

BÀI TẬP BÀI THỰC HÀNH 04

1. Họ tên: Nguyễn Thị Thủy MSV: 2020605575

2. Lớp: FE6044.5

3. Nhóm: Ngày, thứ, ca thực hành: thứ 3, 30/11/2021, tiết 7 8 9 10 11 12

4. Nội dung bài tập

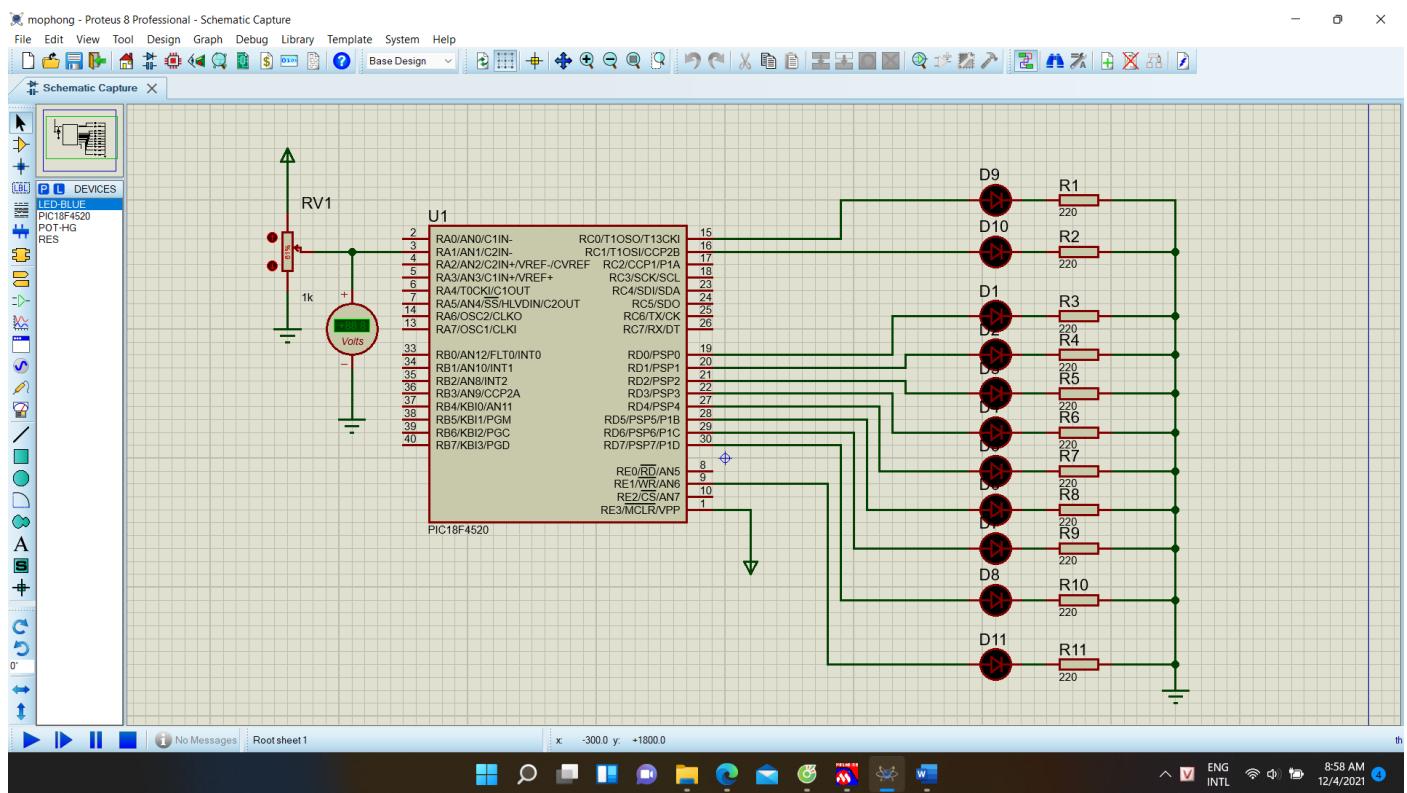
4.1 Bài tập 2.9

- Chụp ảnh mạch điện

- Chụp ảnh viết code

- Chụp ảnh mô phỏng kết quả

- Chụp ảnh lưu đồ thuật toán (vẽ trên giấy sau đó chụp lại)



bai29 - MPLAB IDE v8.92

File Edit View Project Debugger Programmer Tools Configure Window Help

Checksum: 0x89b7 | Debug |

```
//chuong trinh con

int adc;
float dienap;
void main(void)
{
    //B1: khung chuong trinh
    TRISC=0x00;
    TRISE=0x00;
    TRISE=0b000001101;
    TRISA=0xff;
    ADCON1=0b000001101; //AN1
    OpenADC(ADC_FOSC_8&ADC_RIGHT JUST&ADC_8_TAD,
            ADC_CH1&ADC_INT_OFF&ADC_VREFPLUS_VDD&ADC_VREFMINUS_VSS, 1

    while(1)
    {
        //B3: doc ADC
        ConvertADC(); //bat dau bien doi
        while(BusyADC()); //cho bien doi xong
        adc=ReadADC();
        //hien thi
        PORTD=adc%256; // 8 bit thap
        PORTC=adc/256;
        dienap=((float)adc*5)/1023;
        if(dienap>=3)
            PORTEbits.RE1=1;
        else
            PORTEbits.RE1=0;
    }
}
```

