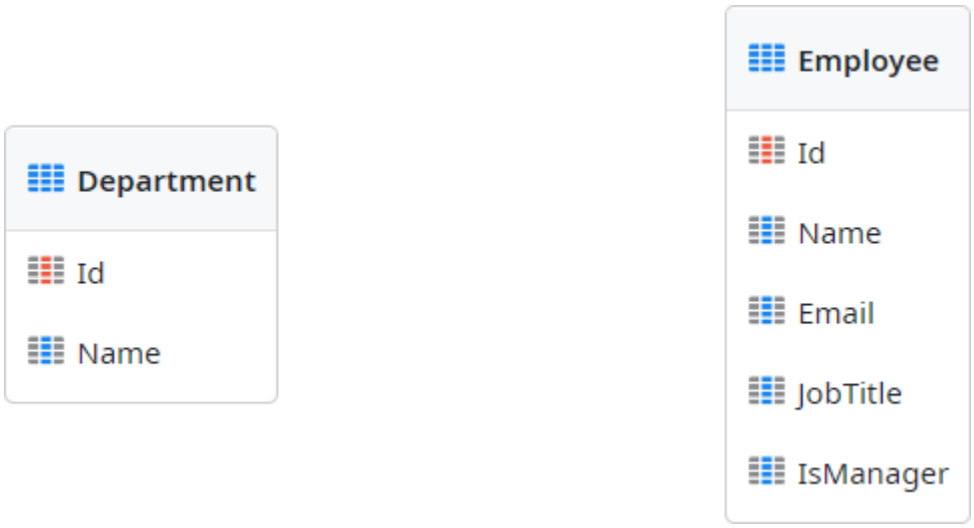
Note that this is exercise is all about Aggregates, and no user interface exists yet. Therefore, the exercise will rely on the live preview of data for Aggregates in Service Studio.

How-To

In this section, we'll 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.

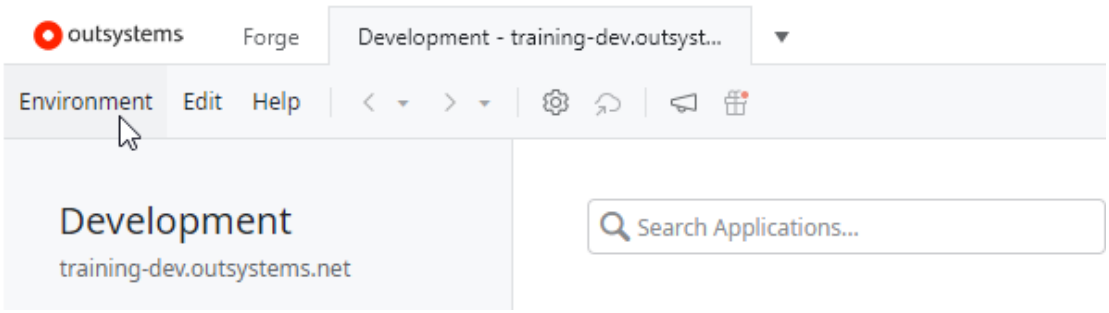
Getting Started

To start this exercise, we need to install the Quickstart file, which has the application already created, with the two Entities: Department and Employee.

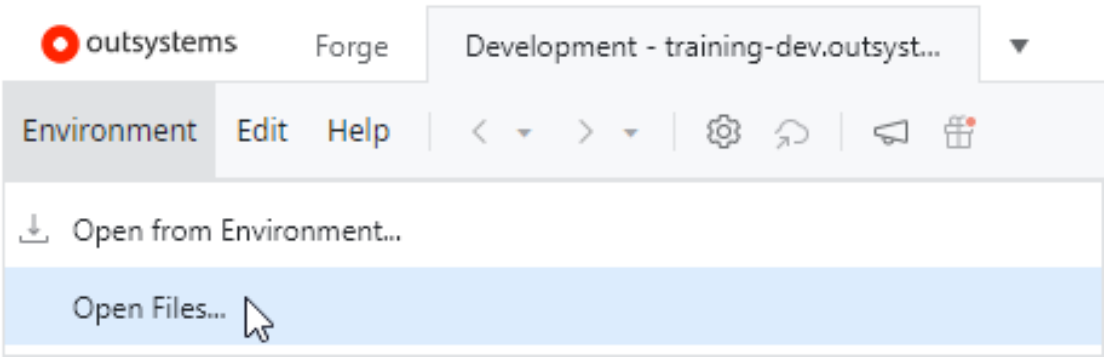


Before we start, we need to install the Quickstart application in our development environment. You'll need to have Service Studio open and connected to an OutSystems Environment (e.g. Personal Environment).

