



2016

Interfacing POT With MPLAB Xpress Evaluation Board



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Version: 1.0

Introduction:

MPLAB X IDE v3.30 cost free development platform available from microchip supporting PIC-based microcontrollers. The platform is comprised of code editor, build automation tools, debugger. MPLAB X IDE is an end-to-end solution enabling engineers to develop their applications from initial evaluation to final production.

Component Requirement

- Hardware:
 - MPLAB Xpress evaluation tool
 - LED
 - POT
- Software:
 - MPLAB X IDE

Note : we have onboard POT.

Step 1: Open MPLAB X IDE

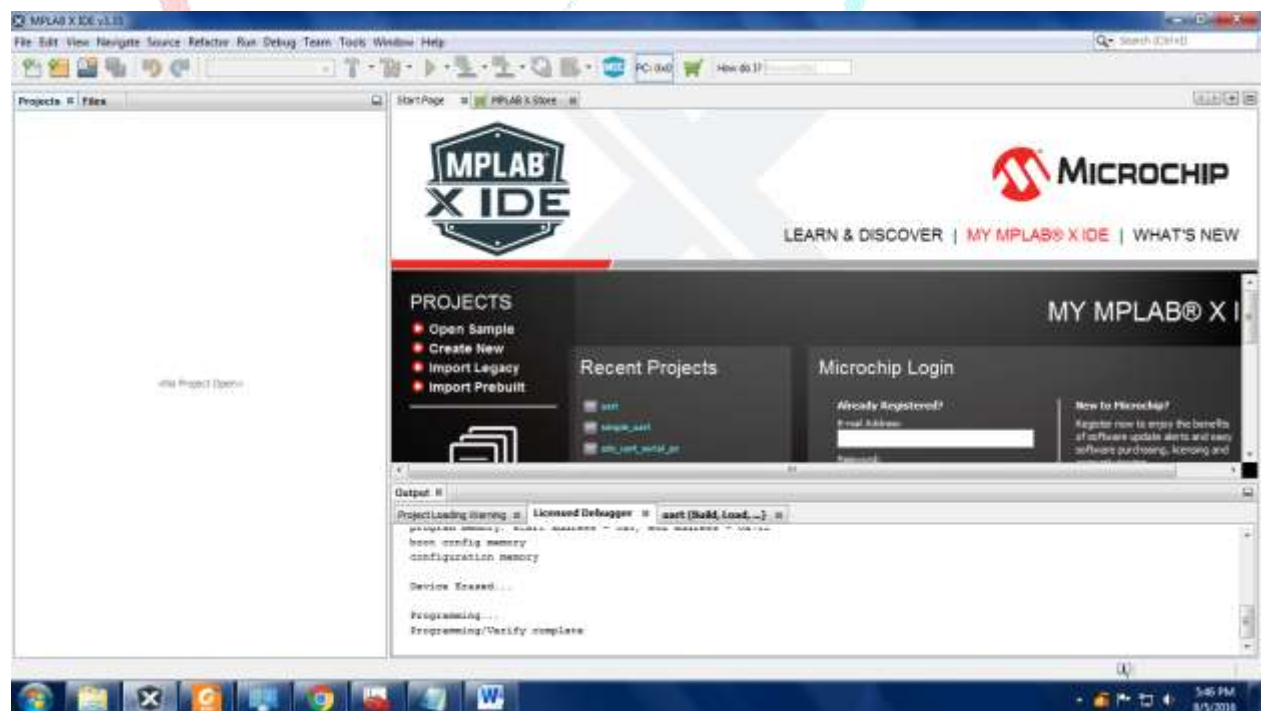


Figure 1 MPLAB X IDE main window

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

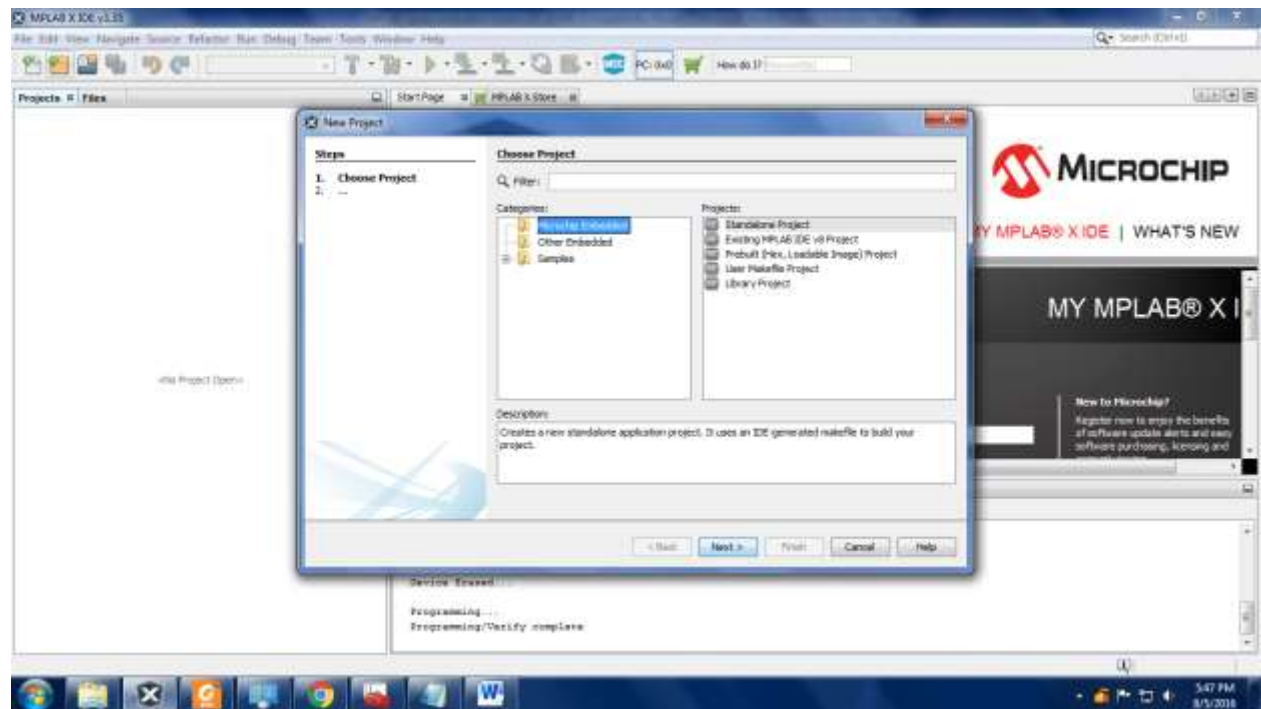


Figure 2 Open new project

Step 3: Select device **pic16f18855**, and click **next**.

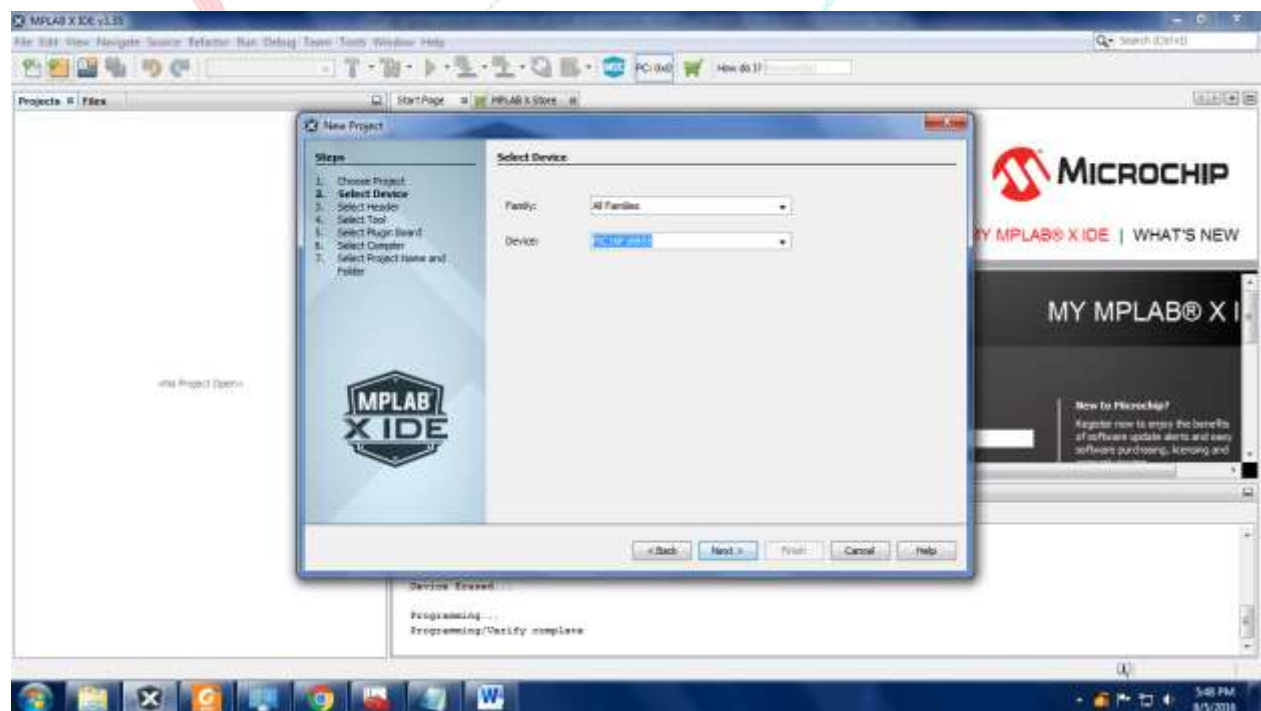


Figure 3 select Device

Step 4: Now select tool **Licensed Debugger** and click **Next**.

