



2016

Interfacing Seven Segment Display 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, 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
 - Micro B Cable
 - GPIO Board
 - Jumper wires
- Software:
 - MPLAB Xpress IDE

Step 1: Open your Browser and go to following link

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

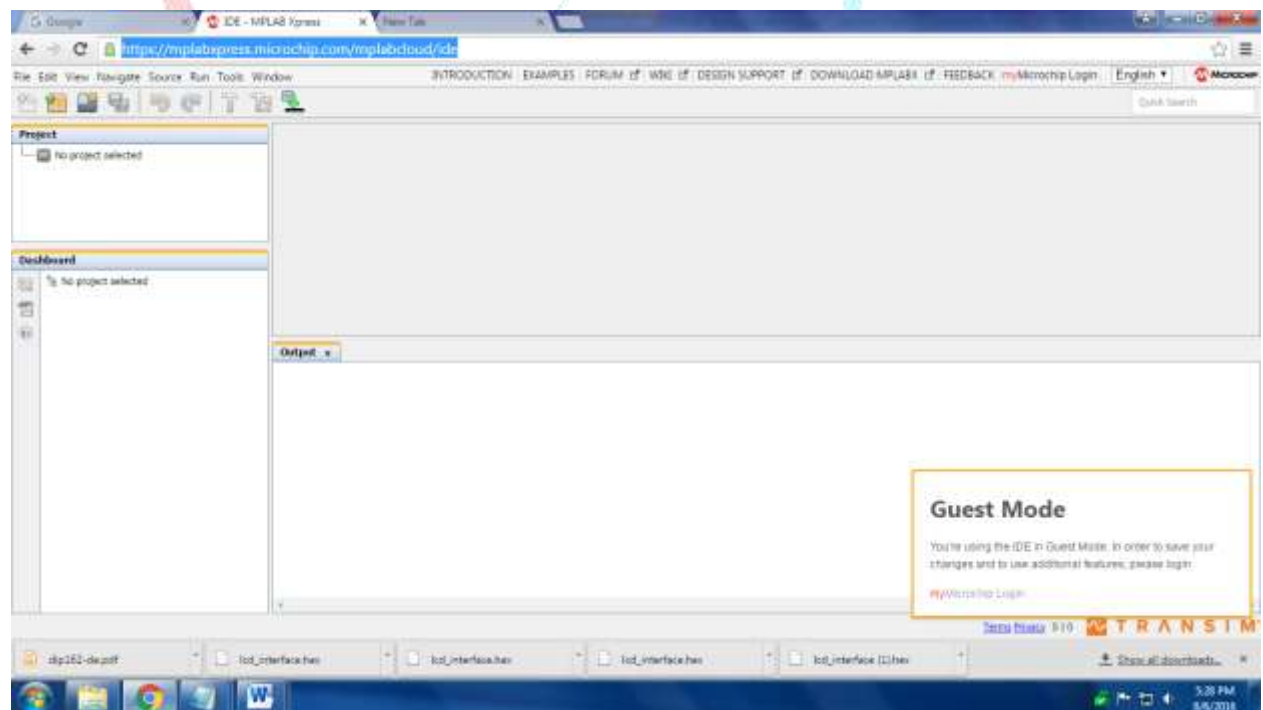


Figure 1 MPLAB Xpress IDE main window

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

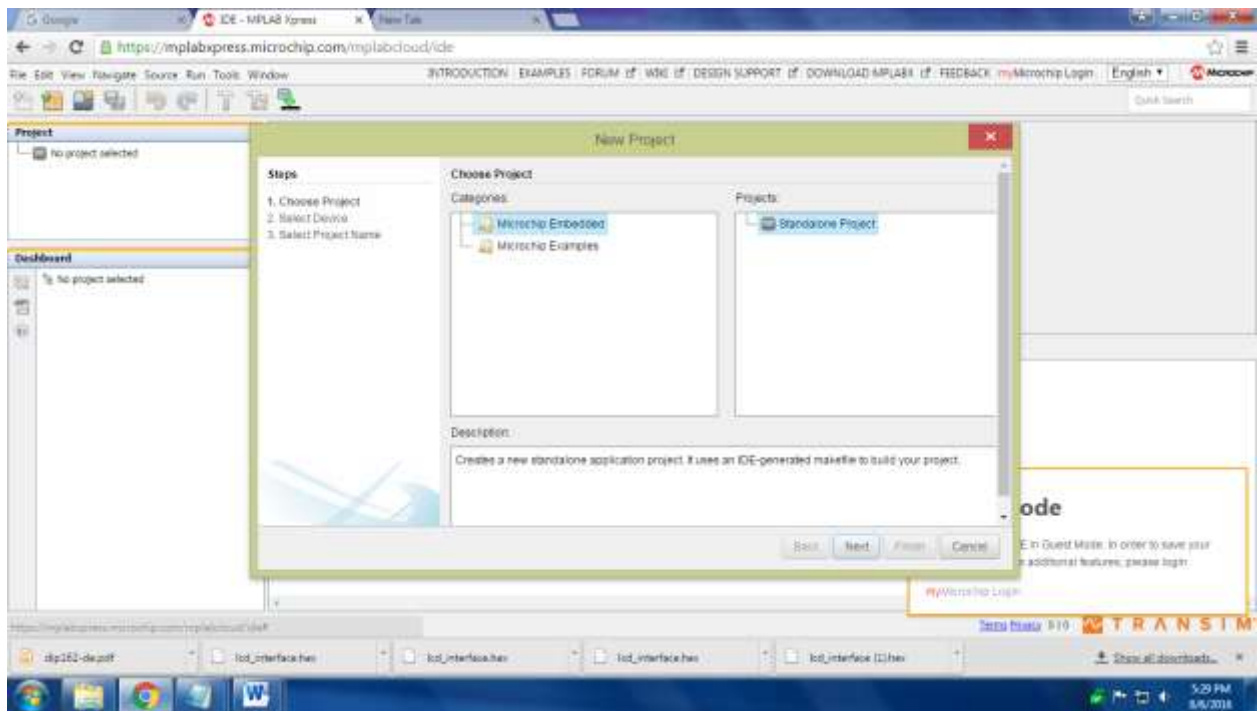


Figure 2 Open new project

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

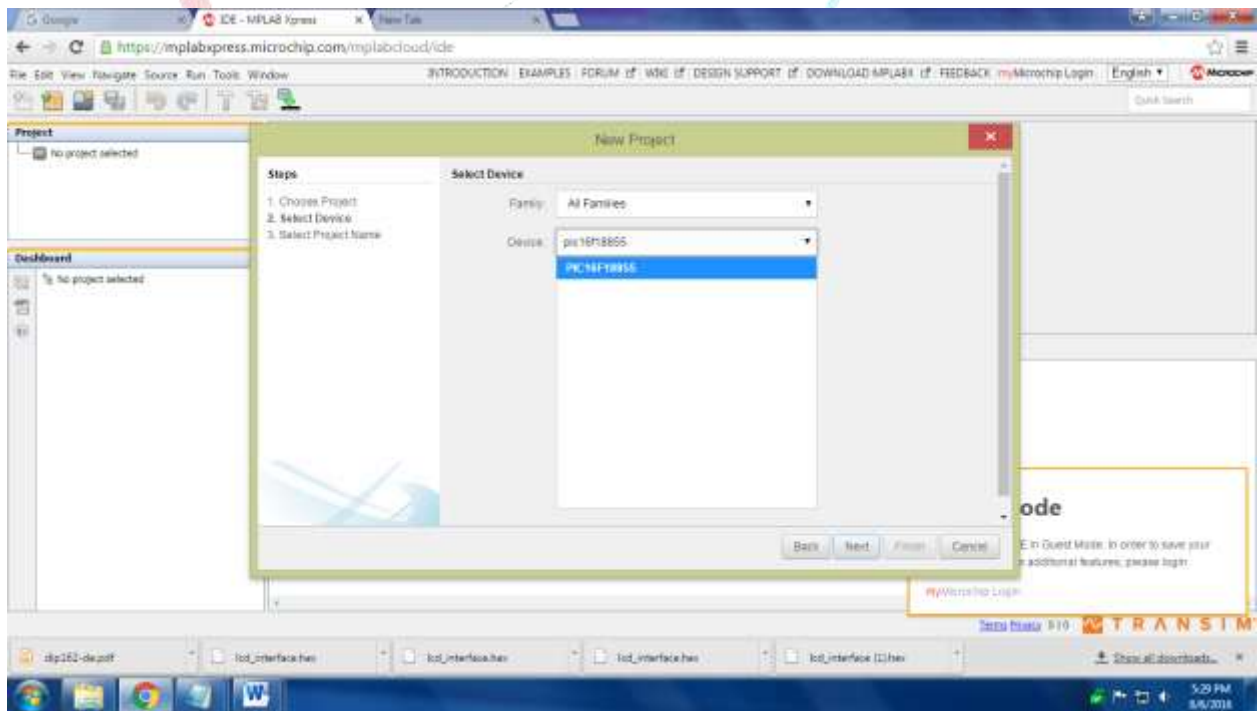


Figure 3 select Device

Step 4: then give project name and click finish.

