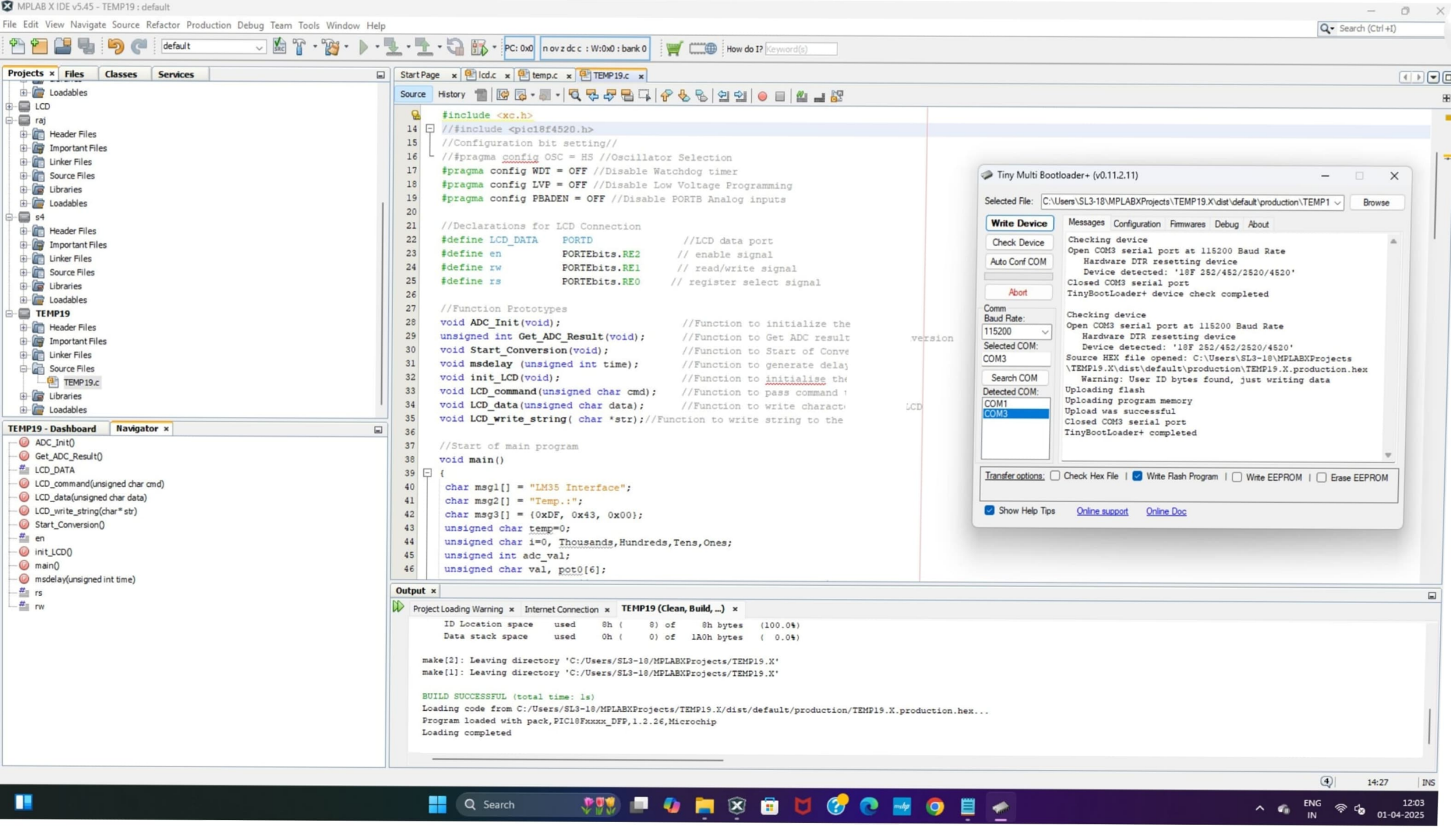
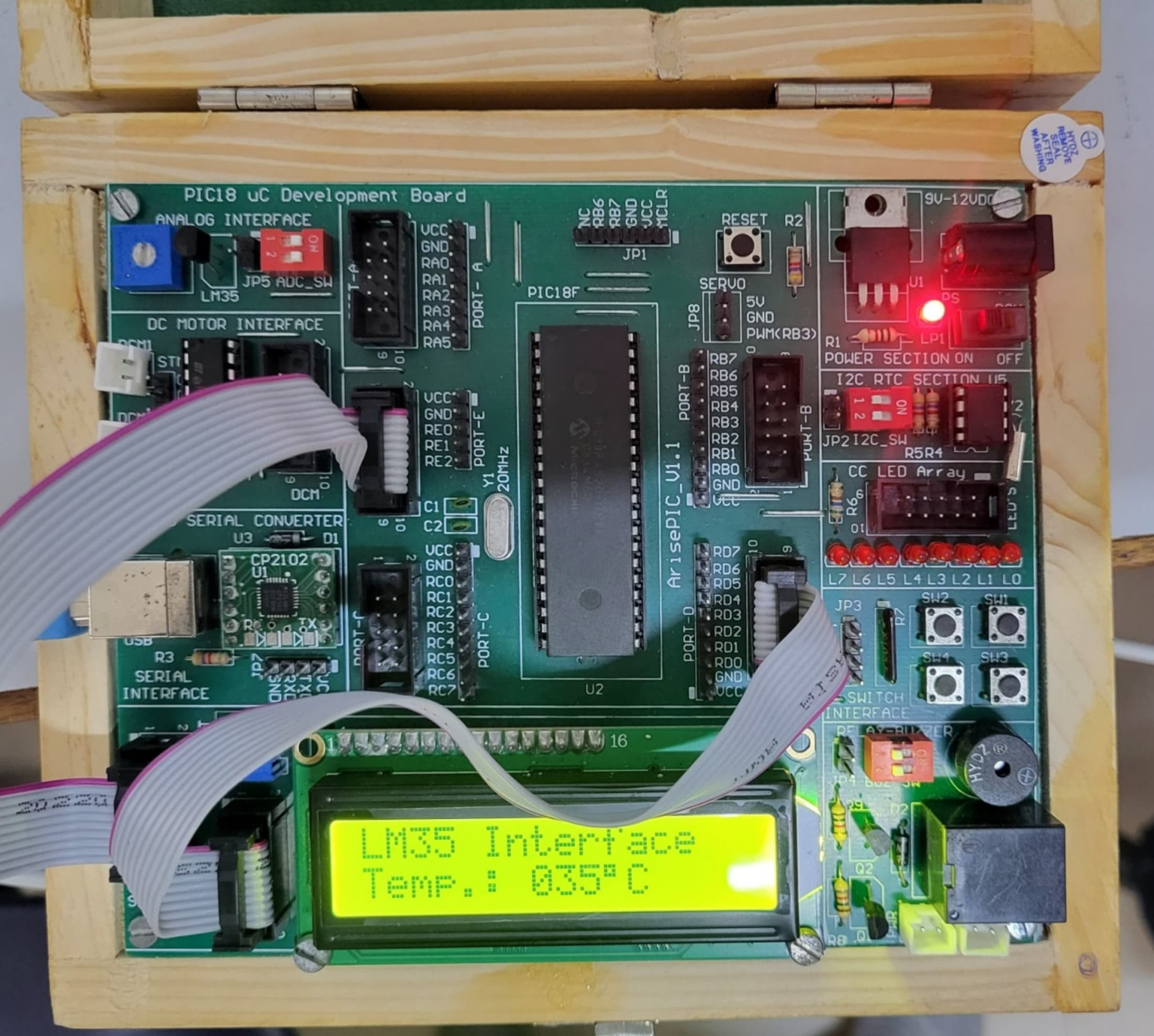
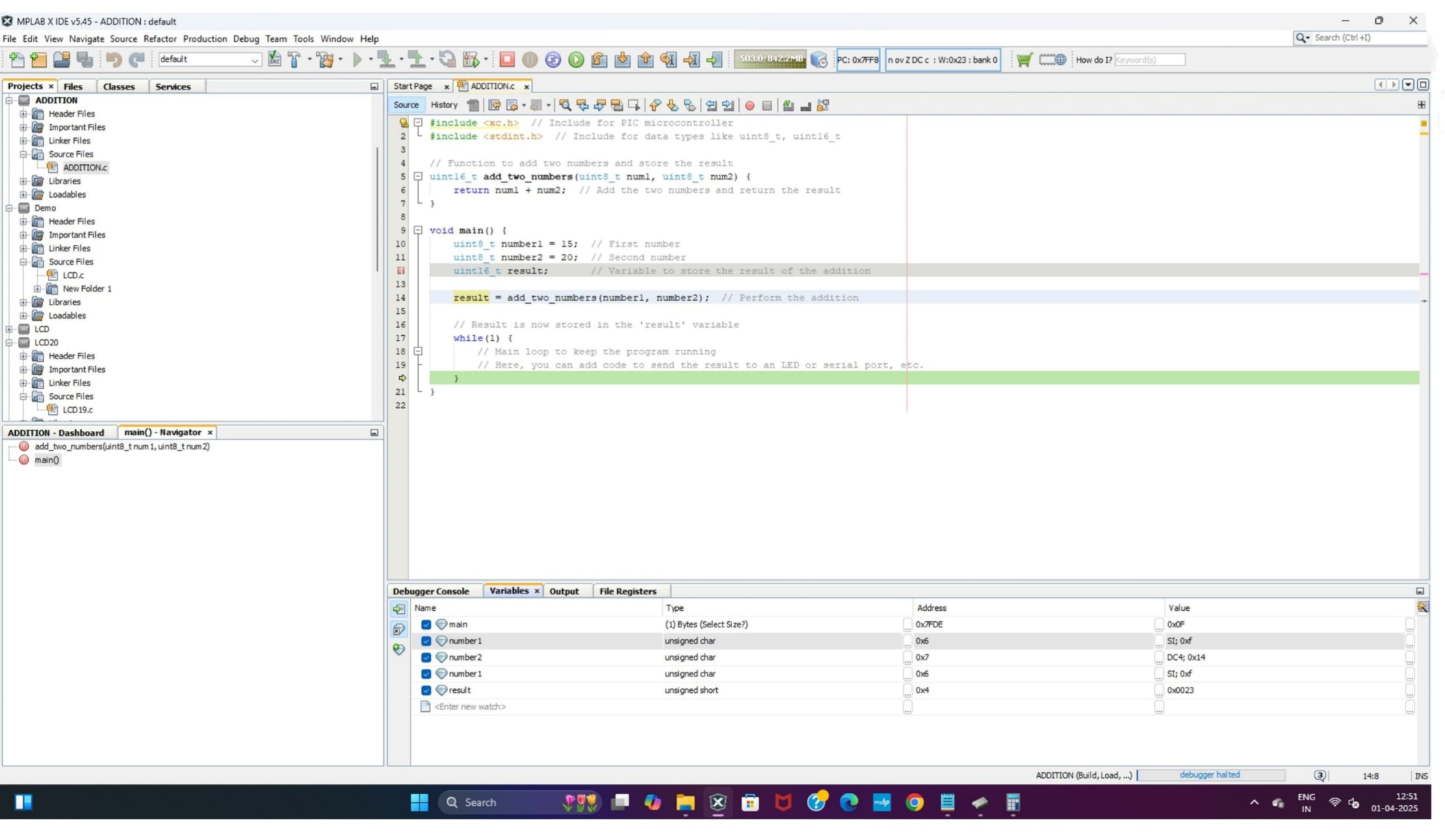

