Department of Computer Engineering

BLG 351E
Microcomputer Laboratory
Experiment Report

Experiment No : 4

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Group Number : 2

Group Members : 3

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1 INTRODUCTION

In this experiment, first, we learned how to create and debug project in Code Composer Studio. After we learned how to create and debug project in Code Composer Studio, we wrote assembly code that make LEDs in Port 1 are turned on and off sequentially.

2 REQUIREMENTS

2.1 FIRST HEADER

In part 1, we learned how to create and debug project in Code Composer Studio. We use assembly code that is given from experiment document, for learning creation and building steps.

2.2 SECOND HEADER

In part 2 , we wrote assembly code that make LEDs in Port 1 are turned on and off sequentially. In this code, loop 1 turns on leds from P1.0 to P1.7 sequentially, and loop 2 lights leds starting from P1.7 to P1.0.

```
                mov.w #000001,R5    ;To select leds sequentially in port 1
                mov.w #000007,R6    ;Counter for loop 1
                mov.w #000007,R7    ;Counter for loop 2

;;;;;;;;        loop 1        ;;;;;;;;
SetupP1         bis.b R5, &P1DIR    ;Setup the corresponding led
Mainloop        xor.b R5, &P1OUT    ;Toggle (turns on the led if it's off and vice versa)
Wait            mov.w #050000,R15   ;Delay loop in order to wait after turning on/off a led
L1              dec.w R15
                jnz L1
                rla.b R5            ;Rotate left R5 in order to select other leds
                clr.b &P1OUT        ;Turn off all leds
                dec.w R6            ;Check the counter
                jz SetupP2          ;If the counter ends, go to loop 2
                jmp SetupP1

;;;;;;;;        loop 2        ;;;;;;;;
SetupP2         bis.b R5, &P1DIR    ;Setup the corresponding led
Mainloop2       xor.b R5, &P1OUT    ;Toggle (turns on the led if it's off and vice versa)
Wait2           mov.w #050000,R15   ;Delay loop in order to wait after turning on/off a led
L2              dec.w R15
                jnz L2
                clrc
                rrc.b R5            ;Rotate right R5 in order to select other leds
                clr.b &P1OUT        ;Turn off leds
                inc.w R6
                cmp.w R6, R7        ;Check counters
                jz SetupP1          ;If loop2 ends, start from loop1 again
                jmp SetupP2
```

3 CONCLUSION

In this experiment we learned how to use CCS IDE and our new kit MSP430 Education Board.We didn't face any difficulties in this experiment.