



Tutorial Sample Application

Description

The configuration of the sample application in this tutorial will expose you to the simple configuration required to develop Plantwatch.

We will configure Plantwatch to receive a RS232 string from a bar code scanner, place the data in a plantwatch variable, select the first eight characters of the string and then place them into a file Excel can open.

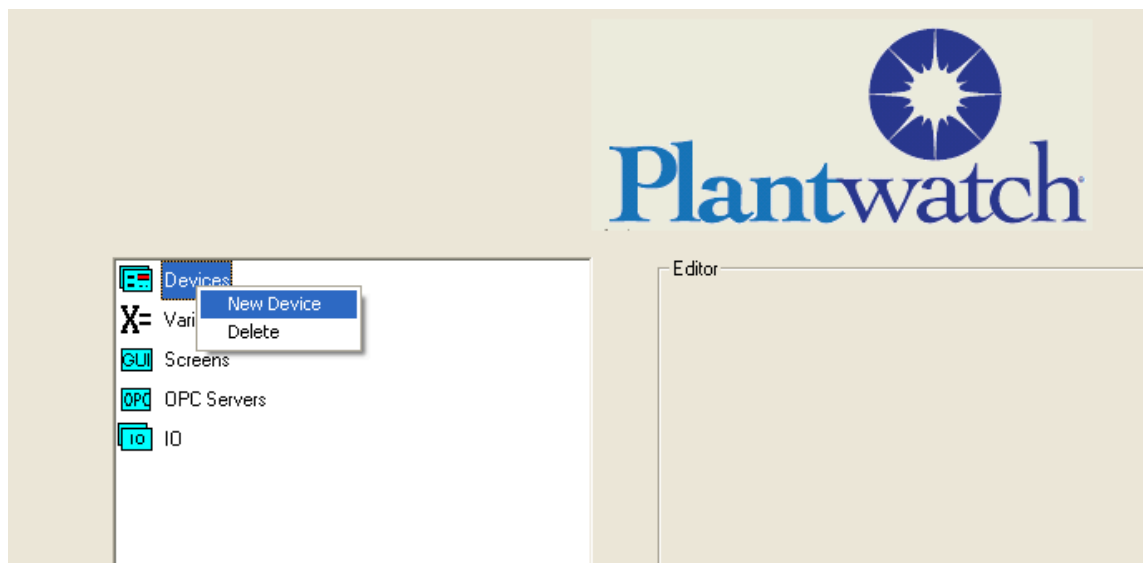
Part 1: Set up communication to RS232

For our example we will use a bar code scanner for a RS232 data source.

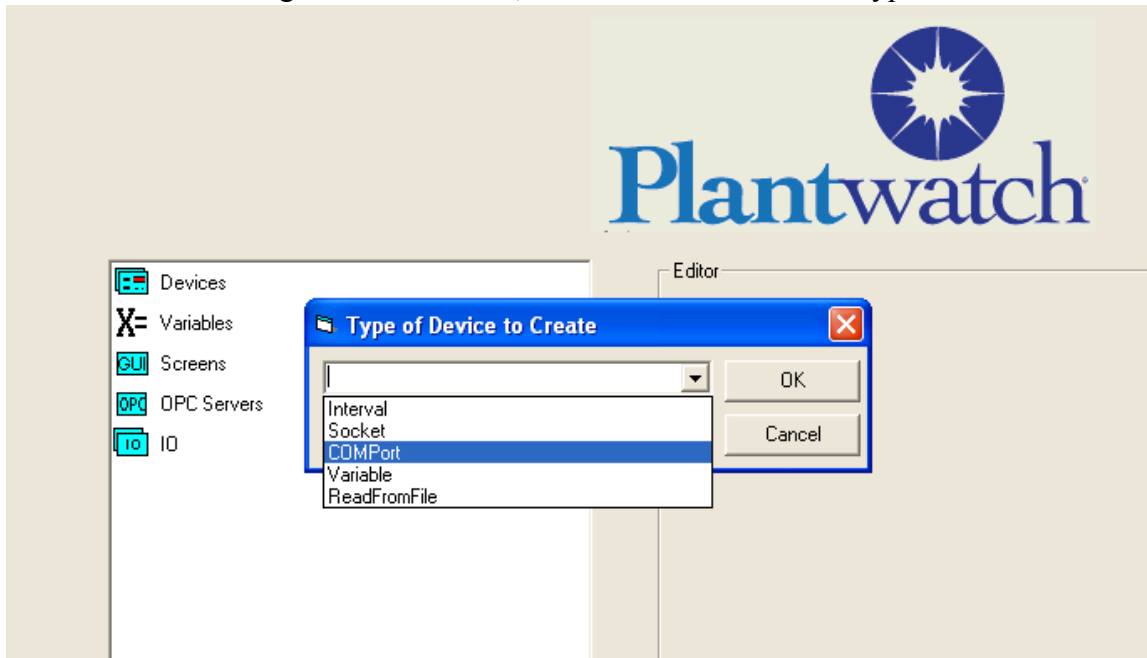
Step 1 Create a *Device* within Plantwatch.

Procedure:


Right Click on *Devices* within the *Development Tree*, and then click on *New Device*.



You will see the dialog for a new device, Choose *COMPort* device type



You will see the dialog for configuring the new *COMPort Device*.



