TENET TECHNETRONICS

2016

Controlling LED Brightness using PWM technique with MPLAB Xpress Evaluation Board

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Version: 1.0

Introduction:

MPLAB Xpress IDE cost free development platform. It's cloud Based IDE available from microchip supporting PIC-based microcontrollers. The platform is comprised of code editor, build automation tools, debugger and code configurator. MPLAB Xpress IDE is an end-to-end solution enabling engineers to develop their applications from initial evaluation to final production.

Components Requirement

- Hardware
  - MPLAB Xpress Evaluation Tool.
  - LED
- Software
  - MPLAB Xpress IDE

Note: we have on board LED.

Step 1: Open your Browser and go to following link

https://mplabxpress.microchip.com/mplabcloud/ide

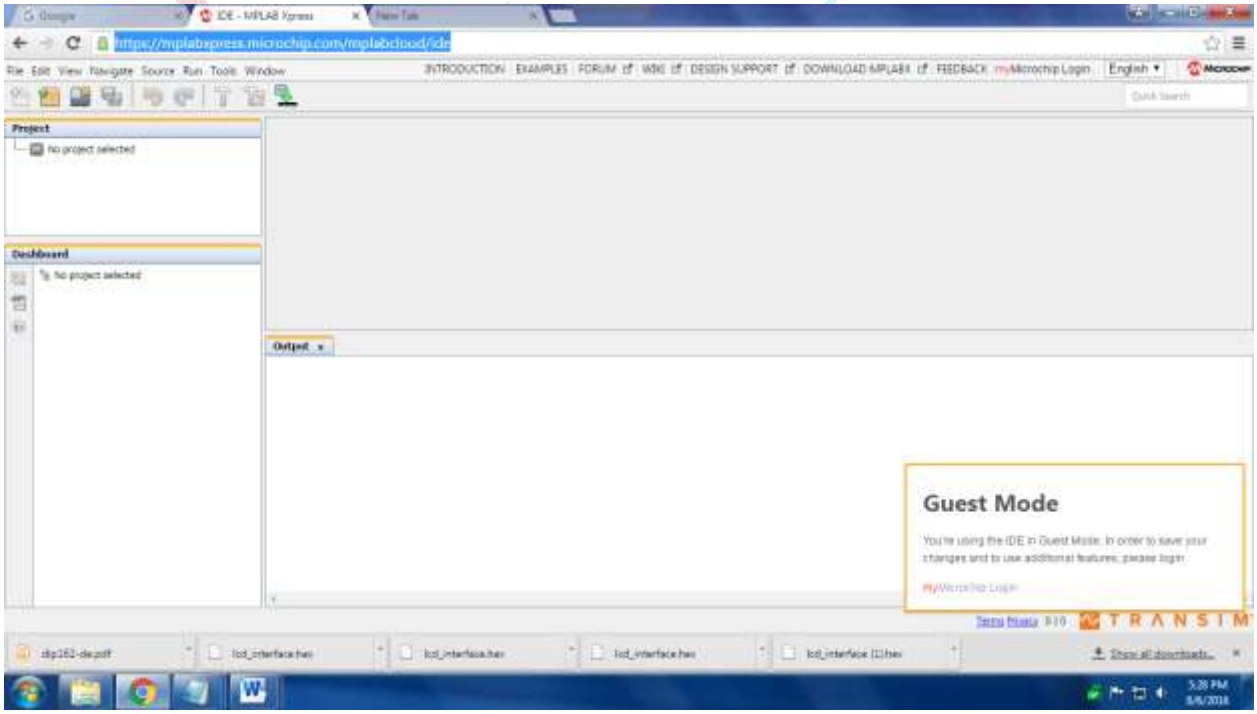

Figure 1 MPLAB Xpress IDE main window

Step 2: Start creating our new project. Go to **File** >> **New Project.** Select **microchip embedded** as well as **standalone project** then click **next**

