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Module 4

**Why do you have a sleep command in your loop?**

The sleep command is used to slow down the loop so that the text on the display can actually be read before it changes. Without it, the messages would update too fast and you wouldn’t be able to see anything on the screen clearly.

**What is the purpose of having a text display on an embedded device?**

A text display allows you to show important information directly on the device, like sensor data, status updates, error messages, or menu options. This makes the device easier to interact with and can remove the need for a separate interface or computer.

**How can you think of the display device as something that could relate to a state machine?**

The display can reflect the current state of the system, acting as an output that changes depending on what the embedded system is doing. For example, a menu system, a boot sequence, or sensor-based display logic can all map to different states shown on the LCD.

Setting up the 16x2 LCD display went smoothly once I followed the lab guide closely. The hardest part was getting all the jumper wires in the right place since the number of connections is a lot more than just working with a single LED. I had to double check the GPIO pin assignments to make sure everything lined up with the code. Adjusting the potentiometer to get the contrast right also took some trial and error, but I eventually got the text to display clearly. I didn’t run into any major errors, but I could see myself needing help later if I wanted to display more dynamic info or navigate between different messages.