Output

```
Build Version Control Find in Files
Debug build of project 'D:\Download\VL\practice\bui04\ADC\bai29\main.c' started.
Language tool versions: mpasmwin.exe v5.54, mplink.exe v5.00, mcc18.exe v3.47, mplib.exe
Preprocessor symbol '_DEBUG' is defined.
Sat Dec 04 08:56:56 2021

Clean: Deleting intermediary and output files.
Clean: Deleted file "D:\Download\VL\practice\bui04\ADC\bai29\main.o".
Clean: Deleted file "D:\Download\VL\practice\bui04\ADC\bai29\bai29.cof".
Clean: Deleted file "D:\Download\VL\practice\bui04\ADC\bai29\bai29.hex".
Clean: Deleted file "D:\Download\VL\practice\bui04\ADC\bai29\bai29.mcs".
Clean: Done.
Executing "D:\Mplab\maple\maple v3.47\bin\nmc18.exe" -p=18F4520 "main.c" -fo="main.o" -D _D
MPLAB C18 3.47 (feature limited)
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and will not perform all optimizations. To purchase a full
copy of MPLAB C18, please contact your local distributor or
visit buy.microchip.com.

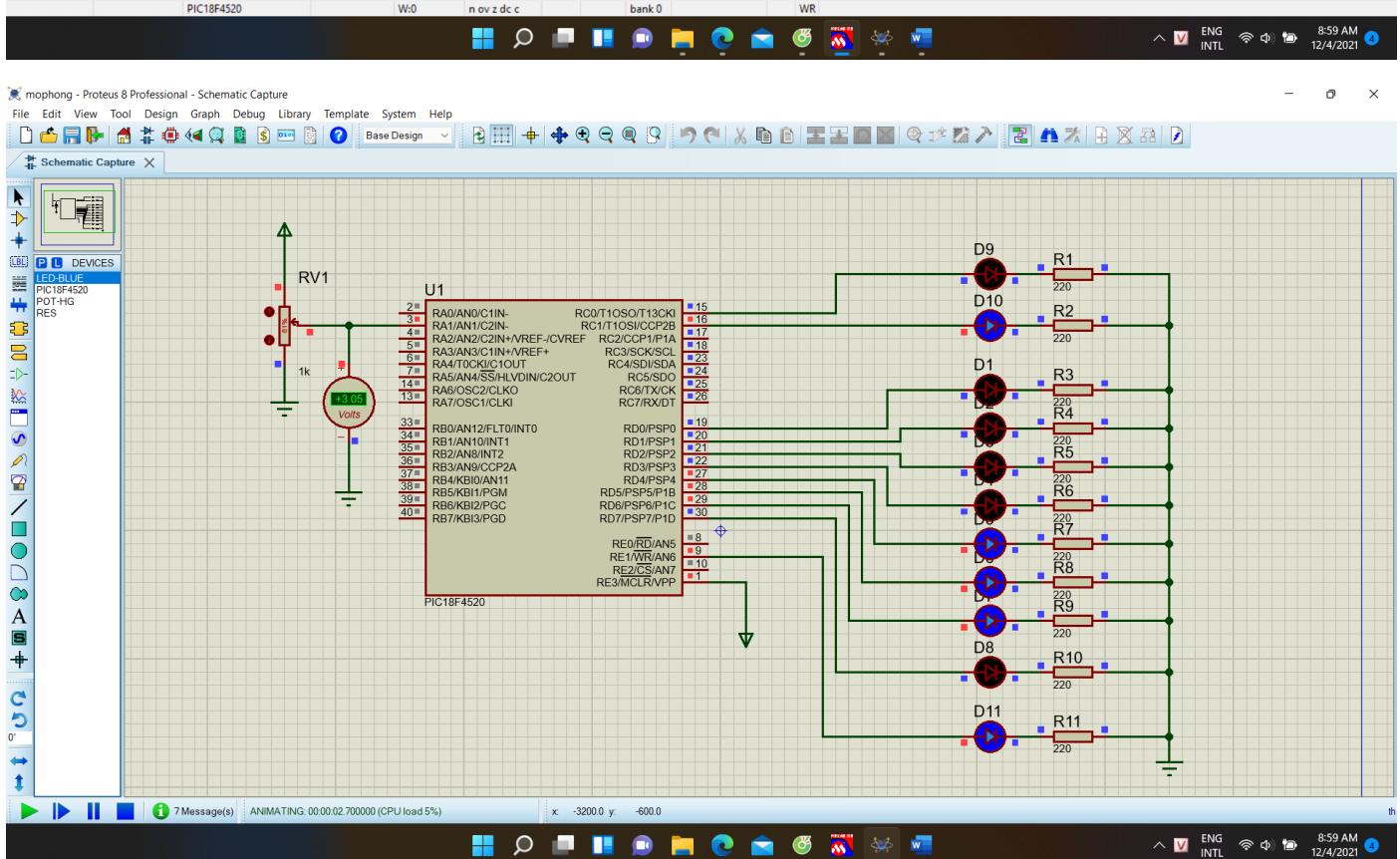
Executing "D:\Mplab\maple\maple v3.47\bin\mplink.exe" /p18F4520 /"D:\Mplab\maple\maple v3.47\lib
MPLINK 5.00 LINKER
Device Database Version 1.17
Copyright (c) 1998-2013 Microchip Technology Inc.
Errors : 0

