

Github root directory: (https://github.com/galveg1/VMs_House-of-Fun-Or-Pain.git)

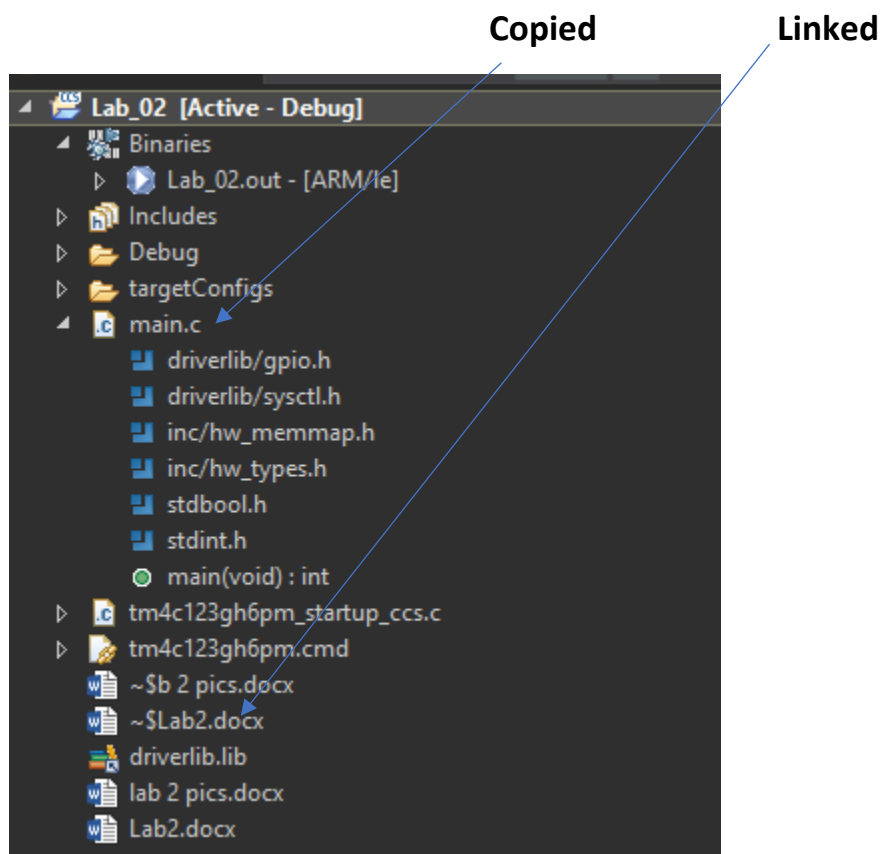
Date Submitted: 09.24.2018

Task 00: *Folder Structure for the Labs*

Youtube Link: N/A

↑ > GUILLERMO GALVEZ > Google Drive > School > 2018_3_Semester_Fall > CPE403 > Workspace8 > lab2

Task 01: Create a New CCS Project & Add files to your project



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

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Task 02: Add Path and Build Vars

Youtube Link: N/A

Path variables | **Linked Resources**

Path variables specify locations in the file system, including other path variables with the. The locations of linked resources may be specified relative to these path variables.

Defined path variables for resource 'Lab_02':

Name	Value
CCS_BASE_ROOT	C:\ti\ccsv8\ccs_base
CCS_INSTALL_ROOT	C:\ti\ccsv8
CG_TOOL_ROOT	C:\ti\ccsv8\tools\compiler\ti-cgt-arm_18.1.3.LTS
ECLIPSE_HOME	C:\ti\ccsv8\eclipse\
PARENT_LOC	C:\Users\GUILL\Google Drive\School\CCS Workspace
PROJECT_LOC	C:\Users\GUILL\Google Drive\School\2018_3_Semest...
TIVAWARE_INSTALL	C:\ti\tivaware_c_series_2_1_4_178
TI_PRODUCTS_DIR	C:\ti
TI_PRODUCTS_DIR_TIR	C:\ti
WORKSPACE_LOC	C:\Users\GUILL\Google Drive\School\CCS Workspace

→

Builder | **Validator** | **Variables** | **Environment** | **Steps** | **Link Order** | **Dependencies**

Name	Type	Value
TIVAWARE_INSTALL	Directory	C:\ti\tivaware_c_series_2_1_4_178

Add dir to #include search path (--include_path, -I)

`${PROJECT_ROOT}` ...

