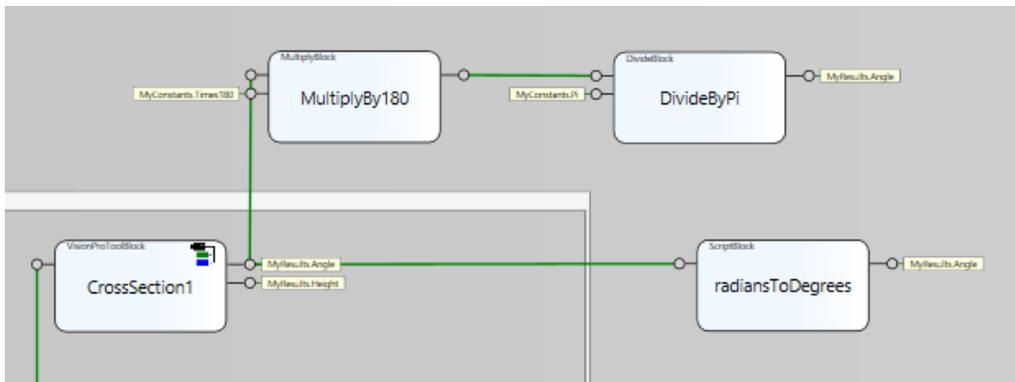
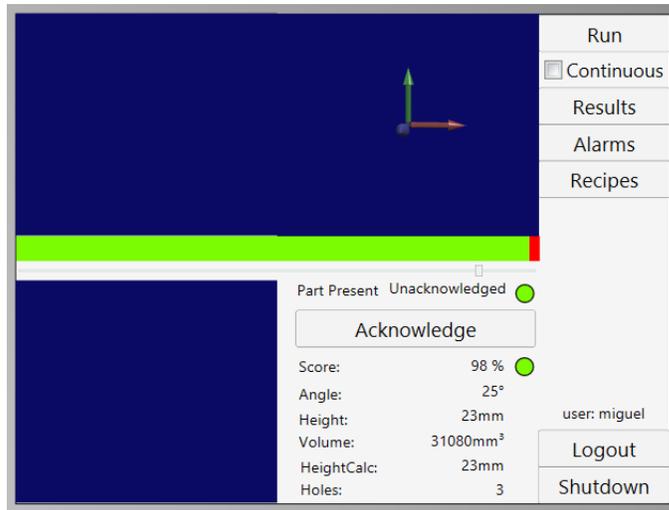


Cognex Designer Advanced – Section 4
Scripting Lab
Approximate Duration: 30 minutes

EXPECTED OUTCOMES:

- Add Script to convert Radians to Degrees
- Show angle information on HMI with degree symbol

EXPECTED VISUAL RESULT:



OUTLINE OF LAB:

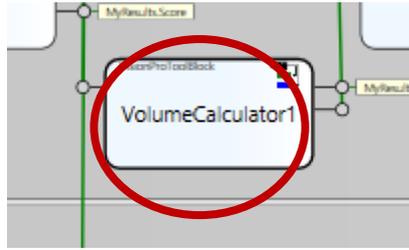
1. Add Script to Convert Radians to Degrees
 - a. Add ToolBlock
 - b. Create Script
 - c. Save new tool into ToolBox
2. Add Angle information to HMI
 - a. Add degree symbol
3. Add Key Script to automatically bring up login page

Challenge: Have the application get rid of the username and password of the last user whenever the Login page is shown.

Steps for the Lab:

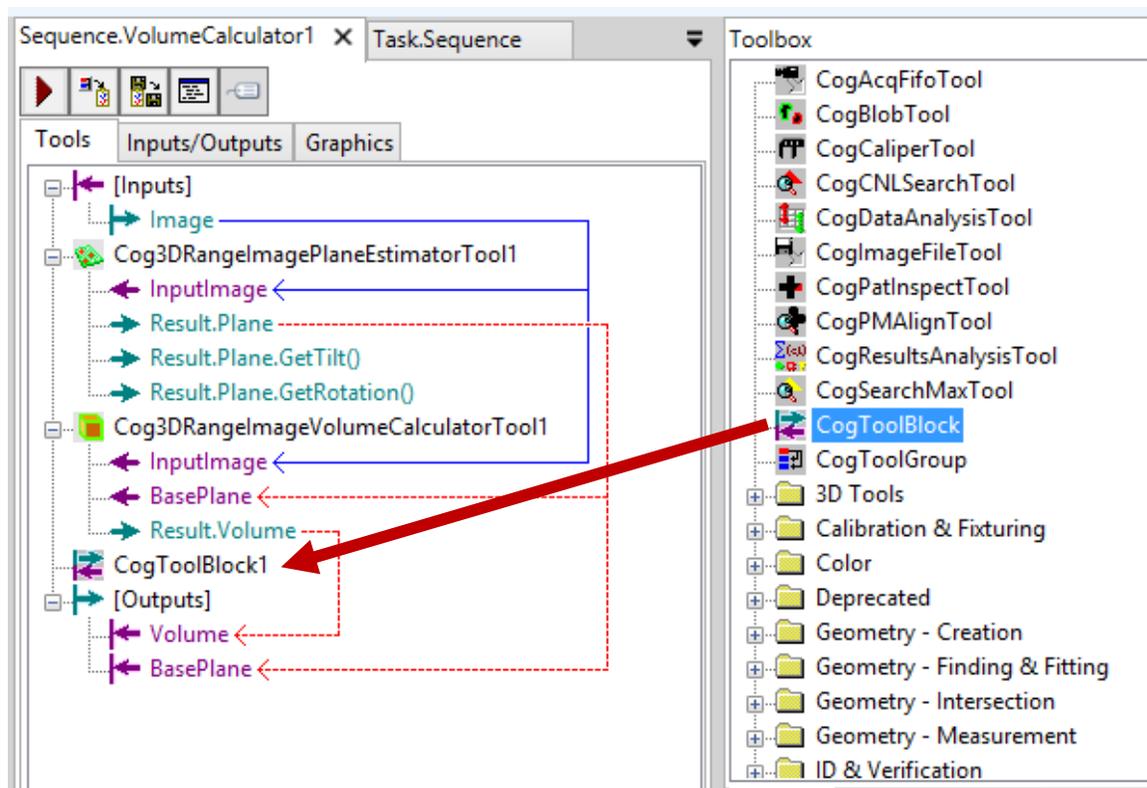
1. Add Script to Convert Radians to Degrees

