```cpp
#include "mbed.h"
#include "pinout.h"
#include "to_7seg.h"

// seven segment display anodes
// when in a int8_t, they are 0b-GFEDCBA
BusOut      g_seven_seg(SGA_PIN, SGB_PIN, SGC_PIN, SGD_PIN,
                        SGE_PIN, SGF_PIN, SGG_PIN);

// display cathodes
DigitalOut  g_dsr(DSR_PIN);
DigitalOut  g_dsl(DSL_PIN);

// leds
BusOut      g_leds(LDR_PIN, LDM_PIN, LDL_PIN);

//Interrupciones
static InterruptIn swr(SWR_PIN);
static InterruptIn swl(SWL_PIN);

static bool volatile swr_fall_evnt;
static bool volatile swl_fall_evnt;

static void swr_fall_isr (void){
  swr_fall_evnt = true;
}

static void swl_fall_isr(void){
  swl_fall_evnt = true;
}

// MULTIPLEXACION
static Ticker tick_4ms;
static bool volatile tick_4ms_evnt;
static void tick_4ms_isr (void){
  tick_4ms_evnt = true;
}

//REBOTES
static Timeout tout_4ms_swr;
static bool volatile tout_4ms_swr_evnt;
static void tout_4ms_swr_isr (void){
  tout_4ms_swr_evnt = true;
}

static Timeout tout_4ms_swl;
static bool volatile tout_4ms_swl_evnt;
static void tout_4ms_swl_isr (void){
  tout_4ms_swl_evnt = true;
}

//tiempo de refresco leds
static Ticker tick_10ms;
static bool volatile tick_10ms_evnt;
static void tick_10ms_isr (void){
  tick_10ms_evnt = true;
}

static Timeout tout_led_off;
static bool volatile tout_led_off_evnt;
static void tout_led_off_isr (void){
  tout_led_off_evnt = true;
}

int main (void)  {
  uint8_t pulsaciones_m = 50;
  bool mux = false;

  g_dsl = 1;
  g_dsr = 1;

  g_seven_seg = to_7seg(pulsaciones_m);

  swr.mode(PullUp);
  swr.fall(swr_fall_isr);

  swl.mode(PullUp);
  swl.fall(swl_fall_isr);

  tick_4ms.attach_us(tick_4ms_isr,4000);
  tick_10ms.attach_us(tick_10ms_isr,10000);

  for (;;) {

    if(tick_4ms_evnt){
      tick_4ms_evnt = false;
      mux = !mux;

      if(mux){
        g_dsl = 0;
        g_dsr = 1;
        g_seven_seg = to_7seg(pulsaciones_m%10);

      }else{
        g_dsl = 1;
        g_dsr = 0;
        g_seven_seg = to_7seg(pulsaciones_m/10);
      }
    }

    if(swr_fall_evnt){
      swr_fall_evnt = false;
      tout_4ms_swr.attach_us(tout_4ms_swr_isr,4000);
    }

    if(swl_fall_evnt){
      swl_fall_evnt = false;
      tout_4ms_swl.attach_us(tout_4ms_swl_isr,4000);
    }

    if(tout_4ms_swr_evnt){
      tout_4ms_swr_evnt = false;

      if(swr == 0){
        pulsaciones_m = (pulsaciones_m == 0) ? 0 : (pulsaciones_m-1);
      }
    }

    if(tout_4ms_swl_evnt){
      tout_4ms_swl_evnt = false;

      if(swl == 0){
        pulsaciones_m = (pulsaciones_m == 99) ? 99 : (pulsaciones_m+1);
      }
    }

    if(tick_10ms_evnt){
      tick_10ms_evnt = false;

      if(pulsaciones_m > 0 and  pulsaciones_m < 51){
        g_leds = 4;
        tout_led_off.attach_us(tout_led_off_isr,
(200*pulsaciones_m-3.97*(50-pulsaciones_m)));

      }else if (pulsaciones_m > 50 and pulsaciones_m <= 99){
         g_leds = 1;
        tout_led_off.attach_us(tout_led_off_isr,
(101*pulsaciones_m-107.2*(99-pulsaciones_m)));

      }else if(pulsaciones_m == 0){
        g_leds = 0;
      }

    }

    if(tout_led_off_evnt){
      tout_led_off_evnt = false;
      g_leds = 0;
    }


    __disable_irq();
    if(!tick_4ms_evnt && !swr_fall_evnt && !swl_fall_evnt && !tout_4ms_swr_evnt &&
!tout_4ms_swl_evnt && !tick_10ms_evnt && !tout_led_off_evnt){
      __WFI();
    }
    __enable_irq();


  } // for (;;)
 } // main()
```