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CS-350

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5-1 Milestone Three Submission

1. What is the purpose of the timerCallback() function?

The timerCallback() function is responsible for driving the state machine. It is called at regular intervals by the timer, ensuring that the current Morse code message (either "SOS" or "OK") continues to blink. The function also checks for a button press (buttonPressed flag) and toggles between the two messages once the button is pressed. In essence, it handles the time-based events of blinking and message toggling.

1. What does period mean in this context?

In this context, the period defines how often the timer triggers the timerCallback() function. The period is set to 500,000 microseconds (500ms), meaning the timer will call timerCallback() every 500ms. This ensures that the state machine progresses at regular intervals, controlling the flow of the Morse code blinking sequence and checking for button presses.

1. How does the Timer\_CONTINUOUS\_CALLBACK parameter impact the driver?

The Timer\_CONTINUOUS\_CALLBACK parameter configures the timer to run in continuous mode, meaning it will keep triggering the timerCallback() function repeatedly at the defined interval (500ms in this case). This ensures that the state machine is consistently driven by the timer, without needing to manually restart the timer after each callback. It is essential for maintaining the continuous blinking of Morse code messages.

1. What is gpioButtonFxn0() used for?

The gpioButtonFxn0() function is an interrupt handler that detects when the button connected to CONFIG\_GPIO\_BUTTON\_0 is pressed. When the button is pressed, it sets the buttonPressed flag to 1. The state machine checks this flag to know when to toggle between the "SOS" and "OK" messages. Essentially, this function captures user input and allows the program to respond to button presses.

1. What is the purpose of GPIO\_CFG\_IN\_INT\_FALLING?

The GPIO\_CFG\_IN\_INT\_FALLING configuration sets the GPIO pin to detect an interrupt on the falling edge. This means that an interrupt is triggered when the voltage on the button pin transitions from high to low, indicating that the button has been pressed (assuming the button is wired with a pull-up resistor). This configuration ensures that the system can reliably detect button presses and respond to them by toggling between messages.