

# Introduction to FlowCode4

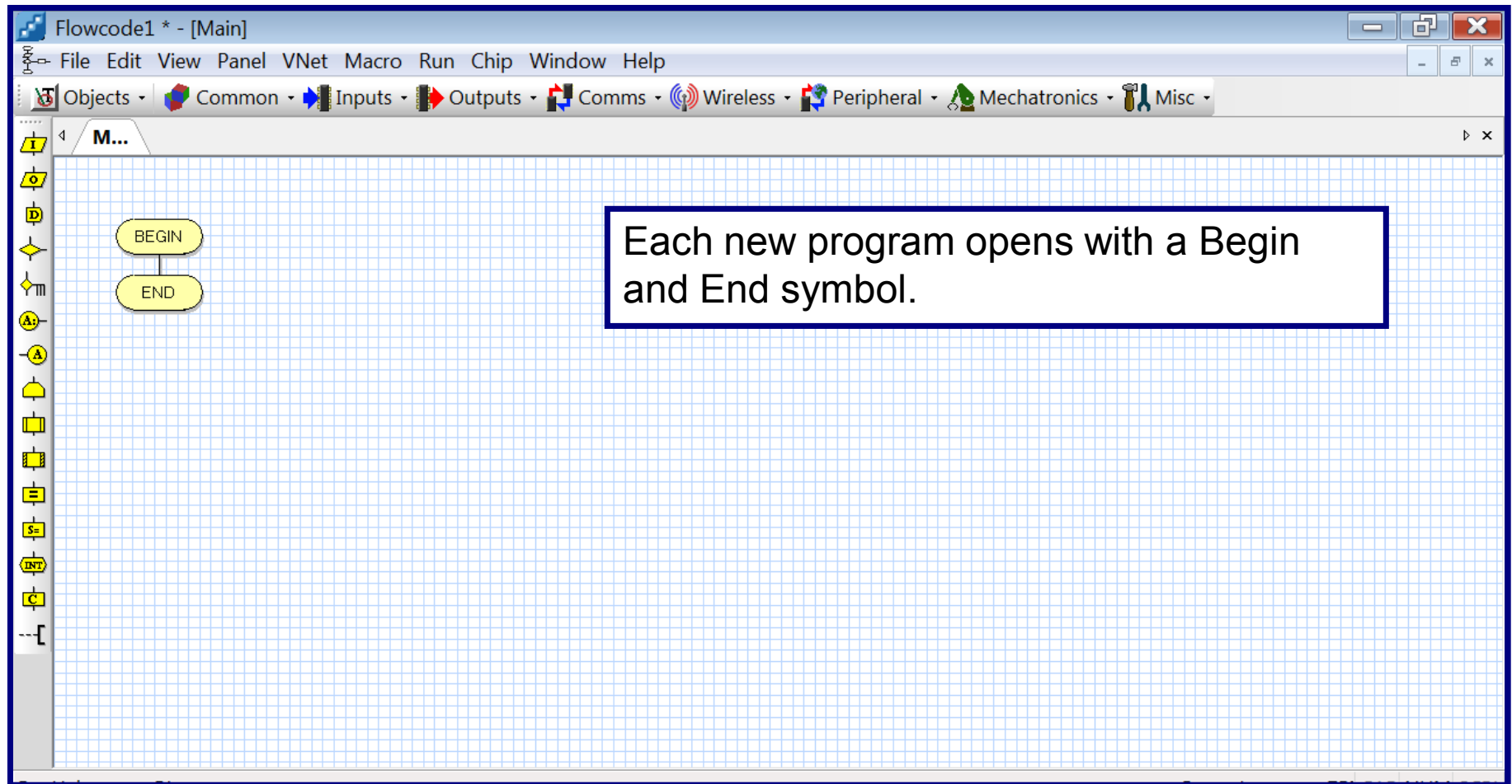
FlowCode4 is a flowchart driven program that allows the user to create a microcontroller program simply by creating a flowchart. Tools located in the program will compile the flowchart and download the hexadecimal program to the microcontroller chip.

# Introduction to FlowCode4

The first step in using FlowCode4 is to learn how the program works.

Once the software is loaded and the user opens the program, the following screen appears.

# Opening FlowCode4



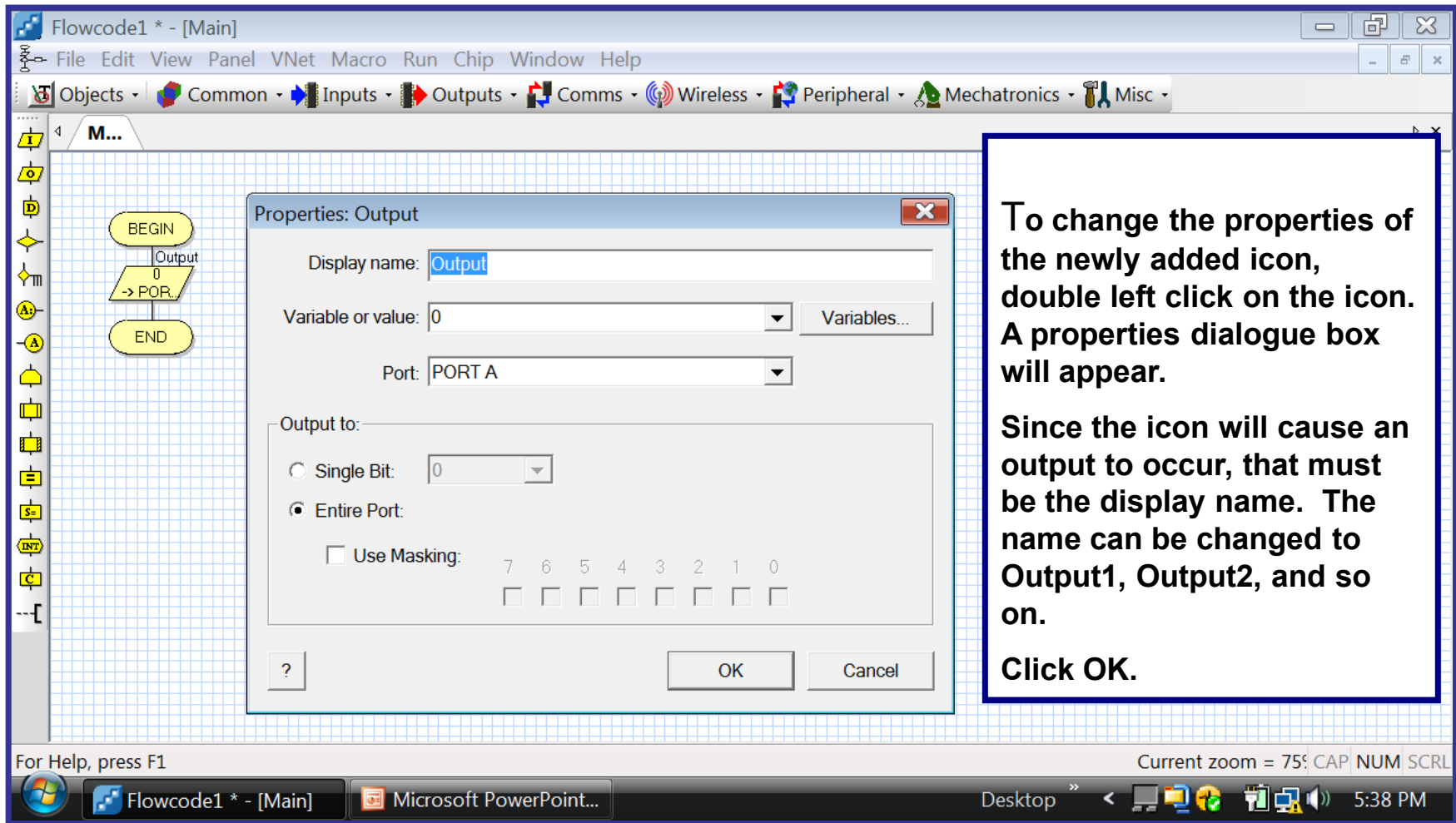
# Adding Operational Icons

The screenshot shows the Flowcode1 software interface. The title bar reads "Flowcode1 \* - [Main]". The menu bar includes File, Edit, View, Panel, VNet, Macro, Run, Chip, Window, and Help. The toolbar contains icons for Objects, Common, Inputs, Outputs, Comms, Wireless, Peripheral, Mechatronics, and Misc. The left sidebar shows a vertical list of icons for various components. The main workspace is a grid with a flowchart containing four blocks: a yellow oval labeled "BEGIN", a yellow parallelogram labeled "Output", a yellow rectangle labeled "-> POR", and a yellow oval labeled "END". A text box with a blue border is overlaid on the grid, containing the following text:

Different operational icons are placed in the flowchart by clicking on the desired operation, holding down the left mouse button, dragging the icon to the desired place in the flowchart and releasing the left mouse button.

At the bottom of the window, a status bar displays "For Help, press F1" on the left and "Current zoom = 75% CAP NUM SCRL" on the right. The Windows taskbar at the very bottom shows the Start button, taskbar buttons for "Flowcode1 \* - [Main]" and "Microsoft PowerPoint...", and system icons for Desktop, network, volume, and time (5:32 PM).

# Changing Properties



**Properties: Output**

Display name:

Variable or value:  Variables...

