



Tutorial Sample Application

Description

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

There are three programs that are used to develop a Plantwatch application.



PlantWatchF...

Form Editor : creates graphic screens



PlantWatch...

Configurator : communications, logic , data colleciton



PlantWatch...

Runtime : Run the application developed while monitoring it live

We will configure Plantwatch to receive a RS232 string from a bar code scanner, place the data in a plantwatch variable, display the value on a screen, 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

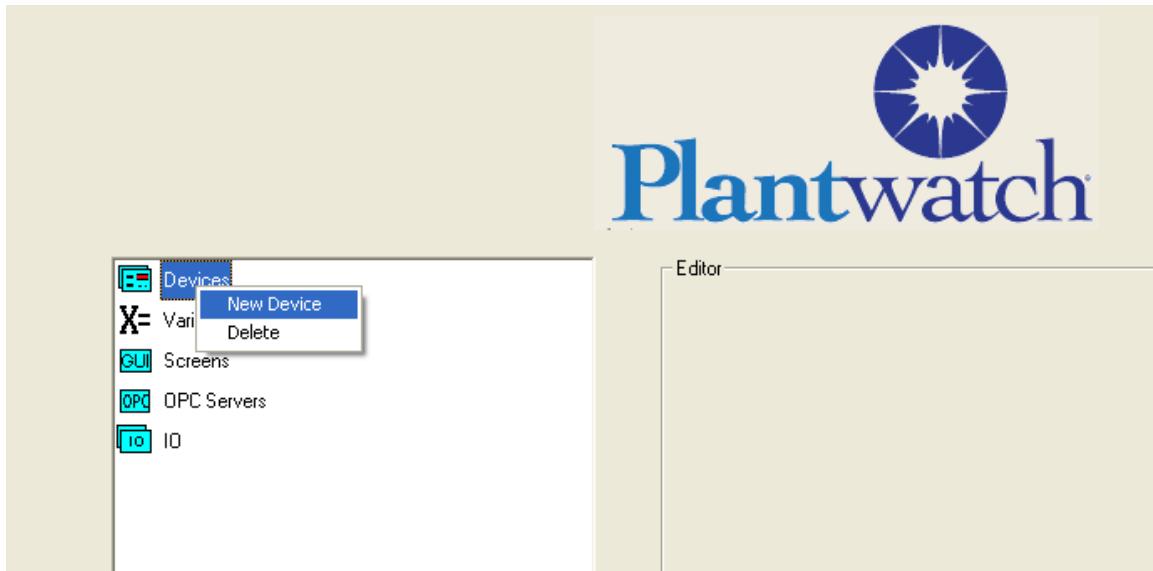
For our example we will use a bar code scanner for a RS232 data source.

Step 1 Create a *Device* within Plantwatch configuration

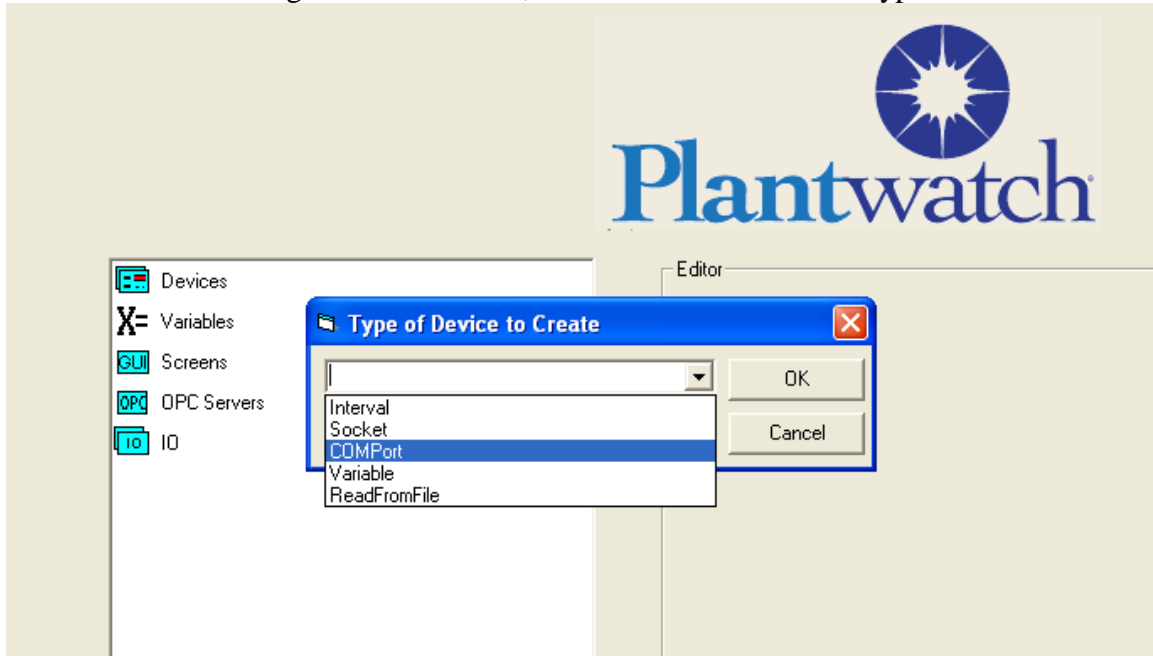


Procedure:

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*.

