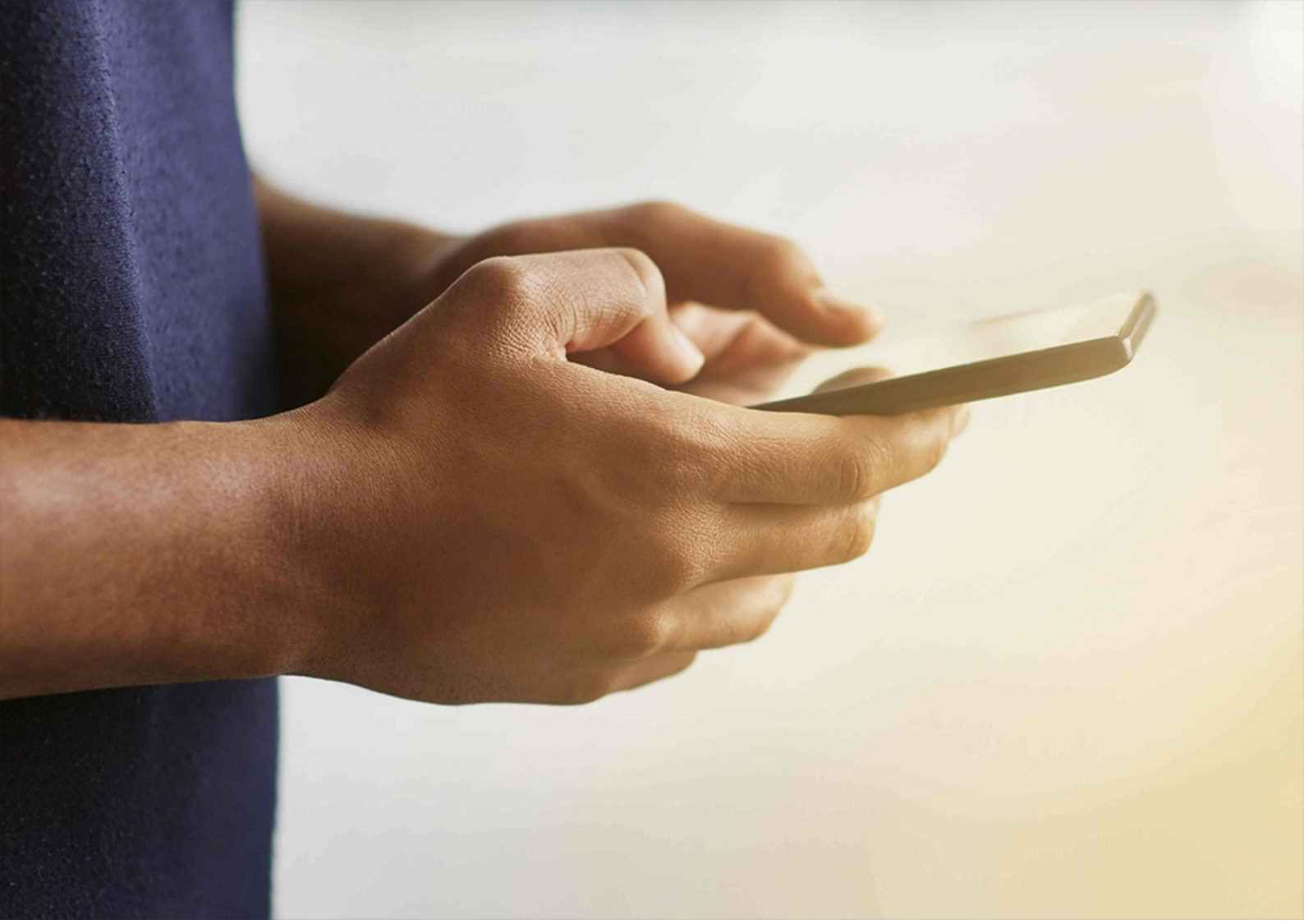

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Getting Started with the Cloud Studio

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Content

1 Web Search Automation Tutorial . . . 3

1.1 Prerequisites . . . 3

1.2 Create a Project . . . 3

1.3 Capture the Search Engine . . . 4

1.4 Declare Elements . . . 7

Declare the Search Bar . . . 7

Declare the Search Button . . . 9

1.5 Capture the Search Results Screen . . . 10

Declare the Titles . . . 11

Declare the Links . . . 14

Declare the Short Descriptions . . . 16

1.6 Create your Automation . . . 18

Set the Search Engine Screen Activities . . . 19

Set the Search Results Screen Activities . . . 23

1.7 Test your Automation . . . 29

1 Web Search Automation Tutorial

In this tutorial, you will go through the different steps you need to follow to create your first basic project with an application and an automation in the Cloud Studio.

You will learn how to capture and declare a web application, and how to add it to an automation. The goal of the automation will be to automatically search for the key word SAP Intelligent RPA in a web search engine and to gather the results.

> **Note**
>
> To learn how to perform a query on a web search engine, you can download the Pilot a web search engine sample on the SAP Intelligent RPA Store.

1.1 Prerequisites

Before you work through this tutorial, make sure an agent has been properly connected to your tenant. Otherwise, you will not be able to complete the tutorial. For more information, see the Desktop Agent Tenant Registration in the Installation Guide.

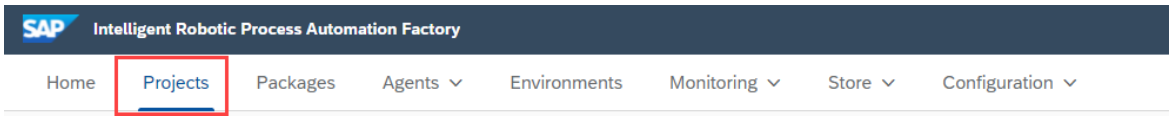
Make sure you have created an environment and added your agent to this environment. For more information, see Create and Manage Environments in the Factory User Guide.

In the following tutorial, you will capture a web application: launch Internet Explorer and enter the URL of your favorite search engine. Here we will use the URL **https://duckduckgo.com** as an example.

1.2 Create a Project

Procedure

1. In SAP Intelligent RPA Factory, click the *Projects* tab in the top navigation bar.

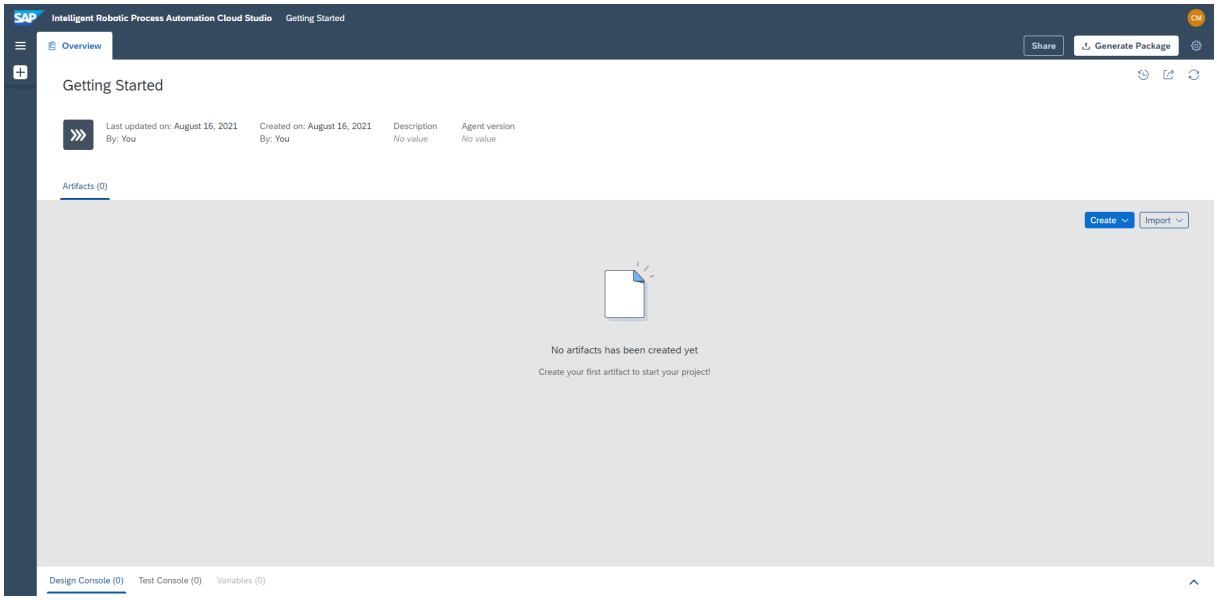


2. Click the *New Project* button. A *New Project* window will pop up.

3. Enter a project name and a description (optional).
4. Click *Create*.

Results

The Cloud Studio opens in another window.



1.3 Capture the Search Engine

Prerequisites

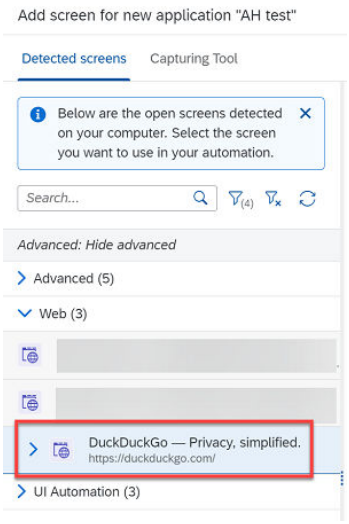
You have launched Google Chrome or Edge and entered **https://duckduckgo.com** in the search bar.

> **Note**
>
> You must keep the same window zoom factor on every screen while capturing with Chrome and Firefox. For more information, see Best Practices.

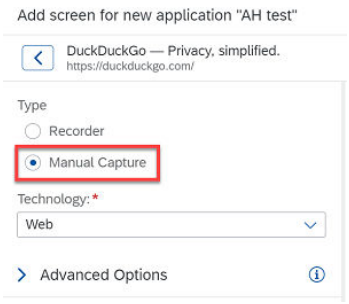
Context

Procedure

1. On the left-hand side panel, click the + icon and then the *Create* button on the left-side panel. A dropdown menu opens.
2. Select *Application*.
3. In the *Select Screen* side panel, select the DuckDuckGo application from the list. A preview image of the screen is displayed in the capture area.

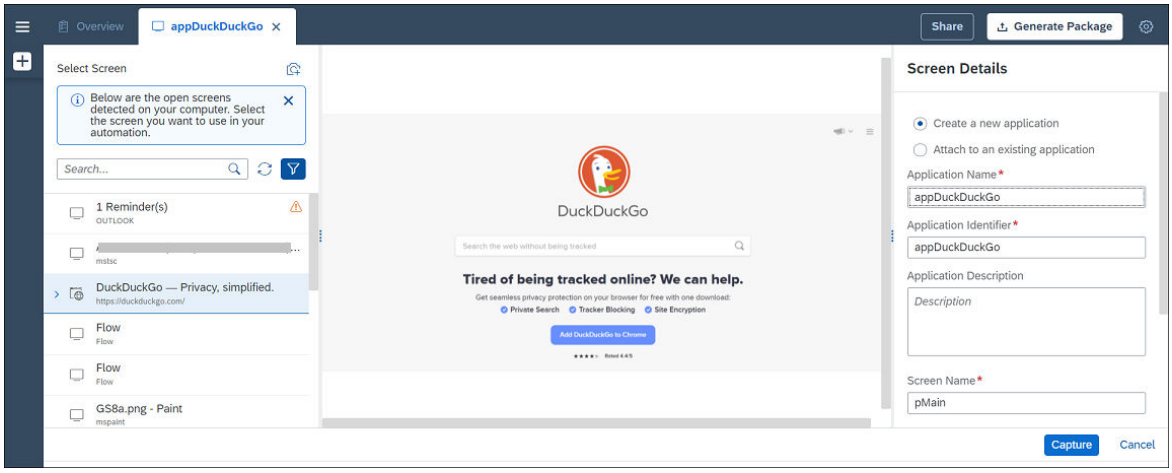


4. In the *Screen Details* side panel, select *Capture Application*



5. Enter an *Application Name* and a *Screen Name*.

   We enter `appDuckDuckGo` as the *Application Name* and `pMain` as the *Screen Name*.
6. Click *Capture*.

