

MICROCONTROLLER

Practical -2

MULTIPLICATION

AIM:

Write a MPLAB program/ALP for multiplication.

APPARATUS REQUIRED:

MPLAB X IDE

Input (code):

MPLAB X IDE v5.10 - MULTIPLY: default

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

Search (Ctrl+I)

default PC: 0x3A zDC c: W:\0xa : bank 0 How do I? Keyword(s)

Projects Files Classes

Start Page MPLAB X Store newpic_8b_general.asm

Asm Source History

```

1 #include "p16f977a.inc"
2
3 ; CONFIG
4 ; _config 0xFF39
5 _CONFIG_FOSC_XT & _WDTE_OFF & _PWRTE_OFF & _BOREN_OFF & _LVP_OFF & _CPD_OFF & _WRT_OFF & _CP_OFF
6
7
8
9
10     ORG 0
11     GOTO MAIN
12
13 N1 EQU 50
14 RL EQU 51
15 RH EQU 52
16
17     ORG 30
18 MAIN MOVWF 5
19     MOVWF N1
20     MOV LW .10
21     CLRF RL
22     CLRF RH
23
24 UP   ADDWF RL
25     BTFSC STATUS,C
26     INCF RH
27     DECFSZ N1
28     GOTO UP
29
30     GOTO $ ; loop forever

```

Output Configuration Bits SFRs File Registers

MULTIPLY (Build, Load, ...) debugger halted

8:1

OUTPUT:

Output

Trace/Profiling

Config Bits Source

Debugger Console

Simulator

MULTIPLY (Clean, Build, ...)

```
make[2]: Leaving directory 'C:/Users/ASUS/MPLABXProjects/MULTIPLY.X'
make[1]: Leaving directory 'C:/Users/ASUS/MPLABXProjects/MULTIPLY.X'

BUILD SUCCESSFUL (total time: 2s)
Loading code from C:/Users/ASUS/MPLABXProjects/MULTIPLY.X/dist/default/production/MULTIPLY.X.production.hex...
Loading completed
```

Output

Configuration Bits

SFRs

File Registers

MULTIPLY (Build, Load, ...)

SFRs

Address /	Name	Hex	Decimal	Binary	Char
	WREG	0x0A	10	00001010	','
000	INDF	0x00	0	00000000	','
001	TMR0	0x00	0	00000000	','
002	PCL	0x3A	58	00111010	':'
003	STATUS	0x1A	26	00011010	','
004	FSR	0x00	0	00000000	','

Memory SFRs Format Individual

MULTIPLY (Build, Load, ...)

debugger halted

File Registers

	Address	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F	ASCII
	000	00	00	00	1A	00	00	00	00	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	32	00	00	00	00	00	00	00	00	00	00	00	00	00	00	.2.....

Memory File Registers Format Hex

Output Configuration Bits SFRs File Registers

MULTIPLY (Build, Load, ...)

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