



DEVELOPING OUTSYSTEMS MOBILE APPS

Scaffolding



Introduction

Over the course of this set of exercise labs, you will create a web application. The application will focus on creating and managing To Dos. The To Dos will be persisted in a database so they can be accessed from and shared across multiple devices. To Dos will have attributes such as category, priority (low, medium or high), due date and they can be marked as important (starred) by the user.

Users of the To Do application will be able to access all of this information. This back-office application will allow administrators to manage all existing To Dos.

You constantly will be expanding your application, publishing it to the server and testing your application to the server while learning and applying new OutSystems concepts.

At the end of this set of exercise labs, you will have a small, but well-formed web application, spanning multiple screens and concepts that you can easily access from your browser.

In this specific exercise lab, you will:

- Scaffold the list and detail Screens for To Dos
- Set the module Entry Point

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Part 1: Scaffold To Dos list Screen

In this part of the exercise, you will create a new list Screen to show the To Dos. At first, the Screen will be created using accelerators, denominated Scaffolding patterns, that will enable you to speed-up the development process. Then you will modify the Screen to fit the **ToDo** application.

1. Create a new list Screen for To Dos.

- a) Switch to the **Interface** tab and open the **MainFlow**.
- b) Switch to the **Data** tab, select the **ToDo** Entity under the **ToDo_Core** module, and drag it to the **MainFlow**. You will notice some stars, indicating that a new Screen was generated automatically.

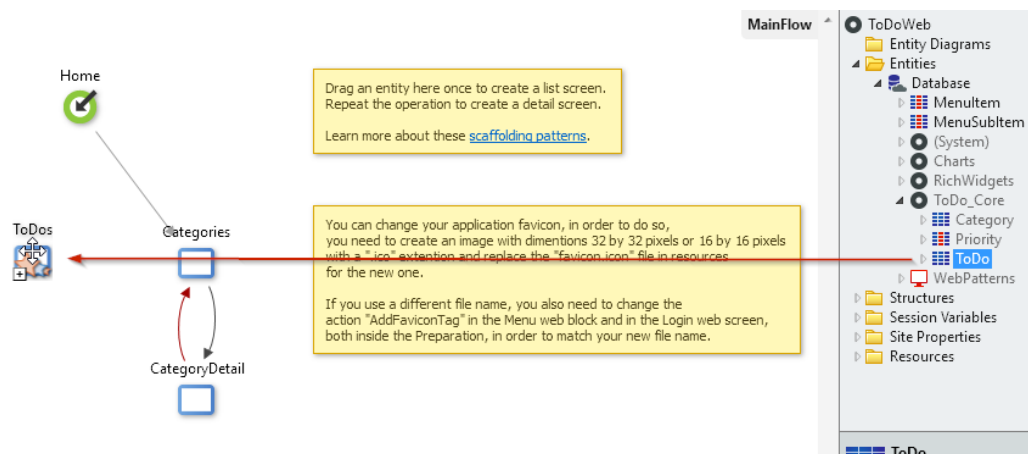


Figure 1. Scaffold a list Screen from the ToDo Entity

- c) Double click the **ToDos** Screen to open it. The Screen created by the scaffold should look like this

