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ECE 153B

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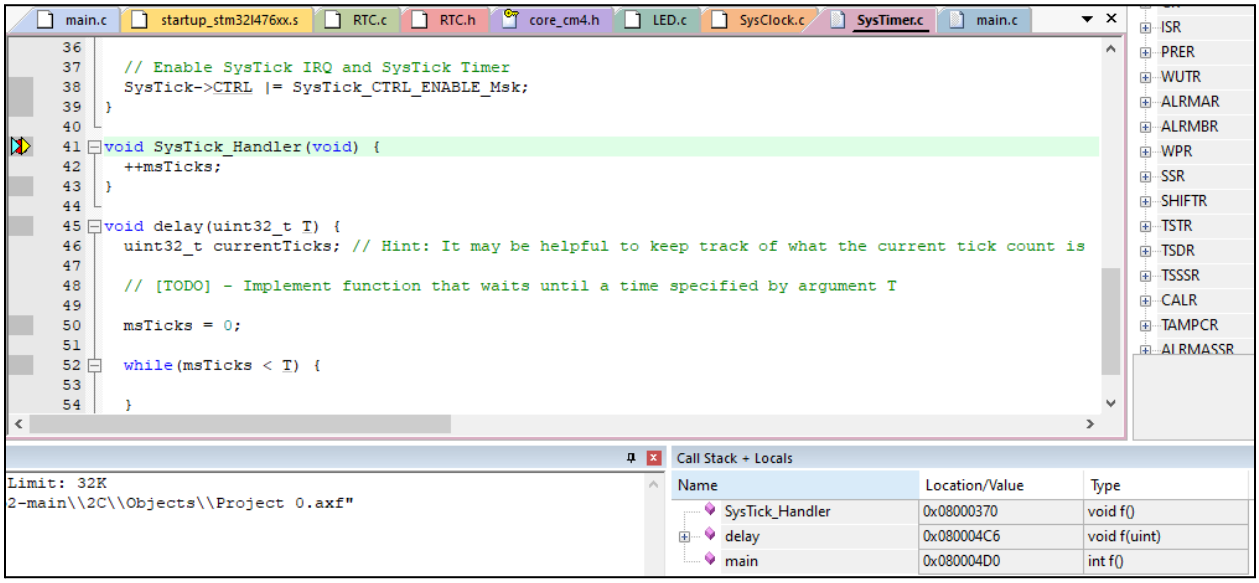
Lab 2 Report

1. What is the address of the SysTick Handler() function? Verify it (i.e. take a screenshot) in the debug environment.

   The address of the SysTick Handler() function is 0x08000370.



[Figure 1. SysTick Handler() function address.]

2. Set up a breakpoint within the SysTick Handler() function. In the debug environment, find out the exception number in the program status register when the program runs to the breakpoint. Explain what this number means.

   The exception number is 15. This means that a SysTick Interrupt was triggered. This occurs when the system timer reaches 0 or software generated the interrupt.

3. Cortex-M series supports up to 256 interrupts. What is the interrupt number of SysTick

that is defined in CMSIS?

The interrupt number of SysTick that is defined in CMSIS is -1.

4. Does a higher priority value represent a higher urgency?

   No. The higher the priority value, the less the urgency. That is why the system interrupts like reset have negative priority values.

5. Suppose a clock of 16 MHz is used to drive the system timer. What is the maximum period between two consecutive SysTick interrupts that we can possibly obtain?

   2^{24} is the highest reload value allowed. The SysTick clock frequency is 16MHz / 8 which has a period of 5e-7 seconds. Thus, the max SysTick interval is:

   2^{24} * 5e-7 = <u>8.388 seconds</u>.