Port:

Output to:

☐ Single Bit:

☒ Entire Port:

☐ Use Masking:

7	6	5	4	3	2	1	0
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Buttons: ? OK Cancel

**To change the properties of the newly added icon, double left click on the icon. A properties dialogue box will appear.**

**Since the icon will cause an output to occur, that must be the display name. The name can be changed to Output1, Output2, and so on.**

**Click OK.**

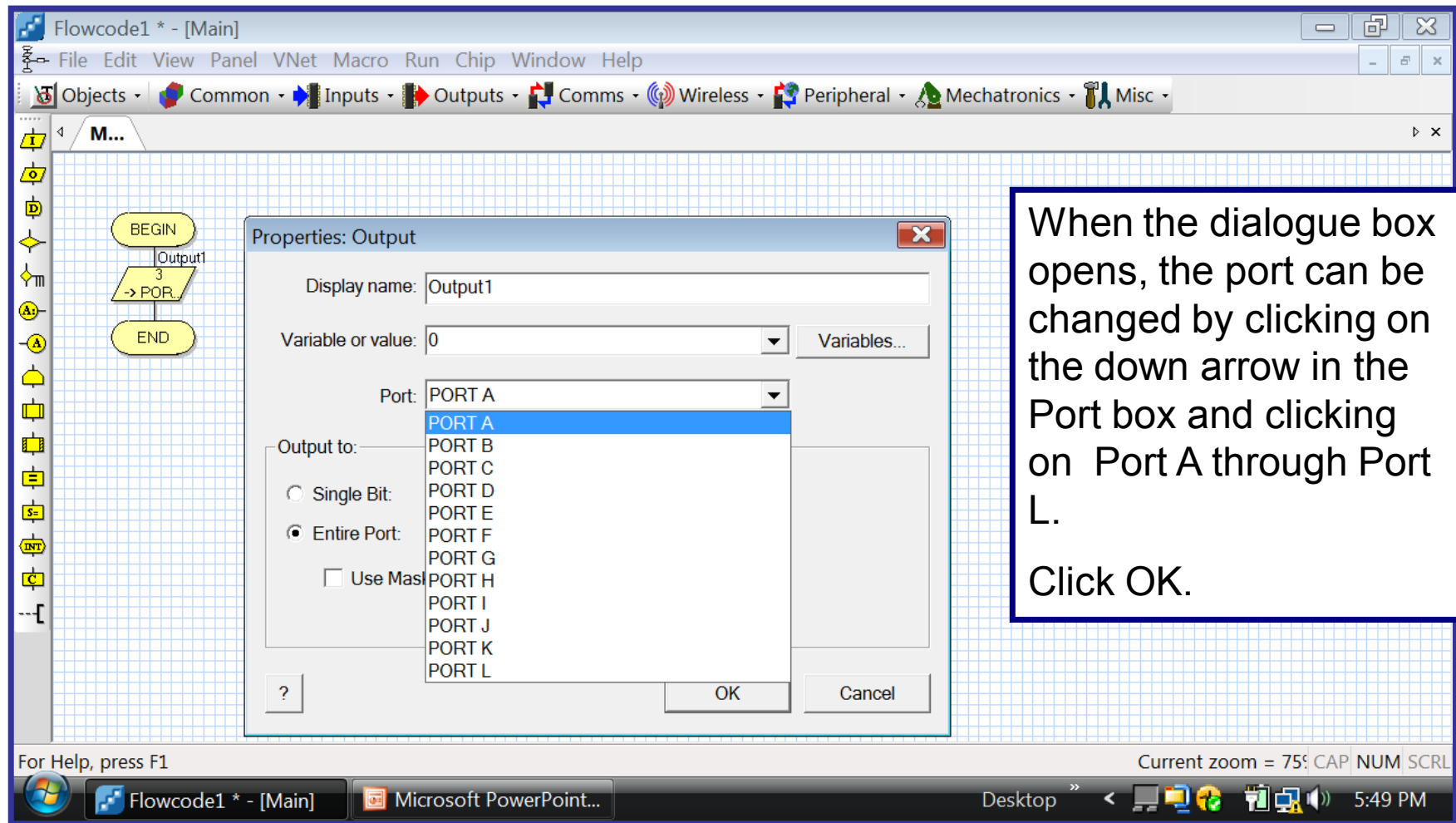
For Help, press F1

Current zoom = 75% CAP NUM SCRL

Flowcode1 \* - [Main] Microsoft PowerPoint...

Desktop 5:38 PM

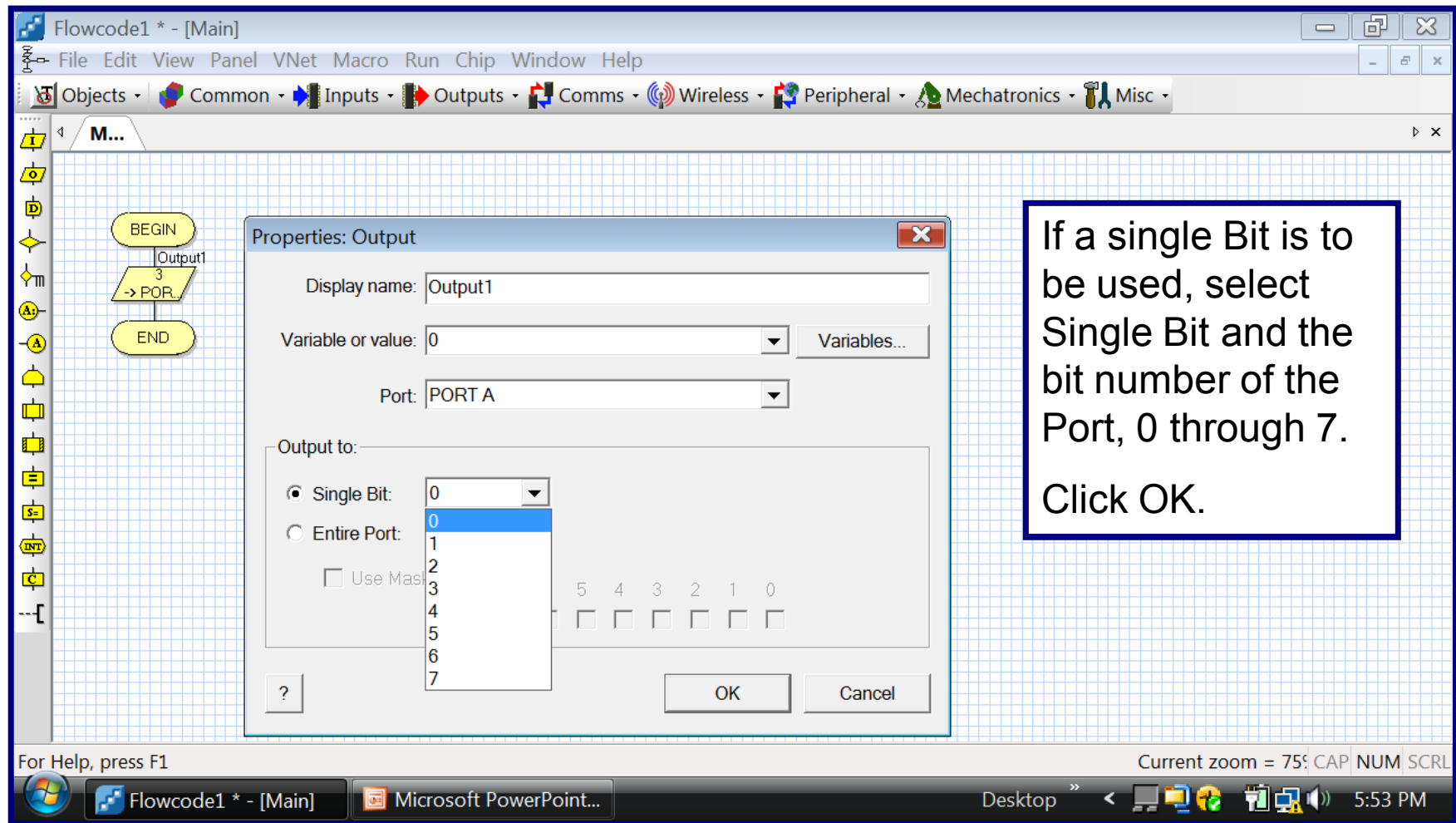
# Changing the Port



When the dialogue box opens, the port can be changed by clicking on the down arrow in the Port box and clicking on Port A through Port L.

Click OK.

