



DEVELOPING OUTSYSTEMS MOBILE APPS

# Creating Applications



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# Introduction

Over the course of this set of exercise labs, you will create a mobile 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 regardless of whether the device is online or offline. When offline, users will still be able to keep interacting with the application and changes will be saved locally in the device local storage. When the device returns to online mode, changes made while offline will automatically be synced to the server.

You constantly will be expanding your application, publishing it to the server and testing it in your mobile device. Throughout the process you will be learning and applying new OutSystems concepts.

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

In this specific exercise lab, you will:

- Create an application
- Create the first module of the application
- Create a Client Action that works as a function
- Use that function in another module

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## Part 1: Create the Core application

In this part of the exercise, you will create the To Do Core application. The **ToDo\_Core** application will start with one module, the Core (data) module, and later will be expanded with a User Interface (UI) module. The **ToDo\_Core** application can also have an icon and a description.

1. Create a new mobile application named **To Do Core**. Give the application a simple description, change the application icon to **todo-icon.png**, and use the **Blank** module template.

a) Open Service Studio from the Start Menu or by double clicking the icon.



Figure 1. Open Service Studio

- b) In the 'Connect to Environment' or 'Switch Environment' dialog, enter the server, username and password you will be using to carry out the exercises, and click **Connect**.

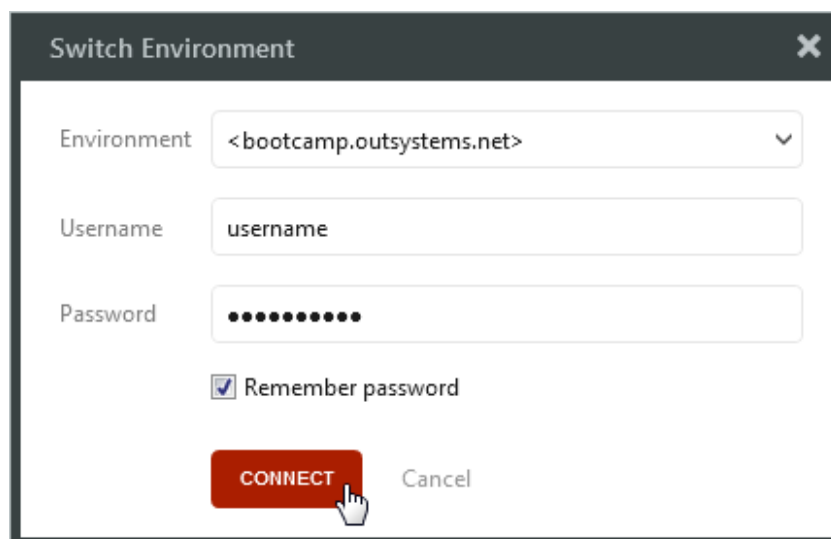


Figure 2. Connect to Environment

**NOTE:** The server (Environment) name you specify depends on your particular case:

- If attending a classroom Boot Camp, it will look something like **bootcamp<suffix>.outsystemsenterprise.com**
- If you are developing in your [Personal Environment](#), it will look like **<yourprefix>.outsystemscloud.com**
- If you are developing in your company's Enterprise Environment, it may take any format like **dev-env.ACMECorporation.com**

c) In the 'Applications in Development' area, click **New Application**.

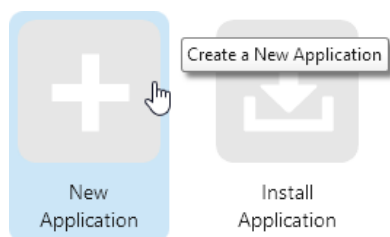


Figure 3. Create a New Application

d) In the **New Application** dialog, select **Mobile App**, and then click **Next**.

