**Department of Computer Engineering**

BLG 351E  
Microcomputer Laboratory Experiment Report

Experiment No : 4

Experiment Date : 26.11.2015

Group Number : 2

Group Members : 3

|  |  |  |
| --- | --- | --- |
| **ID** | **Name** | **Surname** |
| 040100055 | Emir | Bilgin |
| 150120251 | Cem Yusuf | Aydoğdu |
| 150120121 | Hüseyin | Tosun |
| Click here to enter text. | Click here to enter text. | Click here to enter text. |

Laboratory Assistant : Gökhan Seçinti

# 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.

# Requirements

## 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.

## 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

# 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.