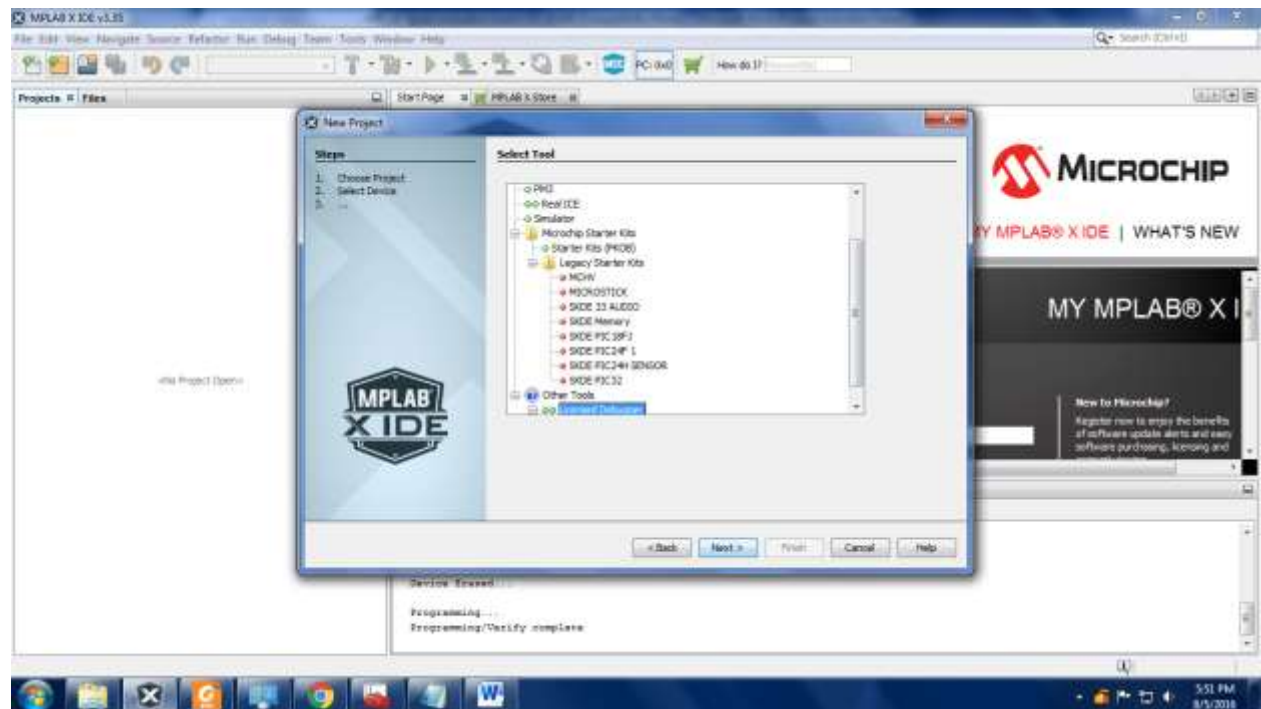


Figure 4 Select Debugger

Step 5: Now select tool select the **XC8compiler** and click **Next**.

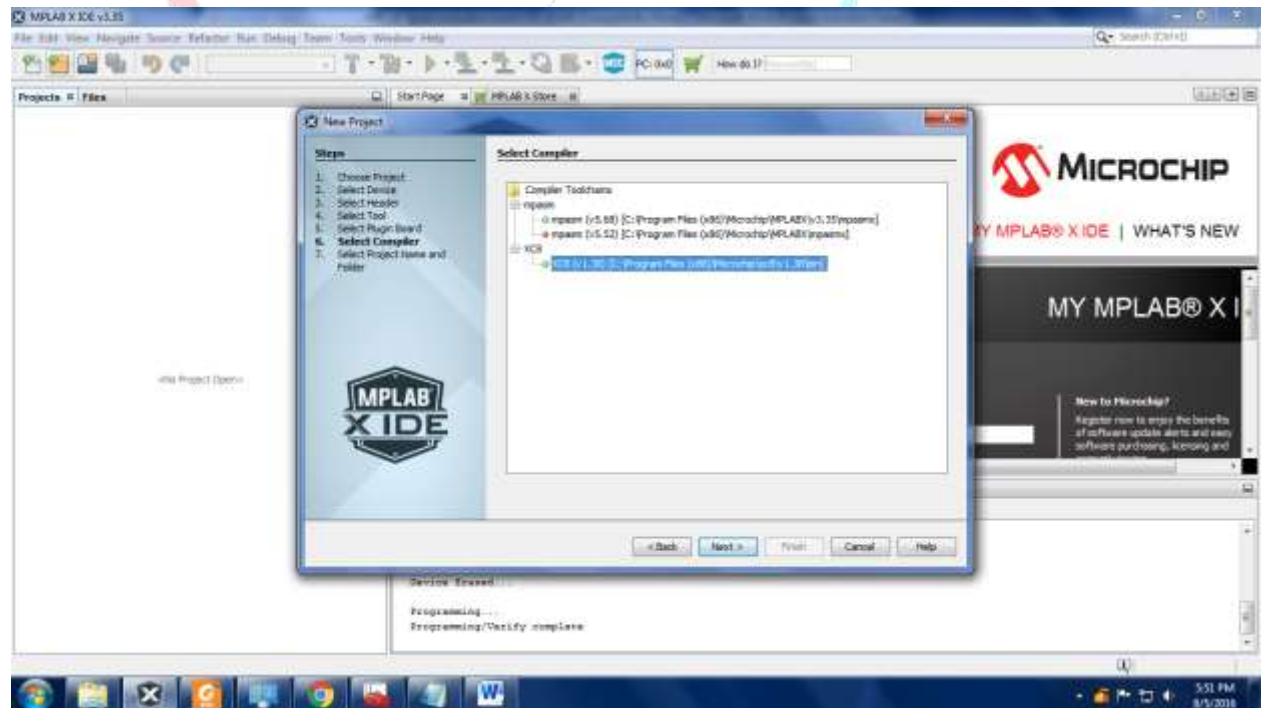


Figure 5 Select Compiler

Step 6: Now give project name and project location folder and click finish.