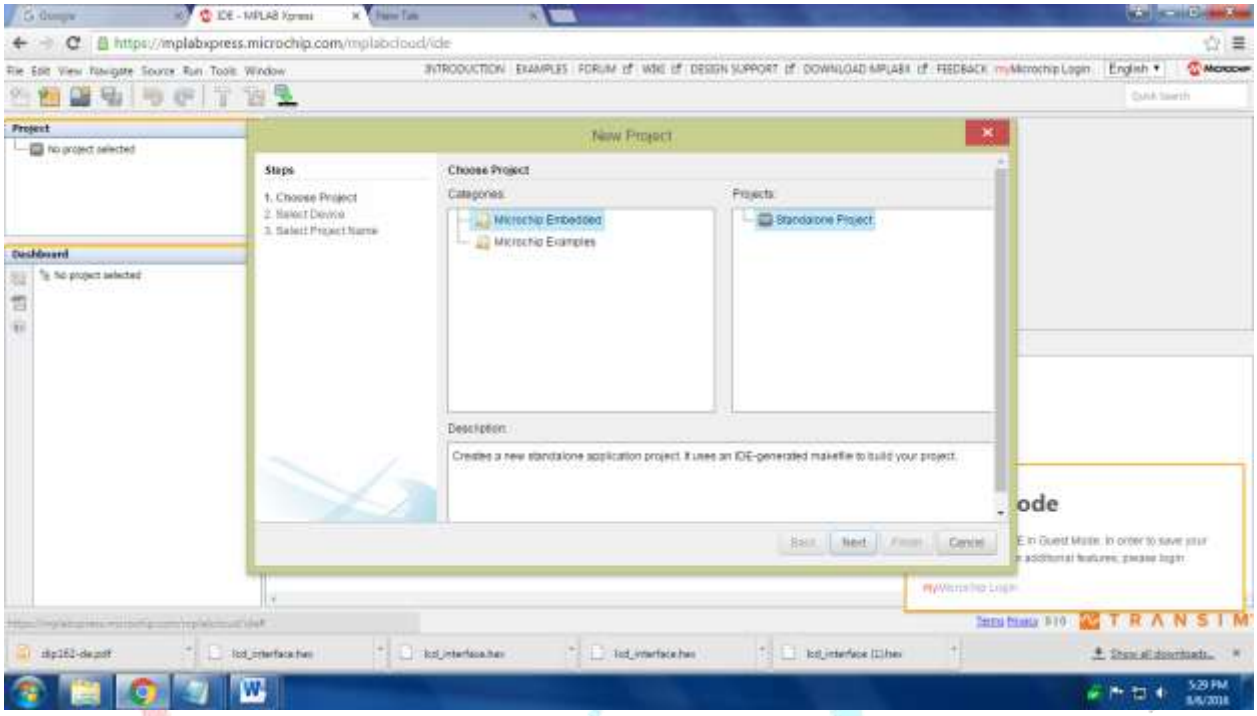

Figure 2 Open new project

Step 3: Select device **PIC16F18855**, and click **next .**

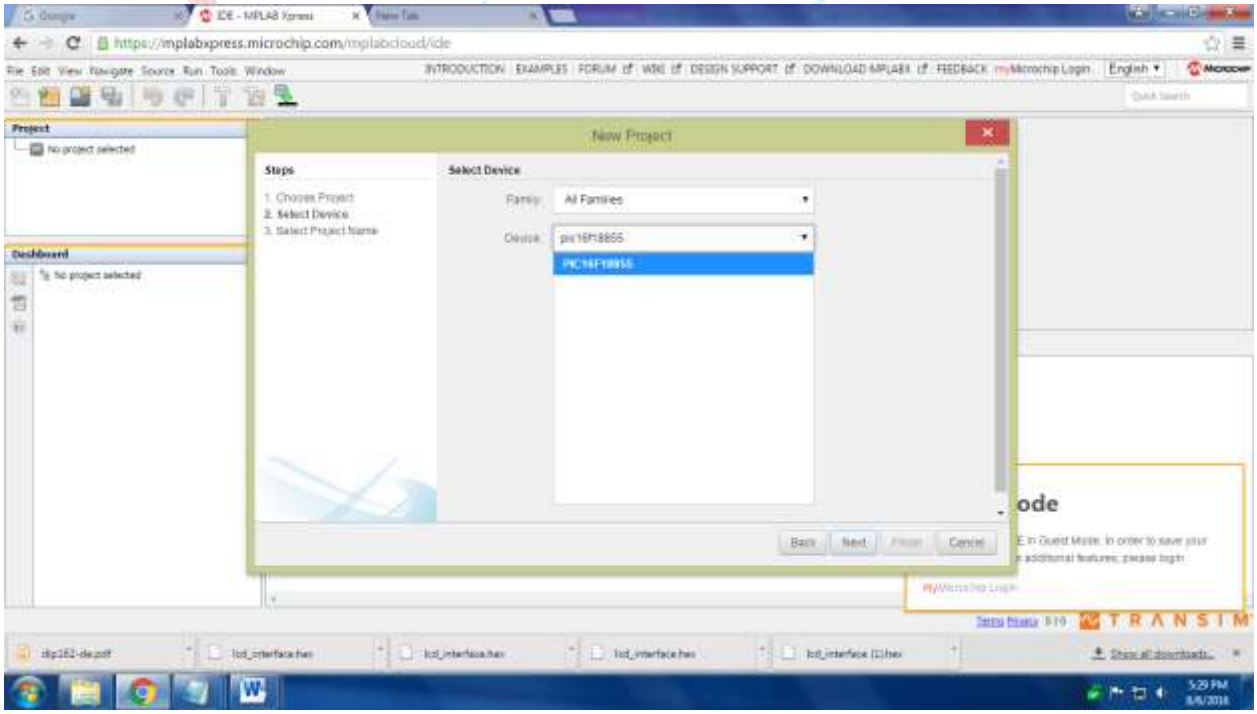

Figure 3 select Device

Step 4: Then give project name and click finish**.**