# Selecting Output to Single Bit



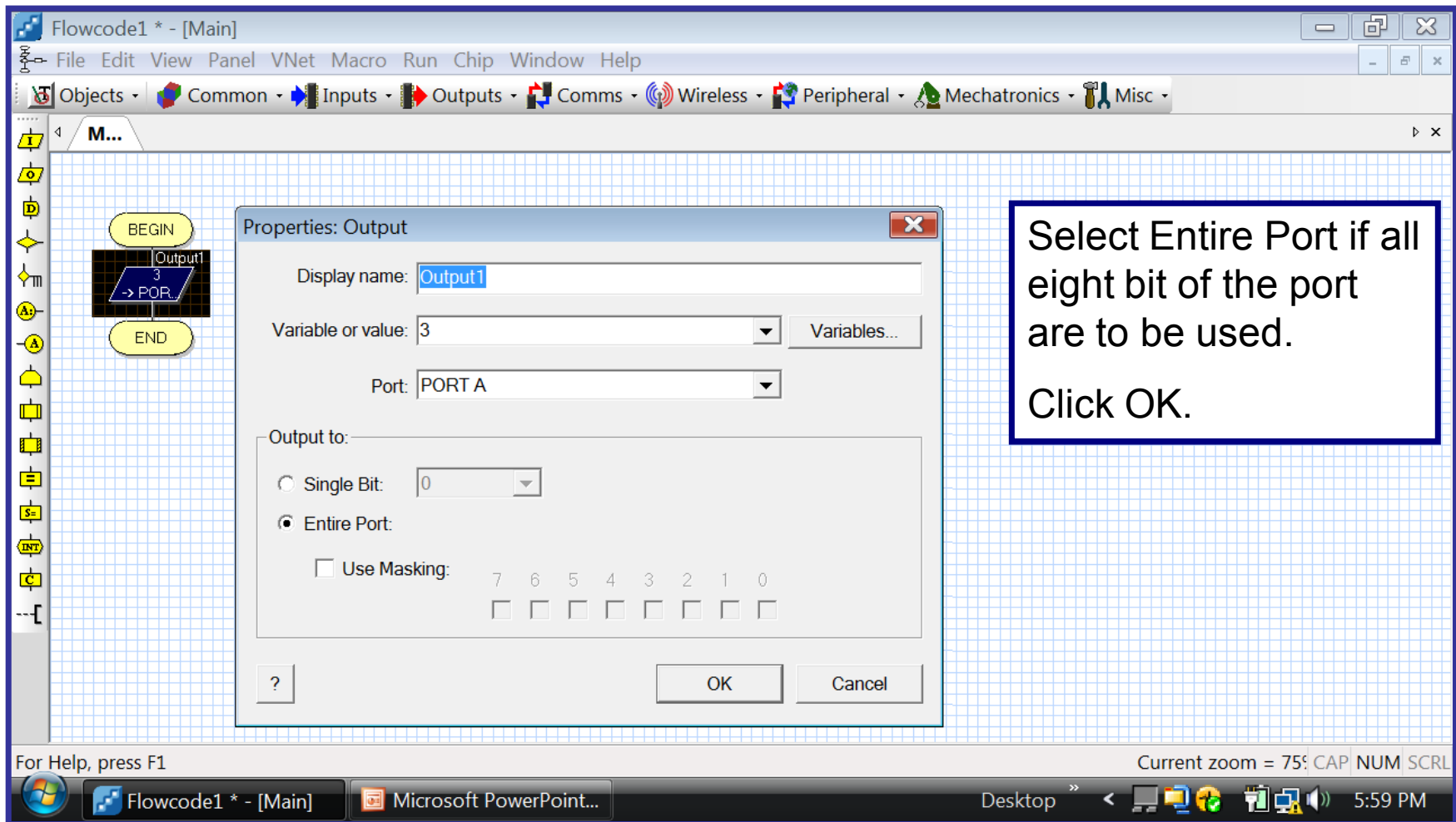
The screenshot shows the Flowcode1 software interface. The main workspace displays a flowchart with a 'BEGIN' block, an 'Output1' block, and an 'END' block. The 'Output1' block is connected to a 'PORT A' output. A 'Properties: Output' dialog box is open, showing the following settings:

- Display name: Output1
- Variable or value: 0
- Port: PORT A
- Output to:
  - ☒ Single Bit: 0
  - ☐ Entire Port:

The 'Single Bit' dropdown menu is open, showing a list of bits from 0 to 7. Bit 0 is selected. To the right of the list, there are checkboxes for bits 5, 4, 3, 2, 1, and 0.

If a single Bit is to be used, select Single Bit and the bit number of the Port, 0 through 7. Click OK.

# Selecting Entire Port



The screenshot shows the Flowcode1 software interface. The main workspace displays a flowchart with a 'BEGIN' block, an 'Output1' block (labeled '3' and 'PORT A'), and an 'END' block. The 'Properties: Output' dialog box is open, showing the following settings:

- Display name: Output1
- Variable or value: 3
- Port: PORT A
- Output to:
  - ☐ Single Bit: 0
  - ☒ Entire Port:
- ☐ Use Masking: 7 6 5 4 3 2 1 0

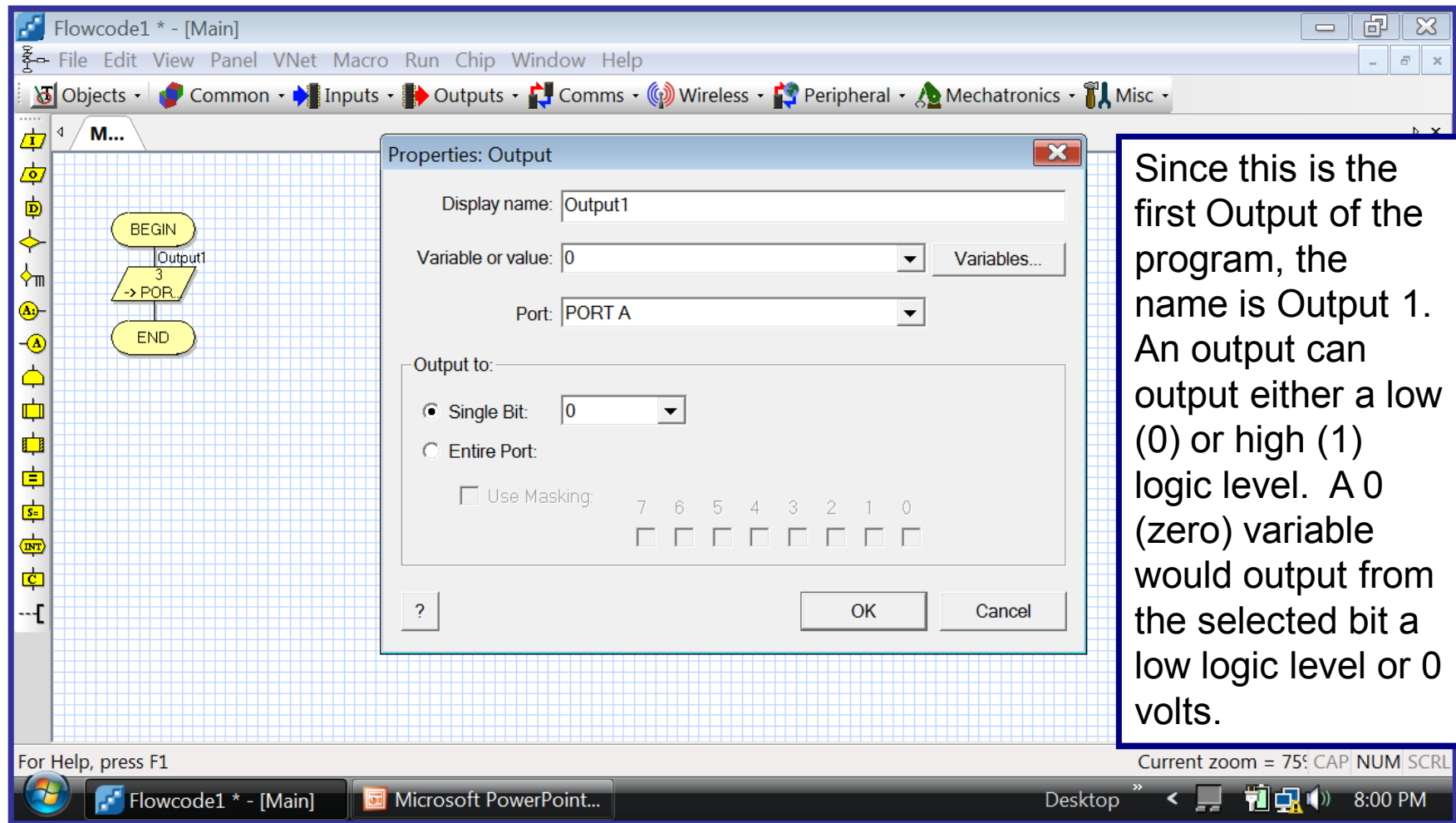
A text box on the right side of the dialog explains the 'Entire Port' selection:

Select Entire Port if all eight bit of the port are to be used.  
Click OK.

The bottom status bar shows 'For Help, press F1', 'Current zoom = 75%', and 'CAP NUM SCRL'. The taskbar at the bottom includes icons for Flowcode1, Microsoft PowerPoint, and the system clock showing 5:59 PM.



# Setting Properties for Output Icon



Flowcode1 \* - [Main]

File Edit View Panel VNet Macro Run Chip Window Help

Objects Common Inputs Outputs Comms Wireless Peripheral Mechatronics Misc

Properties: Output

Display name: Output1

Variable or value: 0 Variables...