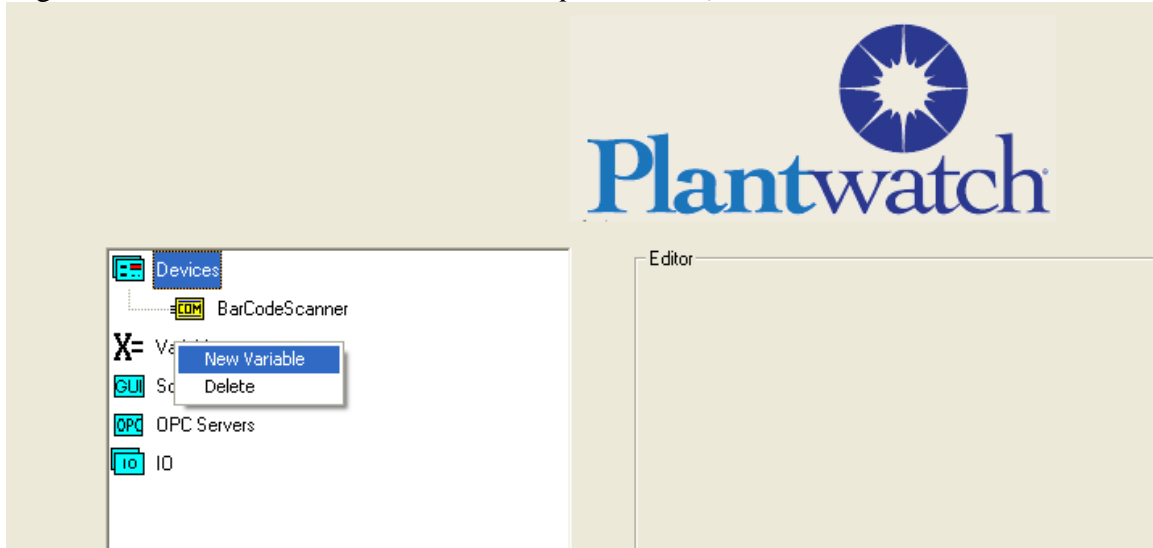


Part 2: Extract data from a Plantwatch *Device*

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.



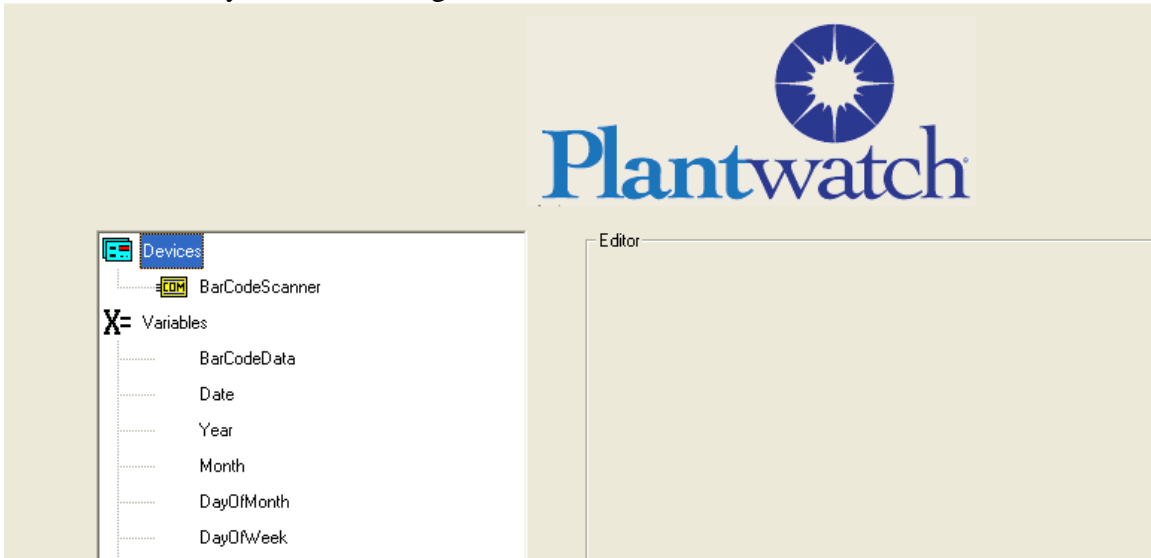
Editor - Create New Variable

Name

Description

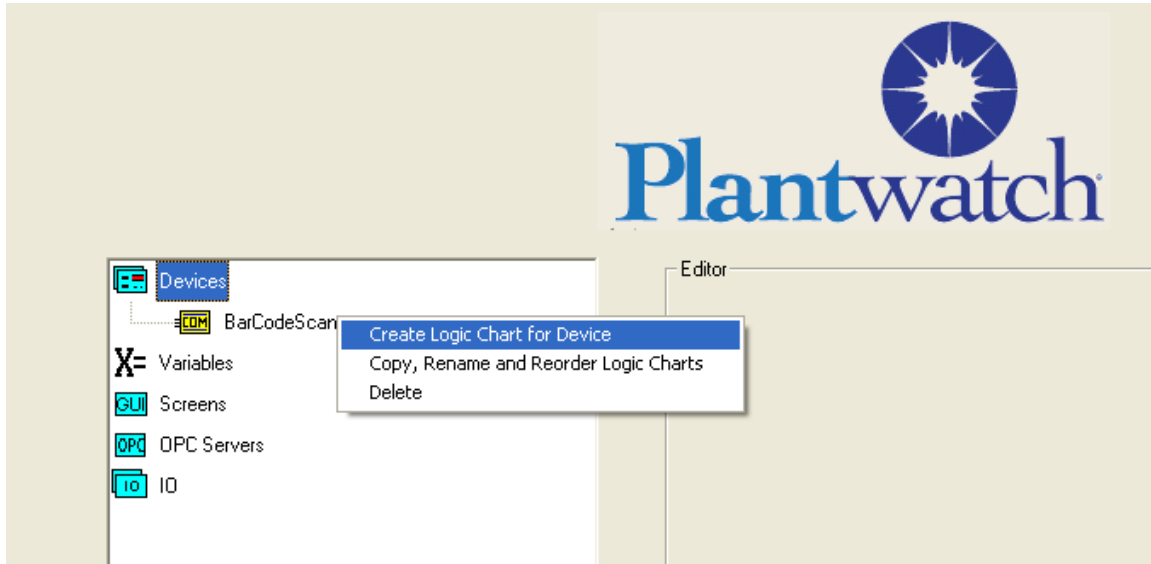
Type

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”