Editor-Device-COMPort

Device Name
Dev1_Comport

Device Description

Port Configuration

Port ID	1
Baud Rate	9600
Data Bits	8
Parity	n
Stop Bits	1


Packet Determination Method

Timeout
 Starting Char
 Ending Char
 Start And End Char

Packet Timeout Setting

OK Cancel

Adjust the port as desired and then give it a reasonable name and the new *Device* is created.



Editor-Device-COMPort

Device Name
BarCodeScanner

Device Description
RS232 bar Code scanner

Port Configuration

Port ID	1
Baud Rate	115200
Data Bits	8
Parity	n
Stop Bits	1

Packet Determination Method

Timeout
 Starting Char
 Ending Char
 Start And End Char

Packet Timeout Setting 30

OK Cancel

Now it is visible within the *Development Tree*.



Part 2: Extract data from a Plantwatch *Device*


Part 2 of the example will create a *Logic Chart* within Plantwatch that gathers the data from the *BarCodeScanner Device* and places it into a new Plantwatch *Variable* called *BarCodeData*.

Procedure:

Right Click on *Variables* within the *Development Tree*, and click on “New Variable”



You will be presented with the *Create New Variable* Editor.



Editor - Create New Variable

Name

Description

Type

Enter “BarCodeData” for the name of the new variable and click on “OK”. You can also enter a description.



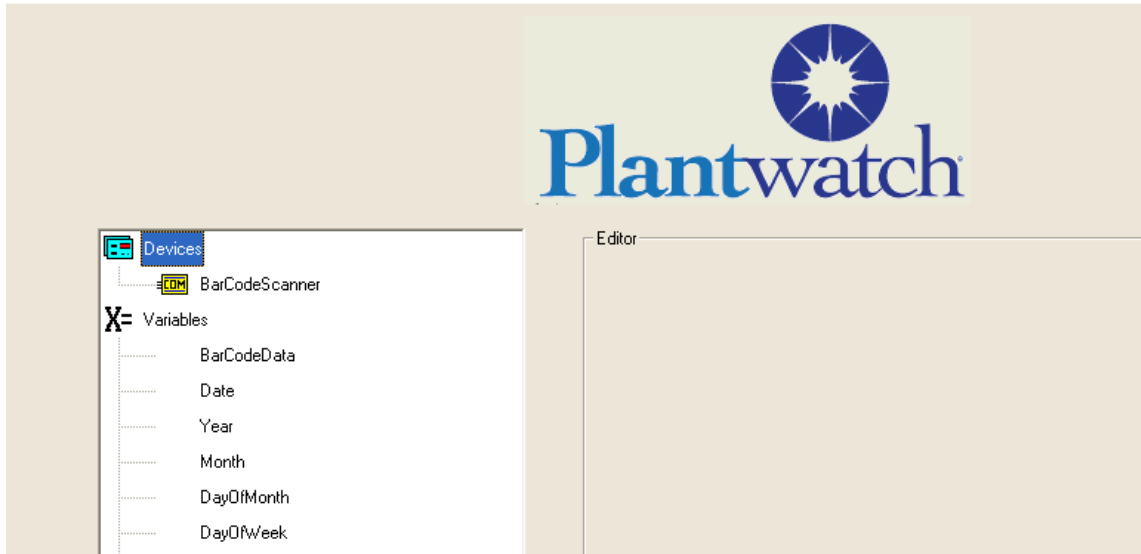
Editor - Create New Variable

Name

Description

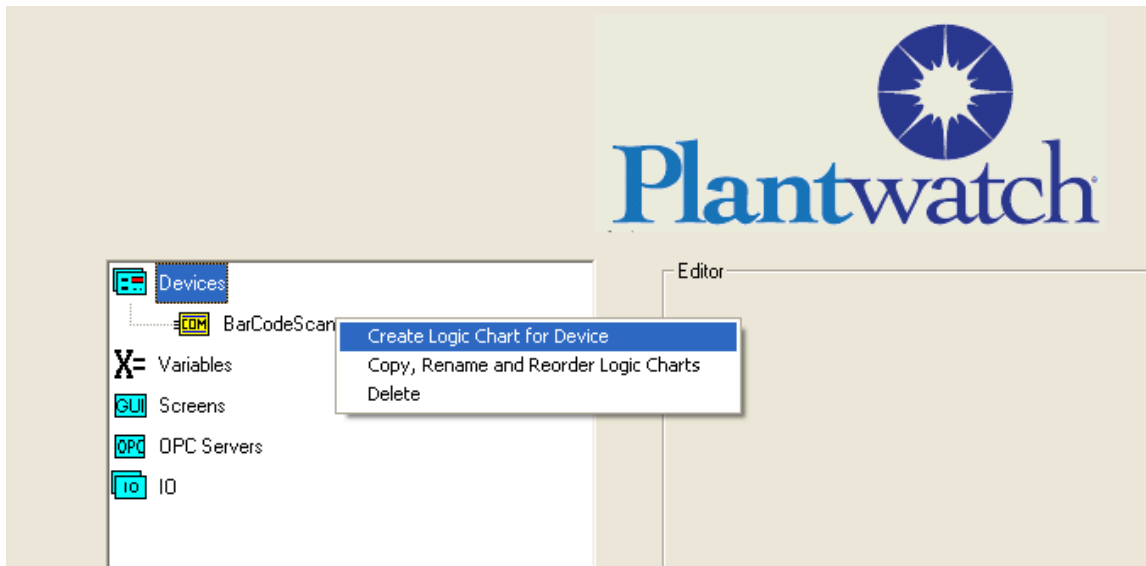
Type

This completes creating the *Variable* BarCodeScanner,. To see the new variable expand the variable list by double clicking on the X. New variable BarCodeData is visible.



