



Tutorial : One

Sample Application Configuration

The configuration of the sample application in this tutorial will expose you to :

- Plantwatch Configuration Editor
- How to create *Variables*
- Create and configure logic charts
- Use Graphic editor to create a graphics screen
- Manipulate string data & save to new file

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 in that variable and then place them into a file which Excel can open.

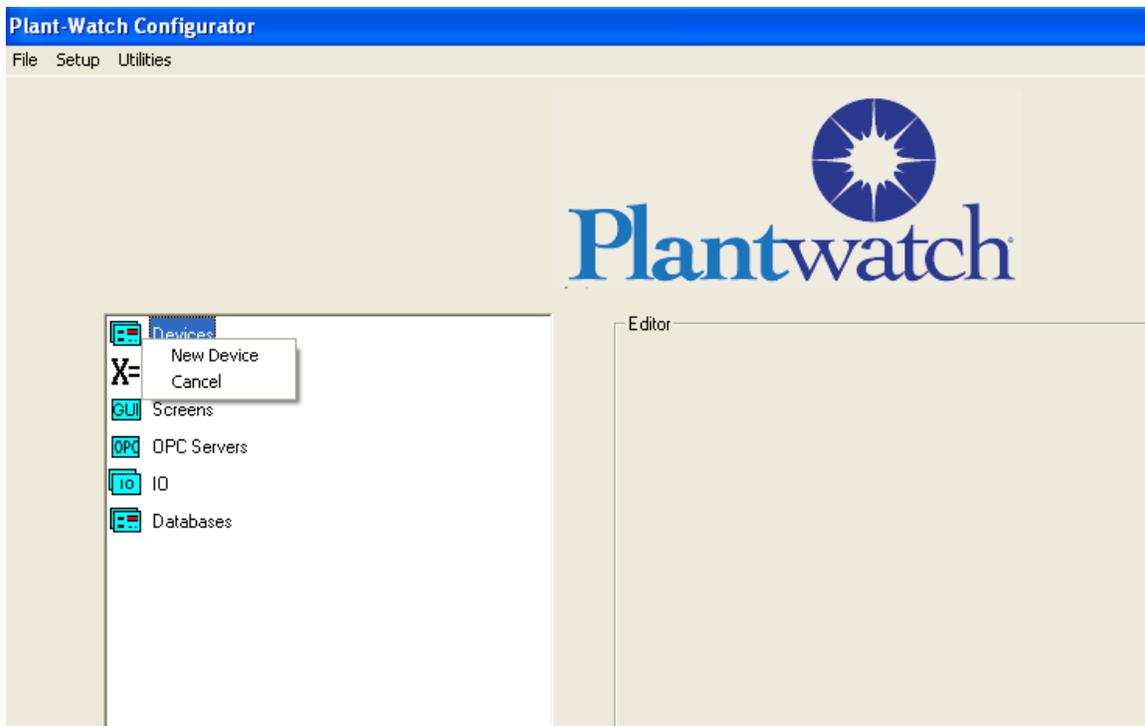
Part 1: Set up communication to RS232 scanner

- Step 1 Open the Plantwatch Configuration Editor by clicking the Icon
- Step 2 Create a new application
- Step 3 Create a *Device* within Plantwatch.

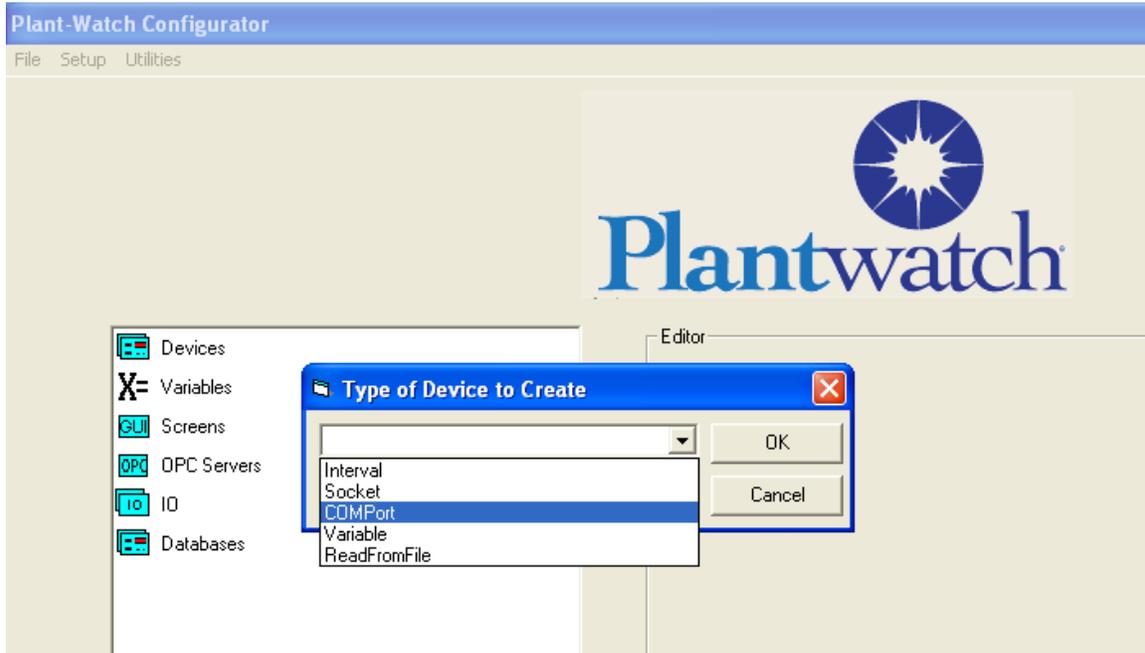


Procedure:

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 default 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 30

OK Cancel

Adjust the port as desired and then give it a name *BarCodeScanner*. The new *Device* is created. Click **OK** to exit



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 |

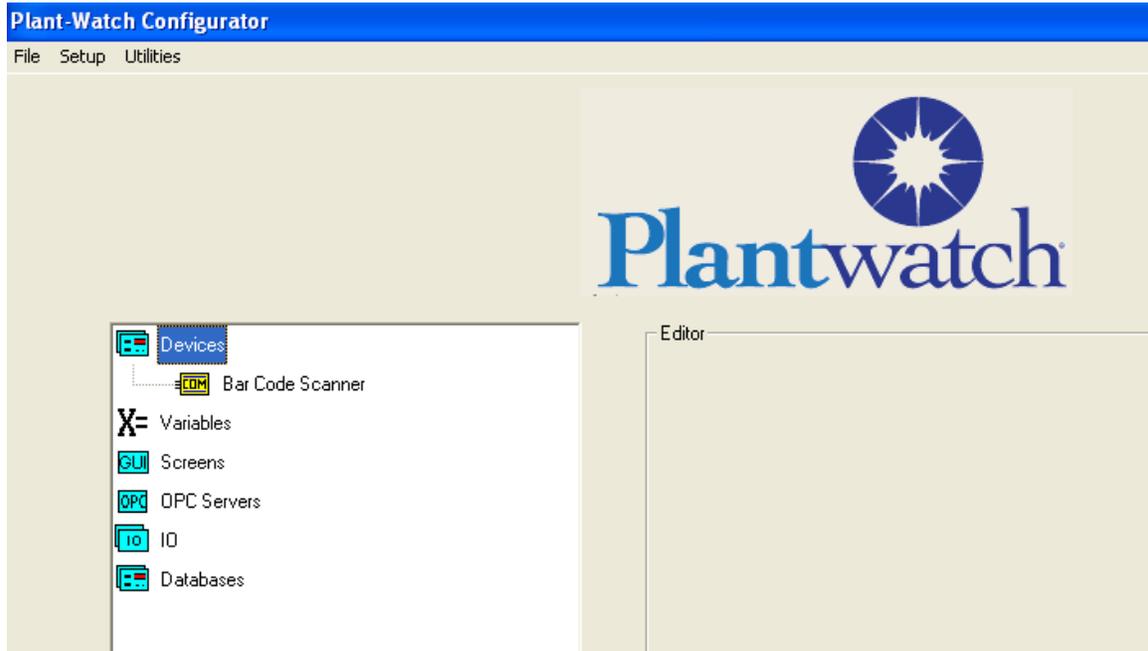
Packet Determination Method

Timeout
 Starting Char
 Ending Char
 Start And End Char

Packet Timeout Setting 30

OK Cancel

Now the device is visible within the *Development Tree*.



Part 2: Extract data from a RS232 Device

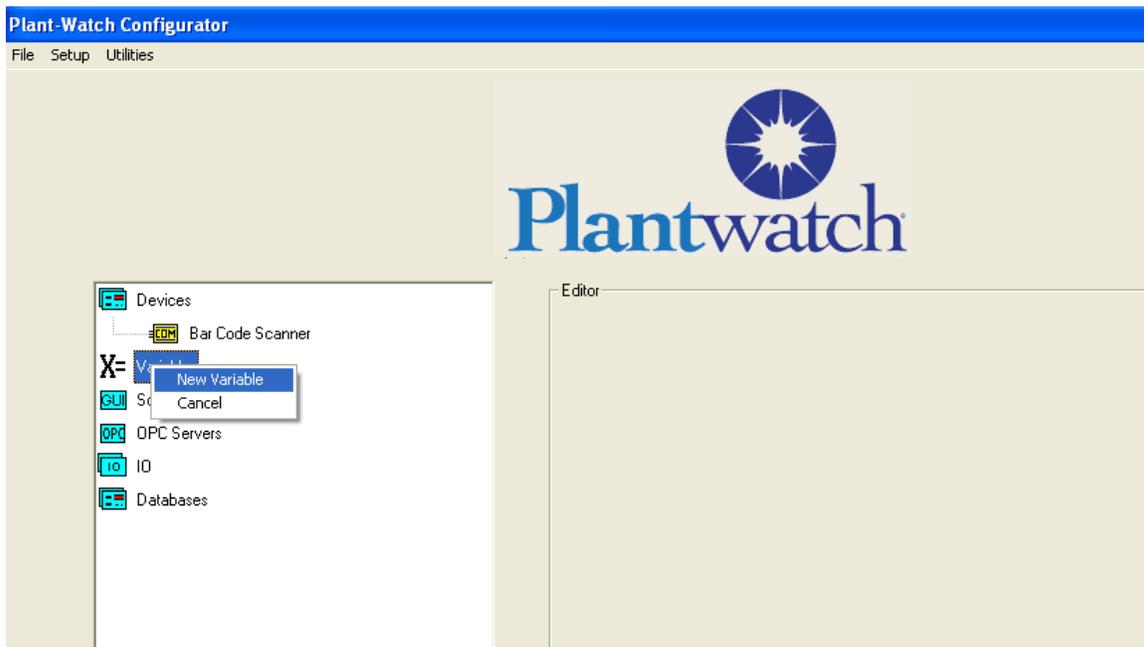
Step 1 Create a new *Variable* called **BarCodeData**

Step 2. Create a *Logic Chart* that gets the string data from the *BarCodeScanner Device* through the PC comm. port

Step 3

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”. Variable names are case sensitive. You can also enter a description.



