Nathan Hanuscin

Github root directory: https://github.com/nhanuscin/HappyFunStuff

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Task 01:

Youtube Link: N/A

Modified Schematic (if applicable): N/A

Modified Code:
```c
//----------------------------------------
// TivaWare Header Files
//----------------------------------------
#include <stdint.h>
#include <stdbool.h>
#include <time.h>
#include "inc/hw_memmap.h"
#include "inc/hw_types.h"
#include "driverlib/sysctl.h"
#include "driverlib/gpio.h"
#include "inc/hw_ints.h"
#include "driverlib/interrupt.h"
#include "driverlib/timer.h"


//----------------------------------------
// Prototypes
//----------------------------------------
void hardware_init(void);
void ledToggle(void);
void delay(void);

//----------------------------------------
// Globals
//----------------------------------------
volatile int16_t i16ToggleCount = 0;

//----------------------------------------------------------------------
// main()
//----------------------------------------------------------------------
void main(void)
{
    hardware_init();                                    // init hardware via Xware

    while(1)                                            // forever loop
    {
        ledToggle();                                    // toggle LED
        delay();                                 // create a delay of ~1/2sec

        i16ToggleCount += 1;                            // keep track of #toggles
    }
}
```

Grading scheme: 30% Coding, 30% Documentation, 40% Execution/Video.

```
//------------------------------------------------------------------------------
// hardware_init()
//
// inits GPIO pins for toggling the LED
//------------------------------------------------------------------------------
void hardware_init(void)
{
        //Set CPU Clock to 40MHz. 400MHz PLL/2 = 200 DIV 5 = 40MHz
        SysCtlClockSet(SYSCTL_SYSDIV_5|SYSCTL_USE_PLL|SYSCTL_XTAL_16MHZ|SYSCTL_OSC_M
AIN);

        // ADD Tiva-C GPIO setup - enables port, sets pins 1-3 (RGB) pins for output
        SysCtlPeripheralEnable(SYSCTL_PERIPH_GPIOF);
        GPIOPinTypeGPIOOutput(GPIO_PORTF_BASE, GPIO_PIN_1|GPIO_PIN_2|GPIO_PIN_3);

        // Turn on the LED
        GPIOPinWrite(GPIO_PORTF_BASE, GPIO_PIN_1|GPIO_PIN_2|GPIO_PIN_3, 4);

}


//------------------------------------------------------------------------------
// ledToggle()
//
// toggles LED on Tiva-C LaunchPad
//------------------------------------------------------------------------------
void ledToggle(void)
{
        // LED values - 2=RED, 4=BLUE, 8=GREEN
        if(GPIOPinRead(GPIO_PORTF_BASE, GPIO_PIN_2))
        {
            GPIOPinWrite(GPIO_PORTF_BASE, GPIO_PIN_1|GPIO_PIN_2|GPIO_PIN_3, 0);
        }
        else
        {
            GPIOPinWrite(GPIO_PORTF_BASE, GPIO_PIN_2, 4);
        }
}


//------------------------------------------------------------------------------
// delay()
//
// Creates a 500ms delay via TivaWare fxn
//------------------------------------------------------------------------------
void delay(void)
{
         SysCtlDelay(6700000);          // creates ~500ms delay - TivaWare fxn

}

-----------------------------------------------------------------------------------
```

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