We will now place the data from the bar code scanner into this variable.

Double click the *Devices* icon to expand the branch of the *Development Tree*, right click on the *Device BarCodeScanner* and click on “Create Logic Chart for Device”



You will see the dialog for creating a *Logic Chart*. Enter in a name such as “Extract Data”, and click on “OK”



Editor-LogicChart-CreateNew

Name

Description


Selected Device

You will see that the *Development Tree* now has a *Logic Chart* named “ExtractData” associated to the *Device* named “BarCodeData”. Single click on the “ExtractData” logic chart Icon to start the *Logic Chart Editor*.

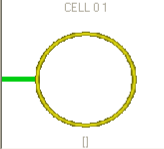









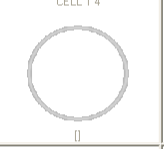












You will see the *Logic Chart* named “ExtractData”

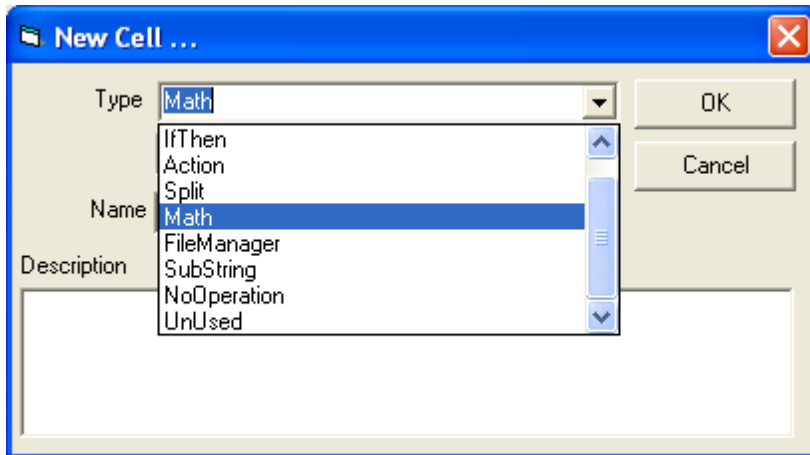
Editor - Logic Chart
Exit SFormPopupMenu



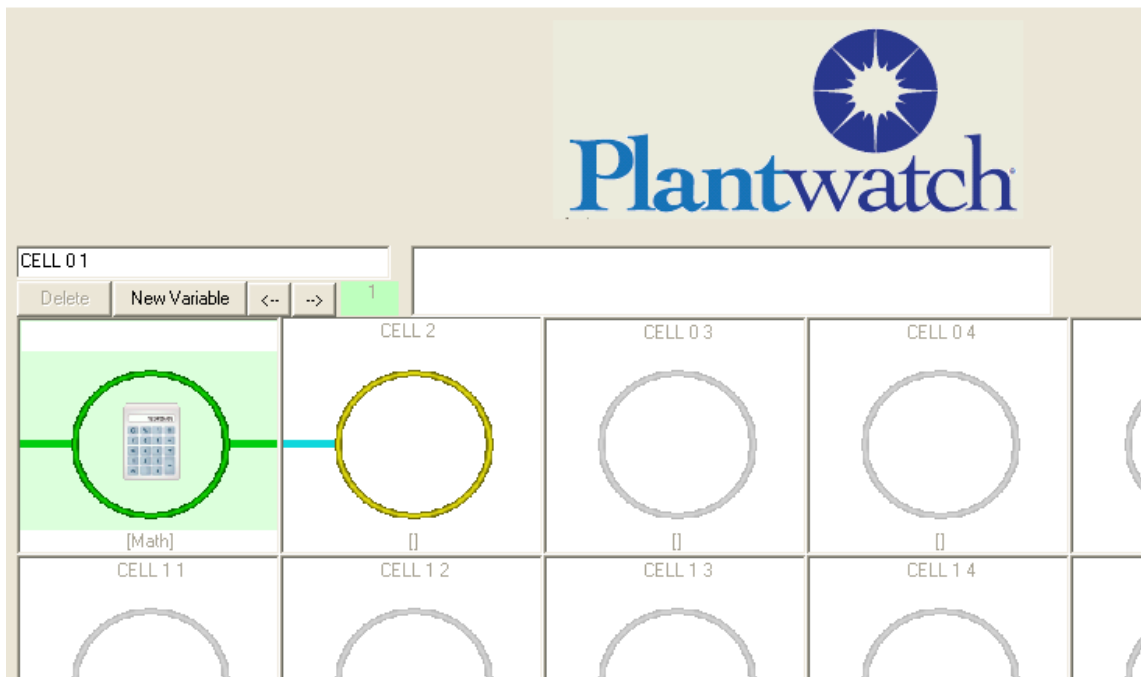
Delete New Variable <- -> 1

CELL 01  0	Cell 2  0	CELL 03  0	CELL 04  0	CELL 05  0	CELL 06  0	CELL 07  0
CELL 11  0	CELL 12  0	CELL 13  0	CELL 14  0	CELL 15  0	CELL 16  0	CELL 17  0
CELL 21  0	CELL 22  0	CELL 23  0	CELL 24  0	CELL 25  0	CELL 26  0	CELL 27  0

Double click on the top left cell to select the type of cell needed. In this case select “Math”



Then give it a name such as GetData and click on OK. You will again see the logic chart but now the top left cell is presented as a *Math* cell.