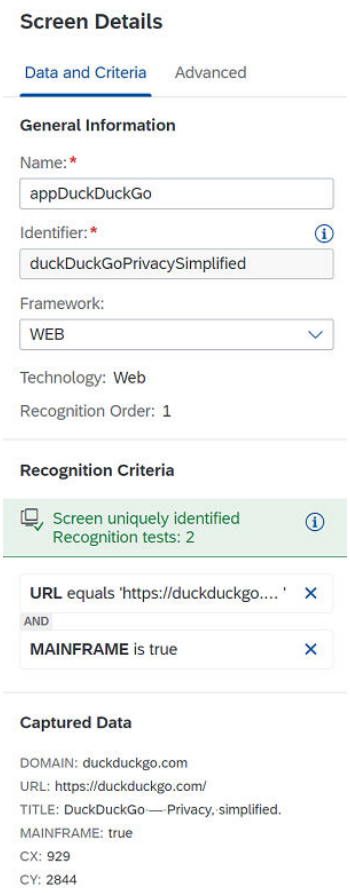


7. In the *Screen Details* panel, set the criteria of the screen. You can add the criteria by clicking on them in the *Captured Data* section.

   In the *Recognition Criteria* section, check that the following criteria are automatically selected:

   - **MAINFRAME is 'true'**.
   - **URL equals 'https://duckduckgo.com/'**.

> **Note**
>
> You must select *MAINFRAME: true* to interact with the elements you will declare on the screen.



8. Click *Save*.

1.4 Declare Elements

You must declare the elements from the captured application that you want to use in your automation.

In this tutorial, you will declare two elements: the search bar and the search button.

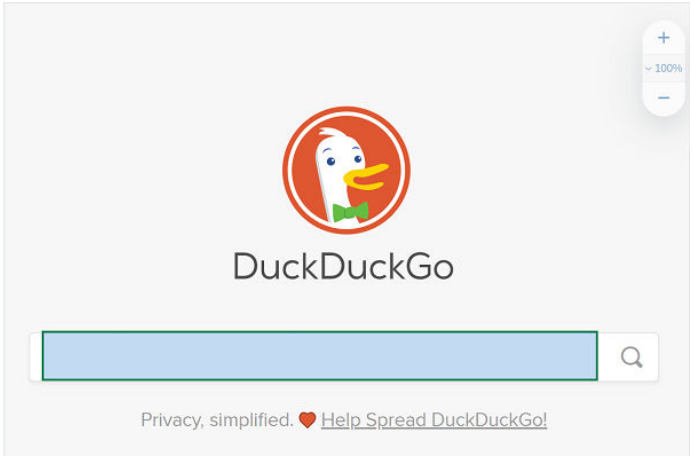
1.4.1 Declare the Search Bar

Context

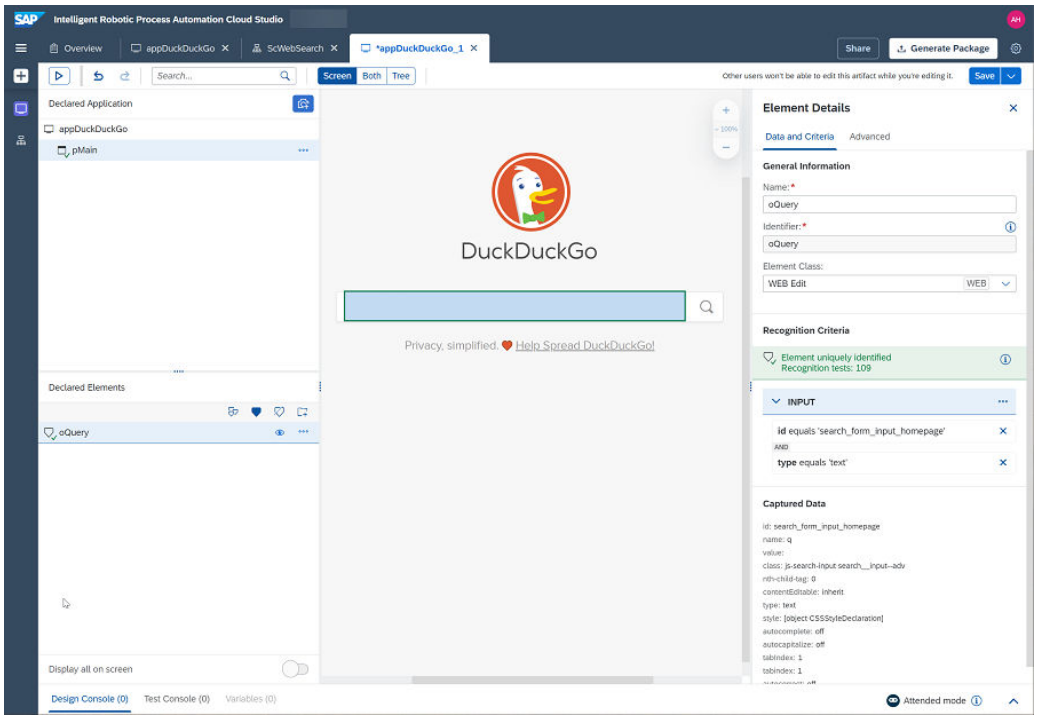
You will first declare the search bar.

Procedure

1. Click the search bar to select it.



2. In the *Element Details* side panel, enter the name `oQuery` in the *Name* field.
3. In *Recognition Criteria*, remove all criteria by clicking the ✕ icon and, under *Captured Data*, select:
   - *id: search_form_input_homepage* and
   - *type: text*.
4. Click *Declare Element*.
   You have declared the search bar.



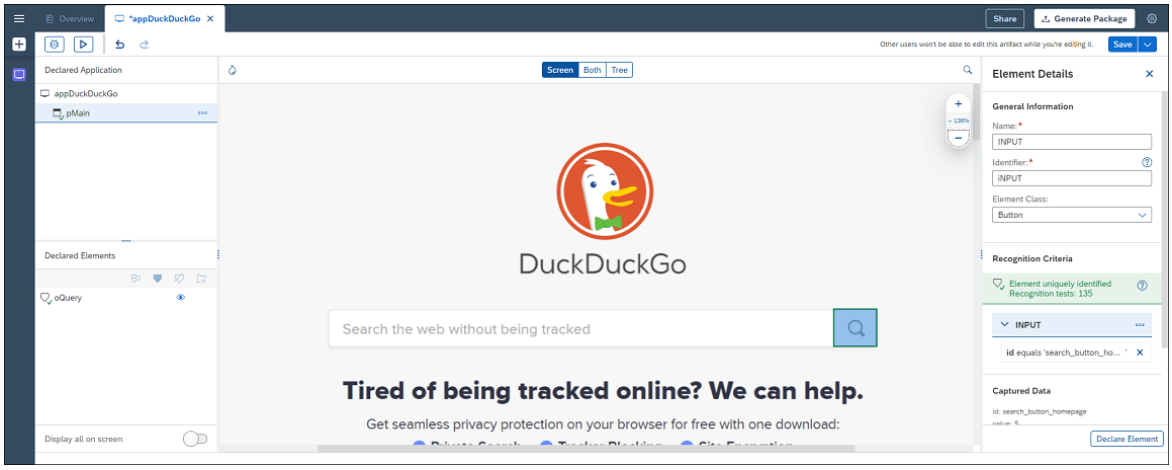
1.4.2 Declare the Search Button

Context

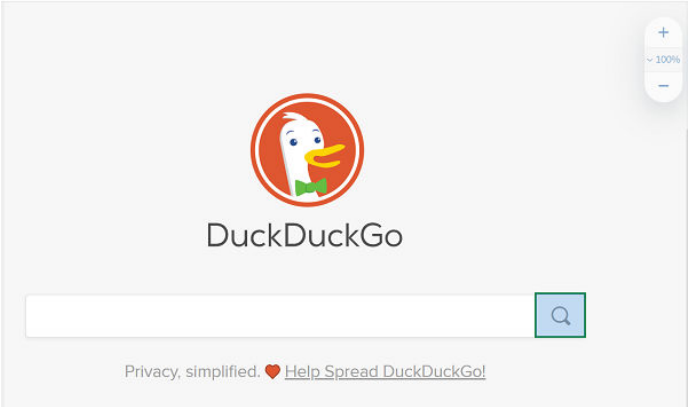
In this section, you will declare the search button.

Procedure

1. Click the search button to select it.



2. In the *Element Details* side panel, enter the name `btSearch` in the *Name* field.
3. In *Recognition Criteria*, remove all criteria by clicking the ✕ icon and, under *Captured Data*, select:
   - *id: search_button _homepage* and
   - *type: submit*.
4. Click *Declare Element*.
   You have declared the search button.



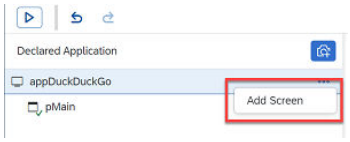
1.5 Capture the Search Results Screen

Context

You have captured an application and at least one screen. In this tutorial, you will capture another screen.

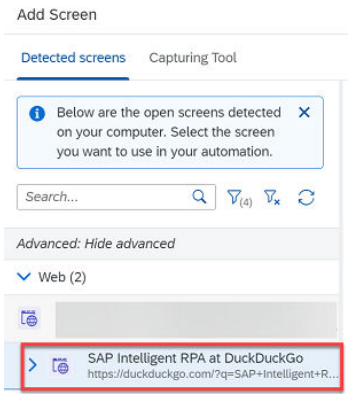
Procedure

1. On the DuckDuckGo web page, enter `SAP Intelligent RPA` in the search bar and click the search button. The search results are displayed.
2. In SAP Intelligent RPA Cloud Studio, go back to the DuckDuckGo screen you captured at the beginning of this tutorial.
3. On the *Declared Application* panel, click ••• next to the application your declared before to capture another screen and click *Add Screen*.



4. In *Select Screen*, select the DuckDuckGo screen you have opened from the list.

   A preview image of the screen is displayed in the capture area.

