SCHEMATIC_10D_MotorTest

Schematic Design project to test the new Nodes:

- Node L298 ✔
- Node GPITrigger ✕
- Node ConstTrigger ✕
- Node ValueTrig ✔

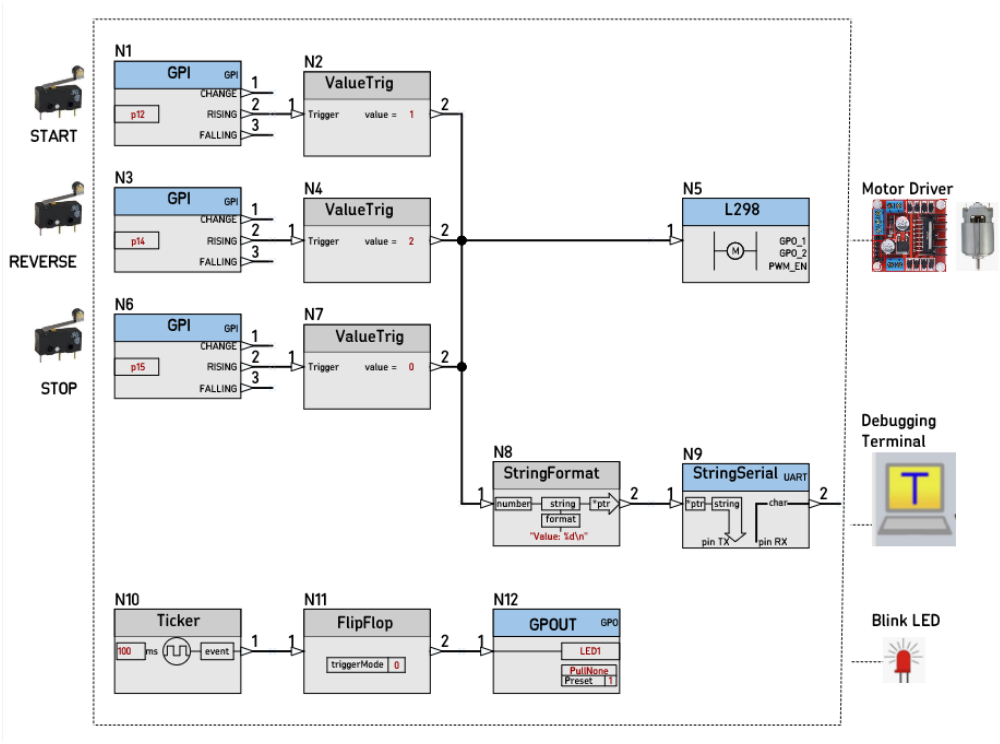
To be automatically translated from nBlocksStudio Translator.

The C++ project is here: 10D_MotorTest

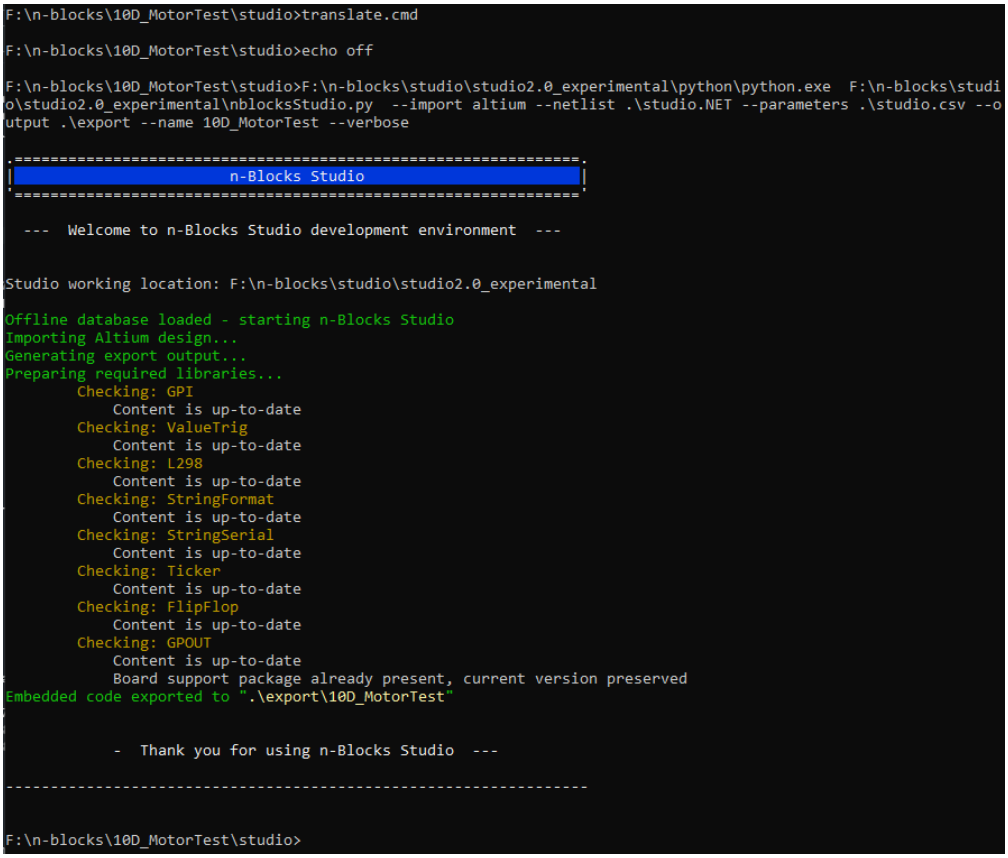
Use case:

- Button [Transition 0 to 3.3V] at Pin p12 starts the movement, direction right
- EndSwitch [Transition 0 to 3.3V] at Pin p14 change direction
- EndSwitch [Transition 0 to 3.3V] at Pin p15 stop

Schematic nBlocksStudio Design ✔



Translation Pass ✔



C++ code creation Pass ✔

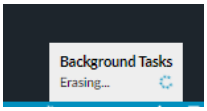
main.cpp

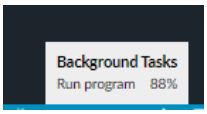
```cpp

/* ============================================================ *
 *          Automatically generated by n-Blocks Studio 2.0      *
 *                                                              *
 *                       www.n-blocks.net                       *
 * ============================================================ */
#include "nlib\nblocks.h"
#include "nlib\BSP\bsp.h"
// Custom nodes:
#include "nlib\GPI\gpi.h"
#include "nlib\ValueTrig\valuetrig.h"
#include "nlib\L298\L298.h"
#include "nlib\StringFormat\stringformat.h"
#include "nlib\StringSerial\stringserial.h"
#include "nlib\Ticker\ticker.h"
#include "nlib\FlipFlop\flipflop.h"
#include "nlib\GPOUT\gpout.h"

// -*-*- List of node objects -*-*-
nBlock_GPI              nb_nBlockNode0_GPI          (p12);
nBlock_ValueTrig        nb_nBlockNode1_ValueTrig    (1);
nBlock_GPI              nb_nBlockNode2_GPI          (p14);
nBlock_ValueTrig        nb_nBlockNode3_ValueTrig    (2);
nBlock_L298             nb_nBlockNode4_L298         (LED2, LED3, LED4);
nBlock_GPI              nb_nBlockNode5_GPI          (p15);
nBlock_ValueTrig        nb_nBlockNode6_ValueTrig    (0);
nBlock_StringFormat     nb_nBlockNode7_StringFormat ("Value: %d\n");
nBlock_StringSerial     nb_nBlockNode8_StringSerial (USBTX, USBRX);
nBlock_Ticker           nb_nBlockNode9_Ticker       (100);
nBlock_FlipFlop         nb_nBlockNode10_FlipFlop    (0);
nBlock_GPOUT            nb_nBlockNode11_GPOUT       (LED1, PullNone, 1);

// -*-*- List of connection objects -*-*-
nBlockConnection    n_conn0( &nb_nBlockNode10_FlipFlop,    0,    &nb_nBlockNode11_GPOUT,       0);
nBlockConnection    n_conn1( &nb_nBlockNode9_Ticker,       0,    &nb_nBlockNode10_FlipFlop,    0);
nBlockConnection    n_conn2( &nb_nBlockNode7_StringFormat, 0,    &nb_nBlockNode8_StringSerial, 0);
nBlockConnection    n_conn3( &nb_nBlockNode5_GPI,          1,    &nb_nBlockNode6_ValueTrig,    0);
nBlockConnection    n_conn4( &nb_nBlockNode2_GPI,          1,    &nb_nBlockNode3_ValueTrig,    0);
nBlockConnection    n_conn5( &nb_nBlockNode1_ValueTrig,    0,    &nb_nBlockNode4_L298,         0);
nBlockConnection    n_conn6( &nb_nBlockNode1_ValueTrig,    0,    &nb_nBlockNode7_StringFormat, 0);
nBlockConnection    n_conn7( &nb_nBlockNode3_ValueTrig,    0,    &nb_nBlockNode4_L298,         0);
nBlockConnection    n_conn8( &nb_nBlockNode3_ValueTrig,    0,    &nb_nBlockNode7_StringFormat, 0);
nBlockConnection    n_conn9( &nb_nBlockNode6_ValueTrig,    0,    &nb_nBlockNode4_L298,         0);
nBlockConnection    n_conn10( &nb_nBlockNode6_ValueTrig,    0,    &nb_nBlockNode7_StringFormat, 0);
nBlockConnection    n_conn11( &nb_nBlockNode0_GPI,          1,    &nb_nBlockNode1_ValueTrig,    0);


// -*-*- Main function -*-*-
int main(void) {
    SetupWorkbench();
    while(1) {
        ProgressNodes();

        // Your custom code here!
    }
}