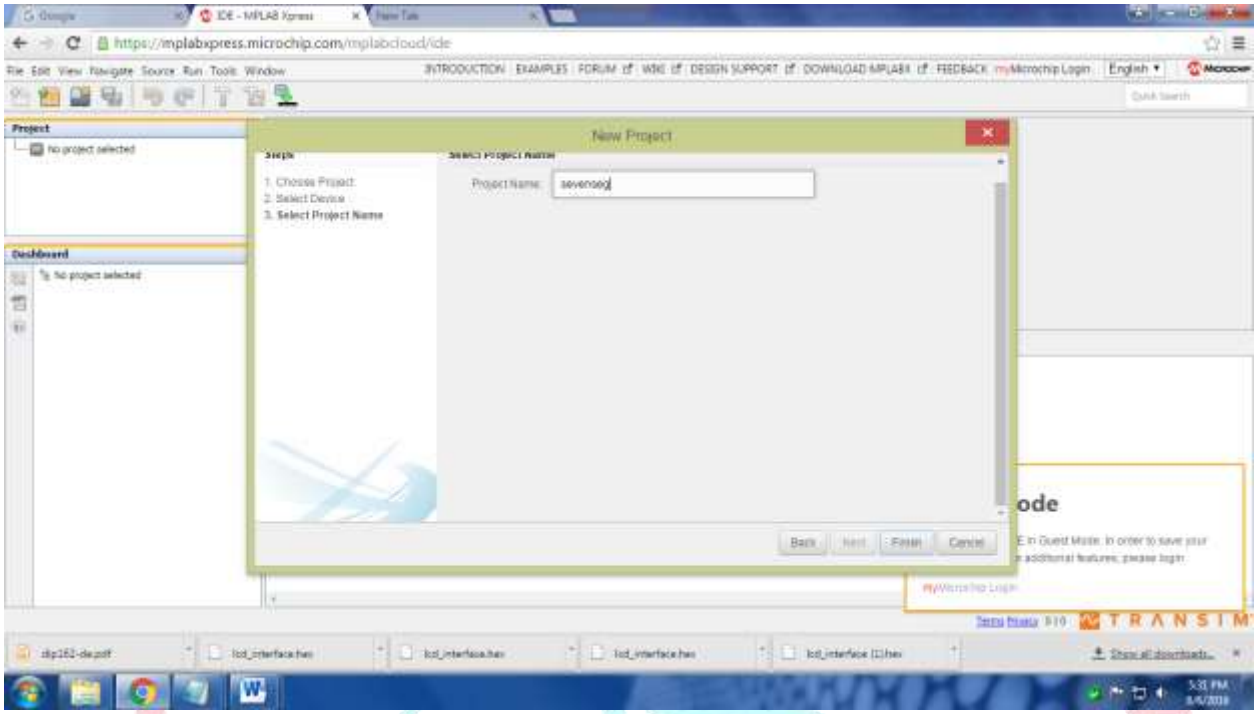

Figure 4 give project name

Step 5: Now choose MPLAB Xpress code configurator if it's not present in your Device please Download and install from following link. http://www.microchip.com/mplab/mplab-code-configurator