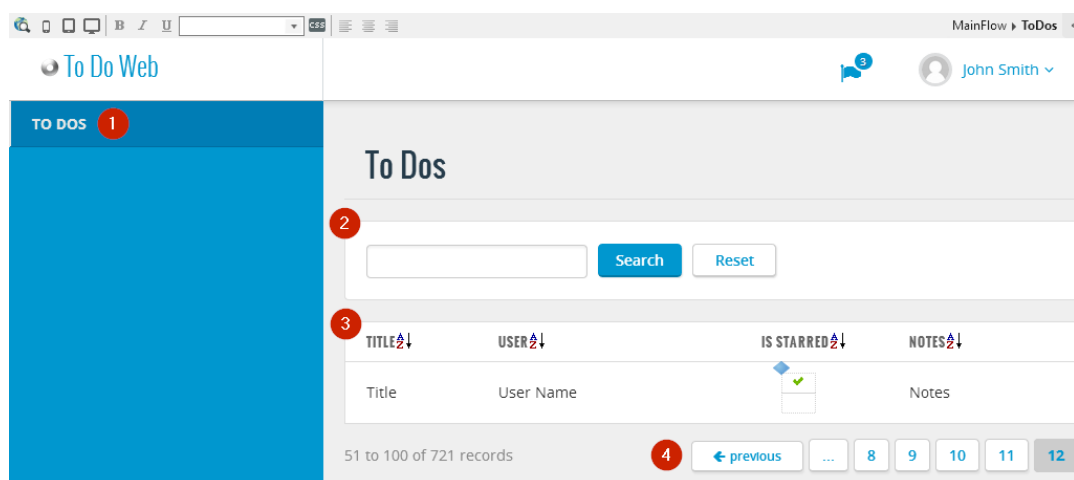


Figure 2. ToDos Screen

NOTE: Dragging an Entity into the **MainFlow**, to generate a List Screen for that Entity, is a Scaffolding pattern. The Platform automatically adds a link to the Menu (1), that we will cover later; creates search fields (2) and the respective Actions; a **Table Records** (3) with sorting and respective source Aggregate defined in the **Preparation**; and list navigation (4). The logic behind Sorting and Navigation is part of the **RichWidgets**.

Although the entire Screen was automatically generated, it is possible to modify every aspect of the generated elements.

2. Remove 'Is Starred' and 'Notes' columns from the generated Table Records.

- a) Place the cursor next to the 'Is Starred' column title, and then click the **Delete Column** icon from the toolbar.

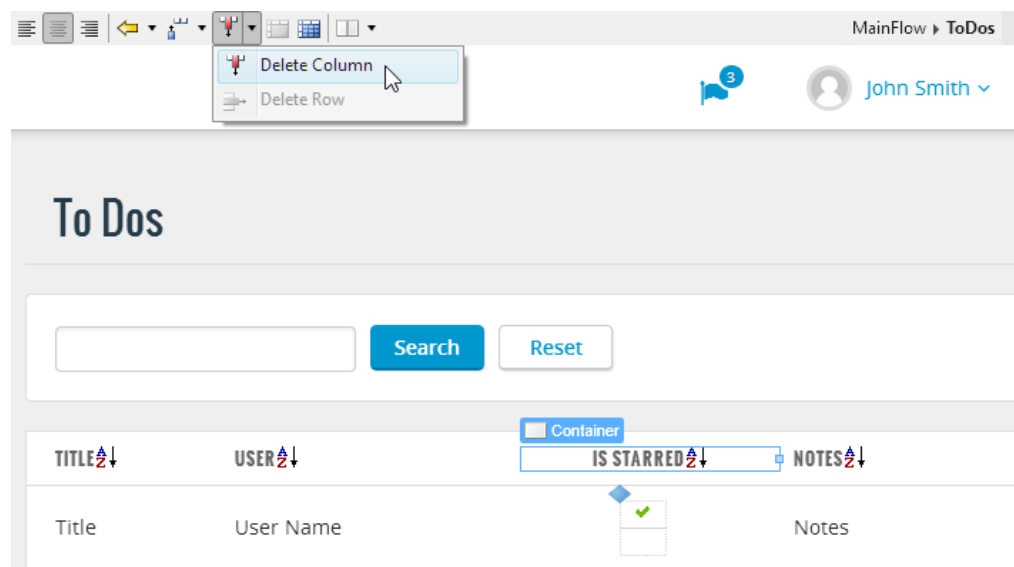


Figure 3. Delete 'Is Starred' column

- b) Move the cursor focus to the 'Notes' column and delete the column. The **Table Records** should look like this

TITLE	USER
Title	User Name

Figure 4. Table Records without 'Is Starred' and 'Notes' columns

3. Add Category, Priority and Completed Date columns to the ToDo Table Records.

- a) With the **ToDoS** Screen still open, switch to the **Data** tab.

- b) From under the **ToDo** Entity, drag the **CategoryId** attribute and drop it on the right side of the **TableRecords**.