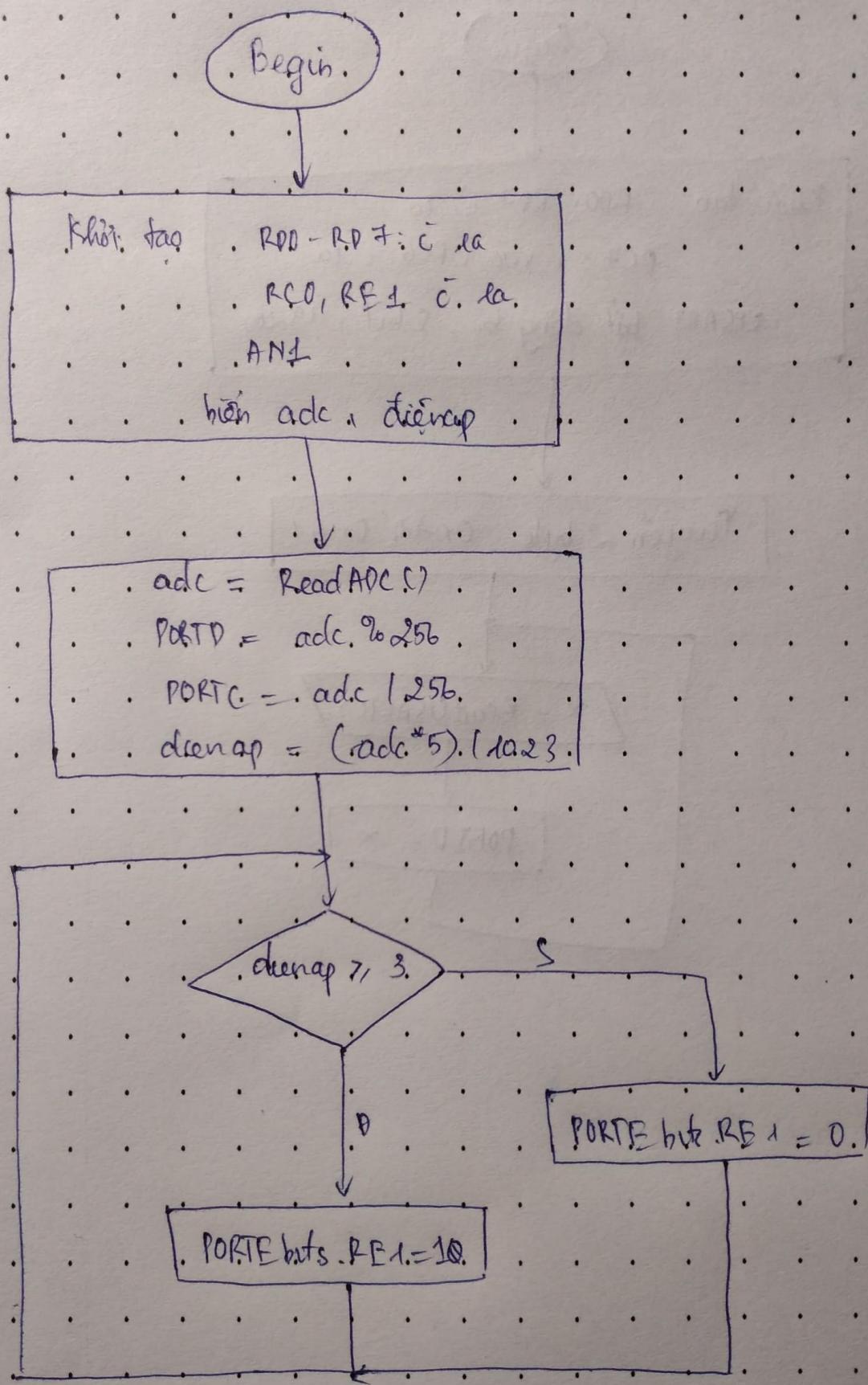
MP2HEX 5.00. COFF to HEX File Converter
Copyright (c) 1998-2013 Microchip Technology Inc.
Errors : 0

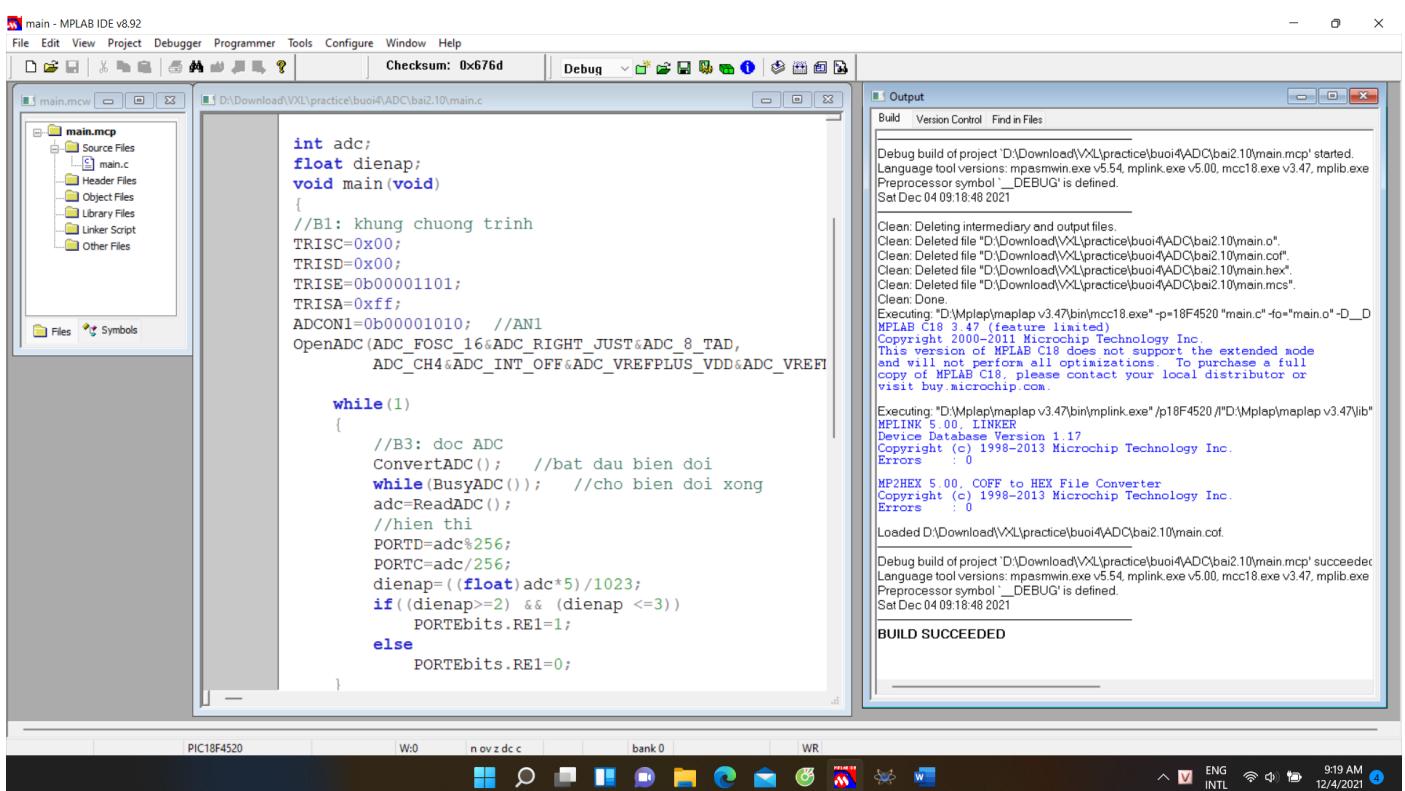
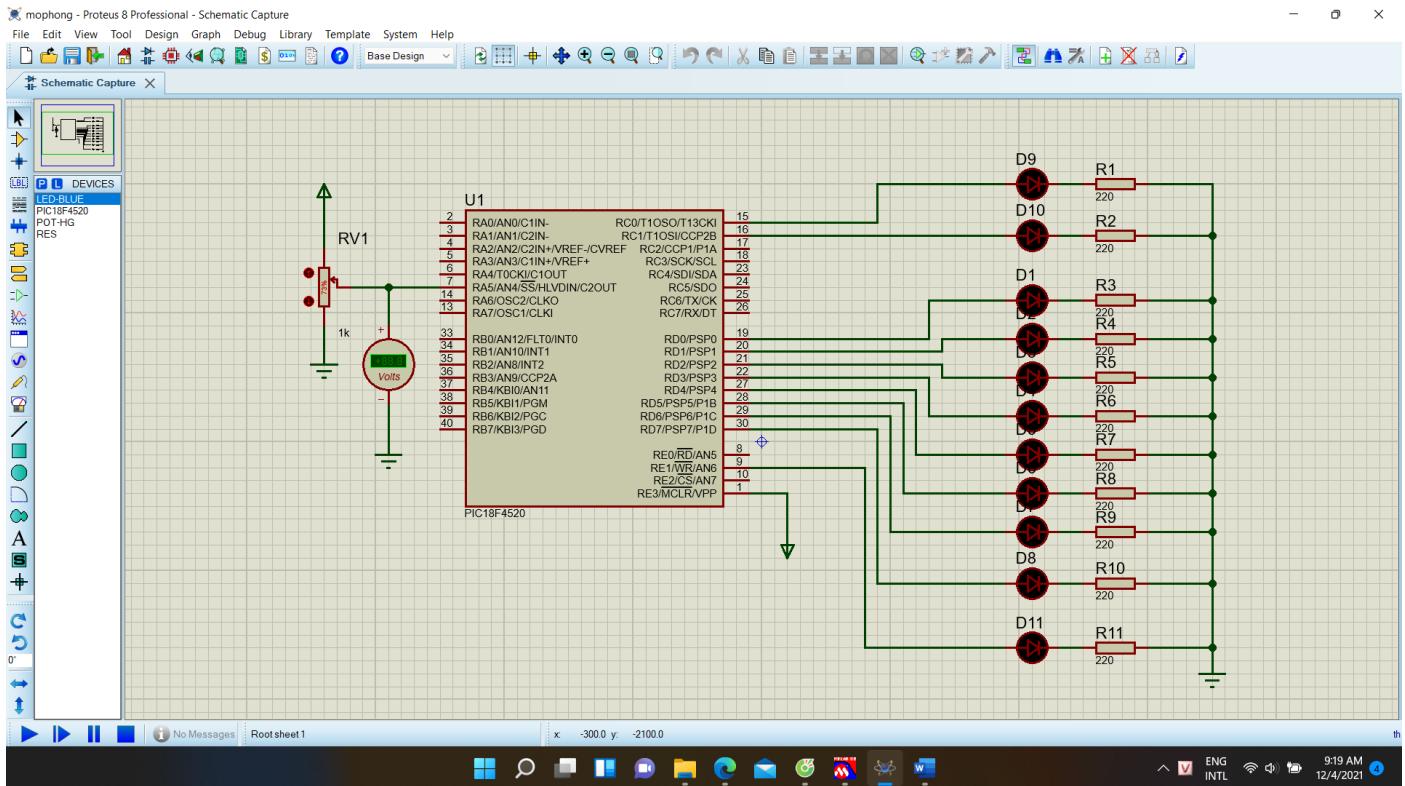
Loaded D:\Download\VL\practice\bui04\ADC\bai29\bai29.cof.

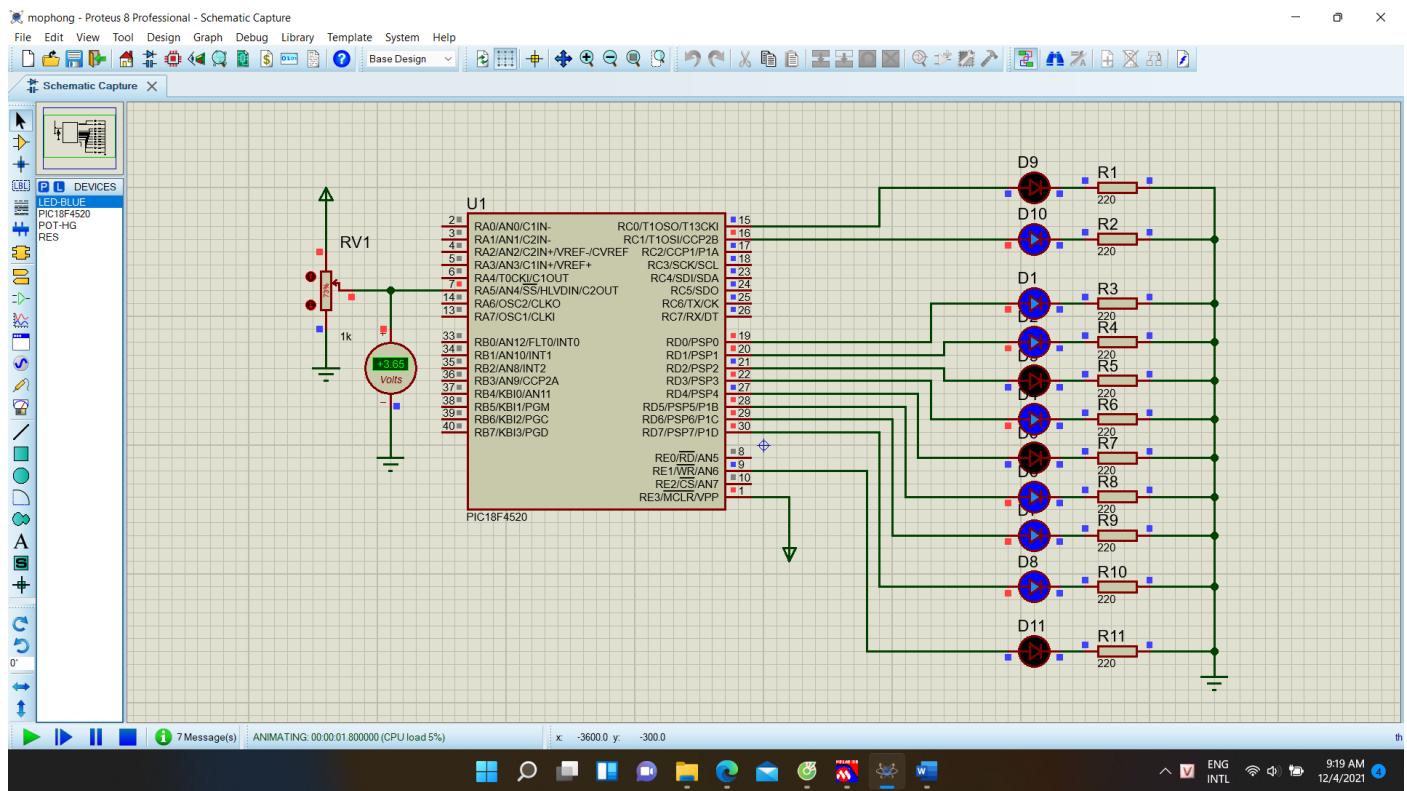
Debug build of project 'D:\Download\VL\practice\bui04\ADC\bai29\bai29.mcp' succeeded.
Language tool versions: mpasmwin.exe v5.54, mplink.exe v5.00, mcc18.exe v3.47, mplib.exe
Preprocessor symbol '_DEBUG' is defined.
Sat Dec 04 08:56:58 2021

BUILD SUCCEEDED
```