Double Click on the top left cell, *Math* cell type, and you will be presented the *Math Cell Editor*. We want to take the value from the device and place it's value in *Variable* BarCodeData. To do this we will

- Set *Source Value 1* to "Device"
- Set *Operator* to "SetToValue"
- Set *Source Value 2* to "Constant"
- Set *Output Variable* to "BarCodeData"

The screenshot shows the 'Math Cell Editor' dialog box with the following configuration:

- Source Value 1:** Type is set to **Device** (radio button selected).
- Operator:** Set to **SetToValue** (dropdown menu).
- Source Value 2:** Type is set to **Constant** (radio button selected).
- Output Variable:** Set to **BarCodeData** (dropdown menu).

Buttons for 'OK' and 'Cancel' are visible at the bottom.

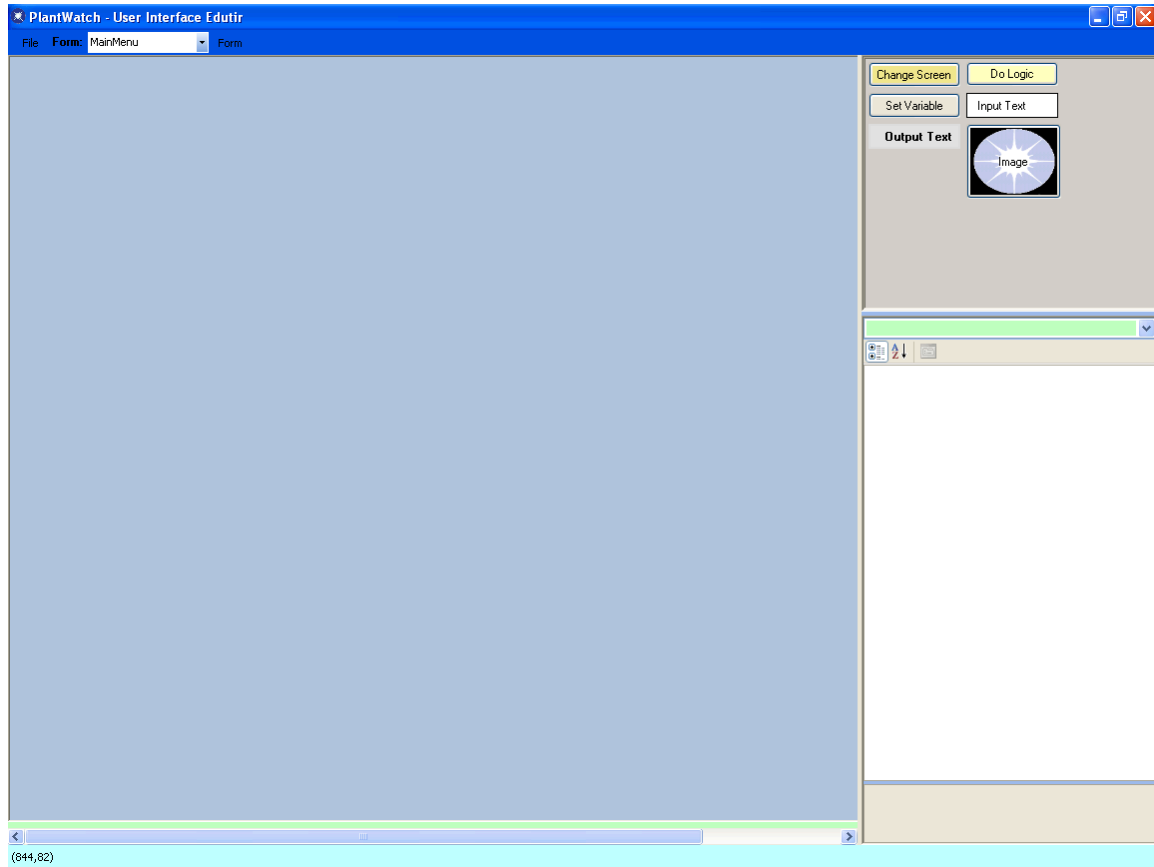
Example 1 part 3: Display a Variable on a Plantwatch *Screen*.