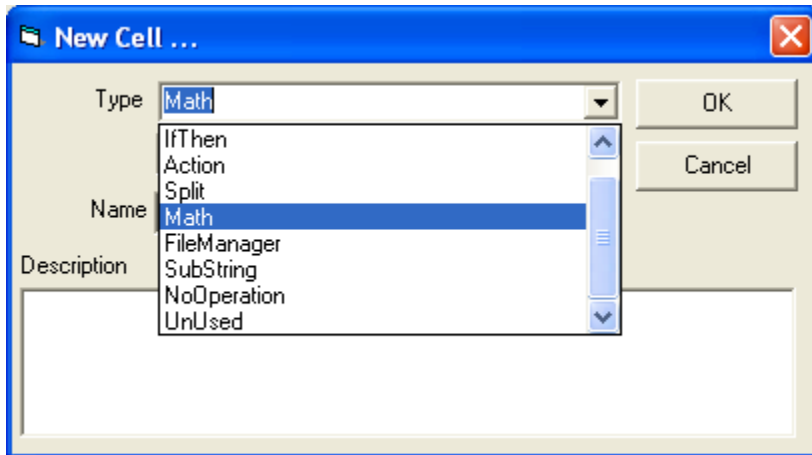
Editor - Logic Chart
Exit \$FormPopupMenu

