

TestProject's AI Self-Healing Technology



Introduction

In this session, I will talk about TestProject's new AI-Powered Self-Healing Technology. It's built into their Test Recorder. Self-Healing means if an element has a change then the recorder uses AI to simulate human intelligence. It is smart to automatically handle the change then maintain our test. More information about the Self-Healing Technology can be found on TestProject's blog site. Since TestProject is built on top of Selenium, we have the benefits of Selenium and AI.

Some of the benefits include support for Dynamic Elements, iFrames, Pop-Ups, Custom Attributes, Multiple Windows/Tabs, Adaptive Wait, and Hovering Menu Items. I'm going to show you how it supports Dynamic Elements, how to add Custom Attributes, and how it supports Hovering a Menu. Also show you the report after running our Test Script.

Dynamic Elements

A dynamic element is an element that has attributes that change after reloading a page. This causes our Test Script to fail because the element has a new value for each Test Execution. On this [Rediff page](#), I will enter a Full Name and ID.

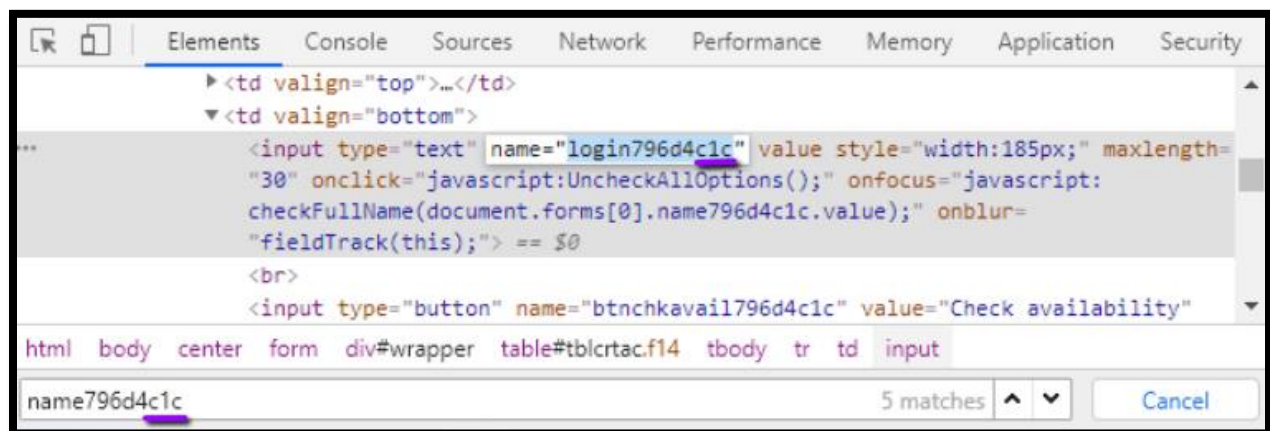
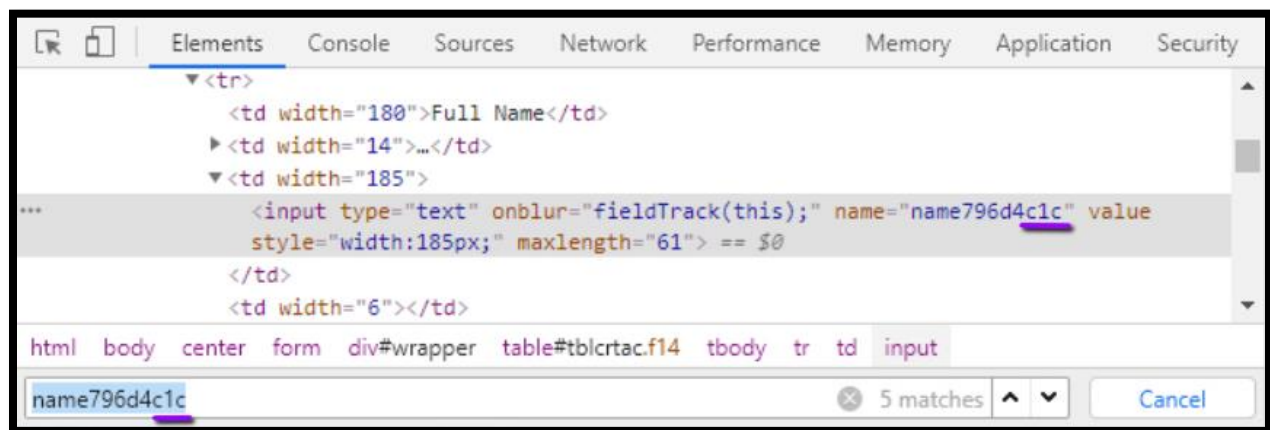
Home
rediff.com