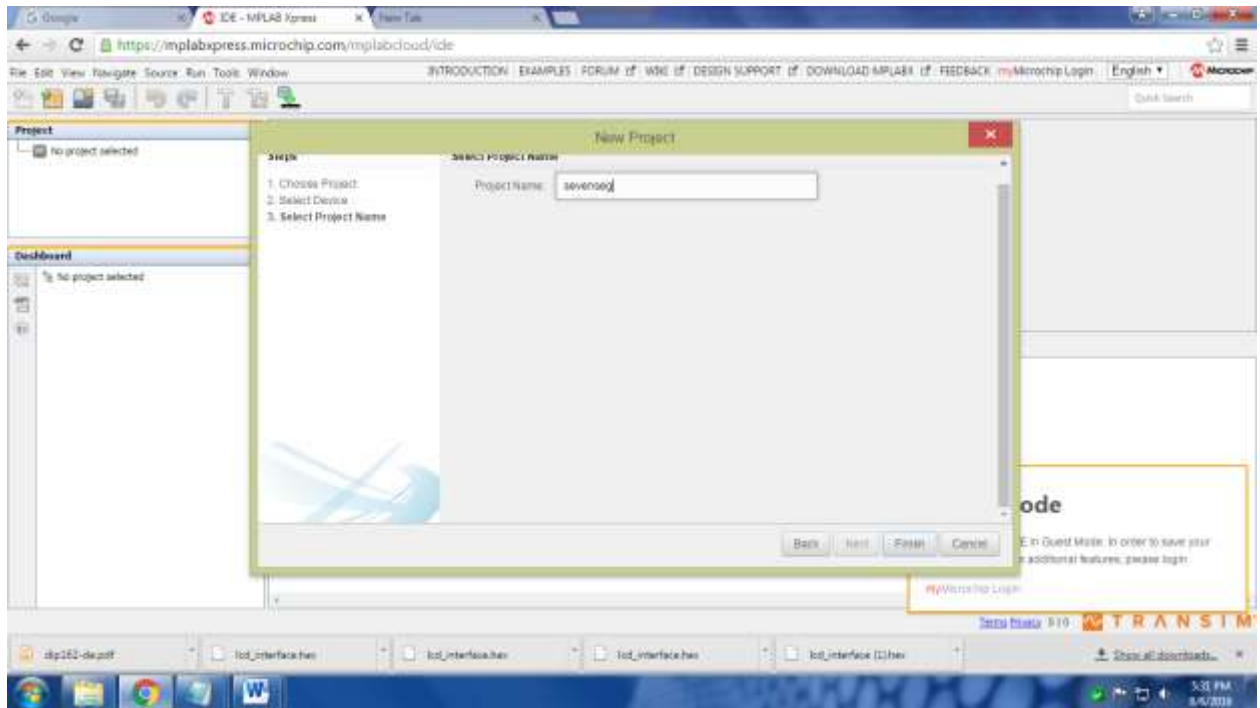


Figure 4 give project name

Step 5: Now choose MPLAB Xpress code configurator if its not present in your Device please [Download and install](#)