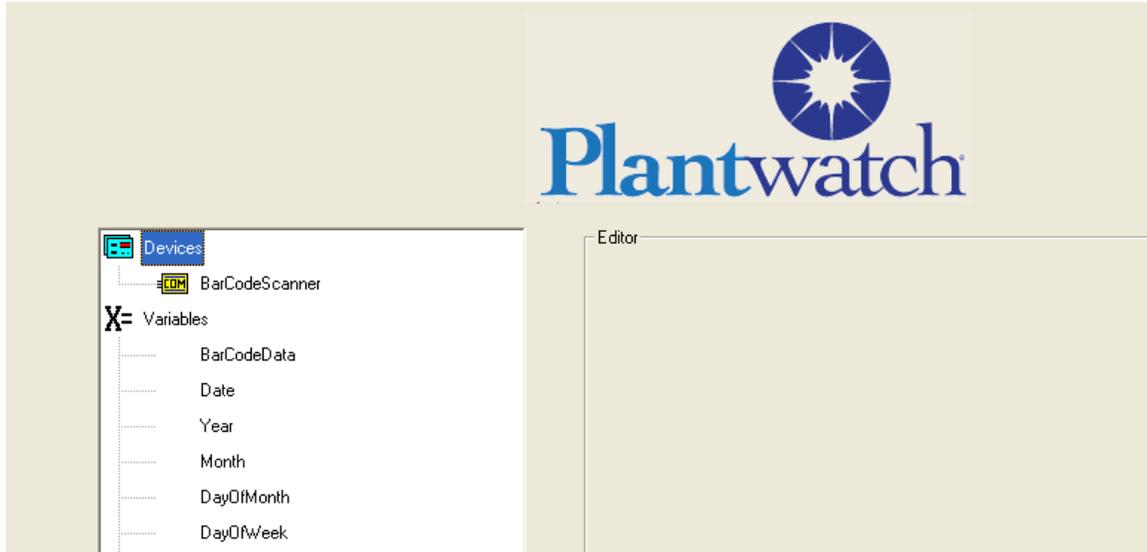
Editor - Create New Variable

Name

Description

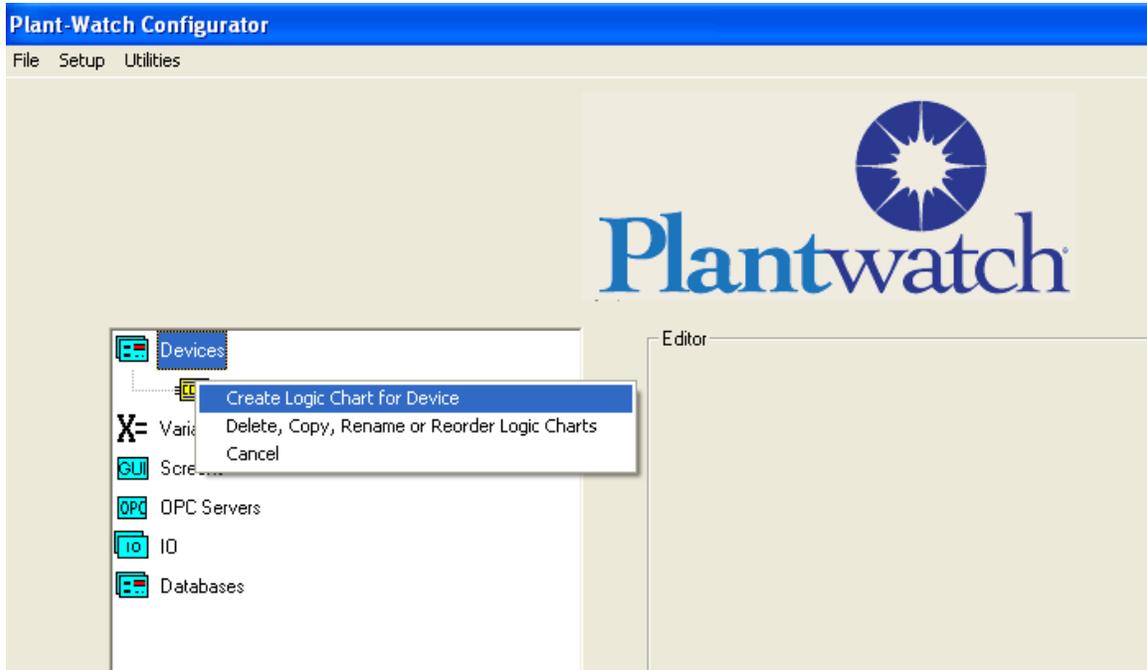
Type ▼

This completes creating the Variable *BarCodeScanner*. To see the new variable expand the variable list by double clicking on the X. The new variable *BarCodeData* is visible and ready for use inside Plantwatch.