```

Compiler Pass ✔

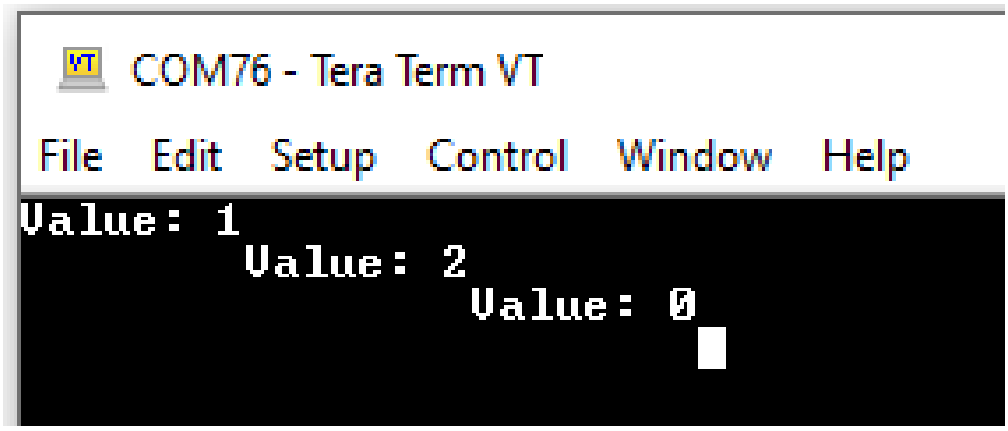
```
Building project 10D_MotorTest (LPC1768, GCC_ARM)
Scan: 10D_MotorTest
Link: 10D_MotorTest
Elf2Bin: 10D_MotorTest
Post-Build: 10D_MotorTest
| Module            |     .text |    .data |     .bss |
|-------------------|-----------|----------|----------|
| [fill]            |   610(+0) |    4(+0) |   27(+0) |
| [lib]\c.a         | 31004(+0) | 2472(+0) |   89(+0) |
| [lib]\gcc.a       |  4980(+0) |    0(+0) |    0(+0) |
| [lib]\misc        |   180(+0) |    4(+0) |   28(+0) |
| main.o            |   742(+0) |    0(+0) | 1572(+0) |
| mbed-os\drivers   |  2118(+0) |    0(+0) |    0(+0) |
| mbed-os\hal       |  1932(+0) |    4(+0) |   67(+0) |
| mbed-os\platform  |  5484(+0) |  260(+0) |  364(+0) |
| mbed-os\targets   |  3714(+0) |   32(+0) |  245(+0) |
| nlib\FlipFlop     |   160(+0) |    0(+0) |    0(+0) |
| nlib\GPI          |   546(+0) |    0(+0) |    0(+0) |
| nlib\GPOUT        |   196(+0) |    0(+0) |    0(+0) |
| nlib\L298         |   544(+0) |    0(+0) |    0(+0) |
| nlib\StringFormat |   214(+0) |    0(+0) |    0(+0) |
| nlib\StringSerial |   144(+0) |    0(+0) |    0(+0) |
| nlib\Ticker       |   318(+0) |    0(+0) |    0(+0) |
| nlib\ValueTrig    |    90(+0) |    0(+0) |    0(+0) |
| nlib\nworkbench.o |   560(+0) |    0(+0) |   88(+0) |
| Subtotals         | 53536(+0) | 2776(+0) | 2480(+0) |
Total Static RAM memory (data + bss): 5256(+0) bytes
Total Flash memory (text + data): 56312(+0) bytes
Image: BUILD/LPC1768/GCC_ARM\10D_MotorTest.bin
```

