Alan Rieger and Ayden Dauenhauer

Prof. Wolfe

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ELEN 121L Tuesday 2:15 p.m.

<div align="center">Lab 2 – MX Environment</div>

Step 1: Make Blinky Lights

Turn in your main.c file and a screen shot of a successful build in your report.

```
Build started: Project: MX First Project
*** Using Compiler 'V5.06 update 7 (build 960)', folder: 'C:\Apps\Keil_v5\ARM\ARMCC\Bin'
Build target 'MX First Project'
compiling stm32l4xx_hal.c...
compiling stm32l4xx_hal_hcd.c...
compiling usbh_platform.c...
compiling stm32l4xx_hal_i2c_ex.c...
compiling stm32l4xx_it.c...
compiling stm32l4xx_hal_msp.c...
compiling usb_host.c...
compiling main.c...
compiling usbh_conf.c...
compiling stm32l4xx_ll_usb.c...
compiling stm32l4xx_hal_i2c.c...
compiling stm32l4xx_hal_gpio.c...
compiling stm32l4xx_hal_flash.c...
compiling stm32l4xx_hal_cortex.c...
compiling stm32l4xx_hal_dma_ex.c...
compiling stm32l4xx_hal_flash_ex.c...
compiling stm32l4xx_hal_pwr.c...
compiling stm32l4xx_hal_dma.c...
compiling stm32l4xx_hal_flash_ramfunc.c...
compiling stm32l4xx_hal_pwr_ex.c...
compiling stm32l4xx_hal_rcc.c...
compiling stm32l4xx_hal_rcc_ex.c...
compiling stm32l4xx_hal_sai.c...
compiling stm32l4xx_hal_tim.c...
compiling stm32l4xx_hal_spi.c...
compiling stm32l4xx_hal_qspi.c...
compiling stm32l4xx_hal_spi_ex.c...
compiling stm32l4xx_hal_uart_ex.c...
compiling stm32l4xx_hal_tim_ex.c...
compiling stm32l4xx_hal_lcd.c...
compiling stm32l4xx_hal_sai_ex.c...
compiling stm32l4xx_hal_exti.c...
compiling stm32l4xx_hal_uart.c...
compiling system_stm32l4xx.c...
compiling usbh_core.c...
compiling usbh_pipes.c...
compiling usbh_cdc.c...
compiling usbh_ioreq.c...
compiling usbh_ctlreq.c...
linking...
Program Size: Code=20424 RO-data=500 RW-data=56 ZI-data=4184
FromELF: creating hex file...
"MX First Project\MX First Project.axf" - 0 Error(s), 0 Warning(s).
Build Time Elapsed:  00:00:46
```
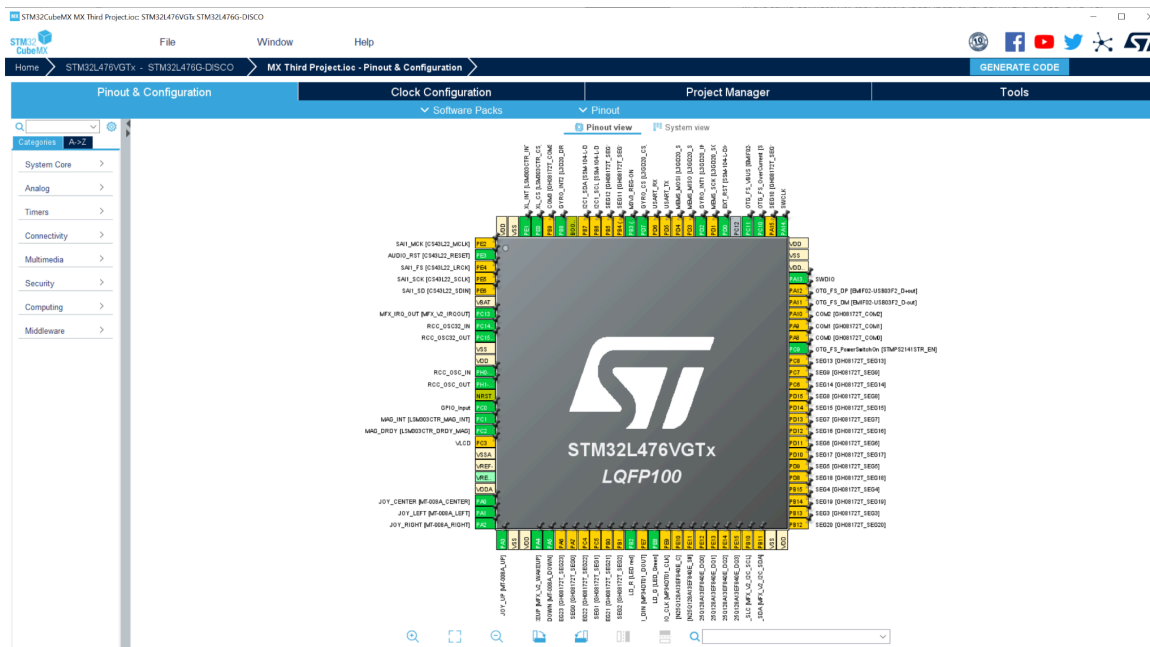
Step 2: Optimize Your Chip Configuration

