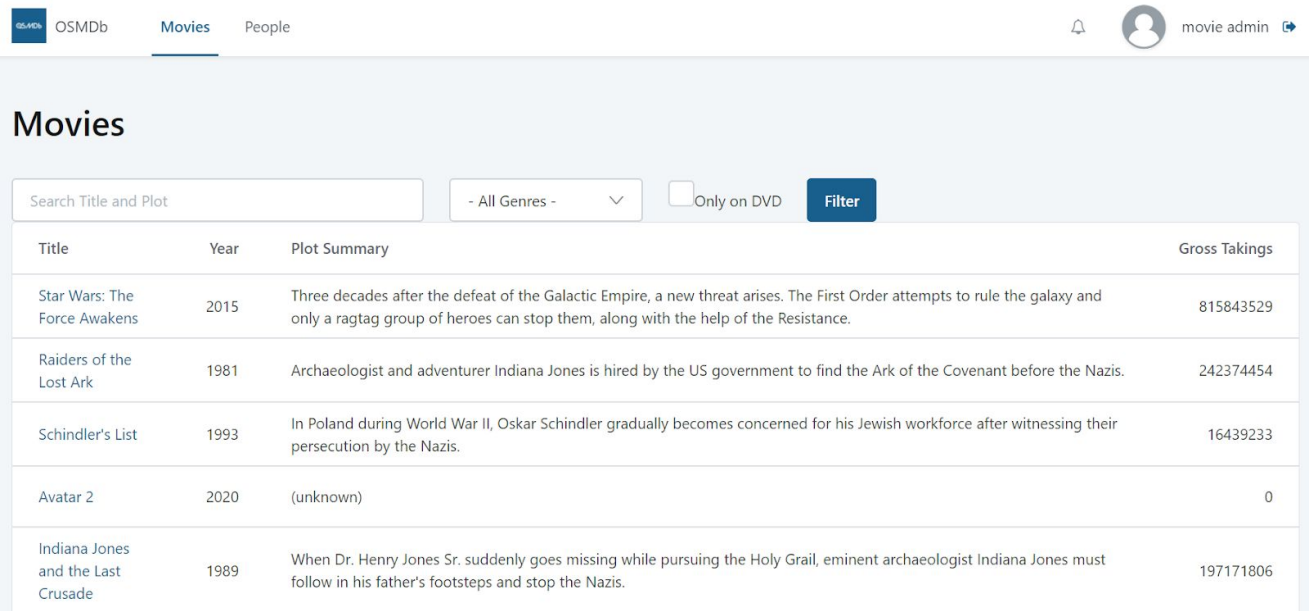
Session Handling Exercise



Introduction

Up until this lab, in the Movies Screen, there is a filter area that supports searching over the movie list by the movie title and plot summary, as well as by genre and by availability on DVD. However, the filters made by a user are not preserved, while the user navigates among the OSMDb pages. This means that if we apply a search to the movie table on the Screen, and then change to a different Screen and come back, the search filter is lost and all the movies are displayed again.

In this exercise, we will use Session Variables to implement the search filters logic, with the objective of maintaining the filter values, even after navigating to other pages.

Then, we are going to use Site Properties to define the maximum rating for a movie. Site Properties are very useful for holding values that do not change often and could almost be considered as constants.

In this specific exercise lab, you will:

- Create Session Variables and Site Properties.
- Use Session Variables in the logic of your application.
- Use Site Properties to define variables that are not changed often.
- Change Site Properties values using Service Center.

Table of Contents

Create and use Session Variables

We will create three **Session Variables**. These variables will be used in the logic of the OSMDb application, to filter the search for movies, and see the differences between using Session Variables and Local Variables.

1) Create three **Session Variables**: *MovieNameOrPlotFilter*, *MovieGenreFilter* and *MovieDVDFilter*, with **Data Types** *Text*, *MovieGenre Identifier* and *Boolean* respectively. These variables will be used in the logic for filtering the searches for movies, in the Movies Screen.

