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CS-350: Emerging Sys Arch & Tech
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CS 350 Milestone Three Lab Questions

1. Why does the loop that processes the LED blinking need to run in a separate thread?
    a. The loop needs to run in a separate thread so that two processes can occur at the same time; so that the program is ready for a button interrupt event while the blinking light is in loop. Doing so will make user inputs responsive and with minimal delay.

2. What is the purpose of returning to the off state after each completed state action?
    a. The purpose of returning to the off state after each completed state action(i.e. Illumination of a red or blue light) is so that there is a visual distinction between each dot or dash. If the LED was not returned to the off state, the illumination of the LED will remain on, but for twice as long, which can confuse the user about the message transmitted.

3. How could you integrate serial communications to facilitate changing the messages available to the program?
    a. Integration of serial communication can occur by writing code to allow users to input a morse code message via the button. The message then can be stored and outputted on the LCD along with mimicking the message on the red and blue LED lights.

4. How could you use the 16x2 display to provide debugging information to the user when they don't have access to the application console?
    a. The 16x2 display can be used to provide debugging information to the user by outputting the current morse code message as it is being transmitted via the LED. The display can also be useful for informing the user of button interrupt events.