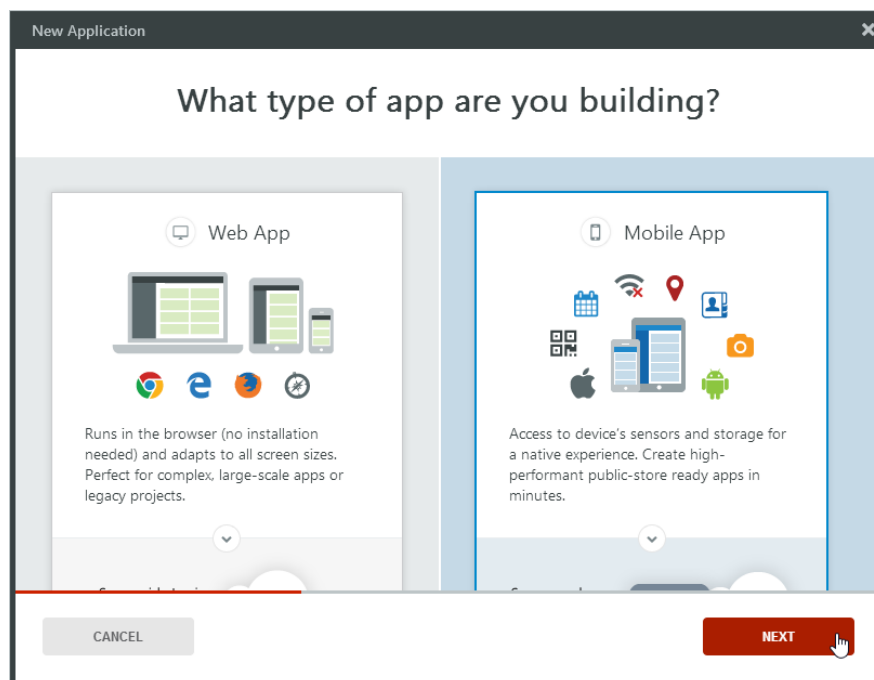


Figure 4. Create a new Mobile App

e) Select the **Phone** template, and then click **Next**.

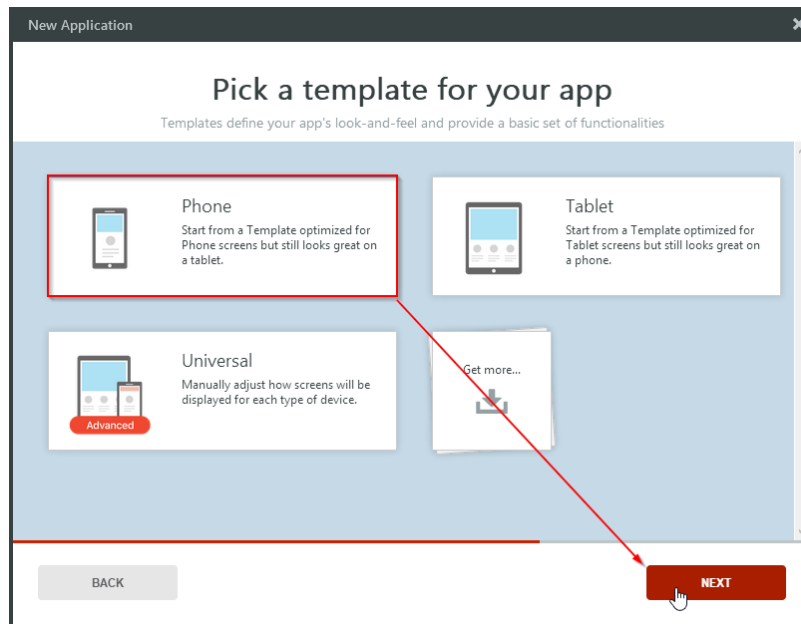


Figure 5. Pick a template for your app

- f) Set the Application Name to 'ToDo\_Core\_<yourinitials>' (for simplicity, screenshots will suppress all the <your\_initials> suffixes from hereon).
- g) Type in a simple description for the application.
- h) Click the **Upload Icon** button, select the **todo-icon.png** from the Resources folder on the Boot Camp materials. Select **Create App**.