Procedure:

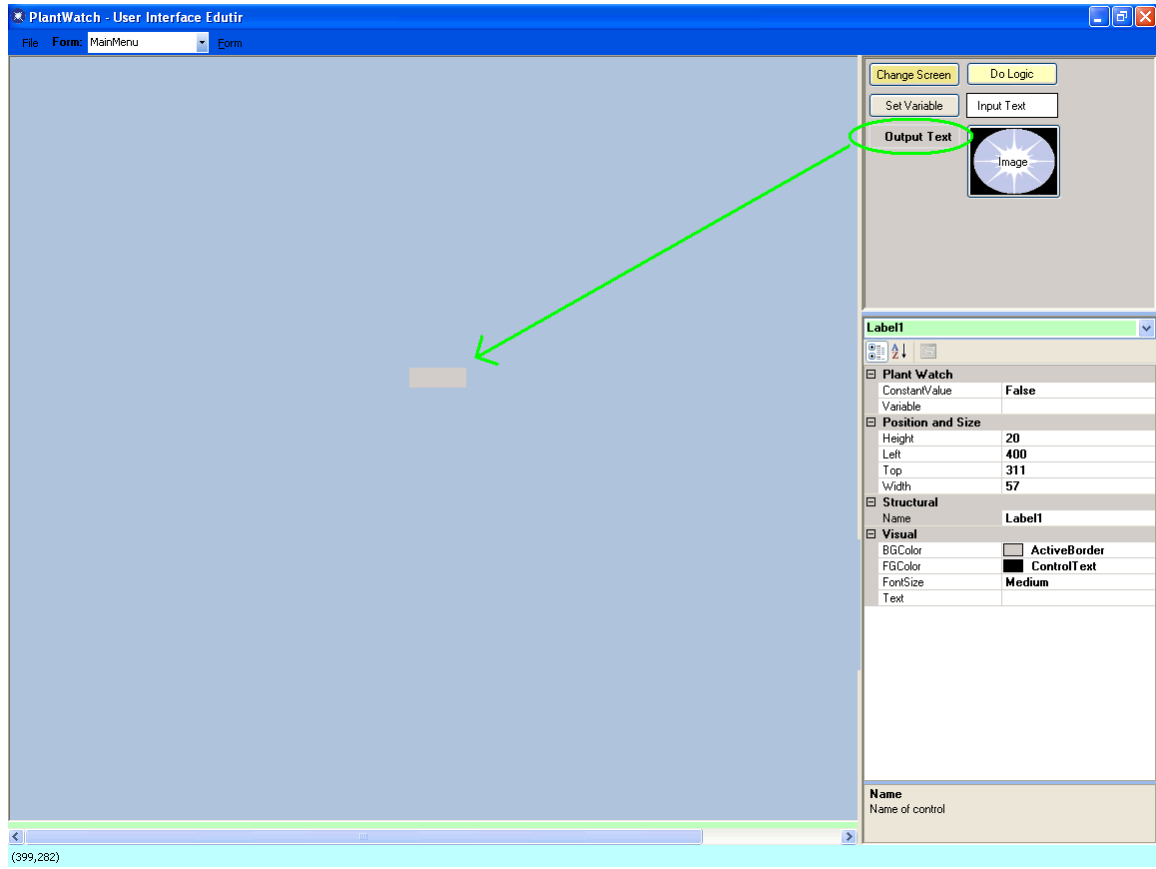
Need to create a new screen.

Left click on non bolded “screen” to create new screen “MainMenu”

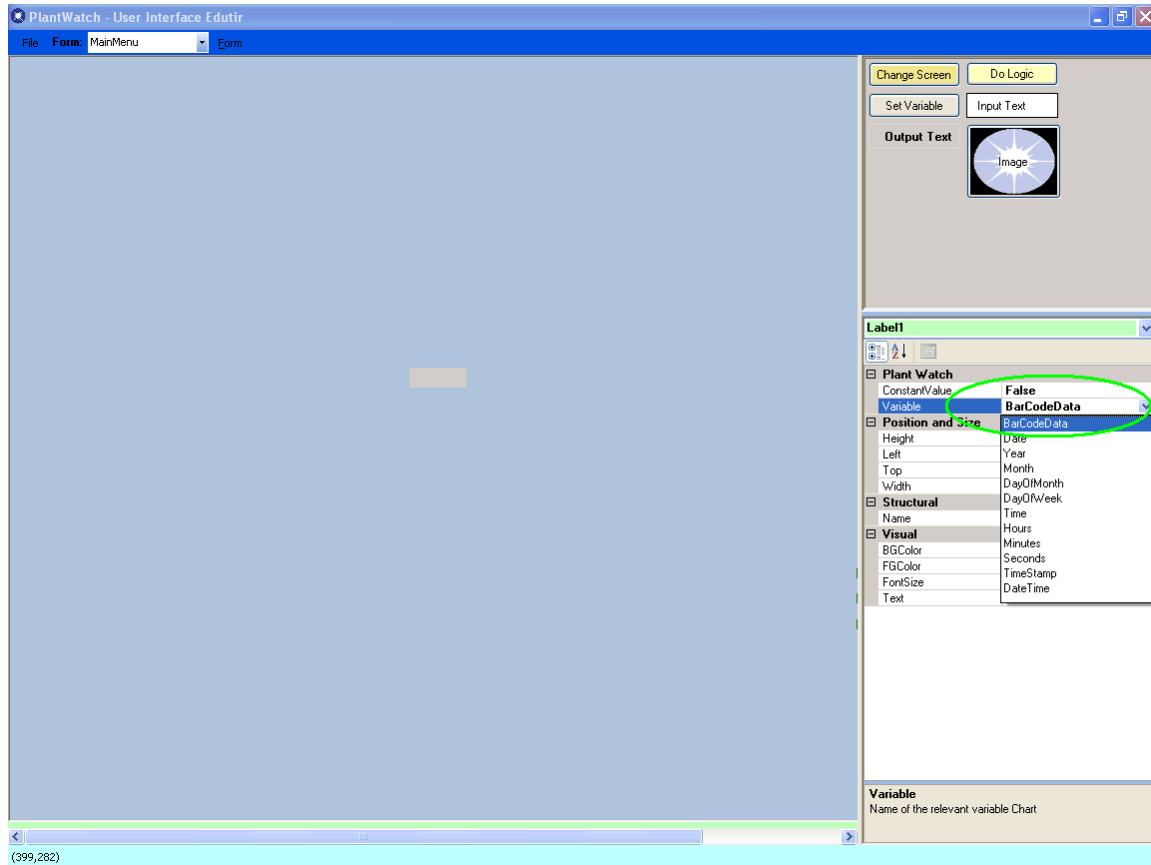
Open the Plantwatch Graphics Editor and select the *Screen* to edit.