2.10

Begin

Khoi tao RDO - RPT : c. ea.
RC0, RC1, RF + c. ea.
kenh. AN4
bien. adc, duenap.

adc = Read ADC();
PDRFD = adc * 256;
PORTC = adc / 256;
duenap = (adc * 5) / 1023;

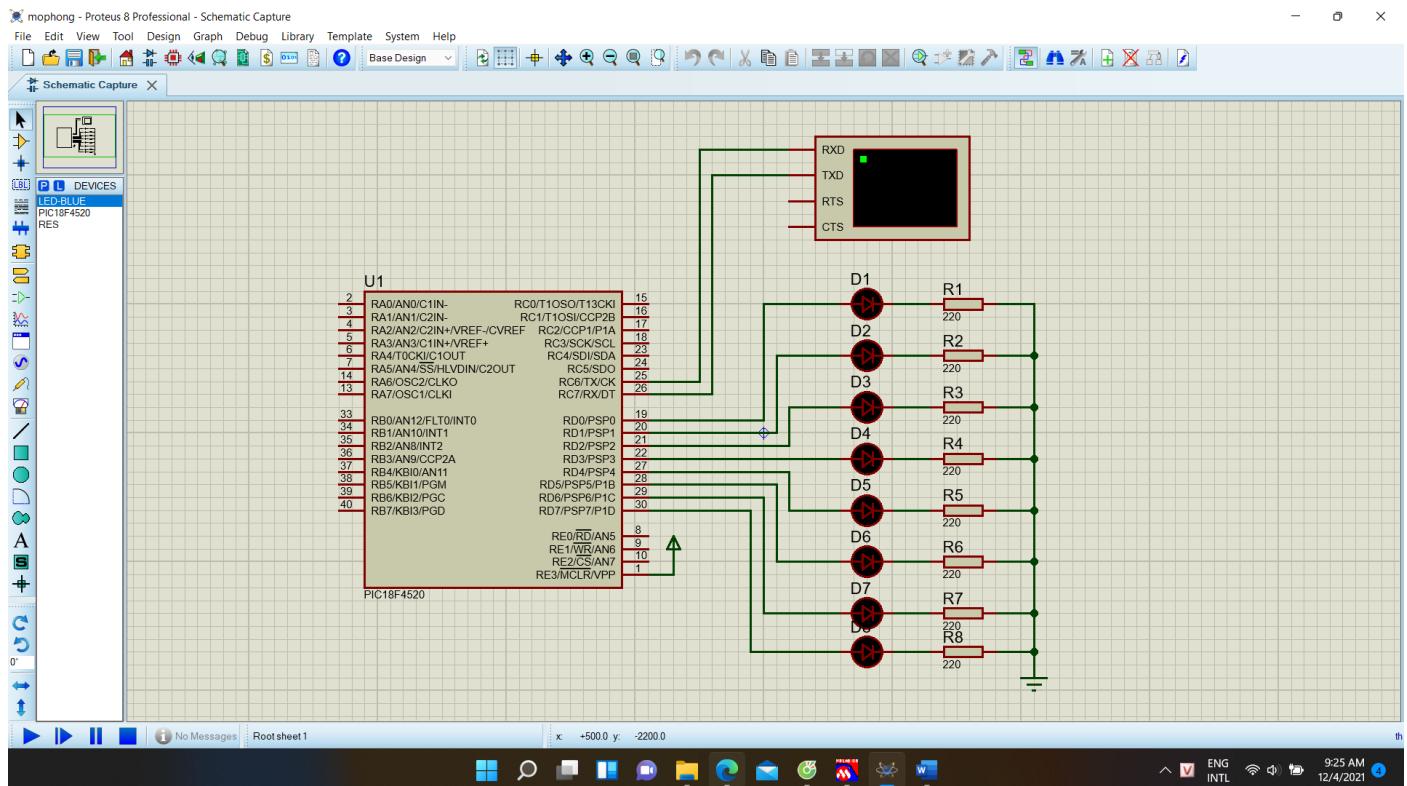
duenap >= 2.2

duenap <= 3.