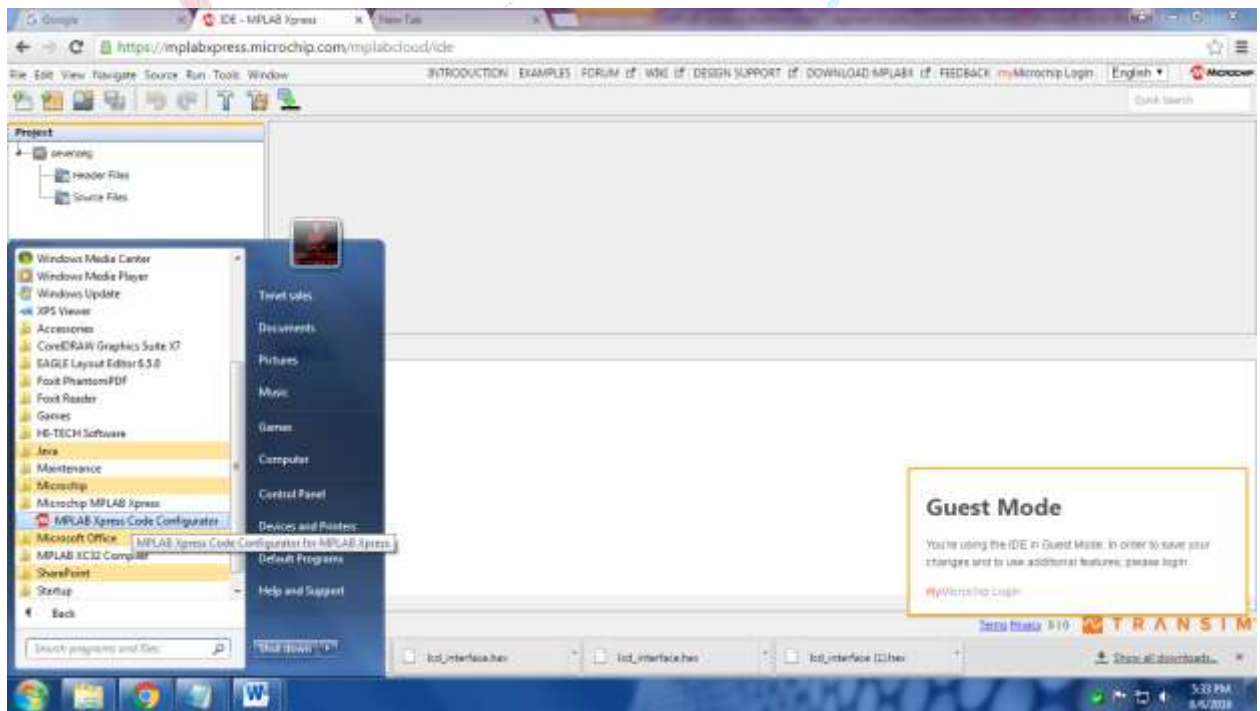


Figure 5 Select mplab xpress code configurator

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

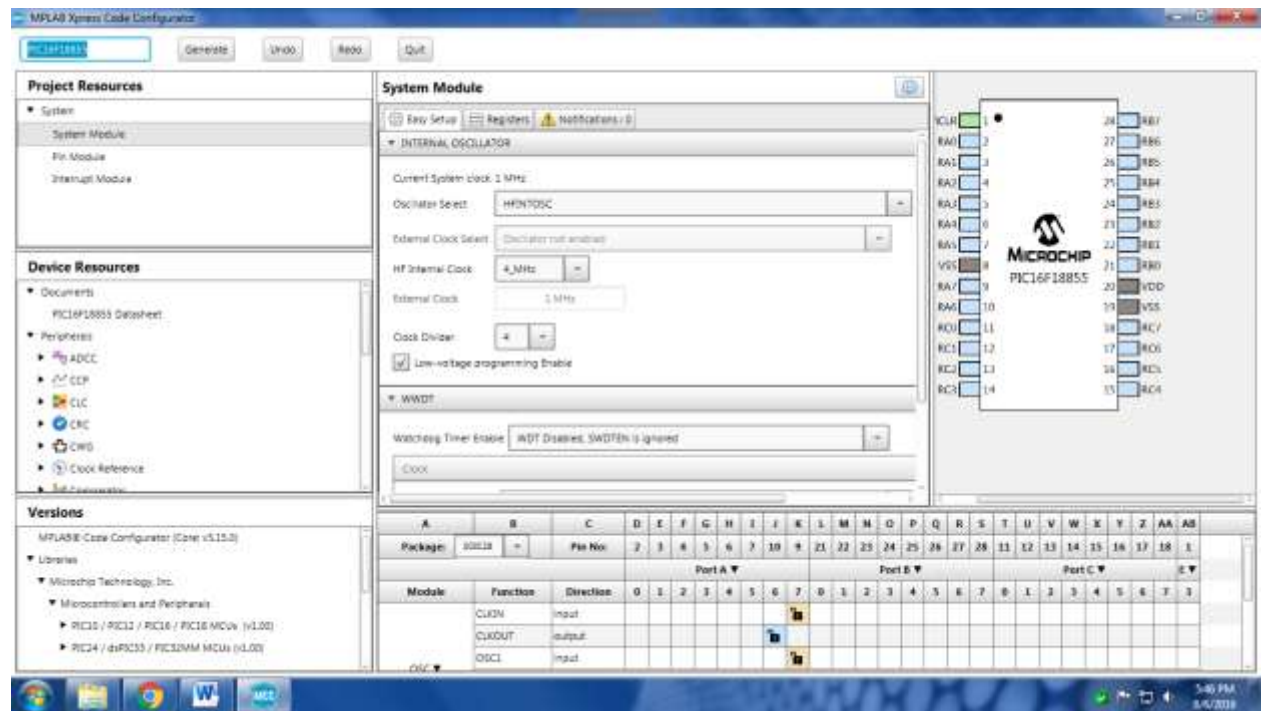


Figure 6 Assign project name

Step 7: Make oscillator configuration in MPLAB Xpress configuration window

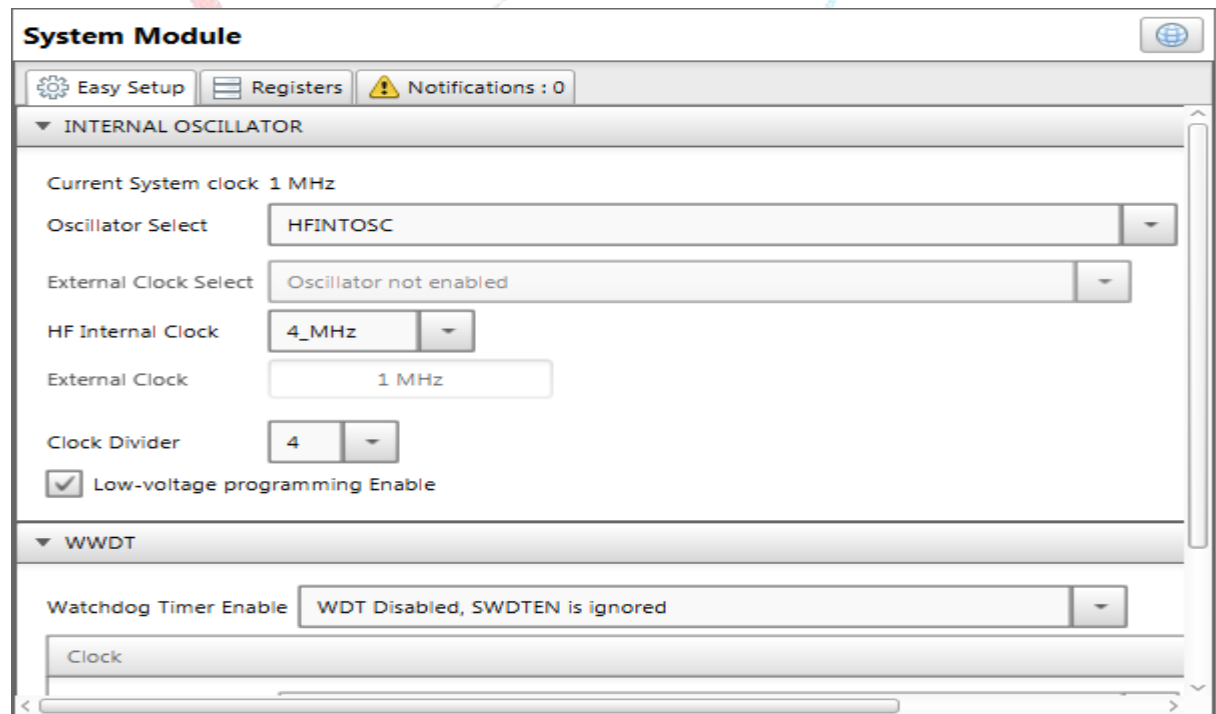


Figure 7 oscillator configuration

MPLAB Xpress Code Configurator

PIC16F18855 Generate Undo Redo Quit

Project Resources

- System
 - System Module
 - Pin Module
 - Interrupt Module

Device Resources

- Documents
 - PIC16F18855 Datasheet
- Peripherals
 - ADCC
 - CCP
 - CLC
 - CMC
 - CMD
 - Clock Reference
 - Sub-Processors