Plantwatch

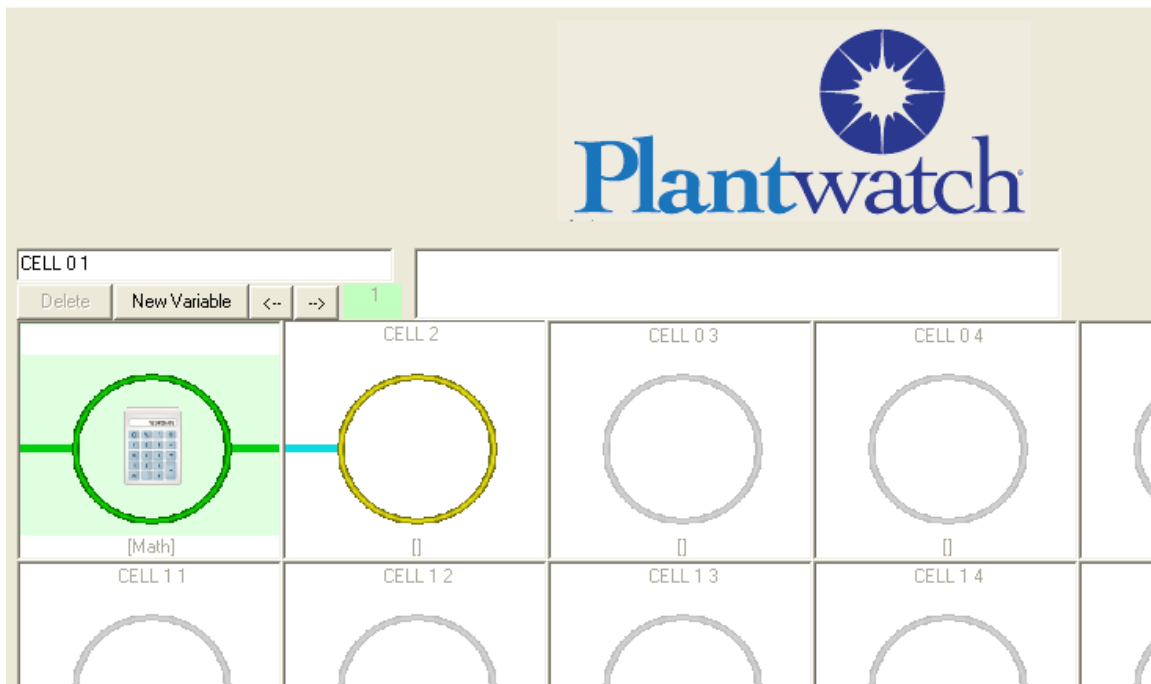
Delete New Variable <- -> 1

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

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

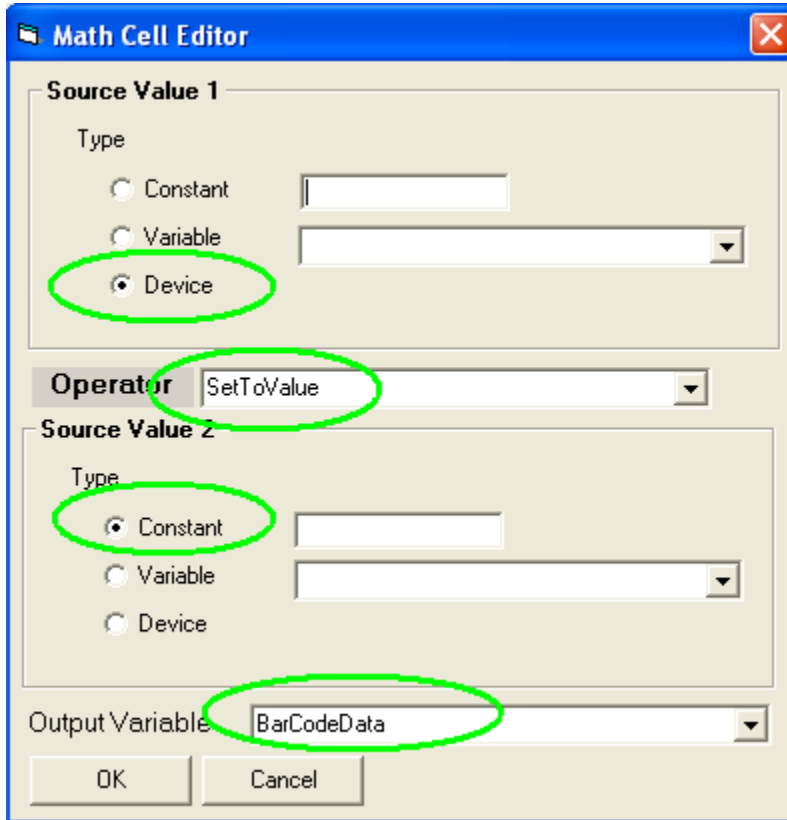


Then give it a name such as GetData and click on OK. You will again see the logic chart but now the top left cell is presented as a *Math* cell.



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"



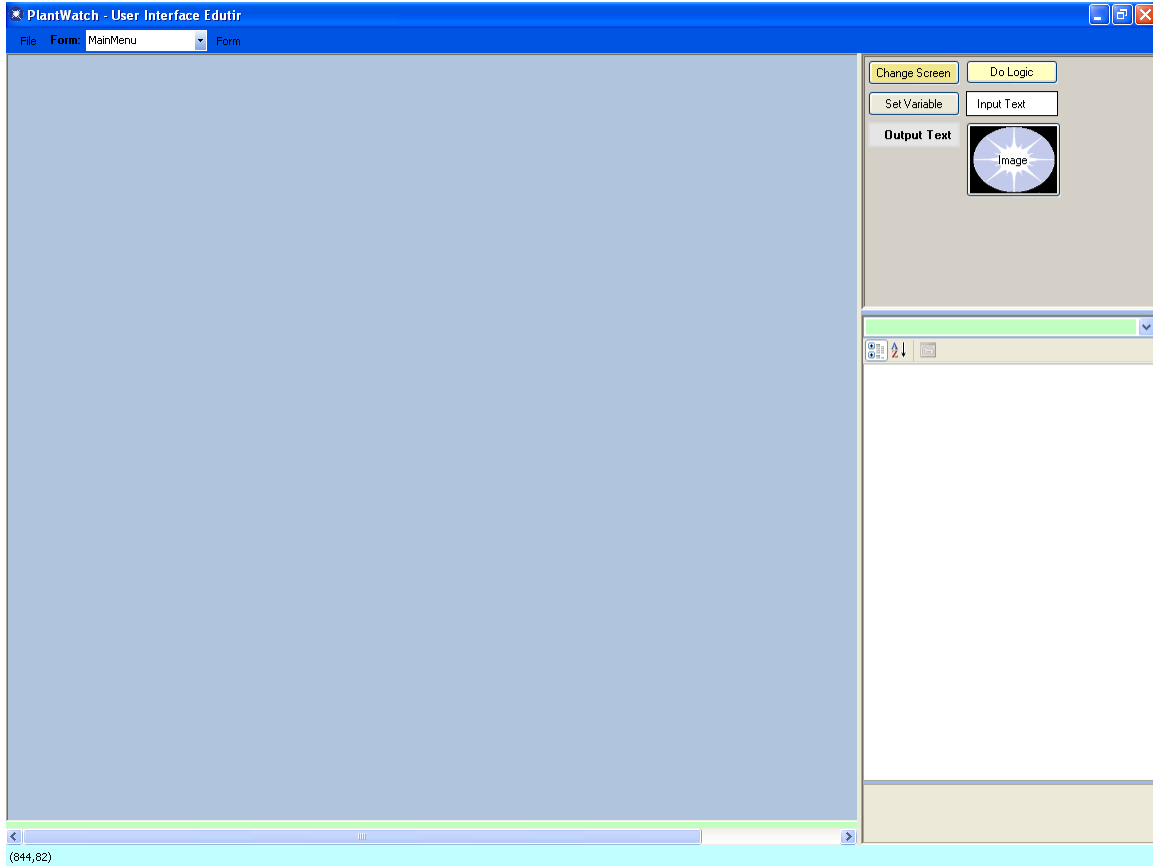
Part 3: Display a Variable on a Plantwatch Screen.