Create a Rediffmail account

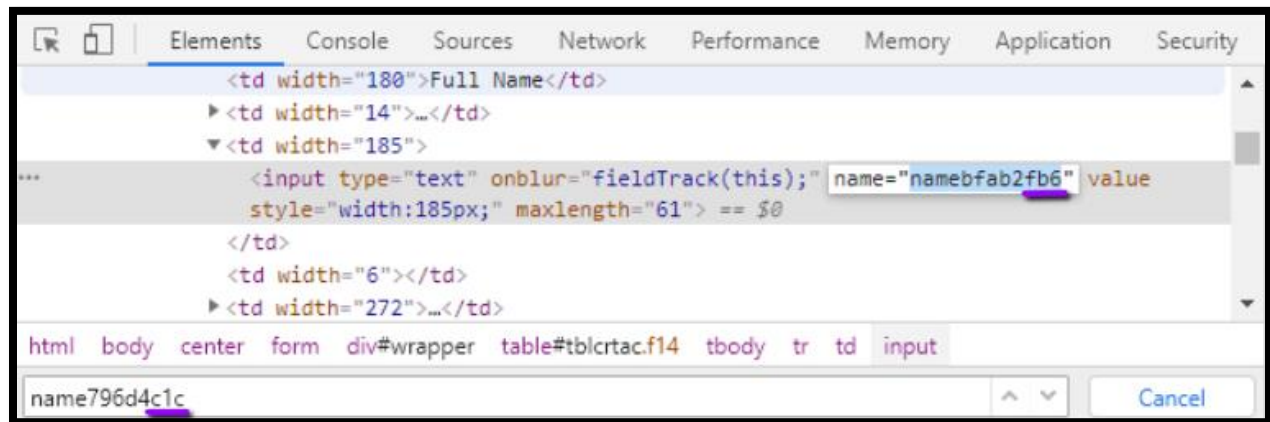
Full Name : Enter your first name & last name
Eg. Sameer Bhagwat

Choose a Rediffmail ID : @rediffmail.com

However, let's inspect both fields. Do you see how the name attribute has a value that ends with c1c? I'm going to copy and paste the value.

