

```
1  .global EXTI0_IRQHandler
2  .type EXTI0_IRQHandler, %function // needed for vector table
3  .global main
4
5  .syntax unified
6  .section .text.ButtonDemo
7
8  EXTI0_IRQHandler:
9      push {lr}
10     //increment PHASE
11     ldr r0,=PHASE
12     ldr r1,[r0]
13     cmp r1,#2
14     beq ResetPhase
15     add r1, #1
16     b StorePhase
17 ResetPhase:
18     mov r1, #0
19 StorePhase:
20     str r1,[r0]
21     //small delay for debounce
22     mov r0,#0x00800000 // 10 ms
23 Bloop:
24     subs r0,#1
25     bne Bloop
26
27     //exit the handler
28     bl Reset_EXTI0
29     pop {lr}
30     bx r14
31
32 main:
33     bl InitButton //initialize PA0 as input from button
34     bl Init_EXTI0 //button to trigger EXTI0
35     bl InitLEDs //LEDs on PB9-8-7-6
36
37     cpsie i //enable interrupts
38 loop:
39     bl PhaseDisplay
40     b loop
41
42     //endless loop of incrementing MCount every half second
43
44
45     .data
46 PHASE: .word 0
47 COUNTER: .word 0
48     .global COUNTER
49     .global PHASE
50
51     .end
52
```