- Go to the VolumeCalculator ToolBlock and double click to open it

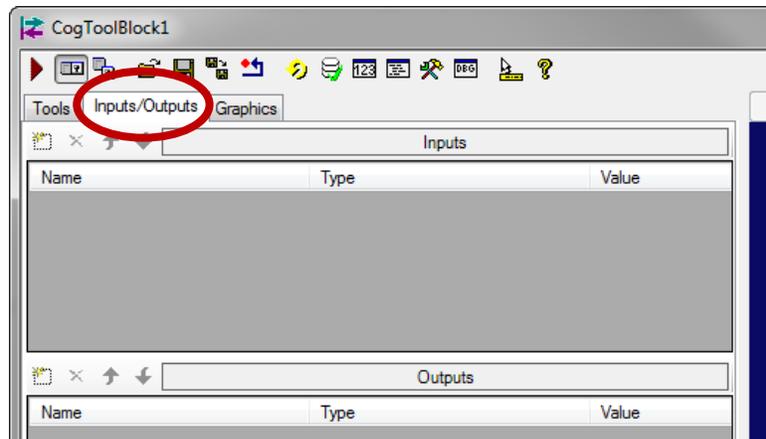


a. Add ToolBlock

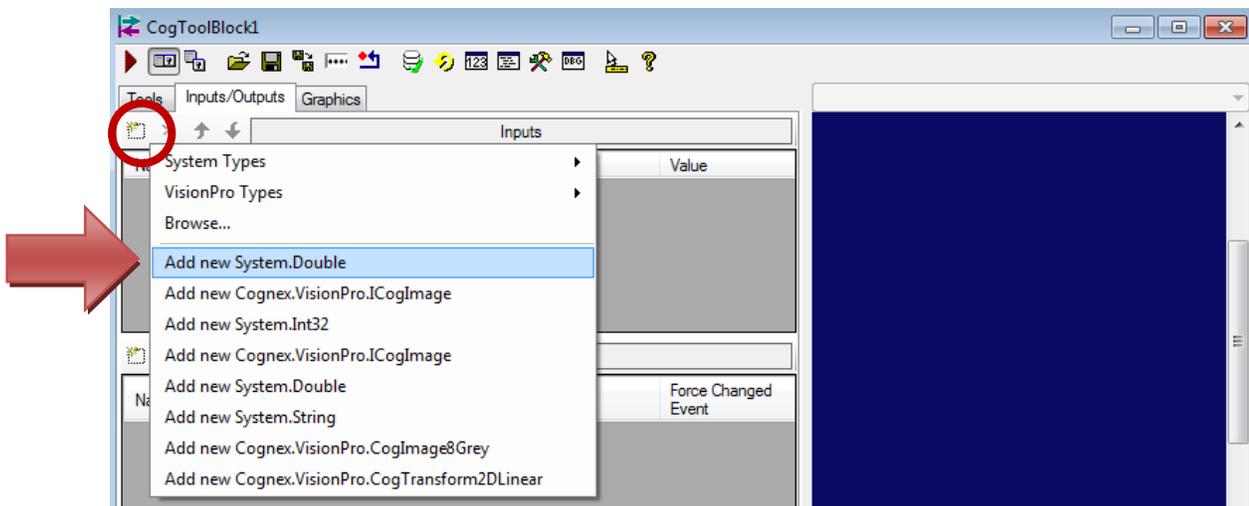
- i. Add a ToolBlock from the Toolbox



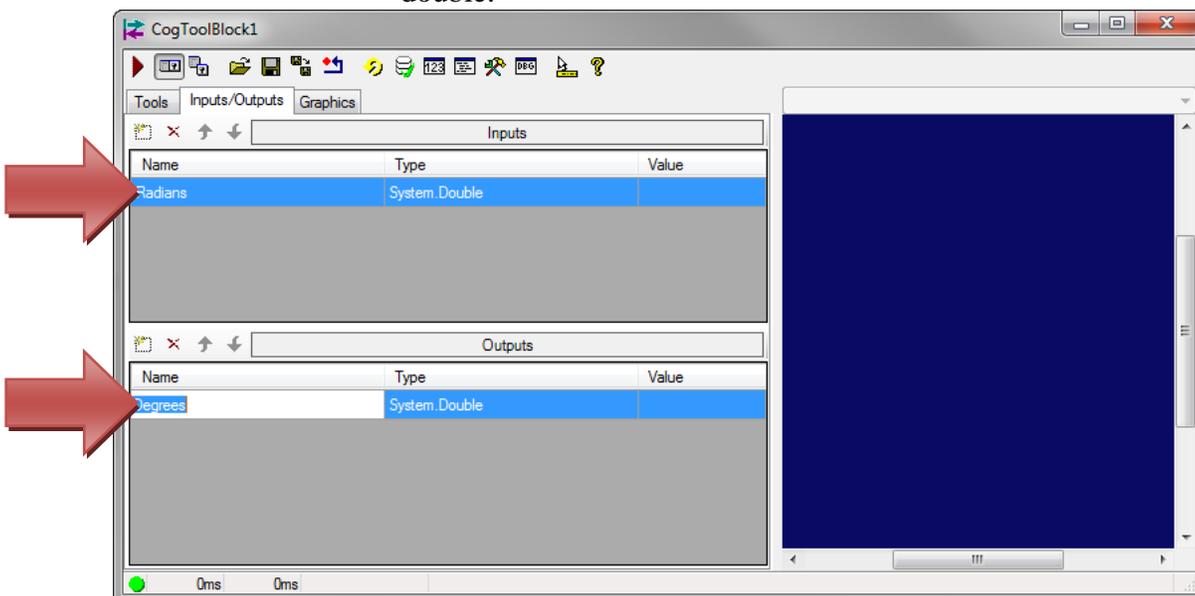
ii. Open the new CogToolBlock1 and go to the Input/Output Tab



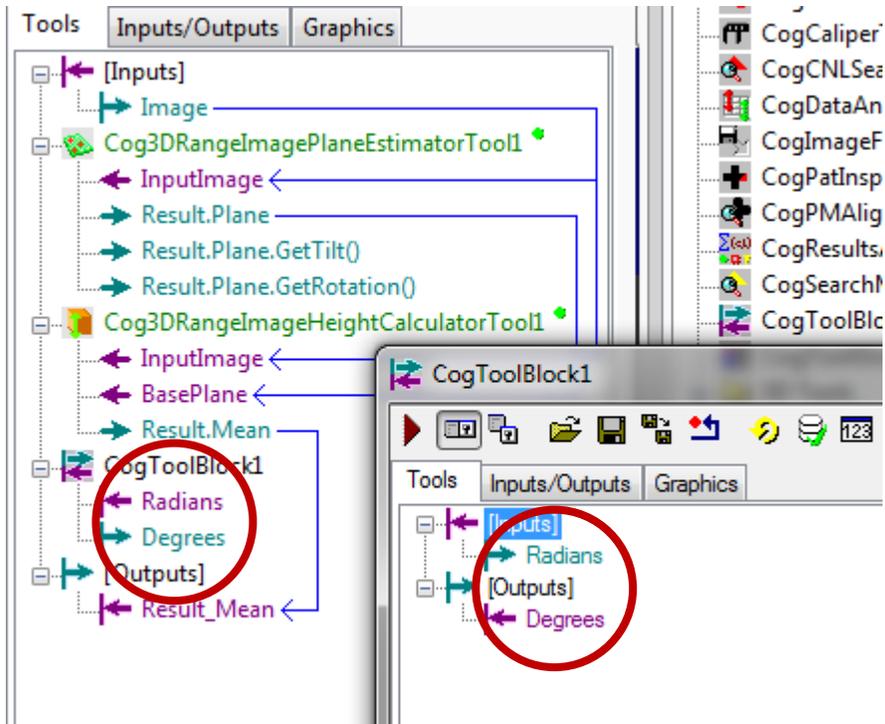
iii. Add an input of type Double



iv. Name it "Radians". Also add an output named "Degrees" of type double.