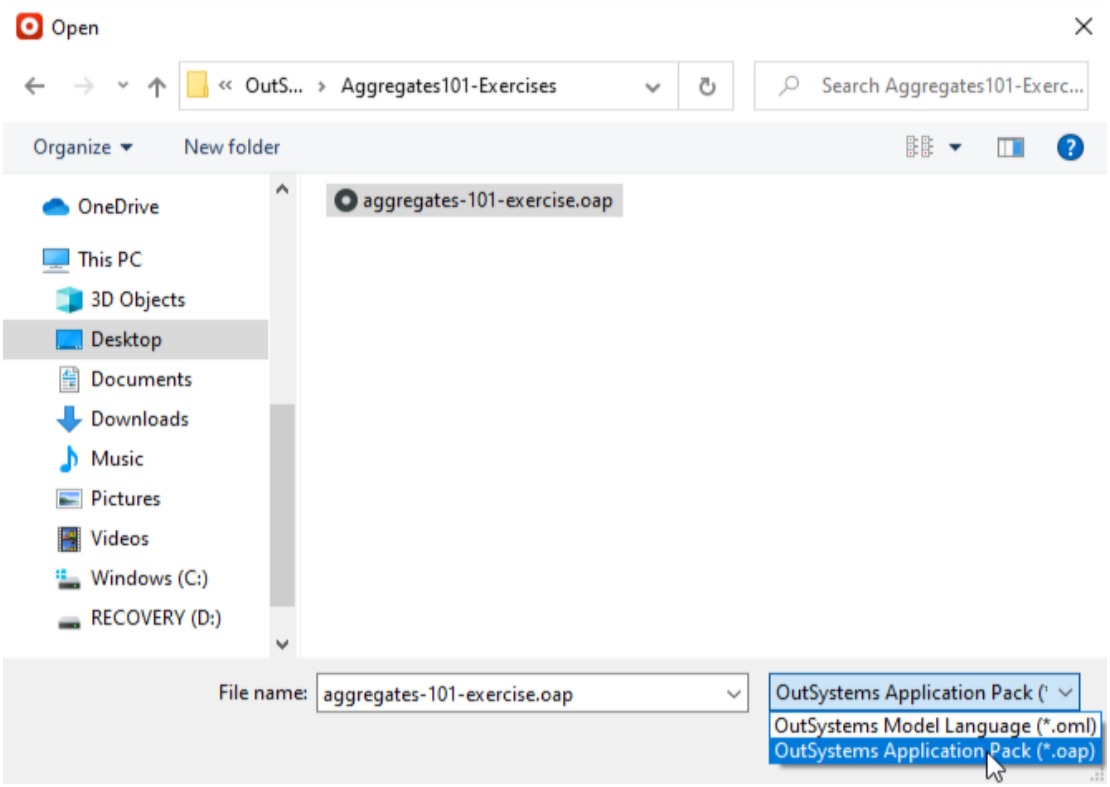
1) In Service Studio's main window, select the **Environment** menu on the top left.



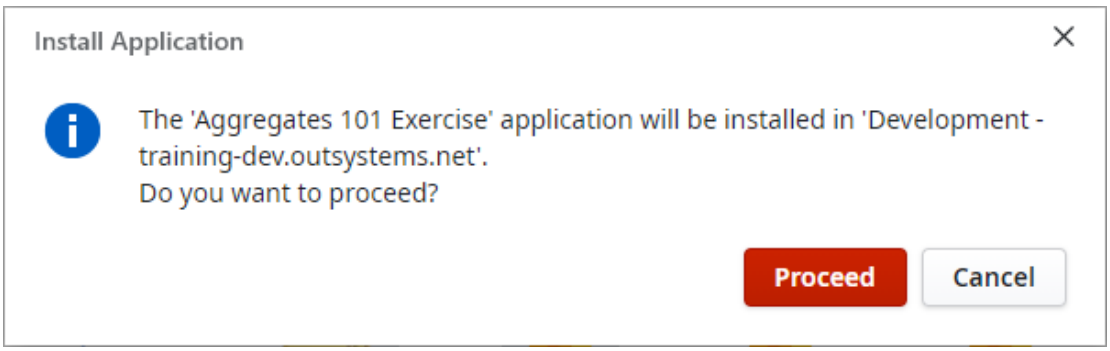
2) Select **Open Files...**



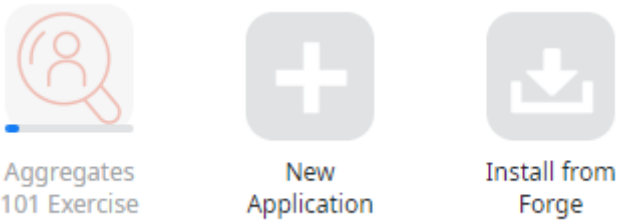
3) In the following dialog, change the file type to OutSystems Application Pack (.oap), find the location of the Quickstart, and open the file named **Aggregates 101 Exercise.oap**



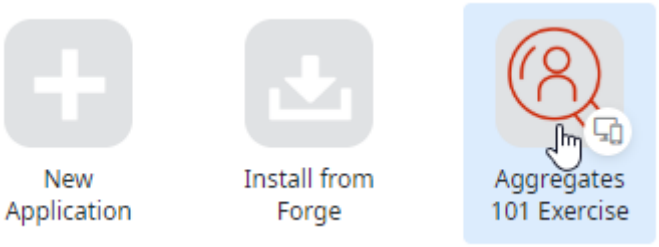
4) In the new confirmation dialog, select **Proceed**



