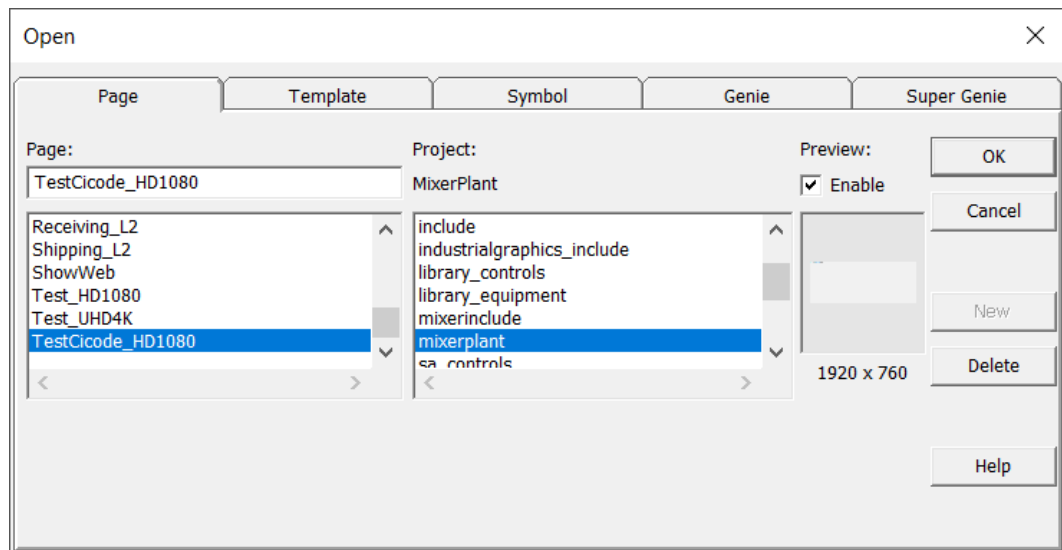


## Exercise 1.1 – Cicode Commands on Graphics Pages

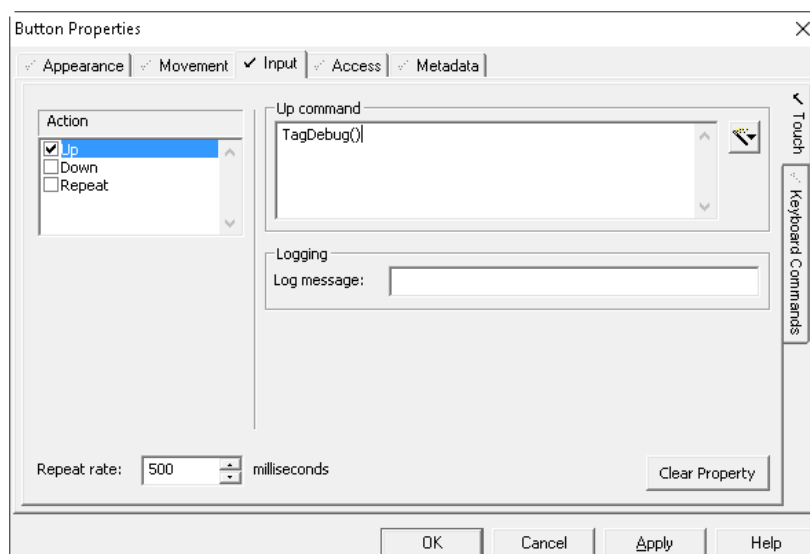
### Learning Outcomes

Upon completion of this exercise, you will be able to:

- Add Cicode commands to graphics page objects that will compile and run correctly.
  1. Add a button to the **TestCicode\_HD1080** page to open the Tag Debug dialog box.
    - i. In the Graphics Builder, open the **TestCicode\_HD1080** page.