Procedure:

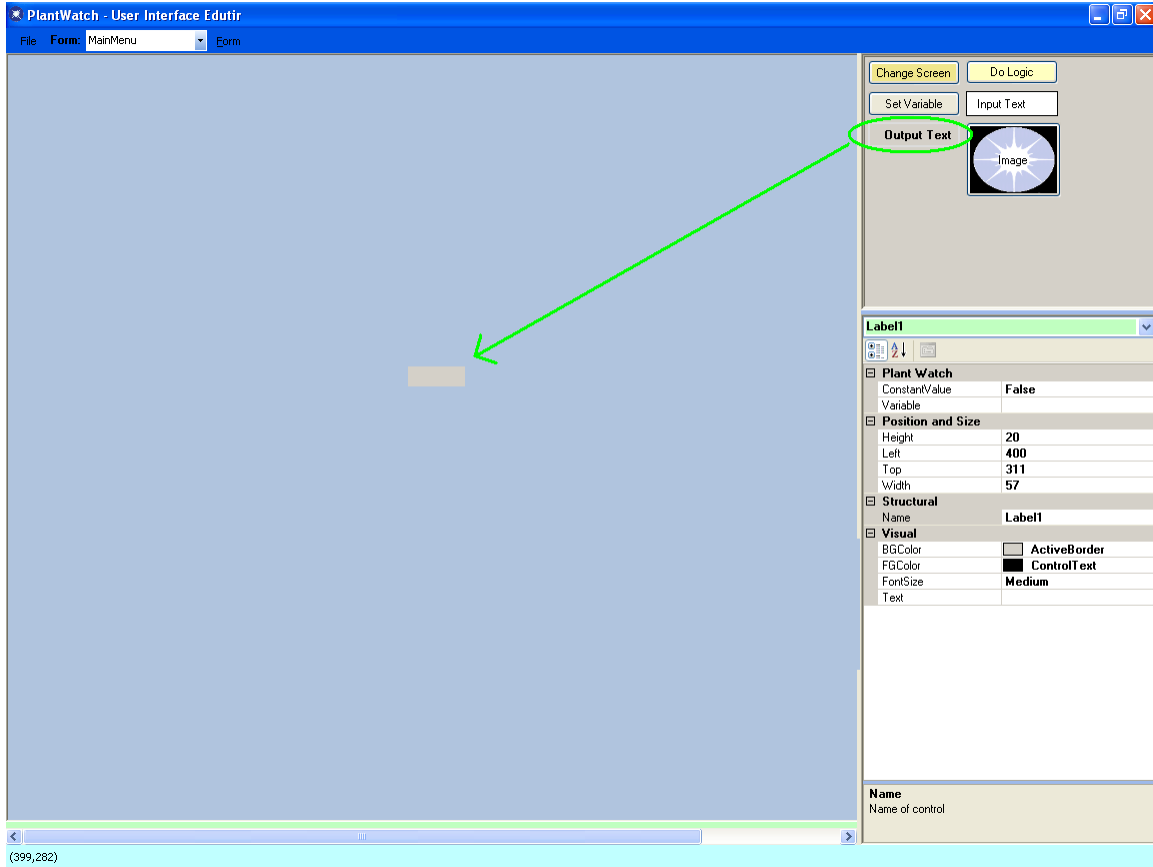
First we need to create a new screen.

Open the Plantwatch Graphics Editor.

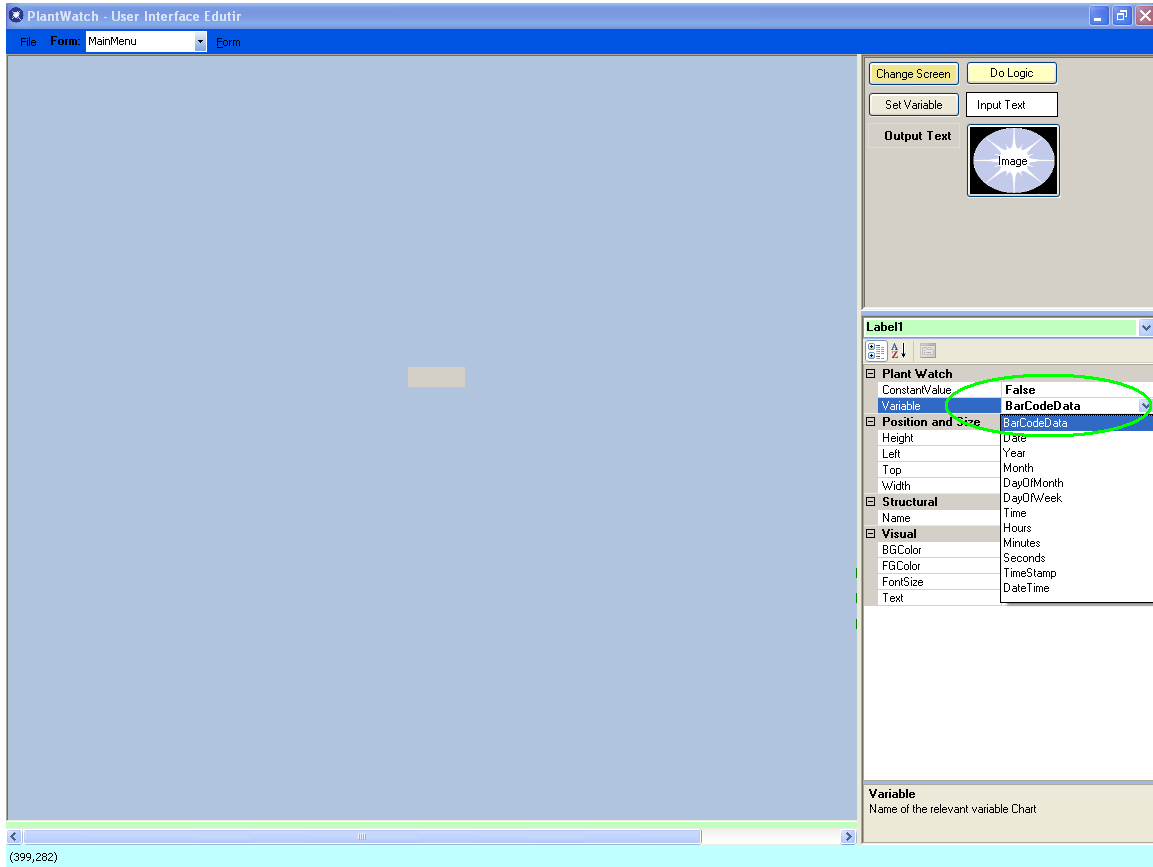
Click on *Screen*, Select *New* to create a new screen. Call it MainMenu.