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**”



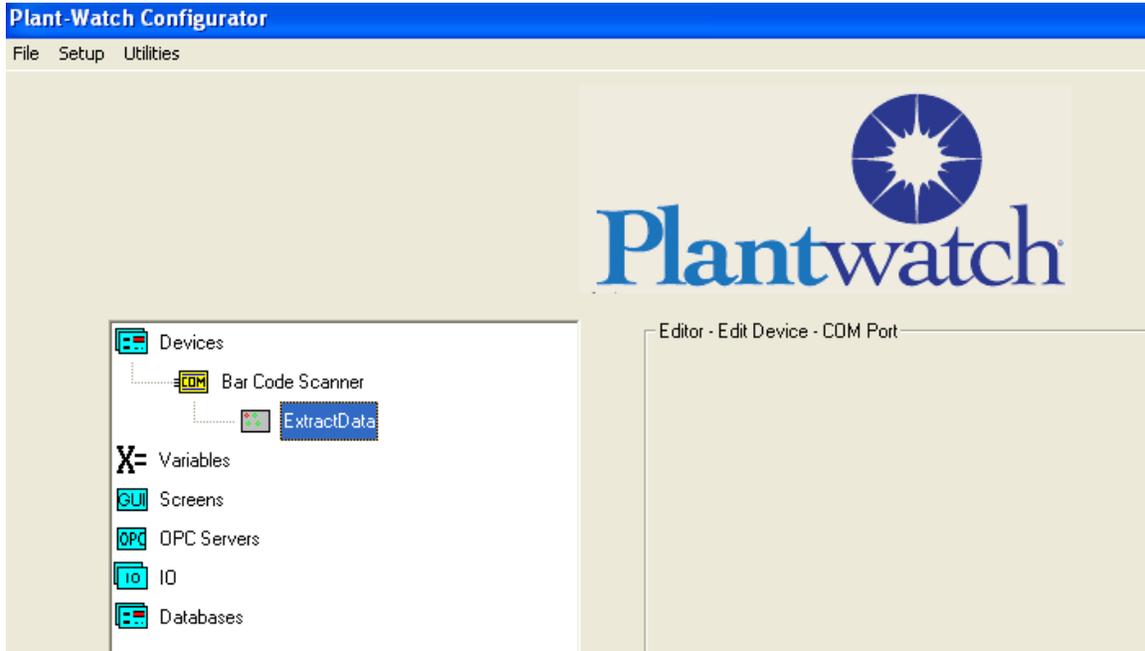
Editor-LogicChart-CreateNew

Name

Description

Selected Device

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

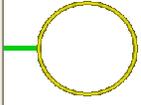


You will see the new *Logic Chart* you created.

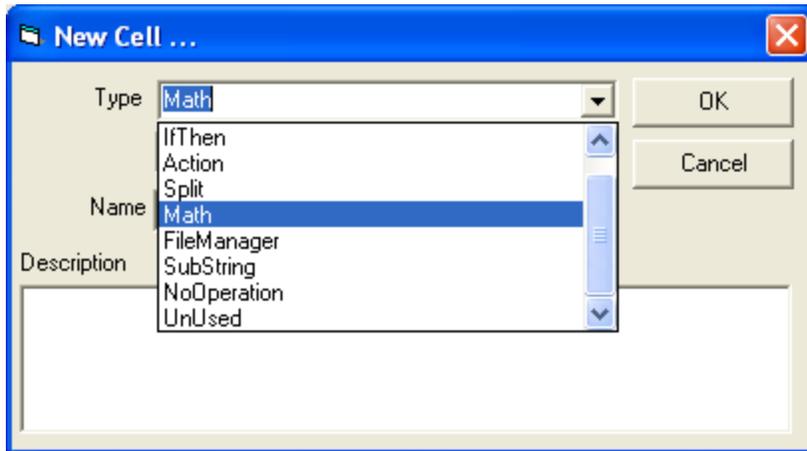
Editor - Logic Chart
Exit: SFormPopupMenu