`${TIVAWARE_INSTALL}` ...

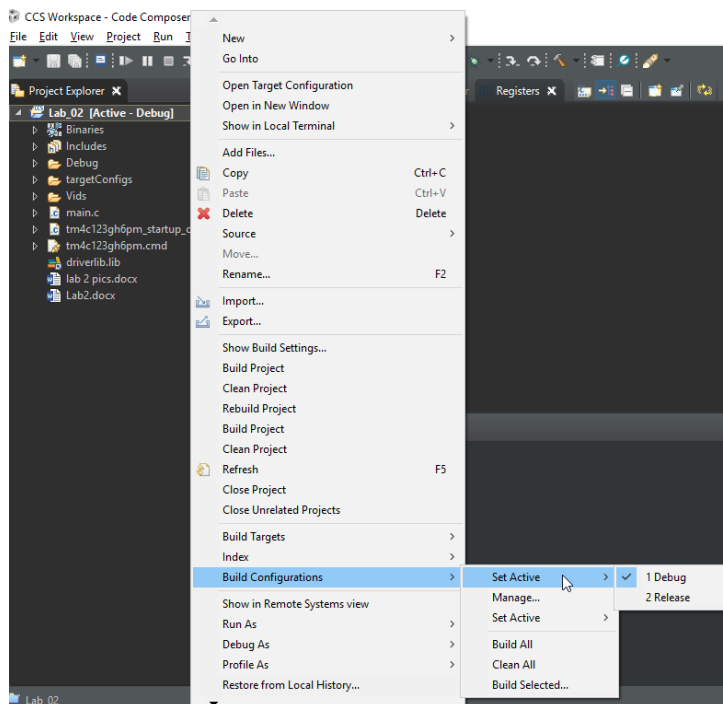
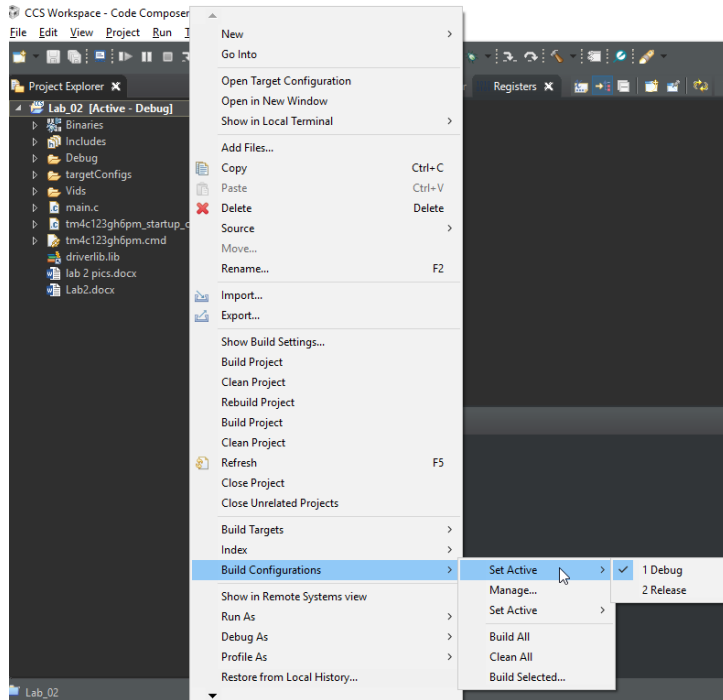
`${CG_TOOL_ROOT}/include` ...

