



## EXPERIMENT REPORT OF ASSEMBLY LANGUAGE

### Assignment 1 Experiment 3

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### **Problem Description:**

#### **Chapter 4 Experiment 3 Display devices Interfacing**

(1) Frequency division practicing .

In this experiment, a crystal oscillator of 500kHz is used as the clock source of a piece 8253 PIT controller, as shown in Figure4.1 the circuit schema. And there are 3 led lights are connected to the signal out pins of the 8253. You are required to write a short initialization program to setup the 8253, so that to twinkle one of the led in a frequency of 0.5Hz, and the led should be light for nearly 1s, and be off for another 1s. A template is provide for the program in 8253Div.asm

;view 8254 output

;LED1 displays out0 of timer0

;LED2 displays out1 of timer1, and LED1 should light for 1s and off for 1s

.MODEL SMALL

.STACK 32

.DATA

IOS4 EQU 048H;

.CODE

MAIN PROC FAR

```

;TODO1: program timer0, both cmd and initial value
;TODO1: program timer1, both cmd and initial value
MOV AX, 4C00H
INT 21H
MAIN ENDP
END MAIN

```

## **Goal:**

We are going to use as the clock source of a piece 8253 PIT controller. We have 3 led lights are connected to the signal out pins of the 8253. We are required to twinkle one of the led in a frequency of 0.5Hz, and the led should be light for nearly 1s, and be off for another 1s.

## **Code:**

```

.MODEL SMALL
.STACK 32
.DATA
    IOS4 EQU 048H;
.CODE
MAIN PROC FAR
;TODO1: PROGRAM TIMER0, BOTH CMD AND INITIAL VALUE

MOV AL, 00110100B    ;TIMER 0 CMD
MOV DX, IOS4+6
OUT DX, AL
MOV AX, 10000        ;TIMER0 INIT VALUE
MOV DX, IOS4
OUT DX, AL
MOV AL, AH

```

OUT DX, AL

;TODO1: PROGRAM TIMER1, BOTH CMD AND INITIAL VALUE

MOV AL, 01010110B ;TIMER1 CMD

MOV DX, IOS4+6

OUT DX, AL

MOV AX, 100 ;TIMER1 INIT VALUE

MOV DX, IOS4+2

OUT DX, AL

MOV AX, 4C00H

INT 21H

MAIN ENDP

END MAIN

## **Debugging:**

This is a new IDE for me ,I have never used it before .So,at the beginning ,I couldn't understand the use of so many features.Eventually,after watching video.

## **Attachment:**

- 1) Experiment-3(assignment-1).mkv
- 2) E3A1.asm
- 3) 8253Div.asm
- 4) 8253.DSN
- 5) Exp-3\_ assignment1.pdf

## **Acknowledgement:**

I complete this assignment by myself by using online videos and taking help from online. The most useful help from teacher's hint given in question, the theory class and the lecture note from the practical class