Ali Asadi
Github root directory: https://github.com/aliasadivet/Lab_Submition-.git

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Task 00: Execute provided code

Youtube Link: No submition required

Task 01:

Youtube Link: N/A

Modified Schematic (if applicable): N/A

Calculation of 0.5S delay:

In the present code, since we are using PLL and devide by 5, the total devision is 10:

400MHz/10 = 40MHz.

There fore each cycle is:

1/40MHz = 25nS

So the generated dely for each cycle is:

2000000*25nS = 0.05 S

Since we have 3 cycles in the for loop, the total present delay is:

0.05 S * 3 = 0.15 S

To make 0.5 S delay, we need to multiply 2000000 by 3.333

So it would be 6666667

In Other words:

Each loop has 75nS delay so:

0.75nS * 6666667 = 0.5 S

Code for Task 01:

Modified Code:

```
// Insert code here
#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_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)
    {
        GPIOPinWrite(GPIO_PORTF_BASE, GPIO_PIN_1|GPIO_PIN_2|GPIO_PIN_3, ui8PinData);
        SysCtlDelay(6666667);
        GPIOPinWrite(GPIO_PORTF_BASE, GPIO_PIN_1|GPIO_PIN_2|GPIO_PIN_3, 0x00);
```

```
        SysCtlDelay(6666667);
        if(ui8PinData==8) {ui8PinData=2;} else {ui8PinData=ui8PinData*2;}
    }
}
```

Task 02:

Youtube Link: https://www.youtube.com/watch?v=G0fBdhtlhJ4

Modified Schematic (if applicable): N/A

To change the sequence, I represented the corresponding values in an array, and instead of pin I put the array in the function and incremented to change the value each delay.

Modified Code:

```
// Insert code here
#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=0;
//const char array[] = {4, 8, 2};                 //Task2-a
const char array[] = {2, 8, 4, 10, 6, 12, 14};   //Task2-b

int main(void)
{
    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)
    {
        GPIOPinWrite(GPIO_PORTF_BASE, GPIO_PIN_1|GPIO_PIN_2|GPIO_PIN_3,
array[ui8PinData++]);
        SysCtlDelay(6666667);
        GPIOPinWrite(GPIO_PORTF_BASE, GPIO_PIN_1|GPIO_PIN_2|GPIO_PIN_3, 0x00);
        SysCtlDelay(6666667);
        if(ui8PinData >=sizeof(array)) {ui8PinData=0;}
    }
}
```