Port: PORT A

Output to:

☒ Single Bit: 0

☐ Entire Port:

☐ Use Masking:

7 6 5 4 3 2 1 0

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

? OK Cancel

For Help, press F1

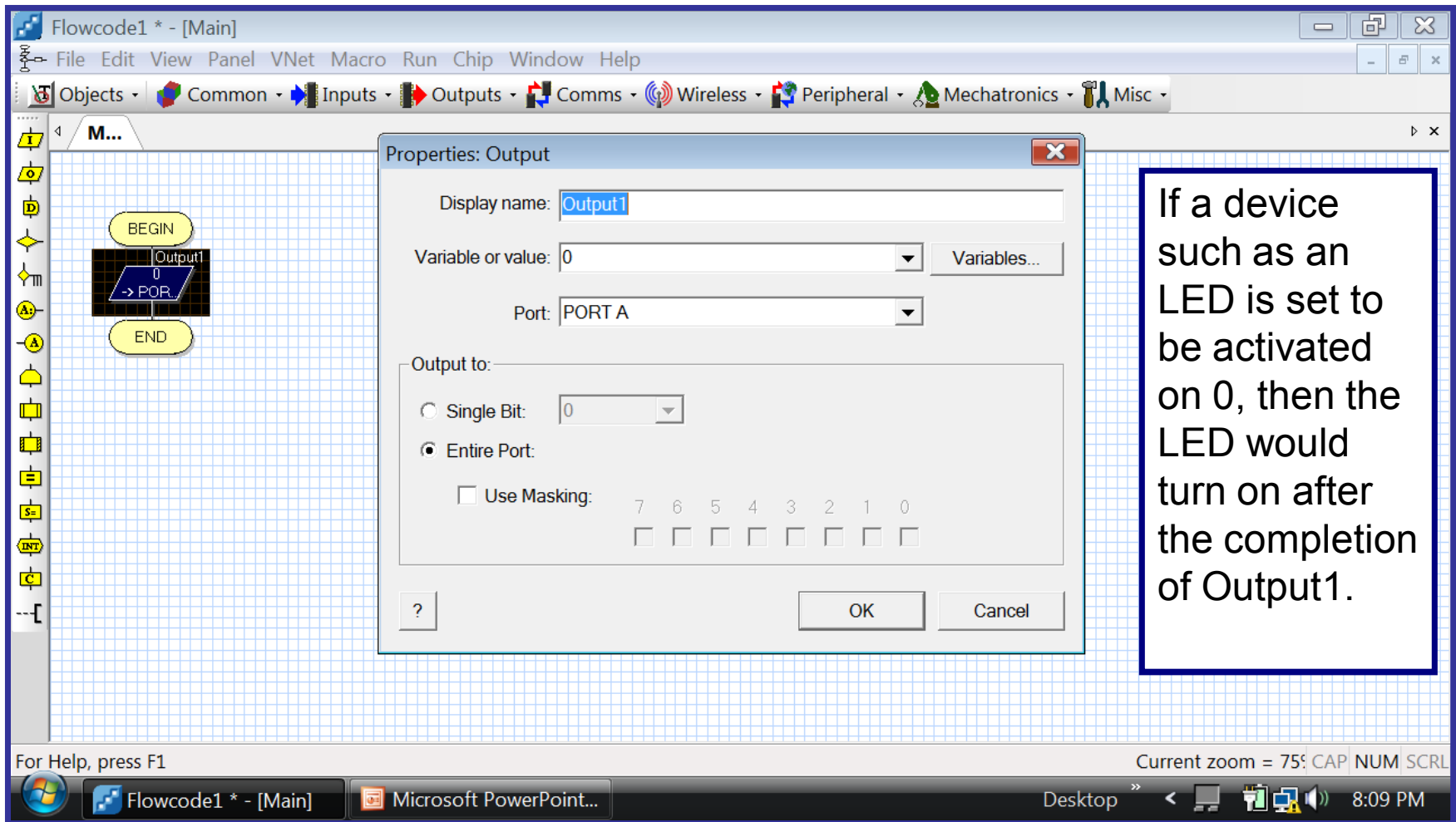
Current zoom = 75% CAP NUM SCRL

Flowcode1 \* - [Main] Microsoft PowerPoint...

Desktop 8:00 PM

Since this is the first Output of the program, the name is Output 1. An output can output either a low (0) or high (1) logic level. A 0 (zero) variable would output from the selected bit a low logic level or 0 volts.

# Setting Properties for Output Icon



Flowcode1 \* - [Main]

File Edit View Panel VNet Macro Run Chip Window Help

Objects Common Inputs Outputs Comms Wireless Peripheral Mechatronics Misc

M...

Properties: Output

Display name: Output1

Variable or value: 0 Variables...

Port: PORT A

Output to:

☐ Single Bit: 0

☒ Entire Port:

☐ Use Masking:

7 6 5 4 3 2 1 0

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

? OK Cancel

If a device such as an LED is set to be activated on 0, then the LED would turn on after the completion of Output1.

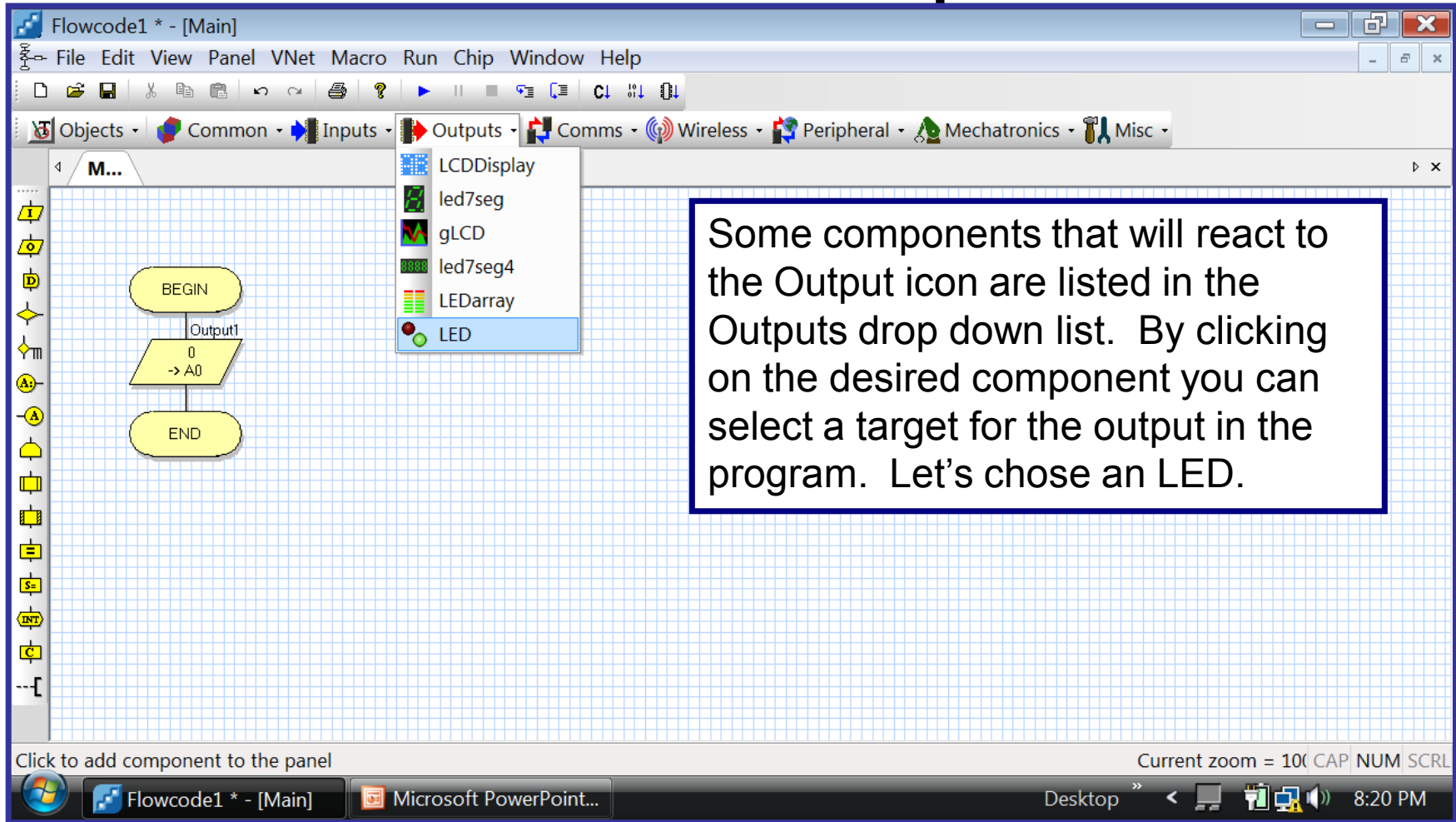
For Help, press F1

Current zoom = 75% CAP NUM SCRL

Flowcode1 \* - [Main] Microsoft PowerPoint...

Desktop 8:09 PM

# Selection of Components



The screenshot shows the Flowcode1 software interface. The main window is titled 'Flowcode1 \* - [Main]'. The menu bar includes File, Edit, View, Panel, VNet, Macro, Run, Chip, Window, and Help. The toolbar contains various icons for file operations and execution. The 'Outputs' dropdown menu is open, showing a list of components: LCDDisplay, led7seg, gLCD, led7seg4, LEDarray, and LED. The 'LED' component is highlighted. The workspace shows a flowchart with a 'BEGIN' block, an 'Output1' block, and an 'END' block. The status bar at the bottom indicates 'Click to add component to the panel' and 'Current zoom = 10( CAP NUM SCRL'. The taskbar at the bottom shows the Windows logo, the Flowcode1 application, and a Microsoft PowerPoint application. The system clock shows 8:20 PM.

Some components that will react to the Output icon are listed in the Outputs drop down list. By clicking on the desired component you can select a target for the output in the program. Let's chose an LED.

# Selection of Components

The screenshot displays the Flowcode software interface. The main workspace shows a flowchart with the following steps: a 'BEGIN' block, a connector labeled 'Output1', a decision block '0 -> A0', and an 'END' block. On the left, a vertical toolbar contains various component icons. Below the workspace is a 'Panel' area with a dotted grid. A text box in the upper right of the workspace states: 'The LED or which ever component that is chosen will appear in the Panel area.' The Windows taskbar at the bottom shows the 'Flowcode1 \* - [Main]' window and a 'Microsoft PowerPoint...' window, with the system clock indicating 8:25 PM.

Flowcode1 \* - [Main]

File Edit View Panel VNet Macro Run Chip Window Help

Objects Common Inputs Outputs Comms Wireless Peripheral Mechatronics Misc

M...