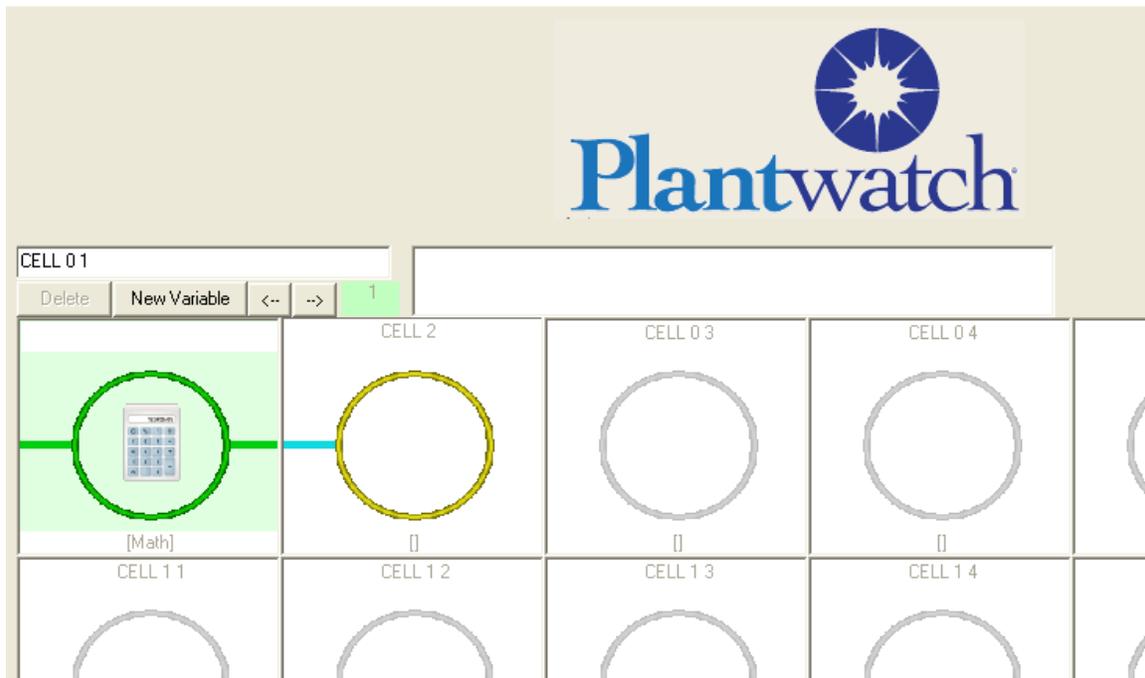
Delete New Variable <- -> 1

| | | | | | | |
|---|---|---|---|--|---|---|
| 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 this cell 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 *Math* cell type, and you will be presented with the *Math Cell Editor*.

We want to take the value from the bar code device and place its value in the *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 image shows a screenshot of the "Math Cell Editor" dialog box. The dialog is titled "Math Cell Editor" and has a close button in the top right corner. It contains the following fields and options:

- Source Value 1:** A section with a "Type" label and three radio buttons: "Constant", "Variable", and "Device". The "Device" radio button is selected and circled in green.
- Operator:** A dropdown menu showing "SetToValue", which is circled in green.
- Source Value 2:** A section with a "Type" label and three radio buttons: "Constant", "Variable", and "Device". The "Constant" radio button is selected and circled in green.
- Output Variable:** A dropdown menu showing "BarCodeData", which is circled in green.
- At the bottom, there are "OK" and "Cancel" buttons.

Click on **OK**

Save and Exit Plantwatch configurator.

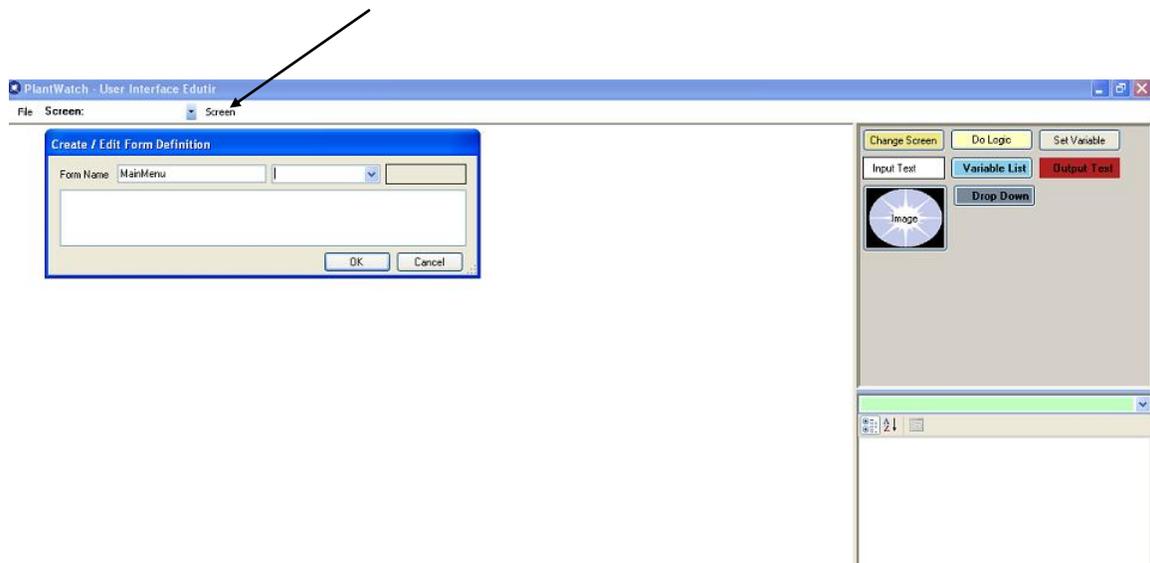
Part 4: Display a Variable on a Plantwatch Screen.

Procedure:

Open the Plantwatch **User Interface Editor** by clicking the Icon on the desktop

Create a new screen by left click on non bolded “screen” to create a new screen called “MainMenu”.