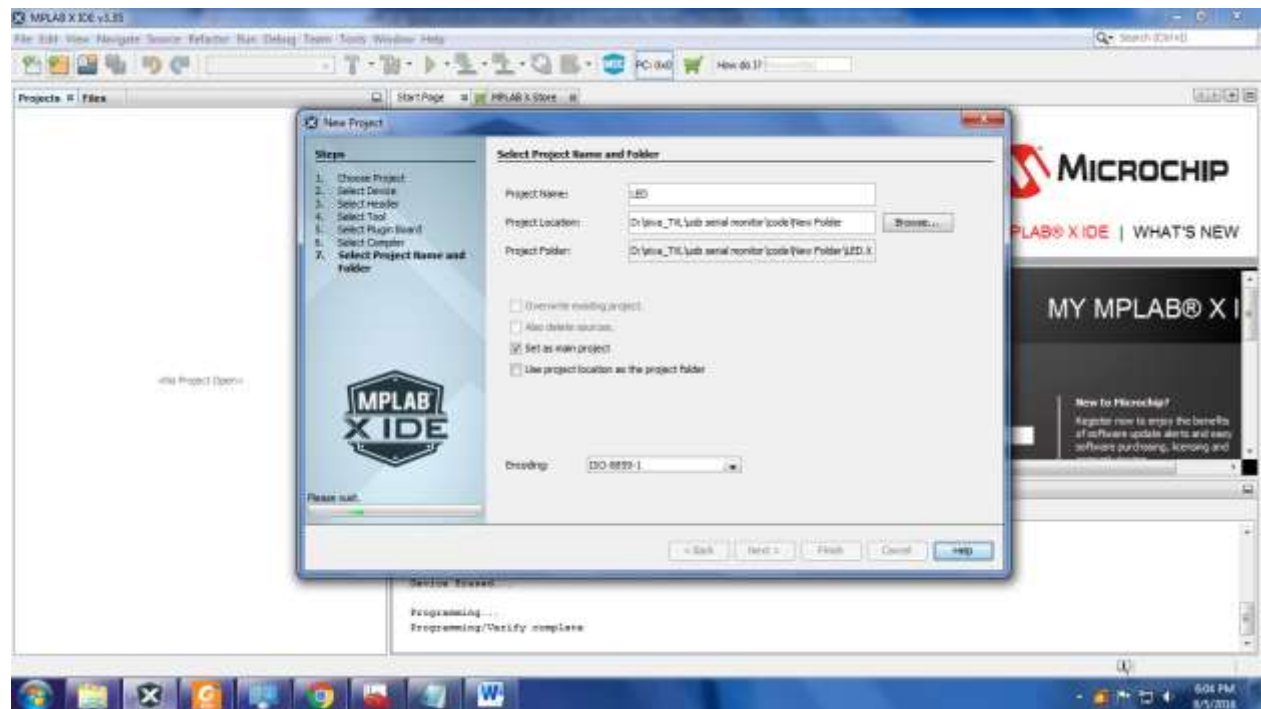


Figure 6 Assign project name

Step 7: Now we can see our project onto the workspace. Then, go to **File >> New file** then choose file type **c** as **main file** then click **next**.

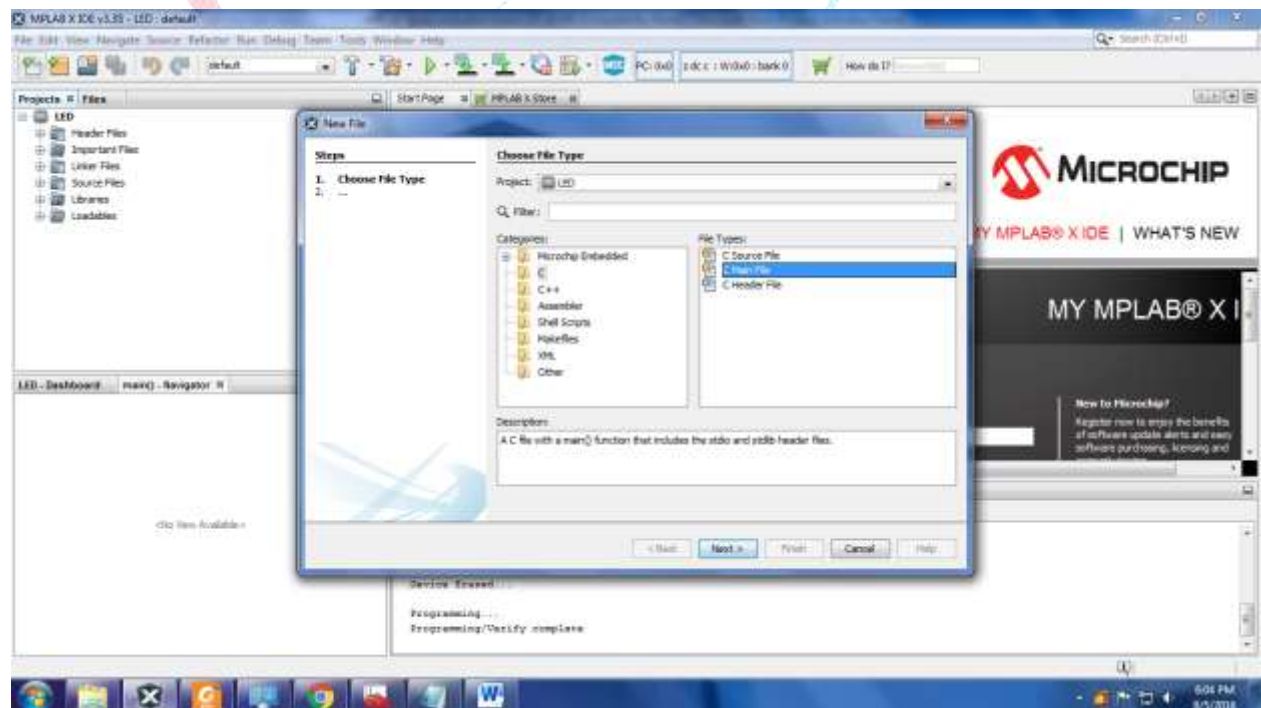


Figure 7 Add new file

Step 8: Now give **file name** and **file location folder** and click **finish**.