Flash Programming Pass ✔

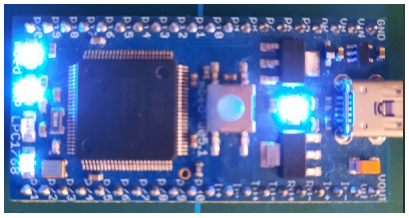




Serial Terminal Pass ✔



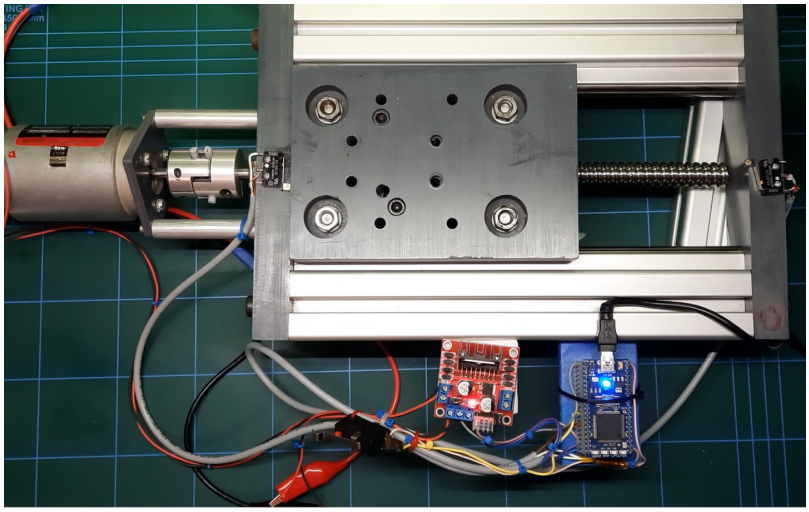
Led testing Pass ✔

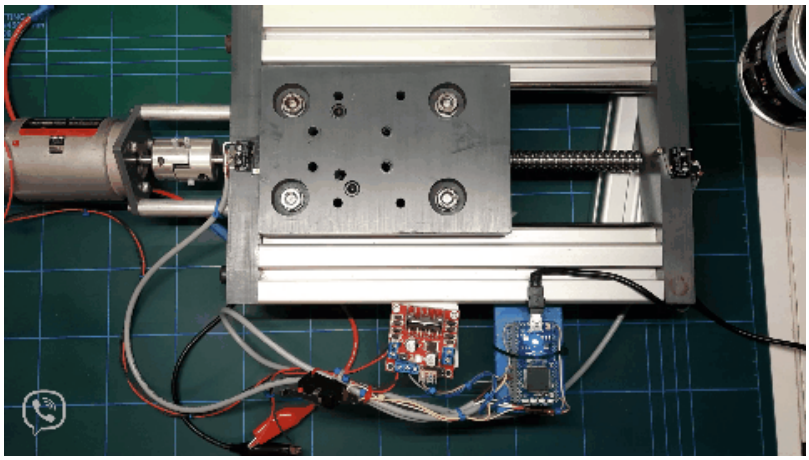


```
*  LED1:                                    Is the Blink LED
*  LED2 = 1, LED3 = 0 (L298 IN2, IN2):      Movement Direction Right
*  LED 4 =                                  Low Duty Cycle 5%: Motor is turning Right
```

```
                default:
                        stop();
                        break;
                }//switch
        }//if(must_update)
}//endFrame

void nBlock_L298::stop(void) {
        _in1 = OFF;
        _in2 = OFF;
}

void nBlock_L298::turnLeft(void) {
    _enable.write(0.95f);
        _in1 = OFF;
        _in2 = ON;
}

void nBlock_L298::turnRight(void) {
    _enable.write(0.05f);
    _in1 = ON;
    _in2 = OFF;
}

void nBlock_L298::brake(void) {
    _enable.write(0.95f);
    _in1 = ON;
    _in2 = ON;
}

```

Next: test with LPC1768-mbed, L298-breakout and a DC Motor ?





Next: Test with Nucleo STM32F401 AND Nucleo DC motor expansion board ?