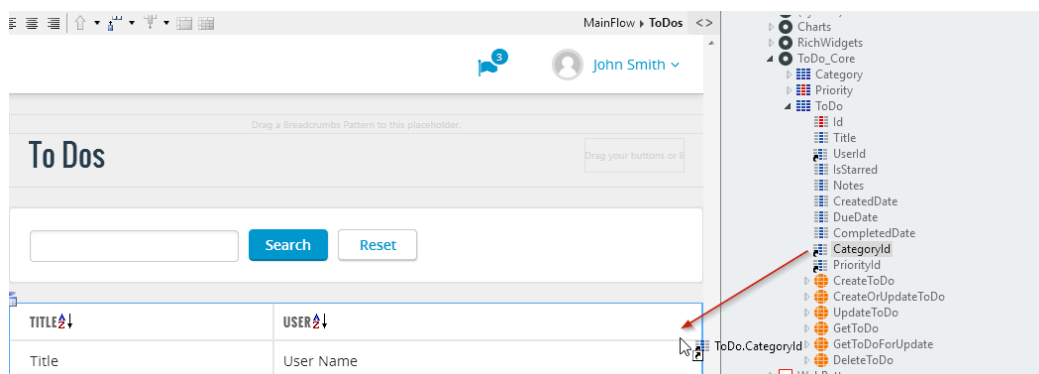


Figure 5. Add CategoryId attribute to Table Records

- c) Notice that instead of showing the **Category Identifier**, OutSystems added the **Name** of the category, and also added the sorting functionality to this column automatically.

NOTE: By adding the **CategoryId** attribute, the Aggregate in the **Preparation** that is used to feed the **Table Records** was also changed. The **Category** Entity was added as a Source Entity to the Aggregate, with the respective join condition between the Entities.

- d) From under the **ToDo** Entity, drag the **PriorityId** attribute and drop it on the right side of the **TableRecords**.

NOTE: It is also possible to drop attributes between existing columns or even in the left side of the **Table Records**.

- e) From under the **ToDo** Entity, drag the **CompletedDate** attribute and drop it on the right side of the **TableRecords**, after the Priority column. Your **Table Records** should look like this

TITLE	USER	CATEGORY	PRIORITY	COMPLETED DATE
Title	User Name	Groceries	Low	2 Dec(5 days ago)

Figure 6. To Do Table Records with Completed Date column

4. Add an image to highlight starred To Dos.

- a) Drag an **Image** Widget to the left of the 'Title' **Expression** of the **ToDoTable**.

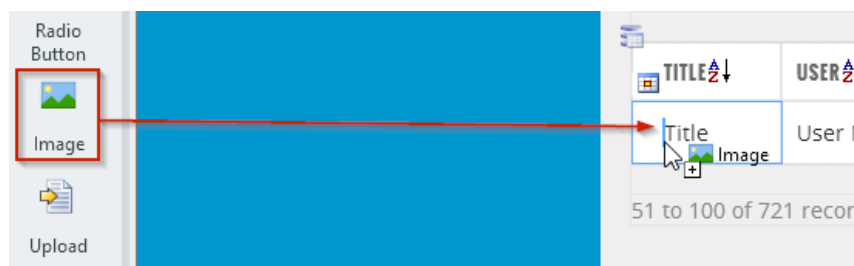


Figure 7. Drag Image widget

- b) In the **Select Image** dialog click **Import Image...**. Locate the **star.png** image from the Resources folder and click Open.
- c) Right click the star **Image**, and select 'Enclose in If'.

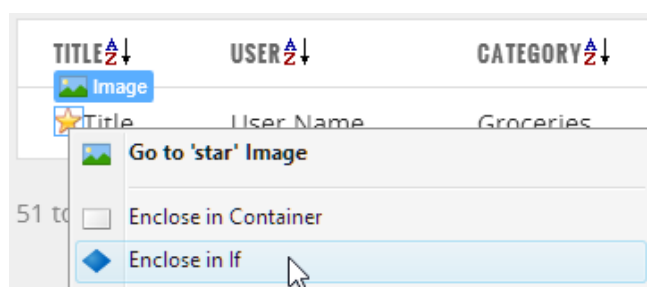


Figure 8. Enclose Image with If

- d) Set the **If Widget Condition** property to
'ToDoTable.List.Current.ToDo.IsStarred'