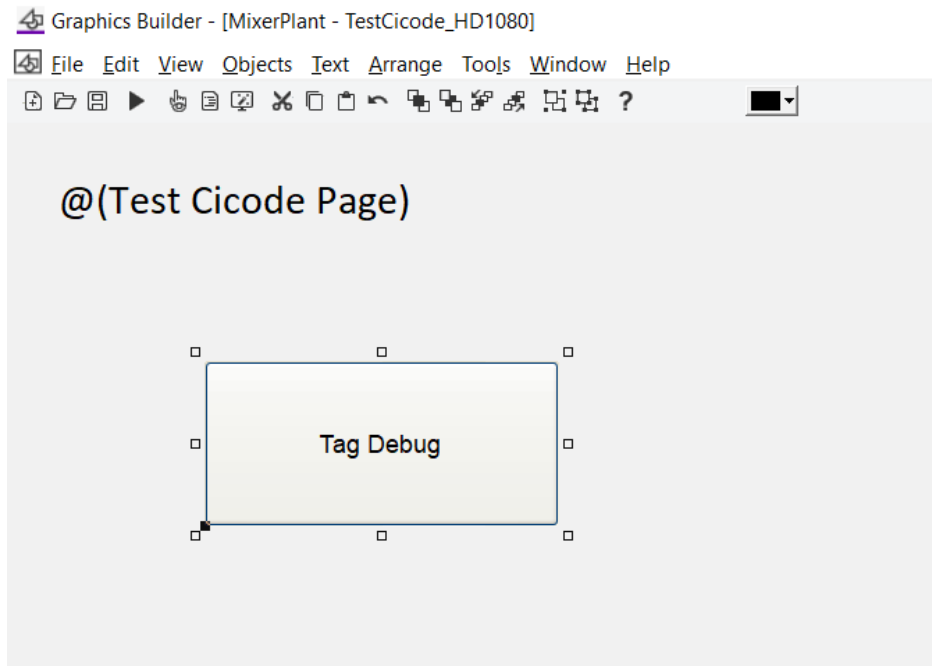
- ii. In the lower-left corner of the **TestCicode\_HD1080** page, draw a new button.
- iii. Click the **Appearance (General)** tab and in the **Text** field, type **Tag Debug**.
- iv. Click the **Input (Touch)** tab and in the **Up command** field, type **TagDebug()**.



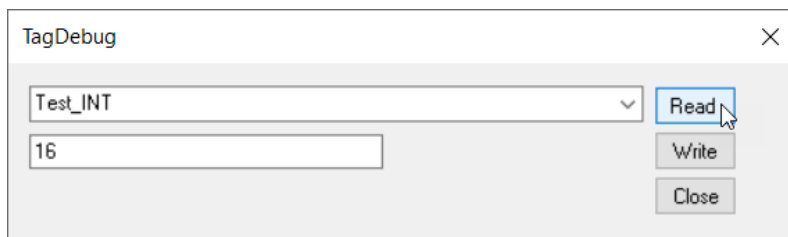
## Exercise - Cicode Commands on Graphics Pages (cont.)

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- v. Click **OK**.
  - vi. Save the page then compile and run the project.
2. **Test the modifications.**
- i. In the runtime project, open the **TestCicode\_HD1080** page and observe that the new **Tag Debug** button is visible.



- ii. Click the **Tag Debug** button to open the Tag Debug dialog box.
- iii. Select **Test\_INT** from the dropdown list and click **Read**.
- iv. Observe the tag value is updated.

