CSC 234 – CODED UI TESTING TOOL MANUAL CALCULATOR APP

TEAM C

I. Visual Studio and Coded UI Test component installation

Step 1: Go to Microsoft's devtools portal - https://azureforeducation.microsoft.com/devtools

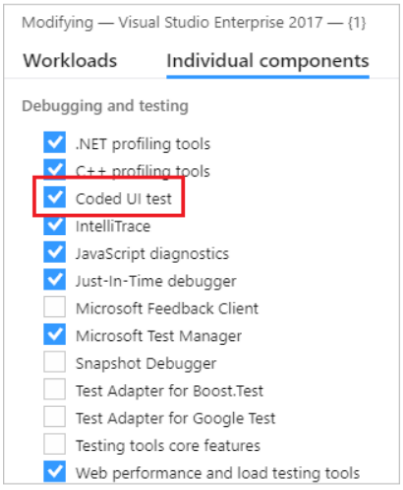
and provide your Sac State Username and Password.

Step 2: Once logged in, search for "Visual Studio Enterprise 2017" and download it.

We need to install the **Coded UI test** component of Visual Studio to access Coded UI test tools and templates. Follow steps 3 to 5 to install Coded UI component in Visual Studio:

Step 3: Launch Visual Studio Installer by choosing **Tools** > **Get Tools and Features**.

Step 4: In Visual Studio Installer, choose the **Individual components** tab, and then scroll down to the **Debugging and testing** section. Select the **Coded UI test** component (as shown in the figure – next page)



Step 5: Select modify. Coded UI test component will now be installed in Visual Studio IDE.

Now the test environment setup is complete.

II. Downloading sample application and Performing coded UI test

Coded UI has two different ways for conducting a test for our application.

1. Coded UI Record and Playback or
2. Coded UI Hand coding

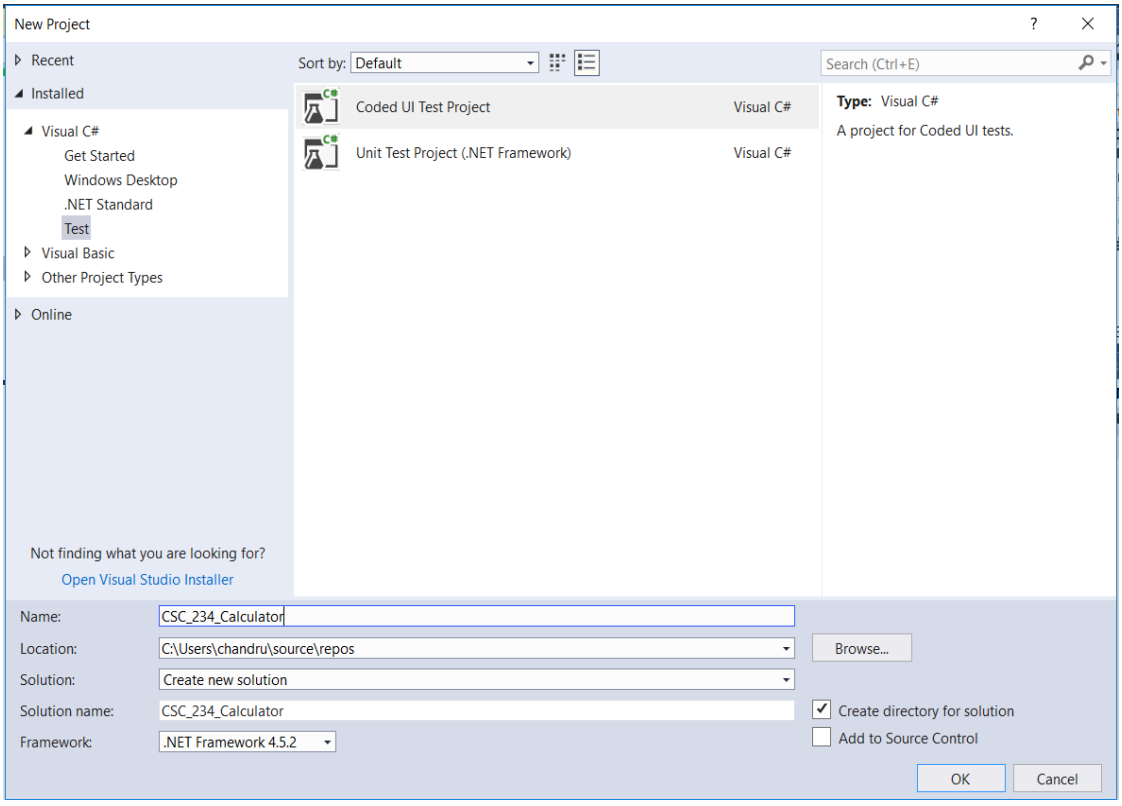
Demo 1 – Calculator Application

Following are the steps to download Calculator application and perform Coded UI Test:

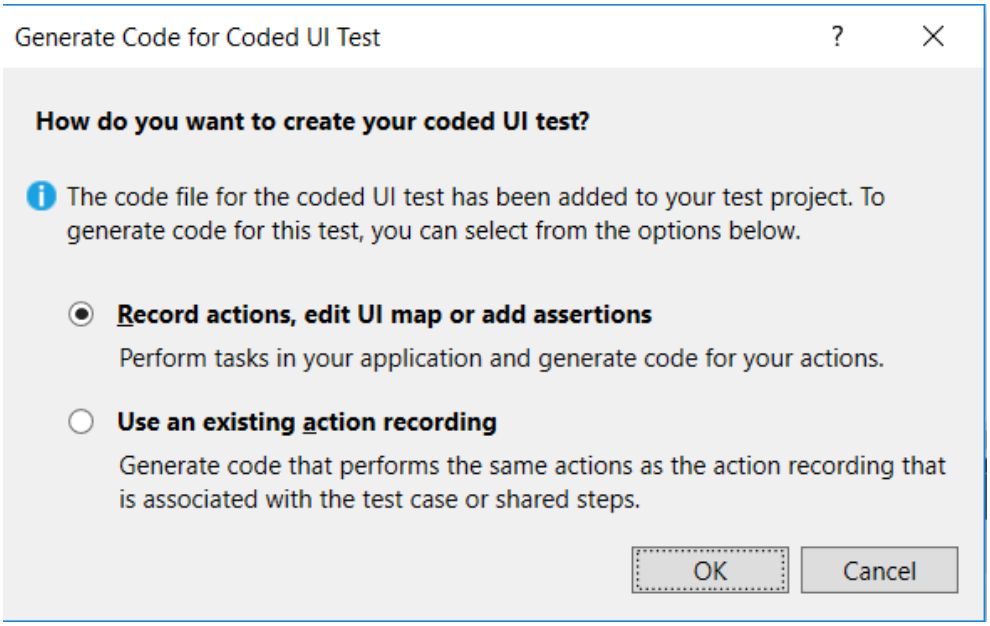
Step 1: Go to https://winaero.com/download.php?view.1795 and download Windows 7 calculator.

Step 2: Open the Windows 7 Calculator.

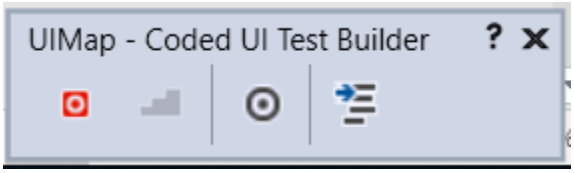
Step 3: In Visual Studio, select **File > New > Project.** New Project window opens, now select **Coded UI Test project** under Visual C# and click on **Ok** as shown in the figure below.



Step 4: Now **"Generate Code for Coded UI Test"** window pops up, select **"Record actions, edit UI map or add assertions"** radio button and click **Ok** as shown in the figure below.



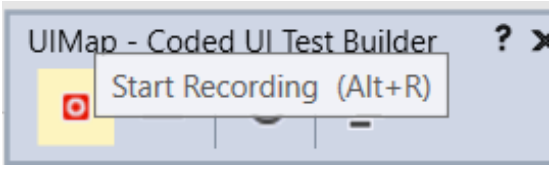
Step 5: **Coded UI Test Builder** will pop up at the bottom right of the screen as shown in the figure below.