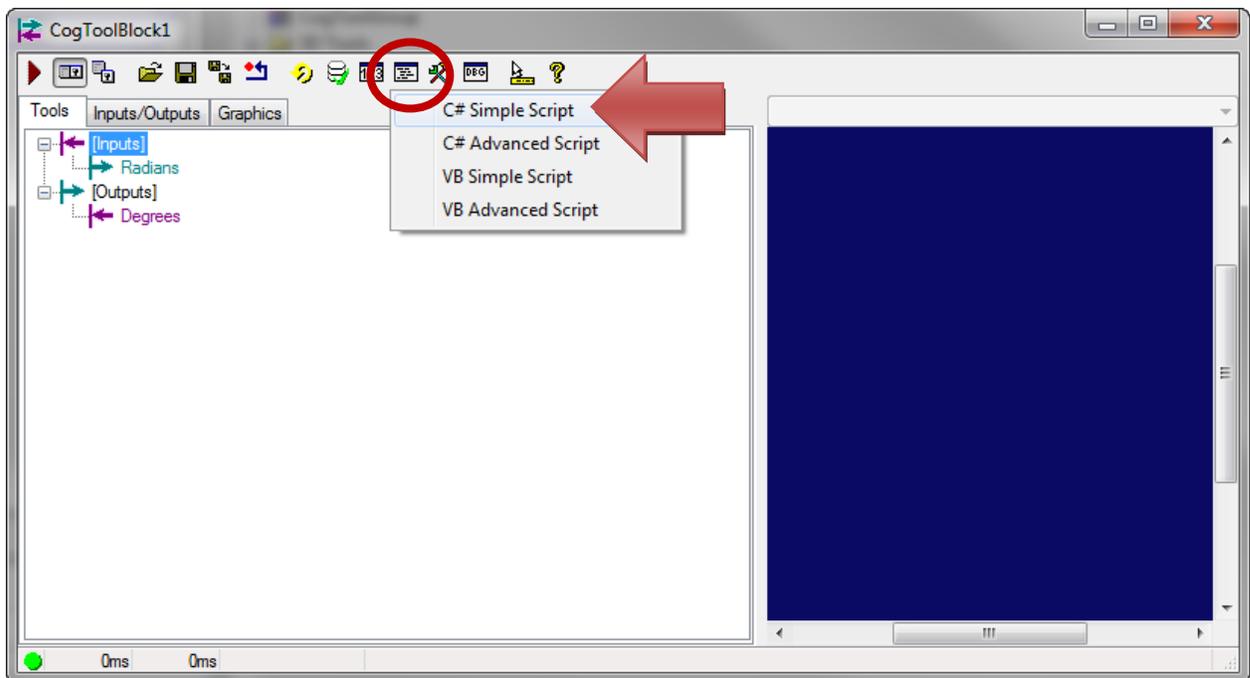


v. Note the terminals created for the tool



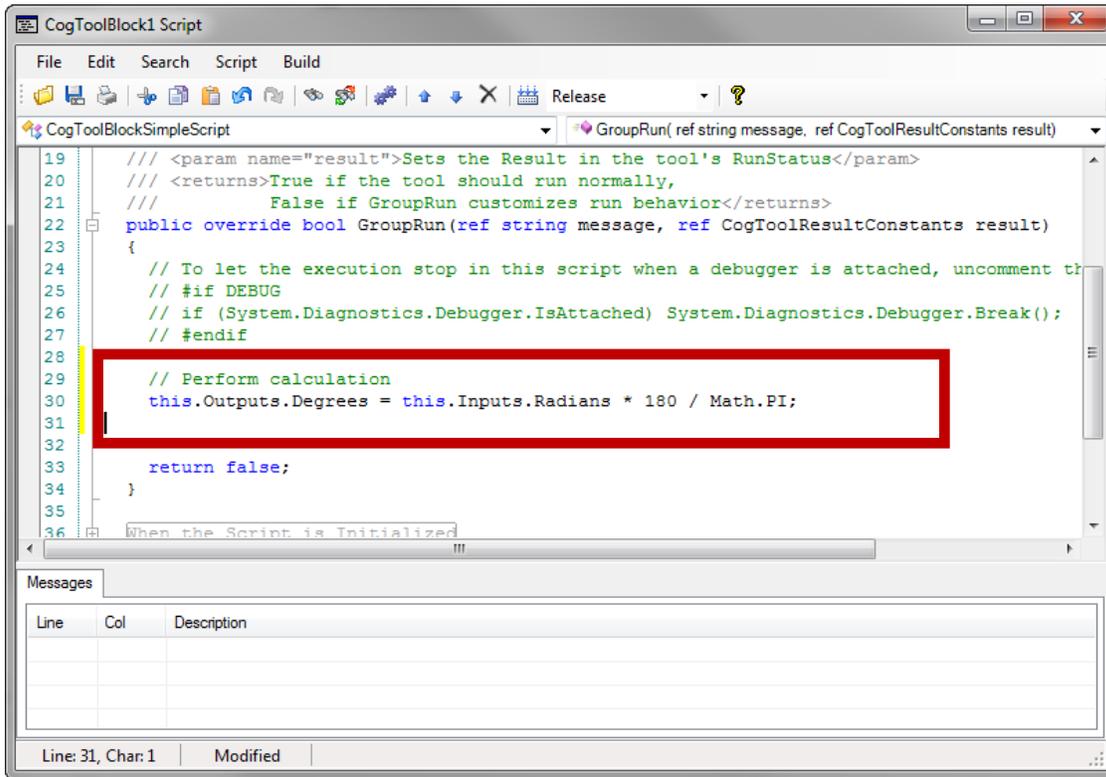
a. Create Script

- i. Go to the Tools tab and Select the Edit Script Button. Choose C# Simple.