Turn in your main.c file and a screen shot of a successful build in your report.

```
Build started: Project: MX Second Project
*** Using Compiler 'V5.06 update 7 (build 960)', folder: 'C:\Apps\Keil_v5\ARM\ARMCC\Bin'
Build target 'MX Second Project'
assembling startup_stm32l476xx.s...
compiling stm32l4xx_hal_flash.c...
compiling main.c...
compiling stm32l4xx_hal_msp.c...
compiling stm32l4xx_hal_i2c_ex.c...
compiling stm32l4xx_hal.c...
compiling stm32l4xx_hal_i2c.c...
compiling stm32l4xx_hal_rtc_ex.c...
compiling stm32l4xx_it.c...
compiling stm32l4xx_hal_rcc_ex.c...
compiling stm32l4xx_hal_rtc.c...
compiling stm32l4xx_hal_rcc.c...
compiling stm32l4xx_hal_tim.c...
compiling stm32l4xx_hal_cortex.c...
compiling stm32l4xx_hal_dma.c...
compiling stm32l4xx_hal_flash_ex.c...
compiling stm32l4xx_hal_exti.c...
compiling stm32l4xx_hal_gpio.c...
compiling stm32l4xx_hal_pwr.c...
compiling stm32l4xx_hal_dma_ex.c...
compiling stm32l4xx_hal_tim_ex.c...
compiling stm32l4xx_hal_flash_ramfunc.c...
compiling stm32l4xx_hal_pwr_ex.c...
compiling system_stm32l4xx.c...
linking...
Program Size: Code=6464 RO-data=488 RW-data=16 ZI-data=1672
FromELF: creating hex file...
"MX Second Project\MX Second Project.axf" - 0 Error(s), 0 Warning(s).
Build Time Elapsed:  00:00:20
```

Step 3: Re-using the Configuration

Turn in a screen shot of your STM32cubeMX Pinout and Configuration page.

```
Build started: Project: MX Third Project
*** Using Compiler 'V5.06 update 7 (build 960)', folder: 'C:\Apps\Keil_v5\ARM\ARMCC\Bin'
Build target 'MX Third Project'
assembling startup_stm321476xx.s...
compiling stm3214xx_hal.c...
compiling stm3214xx_hal_i2c_ex.c...
compiling stm3214xx_hal_rcc_ex.c...
compiling main.c...
../Core/Src/main.c(69): warning:  #550-D: variable "y"  was set but never used
    int y=9;
../Core/Src/main.c: 1 warning, 0 errors
compiling stm3214xx_hal_i2c.c...
compiling stm3214xx_hal_rtc.c...
compiling stm3214xx_hal_flash.c...
compiling stm3214xx_hal_msp.c...
compiling stm3214xx_it.c...
compiling stm3214xx_hal_rtc_ex.c...
compiling stm3214xx_hal_rcc.c...
compiling stm3214xx_hal_flash_ramfunc.c...
compiling stm3214xx_hal_tim.c...
compiling stm3214xx_hal_exti.c...
compiling stm3214xx_hal_cortex.c...
compiling stm3214xx_hal_dma_ex.c...
compiling stm3214xx_hal_gpio.c...
compiling stm3214xx_hal_tim_ex.c...
compiling stm3214xx_hal_flash_ex.c...
compiling stm3214xx_hal_dma.c...
compiling stm3214xx_hal_pwr.c...
compiling stm3214xx_hal_pwr_ex.c...
compiling system_stm3214xx.c...
linking...
Program Size: Code=6376 RO-data=488 RW-data=20 ZI-data=1668
FromELF: creating hex file...
"MX Third Project\MX Third Project.axf" - 0 Error(s), 1 Warning(s).
Build Time Elapsed:  00:00:20
```

Turn in main.c

Our code added two numbers, one was defined and the other was global. We stored this in a local variable. Then we increment the global variable infinitely. Pretty useless operations, but operations nonetheless.