Versions

MPLAB Xpress Code Configurator (Core v3.15.3)

- Libraries
 - Microchip Technology, Inc.
 - Microcontrollers and Peripherals
 - PIC16 / PIC12 / PIC16 / PIC18 MCUs (v1.0.0)
 - PIC16 / dsPIC33 / PIC18MM MCUs (v1.0.0)

Pin Module

Easy Setup Registers Notifications: 0

Selected Package: PIC16F18855

Pin Name	Module	Function	Custom Name	Start High	Analog	Output	WPI
RA0	Pin Module	GPIO	IO_RA0	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
RA1	Pin Module	GPIO	IO_RA1	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
RA2	Pin Module	GPIO	IO_RA2	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
RA3	Pin Module	GPIO	IO_RA3	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
RA4	Pin Module	GPIO	IO_RA4	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
RA5	Pin Module	GPIO	IO_RA5	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
RA6	Pin Module	GPIO	IO_RA6	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
RA7	Pin Module	GPIO	IO_RA7	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Diagram of PIC16F18855 pinout:

- Pin 1: CLR
- Pin 2: GPIO
- Pin 3: GPIO
- Pin 4: GPIO
- Pin 5: GPIO
- Pin 6: GPIO
- Pin 7: GPIO
- Pin 8: VSS
- Pin 9: GPIO
- Pin 10: GPIO
- Pin 11: RC0
- Pin 12: RC1
- Pin 13: RC2
- Pin 14: RC3
- Pin 15: RC4
- Pin 16: RC5
- Pin 17: RC6
- Pin 18: RC7
- Pin 19: VSS
- Pin 20: VDD
- Pin 21: RC8
- Pin 22: RC9
- Pin 23: RC10
- Pin 24: RC11
- Pin 25: RC12
- Pin 26: RC13
- Pin 27: RC14
- Pin 28: RC15

Package	GPIO	Pin No.	2	3	4	5	6	7	10	9	21	22	23	24	25	26	27	28	12	13	14	15	16	17	18	1	AA	AB
Module	Function	Direction	0	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7	0	1
Pin Module	GPIO	input	0	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7	0	1
Pin Module	GPIO	output	0	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7	0	1
RESET	MCU	input	0	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7	0	1

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Step 9: Now click Generate option.

The screenshot displays the MPLAB Xpress Code Configurator (Part 1) for the PIC16F18855 microcontroller. The interface is divided into several sections:

- Project Resources:** Includes System, Pin Module, and Interrupt Module.
- Device Resources:** Includes Documents (PIC16F18855 Datasheet) and Peripherals (ADCC, CCP, CLC, CRC, CWG, Clock Reference).
- Versions:** Lists the MPLAB Xpress Code Configurator (v15.0) and the Microchip Technology, Inc. libraries (Microcontrollers and Peripherals).
- Pin Module:** This section is the primary focus, showing a table of pin configurations and a physical pinout diagram.

The **Pin Module** section contains a table with the following columns: Pin Name, Module, Function, Custom Name, Start High, Analog, Output, and WDT. The table lists pins RA0 through RA7, each configured as a GPIO module with a custom name (e.g., IO_RA0) and an output function. The WDT column is checked for all pins.

To the right of the table is a physical pinout diagram of the PIC16F18855 microcontroller, showing the pin numbers (1-28) and their corresponding functions (e.g., RA0, RA1, RA2, RA3, RA4, RA5, RA6, RA7, VSS, VDD, RC0, RC1, RC2, RC3, RC4).

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SOURCE CODE:

```
#include "mcc_generated_files/mcc.h"

Char siva_disp[]={0xF9,0XA4,0XB0,0X99,0X92,0X82,0XF8,0X80,0X98,0XC0,'\0'};

int i,j=0;

void main(void)
{
    SYSTEM_Initialize();           // initialize the device
    while (1)
    {
        for(j=0;j<10;j++)
        {
            PORTA=siva_disp[j];    //display the values
            for(i=0;i<=10000;i++);  //delay
        }
    }
}
```

