**Date Submitted: 09/24/19**

**Task 00: Execute provided code**

**Youtube Link:**

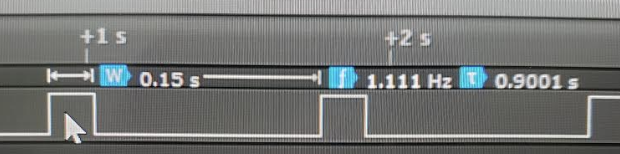
<https://www.youtube.com/watch?v=7rjQzp8_U-s>

**------------------------------------------------------------------------------------**

**Task 01:**

Youtube Link:

<https://www.youtube.com/watch?v=9Z57TuJziv8>



**40MHz/2MHz = 20**

**3 /20 = 0.15s**

**Modified Code:**

**#include** <stdint.h>

**#include** <stdbool.h>

**#include** "inc/hw\_types.h"

**#include** "inc/hw\_memmap.h"

**#include** "driverlib/sysctl.h"

**#include** "driverlib/gpio.h"

**int** **main**(**void**)

{

uint8\_t ui8PinData = 2;

**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);

**while**(1)

{

// Turn on the LED

**GPIOPinWrite**(GPIO\_PORTF\_BASE, GPIO\_PIN\_1| GPIO\_PIN\_2| GPIO\_PIN\_3, ui8PinData);

// Delay for a bit

**SysCtlDelay**(2000000); //loop timer, loop count not delay in clock cycles, each loop = 3 cpu cycles

**GPIOPinWrite**(GPIO\_PORTF\_BASE, GPIO\_PIN\_1|GPIO\_PIN\_2|GPIO\_PIN\_3, 0x00);

**SysCtlDelay**(2000000);

// Cycle through Red, Green and Blue LEDs

**if** (ui8PinData == 8) {ui8PinData = 2;} **else** {ui8PinData = ui8PinData\*2;}

}

}

**// Code 2**



**0.5 = 3x**

**X = 6**

**6 = 40 MHz/y**

**Y = 6.666667**

**#include** <stdint.h>

**#include** <stdbool.h>

**#include** "inc/hw\_types.h"

**#include** "inc/hw\_memmap.h"

**#include** "driverlib/sysctl.h"

**#include** "driverlib/gpio.h"

**int** **main**(**void**)

{

uint8\_t ui8PinData = 2;

**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);

**while**(1)

{

// Turn on the LED

**GPIOPinWrite**(GPIO\_PORTF\_BASE, GPIO\_PIN\_1| GPIO\_PIN\_2| GPIO\_PIN\_3, ui8PinData);

// Delay for a bit

**SysCtlDelay**(6666666); //loop timer, loop count not delay in clock cycles, each loop = 3 cpu cycles

**GPIOPinWrite**(GPIO\_PORTF\_BASE, GPIO\_PIN\_1|GPIO\_PIN\_2|GPIO\_PIN\_3, 0x00);

**SysCtlDelay**(6666666);

// Cycle through Red, Green and Blue LEDs

**if** (ui8PinData == 8) {ui8PinData = 2;} **else** {ui8PinData = ui8PinData\*2;}

}

}**------------------------------------------------------------------------------------**

**Task 02\_a:**

Youtube Link:

<https://www.youtube.com/watch?v=KARvytE81Ms>

**Modified Code:**

**// Insert code here**

**#include** <stdint.h>

**#include** <stdbool.h>

**#include** "inc/hw\_types.h"

**#include** "inc/hw\_memmap.h"

**#include** "driverlib/sysctl.h"

**#include** "driverlib/gpio.h"

**int** **main**(**void**)

{

uint8\_t ui8PinData = 4;

**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);

**while**(1)

{

// Turn on the LED

**GPIOPinWrite**(GPIO\_PORTF\_BASE, GPIO\_PIN\_1| GPIO\_PIN\_2| GPIO\_PIN\_3, ui8PinData);

// Delay for a bit

**SysCtlDelay**(10000000); //loop timer, loop count not delay in clock cycles, each loop = 3 cpu cycles

**GPIOPinWrite**(GPIO\_PORTF\_BASE, GPIO\_PIN\_1|GPIO\_PIN\_2|GPIO\_PIN\_3, 0x00);

**SysCtlDelay**(10000000);

// Cycle through Red, Green and Blue LEDs

**if** (ui8PinData == 8) {ui8PinData = 2;} **else** {ui8PinData = ui8PinData\*2;}

}

}

**------------------------------------------------------------------------------------**

**Task 02\_b:**

Youtube Link:

<https://www.youtube.com/watch?v=SDDKY79f3e4>

**Modified Code:**

**// Insert code here**

**#include** <stdint.h>

**#include** <stdbool.h>

**#include** "inc/hw\_types.h"

**#include** "inc/hw\_memmap.h"

**#include** "driverlib/sysctl.h"

**#include** "driverlib/gpio.h"

**int** **main**(**void**)

{

uint8\_t ui8PinData = 14;

**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);

**while**(1)

{

// Turn on red

**GPIOPinWrite**(GPIO\_PORTF\_BASE, GPIO\_PIN\_1, ui8PinData);

**SysCtlDelay**(10000000);

**GPIOPinWrite**(GPIO\_PORTF\_BASE, GPIO\_PIN\_1|GPIO\_PIN\_2|GPIO\_PIN\_3, 0x00);

**SysCtlDelay**(10000000);

//Turn on Green

**GPIOPinWrite**(GPIO\_PORTF\_BASE, GPIO\_PIN\_3, ui8PinData);

**SysCtlDelay**(10000000);

**GPIOPinWrite**(GPIO\_PORTF\_BASE, GPIO\_PIN\_1|GPIO\_PIN\_2|GPIO\_PIN\_3, 0x00);

**SysCtlDelay**(10000000);

//Turn on Blue

**GPIOPinWrite**(GPIO\_PORTF\_BASE, GPIO\_PIN\_2, ui8PinData);

**SysCtlDelay**(10000000);

**GPIOPinWrite**(GPIO\_PORTF\_BASE, GPIO\_PIN\_1|GPIO\_PIN\_2|GPIO\_PIN\_3, 0x00);

**SysCtlDelay**(10000000);

//Turn on RG

**GPIOPinWrite**(GPIO\_PORTF\_BASE, GPIO\_PIN\_1|GPIO\_PIN\_3, ui8PinData);

**SysCtlDelay**(10000000);

**GPIOPinWrite**(GPIO\_PORTF\_BASE, GPIO\_PIN\_1|GPIO\_PIN\_2|GPIO\_PIN\_3, 0x00);

**SysCtlDelay**(10000000);

//Turn on RB

**GPIOPinWrite**(GPIO\_PORTF\_BASE, GPIO\_PIN\_1|GPIO\_PIN\_2, ui8PinData);

**SysCtlDelay**(10000000);

**GPIOPinWrite**(GPIO\_PORTF\_BASE, GPIO\_PIN\_1|GPIO\_PIN\_2|GPIO\_PIN\_3, 0x00);

**SysCtlDelay**(10000000);

//Turn on GB

**GPIOPinWrite**(GPIO\_PORTF\_BASE, GPIO\_PIN\_3|GPIO\_PIN\_2, ui8PinData);

**SysCtlDelay**(10000000);

**GPIOPinWrite**(GPIO\_PORTF\_BASE, GPIO\_PIN\_1|GPIO\_PIN\_2|GPIO\_PIN\_3, 0x00);

**SysCtlDelay**(10000000);

//Turn on RGB

**GPIOPinWrite**(GPIO\_PORTF\_BASE, GPIO\_PIN\_1|GPIO\_PIN\_2|GPIO\_PIN\_3, ui8PinData);

**SysCtlDelay**(10000000);

**GPIOPinWrite**(GPIO\_PORTF\_BASE, GPIO\_PIN\_1|GPIO\_PIN\_2|GPIO\_PIN\_3, 0x00);

**SysCtlDelay**(10000000);

}

}

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