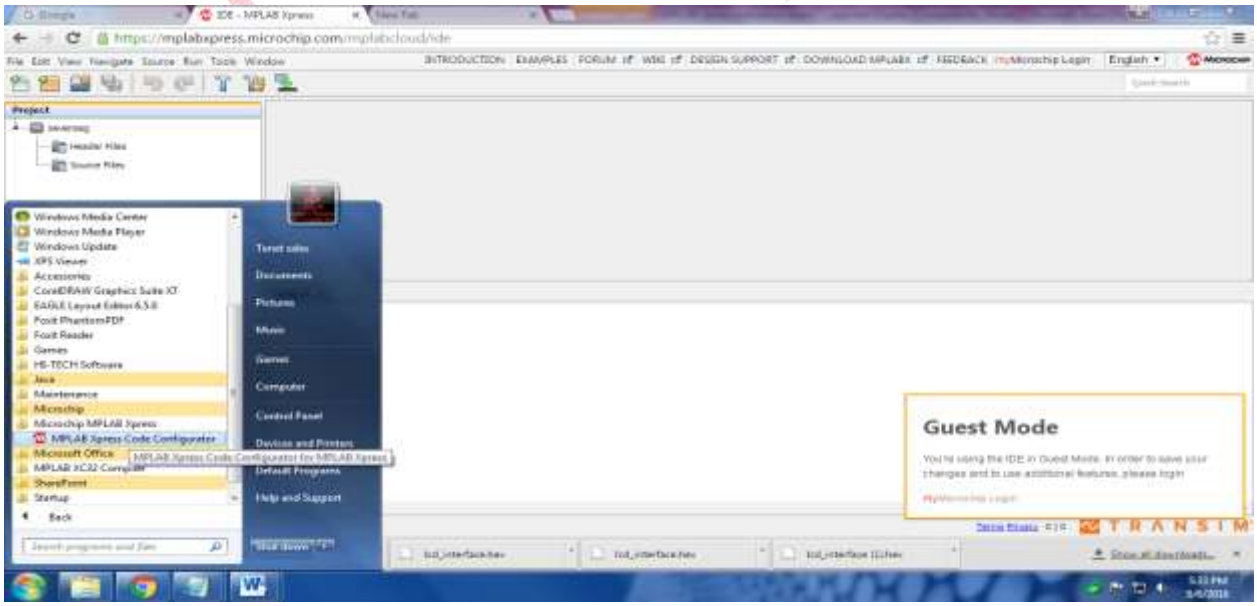

Figure 5 Select mplab xpress code configurator

Step 6: Now we can see our MPLAB Xpress configuration window and select system module in MPLAB Xpress configuration window .