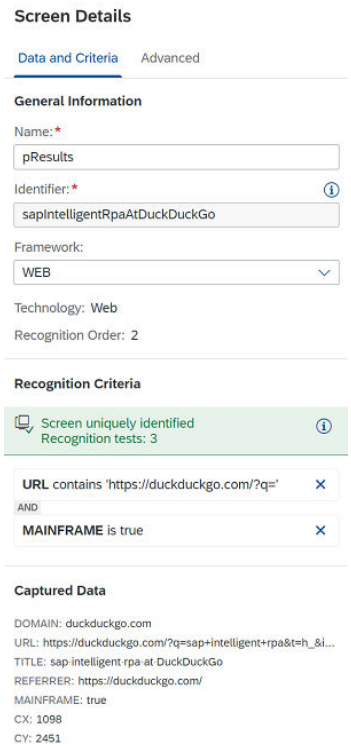


5. Enter a *Screen name* in the *Screen Details*.

   We enter `pResults` as a name.
6. Click *Capture*.
7. In *Captured Data*, select *MAINFRAME: true*:

> **Note**
>
> You must select *MAINFRAME: true* to interact with the elements you will declare on the screen.

8. In *Recognition Criteria*, select the *URL* criterion. Change its properties by choosing *contains* instead of *equals* and set the value as **`https://duckduckgo.com/?q=`**.



9. Once you have defined your criteria, click *Save*.

Next Steps

Next, you need to declare several elements on the search results screen: titles, links and short descriptions.

1.5.1 Declare the Titles

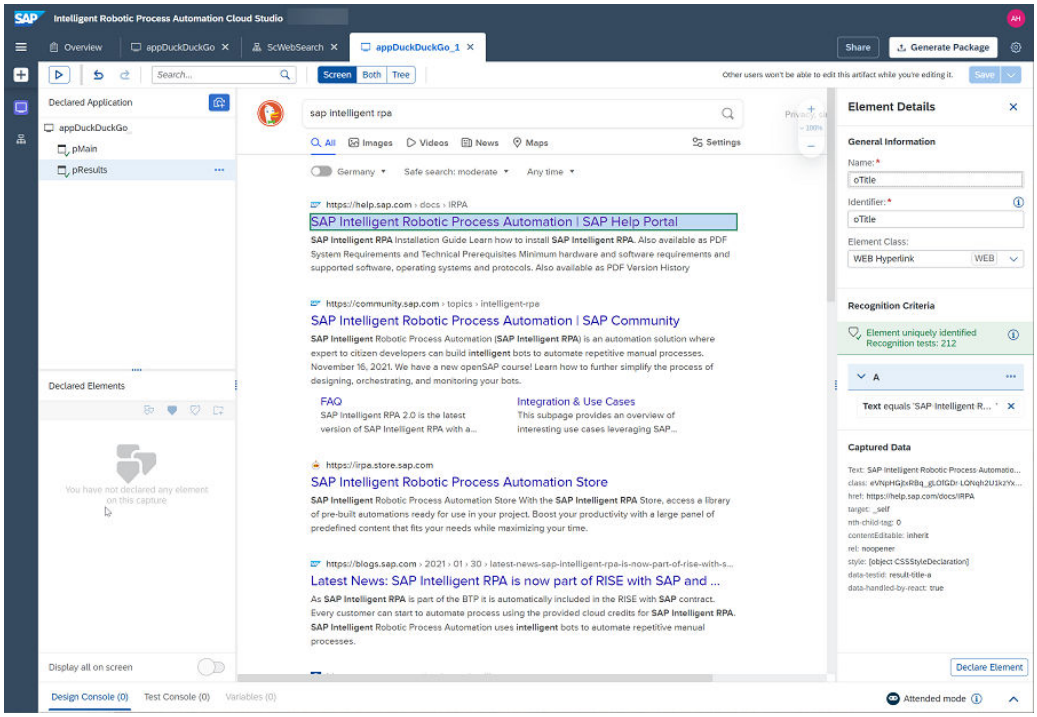
Context

You need to declare the titles on the results screen.

Procedure

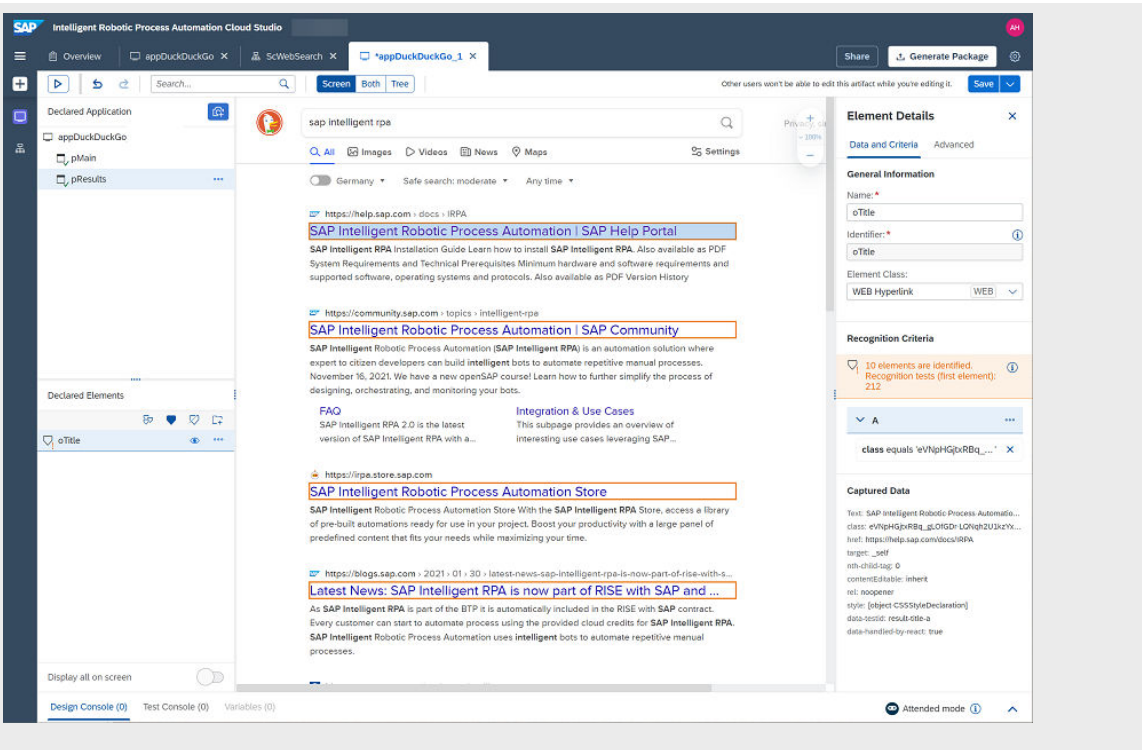
1. Click the first title to declare it.

   You can change its name. We choose to enter `oTitle` as a name.



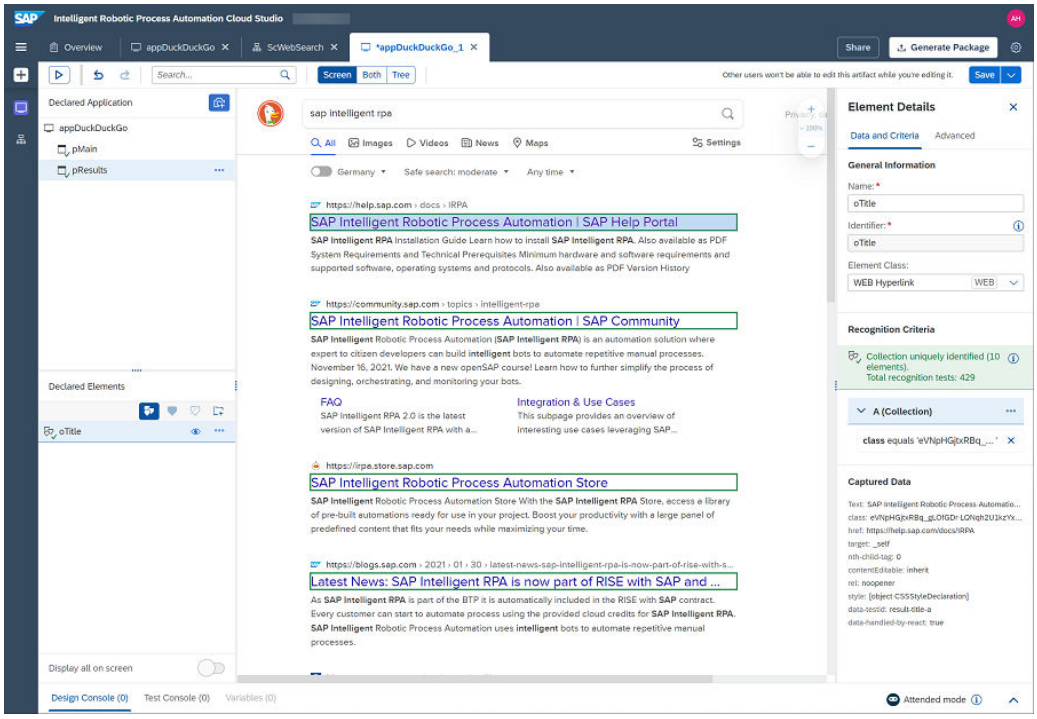
2. In *Captured Data*, click *class: result__a js-result-title-link* to add it as a criterion. In *Recognition Criteria*, click the cross ✕ to remove the criterion **Text** equals 'SAP Intelligent Robotic Process Automation | Intelligent RPA'.
3. Click *Declare Element*.

> **Note**
>
> You have declared the first title. The declared element is framed in orange until it is declared as a collection.



4. Under *Declared Elements* on the left-hand side panel, select the name of the element you declared and then click the *Is a collection* button.

> **Note**
>
> All elements on the screen that have the same criteria are added as a collection. A green border is shown around them.



5. Click *Save*.

1.5.2 Declare the Links

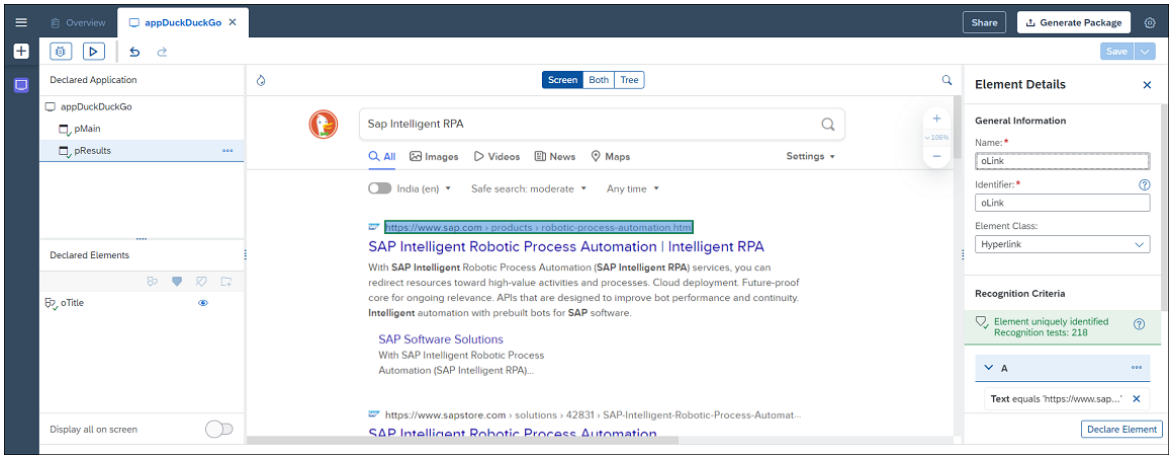
Context

You need to declare the links on the results screen.