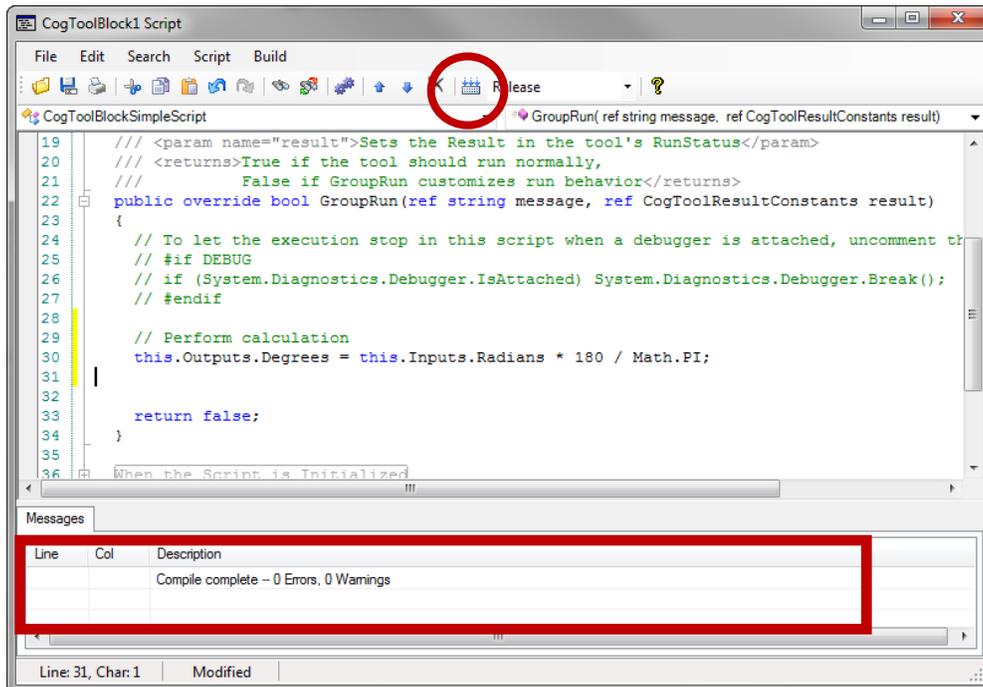


ii. Add the following code to the script:

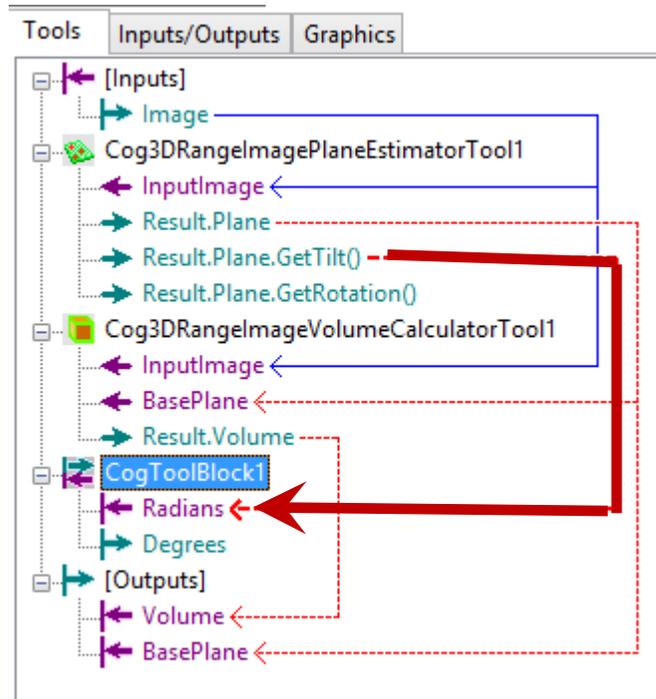
```
// Perform calculation  
this.Outputs.Degrees = this.Inputs.Radians * 180 / Math.PI;
```