`C:\ti\tivaware_c_series_2_1_4_178`

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Task 03: Explore Build Configs

Youtube Link: N/A



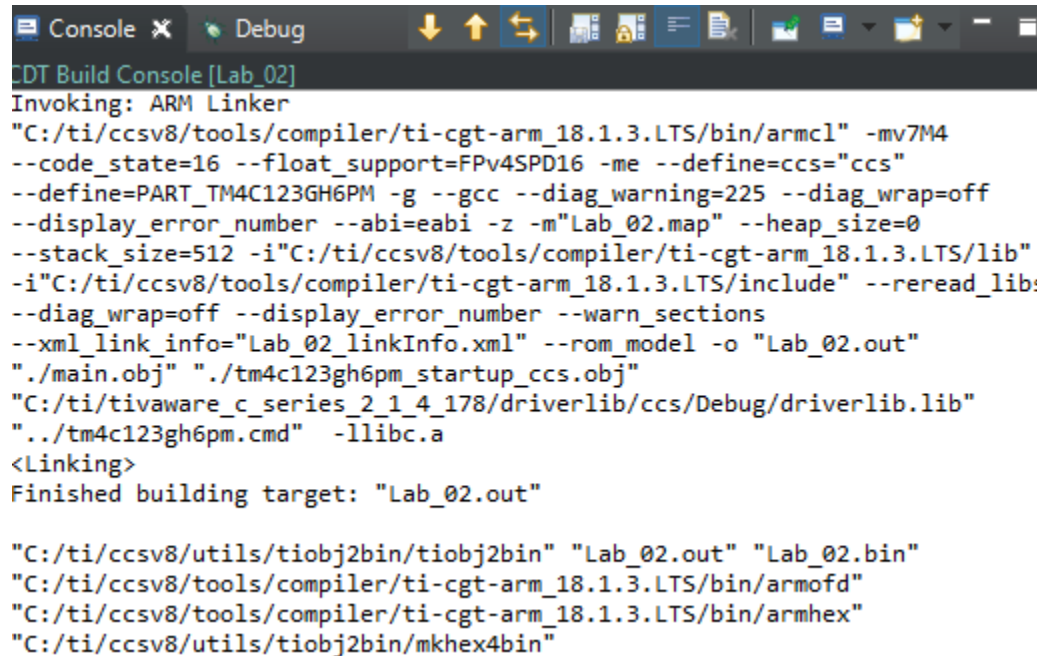
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Task 04: Build, Load, Run, provided code, registers