MPLAB X IDE v5.45 - TEMP19 : default
File Edit View Navigate Source Refactor Production Debug Team Tools Window Help
Projects Files Classes Services
Loadables
LCD
raj
Header Files
Important Files
Linker Files
Source Files
Libraries
Loadables
s4
Header Files
Important Files
Linker Files
Source Files
Libraries
Loadables
TEMP19
Header Files
Important Files
Linker Files
Source Files
TEMP19.c
Libraries
Loadables
TEMP19 - Dashboard
Navigator
ADC_Init()
Get_ADC_Result()
LCD_DATA
LCD_command(unsigned char cmd)
LCD_data(unsigned char data)
LCD_write_string(char* str)
Start_Conversion()
en
init_LCD()
main()
msdelay(unsigned int time)
rs
rw
Start Page
lcd.c
temp.c
TEMP19.c
Source
History
#include <xc.h>
//#include <pic18f4520.h>
//Configuration bit setting//
//#pragma config OSC = HS //Oscillator Selection
#pragma config WDT = OFF //Disable Watchdog timer
#pragma config LVP = OFF //Disable Low Voltage Programming
#pragma config PBADEN = OFF //Disable PORTB Analog inputs
//Declarations for LCD Connection
#define LCD_DATA PORTD //LCD data port
#define en PORTEbits.RE2 // enable signal
#define rw PORTEbits.RE1 // read/write signal
#define rs PORTEbits.RE0 // register select signal
//Function Prototypes
void ADC_Init(void); //Function to initialize the
unsigned int Get_ADC_Result(void); //Function to Get ADC result
void Start_Conversion(void); //Function to Start of Conve
void msdelay (unsigned int time); //Function to generate delay
void init_LCD(void); //Function to initialise th
void LCD_command(unsigned char cmd); //Function to pass command
void LCD_data(unsigned char data); //Function to write charact
void LCD_write_string(char *str);//Function to write string to the
//Start of main program
void main()
{
char msg1[] = "LM35 Interface";
char msg2[] = "Temp.:";
char msg3[] = {0xDF, 0x43, 0x00};
unsigned char temp=0;
unsigned char i=0, Thousands,Hundreds,Tens,Ones;
unsigned int adc_val;
unsigned char val, pot0[6];
Tiny Multi Bootloader+ (v0.11.2.11)
Selected File: C:\Users\SL3-18\MPLABXProjects\TEMP19.X\dist\default\production\TEMP1
Browse
Write Device
Check Device
Auto Conf COM
Abort
Comm Baud Rate:
115200
Selected COM:
COM3
Search COM
Detected COM:
COM1
COM3
Messages Configuration Fimwares Debug About
Checking device
Open COM3 serial port at 115200 Baud Rate
Hardware DTR resetting device
Device detected: '18F 252/452/2520/4520'
Closed COM3 serial port
TinyBootLoader+ device check completed
Checking device
Open COM3 serial port at 115200 Baud Rate
Hardware DTR resetting device
Device detected: '18F 252/452/2520/4520'
Source HEX file opened: C:\Users\SL3-18\MPLABXProjects\TEMP19.X\dist\default\production\TEMP19.X.production.hex
Warning: User ID bytes found, just writing data
Uploading flash
Uploading program memory
Upload was successful
Closed COM3 serial port
TinyBootLoader+ completed
Transfer options: Check Hex File | Write Flash Program | Write EEPROM | Erase EEPROM
Show Help Tips Online support Online Doc
Output
Project Loading Warning
Internet Connection
TEMP19 (Clean, Build, ...)
ID Location space used 0h (0) of 8h bytes (100.0%)
Data stack space used 0h (0) of 1A0h bytes (0.0%)
make[2]: Leaving directory 'C:/Users/SL3-18/MPLABXProjects/TEMP19.X'
make[1]: Leaving directory 'C:/Users/SL3-18/MPLABXProjects/TEMP19.X'
BUILD SUCCESSFUL (total time: 1s)
Loading code from C:/Users/SL3-18/MPLABXProjects/TEMP19.X/dist/default/production/TEMP19.X.production.hex...
Program loaded with pack,PIC18Fxxxx_DFP,1.2.26,Microchip
Loading completed
14:27
INS
Search
ENG IN
12:03 01-04-2025