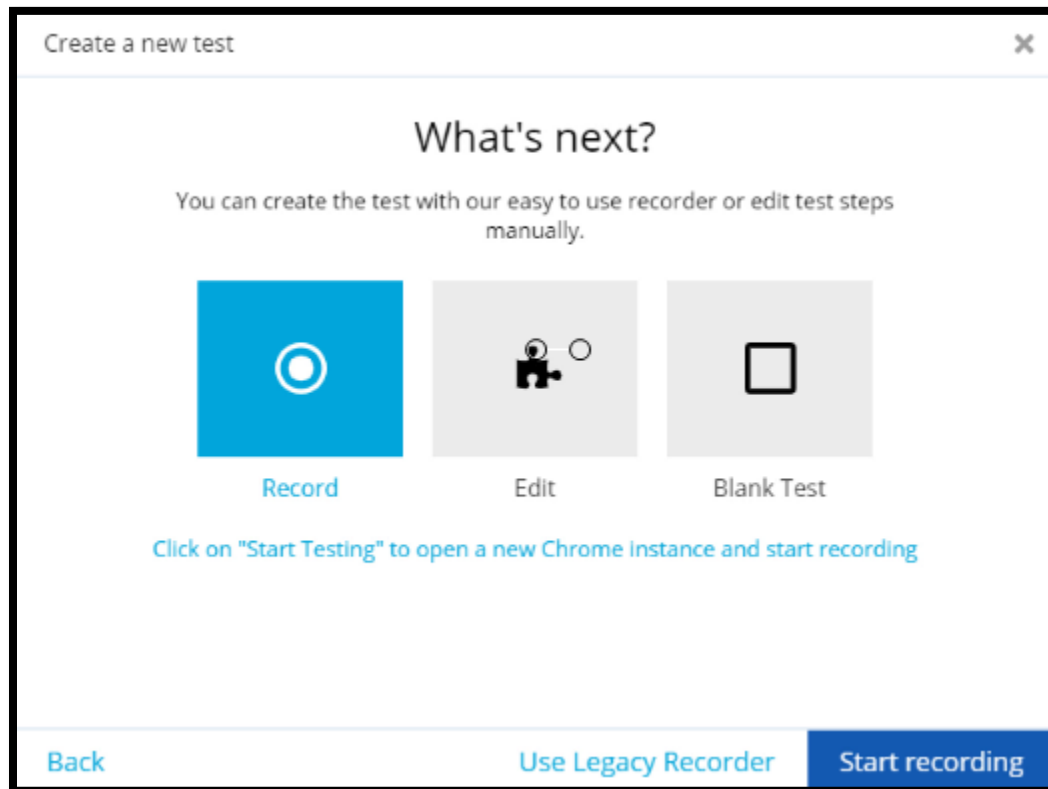


I'm going to also inspect the ID field and we see it ends with the same value. Now, watch what happens when I reload the page. Inspect again and the value change. Also, for ID, it changed.



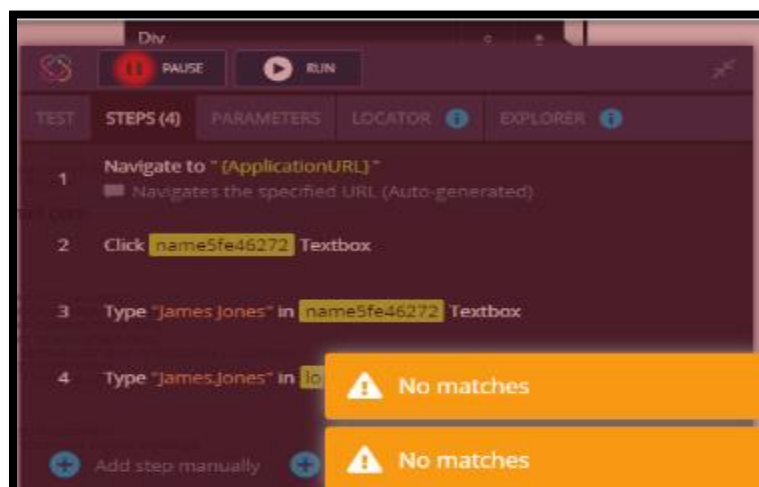
That's what we call a dynamic value because the element has a different value after reloading the page. The ID field and Name field are dynamic. Inspect and we see name ends with a totally different value 'fb6'.

TestProject's Recorder, it is smart enough to use AI and have more than 1 locator for these types of scenarios. First step, is to make sure we are logged into TestProject. Next, is to have Agent version 64 or higher running. I have version 65 and this green monitor icon shows my agent is running. Project is called AI Self-Healing Technology. Now let's create a test. Select Web, Next, then the name will be Dynamic Elements Demo then click Next. Select a web application. I'm going to add a new application. Name will be Rediff Application. Let me go back to this application and copy the [URL](#) and paste it then Finish. Select Next, Record. Now, and we have 2 options for Record: Legacy and Start Recording. Select Start Recording.