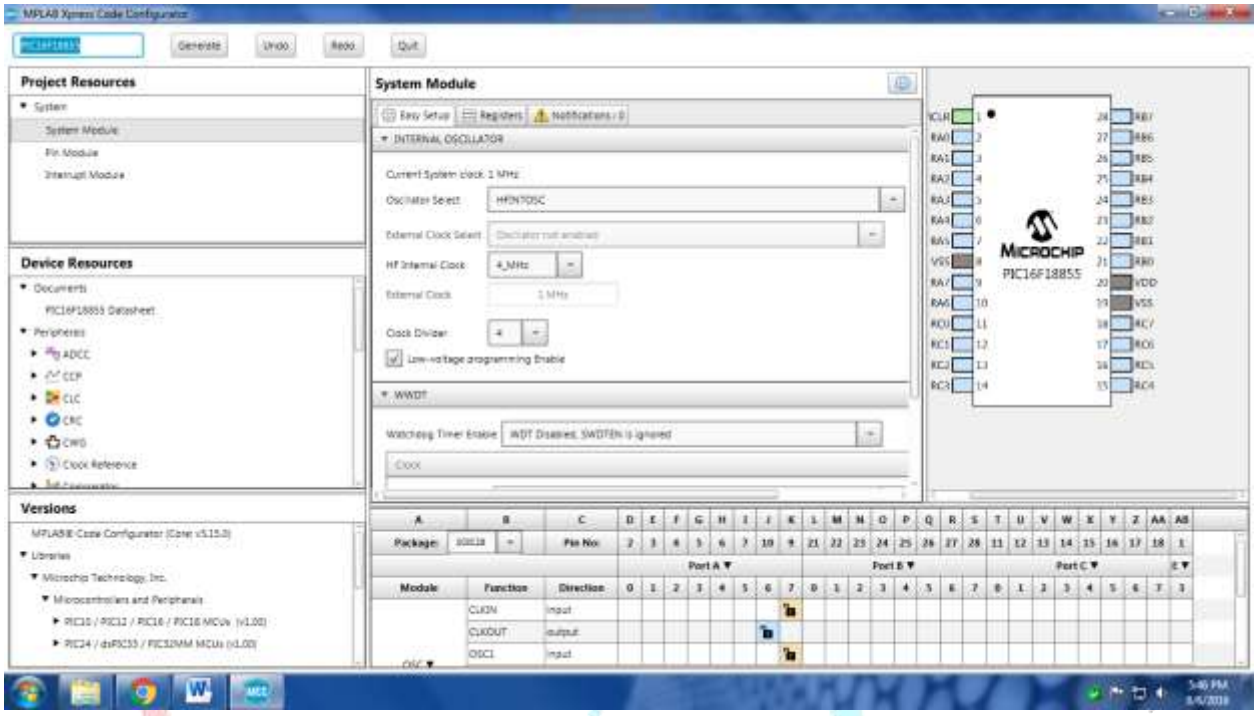

Figure 6 Assign project name

Step 7: Make oscillator configuration and select pin (RA0) .

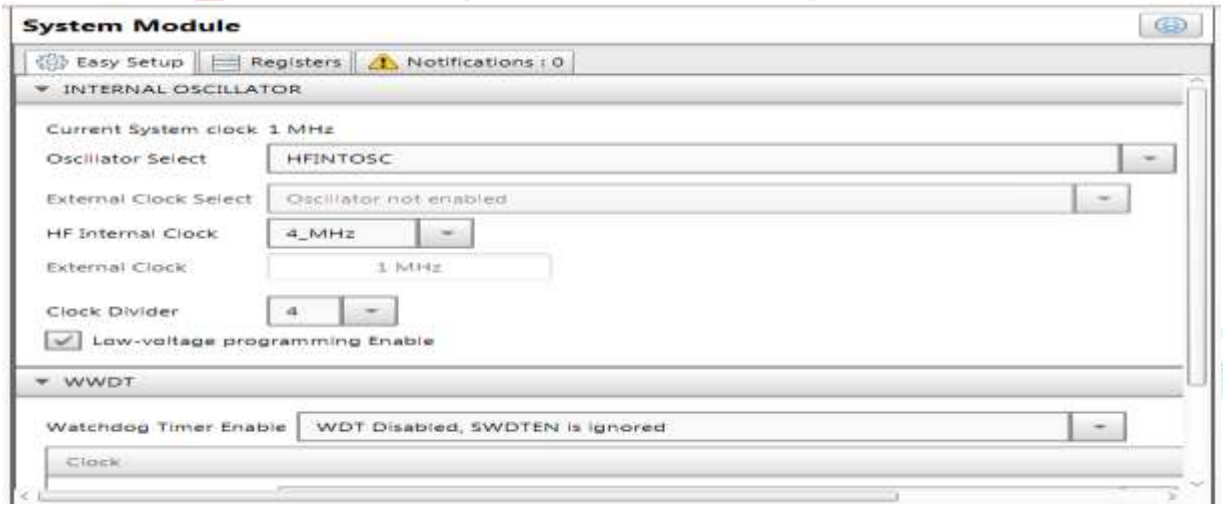

Fig 7.a. oscillator configuration

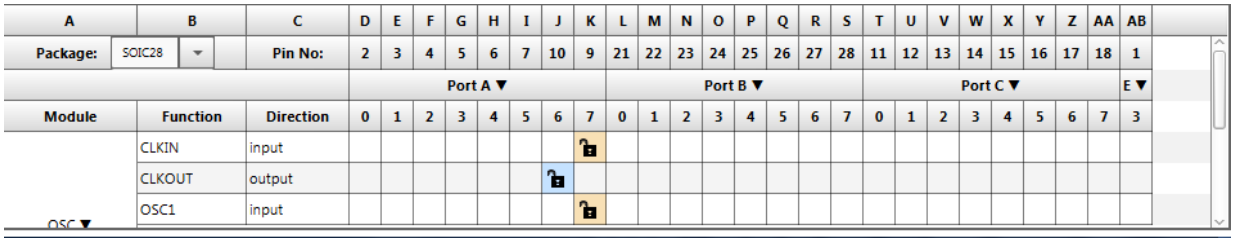

Figure 7 select pin

Step 8: Select pin module in MPLAB Xpress configuration window. Which pin you want you can choose as analog or digital And select peripherals timer, PWM. Finally click Generate Window.