PIC18 uC Development Board
ANALOG INTERFACE
LM35
JP5 ADC_SW
DC MOTOR INTERFACE
SERIAL CONVERTER
CP2102
SERIAL INTERFACE
PIC18F
ArisePIC_V1.1
RESET
SERVO
POWER SECTION ON OFF
I2C RTC SECTION U5
JP2 I2C_SW
CC LED Array
L7 L6 L5 L4 L3 L2 L1 L0
SWITCH INTERFACE
RELAY-BUZZER
LM35 Interface
Temp.: 035°C


MPLAB X IDE v5.45 - ADDITION : default
File Edit View Navigate Source Refactor Production Debug Team Tools Window Help
Projects Files Classes Services
ADDITION
Header Files
Important Files
Linker Files
Source Files
ADDITION.c
Libraries
Loadables
Demo
Header Files
Important Files
Linker Files
Source Files
LCD.c
New Folder 1
Libraries
Loadables
LCD
LCD20
Header Files
Important Files
Linker Files
Source Files
LCD19.c
ADDITION - Dashboard
main() - Navigator
add_two_numbers(uint8_t num1, uint8_t num2)
main()
Start Page
ADDITION.c
Source History
#include <xc.h> // Include for PIC microcontroller
#include <stdint.h> // Include for data types like uint8_t, uint16_t
// Function to add two numbers and store the result
uint16_t add_two_numbers(uint8_t num1, uint8_t num2) {
return num1 + num2; // Add the two numbers and return the result
}
void main() {
uint8_t number1 = 15; // First number
uint8_t number2 = 20; // Second number
uint16_t result; // Variable to store the result of the addition
result = add_two_numbers(number1, number2); // Perform the addition
// Result is now stored in the 'result' variable
while(1) {
// Main loop to keep the program running
// Here, you can add code to send the result to an LED or serial port, etc.
}
}
Debugger Console
Variables
Output
File Registers
Name
Type
Address
Value
main
(1) Bytes (Select Size?)
0x7FDE
0x0F
number1
unsigned char
0x6
SI; 0xf
number2
unsigned char
0x7
DC4; 0x14
number1
unsigned char
0x6
SI; 0xf
result
unsigned short
0x4
0x0023
<Enter new watch>
ADDITION (Build, Load, ...)
debugger halted
14:8
INS
Search
ENG
IN
12:51
01-04-2025