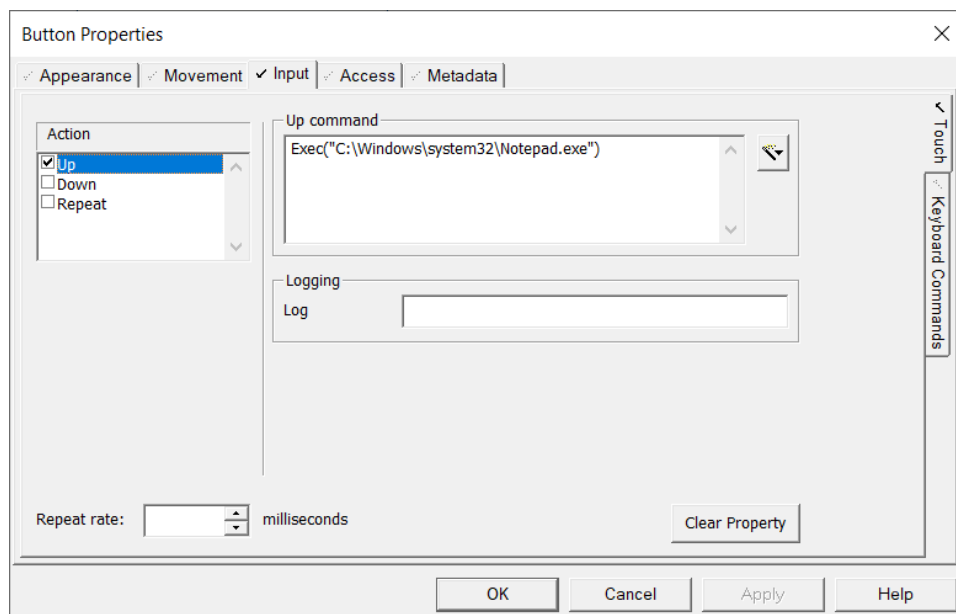


**Note:** To change the tag value, enter the value and click Write.

## Exercise - Cicode Commands on Graphics Pages (cont.)

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3. Shut down the project.
4. Create a button on the TestCicode\_HD1080 page called Notepad that uses the Exec() function to start up Notepad.
  - i. Create another button on the TestCicode\_HD1080 page.
  - ii. Click the **Appearance (General)** tab and in the **Text** field, type **Notepad**.
  - iii. Click the **Input (Touch)** tab and in the **Up command** field, type **Exec("C:\Windows\system32\notepad.exe")**.



**Note:** The **Exec** function allows the user to execute any external program in Windows. There are potential security risks associated with allowing the users access to the computer outside of Plant SCADA, so by default this is not allowed. The designers should do security risk analysis and take appropriate security threat mitigation actions before enabling this kind of functionality.

**Note:** The screenshot above displays the default location used by the Notepad. It may be different on individual computers. Use Windows Explorer to verify the location of the **Notepad.exe** file.

- iv. In the **Plant SCADA Studio**, open the **Security** activity.
- v. Select **Administrators** role and ensure the **Allow Exec** is set to **TRUE**.

## Exercise - Cicode Commands on Graphics Pages (cont.)

- vi. Open the **Computer Setup Editor** and add a **BlockExec** parameter as follows:

Search existing  **Next (F3)**

**Parameter Details**

Section:

Parameter:  **Disable**

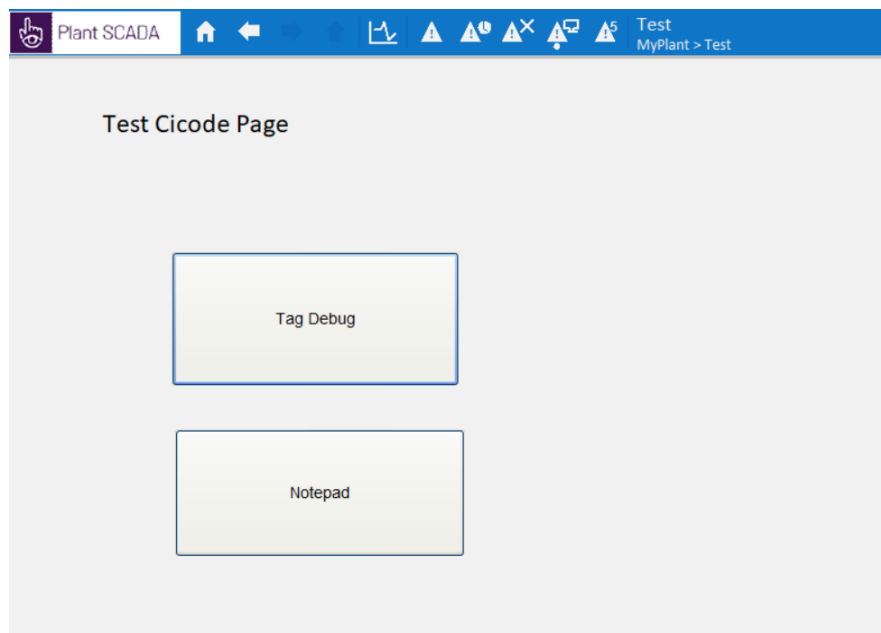
Value:  **Toggle**

Comment:  **Generate**

**Clear** **Add**

**Note:** A user can run the **Exec** Cicode function only if this parameter is set to **0** and the **Allow Exec** user role is set to **TRUE**.

- vii. Save the changes, compile and run the project.
5. **Save the page then compile and run the project to test the modifications.**
- In the runtime project, open the **TestCicode\_HD1080** page and observe the new button, **Notepad**, is visible.
  - Click the **Notepad** button and observe that **Notepad** will open.



- iii. Close **Notepad** and shutdown the project in runtime.

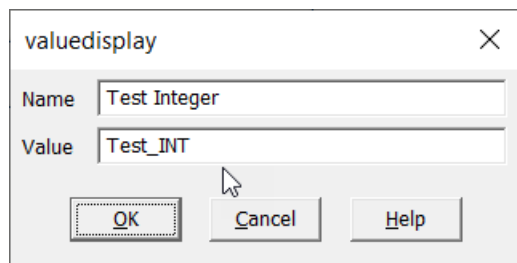
## Exercise - Cicode Commands on Graphics Pages (cont.)

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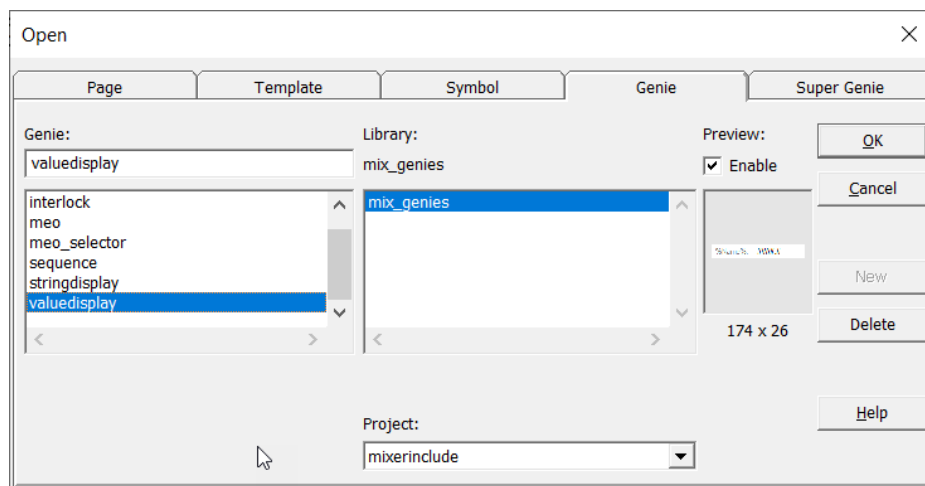
6. Create a touch command to change the values of the tags by using the function **FormNumPad()**.

The values of the tags in the **MixerPlant** project can be displayed by an included genie called **ValueDisplay**. This genie is located in the **Mix\_Genies** library.

- i. Return to the **Graphics Builder** and open the **TestCicode\_HD1080** page.
- ii. Paste a **ValueDisplay** genie on the page.
- iii. Configure the **Name** field with **Test Integer** and the **Value** field with **Test\_INT**.



