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1. Why does the loop that processes the LED blinking need to run in a separate thread?

Running the loop in a separate thread allows the LED to blink independently while the main program runs.

1. What is the purpose of returning to the off state after each complete state action?

Returning to the off state after each completed state action prevents continuous LED blinking when not needed and ensures clear state transitions.

1. How could you integrate serial communications to facilitate changing the messages available to the program?

Using a UART interfance.

1. How could you use the 16x2 display to provide debugging information to the user when they don’t have access to the application console?

You can set the LCD display to show real-time debugging information without the need of application console.