**Date Submitted: 11/23/19**

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

**Task 01:**

Memory browser:

A screenshot of a cell phone

Description automatically generatedA screenshot of a cell phone

Description automatically generated

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

**Task 02:**

Modified Code:

//---------------------------------------------------------------------------

// Project: Blink TM4C - CCS Lab - STARTER

//

// Author: Eric Wilbur

//

// Date: June 2014

//

//---------------------------------------------------------------------------

//------------------------------------------

// TivaWare Header Files

//------------------------------------------

**#include** <stdint.h>

**#include** <stdbool.h>

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

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

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

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

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

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

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

**#include** <time.h>

//----------------------------------------

// Prototypes

//----------------------------------------

**void** hardware\_init(**void**);

**void** ledToggle(**void**);

**void** delay(**void**);

//---------------------------------------

// Globals

//---------------------------------------

**volatile** int16\_t i16ToggleCount = 0;

//---------------------------------------------------------------------------

// main()

//---------------------------------------------------------------------------

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

{

hardware\_init(); // init hardware via Xware

**while**(1) // forever loop

{

ledToggle(); // toggle LED

delay(); // create a delay of ~1/2sec

i16ToggleCount += 1; // keep track of #toggles

}

}

//---------------------------------------------------------------------------

// hardware\_init()

//

// inits GPIO pins for toggling the LED

//---------------------------------------------------------------------------

**void** hardware\_init(**void**)

{

//Set CPU Clock to 40MHz. 400MHz PLL/2 = 200 DIV 5 = 40MHz

SysCtlClockSet(SYSCTL\_SYSDIV\_5|SYSCTL\_USE\_PLL|SYSCTL\_XTAL\_16MHZ|SYSCTL\_OSC\_MAIN);

// ADD Tiva-C GPIO setup - enables port, sets pins 1-3 (RGB) pins for output

SysCtlPeripheralEnable(SYSCTL\_PERIPH\_GPIOF);

GPIOPinTypeGPIOOutput(GPIO\_PORTF\_BASE, GPIO\_PIN\_1|GPIO\_PIN\_2|GPIO\_PIN\_3);

// Turn on the LED

GPIOPinWrite(GPIO\_PORTF\_BASE, GPIO\_PIN\_1|GPIO\_PIN\_2|GPIO\_PIN\_3, 4);

}

//---------------------------------------------------------------------------

// ledToggle()

//

// toggles LED on Tiva-C LaunchPad

//---------------------------------------------------------------------------

**void** ledToggle(**void**)

{

// LED values - 2=RED, 4=BLUE, 8=GREEN

**if**(GPIOPinRead(GPIO\_PORTF\_BASE, GPIO\_PIN\_2))

{

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

}

**else**

{

GPIOPinWrite(GPIO\_PORTF\_BASE, GPIO\_PIN\_2, 4);

}

}

//---------------------------------------------------------------------------

// delay()

//

// Creates a 500ms delay via TivaWare fxn

//---------------------------------------------------------------------------

**void** delay(**void**)

{

SysCtlDelay(13400000); // makes delay 2x as slow!

}

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