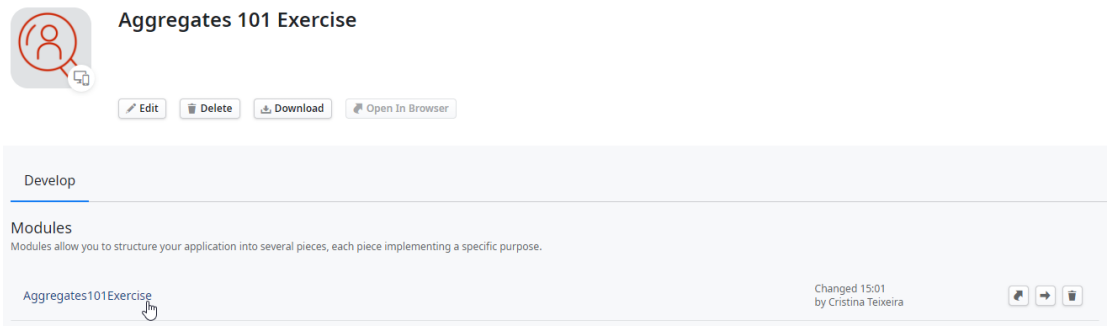
5) The application will begin installing automatically. When it's finished, we're ready to start!



6) Open the application in Service Studio.



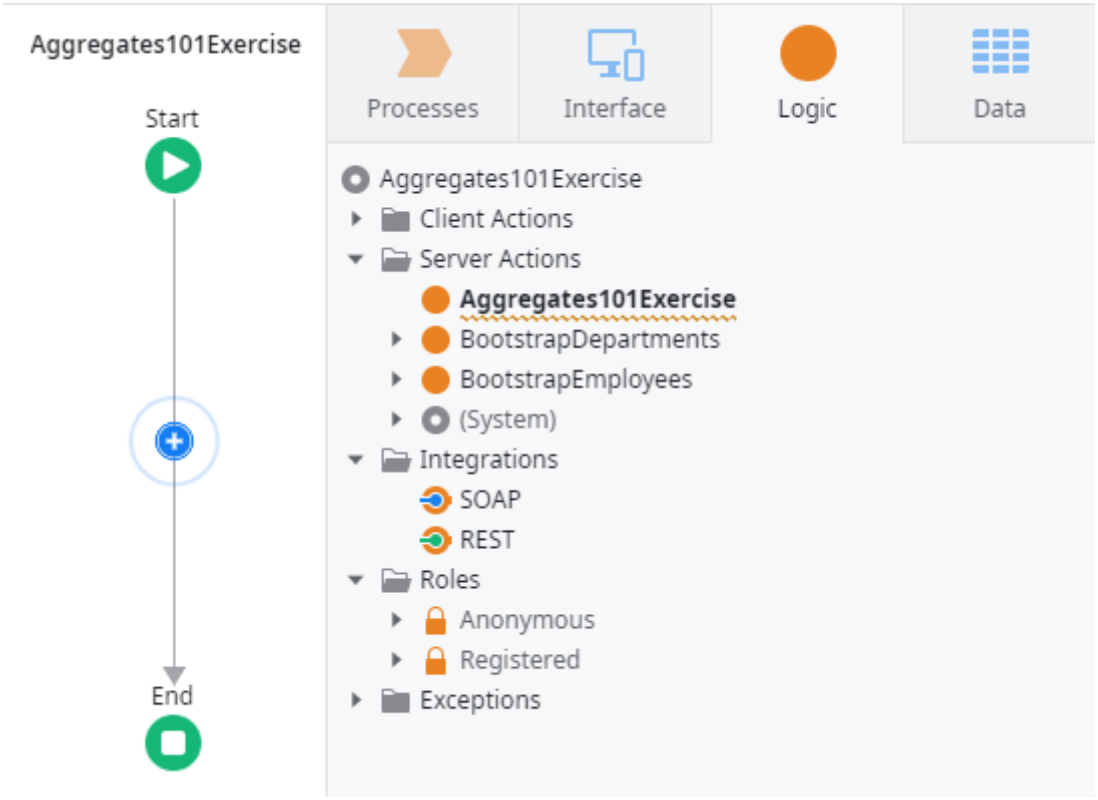
7) The application has only one module. Let's open it!



