

Lab 4 grading sheet

Students name 1) Last \_\_\_\_\_ First \_\_\_\_\_ EID \_\_\_\_\_  
Use same spelling as listed on Blackboard

Students name 2) Last \_\_\_\_\_ First \_\_\_\_\_ EID \_\_\_\_\_

Circle instructor: Valvano TTh5  
Telang MWF2  
Yerraballi TTh3:30 or MW3  
Gerstlauer TTh2

1. Deliverables 20%:  
0) This sheet

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Combine the following components in this order into one doc docx or pdf file and upload it to Blackboard before your checkout time. Have this file open on the computer during demonstration.

- 1) A screenshot showing the system running in simulation mode. In the screenshot, please show the dumped data in a stack window and the I/O window, as illustrated below
- 2) Assembly listing of your final program with both the dump and heartbeat instruments
- 3) Estimation of the execution time of your debugging instrument Debug\_Capture (part b)
- 4) Results of the debugging instrument (part e) and the calculation of the flashing LED period in msec.

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2. Performance 40%:

Does it handle correctly all situations as specified?  
How pretty is the software?

1)	2)

3. Demonstration 40%:

You will show the TA your program operation on the actual 9S12 board. The TA may look at your data and expect you to understand how the data was collected and what the data means. Also be prepared to explain how your software works and to discuss other ways the problem could have been solved. Does the LED flash at a slower rate in Lab 4 than it did in Lab 3? Why? The TA will pick an instruction in your program and ask how much time does it take that instruction to execute in  $\mu$ sec. Does it always take same amount of time to execute? You will be asked to create a breakpoint, and a scanpoint. What's the difference between two? Is your debugging tool minimally intrusive or non-intrusive? What do you mean by intrusiveness? Is your code "friendly"? How do you define masking? How do you set/clear one bit in an 8-bit number without affecting other bits? What is the difference between **bra**, **jmp** and **bsr** instructions? How do you initialize the timer? What is one TCNT in  $\mu$ sec? How much time does your debugging routine take? Are there other ways to measure the time for your debugging code to execute? How do you calculate the sizes of the port data and the timestamp data? Does it make any difference, to the collected timer data if the board is in run mode instead of load mode? Why does the pointer to the time-stamp array need to be incremented by two, if you want to point to the next element in the array? How do you allocate global variables?

1)	2)

Total:

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