Here's the Test Recorder. Enter James Jones for the Full Name and James.Jones in the ID field. Now, let's inspect. Inspect the Full Name field and we see the value ends with 6272, ID also ends 6272, and we see right here in the Recorder that it ends with 6272.

Now, I'm going to reload then inspect again and we see the values changed to end with 22dd. The same for ID. Do you see this search icon when I hover over the step? If I click it, we see both values say No Matches.

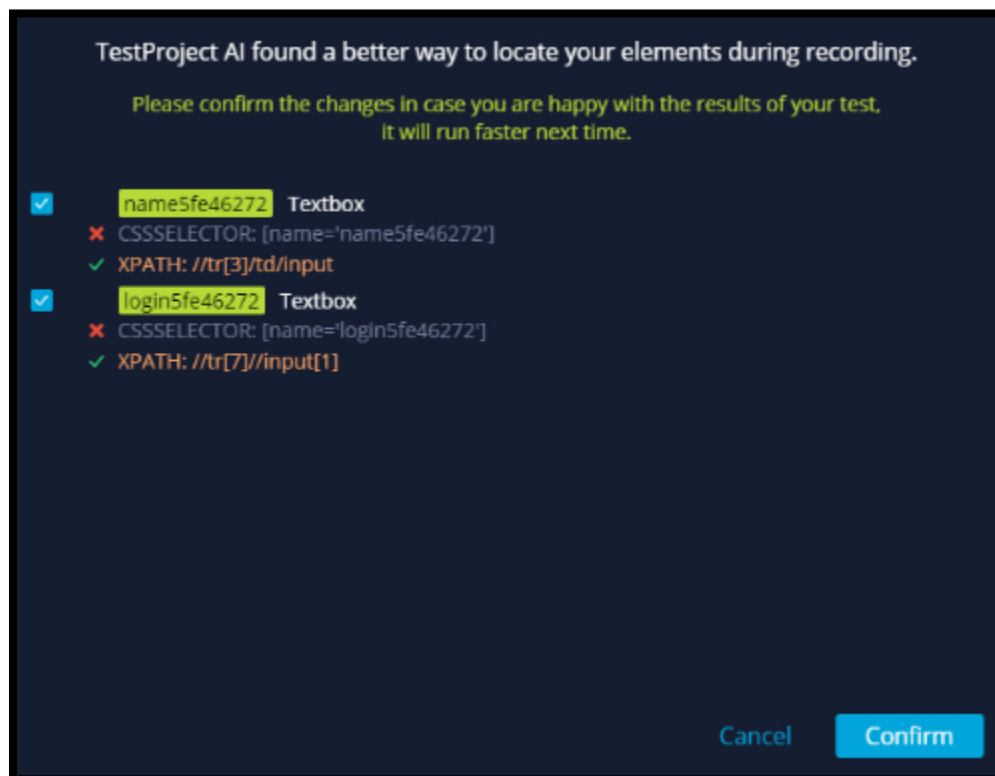


I'm going to Run and watch what happens. The expected element in Step #2 is missing. Don't worry, TestProject's AI is looking for another path forward. Hold tight. That's the message we see. It's letting us know, Don't sweat! Step #2 was self-healed by TestProject's AI. Your next test run will be lightning fast.