MPLAB X IDE v5.45 - ADDITION : default

File Edit View Navigate Source Refactor Production Debug Team Tools Window Help

default

PC: 0x7FF8 | n ov Z DC c : W:0x23 : bank 0 | How do I? Keyword(s)

Projects | Files | Classes | Services

- ADDITION
  - Header Files
  - Important Files
  - Linker Files
  - Source Files
    - ADDITION.c
  - Libraries
  - Loadables
- Demo
  - Header Files
  - Important Files
  - Linker Files
  - Source Files
    - LCD.c
    - New Folder 1
  - Libraries
  - Loadables
- LCD
- LCD20
  - Header Files
  - Important Files
  - Linker Files
  - Source Files
    - LCD19.c

ADDITION - Dashboard | main() - Navigator

- add_two_numbers(uint8_t num1, uint8_t num2)
- main()

Start Page | ADDITION.c

Source | History

```
1  #include <xc.h>  // Include for PIC microcontroller
2  #include <stdint.h>  // Include for data types like uint8_t, uint16_t
3
4  // Function to add two numbers and store the result
5  uint16_t add_two_numbers(uint8_t num1, uint8_t num2) {
6      return num1 + num2;  // Add the two numbers and return the result
7  }
8
9  void main() {
10     uint8_t number1 = 15;  // First number
11     uint8_t number2 = 20;  // Second number
12     uint16_t result;       // Variable to store the result of the addition
13
14     result = add_two_numbers(number1, number2);  // Perform the addition
15
16     // Result is now stored in the 'result' variable
17     while(1) {
18         // Main loop to keep the program running
19         // Here, you can add code to send the result to an LED or serial port, etc.
20     }
21 }
22
```

Debugger Console | Variables | Output | File Registers

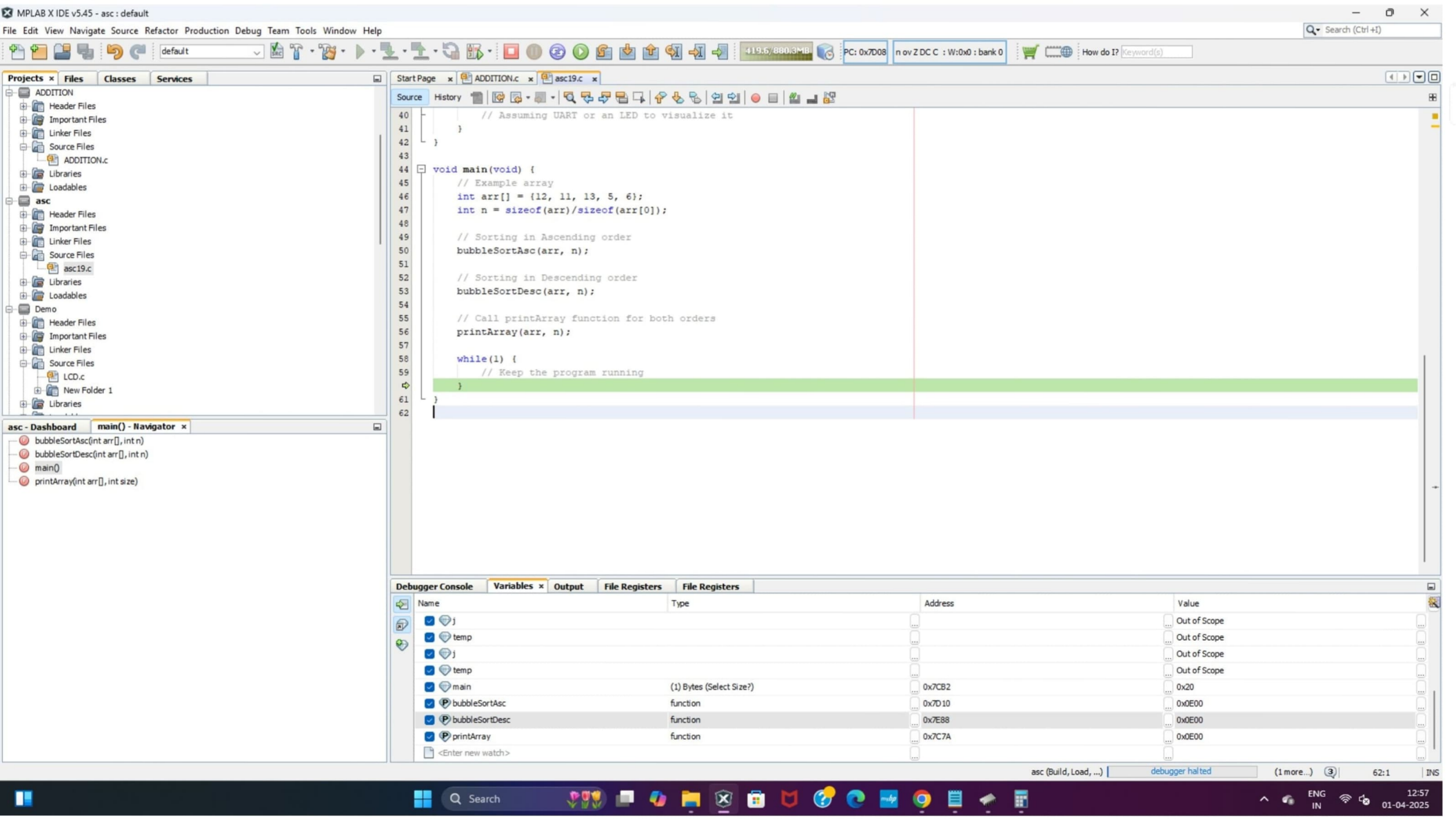
Address	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F	ASCII
000	00	23	00	0F	23	00	0F	14	00	00	00	00	00	00	00	00	.#..#... ....
010	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	....
020	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	....
030	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	....
040	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	....
050	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	....
060	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	....
070	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	....
080	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	....

