Assignment Report 6: IR Sensor and LED Control

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Objective:

The objective of this assignment was to design a program utilizing an IR sensor to count the number of times the sensor is triggered. Upon reaching specific trigger counts, different LEDs should be illuminated. When the counter reaches 10, it should reset, and all LEDs should turn off.

Components Used:

1. IR Sensor

2. LEDs (Red, Amber, Green)

3.NI daq

Program Design:

The program was designed to perform the following actions:

1. Initialize the counter variable to keep track of sensor triggers.

2. Continuously monitor the IR sensor for triggers.

3. When a trigger is detected, increment the counter by one.

4. Check the current counter value to determine which LED to illuminate based on the predefined trigger times for each LED (Red: 2, Amber: 5, Green: 8).

5. If the counter reaches 10, reset it to zero.

6. Turn off all LEDs when the counter is not within the predefined trigger times.

Discussion:

The program successfully meets the assignment requirements by utilizing an IR sensor to track the number of triggers and control the illumination of LEDs according to the specified trigger times. The LEDs change color as the counter reaches the defined trigger counts and reset when the counter reaches 10. The loop ensures that the program continues to monitor the sensor indefinitely.

Conclusion:

In conclusion, the assignment has been successfully completed by developing a program that effectively utilizes an IR sensor and LEDs to respond to sensor triggers according to the specified trigger times. This system provides a clear visual indication of the trigger count and resets itself when necessary, ensuring the desired functionality.