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Embedded Controller Programming for Real-Time Systems
ECE-40097
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Assignment 2

Please find attached with this document a copy of the log file from the terminal session used to test this assignment's code as well as a copy of the project's main.c file, including appropriate comments around the function definitions for logMsg() and logGetMsg() as well as the functional code within main() as pertains to points 1, 2, & 3 of the assignment. Please also note that within the console log file, "…" is used to replace multiple lines of the same character for sake of brevity and readability within the file.

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4. Test the software after pressing key b, g and other keys multiple times (but not t) slowly first. Then, press b or g few times quickly and watch what you notice and see on the screen.

When toggling either LED slowly, they transitioned as expected. Any non-defined key returned the expected error message. When pressing b or g rapidly, the associated LED would toggle one or two times, as well as printing the associated character. After more than two or so toggles, the processor would act as if it had seized up and would become unresponsive, necessitating a reset.

5. Enter t to change the UART timeout to 1 ms and repeat step 4. Watch what you notice and see on the screen.

With the UART timeout changed to 1ms, the response time seemed a little more rapid but the processor would still lock up if an input was given too frequently. The UART timeout also prevented the entirety of therror message from being printed, only getting to "Unknown character re".

6. Repeat step 4 but reduce the led delay to 10 ms (It was set to 1 sec in 3.3 and 3.4 above). Watch what you notice and see on the screen.

With the LED delay set to 10ms, the processor was much more responsive, to the point that an input key could be held down and the LEDs would toggle in time with the keyboard input. The error message was still unable to print string, with the amount of characters that printed before the timeout varying by one or two each time.