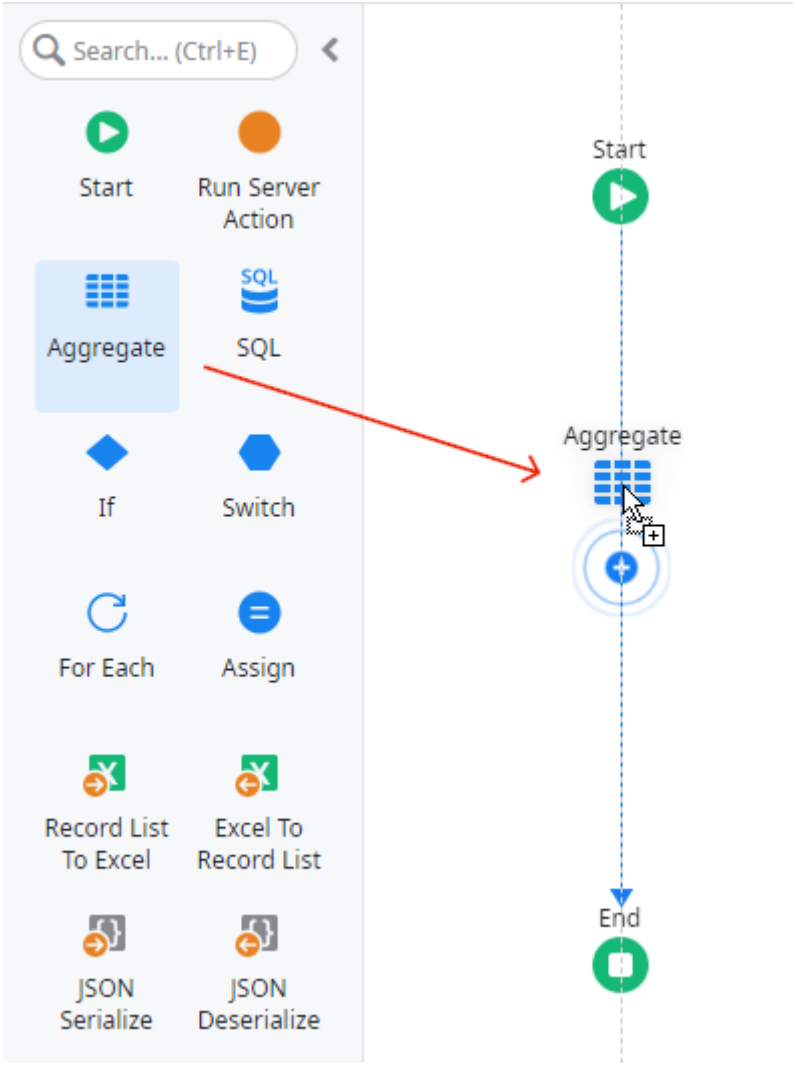
Are there any Employees without Email?

In this section, we'll answer the first question: *Are there any Employees without an Email address?*

1) The module already has the **Aggregates101Exercise** Server Action created.

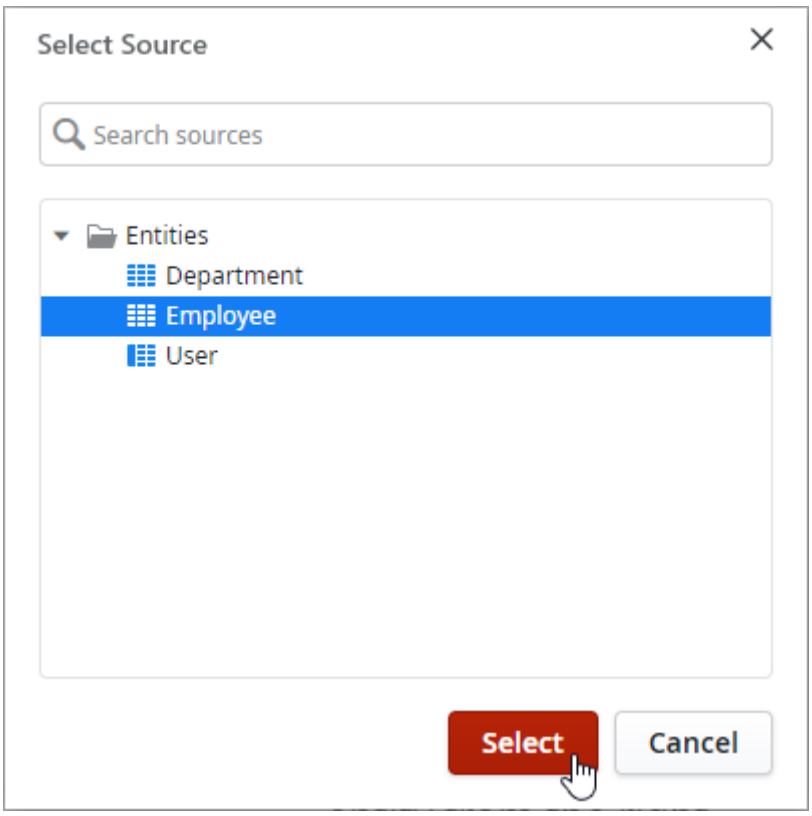


2) From the toolbox on the left, drag an **Aggregate** and drop it in the flow, between the Start and End.

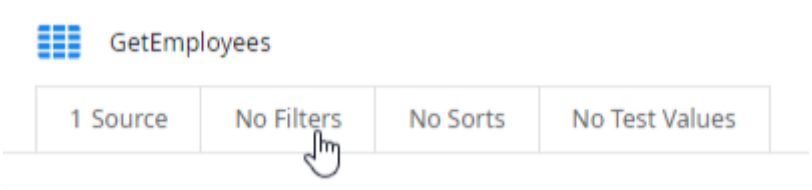


3) Double-click the Aggregate to open it.