TENET
TECHNETRONICS

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

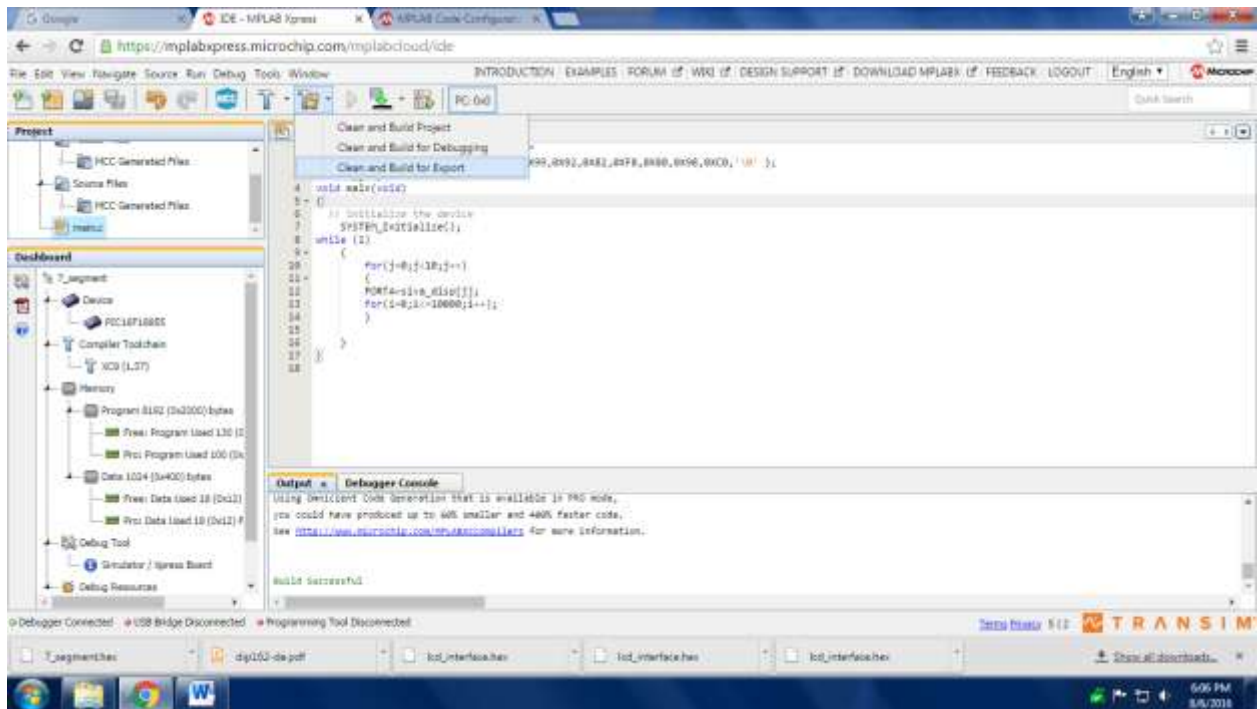
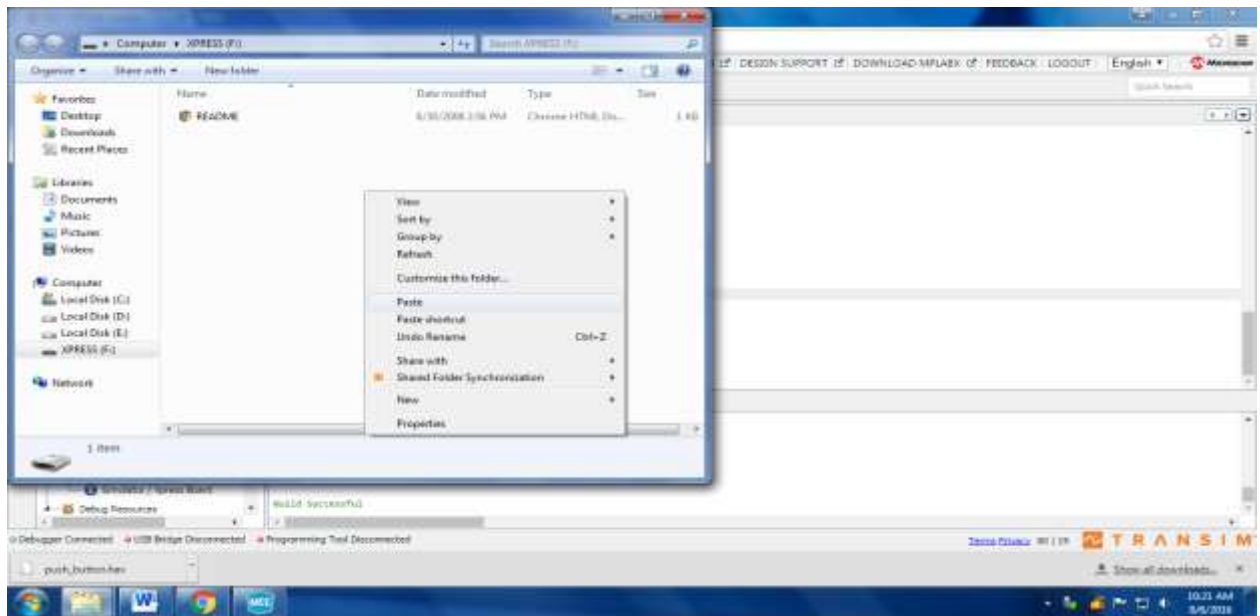


