EECS 363: Digital Filtering
Lab 3 - 1/25/2017
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Code:

```
#include "stdio.h"
#include "csl_i2s.h"
#include "csl_intc.h"
#include "usbstk5505.h"
#include "usbstk5505_led.h" // added for led control
#include "aic3204.h"
//#include "usbstk5505_gpio.h"//added, compiles without
//#include "usbstk5505_i2c.h"//added, compiles without
#include "PLL.h"
#include "stereo.h"
#include "stereo.c"

Int16 left_input; //do these interfere with declarations in aic3204.c?
Int16 right_input;
Int16 left_output;
Int16 right_output;
Int16 mono_input;


#define SAMPLES_PER_SECOND 1500000

unsigned long j = 0; //added for led control
short toggle = 0; //added for led control

interrupt void codec_read_isr(void);

void main( void )
{

    /* Initialize BSL */
    USBSTK5505_init( );
    USBSTK5505_LED_init(); //added for LED control

       /* Initialize PLL */
       pll_frequency_setup(100);

    /* Initialise hardware interface and I2C for code */

    aic3204_hardware_init();

    /* Initialise the AIC3204 codec */
       aic3204_init();

    printf("\n\nRunning Getting Started Project\n");
    printf( "<-> Audio Loopback from Stereo IN --> to HP/Lineout\n" );

       /* Setup sampling frequency and 30dB gain for microphone */
```

```
    set_sampling_frequency_and_gain(SAMPLES_PER_SECOND, 0);// was 30 dB; I changed.

    asm(" bclr XF");

    IRQ_plug(RCV2_EVENT, &codec_read_isr);
    IRQ_enable(RCV2_EVENT);
    IRQ_globalEnable();

       while(1)
       {
     // begin segment for led control
     if (j++ == SAMPLES_PER_SECOND)
      {
       toggle = 1-toggle;
       asm(" SSBX INTM");
       if (toggle)
         USBSTK5505_LED_on(0);
       else
         USBSTK5505_LED_off(0);
           j = 0;
      }
     // end segment for led control
     asm(" RSBX INTM");
       }

   /* Disable I2S and put codec into reset */
    aic3204_disable();

    printf( "\n***Program has Terminated***\n" );
    SW_BREAKPOINT;
}

interrupt void codec_read_isr(void)
{
    left_input = I2S2_W0_MSW_R;         // Read Most Significant Word of channel 1
    right_input = I2S2_W1_MSW_R;        // Read Most Significant Word of channel 2
    left_output =  left_input;            // Replace with your own code!
    right_output = right_input;          // Directly connect inputs to outputs.

    if (I2S2_IR & RcvR)
    {
        I2S2_W0_MSW_W = left_output;         // Left output
        I2S2_W1_MSW_W = right_output;        // Right output
    }
    return;
}
```