PORTE.bits.RE.1 = 1

PORTB bits RB1 = 0

Bài 2.11



main - MPLAB IDE v8.92

```

File Edit View Project Debugger Programmer Tools Configure Window Help
File Project Device Source Code Symbols
Checksum: 0x8c15 Debug
D:\main.mcp
D:\Download\VXL\practice\bui04\USART\bai2.11\main.c

#pragma config MCLRE = ON
#pragma config WDT = OFF

char x;
void main()
{
    TRISC = 0b10000000; //thiet lap RC6 la dau ra, RC7 la
    TRISD = 0x00;
    ADCON1 = 0x0f;
    OpenUSART( USART_RX_INT_OFF & //khong su dung ngat tr
              USART_RX_INT_OFF & //khong su dung ngat nhan
              USART_ASYNCH_MODE & //che do khong dong bo
              USART_EIGHT_BIT & //truyen/nhan 8bit
              USART_CONT_RX & //cho phep nhan lien tiep
              USART_BRGH_HIGH, //toc do baud cao
              38);
    while(BusyUSART());
    WriteUSART(0x41);
    while(BusyUSART());
    WriteUSART(0x61);
    while(1)
    {
        x=ReadUSART();
        PORTD=x;
    }
}

```

Output

```

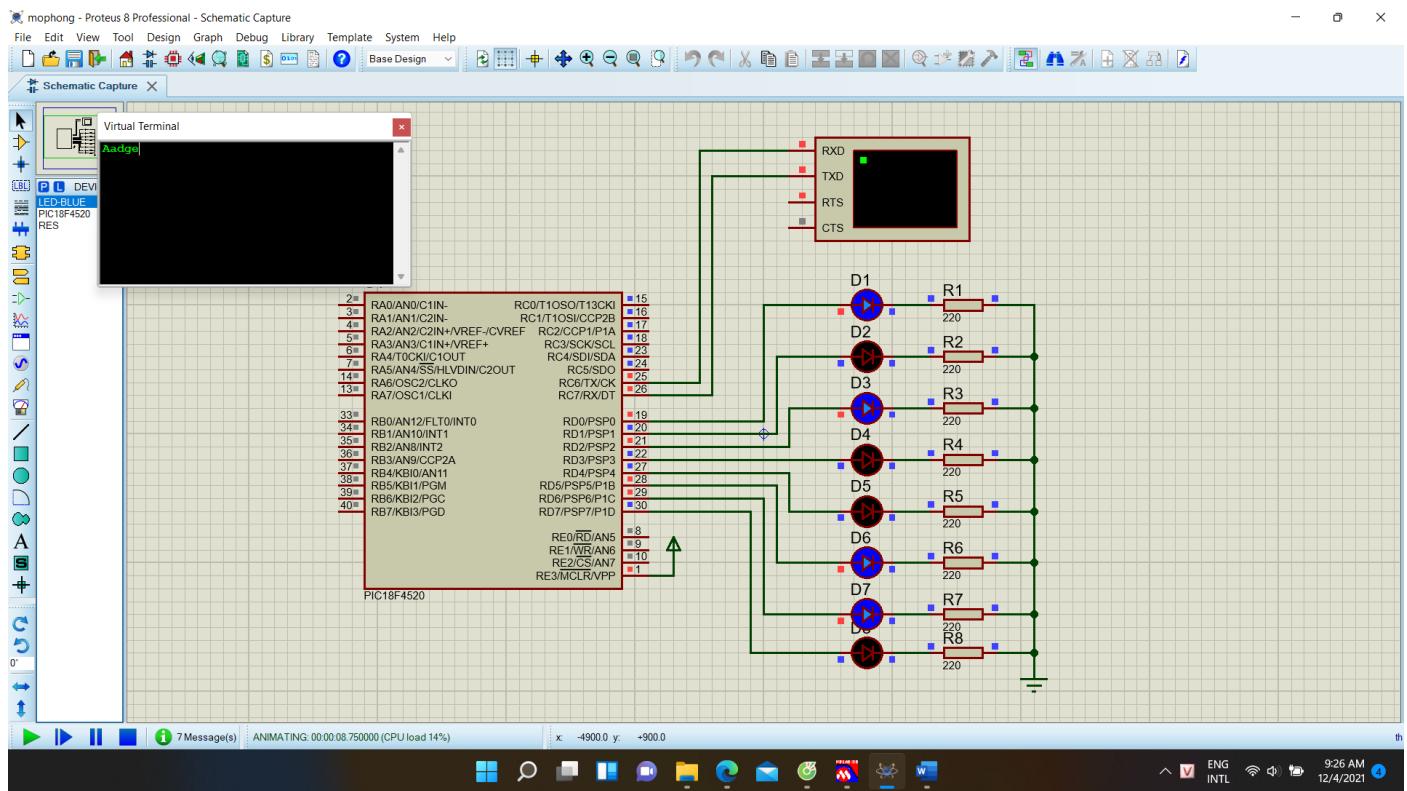
Build Version Control Find in Files
Debug build of project 'D:\Download\VXL\practice\bui04\USART\bai2.11\main.mcp' started.
Language tool versions: mpasmwin.exe v5.54, mplink.exe v5.00, mcc18.exe v3.47, mplib.exe
Preprocessor symbol '_DEBUG' is defined.