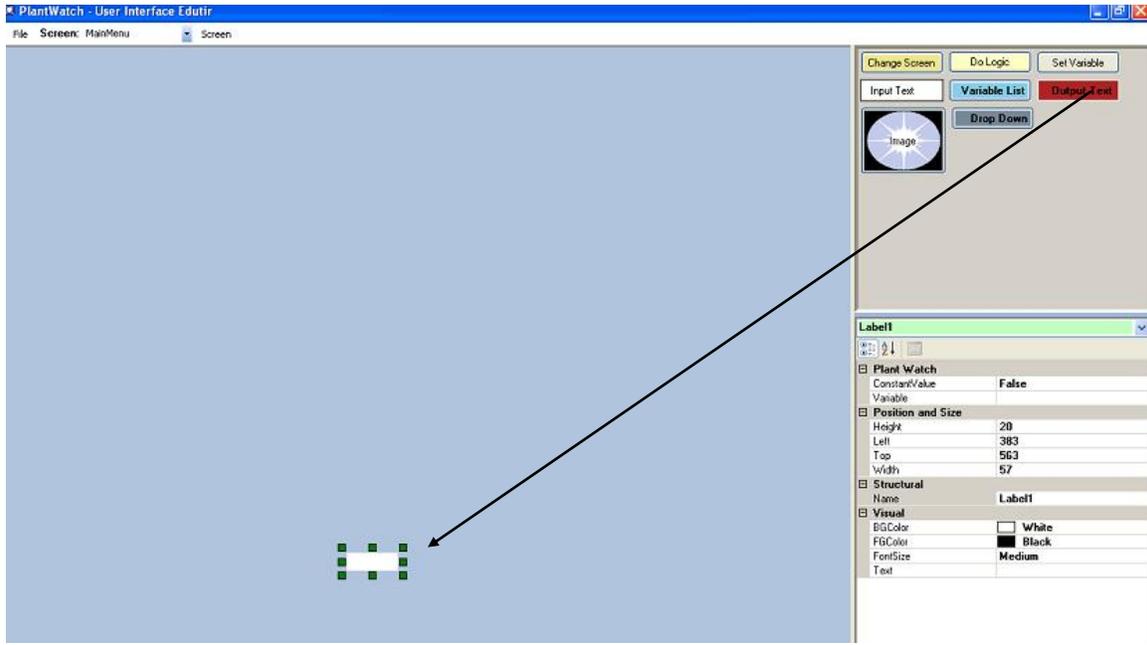
Click **OK**



The new screen “MainMenu” opens

Drag an *Output Text* onto the screen by left click the output text button , hold button down and drag to desired position.

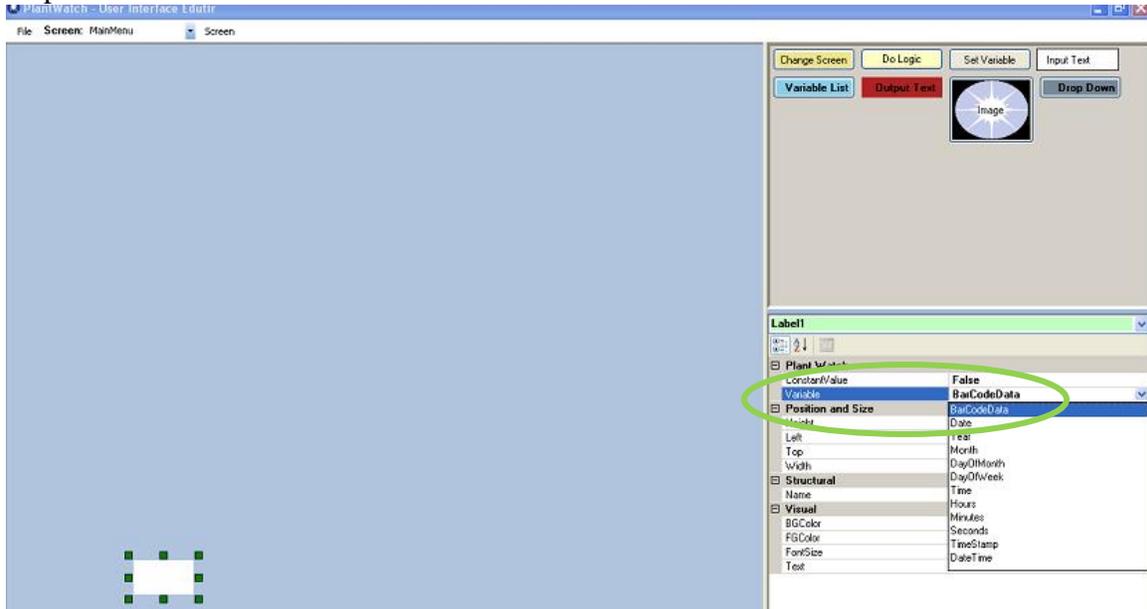
Position and size as required using 8 squares around the box



Click on “**Variable**” text to get the variables drop down to appear

Select the **Variable** “*BarCodeData*” from the drop down list.

This animation will display the values contained in the **Variable** “*BarCodeData*” in the output text box.



Save your work.

Exit user interface Editor.

Click on the Plantwatch runtime Icon to run the application.

As you scan bar codes the value will appear in the output text box.



First 8 from string

String from Scanner

84614300

846143000831

Normal

System Shutdown

Clear Error Mes

Enter the password and then select Shutdown

Shutdown

Cancel

Debug Form

Part 3: Select part of the data from a Plantwatch *Variable* and place it into another Plantwatch *Variable*.