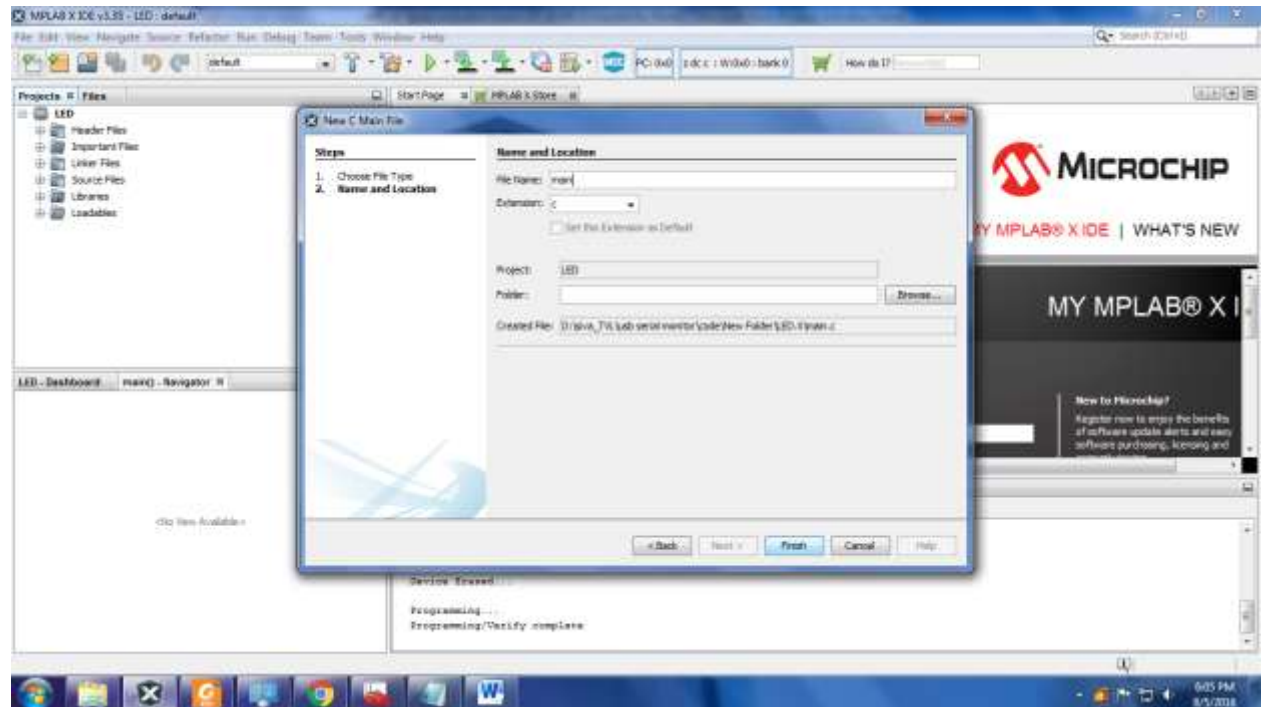


Figure 8 name the file

Step 9: Erase the template in editor window. Then type following code in the editor window.

