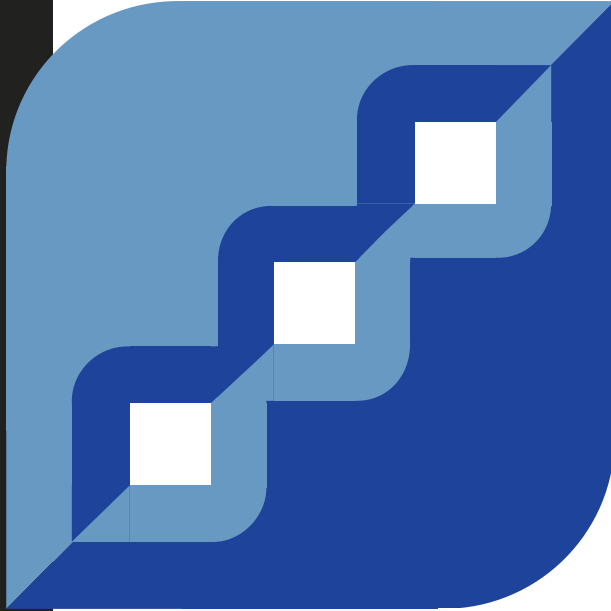


# Getting started guide



**FLOWCODE4<sup>TM</sup>**  
NO CODING, NO LIMITS...

## Minimum system requirements

Personal computer  
Pentium processor or greater  
Windows XP or later  
256MB RAM  
100MB hard disk space

## Flowcode 4 (free) installation

A free version of Flowcode v4 for PICmicros suitable for the Microchip PIC18 Starter Kit for Flowcode from element14 board can be downloaded from this webpage:

[http://www.matrixmultimedia.com/lc\\_index.php?p=26](http://www.matrixmultimedia.com/lc_index.php?p=26)

The Flowcode installation routine will guide you through the installation process including the installation of any subsidiary programs or tools required by the software.

When asked to select the default programmer, you can choose either E-blocks or PICkit2. This choice is ignored when using the Microchip PIC18 Starter Kit for Flowcode from element14 board.

The above webpage also contains examples for using Flowcode with this board.

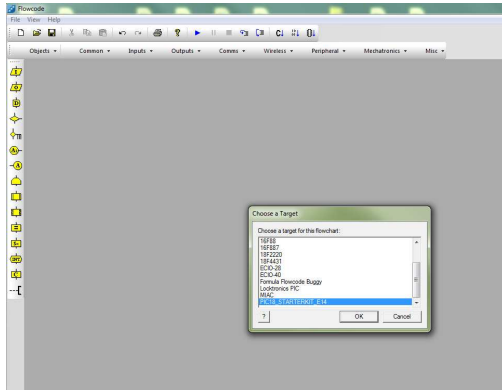
## Hardware installation

When first using the Microchip PIC18 Starter Kit for Flowcode from element14 board, Windows will need to install the drivers. To do this, connect the USB cable while holding down the S1 button. The drivers for the board will automatically be installed and a message will appear saying your hardware is ready to use.

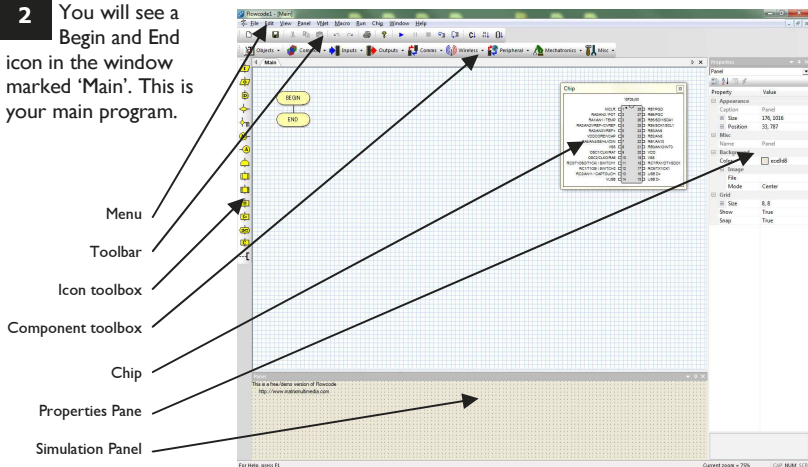
# Making your first program

**1** When you first load Flowcode you will be given a choice of creating a new flowchart or opening an existing chart. Click on the first option and you will be asked to choose a target device.