Drag an *Output Text* onto the screen.



Click on “variable” text to get variables drop down
Select the *Variable* “BarCodeData” from the drop down list.



Save your work.
Exit user interface Edutir

Part 3: Select part of the data from a Plantwatch Variable, place it into another Plantwatch Variable and then write it to a file.

We will configure Plantwatch to take the first 8 characters out of the Plantwatch Variable we created for the bar code data. We will place this first 8 characters into another variable and write it to a text file .

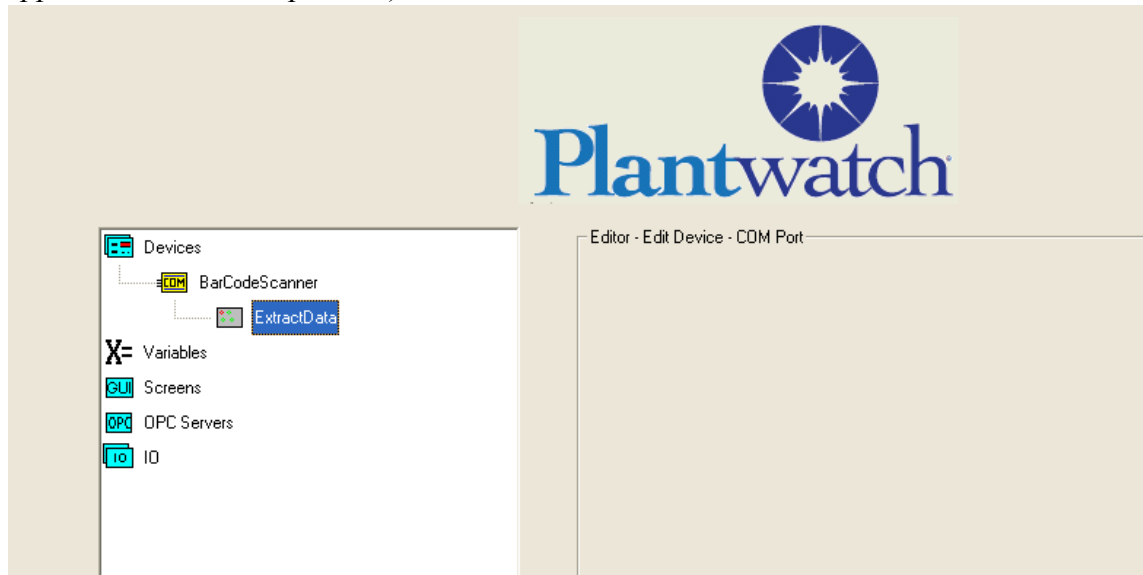
Procedure Overview:

In Plant Watch configurator:

Create a new Variable Named “BarCodeDataFirst8”.


Configure two additional cells in the existing logic chart. One to get the first 8 characters and one to write them to file.

Open existing *Logic Chart* named “ExtractData”. (Expand out the Devices branch of the *Application Tree* to expose it.)

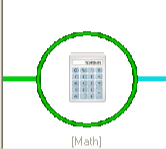
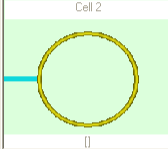
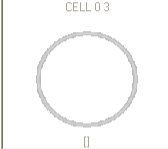
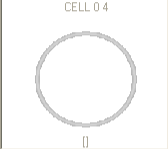
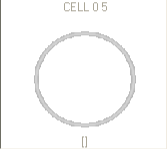
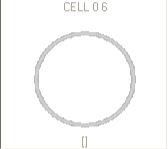

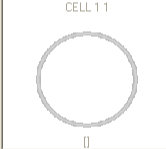
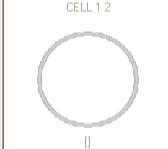
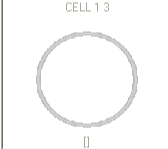
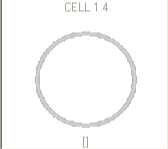
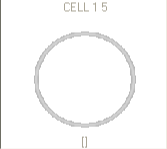




You will see the Logic Chart open.