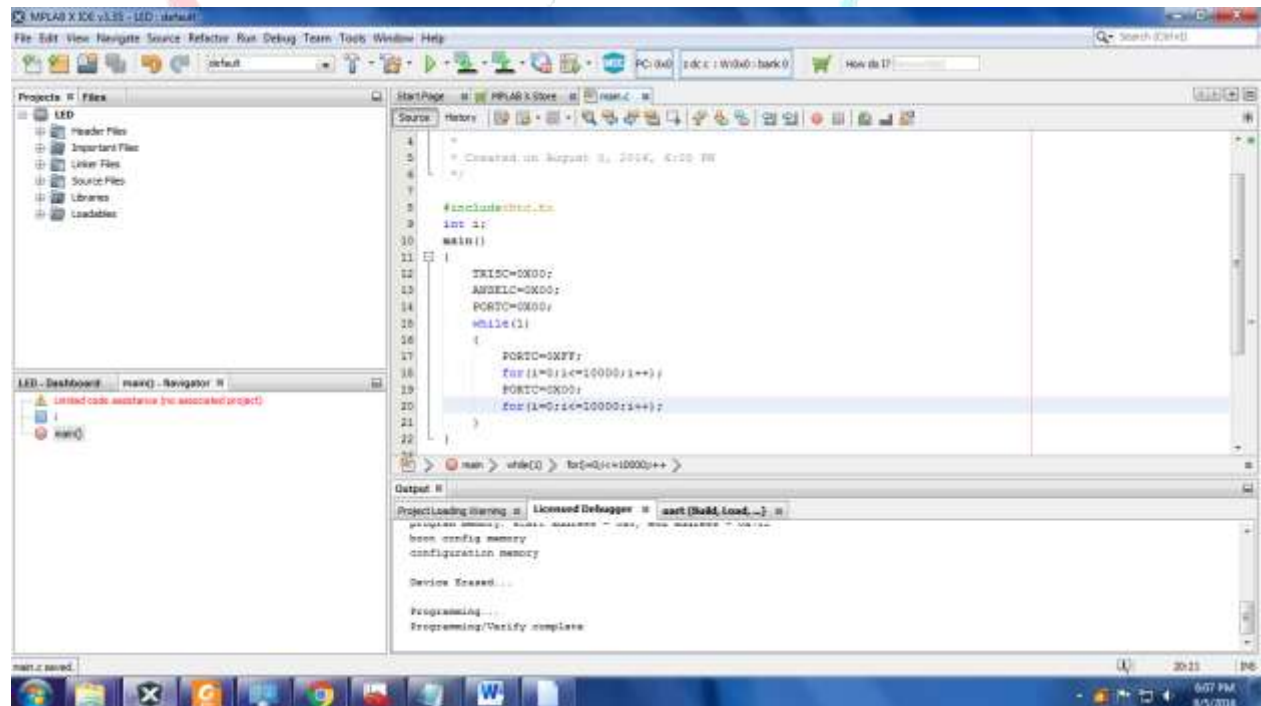


Figure 9 Editor Window with Code

SOURCE CODE:

```
#include<htc.h>
#define OUT PORTC
void ADCC_Initialize(void)    //ADC initialization
{

    ADCON1 = 0x00;
    ADCON2 = 0x00;
    ADCON3 = 0x00;
    ADACT = 0x00;
    ADSTAT = 0x00;
    ADCLK = 0x00;
    ADREF = 0x00;
    ADCAP = 0x00;
    ADPRE = 0x00;
    ADACQ = 0x05;
    ADRPT = 0x00;
    ADLTHL = 0x00;
    ADLTHH = 0x00;
    ADUTHL = 0x00;
    ADUTHH = 0x00;
    ADSTPTL = 0x00;
    ADSTPTH = 0x00;
    ADCON0 = 0x84;
}
```

```
int ADCC_GetSingleConversion()