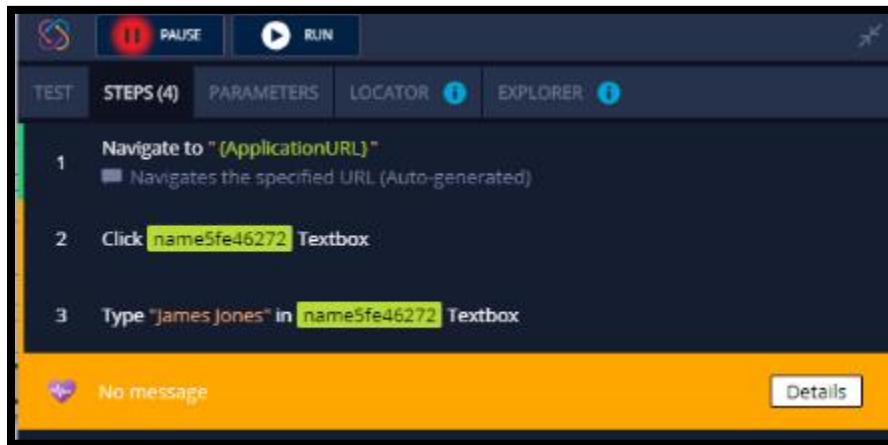
Now, it's saying the same message for Step #3. It is missing and Don't worry! Was self-healed by TestProject's AI. Your next test run will be lightning fast.

Don't sweat! Step #2 was self-healed by TestProject's AI. Your next test run will be lightning fast.
The expected element in step #3 is missing. Don't worry, TestProject's AI is looking for another path forward. Hold tight.

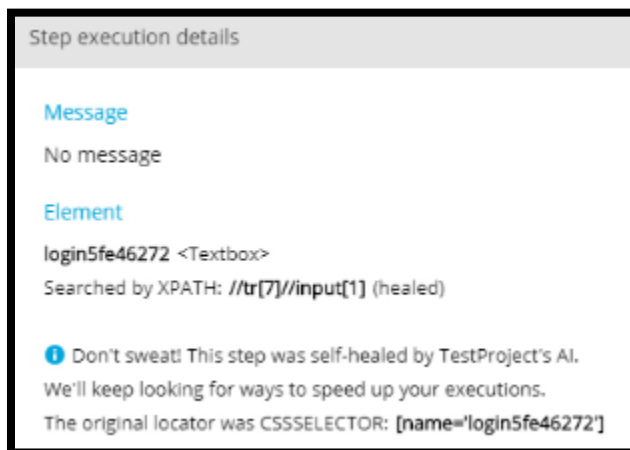
Now, the message updated to say healed by TestProject's AI. This AI feature works 2 ways: It works when recording a test and when executing a test. When recording a test, we see this message at the top that says TestProject AI found a better way to locate your elements during recording. After finding a new locator, there's a red x and a green checkmark. The red x shows the old value and green check mark is the new value. We can Cancel or Confirm the changes. Click Confirm.



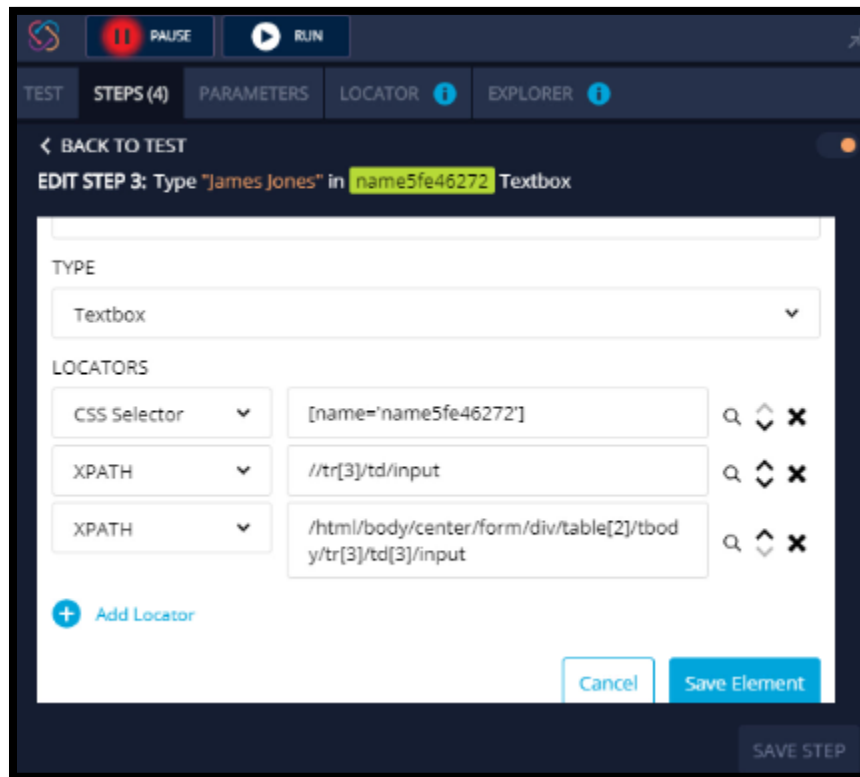
These steps were healed because they show orange and it shows heart as the icon.



