```
#include "259macros.h"

/* global variables */
int counter = 0;
int incr = 1;

/* This ISR will be called every 100ms */
/* Display a counter on the red LEDs */
void counterISR()
{
        /* remember: no waiting in an ISR */
        counter += incr;
        *pLEDR = counter;

        /* clear source of COUNTER interrupt before returning */
        *pCOUNTER_STATUS = 1;
}

void enableCounterIRQ( int interval_cycles, ptr_to_function newISR )
{
        registerISR( IRQ_COUNTER, newISR ); /* specify which ISR to call when COUNTER interrupts */

        *pCOUNTER               = -interval_cycles; /* initial counter value */
        *pCOUNTER_RELOAD        = -interval_cycles; /* on overflow, start with this value */

        *pCOUNTER_STATUS        = 1;    /* allow counter to send interrupts */
        enableInterrupt( IRQ_COUNTER ); /* allow CPU to receive COUNTER interrupts */
}


/* This ISR will be called every time KEY3 or KEY2 is pressed */
/* On KEY3, change the increment direction */
/* On KEY2, reload a new increment amount */
void keyISR()
{
        /* remember: no waiting in an ISR */
        int keypress = *pKEY;

        if( keypress & 8 )      incr = -incr;
        if( keypress & 4 )      incr = *pSWITCH;

        /* clear source of KEY interrupt before returning */
        *(pKEY+3) = 0;
}

void enableKeyIRQ( int keys_to_watch, ptr_to_function newISR )
{
        registerISR( IRQ_KEY, newISR ); /* specify which ISR to call when KEY interrupts */
        *(pKEY+2) = keys_to_watch;      /* allow KEY to send interrupts for KEY3,KEY2 */
        enableInterrupt( IRQ_KEY );     /* allow CPU to receive KEY interrupts */
}


int main( int argc, char *argv[] )
{
        int keys_to_watch;

        /* Clears all interrupt enables, then enables interrupts */
        initInterrupts();

        /* Set up COUNTER to interrupt and call the ISR every 100ms. */
        enableCounterIRQ( 100*ONE_MS, counterISR );

        /* Set up KEY to interrupt every time KEY3 or KEY2 is pressed */
        keys_to_watch = 0x8 | 0x4 ;
        enableKeyIRQ( keys_to_watch, keyISR );

        /* main loop is busy doing nothing, forever */
        while( 1 )
                ;

        return 0; /* never gets here */
}
```