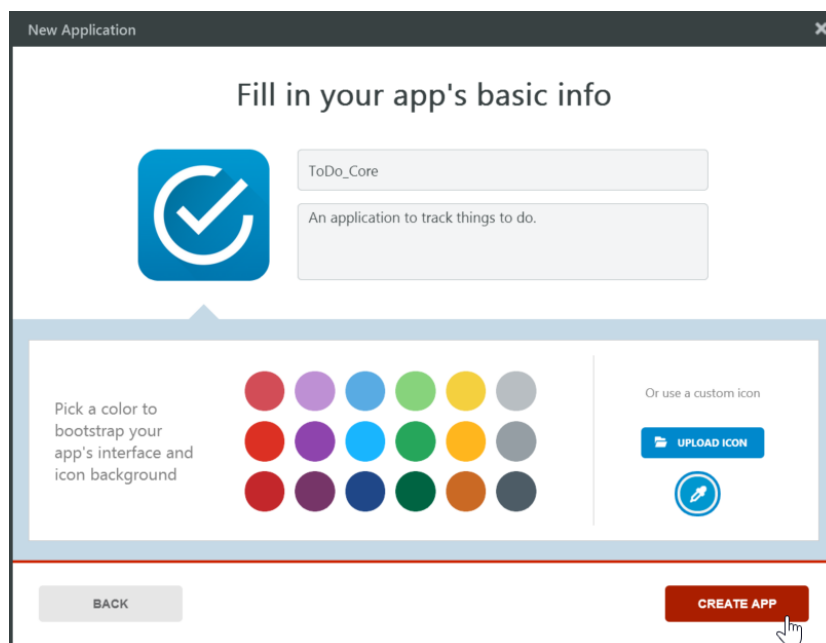


Figure 6. ToDo\_Core application name, description and icon

- i) Since we are creating a core data model, change the **Module Name** to 'ToDo\_Core\_<yourinitials>' and select the **Blank** module type. Click **Create Module** to create the module.

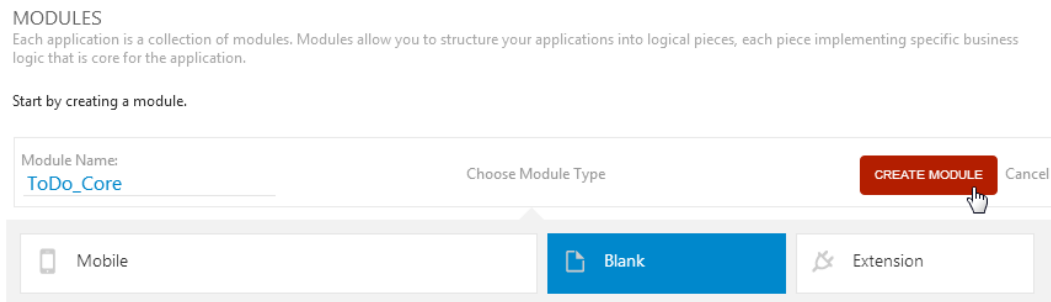


Figure 7. Create the Core module

- j) Notice that the application is created and the module is opened. Since you selected a Blank module, you should see nothing in the workspace.

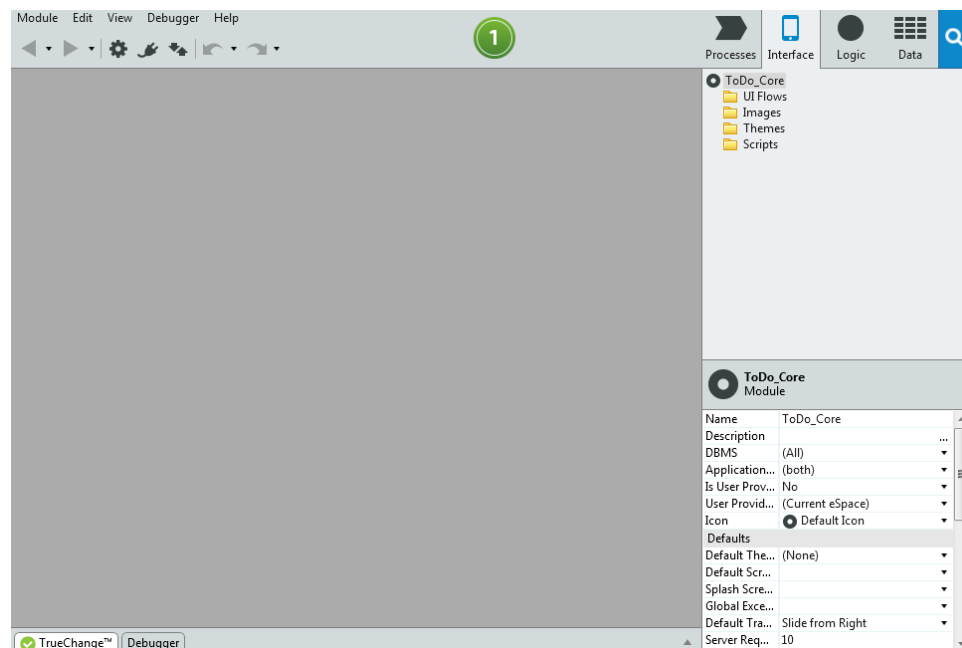


Figure 8. Workspace for ToDo\_Core

2. Create a 'GetAppName' Client Action that returns the applications name. The Action should be public and a function so it can be reused in other apps.