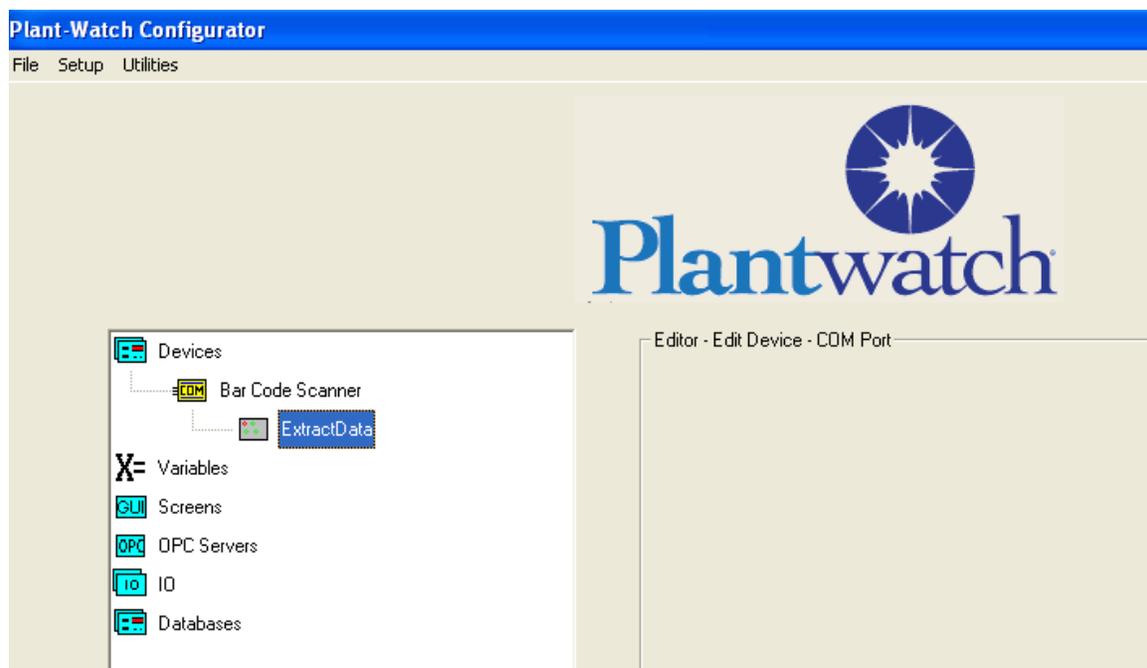
We will configure a logic chart to take the first 8 characters out of the Plantwatch *Variable* we created for the bar code data and put it into a new variable.

Procedure:

Open Plant Watch Configurator

Create a new Variable Named “BarCodeDataFirst8”.

To open the existing *Logic Chart* named “ExtractData” expand out by left clicking? the Devices branch of the *Application Tree* to expose the scanner and then the logic chart.



You will see the Logic Chart open.

Editor - Logic Chart
Exit: SFormPopupMenu



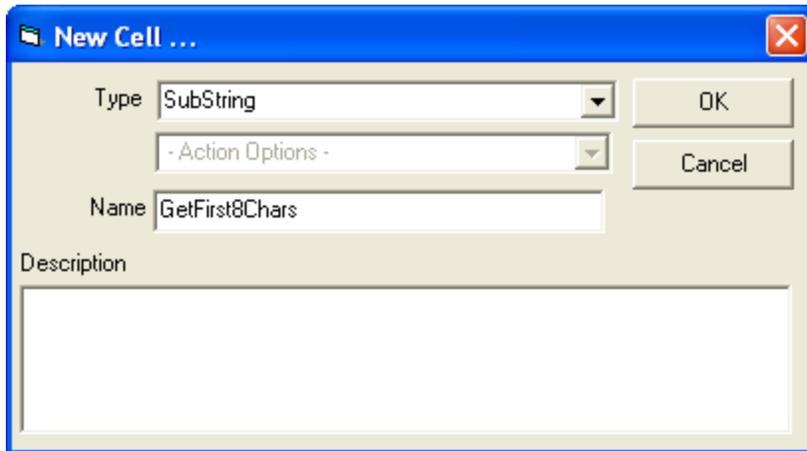
Logic Chart Editor Interface:

- Buttons: Delete, New Variable, <-, -->, 1
- Grid of 28 cells (4 rows by 7 columns):
 - CELL 01: Contains a green circle with a math icon and a blue line connecting to CELL 02.
 - CELL 02: Contains a yellow circle with a green background.
 - CELL 03 to CELL 07: Each contains a grey circle.
 - CELL 11 to CELL 17: Each contains a grey circle.
 - CELL 21 to CELL 27: Each contains a grey circle.

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

Step 1 select SubString from drop down for type

Step 2 type in name GetFirst8Chars



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 elements:

- A "Type" dropdown menu with "SubString" selected.
- A "- Action Options -" dropdown menu.
- A "Name" text input field containing "GetFirst8Chars".
- A "Description" text area, which is currently empty.
- "OK" and "Cancel" buttons on the right side.