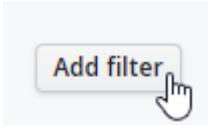
4) Click the Aggregate editor, and then select the **Employee** entity.



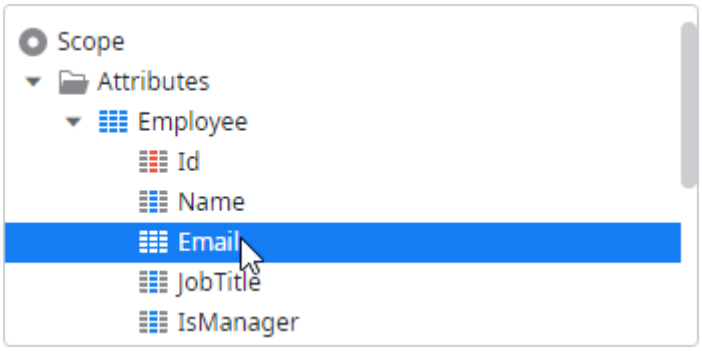
5) Open the **Filters** tab of the Aggregate.



6) Click the **Add Filter** button.



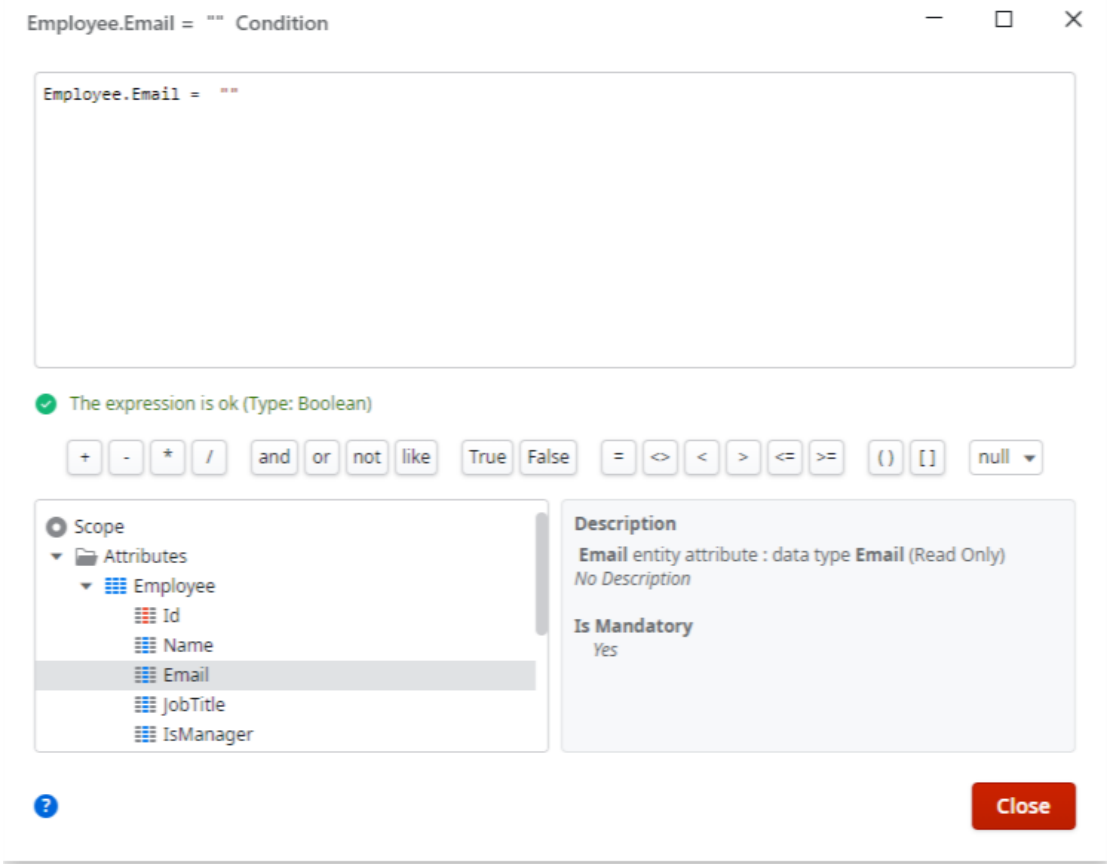
7) Inside the Expression Editor, expand the Employee entity on the lower left, then double-click the **Email** attribute.



8) Complete the Expression by typing the following:

```
= ""
```

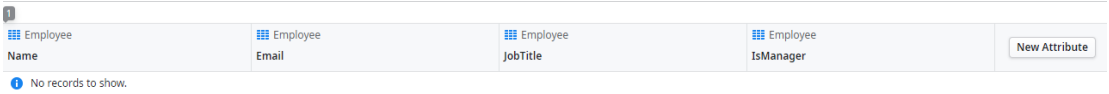
9) The Expression Editor should look like this:



10) Click **Done** to close the Editor.