- a) Switch to the **Logic** tab.

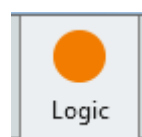


Figure 9. Logic tab

b) Right-click the **Client Actions** folder and select 'Add Client Action'.

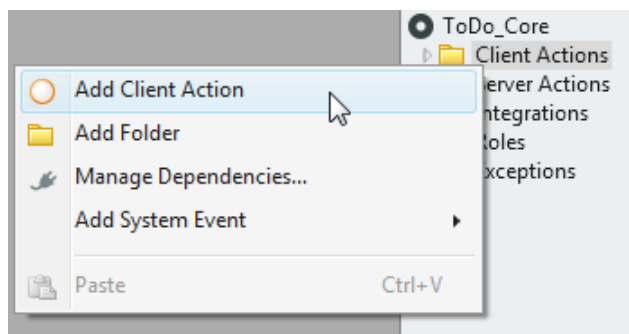


Figure 10. Add Client Action

c) Type in 'GetAppName' to change the name of the Action from **Action1**.

d) Right-click the **GetAppName** Action and select 'Add Output Parameter'.

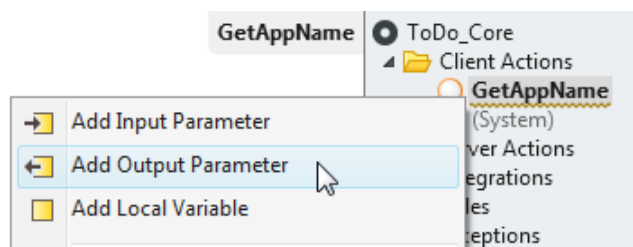


Figure 11. Add Output Parameter

e) Type 'AppName' as the name of the Output Parameter.

f) Drag an **Assign** from the toolbox and drop it on the action flow between the Start and End nodes.

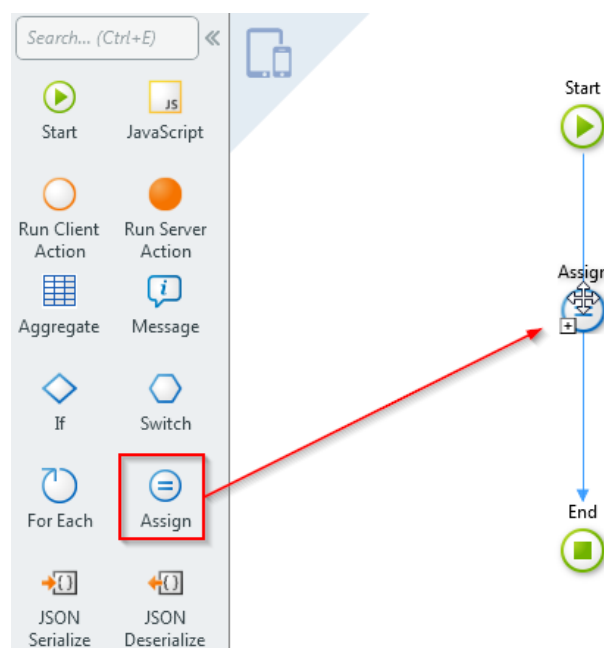


Figure 12. Drag an Assign from the toolbox



- g) In the Assign tool, set the **AppName** variable equal to "To Do Core".

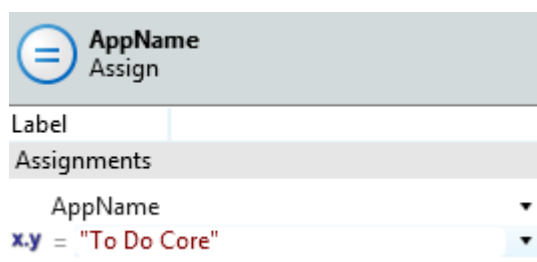


Figure 13. Assign a value to a variable

- h) In the properties area of the Client Action, set the **Public** property to 'Yes' and the **Function** property to 'Yes'.

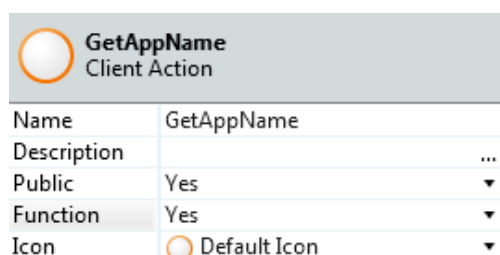


Figure 14. Server Action properties

**NOTE:** By setting the **Function** property to 'Yes', enables the **GetAppName** Action to be used in an Expression, to be evaluated at runtime. A Function cannot have more than one Output Parameter.

