

```

1  #include "mbed.h"
2  #include "pinout.h"
3  #include "to_7seg.h"
4
5  // seven segment display anodes
6  // when in a int8_t, they are 0b-GFEDCBA
7  BusOut      g_seven_seg(SGA_PIN, SGB_PIN, SGC_PIN, SGD_PIN,
8                        SGE_PIN, SGF_PIN, SGG_PIN);
9
10 // display cathodes
11 DigitalOut   g_dsr(DSR_PIN);
12 DigitalOut   g_dsl(DSL_PIN);
13
14 // leds
15 BusOut      g_leds(LDR_PIN, LDM_PIN, LDL_PIN);
16
17
18 //Interrupciones
19 static InterruptIn swr(SWR_PIN);
20 static InterruptIn swl(SWL_PIN);
21
22 static bool volatile swr_fall_evnt;
23 static bool volatile swl_fall_evnt;
24
25 static void swr_fall_isr (void){
26     swr_fall_evnt = true;
27 }
28
29 static void swl_fall_isr(void){
30     swl_fall_evnt = true;
31 }
32
33 // MULTIPLEXACION
34 static Ticker tick_4ms;
35 static bool volatile tick_4ms_evnt;
36 static void tick_4ms_isr (void){
37     tick_4ms_evnt = true;
38 }
39
40 //REBOTES
41 static Timeout tout_4ms_swr;
42 static bool volatile tout_4ms_swr_evnt;
43 static void tout_4ms_swr_isr (void){
44     tout_4ms_swr_evnt = true;
45 }
46
47 static Timeout tout_4ms_swl;
48 static bool volatile tout_4ms_swl_evnt;
49 static void tout_4ms_swl_isr (void){
50     tout_4ms_swl_evnt = true;
51 }
52
53
54 int main (void) {
55     uint8_t pulsaciones_m = 50;
56     bool mux = false;
57
58     g_dsl = 1;
59     g_dsr = 1;
60
61     g_seven_seg = to_7seg(pulsaciones_m);
62
63     swr.mode(PullUp);
64     swr.fall(swr_fall_isr);
65
66     swl.mode(PullUp);
67     swl.fall(swl_fall_isr);
68
69     tick_4ms.attach_us(tick_4ms_isr, 4000);
70     tout_4ms_swr.attach_us(tout_4ms_swr_isr, 4000);
71     tout_4ms_swl.attach_us(tout_4ms_swl_isr, 4000);
72
73     for (;;) {
74
75         if(tick_4ms_evnt){
76             tick_4ms_evnt = false;
77             mux = !mux;
78
79             if(mux){
80                 g_dsl = 0;
81                 g_dsr = 1;
82                 g_seven_seg = to_7seg(pulsaciones_m%10);
83
84             }else{

```

```

85         g_dsl = 1;
86         g_dsr = 0;
87         g_seven_seg = to_7seg(pulsaciones_m/10);
88     }
89 }
90
91 if(swr_fall_evnt){
92     swr_fall_evnt = false;
93     tout_4ms_swr.attach_us(tout_4ms_swr_isr,4000);
94 }
95
96 if(swl_fall_evnt){
97     swl_fall_evnt = false;
98     tout_4ms_swl.attach_us(tout_4ms_swl_isr,4000);
99 }
100
101 if(tout_4ms_swr_evnt){
102     tout_4ms_swr_evnt = false;
103
104     if(swr == 0){
105         pulsaciones_m = (pulsaciones_m == 0) ? 0 : (pulsaciones_m-1);
106     }
107 }
108
109 if(tout_4ms_swl_evnt){
110     tout_4ms_swl_evnt = false;
111
112     if(swl == 0){
113         pulsaciones_m = (pulsaciones_m == 99) ? 99 : (pulsaciones_m+1);
114     }
115 }
116
117 __disable_irq();
118 if(!tick_4ms_evnt && !swr_fall_evnt && !swl_fall_evnt && !tout_4ms_swr_evnt &&
!tout_4ms_swl_evnt){
119     __WFI();
120 }
121 __enable_irq();
122
123
124 } // for (;;)
125 } // main()
126

```