**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)

{};

}