11) Change the Aggregate name from GetEmployees to *GetEmployeesWithoutEmail*

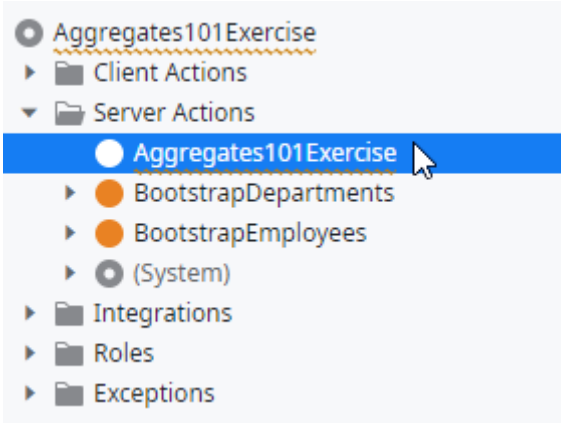
12) The aggregate preview data should be empty and the *No records to show.* message should be displayed.



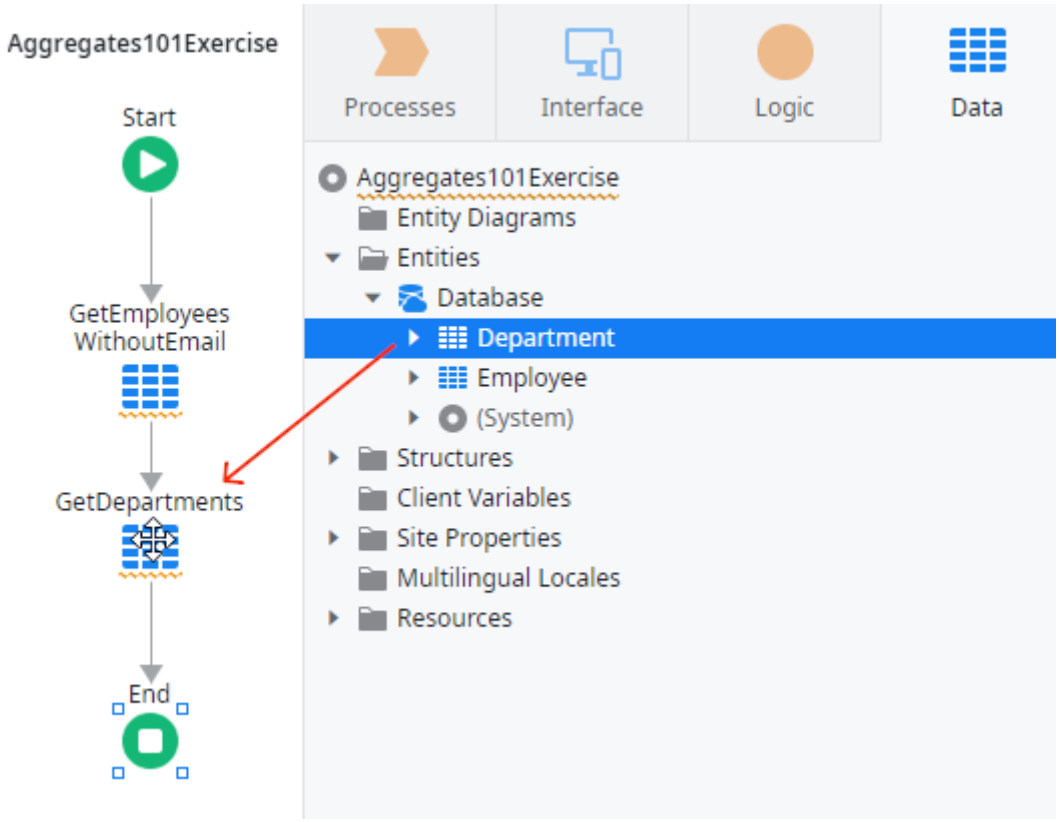
How many Departments exist that start with the letter "T"?

In this section, we'll answer our second question: *How many Departments start with the letter "T"?*

1) Return to the **Aggregates101Exercise** Server Action, by double-clicking it on the elements tree.



2) From the Data tab, drag the **Department** Entity and drop it between the existing Aggregate and the End.

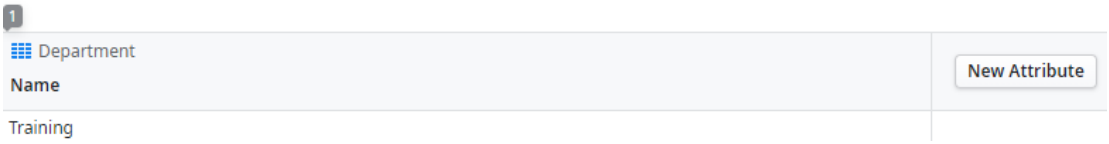


3) Double-click the **GetDepartments** aggregate to open it.