Procedure

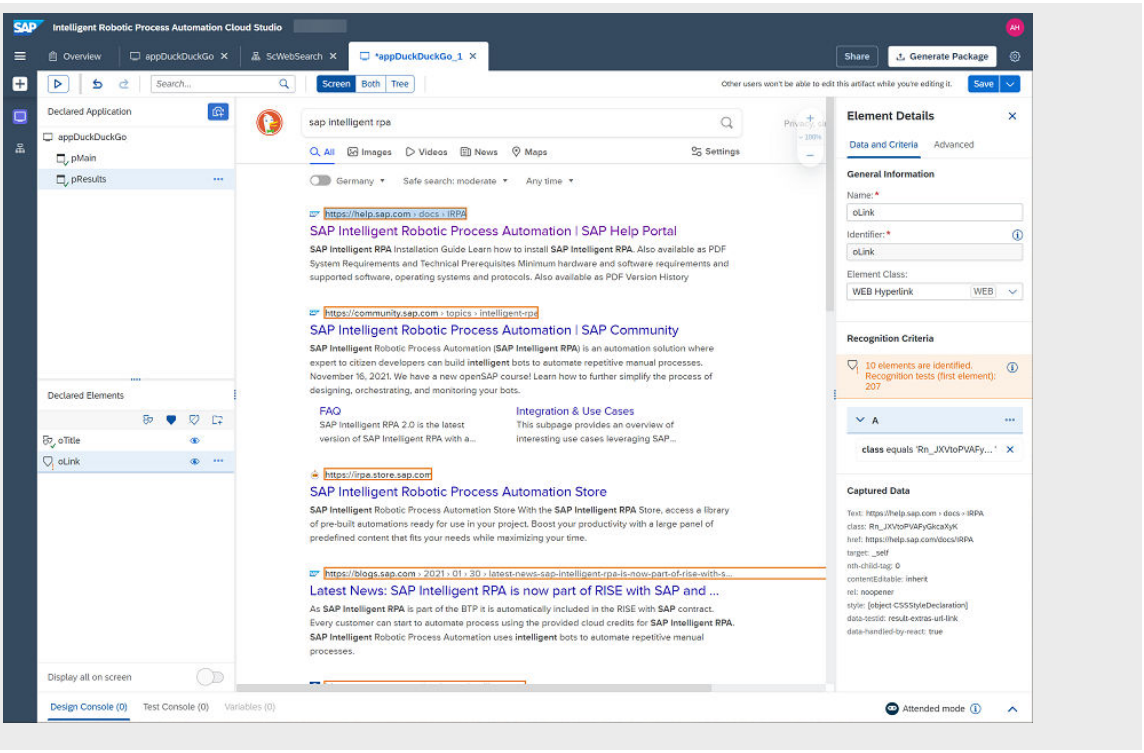
1. Click the first link to declare it.

   You can change its name. We choose to enter `oLink` as a name.



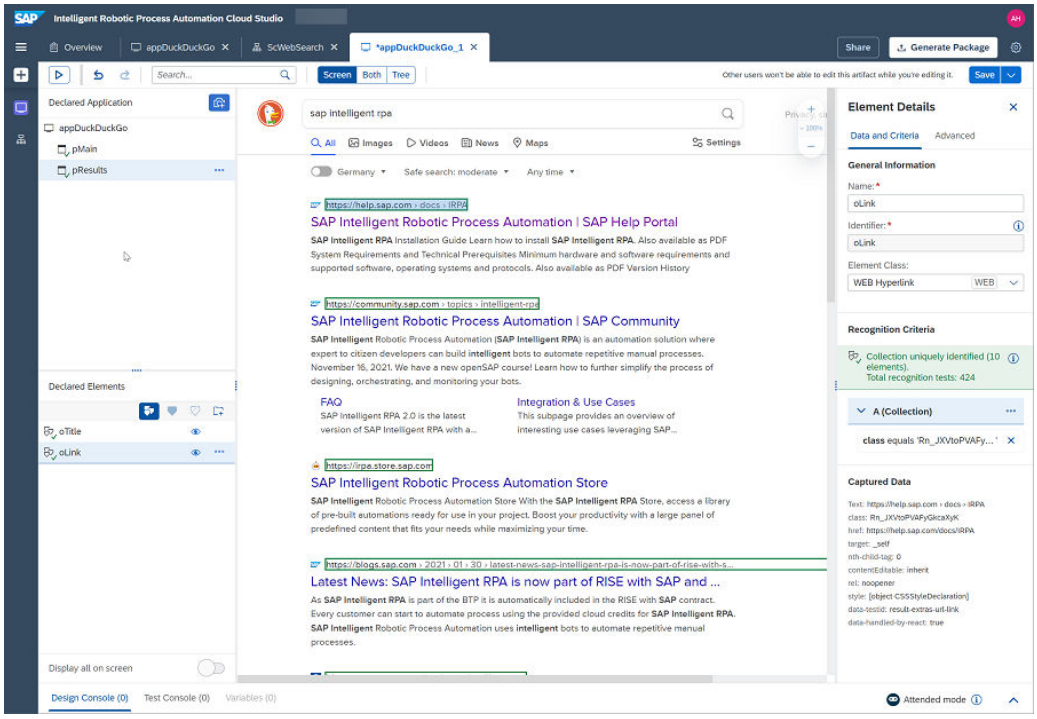
2. In *Captured Data*, click *class: result__url js-result-extras-url* to add it as a criterion. In *Recognition Criteria*, click the cross ✕ to remove the criterion **Text** equals 'https://www.sap.com/products/robotic-process-automation.html'.
3. Click *Declare Element*.

> **Note**
>
> You have declared the first link. The declared element is framed in orange until it is declared as a collection.



4. Under *Declared Elements* on the left-hand side panel, select the name of the element you declared and then click the *Is a collection* button.

> **Note**
>
> All elements on the screen that have the same criteria are added as a collection. A green border is shown around them.



5. Click *Save*.

1.5.3 Declare the Short Descriptions

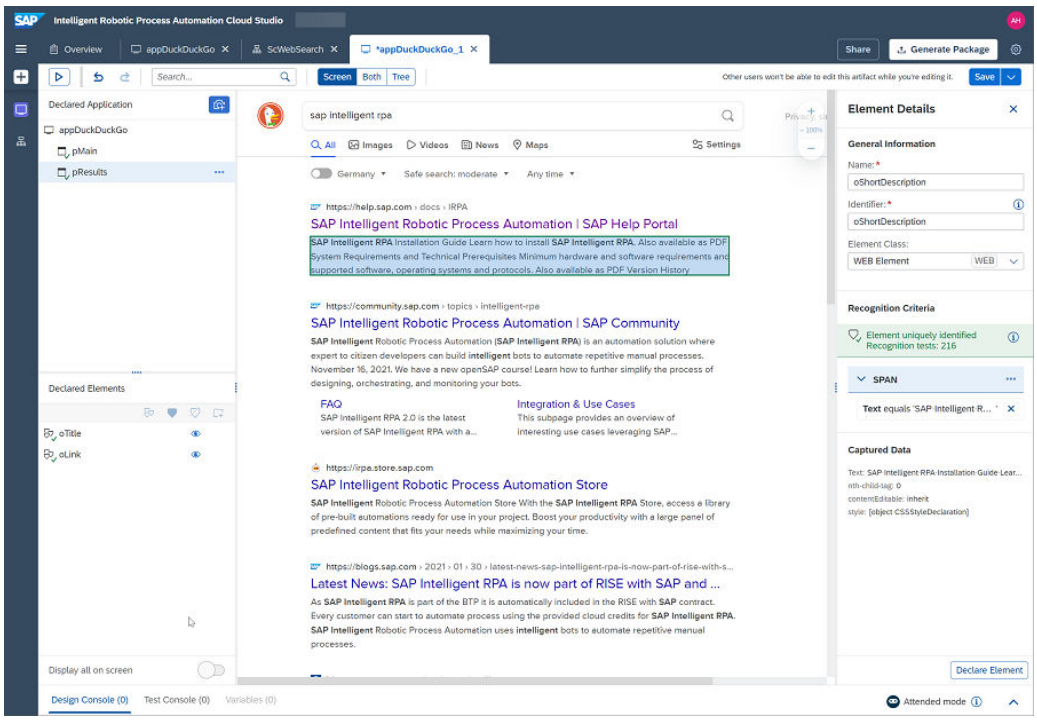
Context

You need to declare the short descriptions on the results screen.

Procedure

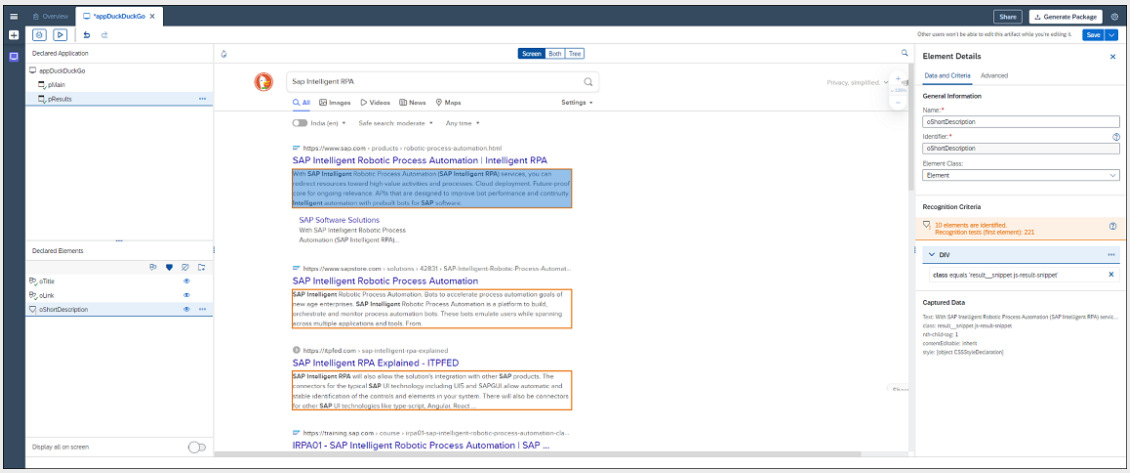
1. Click the first short description to declare it.

   You can change its name. We choose to enter `oShortDescription` as a name.