### 3. Publish the module.

- a) Click the **1-Click Publish** button to publish the module to the server.



Figure 15. Publish module

- b) In the 1-Click Publish tab you should see something similar to this

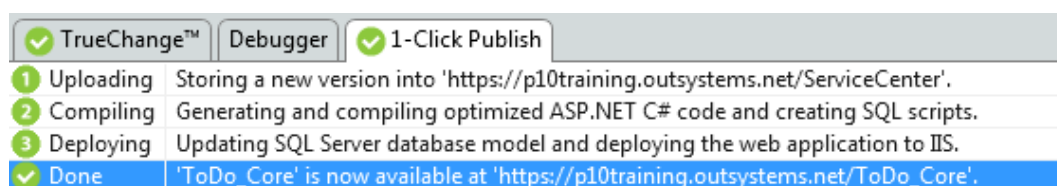


Figure 16. 1-Click Publish tab

## Part 2: Create Mobile Application

In this part of the exercise, you will create the **ToDo** application. The application will target mobile devices, such as smartphones.

### 1. Create the new **ToDo** application

a) Open the Environment tab in Service Studio.



Figure 17. Environment tab

b) Click the 'New Application' item.

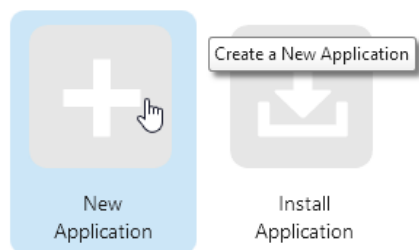


Figure 18. Create a new application

c) In the **New Application** dialog select 'Mobile App', then click **Next**.

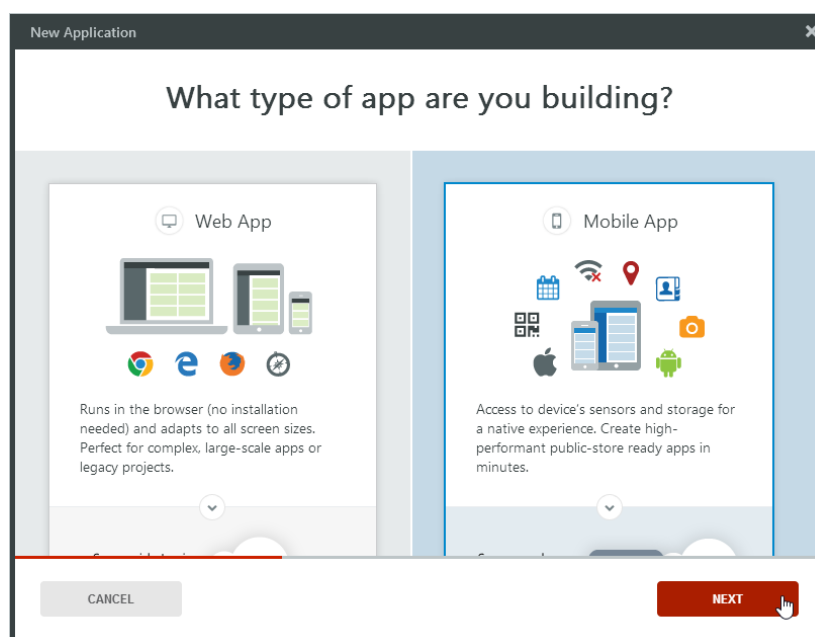


Figure 19. Mobile App

d) Select the **Phone** template and then click **Next**.