4) Open the filters tab, and create the following Filter:

```
Department.Name like "T%"
```

5) The Aggregate's data preview should have refreshed and displayed the following:

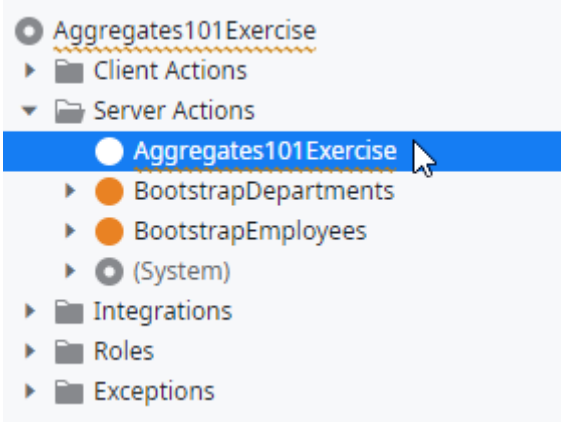


Answer: **There is one Department starting with the letter "T", the Training Department.**

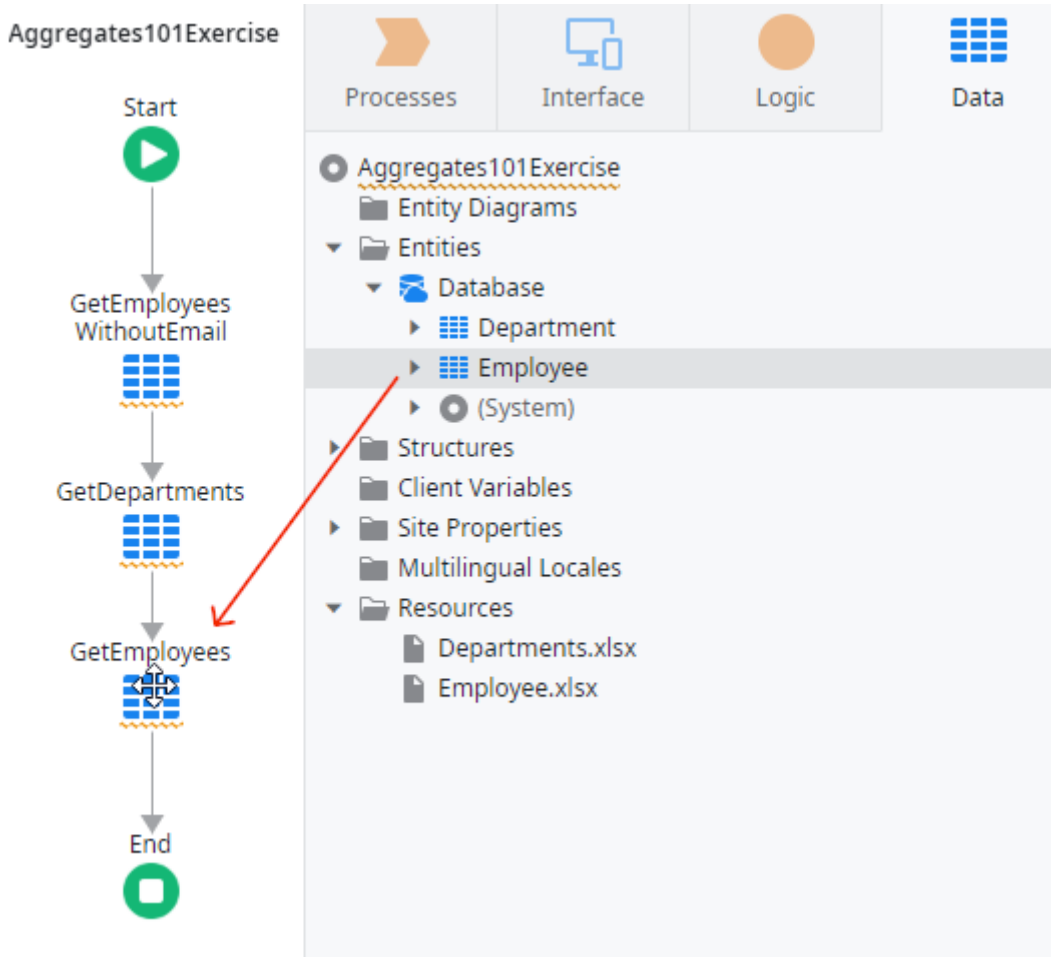
What is the Name of the first Employee when sorted alphabetically?

In this section, we'll answer our third question: *What is the name of the **first** Employee, following an alphabetical order?*