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 Editor

Part 4: Select part of the data from the bar code scanner, 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 these first 8 characters into a new variable called BarCodeDataFirst8 and write the content of the new variable to a text file.

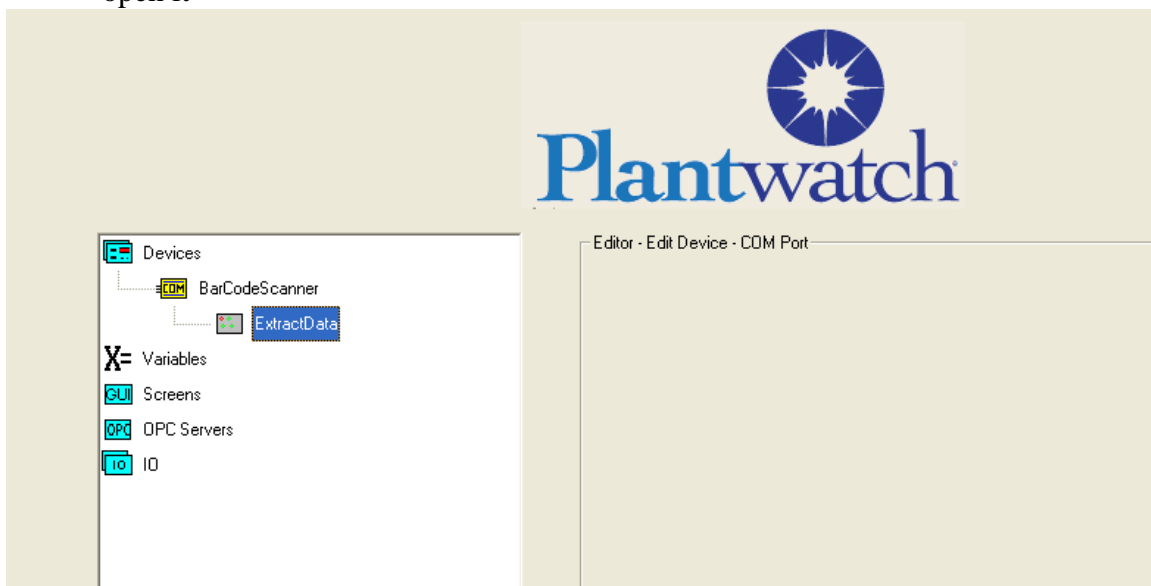
Procedure Overview:

Open Plant Watch Configurator:

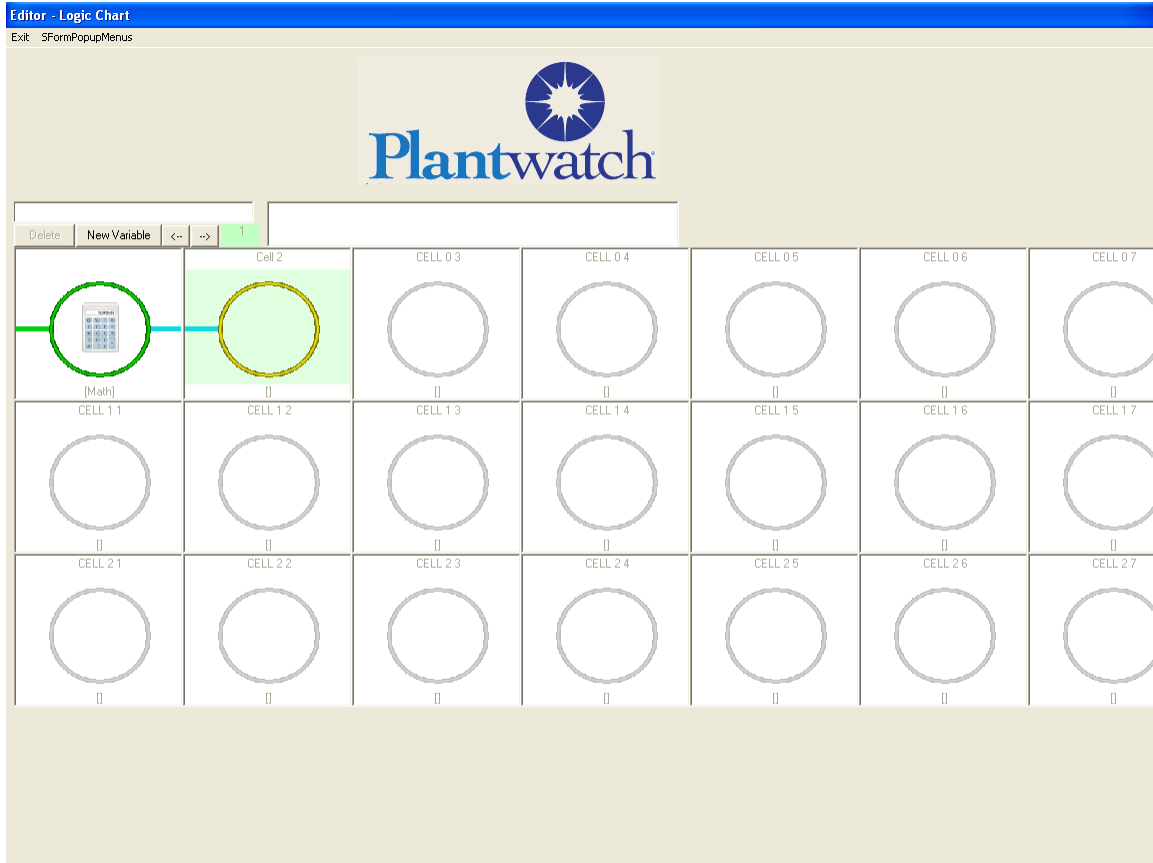
Create a new Variable Named “BarCodeDataFirst8”.