Youtube Link: <https://youtu.be/2HKztp0etHE>

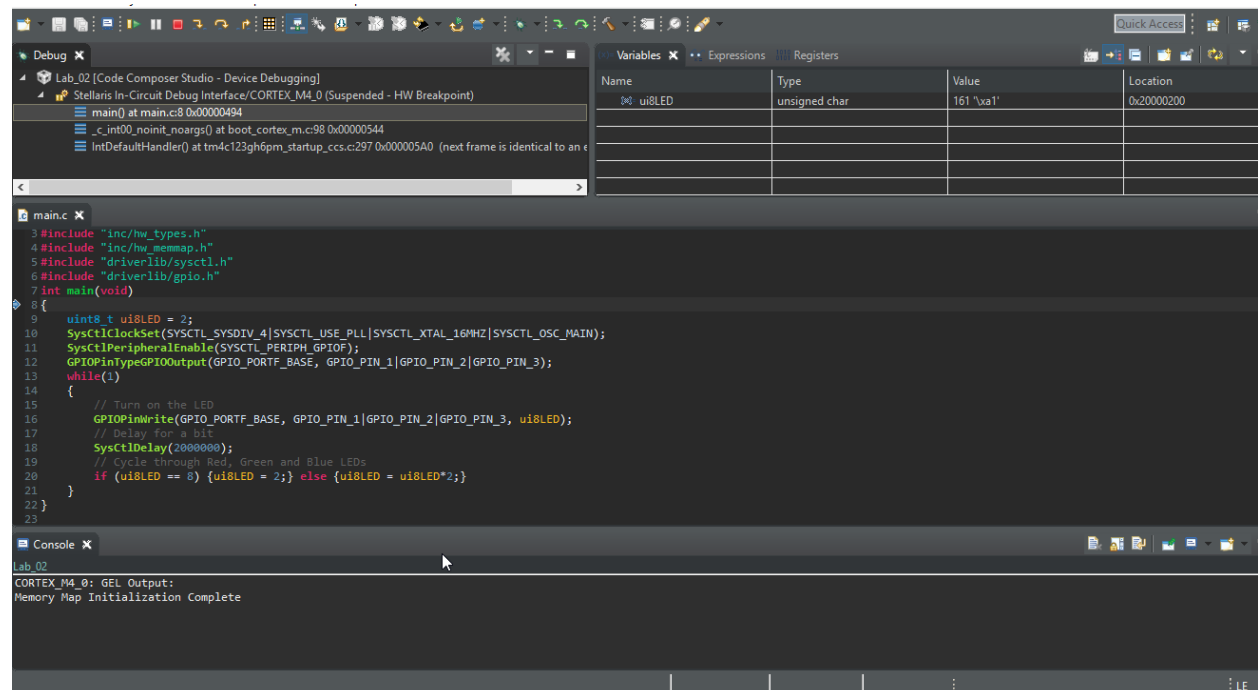
Youtube Link: <https://youtu.be/27QJHZ9vo9w>



```

CDT Build Console [Lab_02]
Invoking: ARM Linker
"C:/ti/ccsv8/tools/compiler/ti-cgt-arm_18.1.3.LTS/bin/armcl" -mv7M4
--code_state=16 --float_support=FPv4SPD16 -me --define=ccs="ccs"
--define=PART_TM4C123GH6PM -g --gcc --diag_warning=225 --diag_wrap=off
--display_error_number --abi=eabi -z -m"Lab_02.map" --heap_size=0
--stack_size=512 -i"C:/ti/ccsv8/tools/compiler/ti-cgt-arm_18.1.3.LTS/lib"
-i"C:/ti/ccsv8/tools/compiler/ti-cgt-arm_18.1.3.LTS/include" --reread_lib:
--diag_wrap=off --display_error_number --warn_sections
--xml_link_info="Lab_02_linkInfo.xml" --rom_model -o "Lab_02.out"
"./main.obj" "./tm4c123gh6pm_startup_ccs.obj"
"C:/ti/tivaware_c_series_2_1_4_178/driverlib/ccs/Debug/driverlib.lib"
"./tm4c123gh6pm.cmd" -llibc.a
<Linking>
Finished building target: "Lab_02.out"

"C:/ti/ccsv8/utlis/tiobj2bin/tiobj2bin" "Lab_02.out" "Lab_02.bin"
"C:/ti/ccsv8/tools/compiler/ti-cgt-arm_18.1.3.LTS/bin/armofd"
"C:/ti/ccsv8/tools/compiler/ti-cgt-arm_18.1.3.LTS/bin/armhex"
"C:/ti/ccsv8/utlis/tiobj2bin/mkhex4bin"
  
```



Registers

Name	Type	Value	Location
ui8LED	unsigned char	161 'va1'	0x20000200

main.c

```

3 #include "inc/hw_types.h"
4 #include "inc/hw_memmap.h"
5 #include "driverlib/sysctl.h"
6 #include "driverlib/gpio.h"
7 int main(void)
8 {
9     uint8_t ui8LED = 2;
10    SysCtlClockSet(SYSCTL_SYSDIV_4|SYSCTL_USE_PLL|SYSCTL_XTAL_16MHZ|SYSCTL_OSC_MAIN);
11    SysCtlPeripheralEnable(SYSCTL_PERIPH_GPIOF);
12    GPIOPinTypeGPIOOutput(GPIO_PORTF_BASE, GPIO_PIN_1|GPIO_PIN_2|GPIO_PIN_3);
13    while(1)
14    {
15        // Turn on the LED
16        GPIOPinWrite(GPIO_PORTF_BASE, GPIO_PIN_1|GPIO_PIN_2|GPIO_PIN_3, ui8LED);
17        // Delay for a bit
18        SysCtlDelay(2000000);
19        // Cycle through Red, Green and Blue LEDs
20        if (ui8LED == 0) {ui8LED = 2;} else {ui8LED = ui8LED*2;}
21    }
22 }
23
  