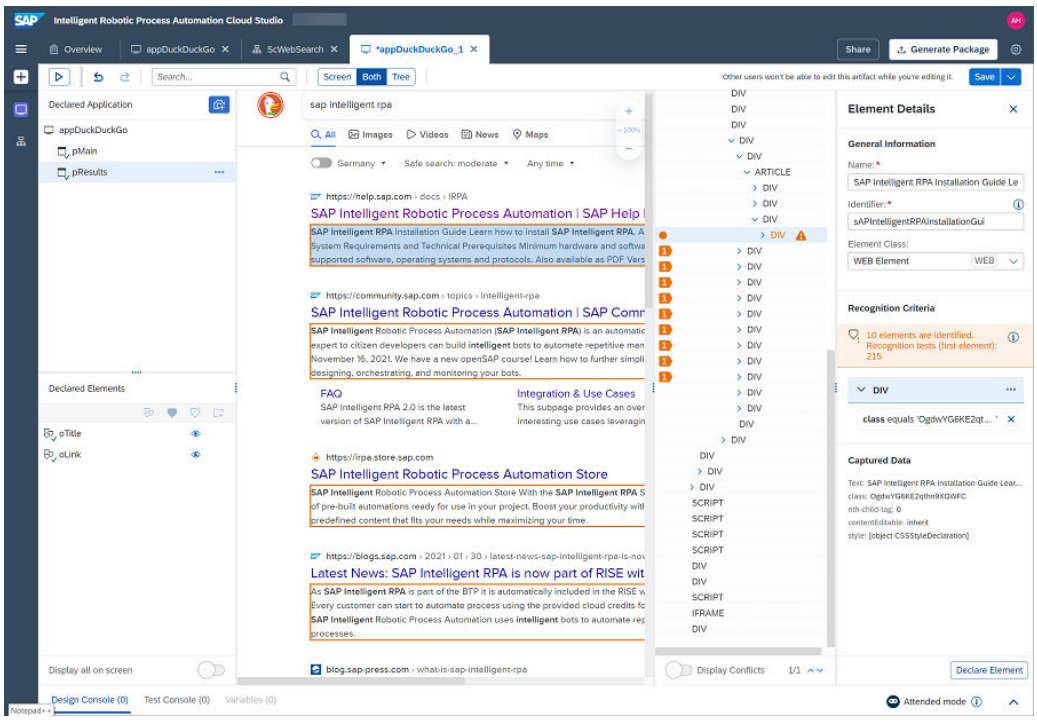
2. In *Captured Data*, click *class: result__snippet js-result-snippet* to add it as a criterion. In *Recognition Criteria*, click the cross ✕ to remove the criterion **Text** equals 'With SAP Intelligent Robotic Process Automation (SAP Intelligent RPA) ...'
3. Click *Declare Element*.

> **Note**
>
> You have declared the first short description. The declared element is framed in orange until it is declared as a collection.



4. Under *Declared Elements* on the left-hand side panel, select the name of the element you declared and then click the *Is a collection* button.

> **Note**
>
> All elements on the screen that have the same criteria are added as a collection. A green border is shown around them.



5. Click *Save*.

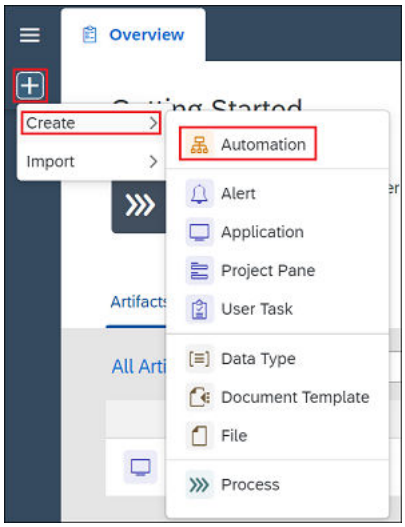
1.6 Create your Automation

Context

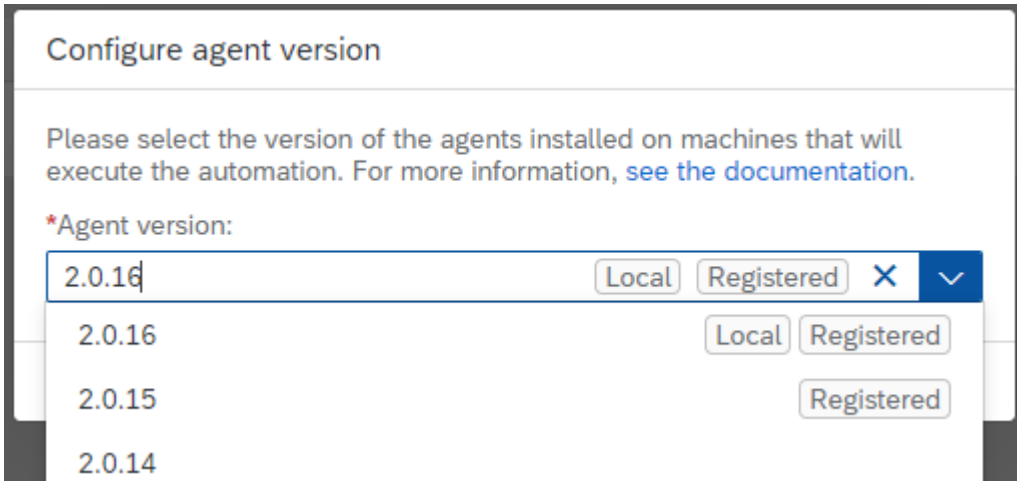
You captured and declared different screens and elements. You will now create an automation.

Procedure

1. Click the + icon and then the *Create* button in the Project Explorer left-hand side panel and select *Automation*.



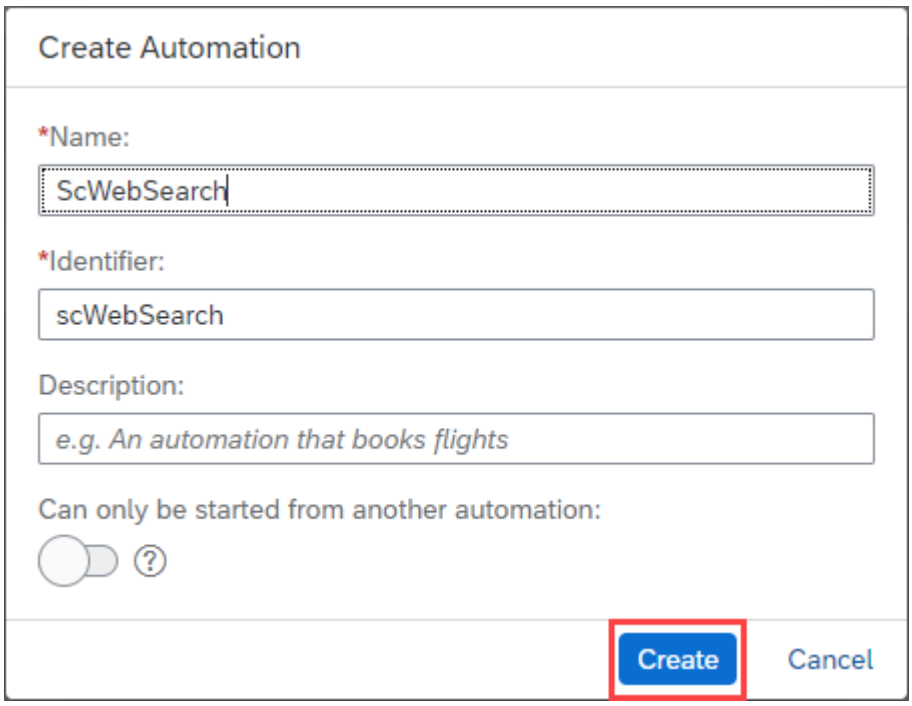
2. Configure the version of the agent that will execute the automation.



For more information, see: Configure an Agent Version

3. Enter a name in the *Name* field and click *Create*.

   We choose to name the automation `ScWebSearch`.



Next Steps

You can now drag and drop activities to build your automation in the Cloud Studio.

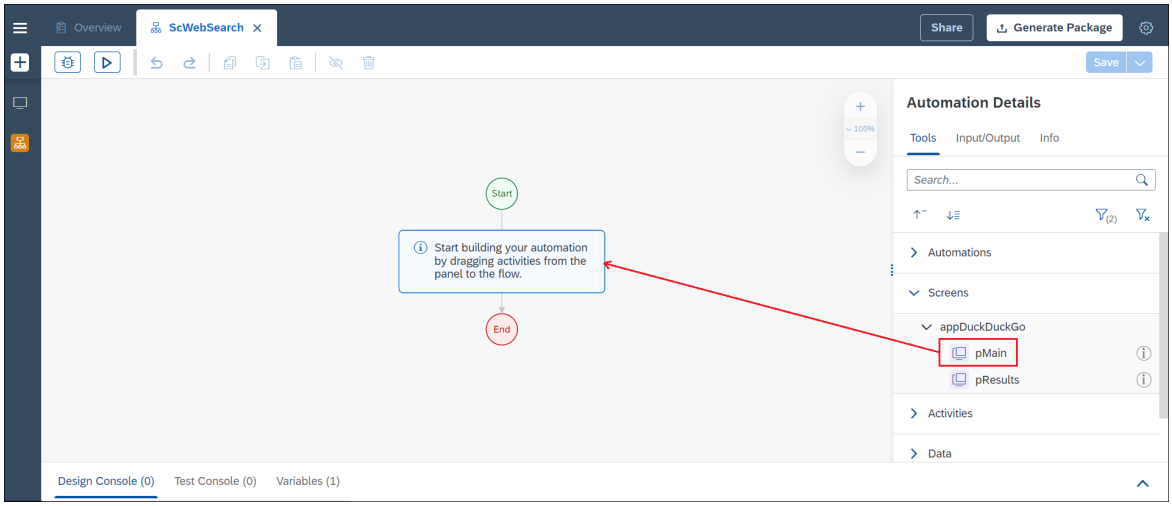
1.6.1 Set the Search Engine Screen Activities

Context

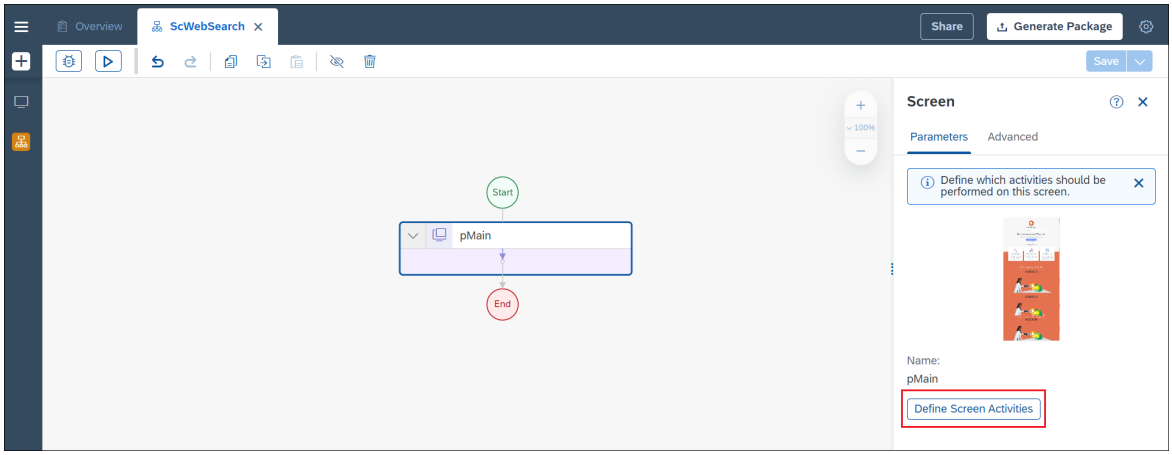
You have created an automation. You will first set activities of the search engine screen that we named `pMain` in Capture the Search Engine.

Procedure

1. In *Automation Details*, open the *Screens* list in the dropdown menu on the right-hand side panel. Drag and drop the screen `pMain` into the workflow.