Sat Dec 04 09:25:09 2021

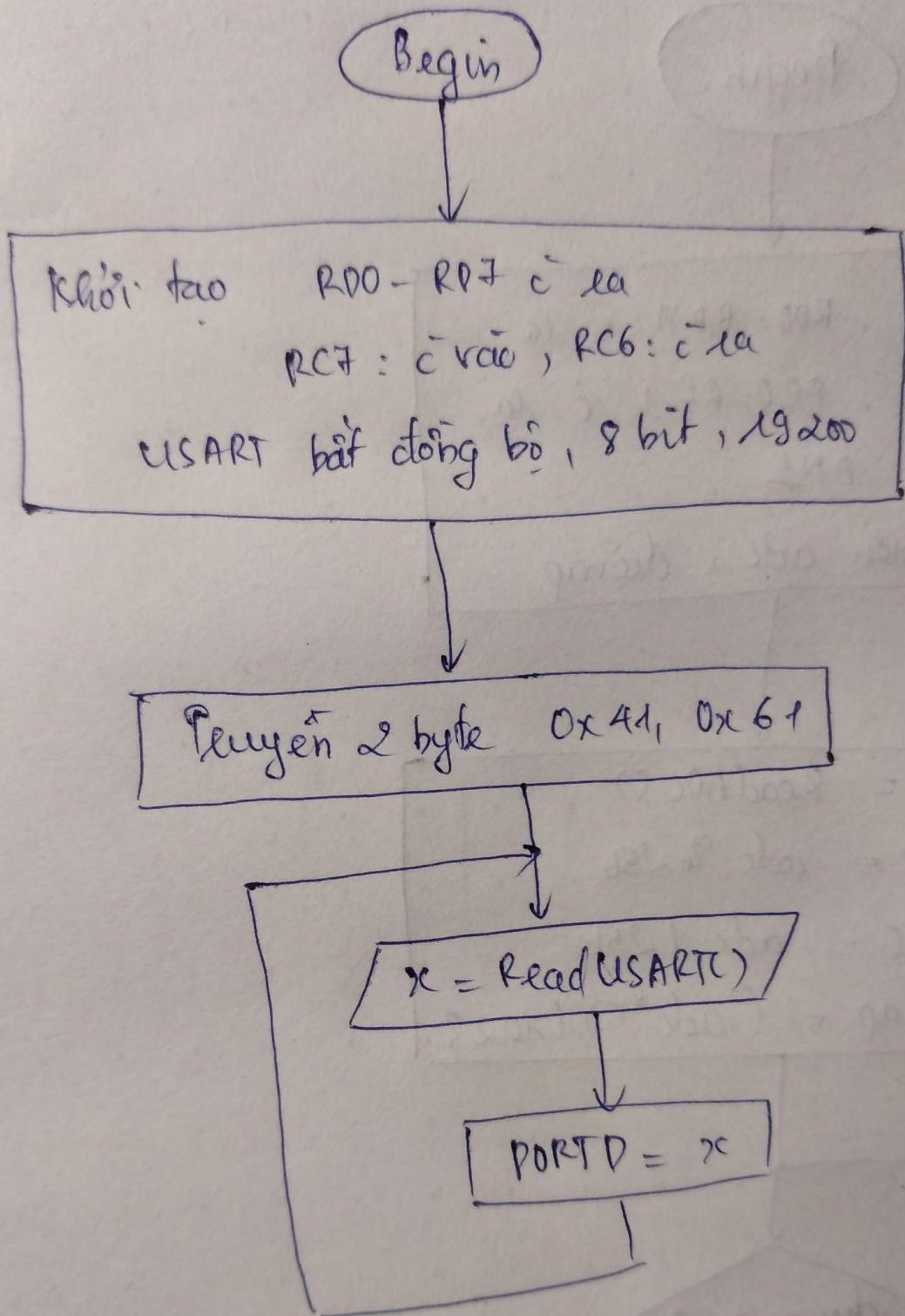
Clean: Deleting intermediate and output files.
Clean: Deleted file "D:\Download\VXL\practice\bui04\USART\bai2.11\main.o".
Clean: Deleted file "D:\Download\VXL\practice\bui04\USART\bai2.11\main.cof".
Clean: Deleted file "D:\Download\VXL\practice\bui04\USART\bai2.11\main.hex".
Clean: Deleted file "D:\Download\VXL\practice\bui04\USART\bai2.11\main.mcs".
Clean: Done.
Executing "D:\Mplab\maple\maple v3.47\bin\mcc18.exe" -p=18F4520 "main.c" -o="main.o" -D=_DEBUG
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Executing "D:\Mplab\maple\maple v3.47\bin\mplink.exe" /p18F4520 /f"D:\Mplab\maple v3.47\lib\MPLINK 5.00, LINKER
Device Database Version 1.17
Copyright (c) 1998-2013 Microchip Technology Inc.
Errors : 0
MP2HEX 5.00, COFF to HEX File Converter
Copyright (c) 1998-2013 Microchip Technology Inc.
Errors : 0
Loaded D:\Download\VXL\practice\bui04\USART\bai2.11\main.cof.

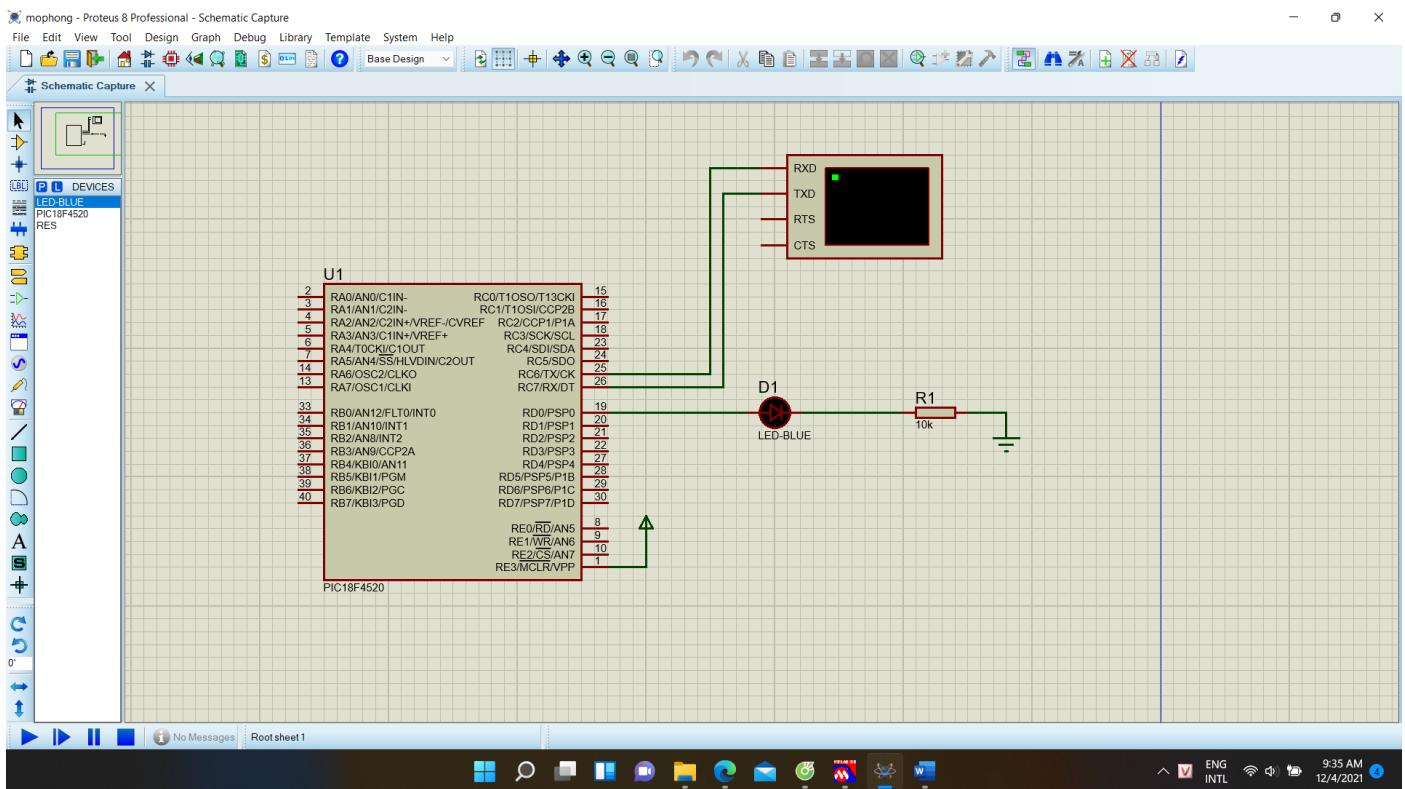
Debug build of project 'D:\Download\VXL\practice\bui04\USART\bai2.11\main.mcp' success.
Language tool versions: mpasmwin.exe v5.54, mplink.exe v5.00, mcc18.exe v3.47, mplib.exe
Preprocessor symbol '_DEBUG' is defined.
Sat Dec 04 09:25:09 2021

BUILD SUCCEEDED

