Real-Time and Embedded Systems Design – Lab 1 Report Submission

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#include <stdint.h>

#include <stdbool.h>

//#include "driverlib/sysctl.h"

//#include "Task1.h"

//#include "driverlib/systick.h"

//#include "driverlib/interrupt.h"

//#include "inc/hw\_memmap.h"

//#include "inc/hw\_gpio.h"

//#include "inc/hw\_types.h"

#include <stdio.h>

#include <stdlib.h>

//#include "driverlib/timer.h"

//#include "driverlib/gpio.h"

#include "tm4c123gh6pm.h"

#define LED\_RED   (1U << 1)

#define LED\_BLUE  (1U << 2)

#define LED\_GREEN (1U << 3)

static uint32\_t volatile l\_tickCtr;

uint32\_t start;

uint32\_t ticks\_red=5; //LED\_RED TICKS

uint32\_t ticks\_blue=10; //LED\_BLUE TICKS

void main\_blinky1(){

  while(1){

  GPIO\_PORTF\_DATA\_R = LED\_RED;

  \_\_asm("CPSID I");

    start=l\_tickCtr;

    \_\_asm("CPSIE I");

    while((l\_tickCtr-start)<ticks\_red){}

    GPIO\_PORTF\_DATA\_R &= ~LED\_RED;

    \_\_asm("CPSID I");

    start=l\_tickCtr;

    \_\_asm("CPSIE I");

    while((l\_tickCtr-start)<ticks\_red){}

  }

}

void main\_blinky2(){

  while(1){

  GPIO\_PORTF\_DATA\_R = LED\_BLUE;

  \_\_asm("CPSID I");

    start=l\_tickCtr;

    \_\_asm("CPSIE I");

    while((l\_tickCtr-start)<ticks\_blue){}

    GPIO\_PORTF\_DATA\_R &= ~LED\_BLUE;

    \_\_asm("CPSID I");

    start=l\_tickCtr;

    \_\_asm("CPSIE I");

    while((l\_tickCtr-start)<ticks\_blue){}

  }

}

int main()

{

    \_\_asm("CPSID I");

    SYSCTL\_RCGCGPIO\_R=0x20;

    GPIO\_PORTF\_DIR\_R=0x0E;

    GPIO\_PORTF\_DEN\_R=0x0E;

    NVIC\_ST\_RELOAD\_R=0xFFFFFF;

    NVIC\_ST\_CTRL\_R=7;

    \_\_asm("CPSIE I");

      main\_blinky1();

      main\_blinky2();

}

void SysTick\_Handler(void) {

    ++l\_tickCtr;

}