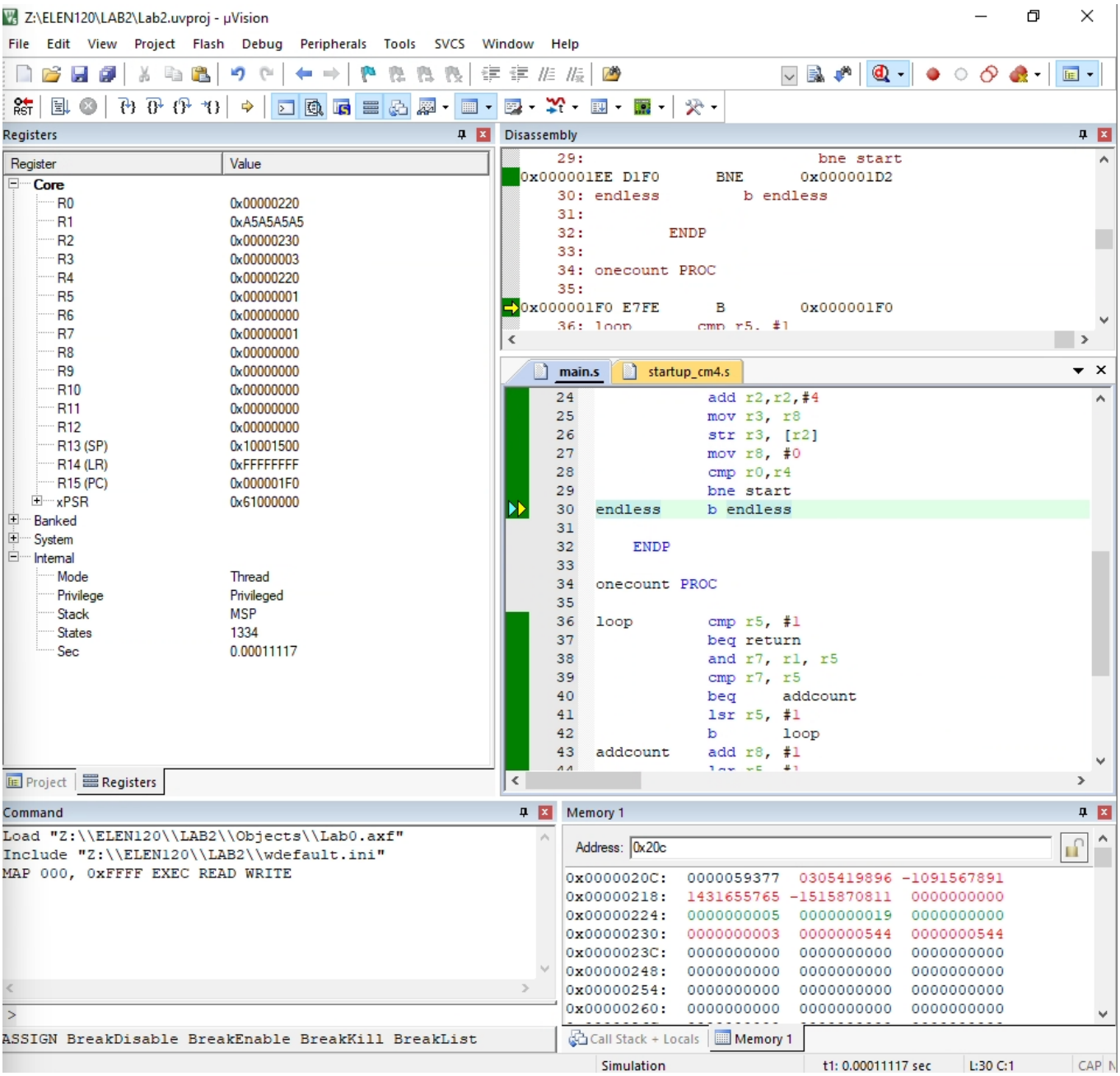
ELEN 120 HW 5 | Dylan Thornburg

1.

Screenshot (results bottom right in decimal):



Code:

```
;******************** (C) Andrew Wolfe ****************************************
; @file    HW4 Problem 3
; @author  Andrew Wolfe
```

```
; @date    Aug. 13, 2023
;*******************************************************************************


AREA    main, CODE, READONLY
EXPORT __main
ENTRY

__main PROC
ldr r0, =samplelist
ldr r4, =eol1
ldr r2, =resultlist
mov r8, #0 ;count
start ldr r1, [r0]
ldr r3, [r2]
ldr r5, =0xc0000000; mask
b onecount
return add r0,r0,#4
add r2,r2,#4
mov r3, r8
str r3, [r2]
mov r8, #0
cmp r0,r4
bne start
endless b endless

ENDP

onecount PROC

loop cmp r5, #1
beq return
and r7, r1, r5
cmp r7, r5
beq addcount
lsr r5, #1
b loop
addcount add r8, #1
lsr r5, #1
b loop
ENDP
```

samplelist dcd 0x12345678, 0xbeeffeed, 0x55555555, 0xa5a5a5a5
eol1
resultlist dcd 0x0,0x0,0x0,0x0
eol2

END

2.
RCC_AHB2ENR: offset 0x4C
RCC_BASE = 0x40021000.
Therefore RCC_AHB2ENR: 0x40021000 + 0x4c = 0x4002104c

GPIOB_OSPEEDR (GPIO_OSPEEDR for GPIO B): offset 0x08
GPIOB_BASE = 0x48000400
Therefore GPIOB_OSPEEDR = 0x48000400 + 0x08= 0x48000408

TIM_CR1 for Timer 2: offset 0x0
Timer 2 base: 0x40000000
Therefore: TIM_CR1 = 0x40000000 + 0x0= 0x40000000

LCD control register (LCD_CR): offset 0x0
Base: 0x40002400
Therefore: LCD_CR = 0x40002400 + 0x0 = 0x40002400

Resources used:
STM32L476VGT6 Datasheets.pdf
Keil software and lab 3 files
STM32L47xxx, STM32L48xxx, STM32L49xxx and STM32L4Axxx advanced Arm®-based 32-bit MCUs - Reference manual