Memory: File Registers Format: Hex

ADDITION (Build, Load, ...) | debugger halted | 14:8 | INS

Search

ENG IN 12:51 01-04-2025


MPLAB X IDE v5.45 - asc : default
File Edit View Navigate Source Refactor Production Debug Team Tools Window Help
Projects Files Classes Services
ADDITION
Header Files
Important Files
Linker Files
Source Files
ADDITION.c
Libraries
Loadables
asc
Header Files
Important Files
Linker Files
Source Files
asc19.c
Libraries
Loadables
Demo
Header Files
Important Files
Linker Files
Source Files
LCD.c
New Folder 1
Libraries
asc - Dashboard
main() - Navigator
bubbleSortAsc(int arr[], int n)
bubbleSortDesc(int arr[], int n)
main()
printArray(int arr[], int size)
Start Page
ADDITION.c
asc19.c
Source
History
// Assuming UART or an LED to visualize it
}
}
void main(void) {
// Example array
int arr[] = {12, 11, 13, 5, 6};
int n = sizeof(arr)/sizeof(arr[0]);
// Sorting in Ascending order
bubbleSortAsc(arr, n);
// Sorting in Descending order
bubbleSortDesc(arr, n);
// Call printArray function for both orders
printArray(arr, n);
while(1) {
// Keep the program running
}
}
Debugger Console
Variables
Output
File Registers
File Registers
Name
Type
Address
Value
j
Out of Scope
temp
Out of Scope
j
Out of Scope
temp
Out of Scope
main
(1) Bytes (Select Size?)
0x7CB2
0x20
bubbleSortAsc
function
0x7D10
0x0E00
bubbleSortDesc
function
0x7E88
0x0E00
printArray
function
0x7C7A
0x0E00
<Enter new watch>
asc (Build, Load, ...)
debugger halted
62:1
INS
Search
ENG
IN
12:57
01-04-2025

MPLAB X IDE v5.45 - asc : default

File Edit View Navigate Source Refactor Production Debug Team Tools Window Help

default

PC: 0x7D08 | n ov Z DC C : W:0x0 : bank 0

How do I? Keyword(s)

Projects | Files | Classes | Services

- ADDITION
  - Header Files
  - Important Files
  - Linker Files
  - Source Files
    - ADDITION.c
  - Libraries
  - Loadables
- asc
  - Header Files
  - Important Files
  - Linker Files
  - Source Files
    - asc19.c
  - Libraries
  - Loadables
- Demo
  - Header Files
  - Important Files
  - Linker Files
  - Source Files
    - LCD.c
    - New Folder 1
  - Libraries

asc - Dashboard | main() - Navigator

- bubbleSortAsc(int arr[], int n)
- bubbleSortDesc(int arr[], int n)
- main()
- printArray(int arr[], int size)

Start Page | ADDITION.c | asc19.c

Source | History

```
40          // Assuming UART or an LED to visualize it
41      }
42  }
43
44  void main(void) {
45      // Example array
46      int arr[] = {12, 11, 13, 5, 6};
47      int n = sizeof(arr)/sizeof(arr[0]);
48
49      // Sorting in Ascending order
50      bubbleSortAsc(arr, n);
51
52      // Sorting in Descending order
53      bubbleSortDesc(arr, n);
54
55      // Call printArray function for both orders
56      printArray(arr, n);
57
58      while(1) {
59          // Keep the program running
60      }
61  }
62
```

Debugger Console | Variables | Output | File Registers | File Registers

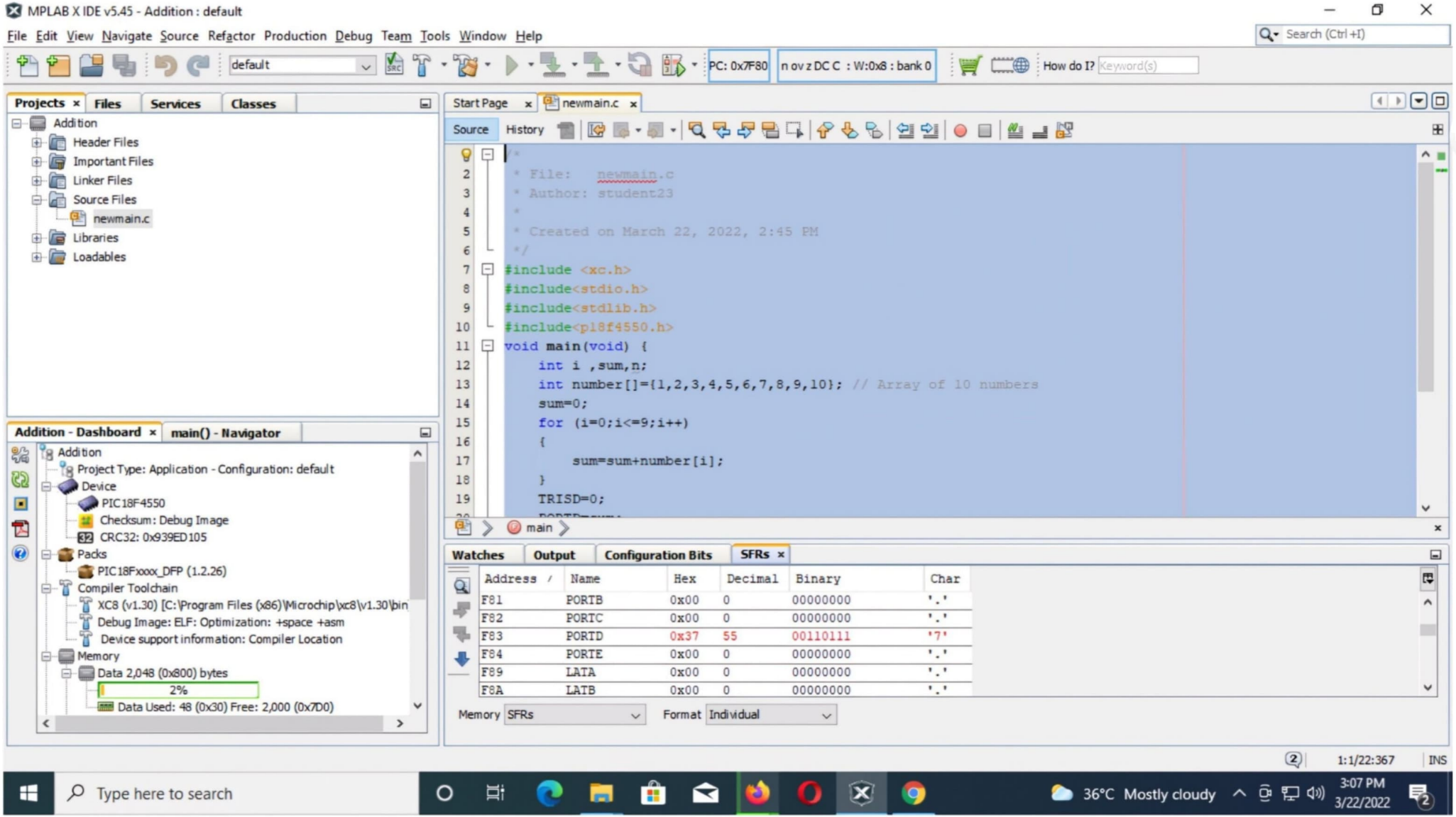
Address	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F	ASCII
000	00	12	00	05	00	80	05	00	00	80	00	80	0C	00	04	00	....
010	01	00	0D	00	0C	00	0B	00	06	00	05	00	05	00	0C	00	....
020	0B	00	0D	00	05	00	06	00	00	00	00	00	00	00	00	00	....
030	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	....
040	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	....
050	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	....
060	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	....
070	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	....
080	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	....