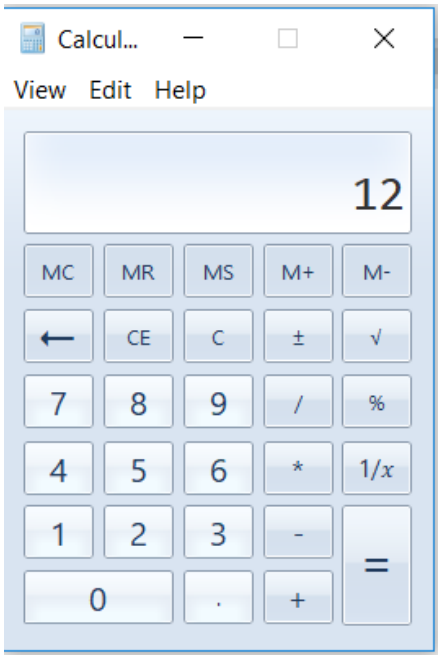
Test builder allows us to record actions, generate code and insert assertions.

Note: Please ensure that Windows 7 Calculator is open.

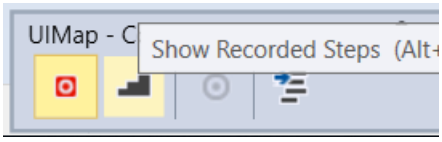
Step 6: In the Coded UI Test Builder, click on first red icon – which is the **"Start Recording" icon.**



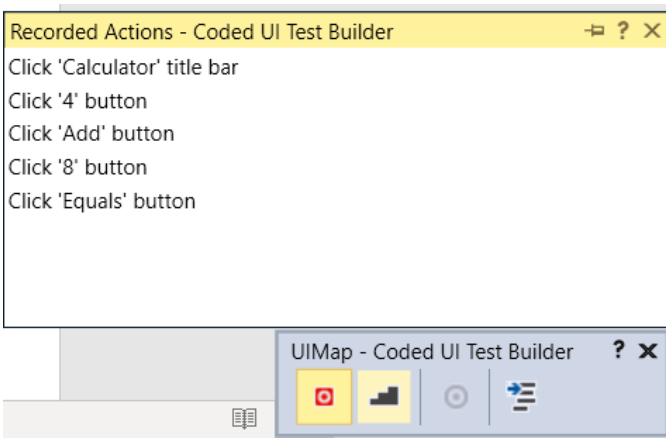
Step 7: Click on title bar of the Calculator application and perform addition operation (Example: 4 + 8 = 12). Note that these steps are being recorded.



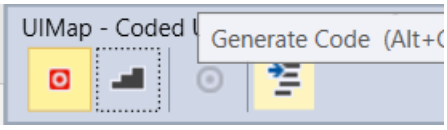
Step 8: Now in the **Coded UI Test Builder,** select **"Show recorded steps" icon,** which is the second icon as shown in the figure below.



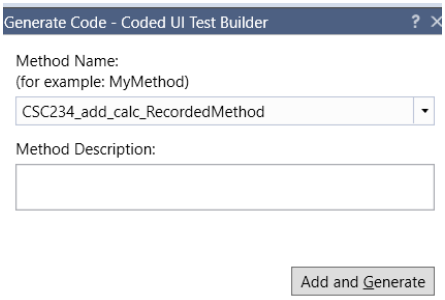
This will list all the actions recorded by the Test builder so far.