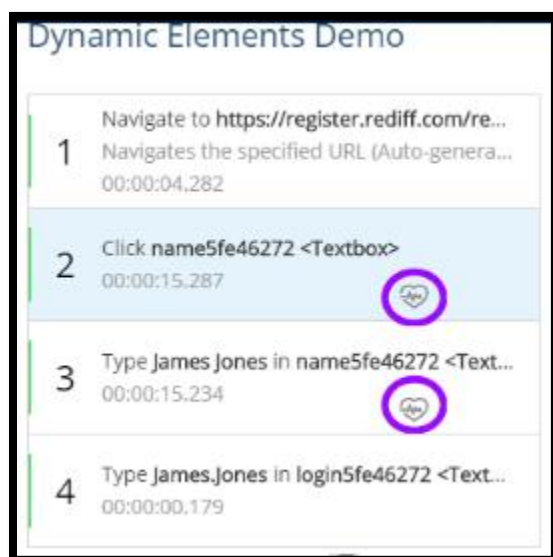
Click Details and we see No Message, Element, and a Note that says Don't sweat! This step was self-healed by TestProject's AI.



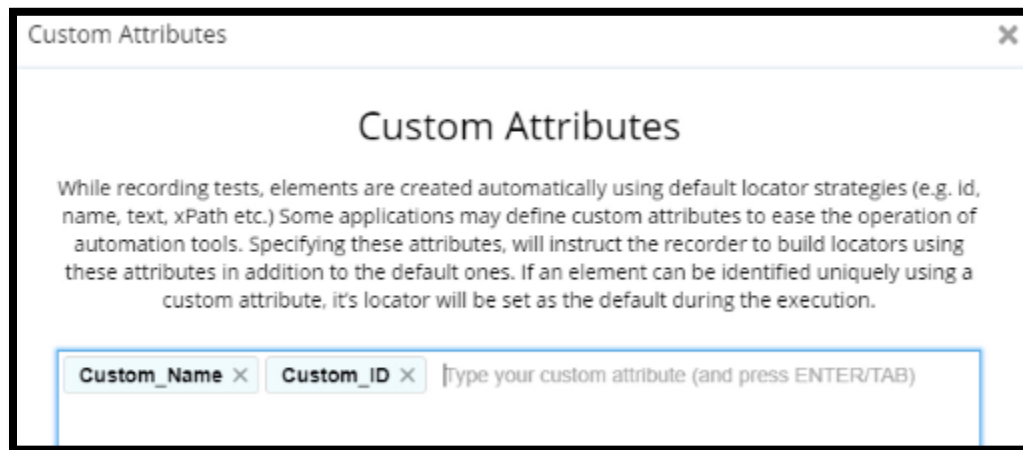
Let's go to the step and click Edit Element. If we scroll down, we have the option of overriding the suggested locator, removing the generated locator, or add our own locator. Let's change this locator back to the old value and Save the Element.



Back to the test and show you how the AI feature works when using AI. So, I'm going to close this test and let's Run, Select a browser, click Next then Run. It finished. Now, let's view the report. We see the heart icon indicating the steps recovered from an error. Expand and the element details also show how it was healed.