Memory: File Registers Format: Hex

asc (Build, Load, ...) | debugger halted | (1 more...) | 62:1 | INS

Search

ENG IN 12:57 01-04-2025


MPLAB X IDE v5.45 - Addition : default
File Edit View Navigate Source Refactor Production Debug Team Tools Window Help
Search (Ctrl+I)
default
PC: 0x7F80
n ov z DC C : W:0x8 : bank 0
How do I?
Keyword(s)
Projects
Files
Services
Classes
Addition
Header Files
Important Files
Linker Files
Source Files
newmain.c
Libraries
Loadables
Start Page
newmain.c
Source
History
/*
* File: newmain.c
* Author: student23
*
* Created on March 22, 2022, 2:45 PM
*/
#include <xc.h>
#include<stdio.h>
#include<stdlib.h>
#include<p18f4550.h>
void main(void) {
int i ,sum,n;
int number[]={1,2,3,4,5,6,7,8,9,10}; // Array of 10 numbers
sum=0;
for (i=0;i<=9;i++)
{
sum=sum+number[i];
}
TRISD=0;
main
Addition - Dashboard
main() - Navigator
Addition
Project Type: Application - Configuration: default
Device
PIC18F4550
Checksum: Debug Image
CRC32: 0x939ED105
Packs
PIC18Fxxxx_DFP (1.2.26)
Compiler Toolchain
XC8 (v1.30) [C:\Program Files (x86)\Microchip\xc8\v1.30\bin
Debug Image: ELF: Optimization: +space +asm
Device support information: Compiler Location
Memory
Data 2,048 (0x800) bytes
2%
Data Used: 48 (0x30) Free: 2,000 (0x7D0)
Watches
Output
Configuration Bits
SFRs
Address / Name Hex Decimal Binary Char
F81 PORTB 0x00 0 00000000 '.'
F82 PORTC 0x00 0 00000000 '.'
F83 PORTD 0x37 55 00110111 '7'
F84 PORTE 0x00 0 00000000 '.'
F89 LATA 0x00 0 00000000 '.'
F8A LATB 0x00 0 00000000 '.'
Memory SFRs
Format Individual
1:1/22:367
INS
Type here to search
36°C Mostly cloudy
3:07 PM
3/22/2022

```c
#include <xc.h>
#include<stdio.h>
#include<stdlib.h>
#include<p18f4550.h>
void main(void) {
    int i ,sum,n;
    int number[]={1,2,3,4,5,6,7,8,9,10}; // Array of 10 numbers
    sum=0;
    for (i=0;i<=9;i++)
    {
        sum=sum+number[i];
    }
    TRISD=0;
    PORTD=sum;
}
```

Our Output is 37

Variables | Call Stack | Output | Program | File R

Address	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F	ASCII
000	00	12	00	0A	00	01	00	02	00	[illegible]	4	00	05	00	06		....
010	00	07	00	08	00	09	00	0A	00	37	00	0A	00	01	00	02	..... .7.....
020	00	03	00	04	00	05	00	06	00	[illegible]	00	08	00	09	00	0A	....
030	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	....
040	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	....

Output

MPLAB X IDE v5.45 - LCD : default

File Edit View Navigate Source Refactor Production Debug Team Tools Window Help

Start Page | lcd.c | new.c

Source History

```
26  void init_LCD(void);                    //Function to initialize the LCD
27  void LCD_command(unsigned char cmd);    //Function to pass command to the LCD
28  void LCD_data(unsigned char data);      //Function to write character to the LCD
29  void LCD_write_string(char *str);//Function to write string to the LCD
30  void msdelay (unsigned int time);       //Function to generate delay
31
32  //Start of Main Program
33  void main(void)
34  {
35      char var1[] = "akole";//Declare message to be displayed
36      char var2[] = "sangamner";
37
38      ADCON1 = 0x0F;          //Configuring the PORTE pins as digital I/O
39      TRISD = 0x00;           //Configuring PORTD as output
40      TRISE = 0x00;           //Configuring PORTE as output
41
42      init_LCD();             // call function to initialise of LCD
43      msdelay(50);            // delay of 50 mili seconds
```