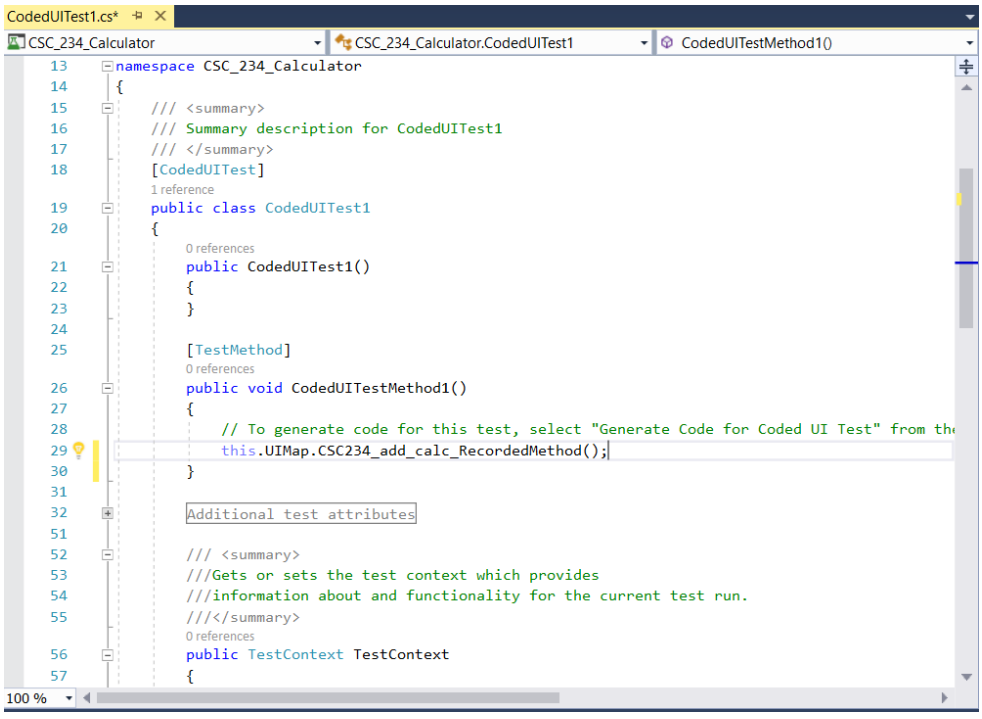
Step 9: Click on the last icon in Test Builder as shown in the figure below. This icon allows us to generate code for the recorded actions.



Provide a name for the recorded method as shown in the figure below.



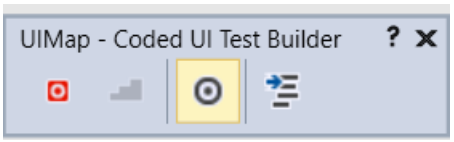
After clicking on **"Add and Generate"** you can notice that the method is now added to Coded UI test code in Visual Studio.



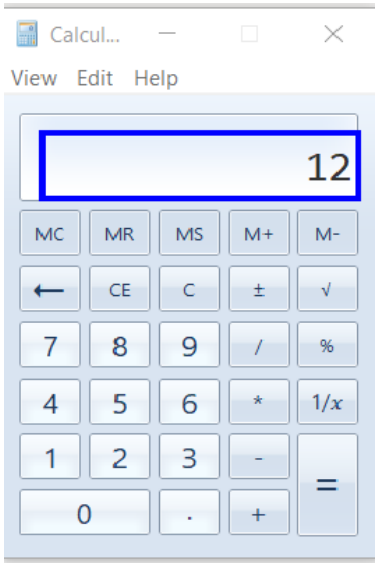
Recording Step using Coded UI is now complete.

Next step is **Adding assertions** which will allow us to check if the recorded actions correctly produce the expected result.

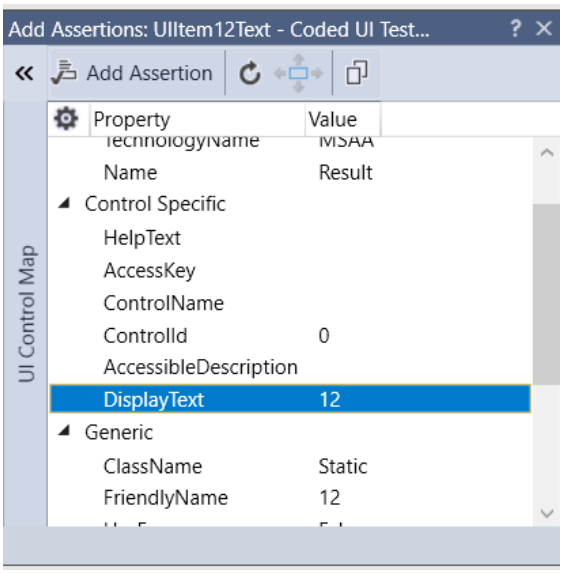
Step 1: Bring the Calculator to the front (in- focus) and **drag and drop the cross-hair icon (third icon in the Coded UI Test Builder as shown in the figure below)** onto the **result display text box** of the calculator.

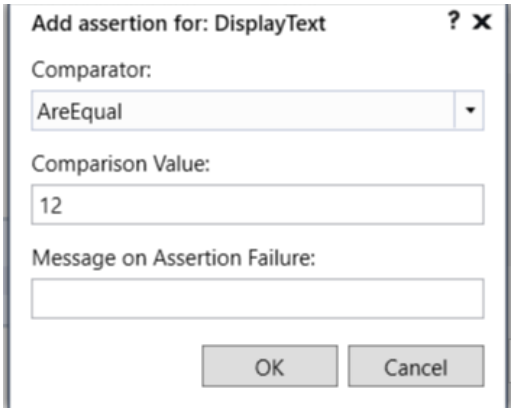


Below figure shows where to drop the cross-hair icon in the Calculator window.