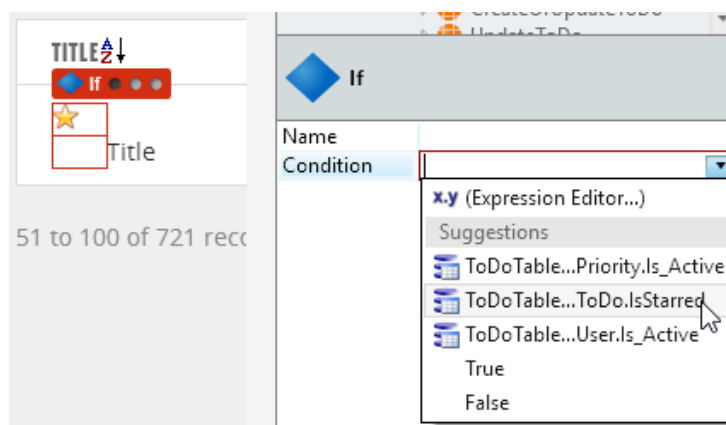


Figure 9. If condition for the If Widget

- e) Leave the **False** branch of the **If** empty.

Part 2: Scaffold the To Do detail Screen

In this part of the exercise, you will create a new detail Screen for To Dos. The detail Screen will allow to create new ToDos, and also show and edit the details of existing To Dos. At first, the Screen will be created using scaffolding patterns, that will enable you to speed-up the development process. Then you will modify the Screen to fit the **ToDo** application.

1. Create a new detail Screen for To Dos.

- a) Switch to the **Interface** tab and open the **MainFlow**.
- b) With the **MainFlow** opened, switch back to the **Data** tab, then drag the **ToDo** Entity to the **MainFlow**.

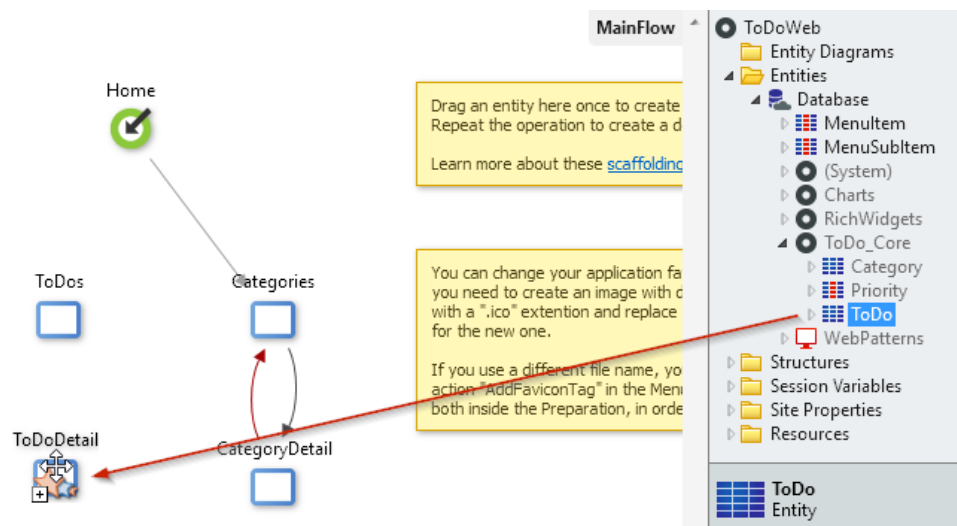


Figure 10. Create Detail Screen for To Dos.