Figure 10 Build the project

TENET
TECHNETRONICS

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.



OUTPUT:

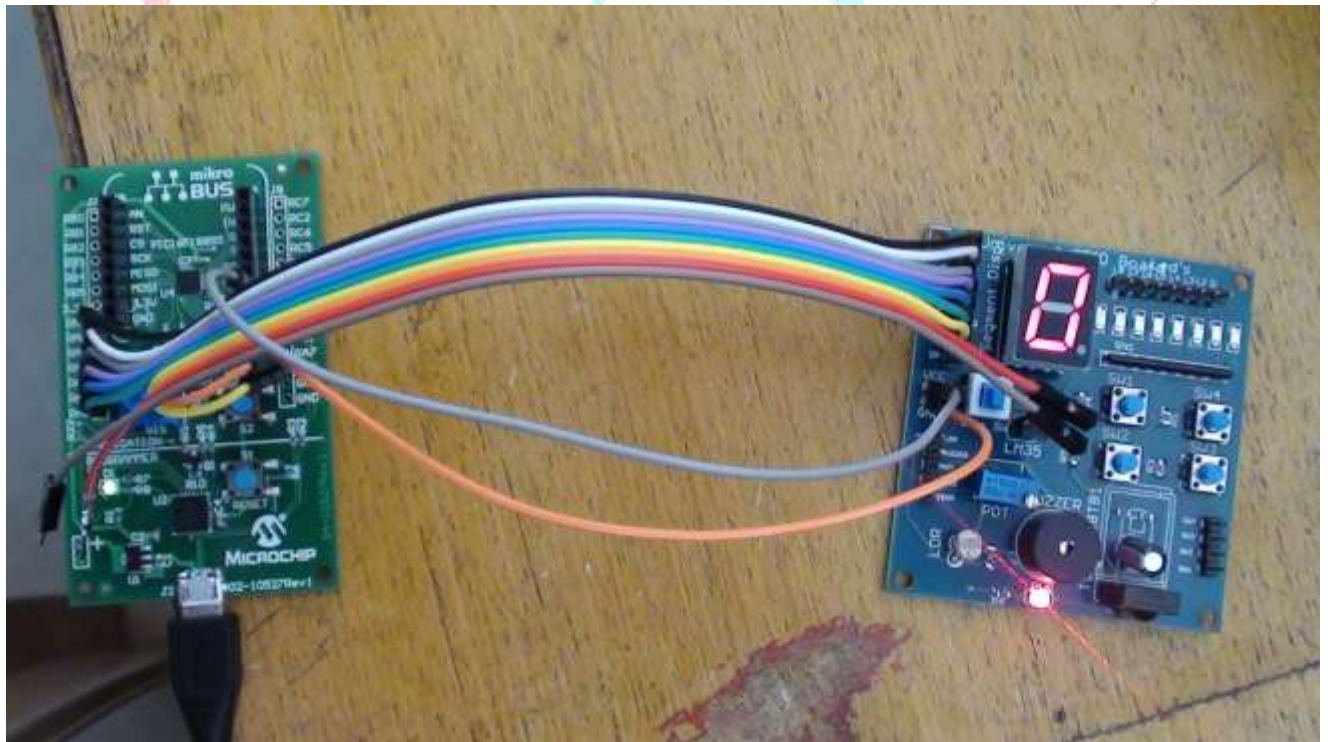


Figure 12 output

Pin connection:



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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