Scroll down and select the “PIC18\_STARTERKIT\_E14” target.



**2** You will see a Begin and End icon in the window marked 'Main'. This is your main program.

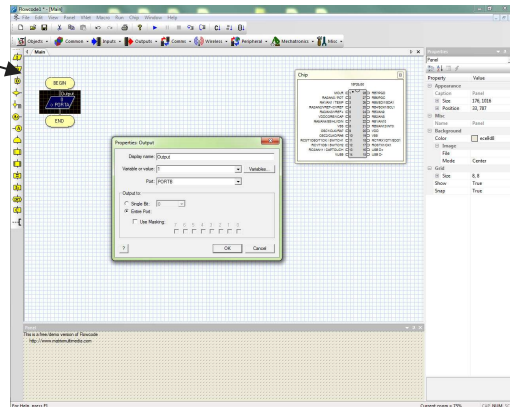


This graphic shows the functions of icons on the Toolbar. To find out what an icon's function is simply hold the mouse pointer over the icon and a small 'tool tip' will give you a clue.



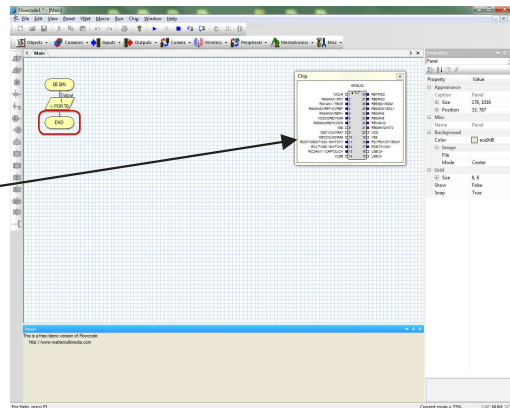
**3** From the Icon toolbox drag an Output icon onto the space between the Begin and End icons. Then click twice on the icon to bring up the properties window.

Set the properties as shown. (Variable = 1, Port = PORTB, single bit).



**4** Click on the Step Into icon (see below) or select RUN...STEP INTO on the menu. You can use this to step through your program.

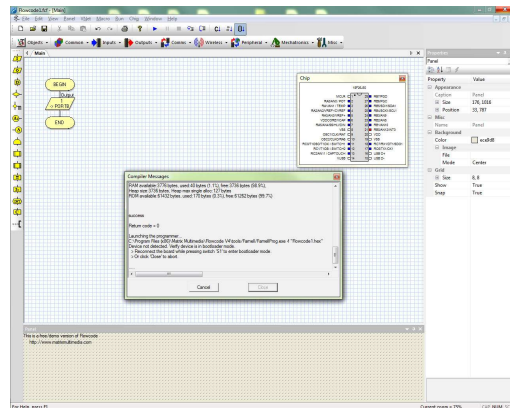
Notice B0 on the chip goes red to indicate logic 1 output.



**5** Click on Compile to Chip button to compile your program and download it to the board.

Press and hold the S1 button while inserting the USB cable to put the board into program mode.

Once programming has completed, the LED connected to B0 will be lit.



# Contratulations!

Congratulations! You have just created your first program with Flowcode.

You can use the help file (click on HELP in the Menu) to understand how all the icons and the components work. On the Matrix website you will find a number of example files which will help you to understand how to construct more functional programs. To use the example files you must first download them to your local hard drive.

Please refer to the forum at [http://www.matrixmultimedia.com/sup\\_menu.php](http://www.matrixmultimedia.com/sup_menu.php) for any technical support issues.

## Getting further information

Once you have got your first program running inside the microcontroller you are ready to start to develop more sophisticated programs than the one we have just seen. To help you learn more there are several places where you can go for further information:

**Help file:** contains help on Flowcode software itself.

**Component Help Files:** contains help on specific Flowcode components .

**Example files:** can be found in the Learning Centre of the Matrix website.

**Learning Centre:** on the Matrix web site you will find a number of articles, learning resources and manuals on how to use Flowcode. This includes a range of videos that explain how programs are constructed with Flowcode.

**Forum:** if you get stuck in installing Flowcode or in using Flowcode for a particular application then please refer to the Forum at: <http://www.matrixmultimedia.com> Here you can search for those who have had similar problems and find fixes. If you cannot find a suitable answer, you can post on the forum to request help.