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 0 2: SubString (Green circle, highlighted)
 - 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)
- Connections: A green line connects CELL 0 1 to CELL 0 2. A blue line connects CELL 0 2 to CELL 0 3.

Double click the new cell called *substring*
You will see the *Substring* editor defaults

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 and a dropdown menu.

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

Set the source to *Device*

Set starting Character Position to constant of 1

Set Length to constant of 8

Select the Variable *BarCodeDataFirst8* form the drop down for Destination variable

Click on **OK**

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

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

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

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

Close the Plantwatch configurator

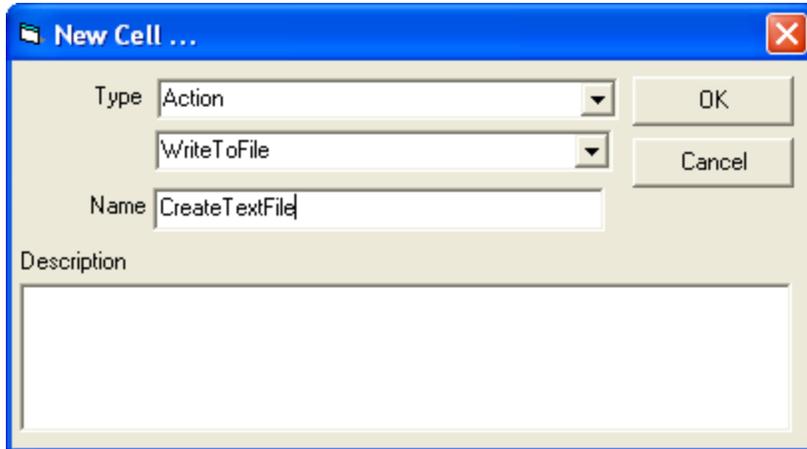
Open the graphics editor

Add the variable to the existing screen as an output text to see the revised string output.

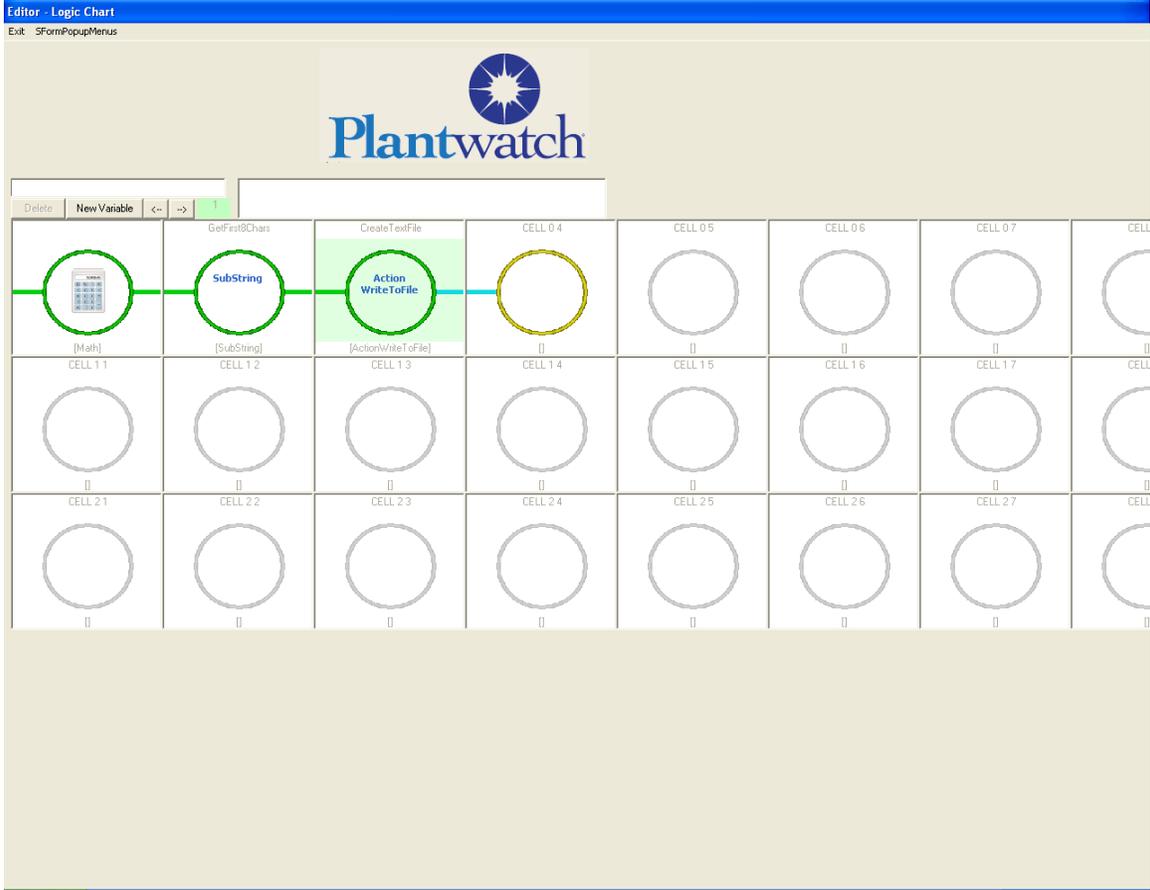
Click on OK. You will again be presented with the logic chart.

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 CRLF ?

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

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