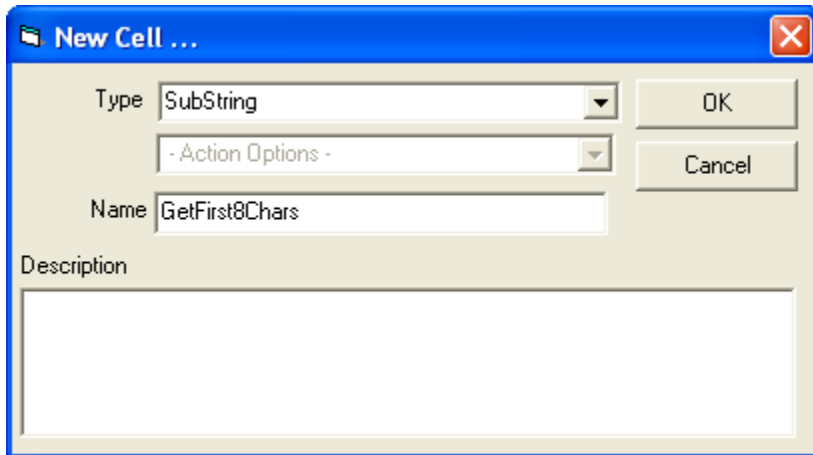
Editor - Logic Chart
Exit SFormPopupMenu



Delete New Variable <- -> 1

 [Math] CELL 1 1	 Cell 2 CELL 1 2	 CELL 0 3 CELL 1 3	 CELL 0 4 CELL 1 4	 CELL 0 5 CELL 1 5	 CELL 0 6 CELL 1 6	 CELL 0 7 CELL 1 7
 CELL 2 1 CELL 21	 CELL 2 2 CELL 22	 CELL 2 3 CELL 23	 CELL 2 4 CELL 24	 CELL 2 5 CELL 25	 CELL 2 6 CELL 26	 CELL 2 7 CELL 27

Double click on the top row, second from the left. You will be presented the dialog for choosing what type of cell this is to be, as well as naming it something useful.




The image shows a dialog box titled "New Cell ...". It has a blue title bar with a close button (X) in the top right corner. The dialog contains the following fields and controls:

- Type:** A dropdown menu with "SubString" selected.
- Action Options:** A dropdown menu with "- Action Options -" selected.
- Name:** A text input field containing "GetFirst8Chars".
- Description:** A large, empty text area.
- Buttons:** "OK" and "Cancel" buttons are located on the right side of the dialog.

You will see the Logic Chart with the second cell set to Substring.

Editor - Logic Chart
Exit SFormPopupMenu



Logic Chart Editor Interface:

- Buttons: Delete, New Variable, <->, 1
- Grid of cells (CELL 0 1 to CELL 2 7):
 - CELL 0 1: [Math] (green circle)
 - CELL 0 2: GetFirstChars (green circle)
 - CELL 0 3: [SubString] (yellow circle)
 - CELL 0 4: [] (grey circle)
 - CELL 0 5: [] (grey circle)
 - CELL 0 6: [] (grey circle)
 - CELL 0 7: [] (grey circle)
 - CELL 1 1: [] (grey circle)
 - CELL 1 2: [] (grey circle)
 - CELL 1 3: [] (grey circle)
 - CELL 1 4: [] (grey circle)
 - CELL 1 5: [] (grey circle)
 - CELL 1 6: [] (grey circle)
 - CELL 1 7: [] (grey circle)
 - CELL 2 1: [] (grey circle)
 - CELL 2 2: [] (grey circle)
 - CELL 2 3: [] (grey circle)
 - CELL 2 4: [] (grey circle)
 - CELL 2 5: [] (grey circle)
 - CELL 2 6: [] (grey circle)
 - CELL 2 7: [] (grey circle)

Double click the new cell
You will see the *Substring* editor

The image shows a dialog box titled "Substring Editor" with a blue title bar and a close button in the top right corner. The dialog is divided into several sections:

- Source String:** Contains a "Type" section with three radio buttons: "Constant" (selected), "Variable", and "Device". Next to "Constant" is a text box containing "Text1". Next to "Variable" is a dropdown menu.
- Starting Character Position:** Contains a "Type" section with three radio buttons: "Constant" (selected), "Variable", and "Device". Next to "Constant" is a text box containing "Text1". Next to "Variable" is a dropdown menu containing "Combo1".
- Length:** Contains a "Type" section with three radio buttons: "Constant" (selected), "Variable", and "Device". Next to "Constant" is a text box containing "Text1". Next to "Variable" is a dropdown menu containing "Combo1".
- Destination Variable:** A dropdown menu.
- Qualifiers:** A section containing a "Length" label.

At the bottom of the dialog are two buttons: "OK" and "Cancel".