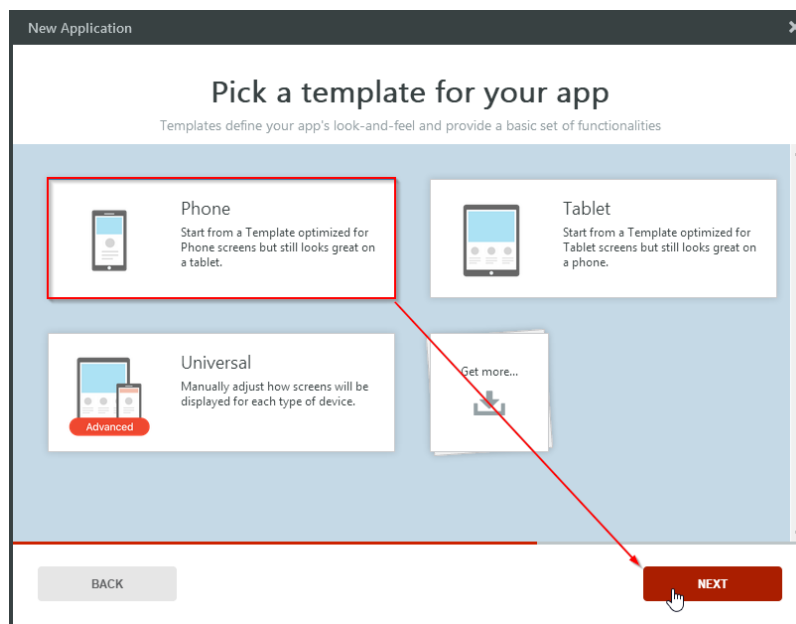


Figure 20. Phone template

e) Set the Application Name to 'ToDo', and fill in the Description.

f) Click the **Upload Icon** button, then select the **todo-icon.png** from the Resources folder on the Boot Camp materials.

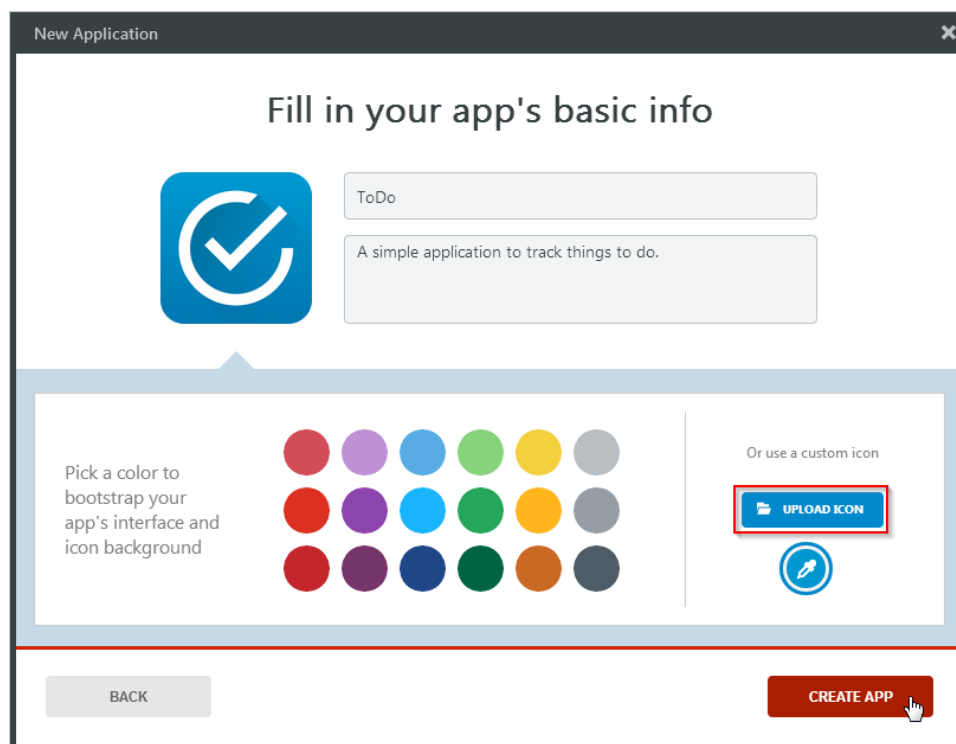


Figure 21. Create the ToDo Mobile application, with a custom Icon

- g) Click the **Create App** button to create the application.
- h) Set the new Module name to 'ToDo', verify that **Mobile** is selected as the module type, and click **Create Module**.

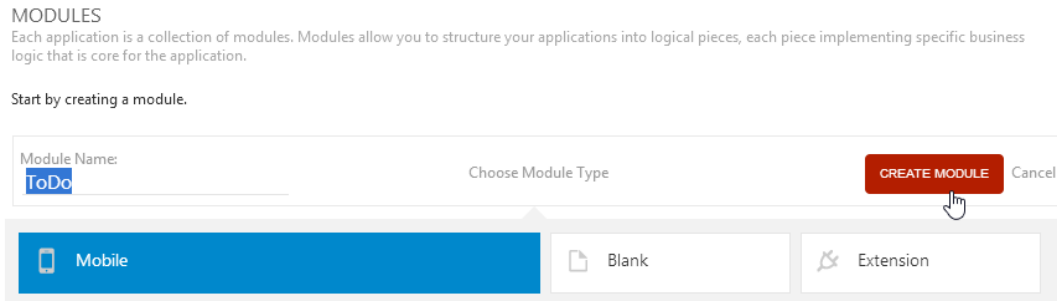


Figure 22. Create new module

## 2. Add references to **ToDo\_Core** module to access the **GetAppName** Action.

- a) Click the **Manage Dependencies...** icon.