```

Console

```

Lab_02
Cortex_M4_0: GEL Output:
Memory Map Initialization Complete
  
```

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Name	Value	Description
Core Registers		Core Registers
WATCHDOG0		Watchdog Timer register offsets
WATCHDOG1		Watchdog Timer register offsets
GPIO_PORTA		GPIO register offsets
GPIO_PORTB		GPIO register offsets
GPIO_PORTC		GPIO register offsets
GPIO_PORTD		GPIO register offsets
SSI0		SSI register offsets
SSI1		SSI register offsets
SSI2		SSI register offsets
SSI3		SSI register offsets
UART0		UART register offsets
UART1		UART register offsets
UART2		UART register offsets

Modified Schematic (N/A):

Modified Code:

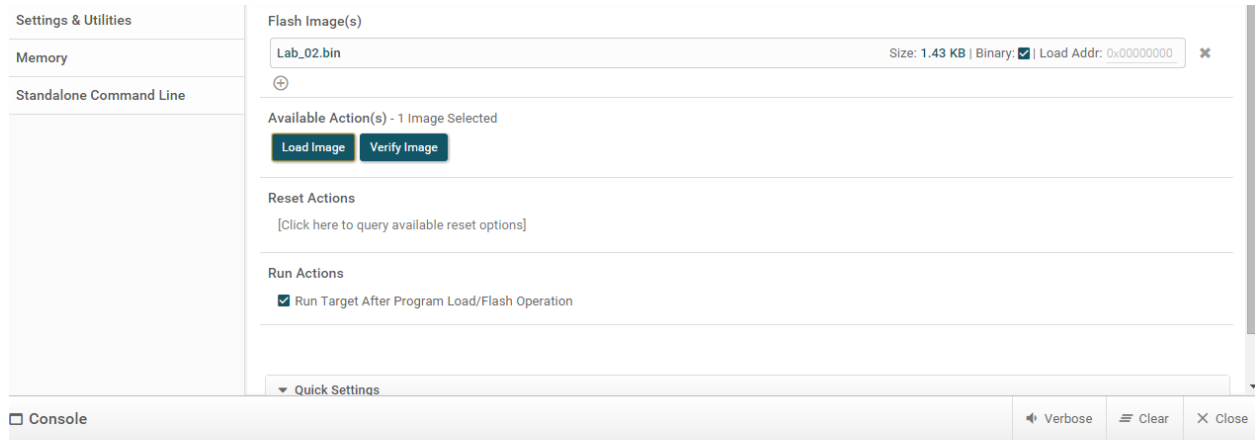
```
// Insert code here
#include <stdint.h>
#include <stdbool.h>
#include "inc/hw_types.h"
#include "inc/hw_memmap.h"
#include "driverlib/sysctl.h"
#include "driverlib/gpio.h"
int main(void)
{
    uint8_t ui8LED = 2;
    SysCtlClockSet(SYSCTL_SYSDIV_4|SYSCTL_USE_PLL|SYSCTL_XTAL_16MHZ|SYSCTL_OSC_MAIN);
    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, ui8LED);
        // Delay for a bit
        SysCtlDelay(2000000);
        // Cycle through Red, Green and Blue LEDs
        if (ui8LED == 8) {ui8LED = 2;} else {ui8LED = ui8LED*2;}
    }
}
```

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Task 05: Create bin file use standalone programming GUI

Youtube Link: <https://youtu.be/o51NQsXM0BQ>



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