BEGIN

Output1

0  
-> A0

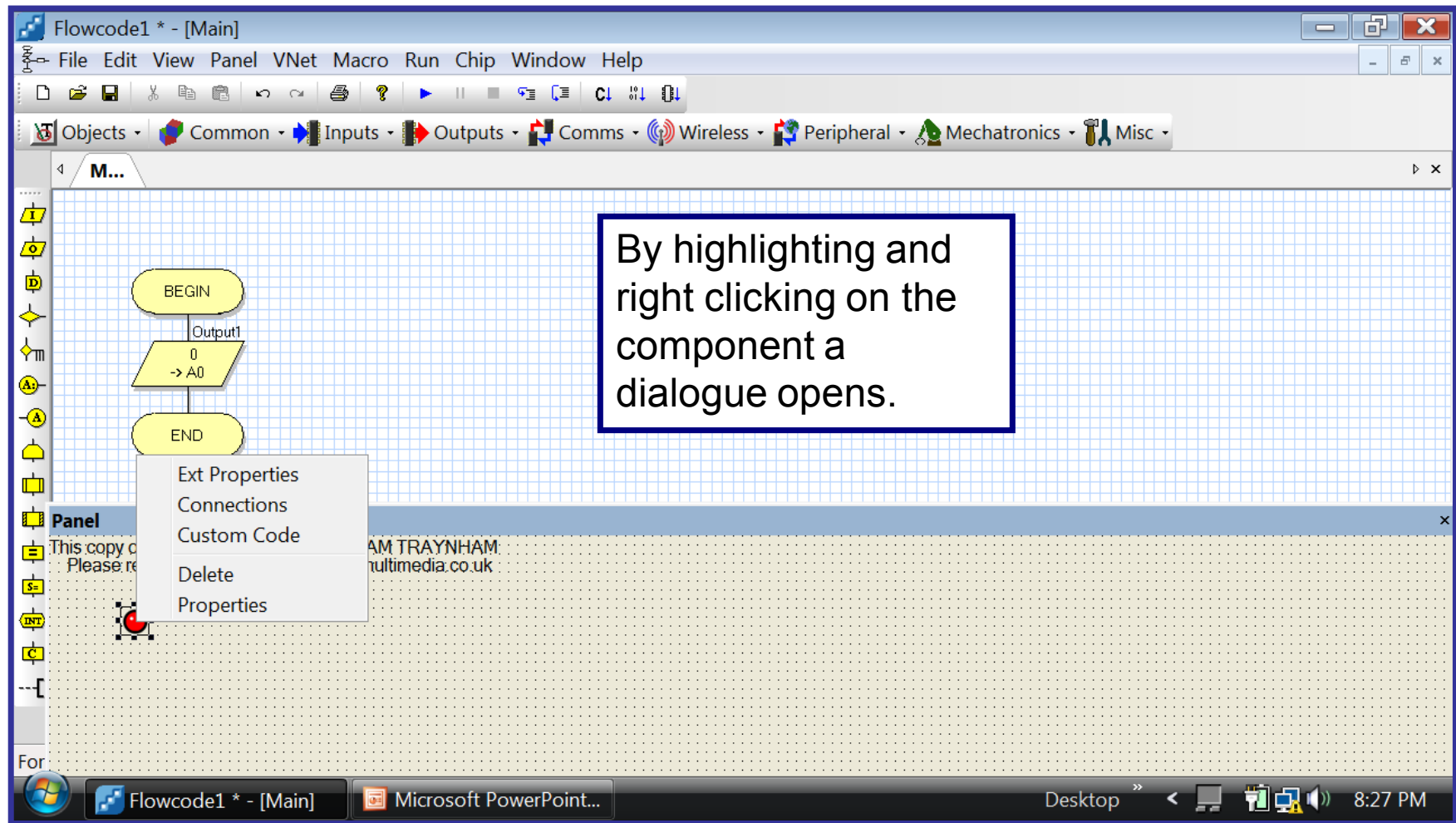
END

Panel

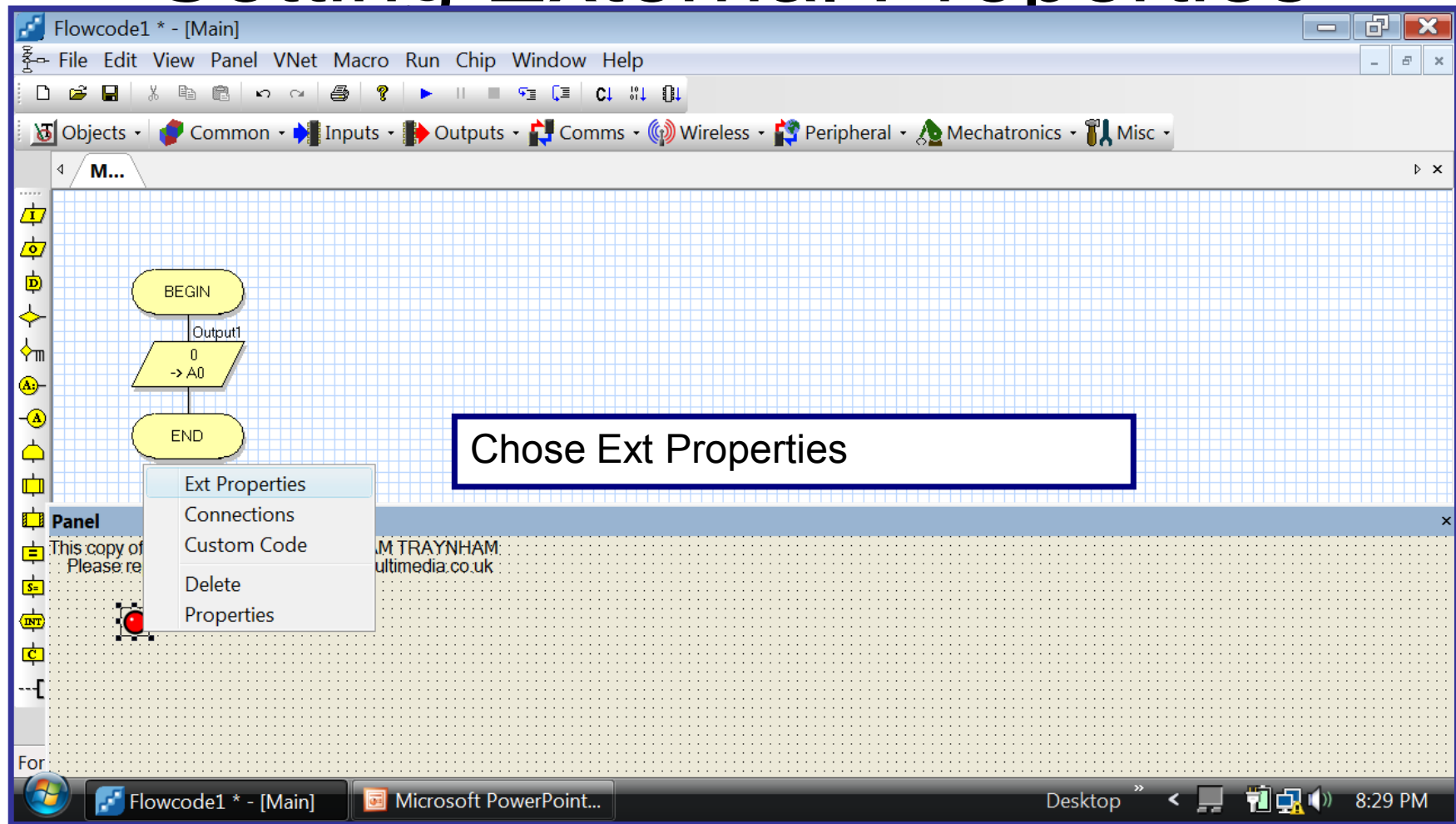
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Flowcode1 \* - [Main] Microsoft PowerPoint... Desktop 8:25 PM

# Setting Component Properties



# Setting External Properties



# Setting External Properties

**When the Edit Component Properties dialogue box opens, The shape, color, and size can be changed. Notice below the color box is a box that selects what logic level turns on the LED. This LED is set to turn on when a low logic level is low from the Output icon.**

Flowcode1 \* - [Main]

File Edit View Panel VNet Macro Run Chip Window Help

Objects Common Inputs Outputs Comms Wireless Peripheral Mechatronics Misc

M...

Edit Component Properties

Circle

LED Color: Red

Active Low

LED Size: 24 x 24

OK Cancel Apply Help

Panel

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Flowcode1 \* - [Main] Microsoft PowerPoint... Desktop 8:34 PM

# Stepping Through the Program Manually

The screenshot shows the Flowcode1 software interface. The main workspace displays a flowchart with a 'BEGIN' block, followed by two output blocks labeled 'Output1' and 'Output', both pointing to 'A0'. The 'BEGIN' block is highlighted with a red rectangle. A red arrow points from the 'Step Into Program' button in the toolbar to a text box. The toolbar includes buttons for 'Step Into Program', 'Step Over', and 'Step Out'. The bottom status bar shows the current step is 'Ste'.

The program can be manually simulated by pressing the Step Into Program button shown above.

As the Step Into button is pressed the program advances to the next command.

Flowcode1 \* - [Main]  
File Edit View Panel VNet Macro Run Chip Window Help  
Objects Common Inputs Outputs Comms Wireless Peripheral Mechatronics Misc  
M...  
BEGIN  
Output1  
0 -> A0  
Output  
1 -> A0  
Panel  
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Ste  
Flowcode1 \* - [Main] Microsoft PowerPoint... Desktop 8:57 PM



# Stepping Through the Program

The screenshot shows the Flowcode1 software interface. The main workspace displays a flowchart with the following steps: a yellow oval labeled 'BEGIN', a yellow parallelogram labeled 'Output1' with '0' above it and '-> A0' below it, a second yellow parallelogram labeled 'Output' with '1' above it and '-> A0' below it, and a yellow oval labeled 'END'. The 'Output1' block is highlighted with a red rectangle. To the right of the flowchart are three blue-bordered text boxes. Below the flowchart is a 'Panel' window containing a copyright notice. The Windows taskbar at the bottom shows the 'Flowcode1 \* - [Main]' and 'Microsoft PowerPoint...' applications, along with the system clock at 9:02 PM.