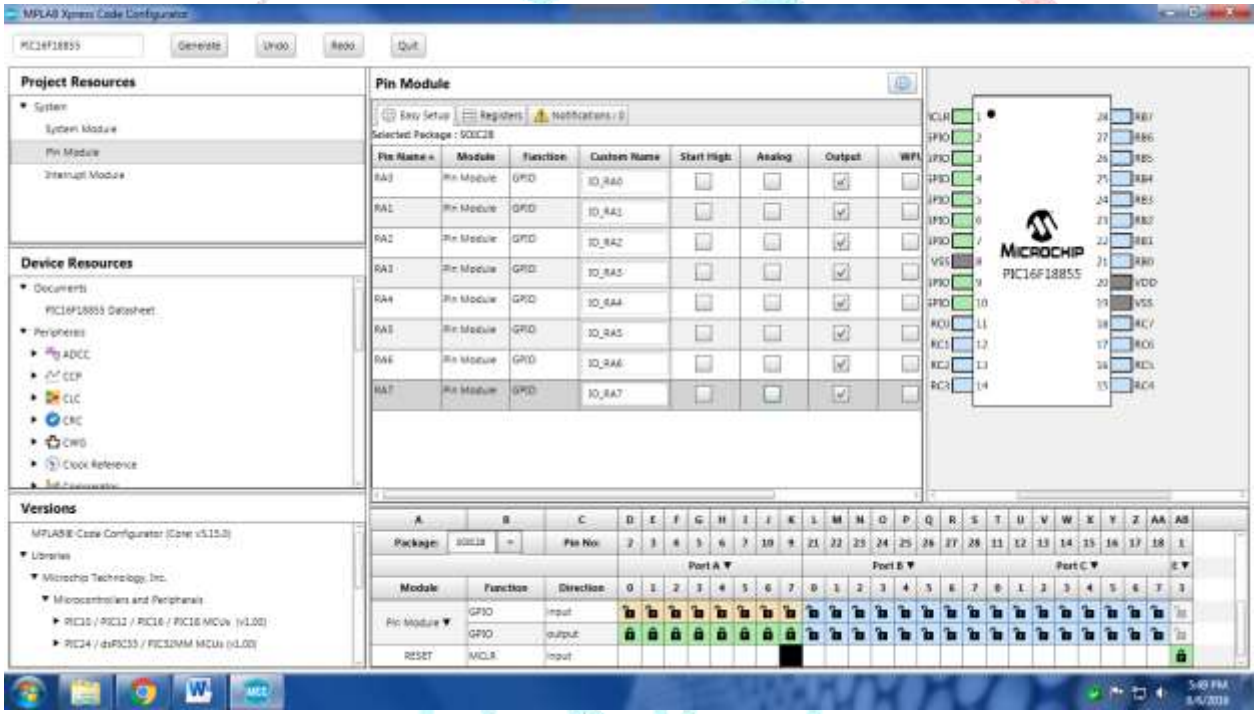

Figure 8 pin configuration set

SOURCE CODE:

```
#include "mcc_generated_files/mcc.h"
void main(void)
{
    SYSTEM_Initialize();                    // initialize the device
    while (1)
    {   for (int duty = 1; duty < 512; duty = duty + 10)
        {
        PWM6_LoadDutyValue(duty);               // load duty value
        for (int delay = 1; delay < 500; delay++)  //delay
            {;}
        }
    }
}
```

Step 10: Go to your MPLAP xpress IDE Erase all existing code and copy above code past there and add header file from given file then make clean and build for Export . if you done this go to download you can see hex file for your project.