```







main - MPLAB IDE v8.92

```

//cau hinh cho vi dieu khien
#pragma config OSC = HS
#pragma config MCLRE = ON
#pragma config WDT = OFF

char x;
void main()
{
    TRISC = 0b10000000; //thiet lap RC6 la dau ra, RC7 la
    TRISD = 0x00;
    ADCON1 = 0x0f;
    OpenUSART( USART_TX_INT_OFF & //khong su dung ngat tr
               USART_RX_INT_OFF & //khong su dung ngat nhan
               USART_ASYNCH_MODE & //che do khong dong bo
               USART_EIGHT_BIT & //truyen/nhan 8bit
               USART_CONT_RX & //cho phep nhan lien tiep
               USART_BRGH_HIGH, //toc do baud cao
               71);
    putrsUSART ("START\r\n");
    while(1)
    {
        x=ReadUSART ();
        if(x=='k') PORTDbits.RD0 = 1;
        else PORTDbits.RD0=0;
    }
}

```

Output window showing the build process and success message:

```

Build Version Control Find in Files
Debug build of project 'D:\Download\VXL\practice\bui04\USART\ba12\main.mcp' started.
Language tool versions: mpasmwin.exe v5.54, mplink.exe v5.00, mcc18.exe v3.47, mplib.exe
Preprocessor symbol '_DEBUG' is defined.
Sat Dec 04 09:34:46 2021

Clean: Deleting intermediary and output files.
Clean: Deleted file "D:\Download\VXL\practice\bui04\USART\ba12\main.o".
Clean: Deleted file "D:\Download\VXL\practice\bui04\USART\ba12\main.cof".
Clean: Deleted file "D:\Download\VXL\practice\bui04\USART\ba12\main.hex".
Clean: Deleted file "D:\Download\VXL\practice\bui04\USART\ba12\main.ncs".
Clean: Done.

Executing: "D:\Mplab\maple\3.47\bin\mcc18.exe" -p=18F4520 "main.c" -fo="main.o" -D _DEBUG
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D:\Download\VXL\practice\bui04\USART\ba12\main.c:23:Warning [2066]
Executing "D:\Mplab\maple\3.47\bin\mplink.exe" /p18F4520 /f"D:\Mplab\maple\3.47\lib"
MPLINK 5.00, LINKER
Device Database Version 1.17
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Errors : 0

MP2HEX 5.00, COFF to HEX File Converter
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Errors : 0

Loaded D:\Download\VXL\practice\bui04\USART\ba12\main.cof.

Debug build of project 'D:\Download\VXL\practice\bui04\USART\ba12\main.mcp' succeeded.
Language tool versions: mpasmwin.exe v5.54, mplink.exe v5.00, mcc18.exe v3.47, mplib.exe
Preprocessor symbol '_DEBUG' is defined.
Sat Dec 04 09:34:47 2021

BUILD SUCCEEDED

```

