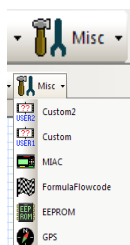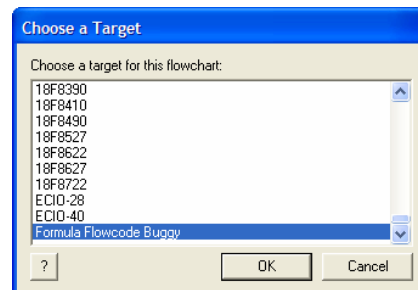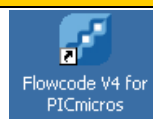|	**Thresholds values for IR sensors**	Section Euro
		STI2D

Run the software

Run Flowcode V4 by double clicking on this icon.
Select "Create a new Flowcode flowchart…" on the opening screen and click "OK".
Select the "Formula Flowcode Buggy" as the target device and click "OK" (see screenshot above).

Click the "Formula Flowcode" component icon:

Testing the Infra Red sensors (IR)

The goal: in the previous activity you tested the IR sensors to determine the value you need for the robot to know if there is a wall in front of it and if there is a wall on its side.
On this activity, you will use a macro to read the IR sensor and compare its value to the threshold value.

The macro "Check IR"

This macro returns a Boolean value representing the IR sensor reading compared to the threshold value.

If the sensor input equals 'L' or 'l' or 0 then the left IR sensor will be checked.
If the sensor input equals 'F' or 'f' or 1 then the front IR sensor will be checked.
If the sensor input equals 'R' or 'r' or 2 then the right IR sensor will be checked.

If the sensor reading is above the threshold value i.e. there is no obstacle present then the function returns a 0.
If the sensor reading is below the threshold value i.e. there is an obstacle present then the function returns a 1.

		Boolean value
No obstacle present	IR sensor reading > threshold	0
An obstacle present	IR sensor reading < threshold	1

Component properties
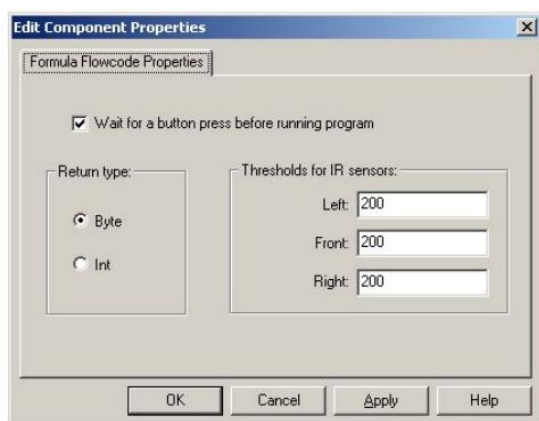
The Formula Flowcode Micromouse component has the following properties:

Wait for Button
If Ticked then the program will wait for button SW4 or SW5 to be pressed before running.
If unticked then the program will run straight away after programming or a reset.

Return Value
Configures the type of the variable returned from the ReadLDR and ReadIR Functions.
   Byte - Returns the sensor readings as an 8 bit number (0 to 255)
   Int - Returns the sensor readings as a 10 bit number (0 to 1023)

4.9.3) Threshold Values
They configure the cutoff threshold values for the left, front and right IR sensors. The threshold values can be either 8 bit (0 to 255) or 10 bit (0 to 1023) depending on the return value property.

The threshold is used as a simple way to:
A. Detect the presence of a wall or obstacle.
B. Allow for inconsistencies between different buggies and different ambient light levels.