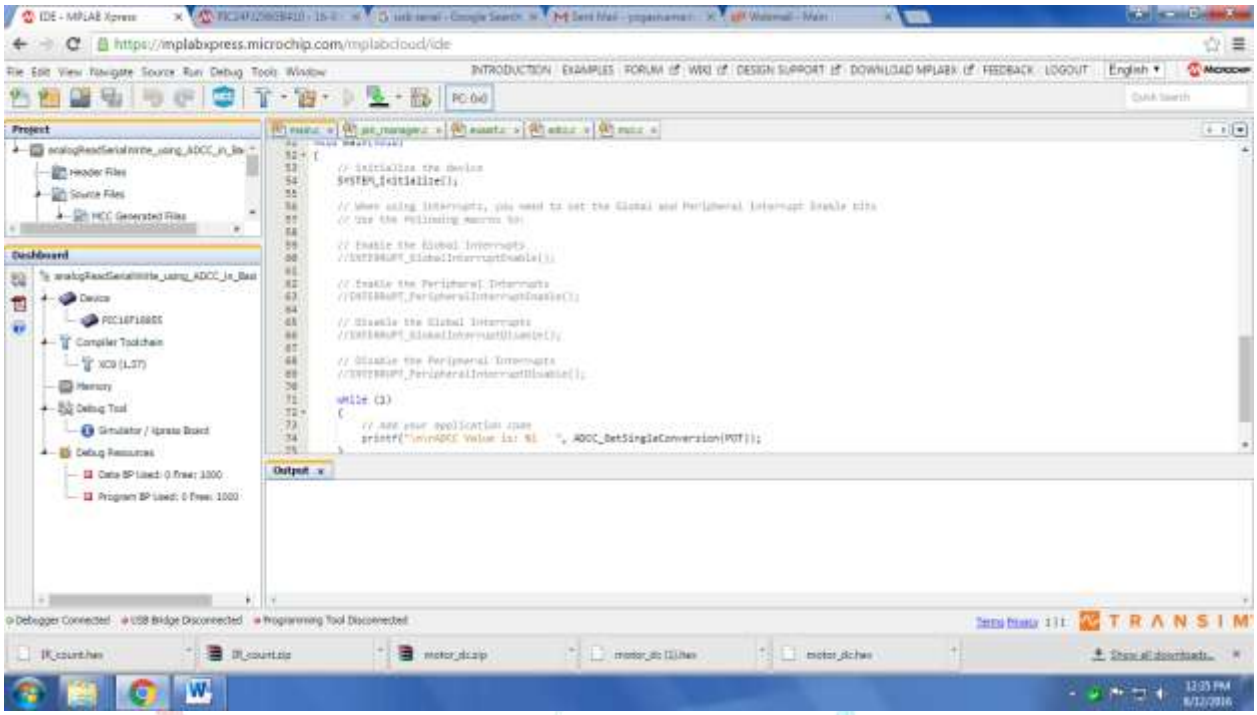

Figure 9 Build the project

Step 11: Now, if all goes well connect the Micro B cable to pic16f18855 (mplab xpress demonstration board) and connect it to your computer. If you done you can see your devise. And copy that Hex file to your device. And make hardware connection.