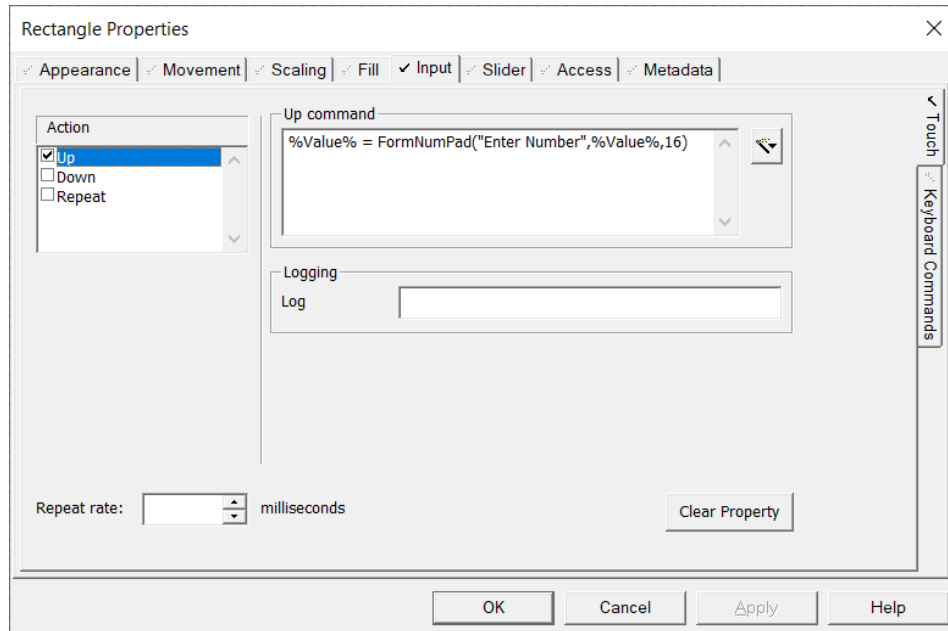
- iv. Click **OK** and save the page.
- v. Open the **ValueDisplay** genie.



## Exercise - Cicode Commands on Graphics Pages (cont.)

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- vi. Double-click the genie and open the **Rectangle Properties**.
- vii. In the **Input (Touch) | Up** command field, type `%Value% = FormNumPad("Enter Number",%Value%,16)` and save the changes.



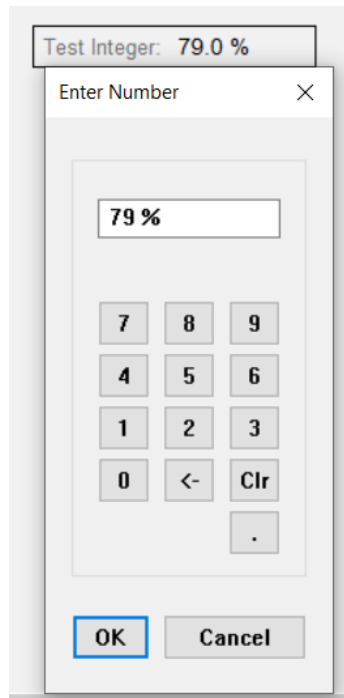
This function will display a number pad form when the left mouse button is clicked on the numeric object in the runtime.

- iv. Save the genie and select **Tools | Update Pages in Active and Included Projects** from the menu.
7. **Compile and run the project.**
- i. Open the **TestCicode\_HD1080** page and click the genie that displays the value of the tag **Test\_INT**.

## Exercise - Cicode Commands on Graphics Pages (cont.)

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- ii. This will open the number pad. Enter a new value for the tag using the Number Pad then click **OK**.



- iii. Observe that the value of the tag **Test\_INT** has changed to a new value.

**See Also:** For further information about **FormNumPad**, see *Plant SCADA Help* and search for the FormNumPad function

### 8. Shutdown the project.

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