

**Date Submitted:** 10/9/2018

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## Task 01:

Youtube Link: [https://youtu.be/x5kB4sg\\_TAs](https://youtu.be/x5kB4sg_TAs)

```
#include <stdint.h>
#include <stdbool.h>
#include "inc/tm4c123gh6pm.h"
#include "inc/hw_memmap.h"
#include "inc/hw_types.h"
#include "driverlib/sysctl.h"
#include "driverlib/interrupt.h"
#include "driverlib/gpio.h"
#include "driverlib/timer.h"

int main(void)
{
    uint32_t ui32Period, dutycycle;

    SysCtlClockSet(SYSCTL_SYSDIV_5|SYSCTL_USE_PLL|SYSCTL_XTAL_16MHZ|SYSCTL_OSC_MAIN);

    SysCtlPeripheralEnable(SYSCTL_PERIPH_GPIOF);

    GPIOPinTypeGPIOOutput(GPIO_PORTF_BASE, GPIO_PIN_1|GPIO_PIN_2|GPIO_PIN_3);

    SysCtlPeripheralEnable(SYSCTL_PERIPH_TIMER0);

    GPIOPinTypeTimer(GPIO_PORTF_BASE, GPIO_PIN_0);

    // GPIOPinConfigure(GPIO_PF0_T0CCP0);

    TimerConfigure(TIMER0_BASE, TIMER_CFG_A_PWM);

    ui32Period = (SysCtlClockGet()/2); // clock period. change toggle of GPIO to 2 HZ, 75% duty cycle.
    dutycycle = ui32Period / 4;
    // 2HZ => total delay = 0.5s, 0.375 on, 0.125 off
    TimerLoadSet(TIMER0_BASE, TIMER_A, ui32Period -1);
    TimerMatchSet(TIMER0_BASE, TIMER_A, dutycycle);

    TimerEnable(TIMER0_BASE, TIMER_A);
    // create delay subrotien without using the interrupt.
    // basic delay should be 0.125s
    while(1)
    {
        if((TimerValueGet(TIMER0_BASE, TIMER_A) < dutycycle)) //Blue LED is off when timer value is less
        than the dutycycle value.
        {
            GPIOPinWrite(GPIO_PORTF_BASE, GPIO_PIN_1|GPIO_PIN_2|GPIO_PIN_3, 0);
        }
        else
        {
            GPIOPinWrite(GPIO_PORTF_BASE, GPIO_PIN_2, 4);
        }
    }
}
```

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## Task 02:

not completed

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