{
    ADPCH = 4;                // select the A/D channel
    ADCON0bits.ADON = 1;
    ADCON0bits.ADCONT = 0;
    ADCON0bits.ADGO = 1;
    while (!ADCON0bits.DONE);
    return ADRESL;
}

char adc_value;
main()
{
    TRISC=0X00;
    TRISA4=1;
    ANSA4=1;
    ANSELC=0X00;
    ADCC_Initialize();
    while(1)
    {
        OUT=ADCC_GetSingleConversion();    // Display the result
    }
}
```


10: After writing code, save it then Go to **Run >> Clean and Build main project.**

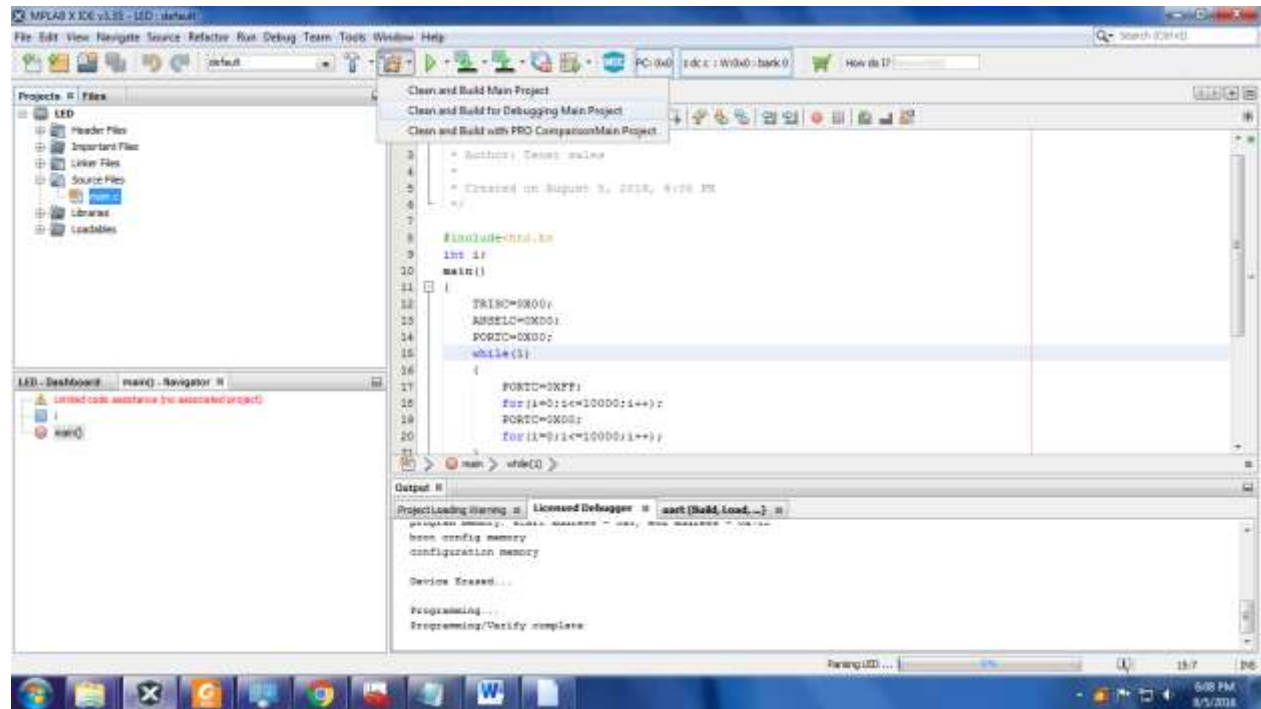
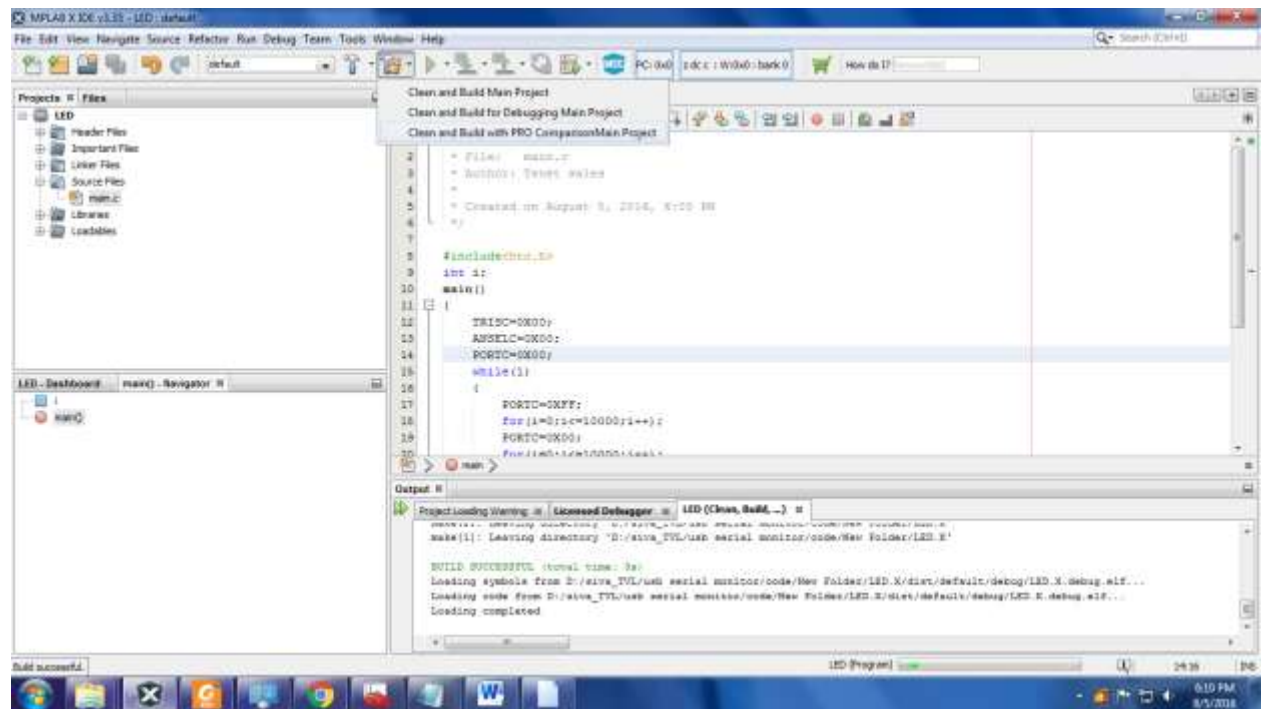