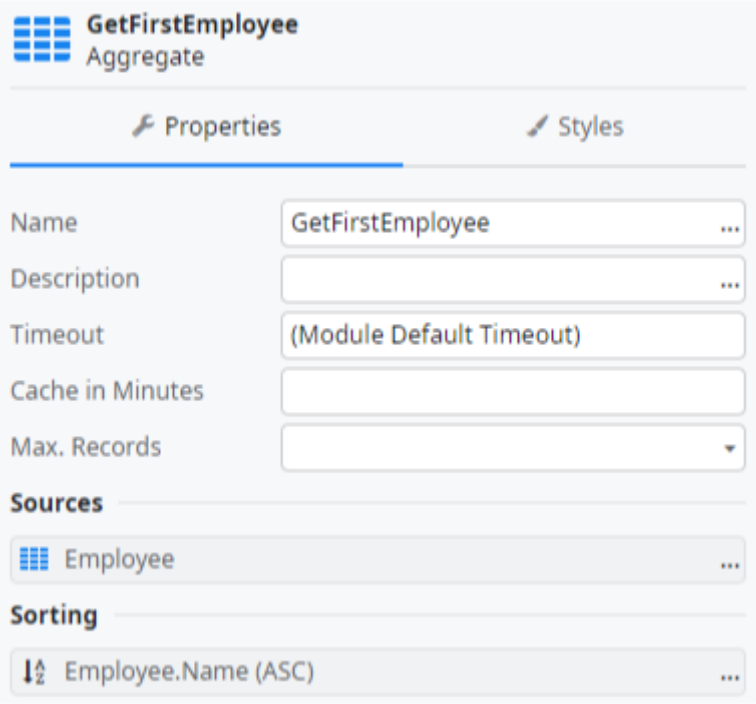
1) Return to the Aggregates101Exercise Server Action, by double-clicking it on the elements tree.



2) From the Data tab, drag the **Employee** entity, and drop it between the GetDepartments Aggregate and the End.

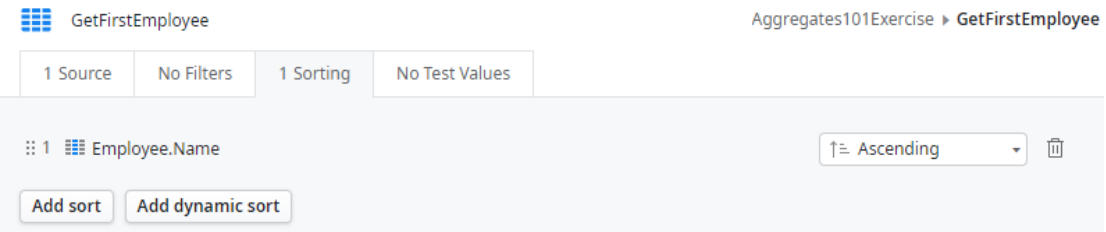


3) Select the **GetEmployees** Aggregate and then in the properties area, rename it *GetFirstEmployee*.



4) Double-click the **GetFirstEmployee** aggregate to open it.

5) Open the Sorting tab, and notice that a Sorting criterion already exists.



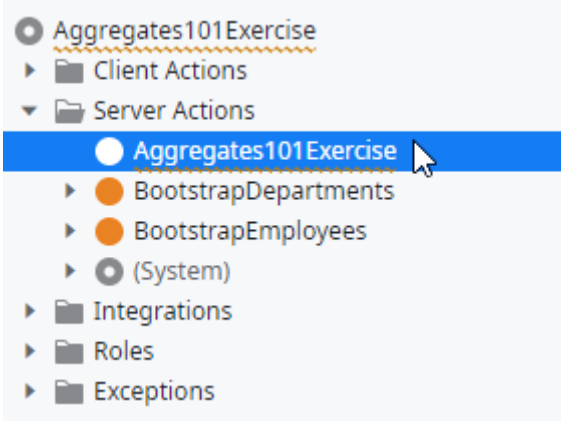
6) By checking the preview data in the Aggregate, we can get the info we want!

Answer: **The name of the first employee is Agosto Carhart.**

And, What is the Name of the Last Employee, Alphabetically?

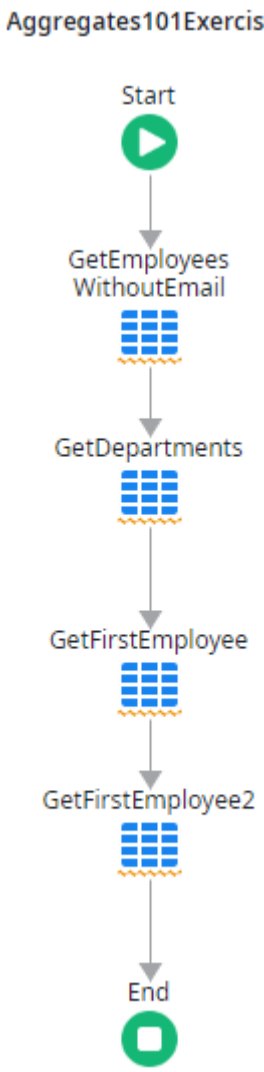
In this section, we will answer a similar question to the previous one. *What is the name of the **last** Employee, following an alphabetical order?*

1) Return to the **Aggregates101Exercise** Server Action inside the Logic tab, by double-clicking it on the elements tree.



2) Select the **GetFirstEmployee** aggregate, then copy (CTRL+C) and paste it (CTRL+V) on the flow.

3) Drag it to the top of the flow in such a way that the flow ends up like this



4) Rename the **GetFirstEmployee2** to *GetLastEmployee*.

5) Double-click the **GetLastEmployee** aggregate to open it.

6) Inside the Sorting tab, change the direction of the Sorting by *Name* to **Descending** and check the previewer of the Aggregate.

Answer: **The name of the last employee is Zacharias Pre.**