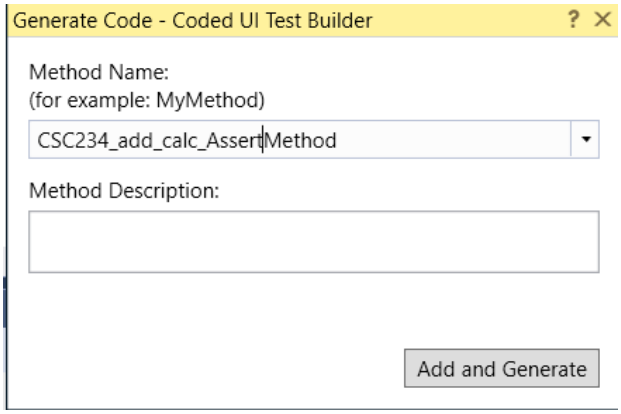
After dropping this icon on the Calculator Display box, you can notice the following pop up. Select **Display Text** and click on **Add Assertion.**



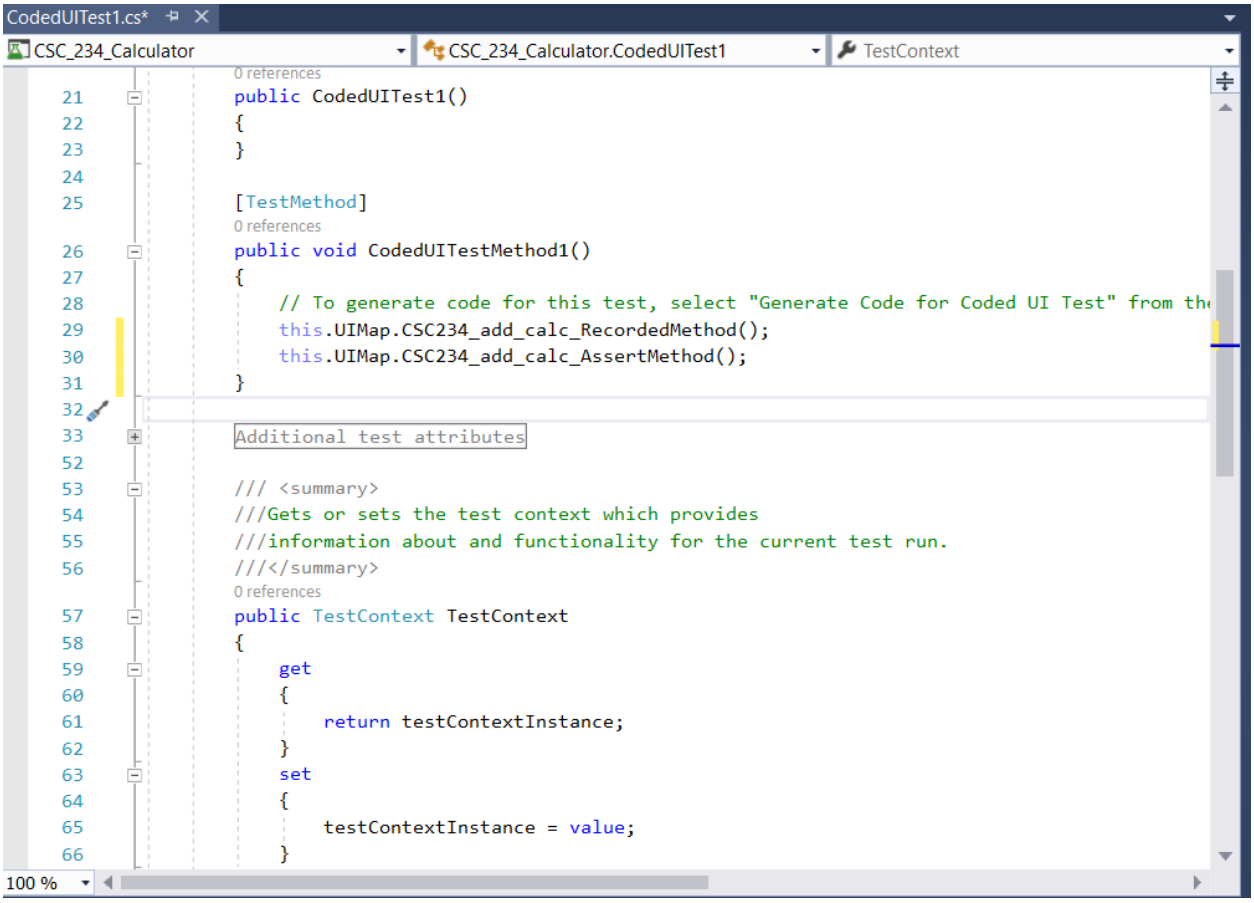


Clicking on Add Assertion will pop up a window as shown above in the right. Check the comparison value and click OK.

Step 2: Click on **Generate code icon** (4th icon) in the Coded UI Test Builder and Provide a name for this assertion in the window that pops up and click on **"Add and Generate"** button as shown in the figure below.



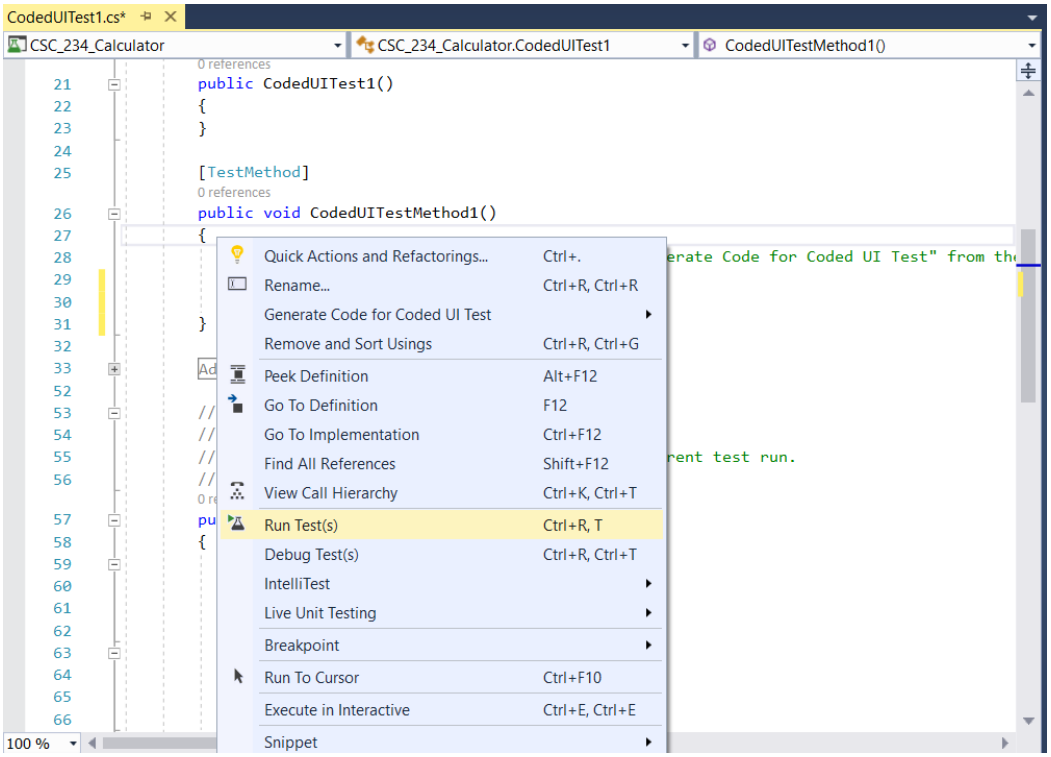
The code for this method can be now seen in Coded UI Test in Visual Studio as shown in the figure below:



Assertion step is now complete. You can close the Coded UI Test Builder window at the bottom right of your screen.

Following are the Coded UI **Playback** steps:

Step 1: Right Click inside **the CodedUITestMethod1()** and select **Run Test(s)** as shown in the figure below.



This will playback all the recorded steps (You would be able to visually observe the recorded steps being replayed live on the screen) and check the Assertion (in this case expected value is 12).

The test will pass if the actual value matches the expected value (Assertion Pass) as shown in the figure below: