Ron Joshua Recrio
Github root directory: https://github.com/recrio/submissions.2/tree/master/Lab%203

Date Submitted:

Task 00: Execute provided code

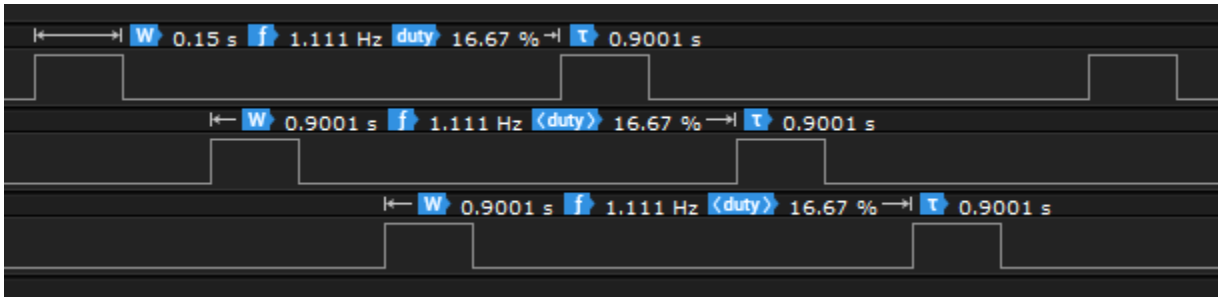
Youtube Link:

https://www.youtube.com/watch?v=nFliIjVSeRg

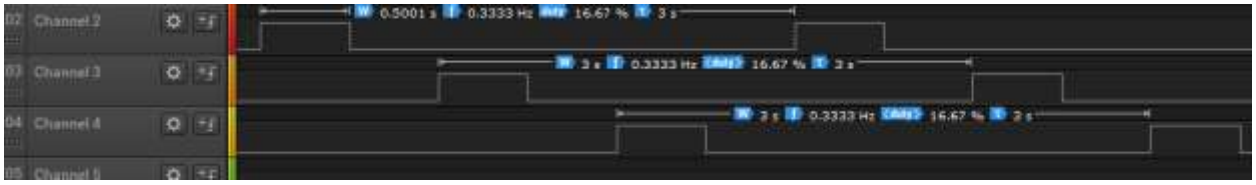
Task 01:

Current period and on-time using provided code:
SysCtlDelay of 2M is equal to 6M CPU Cycles
6M/40MHz = 0.15s

Period of LED blinking = .3s
On-Time of LEDs = .15s
Verification:



Calculating New Delay:
Using SYSCTL_SYSDIV_10|SYSCTL_USE_PLL|SYSCTL_XTAL_16MHZ|SYSCTL_OSC_MAIN
400MHz/2/10 = 20MHz is the new Clock Frequency
20MHz*0.5s/3 = 3.3M is the new value for SysCtlDelay
*In the code, SysClockGet() is used instead of raw values
Verification:



Youtube Link:

https://www.youtube.com/watch?v=fUpzNutyolo

Modified Schematic (if applicable):

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

Modified Code:

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

uint8_t ui8PinData=2;

int main(void)
{

SysCtlClockSet(SYSCTL_SYSDIV_10|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);

    while(1)
    {

        GPIOPinWrite(GPIO_PORTF_BASE, GPIO_PIN_1|GPIO_PIN_2|GPIO_PIN_3, ui8PinData);
        SysCtlDelay(0.5*(SysCtlClockGet() / 3));
        GPIOPinWrite(GPIO_PORTF_BASE, GPIO_PIN_1|GPIO_PIN_2|GPIO_PIN_3, 0x00);
        SysCtlDelay(0.5*(SysCtlClockGet() / 3));
        if(ui8PinData==8) {ui8PinData=2;} else {ui8PinData=ui8PinData*2;}
    }
}
```

Task 02:

*The provided code was already in BGR sequence, so I changed it to RGB instead.

Youtube Link:
Task 02 A: https://youtu.be/VEQOMwYCFYo
Task 02 B: https://youtu.be/uJpkTpOKcLw

Modified Schematic (if applicable):

Modified Code:

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

uint8_t ui8PinData=2;

int main(void)
{

SysCtlClockSet(SYSCTL_SYSDIV_10|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);

    while(1)
    {

        GPIOPinWrite(GPIO_PORTF_BASE, GPIO_PIN_1|GPIO_PIN_2|GPIO_PIN_3, ui8PinData);
        SysCtlDelay(0.5*(SysCtlClockGet() / 3));
        GPIOPinWrite(GPIO_PORTF_BASE, GPIO_PIN_1|GPIO_PIN_2|GPIO_PIN_3, 0x00);
        SysCtlDelay(0.5*(SysCtlClockGet() / 3));
        if(ui8PinData==2){ui8PinData=8;}
        else if(ui8PinData==4){ui8PinData=10;}
        else if(ui8PinData==10){ui8PinData=6;}
        else if (ui8PinData==6){ui8PinData=12;}
        else if (ui8PinData==12){ui8PinData=14;}
        else if (ui8PinData==14){ui8PinData=2;}
        else{ui8PinData=ui8PinData/2;}
    }
}
```

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