# Licensing and versions

The features that you have in your version of Flowcode will depend on which version you have bought. There are several versions of Flowcode 4 that you can see in the table on the right. The differences in functionality are also shown in the table. The terms used in the table are explained below:

**Code size limit:** For lower specification versions there is a limit on the size of compiled code that Flowcode will produce. In this case the code will limit to 2KB of compiled and assembled code. (18 series is 4K)

**Limited components:** Some versions do not have all components. Limited component versions include LED, Switch, ADC, LCD, 7-segment display, Keypad, Quad 7-segment display, Burglar alarm and Buggy. These versions can not have more components added to them as free downloads. Advanced components include: SPI bus, I<sup>2</sup>C bus, Internet, Webserver, CAN bus, LIN bus, EEPROM, IrDA, Bluetooth, and RS232. Other components may be added to this list.

**Multi-user education:** The software license for multi-user versions is for educational use only. Industrial users who need more than one license will need to purchase each license separately. Only 10 and 50 multi-user versions are available. Those requiring between 10 and 20 users will need to purchase 2 off 10 user versions.

**Upgrading licenses:** If you want to upgrade your version from one type of license to another, then you simply pay the price difference between the two versions.

**Limited devices:** Some versions do not have all devices. Limited device versions only include a preset number of the more popular devices as well as the Matrix custom devices.

**In circuit debug:** Some versions of Flowcode do not have the ICD functionality. These versions will still work with the Matrix ICD hardware but the ICD operation will be disabled.

**Virtual networks:** Some versions of Flowcode do not have the Virtual network simulation functionality. These versions will not be able to host or join the virtual network.

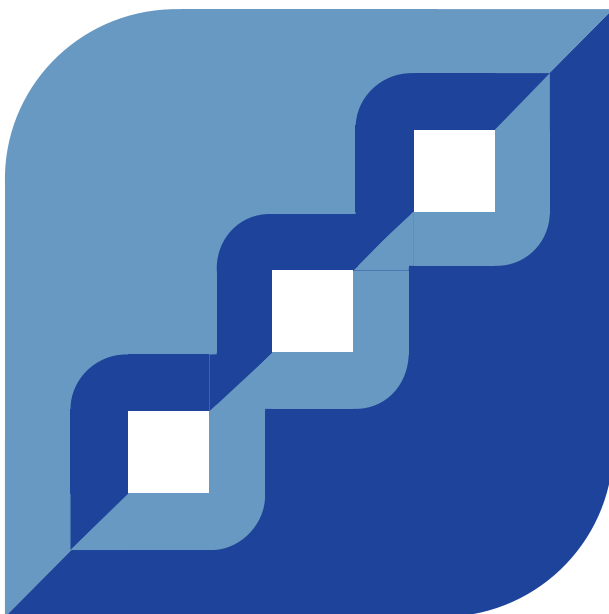
**Code customization:** Some versions of Flowcode do not have the code customization feature. These versions will not be able to view or modify the component code.

**Commercial use:** Some versions of Flowcode do not allow commercial use of the product. to develop programs for commercial applications a valid commercial licence of Flowcode must be purchased.

## Version summary

|                                  | Free version | Home version | Flowcode Pro | Flowcode 10 concurrent users | Flowcode 50 concurrent users | Annual student rental for site licence holders |
|----------------------------------|--------------|--------------|--------------|------------------------------|------------------------------|--|
| Unlimited icons                  | N            | Y            | Y            | Y                            | Y                            | Y  |
| Code size limit                  | 2K           | 4K           | -            | -                            | -                            | -  |
| All devices                      | N            | Y            | Y            | Y                            | Y                            | Y  |
| All components                   | N            | N            | Y            | Y                            | Y                            | Y  |
| In circuit debug                 | N            | N            | Y            | Y                            | Y                            | Y  |
| Virtual netw orks                | N            | N            | Y            | Y                            | Y                            | Y  |
| Code customization               | N            | N            | Y            | Y                            | Y                            | Y  |
| Licence for commercial use       | N            | N            | Y            | N                            | N                            | N  |
| Multi-user license for education | N            | N            | N            | Y                            | Y                            | N  |

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<http://www.microchip.com>

<http://www.element14.com>

<http://www.matrixmultimedia.com>