

```
/* Homework 2 Problem 4
 *
 * Count the number of times SW0 is moved to the "1" position,
 * and display this on the red LEDs.
 *
 * Sometimes the count goes up by more than 1 when
 * you move the switch. Why do you think this happens?
 */

.include "ubc-de1media-macros.s"

.equ          SW0mask,          0x01

.global _start

.text
_start:      movia    r23, IOBASE
             movi     r4, 0

loop:

/* wait for SW1 to go from 1 to 0 */
while1:      ldwio    r3, SWITCH(r23)
             andi     r3, r3, SW0mask
             bne      r3, r0, while1 /* wait while SW0=1 */

/* wait for SW0 to go from 0 to 1 */
while0:      ldwio    r3, SWITCH(r23)
             andi     r3, r3, SW0mask
             beq      r3, r0, while0 /* wait while SW0=0 */

increment:   addi     r4, r4, 1
             stwio    r4, LEDR(r23)

             br       loop

.end
```