- c) Notice that the name of the generated Screen is **ToDoDetail**, and two connections appear between the **ToDos** and the **ToDoDetail** Screens. These connections highlight the navigations between both Screens.
- d) Select the connection between the **Home** Entry Point and the **Categories** Screen.
- e) Drag the end of the arrow, from the **Categories** Screen to the **ToDos** Screen. Your **MainFlow** should look like this

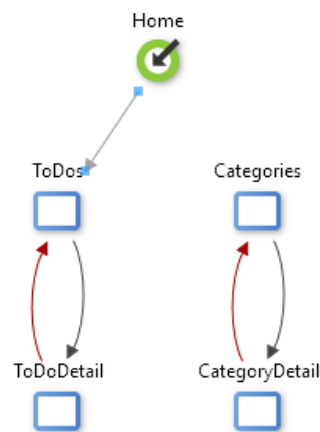


Figure 11. Default Entry Point

NOTE: Changing the default Entry Point also has an effect when you click the **Open in Browser** blue button, since this defines the default Screen to show.

f) Open the **ToDoDetail** Screen.

g) Select the **Input** Widget next to the **Notes** Label.

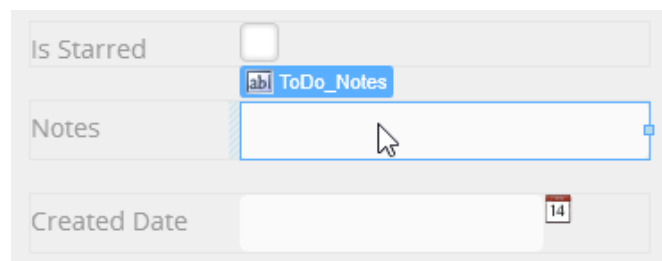


Figure 12. Notes Input Widget

h) Set the **Text Lines** property to '3'.

ToDo_Notes	
Name	ToDo_Notes
Variable	ToDoForm.Record.ToDo.Notes
Validation Parent	
Mandatory	False
Null Value	...
Max. Length	250
Width	8 col
Text Lines	3
Margin Left	1.96% (Auto)
Margin Top	0px (Auto)
Style Classes	
Visible	True
Enabled	True
Type	Text
Prompt	

Figure 13. Notes Input Widget properties

- i) Select the Container that surrounds the 'Created Date' **Label** and the respective **Input** Widgets, and delete it.

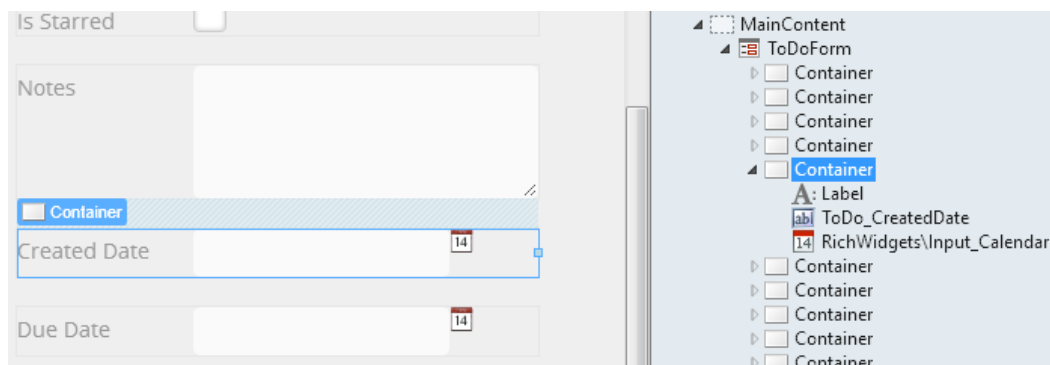


Figure 14. Created Date Label and input widgets

NOTE: Recall that when the **ToDo** Entity was created, the **CreatedDate** attribute **Default Value** was set to be the current date.

- j) Select the Container that surrounds the 'Completed Date' **Label** and respective **Input** Widgets, and delete it. We will later implement a feature that will enable you to mark To Dos as complete.

2. Link **ToDos** Screen to the **CategoryDetail** Screen.

- a) Open the **ToDos** Screen.
- b) Right click the **Expression** for the 'Category Name', and select 'Link to MainFlow\CategoryDetail Web Screen'.