Flowcode1 \* - [Main]

File Edit View Panel VNet Macro Run Chip Window Help

Objects Common Inputs Outputs Comms Wireless Peripheral Mechatronics Misc

M...

BEGIN

Output1  
0  
-> A0

Output  
1  
-> A0

END

Panel

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Ste

Flowcode1 \* - [Main] Microsoft PowerPoint...

Desktop 9:02 PM

Continue to press the Step Into button to advance through the complete program.

Any components programmed to react to the program can be watched in the Panel to observe the actions of the program.

An OUTPUT can either activate (turn on) a component or deactivate (turn off) a component.

# Stepping Through the Program

The LED has been set to turn on when the output to the LED is 0. Notice that the OUTPUT icon has been programmed so that Port A bit 0 (A0) is 0 (low).

If the program is intended to first turn on a device then turn off the device, a second OUTPUT icon must be added to the flowchart to turn off the device. An OUTPUT command can have two functions. One for on and one for off.

Flowcode1 \* - [Main]  
File Edit View Panel VNet Macro Run Chip Window Help  
Objects Common Inputs Outputs Comms Wireless Peripheral Mechatronics Misc  
M...  
BEGIN  
Output1  
0  
-> A0  
Output  
1  
-> A0  
END  
Panel  
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Fo  
Flowcode1 \* - [Main] Microsoft PowerPoint... Desktop 9:22 AM

# Stepping Through the Program

The screenshot shows the Flowcode1 software interface. The main workspace displays a flowchart with the following steps: a yellow oval labeled 'BEGIN', a yellow parallelogram labeled 'Output1' with '0' and '-> A0', a yellow parallelogram labeled 'Output' with '1' and '-> A0' (highlighted with a red rectangle), and a yellow oval labeled 'END'. The flow is indicated by arrows connecting these steps. Below the flowchart, a 'Panel' window contains the text: 'This copy of Flowcode belongs to WILLIAM TRAYNHAM. Please report piracy to piracy@matrixmultimedia.co.uk'. A red dot is visible in the panel area. Two text boxes are overlaid on the right side of the flowchart. The first box, with a blue border, contains the text: 'After execution of the second OUTPUT command, the LED will turn off. The LED has been programmed to turn off when Port A Bit 0 (A0) is1 (high)'. The second box, also with a blue border, contains the text: 'Notice that the LED is on until after the execution of the command. By pressing the Step In button again the LED goes off.' The software's menu bar includes File, Edit, View, Panel, VNet, Macro, Run, Chip, Window, and Help. The toolbar contains various icons for file operations and execution. The bottom status bar shows the Windows taskbar with the Flowcode1 window, a Microsoft PowerPoint window, and system icons for Desktop, time (9:26 AM), and other background applications.

Flowcode1 \* - [Main]

File Edit View Panel VNet Macro Run Chip Window Help

Objects Common Inputs Outputs Comms Wireless Peripheral Mechatronics Misc

M...

BEGIN

Output1  
0  
-> A0

Output  
1  
-> A0

END

Panel

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After execution of the second OUTPUT command, the LED will turn off. The LED has been programmed to turn off when Port A Bit 0 (A0) is1 (high).

Notice that the LED is on until after the execution of the command. By pressing the Step In button again the LED goes off.

Flowcode1 \* - [Main] Microsoft PowerPoint... Desktop 9:26 AM

# Stepping Through the Program

The screenshot shows the Flowcode1 \* - [Main] window. The flowchart consists of the following steps:

- BEGIN** (yellow oval)
- Output1** (yellow parallelogram) with the value **0** and **-> A0**
- Output** (yellow parallelogram) with the value **1** and **-> A0**
- END** (yellow oval, highlighted with a red rectangle)

Two text boxes provide additional information:

- Left box:** The LED is off after the execution of the last OUTPUT command and the program ends.
- Right box:** The second OUTPUT has been programmed to send a 1 (high) to Port A Bit 0 (A0). This turns off the LED.

The Panel at the bottom contains the text: "This copy of Flowcode belongs to WILLIAM TRAYNHAM. Please report piracy to piracy@matrixmultimedia.co.uk". The Windows taskbar at the bottom shows the Flowcode1 \* - [Main] and Microsoft PowerPoint... windows, along with the system clock at 9:31 AM.

# Add Looping to the Program

The LOOP command has been added to the flowchart. The LOOP command can be programmed to loop up to 255 times or loop until a conditions happens, or loop a preset number of times

Notice that two loop icon appear when the LOOP command is dragged into the flowchart. The top icon begins the loop and bottom icon ends the loop. Operations, such as the two OUTPUT commands must be set between the top and bottom LOOP icons.

Loop While is a continuous loop.

Panel  
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# Add Looping to the Program

The screenshot shows the Flowcode software interface. The main workspace displays a program flowchart on a blue grid. The flowchart starts with a yellow 'BEGIN' oval, followed by a blue 'Loop While 1' block. Below the loop block is a yellow trapezoid representing an output to 'A0', with a '0' in the top section and a '1' in the bottom section. This is followed by another yellow trapezoid representing an output to 'A0', with a '1' in the top section and a '0' in the bottom section. The flowchart ends with a yellow 'END' oval. A context menu is open over the 'Loop While 1' block, showing options: Cut, Copy, Paste, Delete, Toggle Breakpoint, and Properties... (highlighted). The 'Properties...' option is highlighted in blue. A text box with a blue border is overlaid on the right side of the workspace, containing the text: 'To set the properties of the LOOP icon, right click on the icon and select Properties.'

Flowcode1 \* - [Main]

File Edit View Panel VNet Macro Run Chip Window Help

Objects Common Inputs Outputs Comms Wireless Peripheral Mechatronics Misc

M...

BEGIN

Loop While 1

0

→ A0

1

→ A0

END

Cut  
Copy  
Paste  
Delete  
Toggle Breakpoint  
Properties...

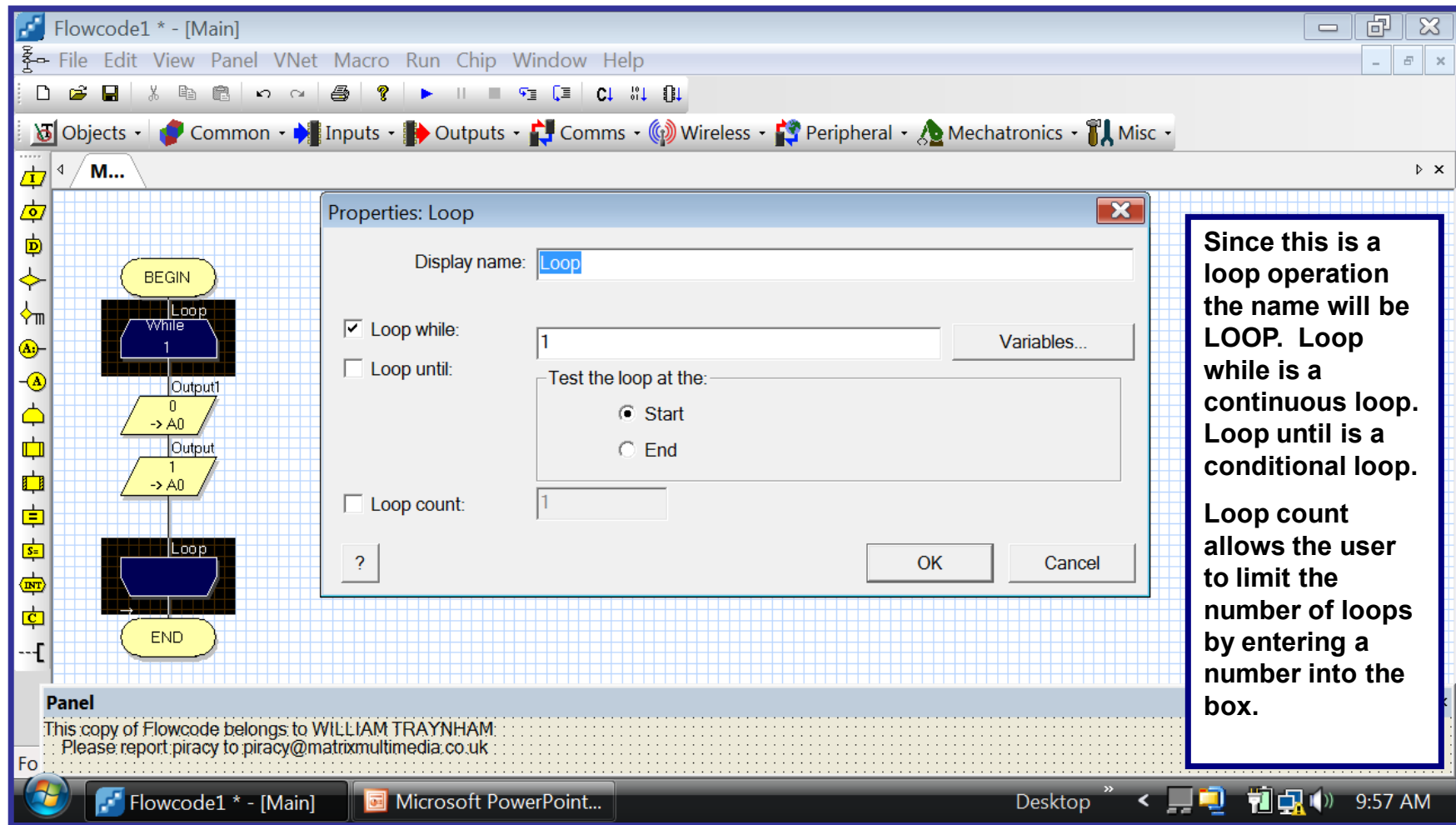
To set the properties of the LOOP icon, right click on the icon and select Properties.