Output

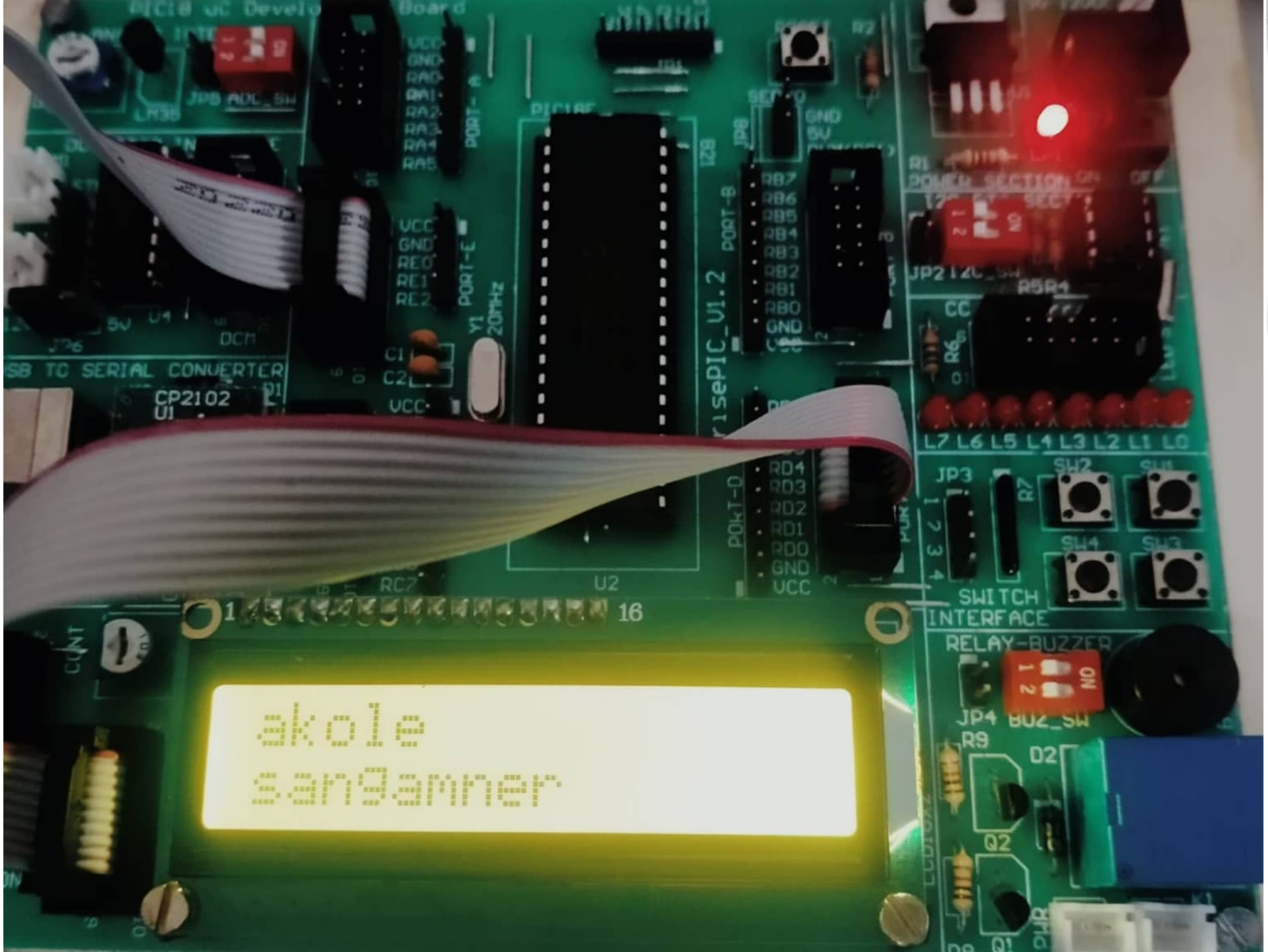
Internet Connection | LCD (Clean, Build, ...)

```
::: warning: (1311) missing configuration setting for config word 0x300002; using default
::: warning: (1311) missing configuration setting for config word 0x300008; using default
::: warning: (1311) missing configuration setting for config word 0x300009; using default
::: warning: (1311) missing configuration setting for config word 0x30000A; using default
::: warning: (1311) missing configuration setting for config word 0x30000B; using default
::: warning: (1311) missing configuration setting for config word 0x30000C; using default
::: warning: (1311) missing configuration setting for config word 0x30000D; using default

Memory Summary:
    Program space        used   1B6h (   438) of  4000h bytes   (  2.7%)
    Data space           used    2Ah (    42) of   300h bytes   (  5.5%)
    Configuration bits   used     7h (     7) of     7h words   (100.0%)
    ID Location space    used     8h (     8) of     8h bytes   (100.0%)

make[2]: Leaving directory 'C:/Users/avcoe/OneDrive/Desktop/kit/lcd.X'
make[1]: Leaving directory 'C:/Users/avcoe/OneDrive/Desktop/kit/lcd.X'

BUILD SUCCESSFUL (total time: 963ms)
Loading code from C:/Users/avcoe/OneDrive/Desktop/kit/lcd.X/dist/default/production/lcd.X.production.hex...
Program loaded with pack,PIC18Fxxxx_DFP,1.2.26,Microchip
Loading completed
```


akole
sangamner

MPLAB X IDE v5.45 - New : default

le Edit View Navigate Source Refactor Production Debug Team Tools Window Help

default

PC: 0x0 | n ov z dc c : W:0x0 : bank 0

How do I?