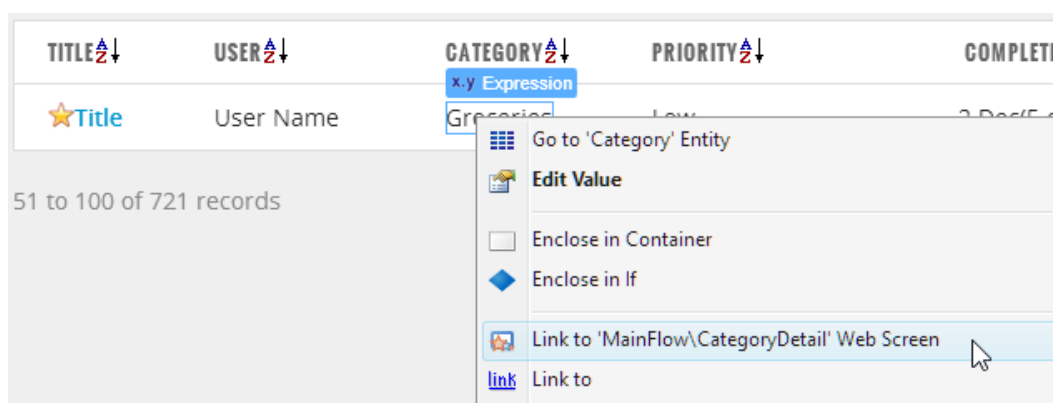


Figure 15. Link ToDos to CategoryDetail Screen

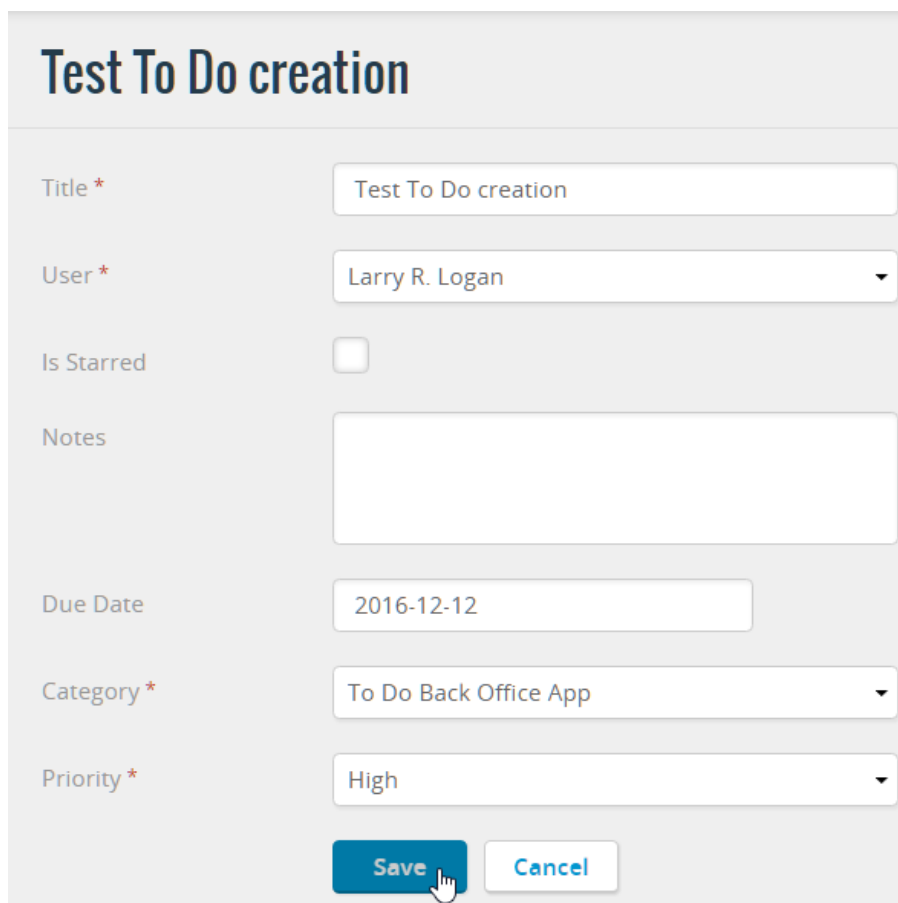
NOTE: This step has created a new Link between the **ToDos** Screen and the **CategoryDetail** Screen, allowing you to navigate from To Dos to Categories.

Part 3: Test the To Dos Screens

In this part of the exercise, you will publish the module with the new Screens created, and then test them by creating new To Dos.