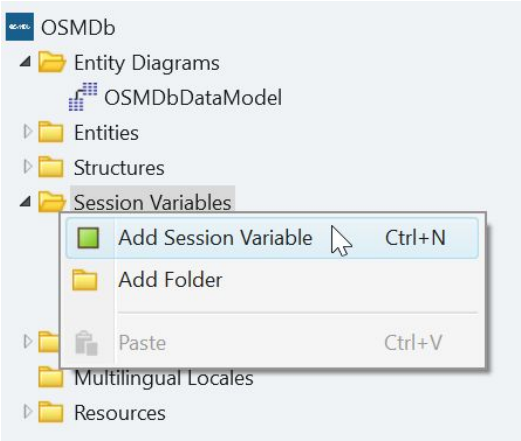
    a) Open the application in the browser and perform a search for a movie, using the search filters.

    b) Using the **Menu**, navigate to the **People** Screen. Then, navigate again to the **Movies** Screen. Notice that the search filters are reset.

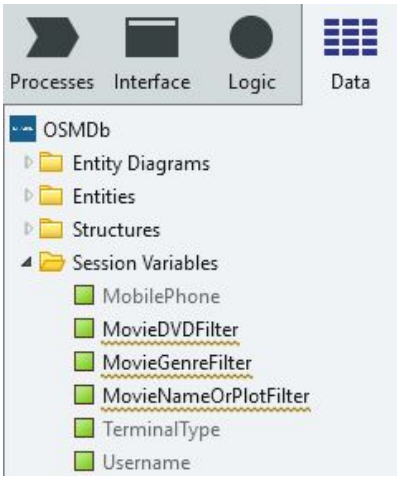
    NOTE: The Local Variables used in the search logic only "live" within the scope of the Screen they are defined, being destroyed after it. For this reason, when we go away from the **Movies** Screen, and later return to it, the Local Variables are initialized to its default values, losing the previous search filters used.

    ---

    c) In Service Studio, switch to the **Data** tab, right-click over the **Session Variables** folder and select *Add Session Variable*. Set the new variable's **Name** to *MovieNameOrPlotFilter* and ensure that its **Data Type** is *Text*.



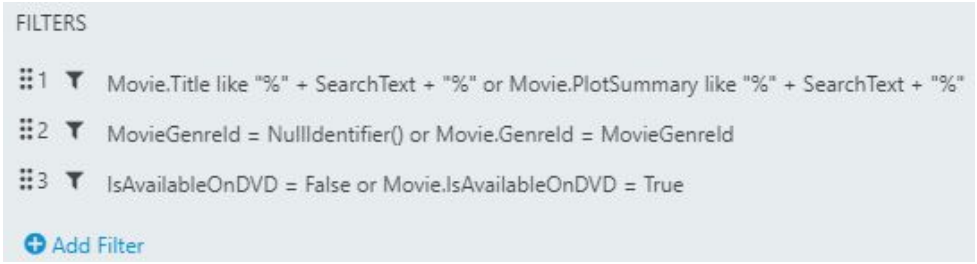
d) Create two new **Session Variables**, using the same procedure. In the first one, set its **Name** to *MovieGenreFilter* and ensure that its **Data Type** is set to *MovieGenre Identifier*. In the second, set its **Name** to *MovieDvdFilter* and **Data Type** to *Boolean*.



2) Use the Session Variables as search filters, in the **Movies** Screen. Adapt the logic to filter the search to use these variables, instead of the Local Variables. This will make sure that a search filter will not disappear if we move to another page and come back, since the values will be kept in Session.

a) Switch to the **Interface** tab and open the Preparation of the **Movies** Screen.

b) Open the **GetMovies** Aggregate and select the **Filters** option. Confirm that your filters look something like this



c) Replace the first Filter for the following expression:

Movie.Title like "%" + Session.MovieNameOrPlotFilter + "%" or Movie.PlotSummary like "%" + Session.MovieNameOrPlotFilter + "%"

d) Replace the second Filter for the following expression:

Session.MovieGenreFilter = NullIdentifier() or Movie.GenreId = Session.MovieGenreFilter

e) Replace the third Filter for the following expression:

Session.MovieDvdFilter = False or Movie.IsAvailableOnDVD = True

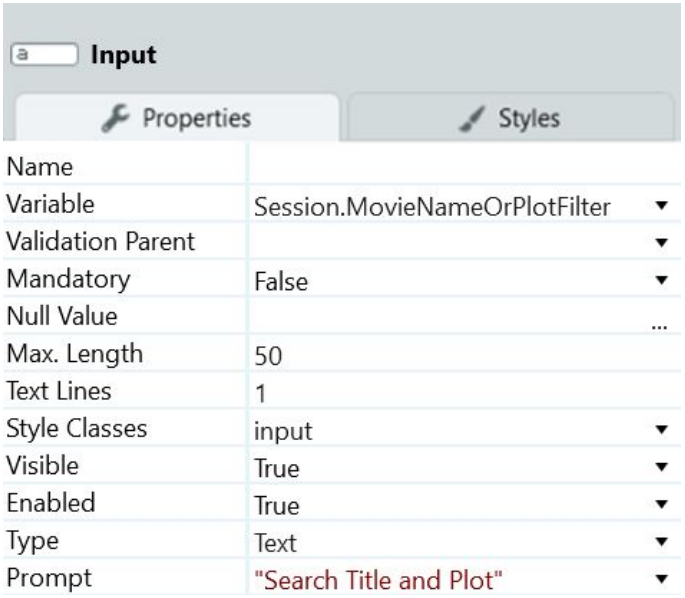
---

NOTE: The three previous steps do not change the logic of the search filters. They just change the variables that are used: from Local Variables to the recently created **Session Variables**. To use the Session Variables, you use **Session.<Variable Name>**

---

f) Open the **Movies** Screen.

g) Select the **Search** Input Widget and change the **Variable** property to *Session.MovieNameOrPlotFilter*.



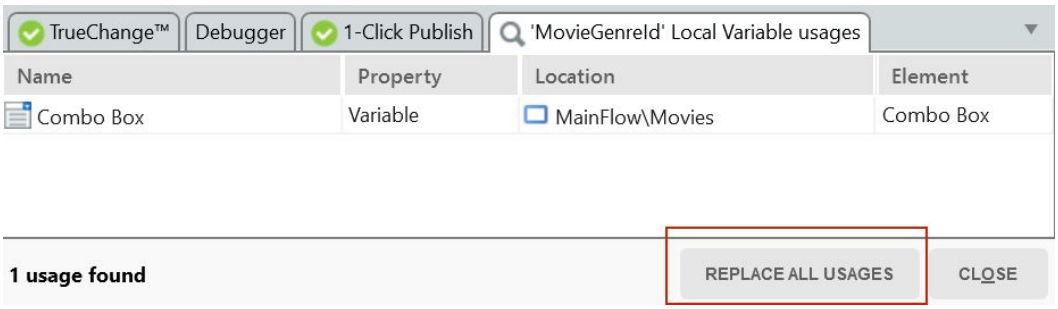
h) Delete the Local Variable **SearchText**.

i) Right-click the Local Variable **MovieGenreId** and select *Find Usages*.

