

1) Name Last\_\_\_\_\_ First\_\_\_\_\_ EID\_\_\_\_\_ AC, VT, RY, JV

2) Name Last\_\_\_\_\_ First\_\_\_\_\_ EID\_\_\_\_\_ AC, VT, RY, JV

*Use same spelling as listed on Canvas***1. Deliverables 20%:**

*Combine all your C and assembly files (like LCD.s, IO.c and print.s) for this lab into one text file called Lab7.c, and upload this Lab7.c file to Canvas. Have Keil open on the computer during demonstration*

*No deliverable pdf file required for Lab7.*

**2. Performance 35%:**

Does it handle correctly all situations as specified?

How pretty is the software?

**3. Adhere to coding standard 5%:**

Good Names have meaning

Variables have units in comments

Consistent indentation

Local variables on the stack

Binding for local variable

1)

2)

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**4. Demonstration 40%** (TAs will ask similar, but not exactly identical questions):

You will be required to demonstrate the proper operation on the actual microcontroller. During demonstration to the TA, you will run your system in the debugger and show the binding, allocation/initialization, access and deallocation of the local variables. Each time a function is called, an **activation record** is created on the stack, which includes parameters passed on the stack (none in this lab), registered saved, and the local variables. You will be asked to observe the stack in the debugger and identify the activation records created during the execution of **LCD\_OutDec**. TAs may ask you questions on OLED interfacing, and programming. What does the SDA and SCL signals signify? What does busy-wait synchronization mean in the context of communication with the LCD? The TA will ask to see your implementation of local variables and ask you to explain the four step process (binding, allocation, access and deallocation). What are the advantages/disadvantages of using SP or R11 for the stack frame? You should be able to draw stack pictures. How does AAPCS apply to this lab? Why is AAPCS important? Why do students who use R4 without saving and restoring R4 find the SSD1306 software crashes?

1)

2)

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Total:

Extra credit: