

Lab 6

Task 1

```
#include <stdint.h>
#include <stdbool.h>
#include "utils/ustdlib.h"
#include "inc/hw_types.h"
#include "inc/hw_memmap.h"
#include "driverlib/sysctl.h"
#include "driverlib/pin_map.h"
#include "driverlib/debug.h"
#include "driverlib/hibernate.h"
#include "driverlib/gpio.h"

#ifdef DEBUG
void __error__(char *pcFilename, uint32_t ui32Line)
{
}
#endif

int main (void)
{
    SysCtlClockSet
(SYSCTL_SYSDIV_5|SYSCTL_USE_PLL|SYSCTL_XTAL_16MHZ|SYSCTL_OSC_MAIN);    //set the
system clock to 40 MHz
    SysCtlPeripheralEnable (SYSCTL_PERIPH_GPIOF); //enables port F, which is
connected to the LEDs
    GPIOPinTypeGPIOOutput (GPIO_PORTF_BASE, GPIO_PIN_1|GPIO_PIN_2|GPIO_PIN_3);
    //set GPIO.PF1, 2, 3 as outputs
    GPIOPinWrite (GPIO_PORTF_BASE, GPIO_PIN_1|GPIO_PIN_2|GPIO_PIN_3, 0x08);
    //writes 1 to pin 3 of the gpio (green led)

    SysCtlPeripheralEnable (SYSCTL_PERIPH_HIBERNATE);    //Enables hibernate mode
on Tiva C
    HibernateEnableExpClk (SysCtlClockGet());    //Sets the clock to be the same
as the System clock (40MHz)
    HibernateGPIORetentionEnable (); //Keeps the hibernate pin enabled and
maintained during hibernation
    SysCtlDelay (64000000);    //delay of 4 seconds
    HibernateRTCSet (0);    //reset the RTC to 0
    HibernateRTCEnable ();    //enables the RTC
    HibernateRTCMatchSet (0, 5);    //sets wake up time to 5 seconds
    HibernateWakeSet (HIBERNATE_WAKE_PIN | HIBERNATE_WAKE_RTC);    //sets the
wake condition of the wake pin (sw2 and RTC)
    GPIOPinWrite (GPIO_PORTF_BASE, GPIO_PIN_3, 0x00);    //turn off the green led
before going to sleep

    HibernateRequest ();
    while (1)
    {}
}
```