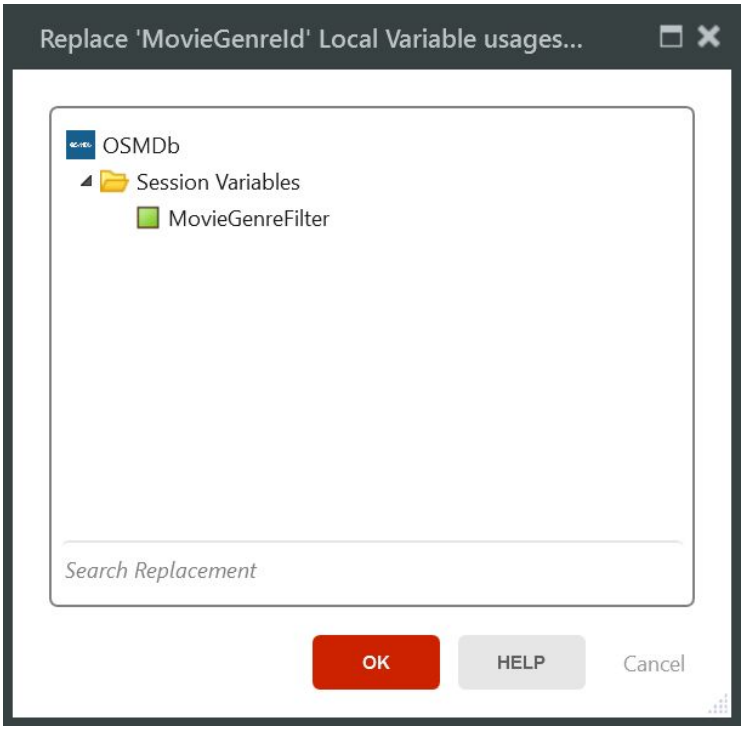
NOTE: You can verify if, and where, a Variable, Widget, Action or Screen is being used anywhere in the application, by right-clicking over the element and select *Find Usages*. Remember that in the case of Public elements, other modules might be using it.

---

j) At the bottom of the Screen, in the window shown in the following screenshot, select the option *Replace all usages*



k) At the new window, select **MovieGenreFilter** and click **OK**.



l) Delete the **MovieGenreId**.

m) Repeat the process for the Session Variable **MovieDvdFilter**, replacing the usages of the Local Variable **IsAvailableOnDVD** and deleting it.

n) Click the **1-Click Publish** button to publish the application, and access it using your browser.

o) Confirm that the search filters are working as before.

p) Using the **Menu**, navigate to the **People** Screen. Then, navigate again to the **Movies** Screen.

q) Confirm that the search filters are kept, even after navigating to a different page and back.

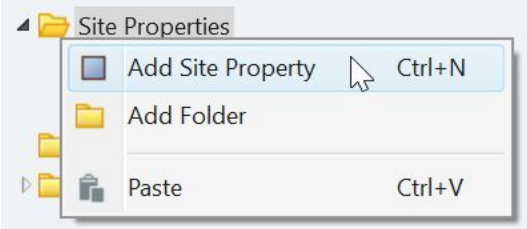
NOTE: **Session Variables** keep the values until they are explicitly changed, for instance using an Assign statement, or until the session terminates. When a session is started, Session Variables have their default values.

Create and use Site Properties

In this section of the exercise, we will create a **Site Property** and learn how to use them in the logic of our applications. We will create a new Site Property to help us managing the ratings of a movie, and understand how we can use it and change its value.

1) Create a **Site Property** called *MaximumRating* of **Data Type** *Integer*. This Site Property will be used to set the maximum number of stars allowed for a movie review.

    a) Switch to the **Data tab**, right-click over the folder **Site Properties** and select *Add Site Property*. Set its **Name** to *MaximumRating* and ensure that its **Data Type** is set to *Integer*.



    b) Set the **Default Value** of **MaximumRating** to *5*.

2) Modify the logic for rating a movie, to ensure that a rating does not exceed the value in **MaximumRating**.

    a) Switch to the **Interface** tab and open the **StarDisplay** Web Block.

    b) In the Preparation of the Block, select the **If Counter < 5?** and change the Condition to:

        Counter < *Site.MaximumRating*

        This way, the Condition is using the value of the Site Property, which we set to *5* in its Default Value, instead of a *hard-coded* value.

NOTE: **Site Properties** are shared among all Users of the application. Their value does not change when a Session ends, in opposition to **Session Variables**. Site Properties are used as **Site.<PropertyName>**.