Set the source to *Device*, set rest of fields

Substring Editor

Source String

Type

Constant

Variable

Device

Starting Character Position

Type

Constant

Variable

Device

Length

Type

Constant

Variable

Device

Destination Variable

Qualifiers

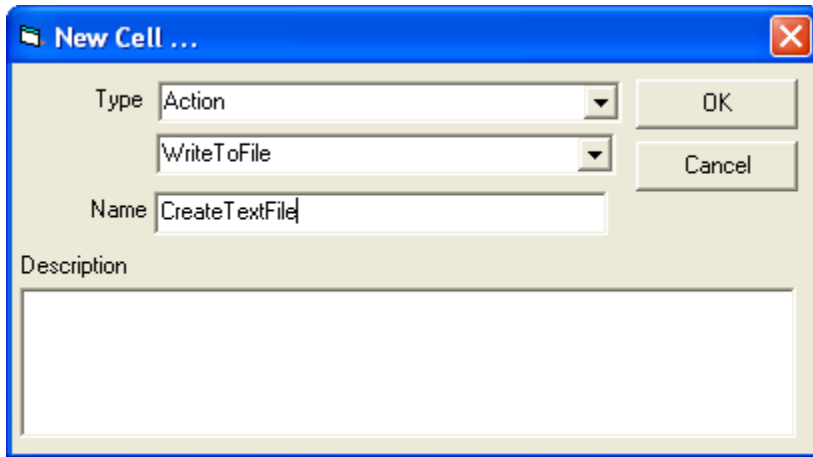
Length

OK Cancel

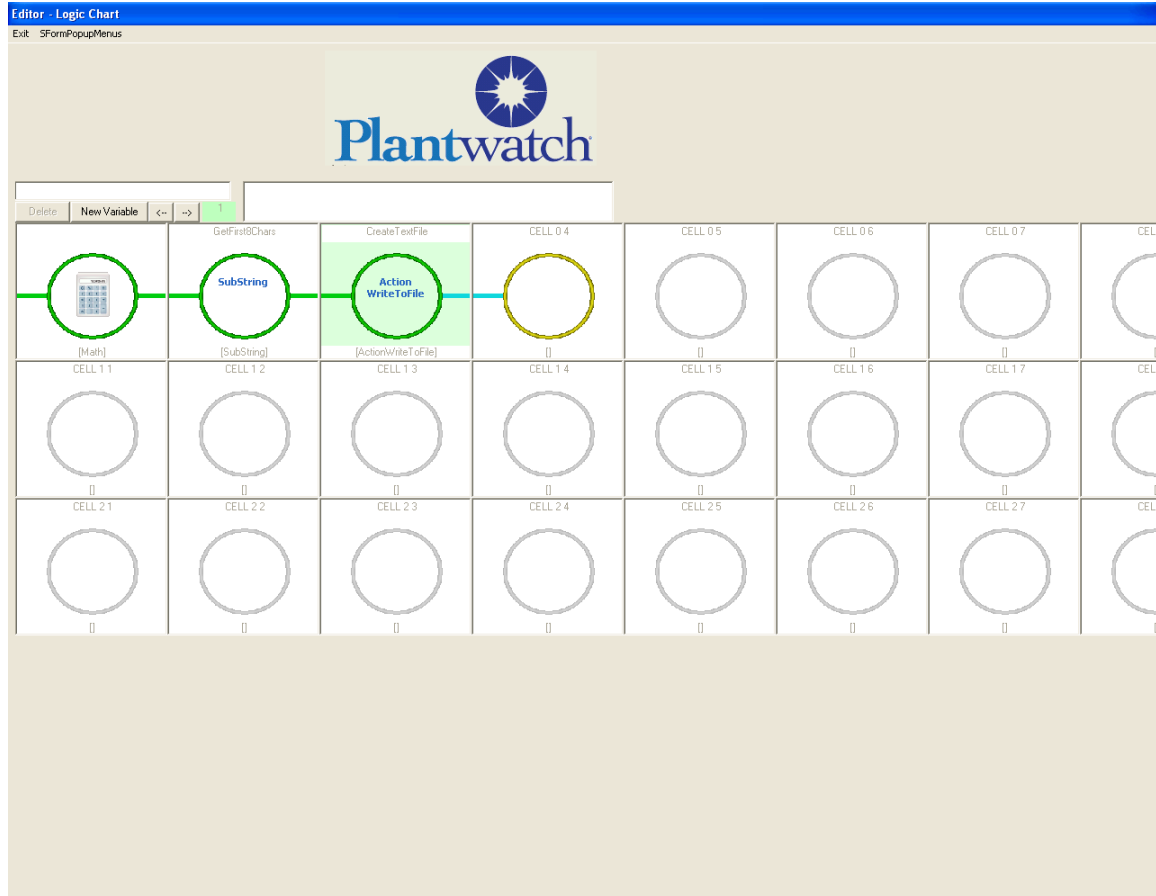
Click on OK. You will again be presented with the logic chart.

Now we will write the first 8 characters to a text file

Double click on the top row, third from the left. You will be presented the dialog for choosing what type of cell this is to be. Select Action and Write to File. Use CreateTextFile for its name.



Click on OK and you will see the Logic Chart with the third cell set to Write to File.



Double click the new cell
You will see the *Write To File* editor

Write To File Editor

Value To Write

Type

Constant

Variable

Device

File Spec Path

Type

Constant

Variable

Device

File Spec File Name

Type

Constant

Variable

Device

File Spec File Extension

Type

Constant

Variable

Device

Add CR/LF ?

Yes No

File Create Mode

Append To Existing File Create New File

OK Cancel

For the value to write we will use our Variable *BarCodeDataFirst8*.

We want to write to file `c:\DataOut.csv` so...

File Spec Path will be set to a constant of `c:\`

File Spec File Name will be set to `DataOut`

File Spec Extension will be set to `csv`

We want to create a report of all scanned items so we will append each new record to the existing file.

Write To File Editor

Value To Write

Type

Constant

Variable

Device

File Spec Path

Type

Constant

Variable

Device

File Spec File Name

Type

Constant

Variable

Device

File Spec File Extension

Type

Constant

Variable

Device

Add CRLF ?

Yes No

File Create Mode

Append To Existing File Create New File

OK Cancel

Exit the logic chart.

Save the application

Close the plantwatch configurator