Panel

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Flowcode1 \* - [Main] Microsoft PowerPoint... Desktop 9:55 AM

# Setting Properties for Looping



The screenshot shows the Flowcode1 software interface. The main workspace displays a flowchart starting with a 'BEGIN' block, followed by a 'Loop while' block with a condition of '1'. Below this is an 'Output1' block with a value of '0' and an 'Output' block with a value of '1', both pointing to 'A0'. The flowchart then enters another 'Loop' block and ends at an 'END' block. The 'Properties: Loop' dialog box is open, showing the following settings:

- Display name: **Loop**
- ☒ Loop while: **1** (with a 'Variables...' button)
- ☐ Loop until:
- Test the loop at the:
  - ☒ Start
  - ☐ End
- ☐ Loop count: **1**

The dialog box has 'OK' and 'Cancel' buttons at the bottom right.

**Panel**  
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**Since this is a loop operation the name will be LOOP. Loop while is a continuous loop. Loop until is a conditional loop. Loop count allows the user to limit the number of loops by entering a number into the box.**

Flowcode1 \* - [Main] | Microsoft PowerPoint... | Desktop | 9:57 AM

# Setting Properties for Looping

The screenshot shows the Flowcode1 \* - [Main] application window. The main workspace contains a flowchart with the following components:

- BEGIN** (yellow oval)
- Loop** (yellow hexagon) with the text "3 times" inside.
- Output1** (yellow parallelogram) with the text "0" inside.
- Output** (yellow parallelogram) with the text "1" inside.
- Loop** (yellow hexagon) with the text "Loop" inside.
- END** (yellow oval)

Connections: A line from BEGIN goes to the Loop (3 times). From the Loop, a line goes to Output1. From Output1, a line goes to Output. From Output, a line goes to the Loop. From the Loop, a line goes to END.

A callout box with a blue border and white background is positioned to the right of the flowchart, containing the text:

The loop count has been set to 3. The LED will go through the blinking process three time before the program ends.

The bottom of the window shows a **Panel** with the text: "This copy of Flowcode belongs to WILLIAM TRAYNHAM. Please report piracy to piracy@matrixmultimedia.co.uk". The Windows taskbar at the bottom shows the Start button, the Flowcode1 \* - [Main] taskbar icon, the Microsoft PowerPoint... taskbar icon, and the system tray with the time 10:05 AM.



# Using Go/Continue to Execute the Program

The screenshot displays the Flowcode1 \* - [Main] window. The menu bar includes File, Edit, View, Panel, VNet, Macro, Run, Chip, Window, and Help. The Run menu is open, showing options: Go/Continue (F5), Step Into (F8), Step Over (Shift + F8), Pause (F7), and Stop (Shift + F5). The main workspace contains a flowchart with the following steps: BEGIN, Loop 3 times, Output1 -> A0, Output -> A0, Loop, and END. A text box in the center states: "The user can select Go/Continue to execute the program automatically." The bottom panel shows a copyright notice for WILLIAM TRAYNHAM and a contact email. The Windows taskbar at the bottom shows the Flowcode1 \* - [Main] and Microsoft PowerPoint... windows, with the system clock at 10:08 AM.

Flowcode1 \* - [Main]

File Edit View Panel VNet Macro Run Chip Window Help

Go/Continue F5  
Step Into F8  
Step Over Shift + F8  
Pause F7  
Stop Shift + F5

Objects Common Inputs

M...

BEGIN

Loop 3 times

Output1 -> A0

Output -> A0

Loop

END

Panel

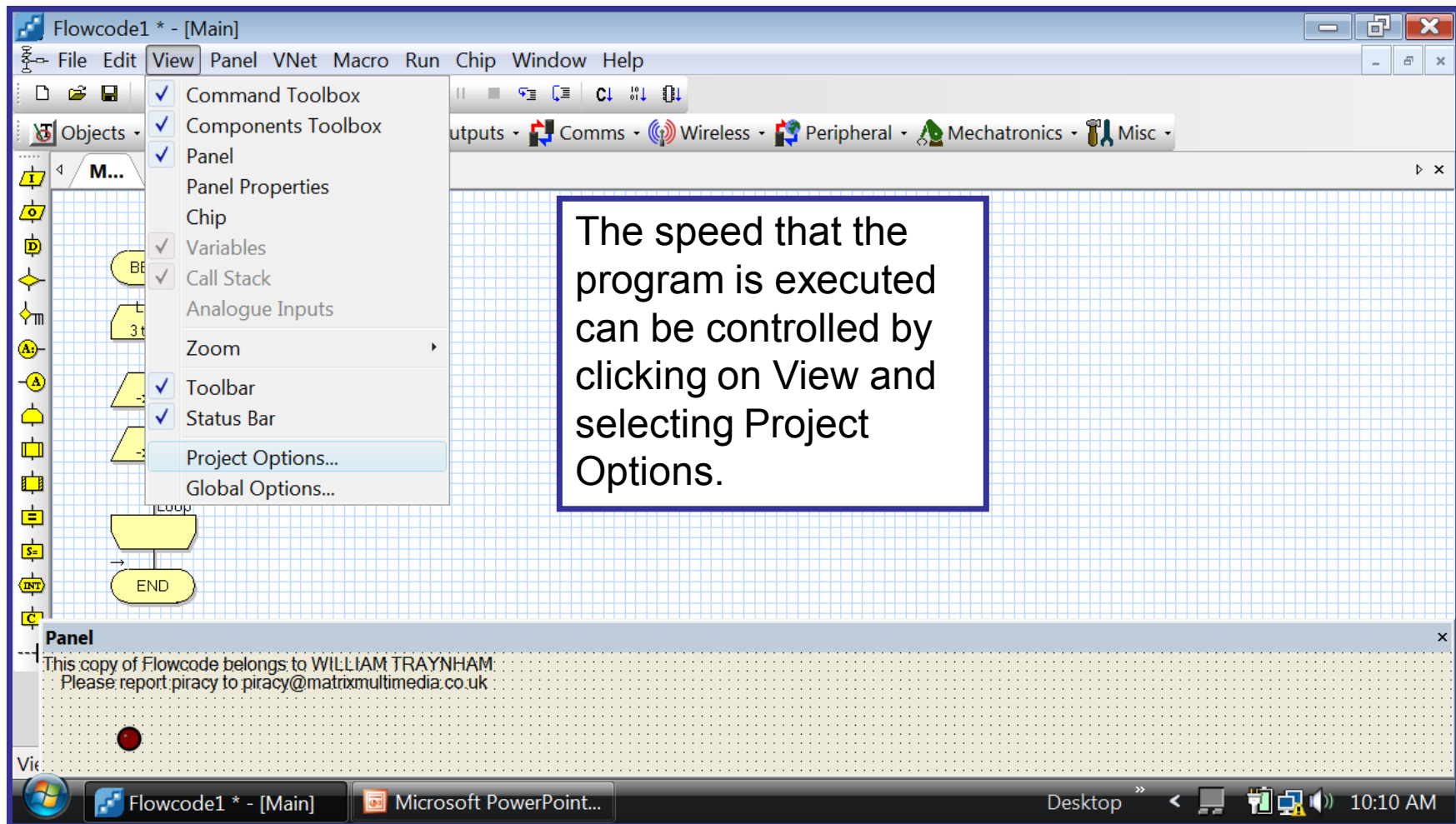
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St:

Flowcode1 \* - [Main] Microsoft PowerPoint... Desktop 10:08 AM

The user can select Go/Continue to execute the program automatically.

# Using Go/Continue to Execute the Program



# Using Go/Continue to Execute the Program

Flowcode1 \* - [Main]

File Edit View Panel

Objects ▾ Comm

Panel

This copy of Flowcode below  
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Project Options

General Options

Target:  
ATMEGA2560

Clock speed (Hz):  
16000000

Simulation speed:  
5

As fast as possible  
1000  
500  
200  
100  
50  
20  
10  
5  
2  
1  
0.5  
0.25

ICD Options

Breakpoint count:  
8

Callstack depth:

Clock pin: 6

Data port: PORT B

Data pin: 7

Restore Defaults

OK Cancel

Choose a speed slow enough for the human eye to follow. 5 is being used for this example. Click OK.