2. Select `pMain` in the workflow and click the *Define Screen Activities* button on the *Screen* panel.

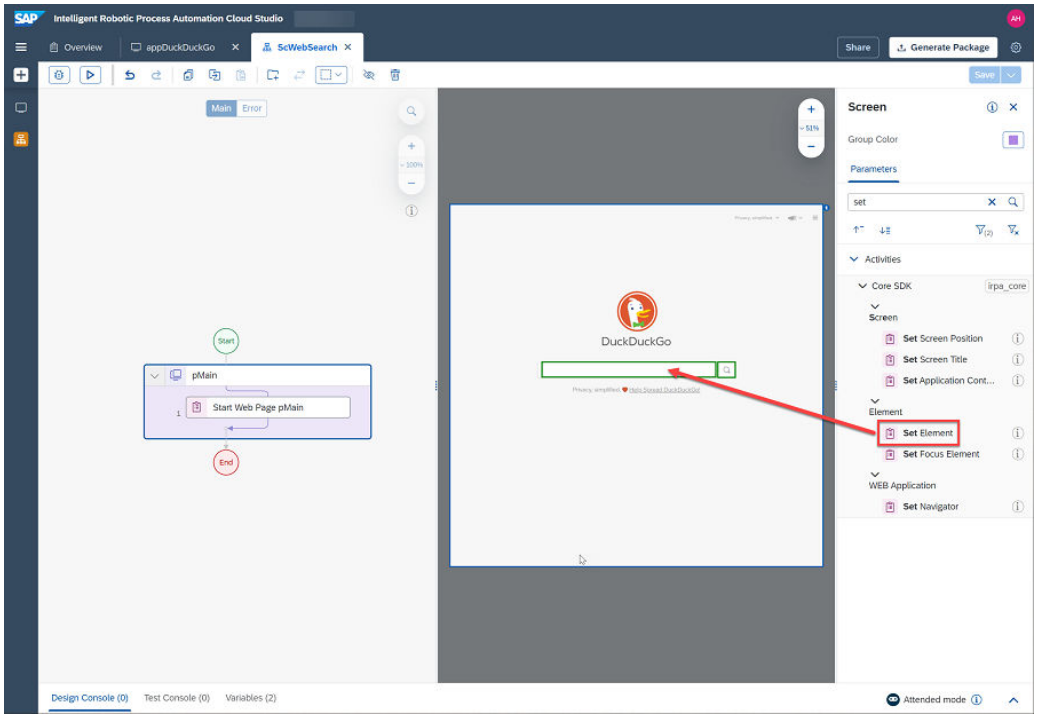


3. Enter `Start` in the search bar of the *Screen* panel and choose the *Start Web Page* activity, in the *WEB Screen* submenu.

   Drag and drop the *Start Web Page* activity anywhere on the screen preview in the main panel.

> ### Note
>
> Do not drag and drop the activity on the elements you declared before.

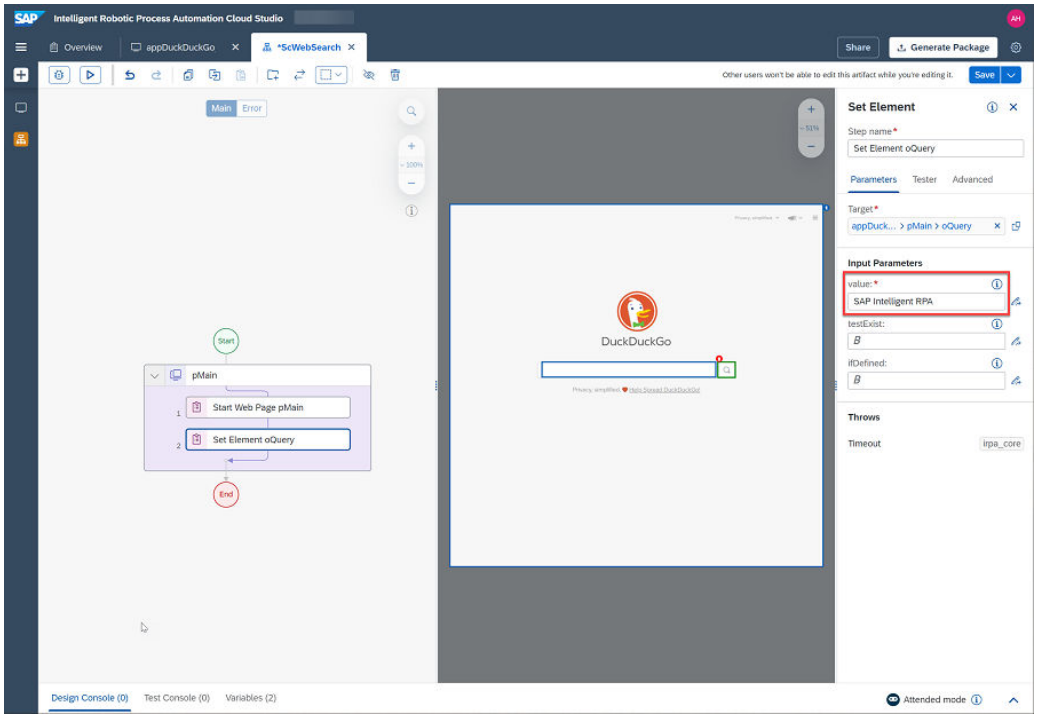
4. Save your automation.
5. Enter `Set` in the search bar of the *Screen* panel and choose the *Set Element* activity, in the *Element* submenu. Drag and drop the activity onto the search bar.



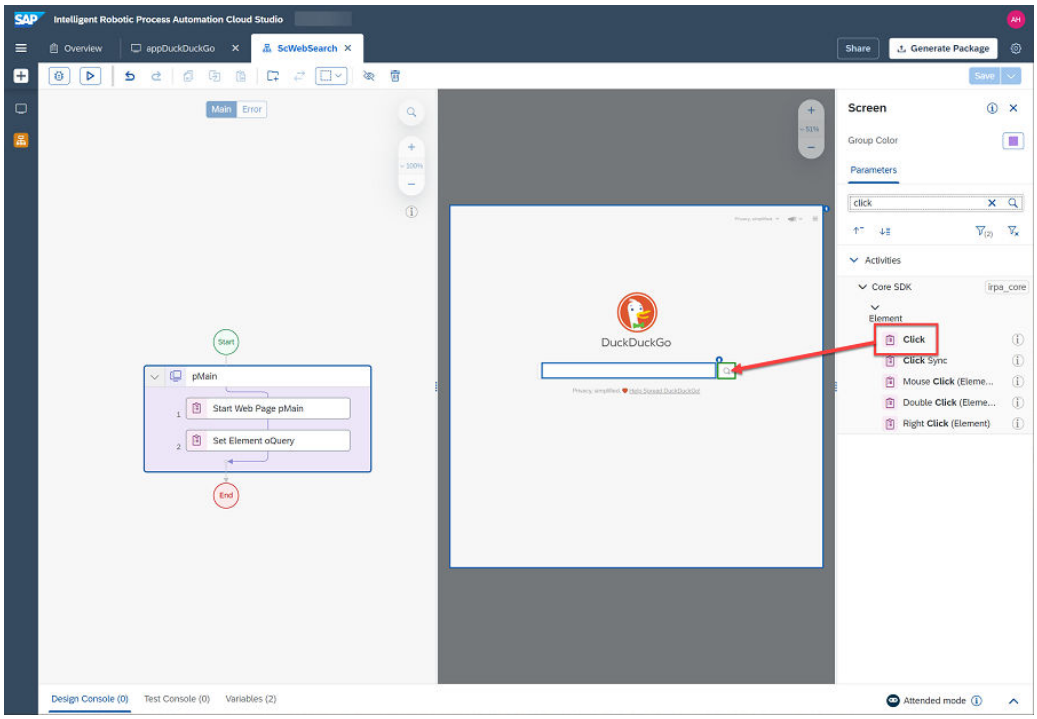
6. Select the *Set Element* activity in the workflow and enter `SAP Intelligent RPA` as *value* in *Input Parameters*.

   Click *Save*.

> ### Note
>
> When you add the activity to your automation workflow, you can notice that it is labeled with a number. It means that the activity is linked to the search bar on the captured screen.



7. Click `pMain` on your workflow to reopen the side panel.
8. Drag and drop the *Click* activity from the *Element* submenu onto the search button.



> ### Note
>
> You can notice that the activity is labeled with a number.

9. Save your automation.

Next Steps

You need to set the activities of the search results screen.

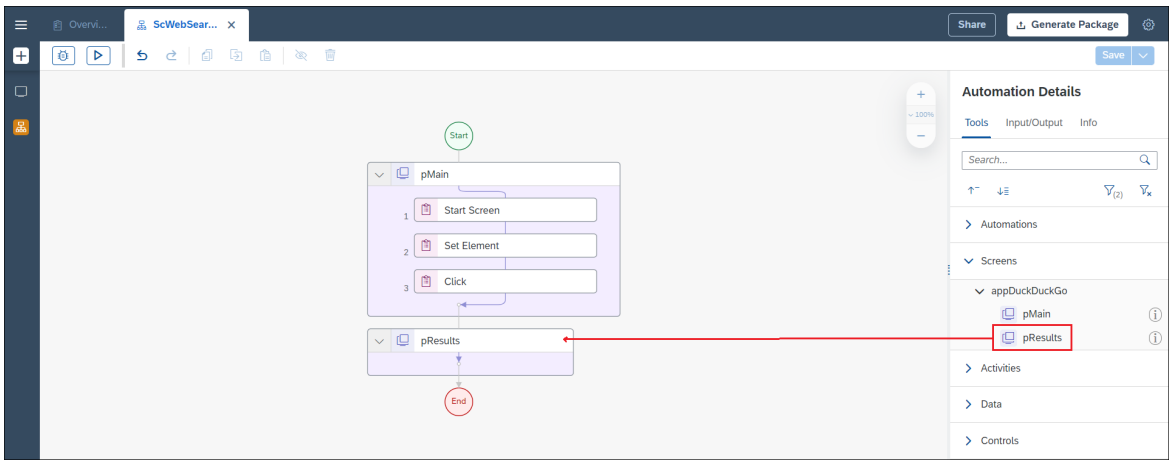
1.6.2 Set the Search Results Screen Activities

Context

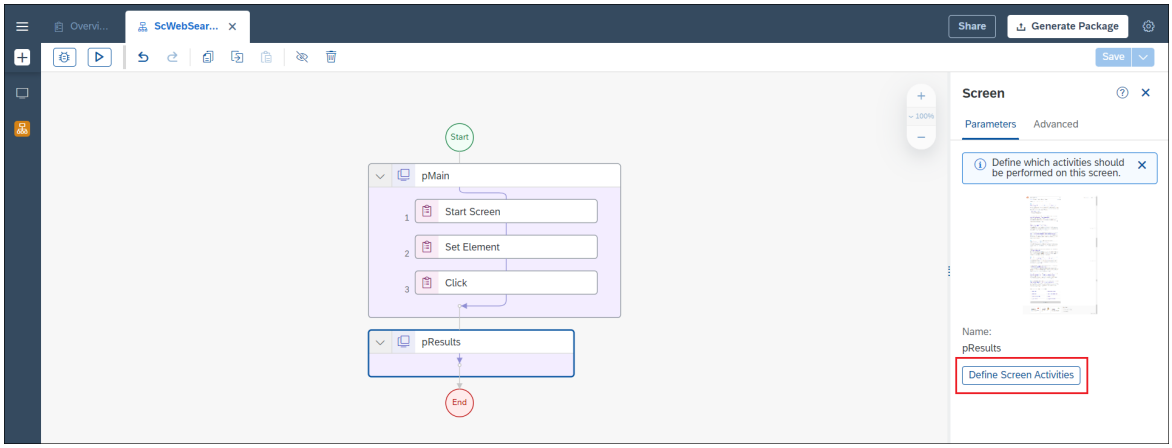
You have created an automation. You have set activities of the search engine screen. You will now set the activities of the search results screen that we named `pResults` in Capture the Search Results Screen.