Open existing *Logic Chart* named “ExtractData”.

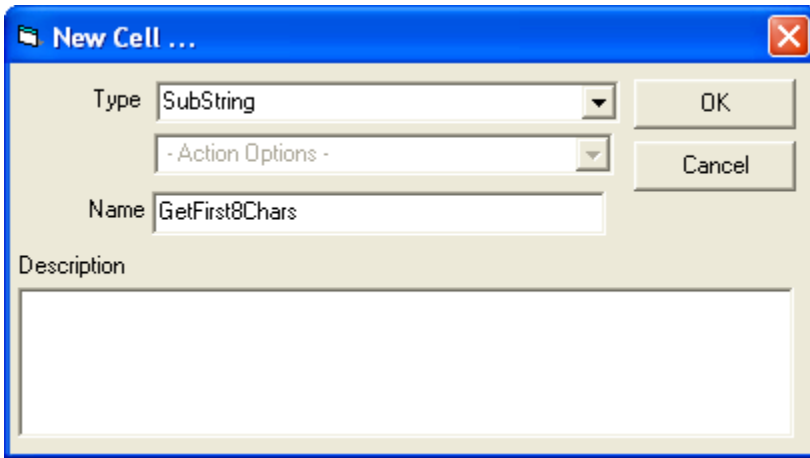
Expand out the *Devices* branch and then the *BarCodeScanner* branch of the *Application Tree* to expose it. Then double click on the *ExtractData* logic chart to open it



You will see the Logic Chart open. Note that only the left most cell, cell 1, is used. We will use cells 2 and 3 to write a portion of the bar code data to file. Cell two will use a Substring cell to get the first 8 characters from the barcode data and place the data into variable BarCodeDataFirst8 . Cell 3 will us a WriteToFile action to write the content of variable BarCodeDataFirst8 to file c:\DataOut.csv. This new file is able to be opened with Excel.




Double click on the unused cell in the top row, second position 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.



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

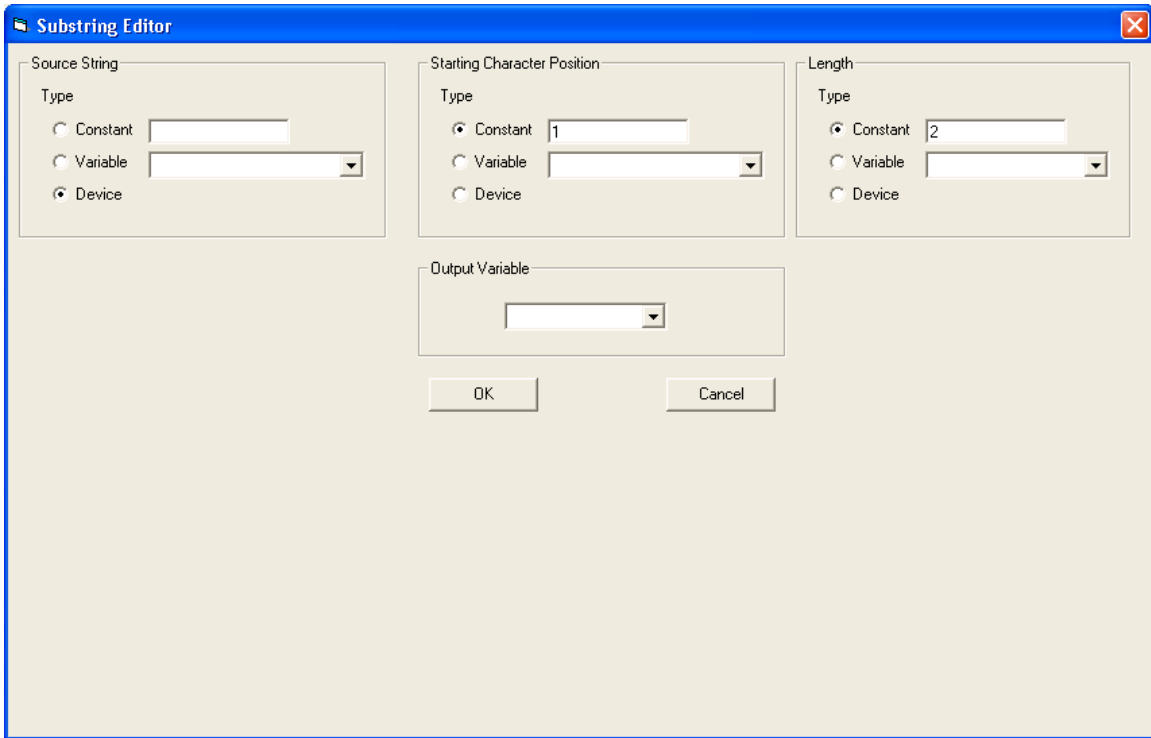
Editor - Logic Chart
Exit: SFormPopupMenu



Logic Chart Editor Interface:

- Buttons: Delete, New Variable, <-, --, 1
- Grid of 28 cells (3 rows by 7 columns):
 - CELL 0 1: [Math] (green circle)
 - CELL 1 2: SubString (green circle)
 - CELL 0 3: (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



Set the source to *Device*, set rest of fields as shown below

The image shows a 'Substring Editor' dialog box with the following configuration:

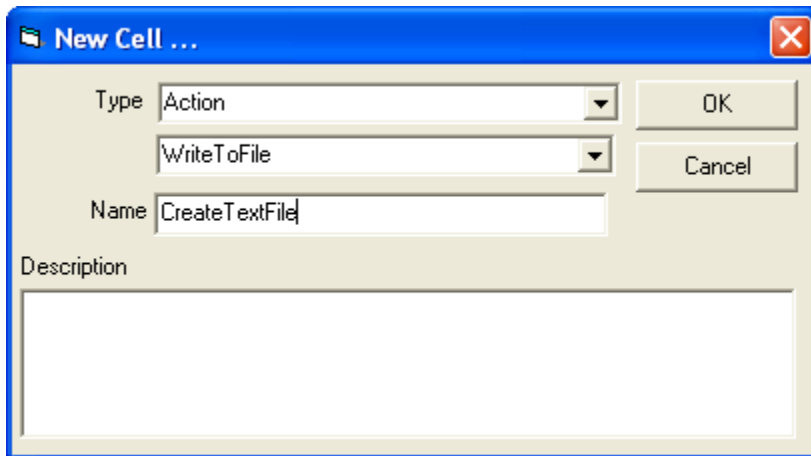
- Source String:** Type is *Device*.
- Starting Character Position:** Type is *Constant* with a value of 1.
- Length:** Type is *Constant* with a value of 8.
- Output Variable:** Set to *BarCodeDataFirst8*.

Buttons: OK, Cancel

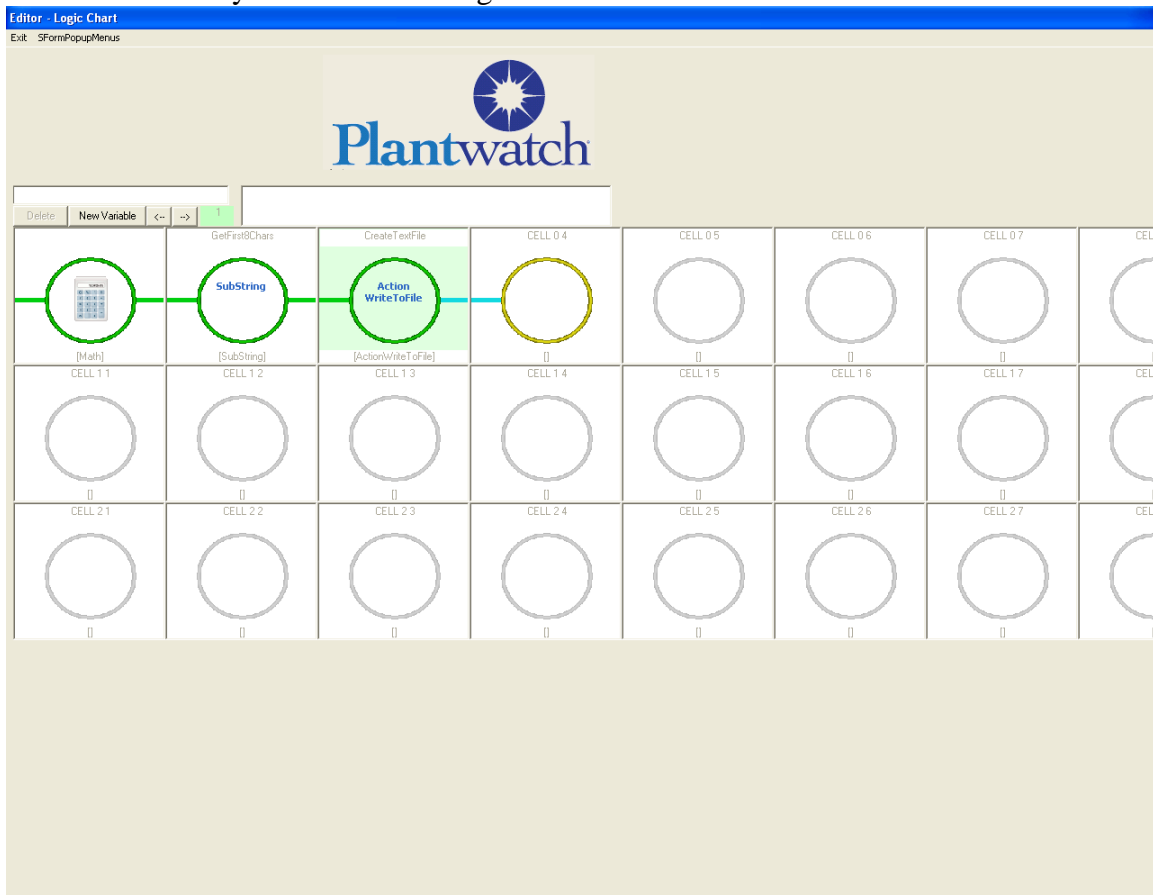
Click on OK. You will again be presented with the logic chart.

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 it's name.



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



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 *BarCode DataFirst8*

Device

File Spec Path

Type

Constant *c:*

Variable

Device

File Spec File Name

Type

Constant *DataOut*

Variable

Device

File Spec File Extension

Type

Constant *csv*

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

Your done!