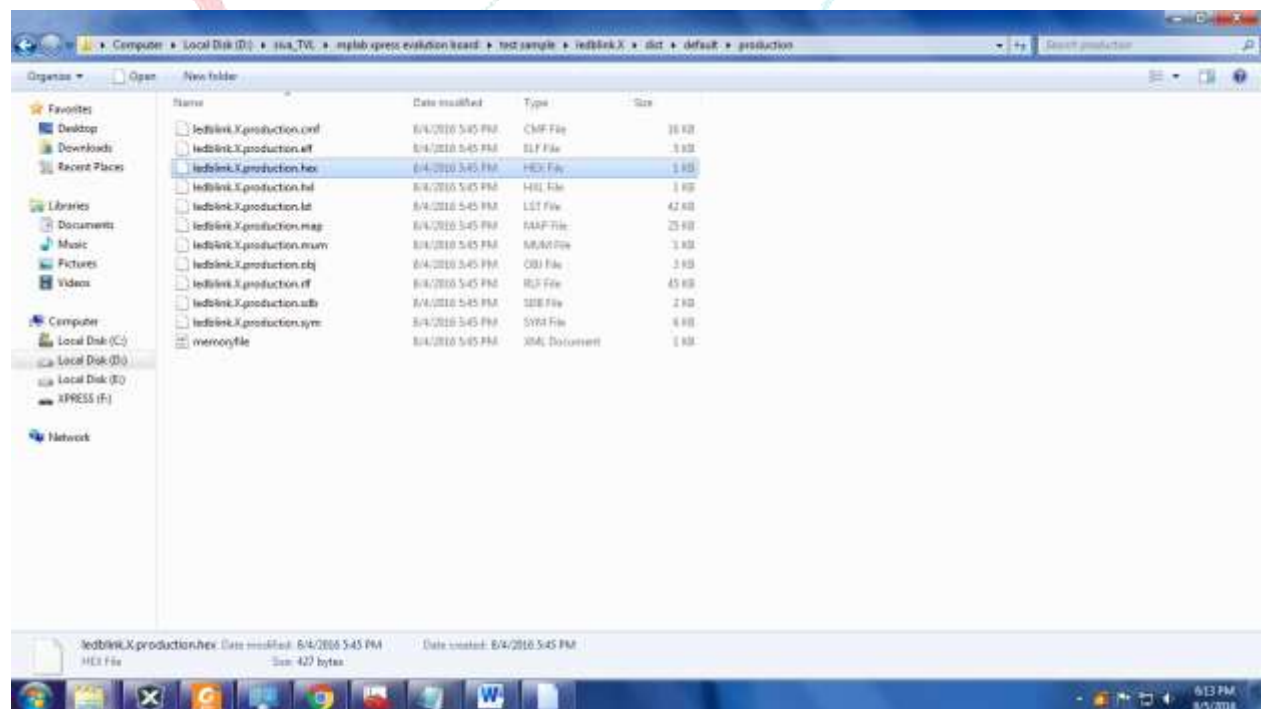
Figure 10 Build the project

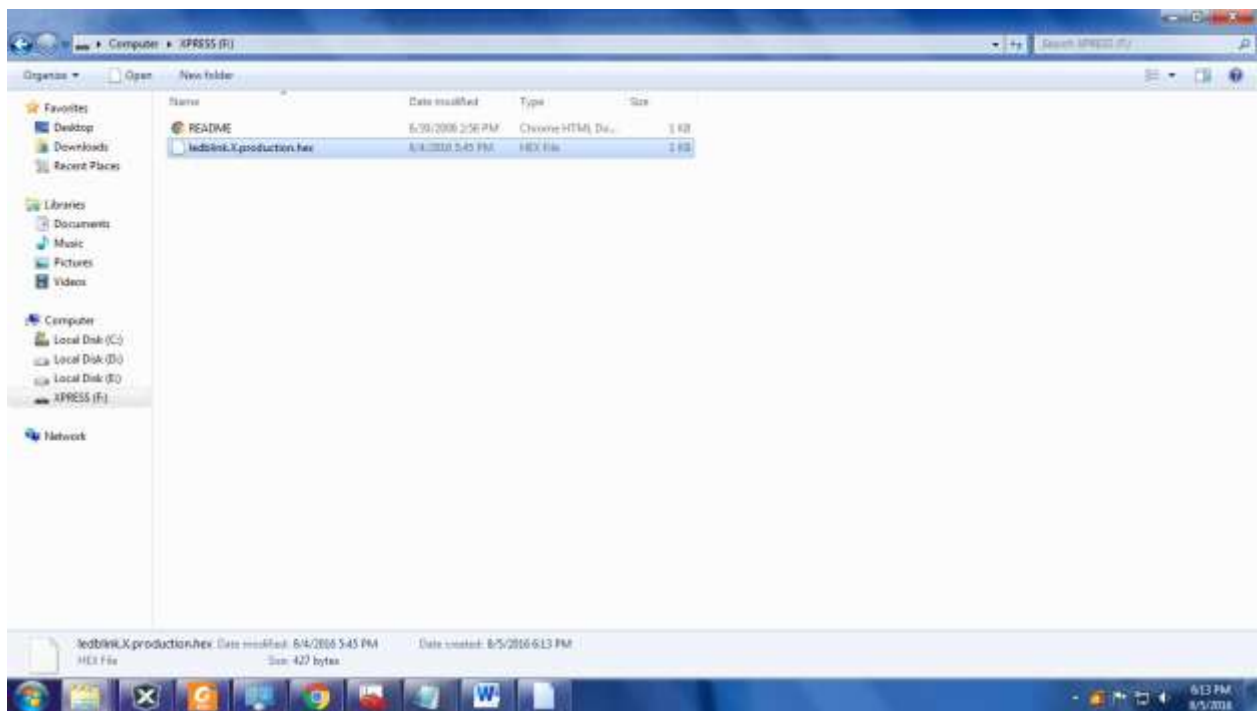
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Step 11: Now, if all goes well connect the Micro B cable to pic16f18855 and connect with PC



Step 12: To upload the project file, copy your hex file(.hex) past to your device. Ensure your device connection.