1. Publish the module and create a new To Do.

- a) Click the **1-Click Publish** button to publish the module.
- b) Click the **Open in Browser** button. If required, login again with the same credentials as before.
- c) Notice that now, instead of opening the **Categories** Screen, it opens the **ToDos** Screen.
- d) Click the 'Create a new To Do' Link to navigate to the **ToDoDetail** Screen.
- e) Fill the **ToDoForm** and click **Save**.



The screenshot shows a web form titled "Test To Do creation". It contains several input fields: "Title *" with the value "Test To Do creation"; "User *" with a dropdown menu showing "Larry R. Logan"; "Is Starred" with an unchecked checkbox; "Notes" with an empty text area; "Due Date" with the value "2016-12-12"; "Category *" with a dropdown menu showing "To Do Back Office App"; and "Priority *" with a dropdown menu showing "High". At the bottom of the form are two buttons: "Save" (highlighted with a mouse cursor) and "Cancel".

Figure 16. Create a new To Do

- f) After saving the new To Do, you should see it in the **ToDos** Screen.

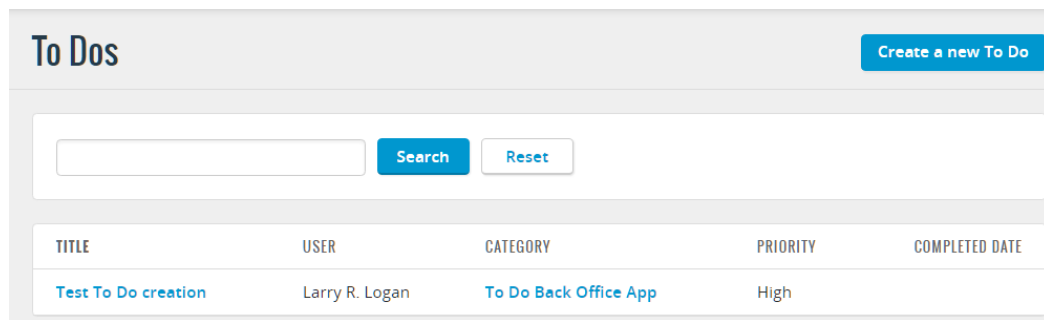


Figure 17. ToDos list screen

2. Edit the To Do created before, set the **Due Date** to yesterday and check the **IsStarred**.
 - a) From the **ToDos** Screen, navigate to the 'Test To Do creation' To Do.
 - b) In the **ToDoDetail** Screen, change the **Due Date** to yesterday, tick the **Is Starred** checkbox, then click **Save**.
 - c) In the **ToDos** Screen, you should see the star next to the To Do title.

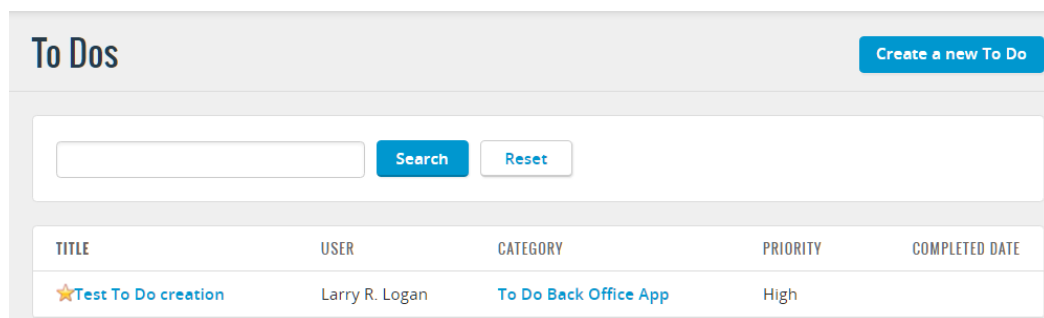


Figure 18. List of To Dos

End of Lab

In this exercise, you extended the Web application by adding two new Screens to display and edit or create new To Dos.

The new Screens were created using Scaffolding patterns. The patterns used allow to quickly create list and details Screens, and then further customize them to the specific needs of the application.

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