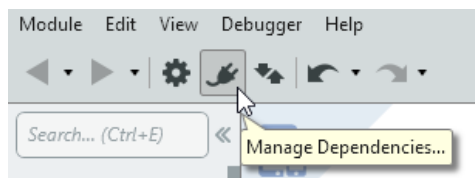


Figure 23. Manage Dependencies

- b) In the **Manage Dependencies** dialog, select the **ToDo\_Core** module on the left, and then select the **GetAppName** Client Action on the right.

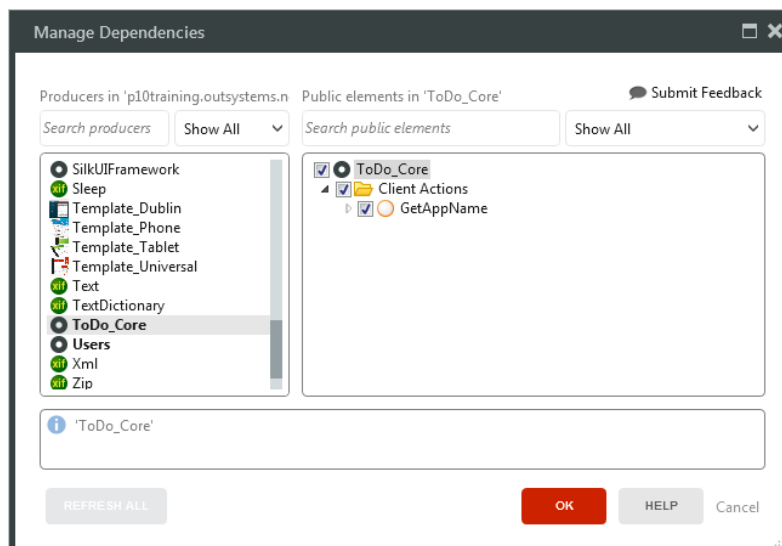


Figure 24. Reference ToDo\_Core Client Action.

- c) Click **Ok** to add the new dependencies.

### 3. Add an **Expression** to the **HomeScreen** to display the results from the **GetAppName** Action.

a) Drag and drop an **Expression** from the toolbox to the main content area.

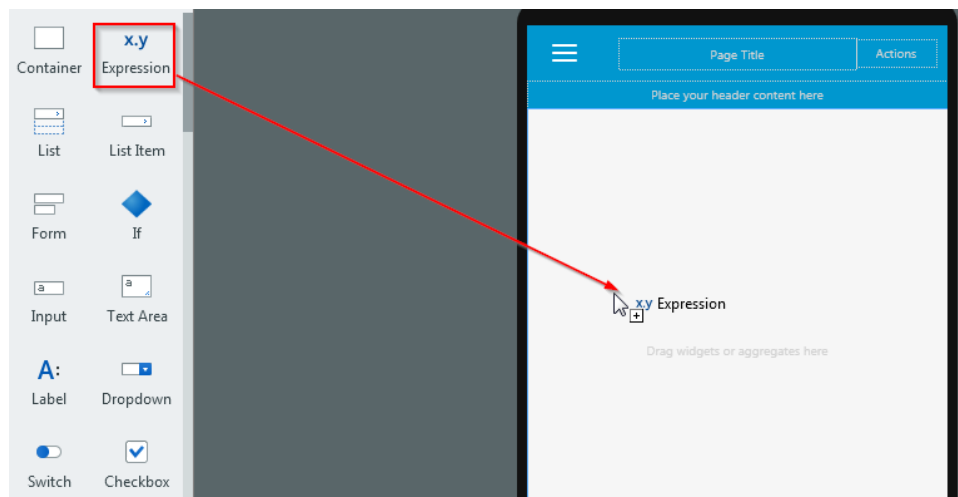


Figure 25. Drag an expression from the toolbox

b) Set the Expression to "Hello from " + GetAppName() .

### 4. Publish the module.

a) Click the **1-Click Publish** button to publish the module to the server.