Projects | Start Page | newmain.c

Source | History

```
#include <htc.h>
#define _XTAL_FREQ 8000000
void main()
{
  TRISB=0X00;
  PORTB=0X00;
  while(1)
  {
    PORTB=0XFF;
    __delay_ms(10000);
    PORTB=0X00;
    __delay_ms(10000);
  }
}
```

Output

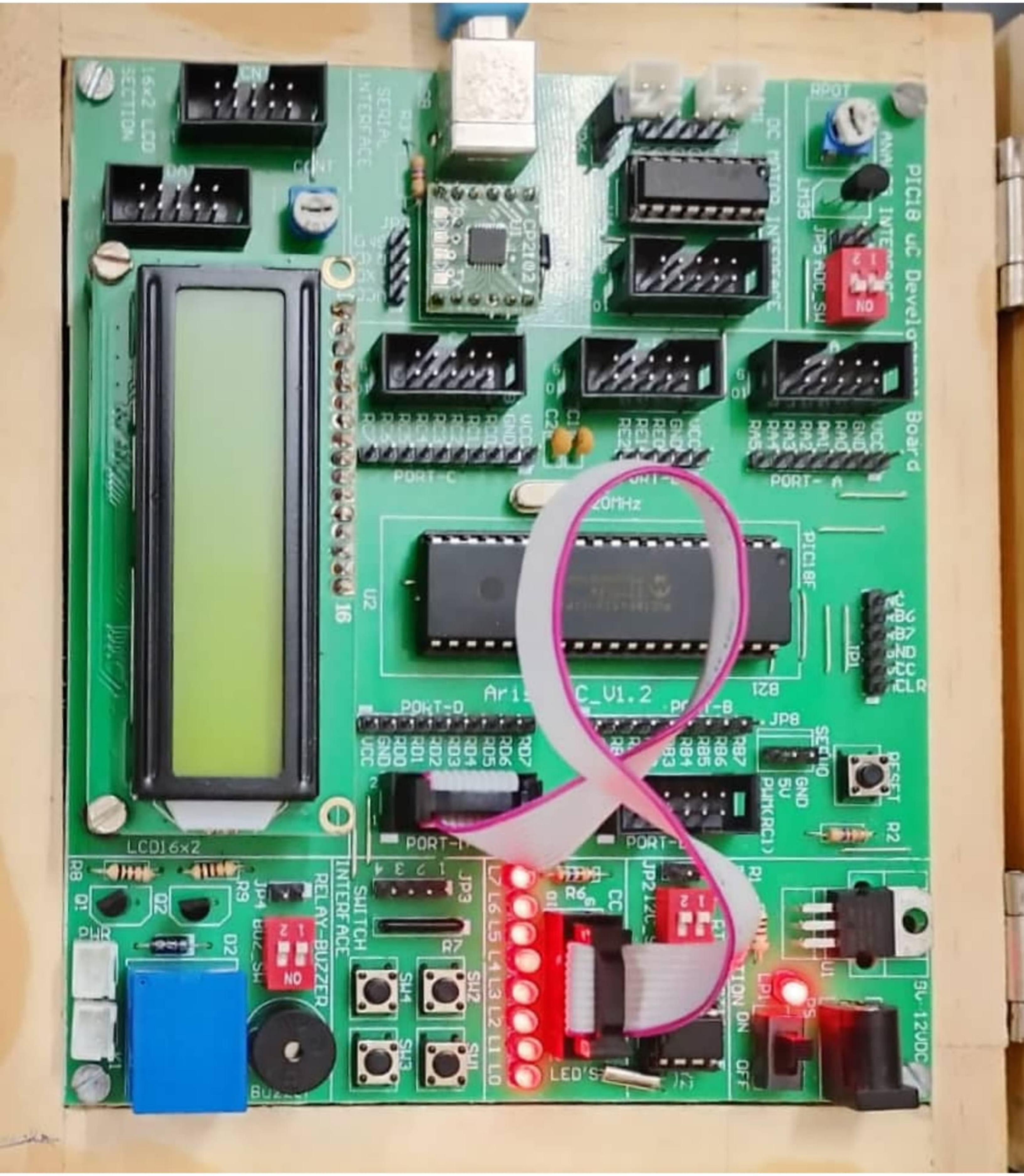
Internet Connection | New (Clean, Build, ...)

```
::: warning: (1311) missing configuration setting for config word 0x300000; using default
::: warning: (1311) missing configuration setting for config word 0x300001; using default
::: warning: (1311) missing configuration setting for config word 0x300002; using default
::: warning: (1311) missing configuration setting for config word 0x300003; using default
::: warning: (1311) missing configuration setting for config word 0x300005; using default
::: warning: (1311) missing configuration setting for config word 0x300006; using default
::: warning: (1311) missing configuration setting for config word 0x300008; using default
::: warning: (1311) missing configuration setting for config word 0x300009; using default
::: warning: (1311) missing configuration setting for config word 0x30000A; using default
::: warning: (1311) missing configuration setting for config word 0x30000B; using default
::: warning: (1311) missing configuration setting for config word 0x30000C; using default
::: warning: (1311) missing configuration setting for config word 0x30000D; using default

Memory Summary:
    Program space        used    52h (    82) of  4000h bytes   (  0.5%)
    Data space           used     2h (     2) of   300h bytes   (  0.3%)
    Configuration bits   used     7h (     7) of     7h words   (100.0%)
    ID Location space    used     8h (     8) of     8h bytes   (100.0%)

make[2]: Leaving directory 'C:/Users/avcce/MPLABXProjects/New.X'
make[1]: Leaving directory 'C:/Users/avcce/MPLABXProjects/New.X'

BUILD SUCCESSFUL (total time: 956ms)
Loading code from C:/Users/avcce/MPLABXProjects/New.X/dist/default/production/New.X.production.hex...
Program loaded with pack,PIC18Fxxxx_DFP,1.2.26,Microchip
Loading completed
```



16x2 LCD SECTION
SERIAL INTERFACE
CONT
PORT-C
PORT- A
20MHz
PIC18F
PORT-D
PORT-B
JP8
RESET
LCD16x2
RELAY-BUZZER
SWITCH INTERFACE
SW1
SW2
SW3
SW4
JP3
JP4
R7
R8
R9
Q1
Q2
PWR
LED'S
L7 L6 L5 L4 L3 L2 L1 L0
OFF
9V-12VDC
GND
5V
PWM(RC1)