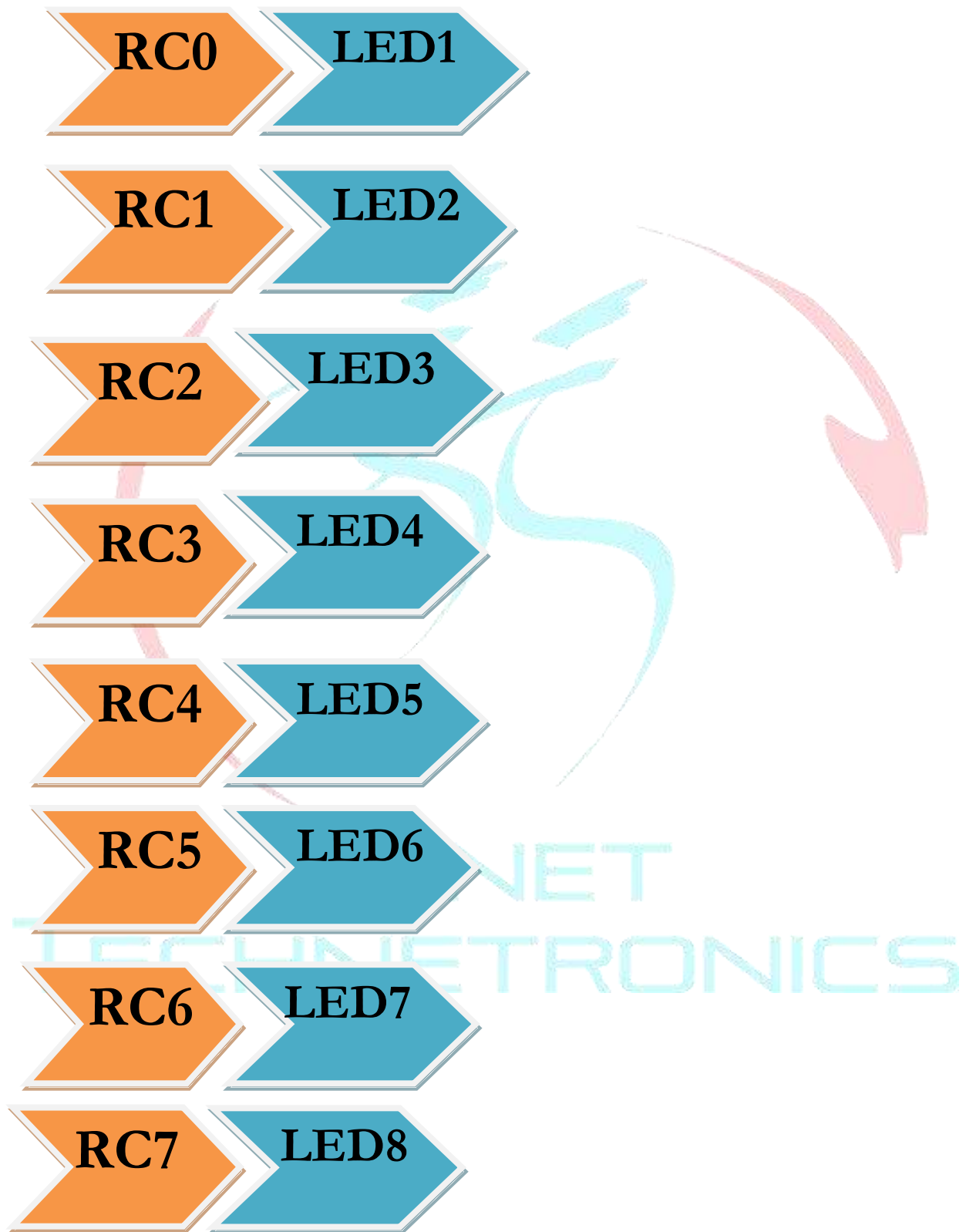


OUTPUT:



Figure 12 output

Pin description





For product link:

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

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For more information please visit: www.tenettech.com

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