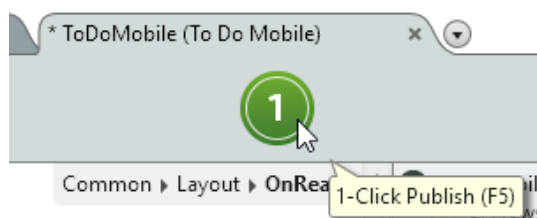


Figure 26. Publish module

b) In the 1-Click Publish tab you should see something similar to this.

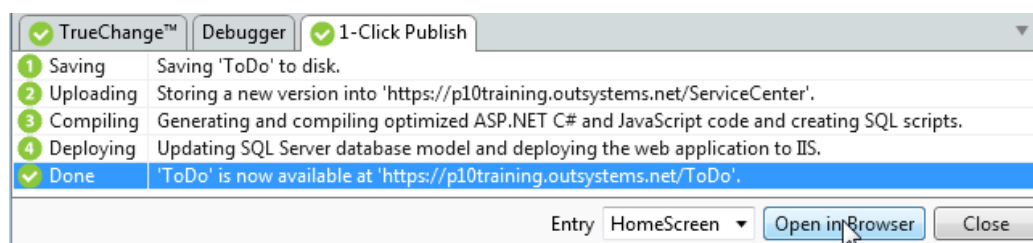


Figure 27. 1-Click Publish tab

### 5. Create a new user to test the application.

a) Open a browser window and navigate to the following URL

`https://<server_address>/Users`

**b)** Login with your credentials.

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**NOTE:** In a Personal Environment, you may login with our own credentials. In a classroom Boot Camp server, you can login with the user **admin** and password **admin**.

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**c)** Click the 'Create a new User' link.

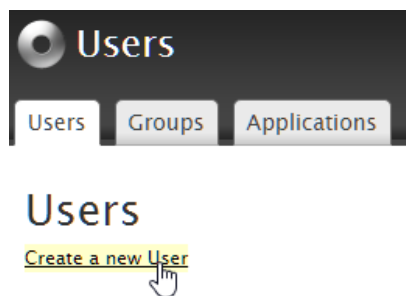


Figure 28. Create a new User

**d)** Define the user name as `<someuser>_<your_initials>` and fill in the rest of the fields. Click **Save** to create the user.

**6.** Test the **ToDo** application.

**a)** Return to Service Studio, and click the **Open in Browser** button.



Figure 29. Open in Browser

**b)** You should now see your application in a device emulator inside your browser.

**c)** After the load process completes, you will see something similar to this

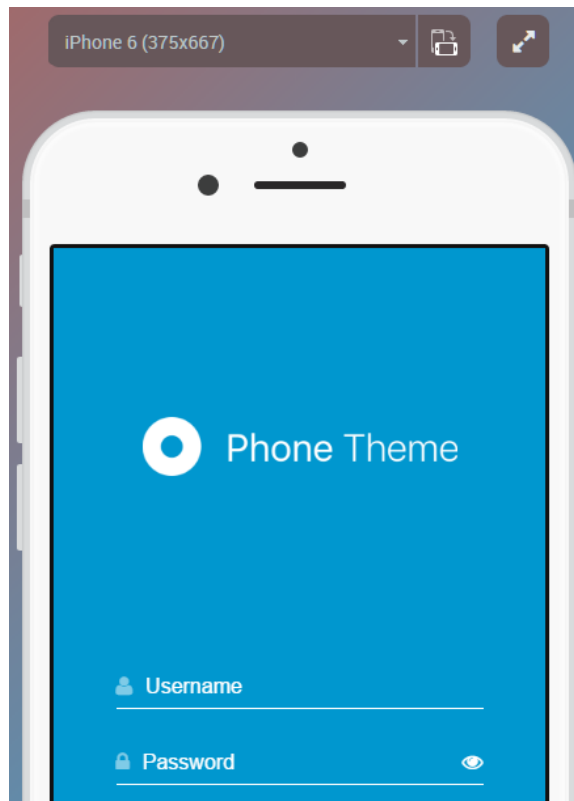


Figure 30. Application Login Screen

- d) Login with the user credentials that you have just created.
- e) Verify that "Hello from To Do Core" appears in the main content area.

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## End of Lab

In this exercise, you created two mobile apps. The **ToDo\_Core** app, which has a function that returns the name of the app, and the **ToDo** app, which uses that function to show the name of the app in the UI.

Both application modules were published to the server.

At the moment, the application contains only one initial Screen.



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