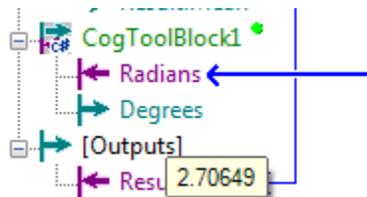
iii. Compile to check to see if there are any errors



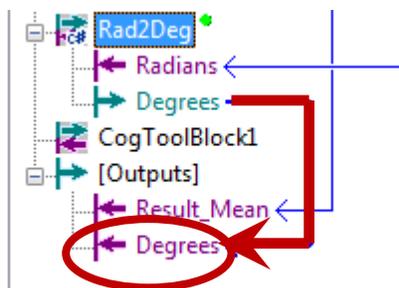
- iv. Close Script and connect the Radians input to the output GetTilt() of the PlaneEstimator tool.



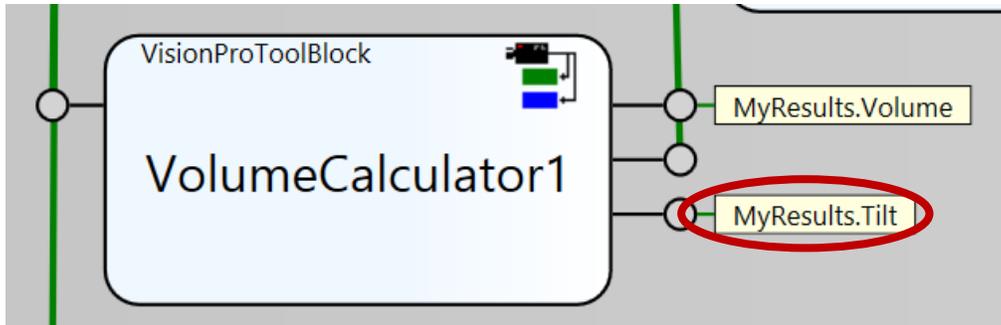
- v. Run ToolBlock once and check values



- vi. Rename the tool “Rad2Deg” and drag the Degrees output down to the [Outputs] area so that another pin is available to the HeightTool ToolBlock.

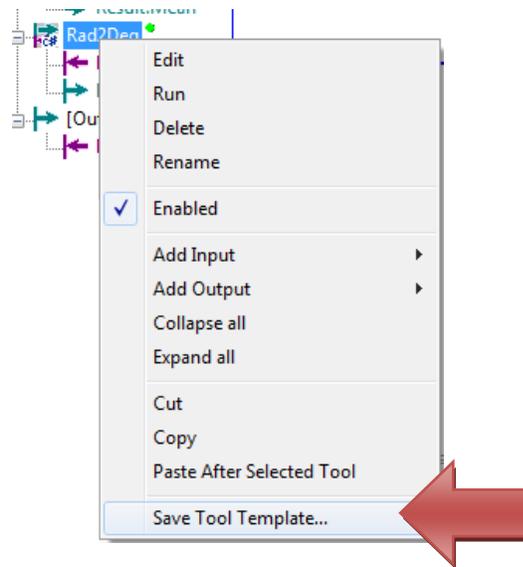


- vii. Add a new tag name “Result.Tilt” to the output pin.

