

CENG 329 PROJECT 2

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LINK:

<https://www.youtube.com/shorts/L4tXbLxVw74>

SOURCE CODE:

-The processor where we press the button

```
bic.b #00001000b, &P1DIR      ; make P1.3 input

bis.b #00000001b, &P2DIR      ; make P2.0 output

bic.b #00001000b, &P1SEL      ; make P1.3 Digital I/O
bic.b #00001000b, &P1SEL2     ; make P1.3 Digital I/O

bic.b #00000001b, &P2SEL      ; make P2.0 Digital I/O
bic.b #00000001b, &P2SEL2     ; make P2.0 Digital I/O

bis.b #00001000b, &P1REN      ; enable pull-up resistor for P1.3
bis.b #00001000b, &P1OUT      ; enable pull-up resistor for P1.3


bis.w #GIE, SR                ; enable interrupts
bis.b #00001000b, &P1IES      ; p1.3 interrupts from H to L
bis.b #00001000b, &P1IE      ; enable p1.3 interrupt

mloop:
add.w #3,r5                   ; does not have any duties
jmp mloop                     ;go mloop


but_ISR:
xor.b #00000001b, &P2OUT      ; if button pressed, switch P2.0 LED
bic.b #00001000b, &P1IFG      ; clear IF for next interrupt
reti                          ; return from interrupt
```

-Processor that turns the lights on and off based on the input it receives

```
bic.b #10000010b, &P1SEL      ; make P1.1 and P1.7 Digital I/O
bic.b #10000010b, &P1SEL2     ; make P1.1 and P1.7 Digital I/O

bic.b #10000000b, &P1DIR      ; Make P1.7 input
bic.b #10000000b, &P1REN      ; enable pull-up resistor for P1.7

bis.b #00000010b, &P1DIR      ; make P1.1 output
bis.b #00000010b, &P1OUT      ; make P1.1 high
```

mloop:

```
bit.b #10000000b, &P1IN      ; bit test P1.7
jne turnoff
jmp on
```

turnoff:

```
bic.b #00000010b, &P1OUT      ; turn off led
jmp mloop                     ;go mloop
```

on:

```
bis.b #00000010b, &P1OUT      ; turn on led
jmp mloop                     ;go mloop
```

Explanation:

This is a project in which we use two processors. The first processor presses a button and creates an output. The second processor uses the value it receives from the first to turn on or turn off the LED. In the code part, we set the p1.3 pin as Input and the p2.0 bit as output by using bis/bic instruction for PxDIR. Then we set the pins' mode to Digital I/O using bis/bic instruction for PxSEL. Then enable pull-up resistor for P1.3 pin and enable the interrupts for P1.3. And then if he presses the button, he will enter the interrupt and switch P2.0. Then he will send this to the second processor. The second processor will decide to turn on or turn off.