Flowcode1 \* - [Main] Microsoft PowerPoint... Desktop 10:12 AM

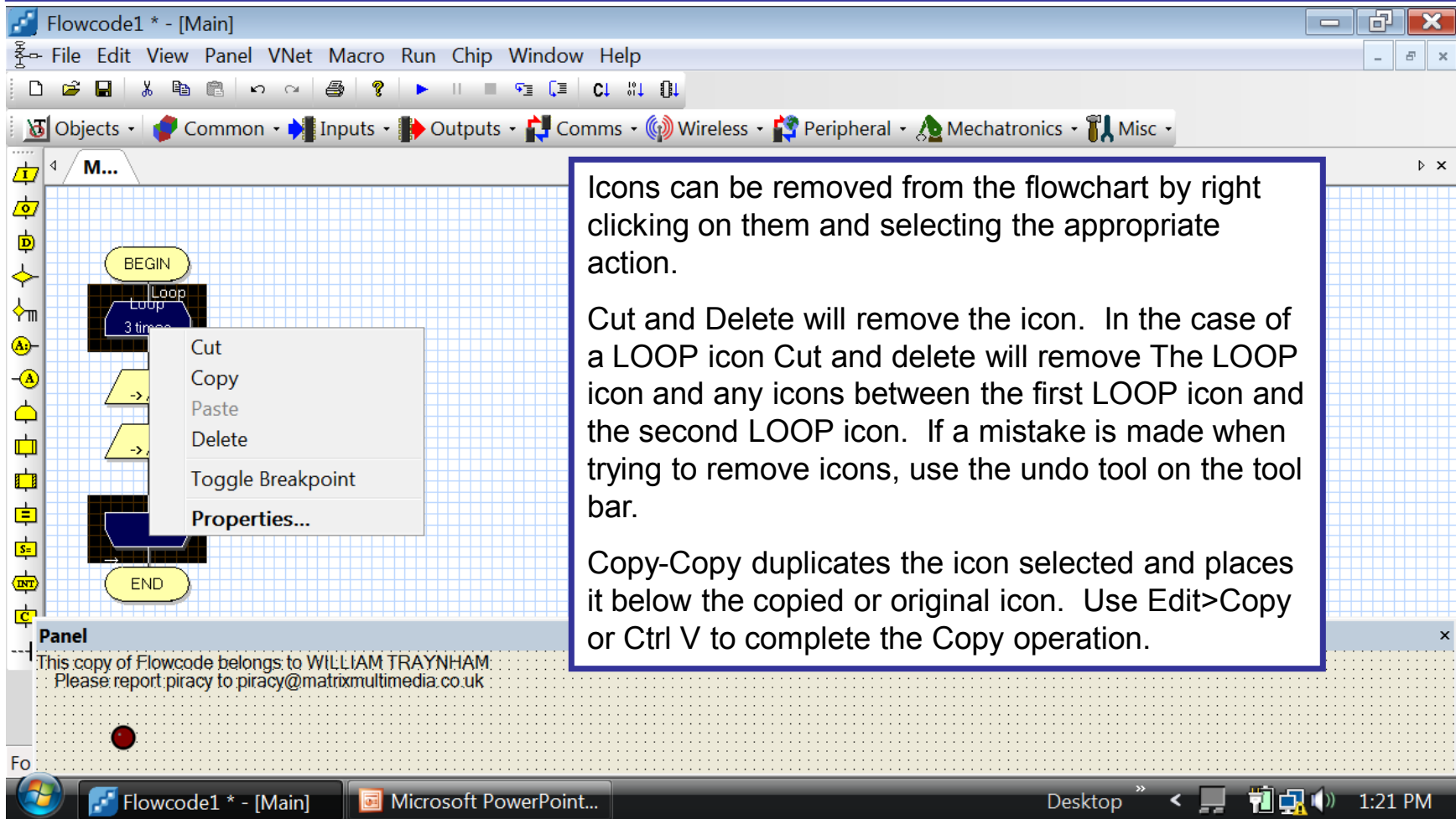
# Executing the Program

The screenshot displays the Flowcode1 software interface. The main workspace shows a flowchart on a blue grid. The flowchart starts with a yellow 'BEGIN' block, followed by a blue 'Loop' block labeled '3 times'. Below the loop is a yellow 'Output1' block with a label '-> A0'. This is followed by another yellow 'Output' block with a label '-> A0'. Below this is another blue 'Loop' block, and finally a yellow 'END' block. A text box with a blue border is overlaid on the right side of the flowchart, containing the text: 'The Step Into and Go/Continue commands allows the user to see if the program is performing the way it is intended to operate. If the components do not function as intended, check the flowchart and the property settings of the component or components used.'

The software interface includes a menu bar with options: File, Edit, View, Panel, VNet, Macro, Run, Chip, Window, Help. Below the menu bar is a toolbar with various icons. A panel on the left side shows a list of components: Objects, Common, Inputs, Outputs, Comms, Wireless, Peripheral, Mechatronics, Misc. The bottom of the window shows a taskbar with the Windows logo, the Flowcode1 application icon, and the Microsoft PowerPoint application icon. The system clock in the bottom right corner shows 12:59 PM.

Panel  
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# Editing the Program



The screenshot displays the Flowcode1 software interface. The main window shows a flowchart with a 'BEGIN' terminal, a 'Loop 3 times' icon, and an 'END' terminal. A context menu is open over the loop icon, listing actions: Cut, Copy, Paste, Delete, Toggle Breakpoint, and Properties... The left sidebar contains various icons for different components. The bottom status bar shows the text 'This copy of Flowcode belongs to WILLIAM TRAYNHAM. Please report piracy to piracy@matrixmultimedia.co.uk'.

Icons can be removed from the flowchart by right clicking on them and selecting the appropriate action.

Cut and Delete will remove the icon. In the case of a LOOP icon Cut and delete will remove The LOOP icon and any icons between the first LOOP icon and the second LOOP icon. If a mistake is made when trying to remove icons, use the undo tool on the tool bar.

Copy-Copy duplicates the icon selected and places it below the copied or original icon. Use Edit>Copy or Ctrl V to complete the Copy operation.

# Moving Within the Program

The screenshot displays the Flowcode1 software interface. The menu bar includes File, Edit, View, Panel, VNet, Macro, Run, Chip, Window, and Help. The toolbar contains various icons for file operations and execution. The 'Objects' palette on the left lists categories like Common, Inputs, Outputs, Comms, Wireless, Peripheral, Mechatronics, and Misc. The main workspace shows two flowcharts on a grid background. The left flowchart starts with a 'BEGIN' block, followed by a 'Loop 3 times' block, then an 'Output1' block with value '0' to 'A0', a 'Delay 10 s' block, another 'Output' block with value '1' to 'A0', and finally an 'END' block. The right flowchart is identical but the 'Delay 10 s' block is positioned below the second output. A text box on the right states: 'Icons can be moved within the flowchart by left clicking on them and dragging to a different location. The Delay icon was moved from above the second output to below the second output. The ability to move icons aids in troubleshooting and saves time during the development of the flowchart.'

Flowcode1 \* - [Main]

File Edit View Panel VNet Macro Run Chip Window Help

Objects Common Inputs Outputs Comms Wireless Peripheral Mechatronics Misc

Panel

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M...

Icons can be moved within the flowchart by left clicking on them and dragging to a different location. The Delay icon was moved from above the second output to below the second output. The ability to move icons aids in troubleshooting and saves time during the development of the flowchart.

For Help, press F1

Current zoom = 75% CAP NUM SCRL

Flowcode1 \* - [Main] Microsoft PowerPoint... C:\Users\William H. T... Desktop 2:48 PM

# Repositioning the Panel Window

The screenshot displays the Flowcode1 software interface. The main window is titled "Flowcode1 \* - [Main]" and features a menu bar (File, Edit, View, Panel, VNet, Macro, Run, Chip, Window, Help) and a toolbar. Below the toolbar is a component palette with categories: Objects, Common, Inputs, Outputs, Comms, Wireless, Peripheral, Mechatronics, and Misc. The central workspace is a blue grid. On the left, a "Panel" window is docked, showing a copyright notice. A right-click context menu is open over the blue portion of the Panel window, with options: Floating, Docking (selected with a checkmark), Tabbed Document, Auto Hide, and Hide. To the right of the Panel window, a flowchart is visible, starting with a "BEGIN" block, followed by a "Loop 3 times" block, then two "Output" blocks (both labeled "-> A0"), a "Delay 10 s" block, another "Loop" block, and finally an "END" block. A status bar at the bottom indicates "For Help, press F1" and "Current zoom = 75% CAP NUM SCRL". The Windows taskbar at the very bottom shows the Start button, the Flowcode1 application, Microsoft PowerPoint, and the file explorer path "C:\Users\William H. T...". The system clock shows "3:01 PM".

By right clicking in the blue portion of the Panel Window and selecting Docking, the Panel will be located to the right of the flowchart Window. This may be easier to see the components during execution of the program.

# Positioning the Variable and Call Stack Windows

The screenshot shows the Flowcode1 software interface. A 'Simulation Delay' dialog box is open on the left, displaying 'Simulation delay: 10 seconds.' and buttons for 'Stop', 'Pause', and 'Continue'. The main workspace contains a flowchart with the following steps: BEGIN, Loop (3 times), Output1 (0), Output (1), Delay (10 s), Loop, and END. The 'Delay' block is highlighted with a red rectangle. On the right, there are two windows: 'Variables' and 'Call Stack'. The 'Variables' window has a table with columns 'Variable', 'Type', and 'Value', and a prompt 'Right-click to add a v...'. The 'Call Stack' window shows 'Macro Calls' and 'Main'. The bottom status bar indicates 'Current zoom = 75%' and 'CAP NUM SCRL'. The Windows taskbar at the bottom shows the Start button, 'Flowcode1 \* - [Main]', 'Microsoft PowerPoint...', and 'C:\Users\William H. T...', along with system icons and the time '3:06 PM'.

When executing the program from Run>Go/Continue, two windows appear, Variables and Call Stack. Reposition these windows so they do not block the view during the execution of the program.

Variable	Type	Value
Right-click to add a v...		

Macro Calls
Main

For Help, press F1

Current zoom = 75% CAP NUM SCRL

Desktop » < 3:06 PM