

**UNIVERSITI
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The National Energy University

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STUDENT ID: DE96562

SUBJECT: EEED253 (INTRODUCTION TO MICROCONTROLLER)

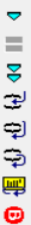
SECTION: 01T

LECTURE NAME: DICKSON NEOH TZE HOW, MR.

TITTLE: QUIZ 6 DELAY

Checksun: 0x37ab

Debug



Files Symbols

Output

Build Version Control Find in Files MPLAB SIM

Clean: Deleted file "H:\Introduction to Microcontroller\QUIZ\quiz 6\0602.cof".

Clean Done

Executing "C:\Program Files (x86)\Microchip\MPASM Suite\MPASMWIN.exe" /q /p18f4550 "0602.asm" /r"0602.lst" /e"0602.err" /d __DEBUG=1

Executing "C:\Program Files (x86)\Microchip\MPASM Suite\mplink.exe" /p18f4550 "0602.o" /u __DEBUG /z __MPLAB_BUILD=1 /z __MPLAB_DEBUG=1 /o"06

MPLINK 4.49, Linker

Device Database Version 1.14

Copyright (c) 1998-2011 Microchip Technology Inc.

Errors : 0

Loaded H:\Introduction to Microcontroller\QUIZ\quiz 6\0602.cof

Debug build of project "H:\Introduction to Microcontroller\QUIZ\quiz 6\0602.mcp" succeeded.

Language tool versions: MPASMWIN.exe v5.51, mplink.exe v4.49, mpilib.exe v4.49

Preprocessor symbol __DEBUG is defined

Wed Nov 11 11:45:01 2020

BUILD SUCCEEDED

H:\Introduction to Microcontroller\QUIZ\quiz 6\0602.asm

```
lp_cnt1 set 0x10
lp_cnt2 set 0x11
```

```
org 0x00
goto start
```

```
org 0x08
```

```
retfie
```

```
org 0x18
```

```
retfie
```

```
dup_nop
```

```
macro kx ;macro function will execute duplication
```

```
variable i ;kx times
```

```
i=0
```

```
while i < kx
```

```
nop
```

```
i+=1
```

```
endw
```

```
endm
```

```
;;*****
```

```
;; HOW TO CREATE A DELAY OF 65 mlii sec
```

```
;; with a crystal of 20MHz
```

```
;;*****
```

```
;; subroutine for delay 65mlii sec
```

```
;;*****
```

```
delay65msec movlw D'100'
```

```
movwf lp_cnt1,A
```

```
again1 movlw D'100'
```

```
movwf lp_cnt2,A
```

```
again2 dup_nop D'28' ;29 instruction cycle
```

```
decfsz lp_cnt2, F,A ;1 instruction cycle
```

```
bra again2 ;2 instruction cycle
```

```
decfsz lp_cnt1, F,A ;total 31 instruction cycle
```

```
bra again1
```

```
return
```

```
;; (100 x 100 x (28+1+2) = 310 000 i.c
```

```
;;*****
```

```
start call delay65msec
```

MPLAB SIM

PIC18F4550

pic0

WMO

n ov z dc c

20 MHz bank 0

Ln 7, Col 1

INS WR

```
#include<p18F4550.inc>
```

```
lp_cnt1 set 0x10
```

```
lp_cnt2 set 0x11
```

```
org 0x00
```

```
goto start
```

```
org 0x08
```

```
retfie
```

```
org 0x18
```

```
retfie
```

```
*****
```

```
dup_nop      macro kk ;macro function will execute duplication
```

```
              ;dup_nop it means duplicate no operation
```

```
              variable i ;kk times
```

```
i=0
```

```
while i < kk
```

```
  nop
```

```
i+=1
```

```
endw
```

```
endm
```

```
*****
```

```
; HOW TO CREATE A DELAY OF 65 mili sec
```

; with a crystal of 20MHz

;*****'

; subroutine for delay 65mili sec

;*****

delay65msec movlw D'100'

movwf lp_cnt1,A

again1 movlw D'100'

movwf lp_cnt2,A

again2 dup_nop D'28' ;29 instruction cycle

decfsz lp_cnt2, F,A ;1 instruction cycle

bra again2 ;2 instruction cyle

decfsz lp_cnt1, F, A ;total 31 instruction cycle

bra again1

return

;; (100 x 100 x (28+1+2) = 310 000 i.c

;*****

start call delay65msec

end