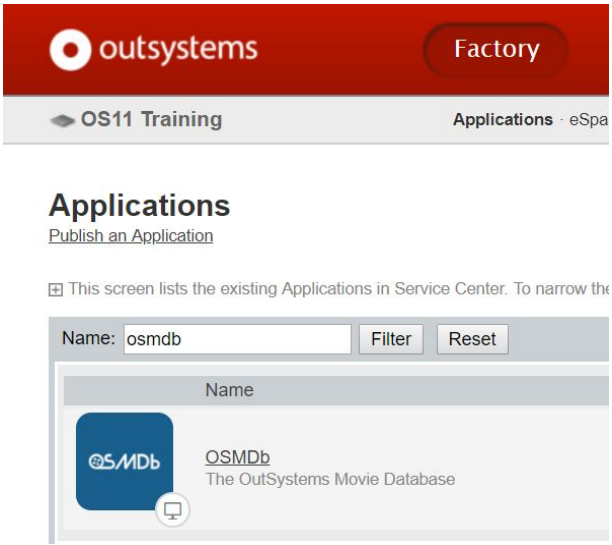
It is preferable to use Variables / Site Properties throughout your application, instead of using explicit and "hard-coded" values, like *5* in this example. In this particular case, where we are defining a rating limit, which does not change that often, Site Properties are a good alternative to hold that value.

c) Publish the application and open it in the browser. Verify that you can only rate a movie from **1** to **5** stars.

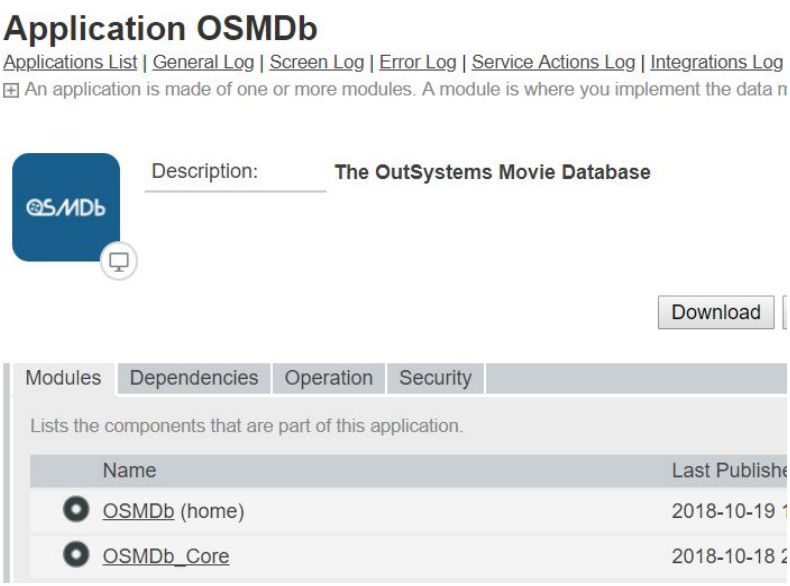
3) Change the Site Property **Effective Value**, in Service Center, to *10*.

a) Open Service Center, following the URL https://*<your_server>/ServiceCenter* and Login with your credentials.

b) In the **Factory** tab, select **Applications** and filter by *OSMDb*. Click on the name of the application.



c) Click on the module *OSMDb*.



d) Click on the **Site Properties** tab, to see the list of Site Properties defined for the module.

e) In the list of Site Properties, the **MaximumRating** Property can be found, with its value at *5*. Click on the **MaximumRating** Site Property.

f) Change its **Effective Value** to *10* and click **Apply**.

NOTE: You can set the **Effective Value** of a Site Property using Service Center directly, without needing to Publish the application again in Service Studio. Changes are immediately visible in runtime.

---

g) Confirm that now you have the option to rate a movie from **1** to **10** in your application.

NOTE: The **Effective Value** of a Site Property is the one used while your application is running, regardless of the **Default Value** set in the Service Studio. As an example, if the **Effective Value** is set to 10 and if you change the **Default Value** from 5 to 6, the Site Property will hold the value 10.

End of Lab

In this exercise, we learned how to create and use **Session Variables** and **Site Properties** in OutSystems.

We used Session Variables to implement the search filters logic, with the objective of maintaining the filter values, even after navigating to other pages. These Session Variables are only modified explicitly, when changing the search filters, or when a session is started when they are reset to their default values.

Then, we learned how to define Site Properties and use them to define the maximum rating for a movie. Site Properties can be used to define values that do not change often, providing a more elegant and generic solution than using “hard-coded” values.