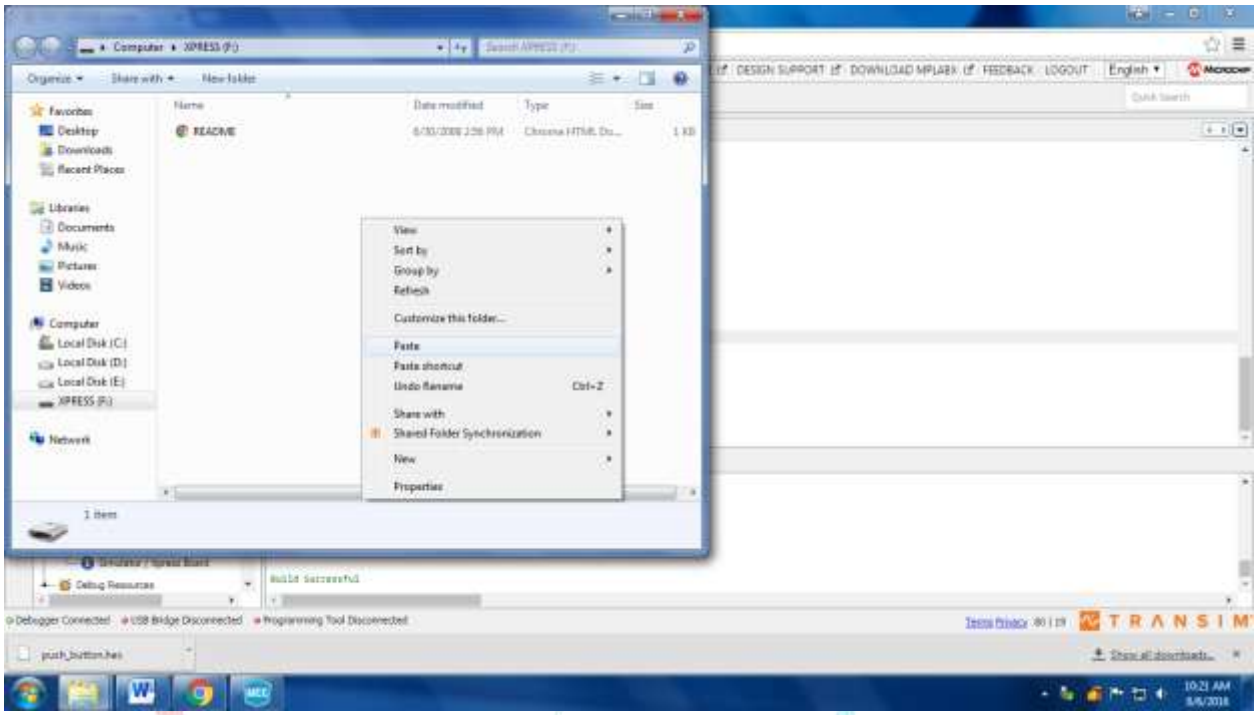

Figure 10 Build the project

Pin connection:

Note: RA0 pin connected with onboard LED

OUTPUT:

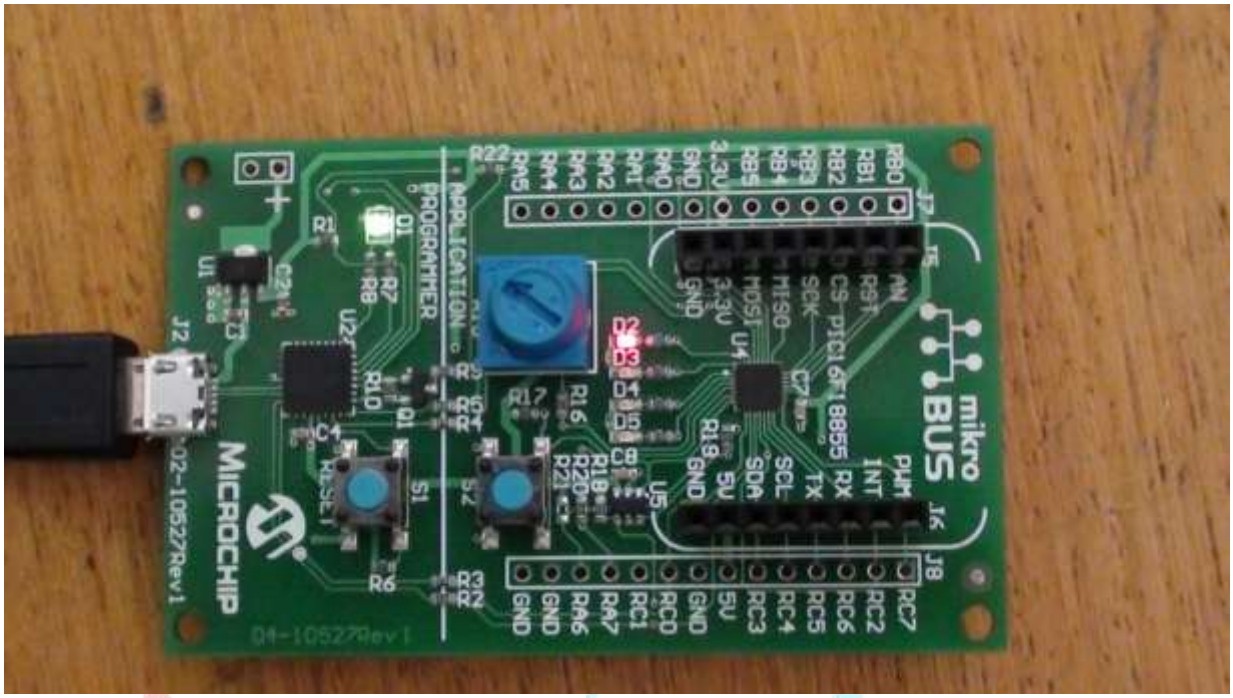

Figure 11 output

For product link:

http://www.tenettech.com/product/8828/mplab-xpress-development-board

For more information please visit: www.tenettech.com

For technical query please send an e-mail: info@tenettech.com

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