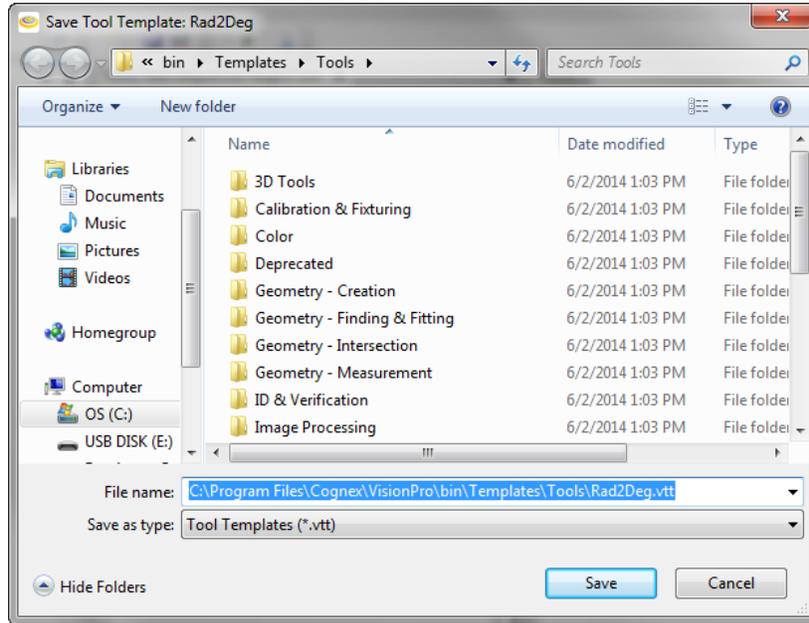


b. Save new tool into ToolBox

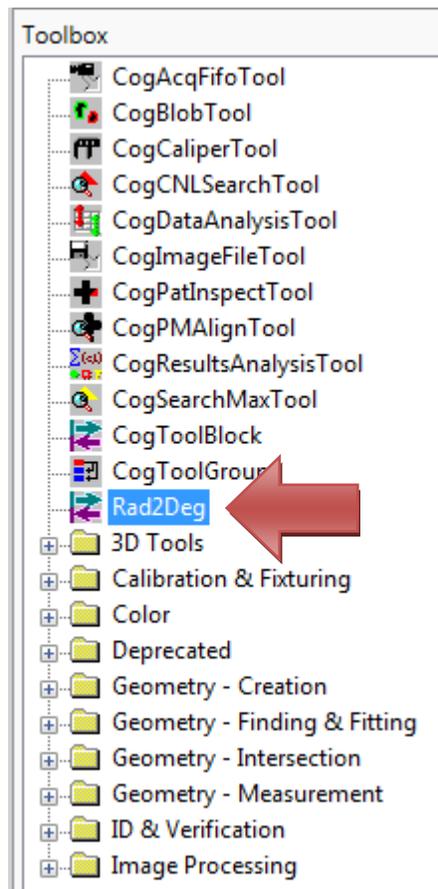
- i. Right-click on the Rad2Deg tool and select “Save to Tool Template”



- ii. Keep the default name (Warning: You must have launched Cognex Designer in Administrator mode to save to this location.)



- iii. Note that the tool now shows up in the ToolBox for VisionPro.



2. Add Angle information to HMI

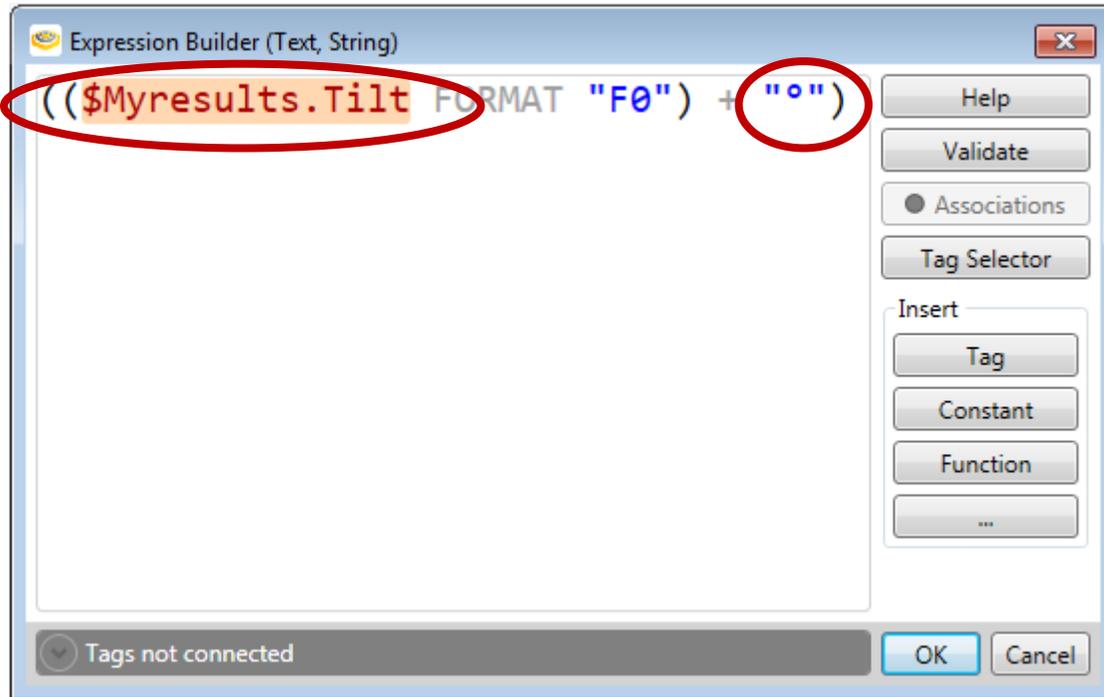
- Go to the Main Page and re-use the label for “Height (Cross):”. Rename it “Tilt:”