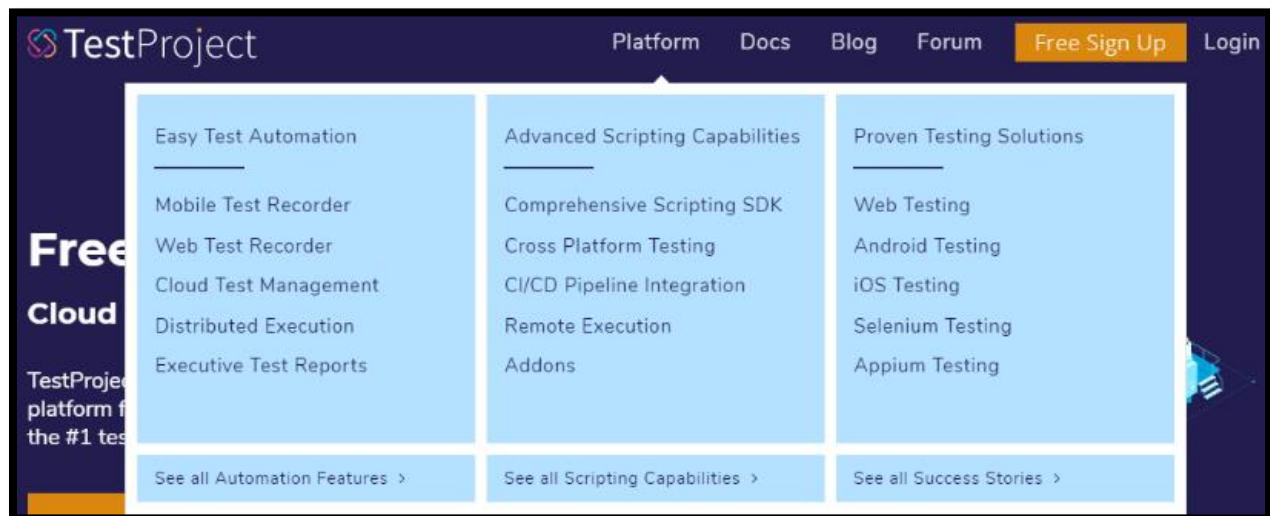
Let's take a look at how TestProject's AI feature also deals with Custom Attributes. Go to Applications and select this icon for Custom Attributes for Rediff Application. This feature instructs the recorder to build a locator using an attribute we specify. For example, we can write Custom_Name and Custom_ID_Attribute to uniquely identify an element by setting the locator as default.



Next, let me show you how this AI feature works for hovering a menu.

Hover Menu

There are 6 menu items on this TestProject page and Platform has sub menu items that cannot be seen unless we hover over the menu.



With Selenium, we must use the Actions class to hover a menu then select an item from the sub-menu. Our Test Script will stop execution due to an exception if we do not hover the menu because the sub-menu is not visible. This AI Self-Healing Technology is different. It will directly interact with the sub-menu item by automatically attempting a JavaScript click. Let's create a new test by going to Test & Jobs

then click New Test. Select Web and click Next. The name will be Hover TestProject Menu then click Next again. Add a new application. The name will be TestProject Application and the URL is <https://testproject.io/> as the URL. Click Next, Record, and click Start Recording. Hover the Platform menu. At this point, we only have 1 step and no step for hovering the Platform. However, when I click Web Test Recorder? Then the 2nd step shows up.

The AI Self-Healing feature is smart enough to directly click the Web Test Recorder option although we cannot see it. Let's run this test and see if AI can find Web Test Recorder in the sub menu. We see the same message "The expected element is missing. Don't worry, TestProject's AI is looking for another path. Hold tight". The test passed with a green bar so we found Web Test Recorder.



That's it for AI Self-Healing Technology by TestProject. If you are interested in more videos, feel free to subscribe to my YouTube channel and click the bell icon. You can also follow me on Twitter, connect with me on LinkedIn and Facebook. I'll make sure the put document transcript on GitHub.

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