Procedure

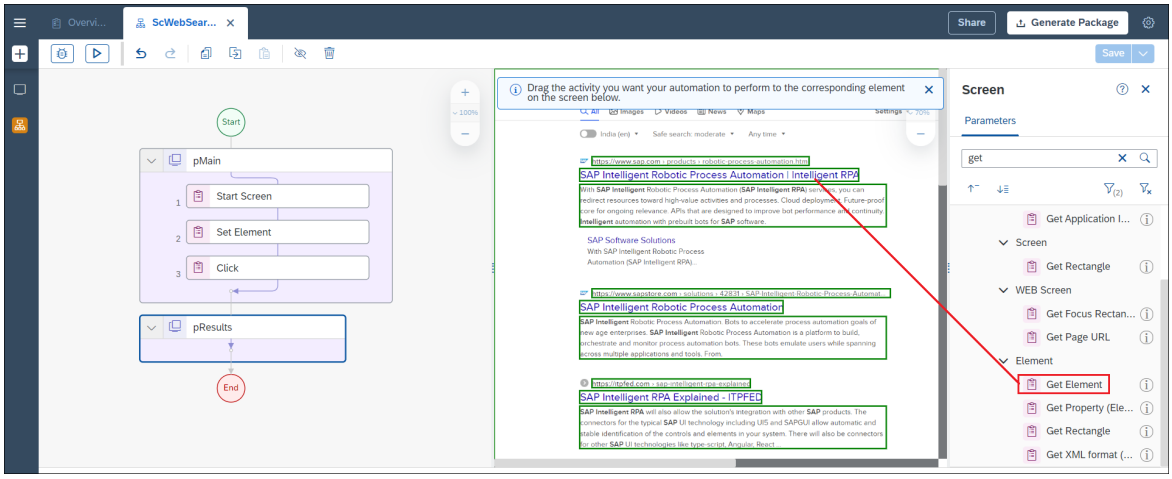
1. In *Automation Details*, open the *Screens* list in the dropdown menu on the right panel. Drag and drop the screen `pResults` into the workflow and after `pMain`.



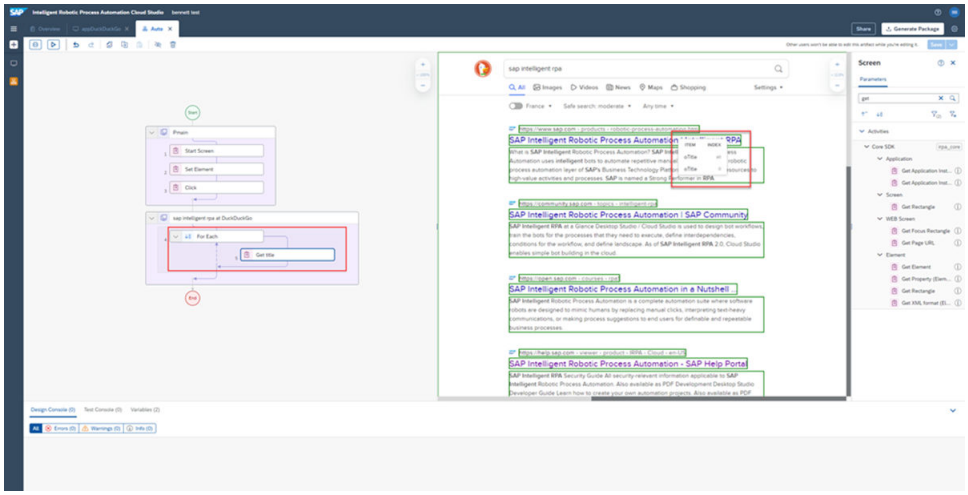
2. Select `pResults` in the workflow and click the *Define Screen Activities* button in the *Screen* panel.



3. Enter `Get` in the search bar at the top of the *Screen* panel. Drag and drop the *Get Element* activity from the *Element* submenu onto the first result title.



A small menu will pop up next to where you dropped the *Get Element* activity. Select the first item *oTitle* with the index *all* to select the whole collection.



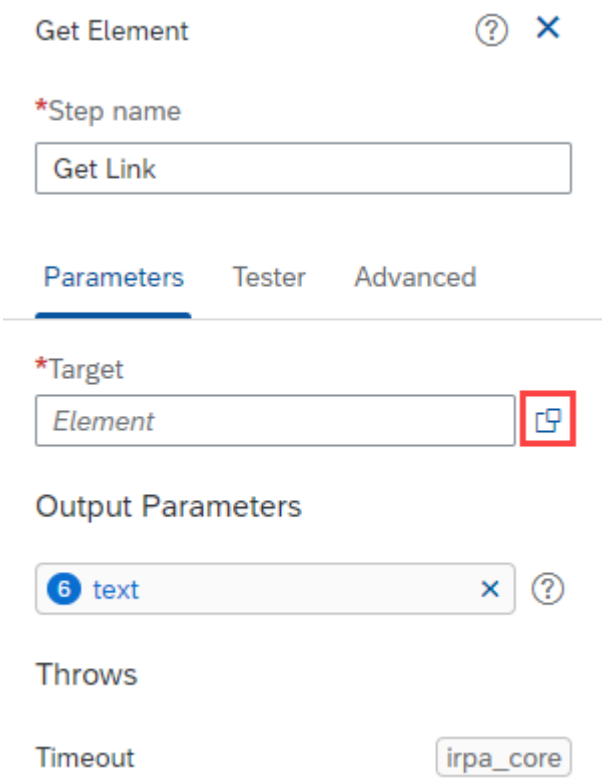
> **Note**
>
> After adding the activity into `pResults`, you can see that there is a *For each* block in the workflow. It means that the *Get Element* activity will be repeated for each result title of the list.

Select *Get Element* in the workflow and rename it in the *Step Details* panel. We name it `Get Title`.

4. Drag and drop the *Get Element* activity into the *For each* block after the `Get Title` activity.

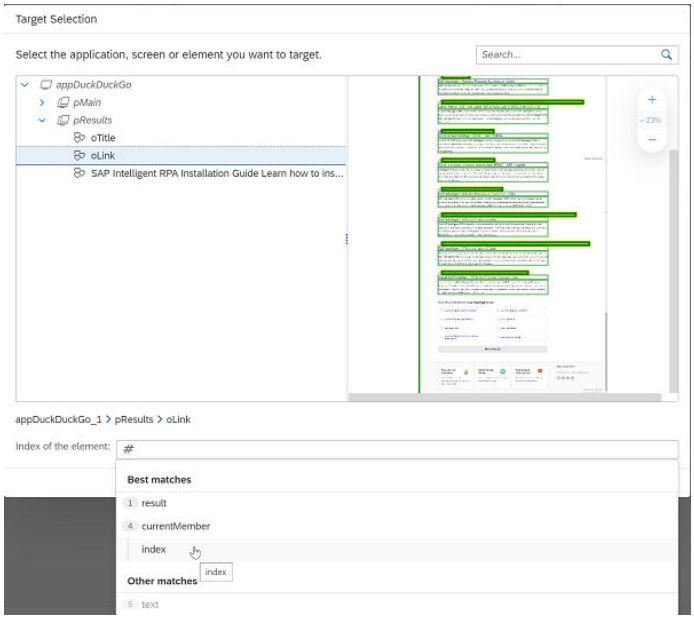
   You can select the activity you have added in the workflow and rename it on the right-hand side panel. We name it `Get Link`.

5. In the *Step Details* panel, click the icon to open the *Target Editor*.



You can now set the targeted element for this activity.

6. Expand:
   - *appDuckDuckGo* (or the name you have given to your application in Capture the Search Engine).
   - *pResults* (or the name you have given to the search results screen in Capture the Search Results Screen).
   - and select *oLink* (or the name you have given to the search results links in Declare the Links).



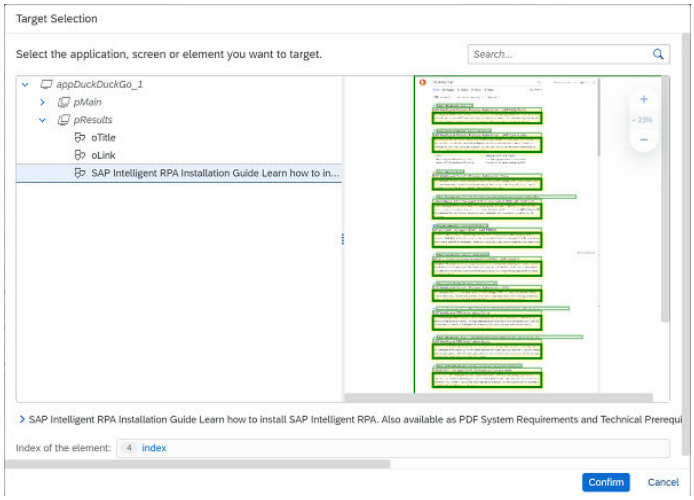
Select *4 Index* as the *Index of the element* and click *Confirm*.

7. Drag and drop the *Get Element* activity into the *For each* block after the *Get Link* activity.

   Select the activity you have added in the workflow. Rename it in the right-hand side panel. We name it `Get Short Description`.

8. In the *Step Details* panel, click the icon to open the *Target Editor*, expand:

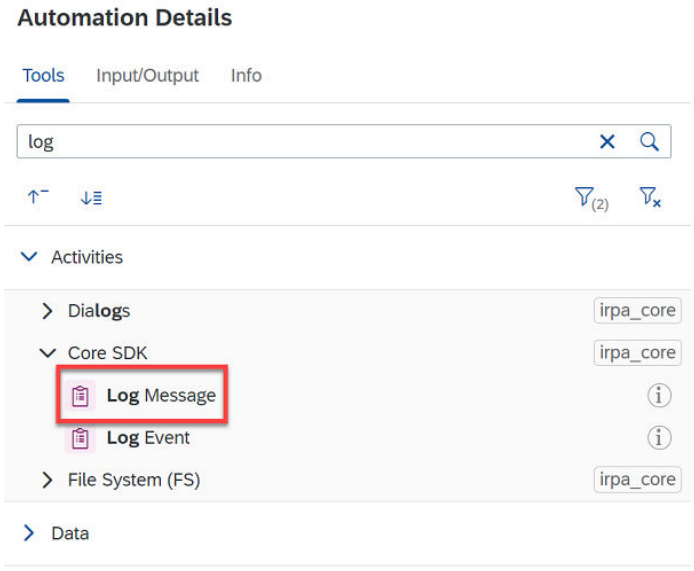
   - *appDuckDuckGo* (or the name you have given to your application in Capture the Search Engine).
   - *pResults* (or the name you have given to the search results screen in Capture the Search Results Screen).
   - and select *oShortDescription* (or the name you have given to the search results links in Declare the Short Descriptions).



Select *4 Index* as the *Index of the element* and click *Confirm*.

9. Click *pResults* in the workflow. In the search bar of the *Screen* panel, enter Log.

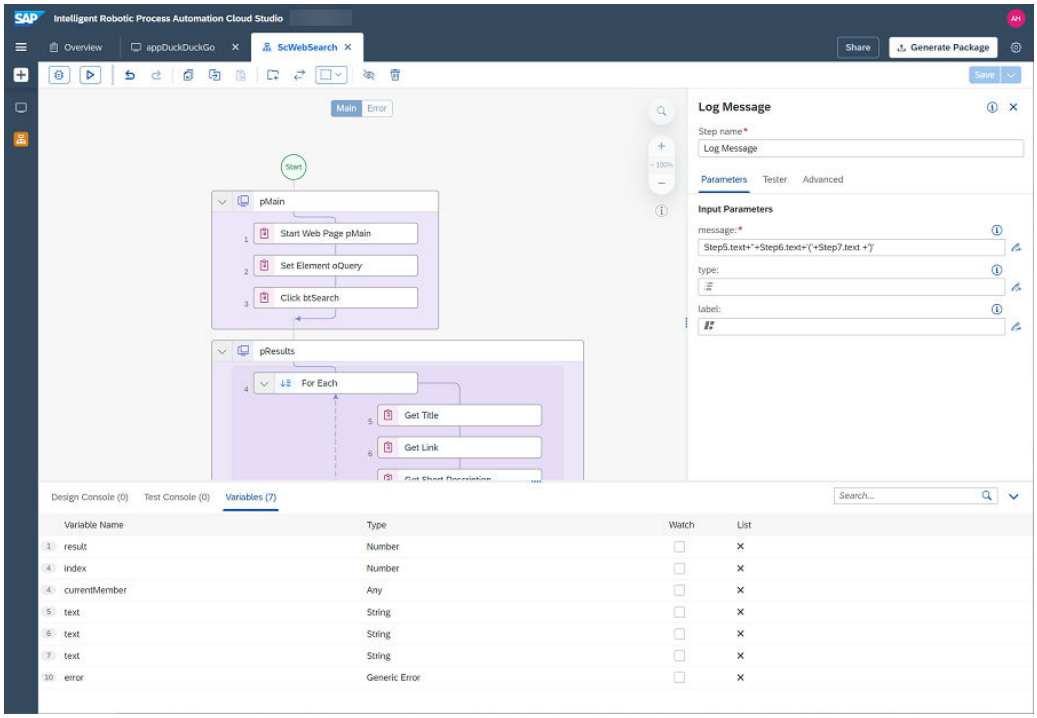
> **Note**
>
> You will not find the *Log Message* activity because this activity cannot be added to a screen.
>
> To add a *Log Message* activity in the *For each* block, you must click ▽ and unselect *Contextual filtering*.



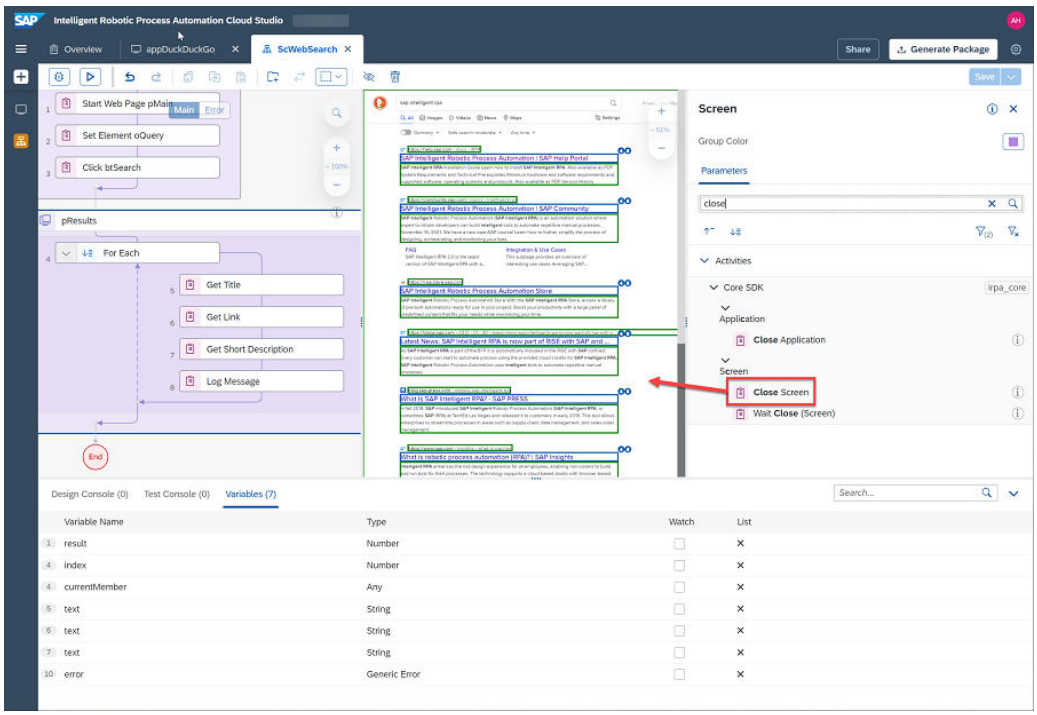
You can now drag and drop the *Log Message* activity into the workflow, under the *Get Short Description* activity.

10. Select the *Log Message* activity to open the side panel and click ✎ next to the *message* field to open the *Expression Editor*.
11. Enter `Step5.text+''+Step6.text+'('+Step7.text +')'` in the *Expression Editor* and save your expression.

> **Note**
>
> You can expand the *Variables* section to select the steps.



12. In the workflow of your automation, double-click on *pResults* to open the *Screen* panel. Enter `Close` in the search bar and drag and drop the *Close Screen* activity from the *Screen* submenu anywhere on the screen preview.



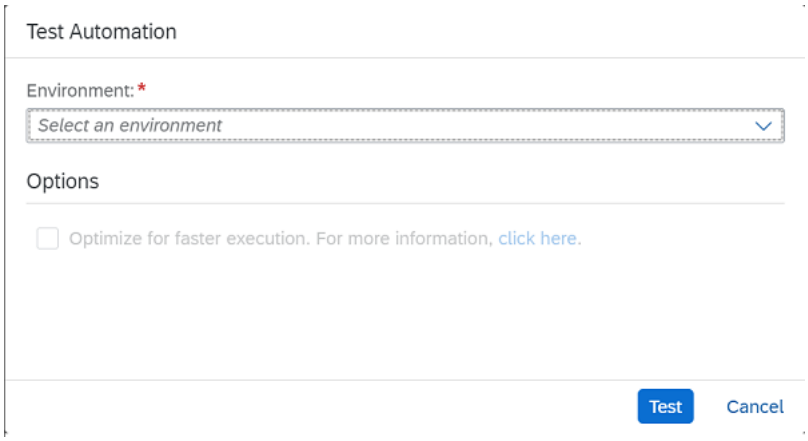
Next Steps

You can now save your automation and test it.

1.7 Test your Automation

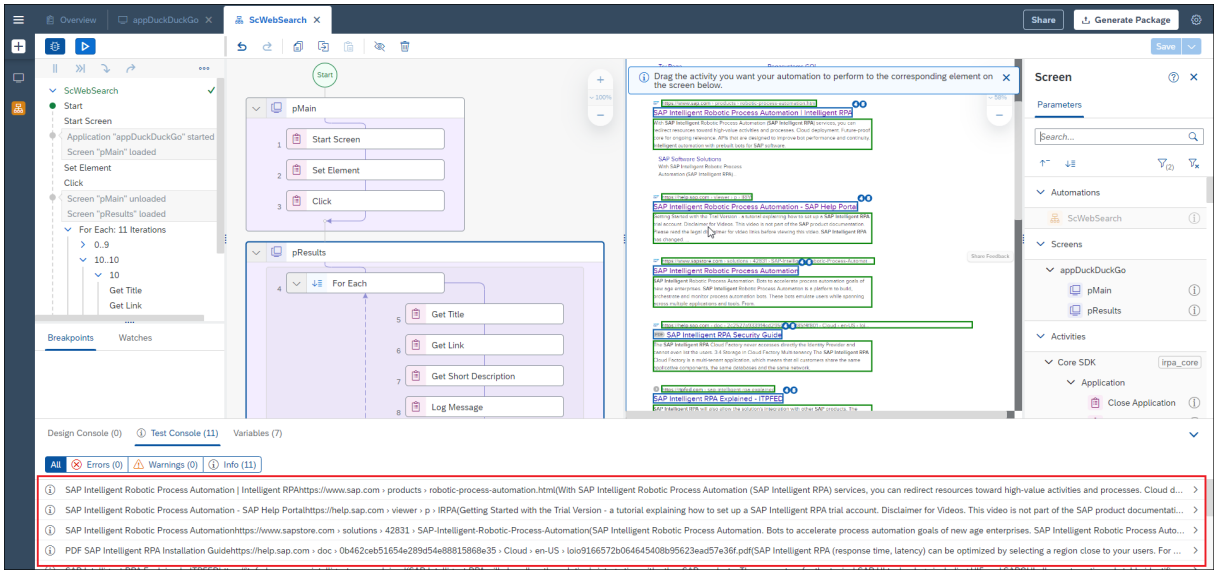
You created your automation and you will now test it.

1. Click the ▷ *Test* button in the automation main panel to test your automation.
2. Select your environment in the drop-down list and click *Test*.
   The *Test Automation* window appears.



> **Note**
>
> Before testing your automation, you must create an environment in the SAP Intelligent Robotic Process Automation Factory.
>
> For more information, see Create and Manage Environments.

If you have closely followed the steps, you can find the results of your search in the *Info* log at the bottom of the screen.


Overview
appDuckDuckGo
ScWebSearch
Share
Generate Package
Save
ScWebSearch
Start
Start Screen
Application "appDuckDuckGo" started
Screen "pMain" loaded
Set Element
Click
Screen "pMain" unloaded
Screen "pResults" loaded
For Each: 11 Iterations
0..9
10..10
10
Get Title
Get Link
Breakpoints
Watches
Start
pMain
Start Screen
Set Element
Click
pResults
For Each
Get Title
Get Link
Get Short Description
Log Message
Drag the activity you want your automation to perform to the corresponding element on the screen below.
Screen
Parameters
Search...
Automations
ScWebSearch
Screens
appDuckDuckGo
pMain
pResults
Activities
Core SDK
irpa_core
Application
Close Application
Design Console (0)
Test Console (11)
Variables (7)
All
Errors (0)
Warnings (0)
Info (11)
SAP Intelligent Robotic Process Automation | Intelligent RPAhttps://www.sap.com › products › robotic-process-automation.html(With SAP Intelligent Robotic Process Automation (SAP Intelligent RPA) services, you can redirect resources toward high-value activities and processes. Cloud d...
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