Height (mean):	10.053
Volume:	915.054 mr
Count:	2
Tilt:	22.352
Length	46.468

a. Add degree symbol

- i. Go to the label next to “Tilt:” and have it reference the \$Result.Tilt tag

- ii. Add Formatting and then add “. Give it a space, then hold down the Alt key while typing in 0176 from the keypad. Add another “, then press Accept.

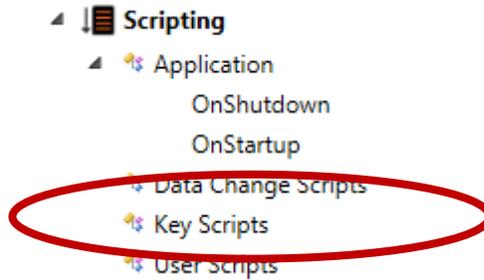


- iii. Go into Test Mode to see the results.

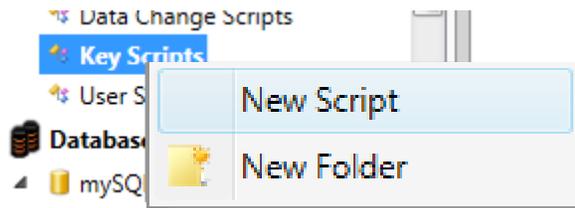
Tilt: 1°

3. Add Key Script to automatically bring up login page

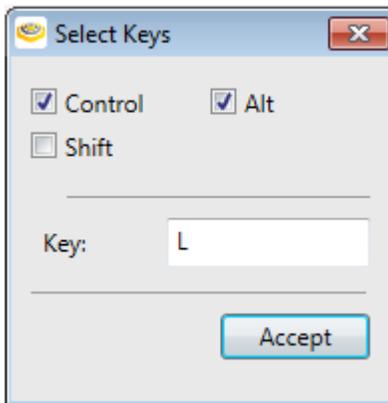
- Go to KeyScripts in the Explorer



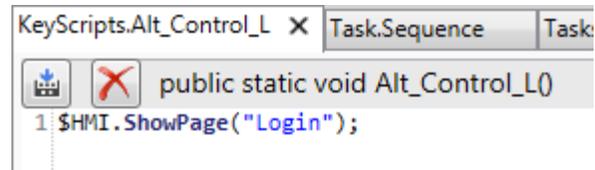
- Right-click to add New Script



- Select Control, Alt, and use the letter “L” for login



- The Script needs to show the Login page



The screenshot shows a script editor window with the title 'KeyScripts.Alt_Control_L'. The script content is as follows:

```
public static void Alt_Control_L()  
1 $HMI.ShowPage("Login");
```

- Go into Test Mode and try it out
 - a. **Save the application**

Challenge: Have the application get rid of the username and password of the last user whenever the Login page is shown.

- i. Go into Test Mode and try out the changes

Timestamp	Username	Action	Message
2/19/2015 11:19:48 AM	miguel	Logging In	Successful
2/19/2015 11:19:49 AM		Logging Out	Successful
2/19/2015 11:21:13 AM	miguel	Logging In	Successful
2/19/2015 11:21:15 AM	miguel	Logging Out	Successful
2/19/2015 12:03:21 PM	miguel	Logging In	Successful
2/19/2015 1:51:51 PM	miguel	Logging In	Successful
2/19/2015 1:57:22 PM	miguel	Logging In	Successful
2/19/2015 1:57:31 PM	miguel	Logging Out	Successful
2/19/2015 1:57:33 PM	miguel	Logging In	Successful
2/19/2015 2:07:08 PM	miguel	Logging In	Successful
2/19/2015 2:08:41 PM	miguel	Logging In	Successful
2/19/2015 2:22:25 PM	miguel	Logging In	Successful
2/19/2015 2:51:11 PM	miguel	Logging In	Successful
2/19/2015 3:10:02 PM	miguel	Logging In	Successful
2/19/2015 3:50:49 PM	miguel	Logging In	Successful
2/19/2015 3:57:01 PM	miguel	Logging In	Successful
2/19/2015 4:00:03 PM	miguel	Logging In	Successful

Challenge: Add Audit Table to a separate page that pops up from a button on the login page. Only certain levels can see the Audit Table.