

## Final Design Review

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**Project:** ThermoLight Alert System

The circuit functioned as intended. The white LED is connected to the thermistor, and the red LED is connected to the photoresistor through a voltage divider. As mentioned in the Critical Design Review, the environmental temperature was considered cold, and the light level was considered bright. In *Figure 1*, when the circuit is first powered on, the white LED turns on because the thermistor senses cold. The red LED remains off because the photoresistor detects a bright environment.

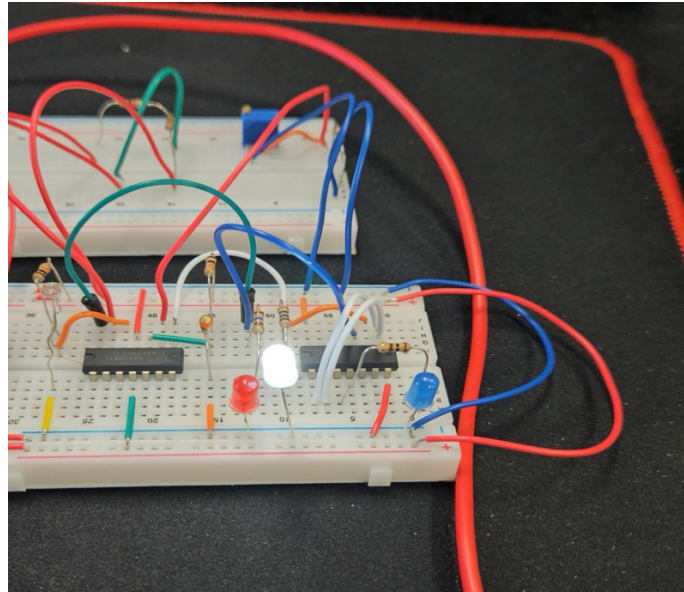
When I pinched the thermistor with my finger, it sensed warmth, and the white LED turned off. This change can be seen in *Figure 3*, where the temperature is warm and the white LED is off.

The red LED is connected to the photoresistor. At the beginning (also in *Figure 1*), it is off because the light level is normal. When I covered the photoresistor with my finger, it sensed darkness, and the red LED turned on, as shown in *Figure 2*.

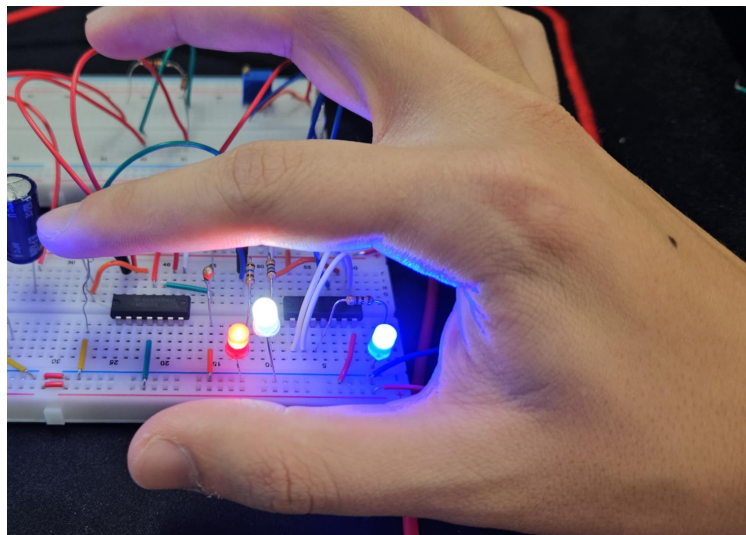
The blue LED acts like an AND gate. It turns on only when both the white and red LEDs are on—this happens only when the environment is cold and dark. You can see this clearly in *Figure 2*. If it is warm and dark (both sensors are activated), only the red LED turns on, as shown in Figure 4.

In summary, the ThermoLight Alert System worked well. Each LED turned on and off as planned based on temperature and light changes. The pictures help show how each condition was tested and confirmed.

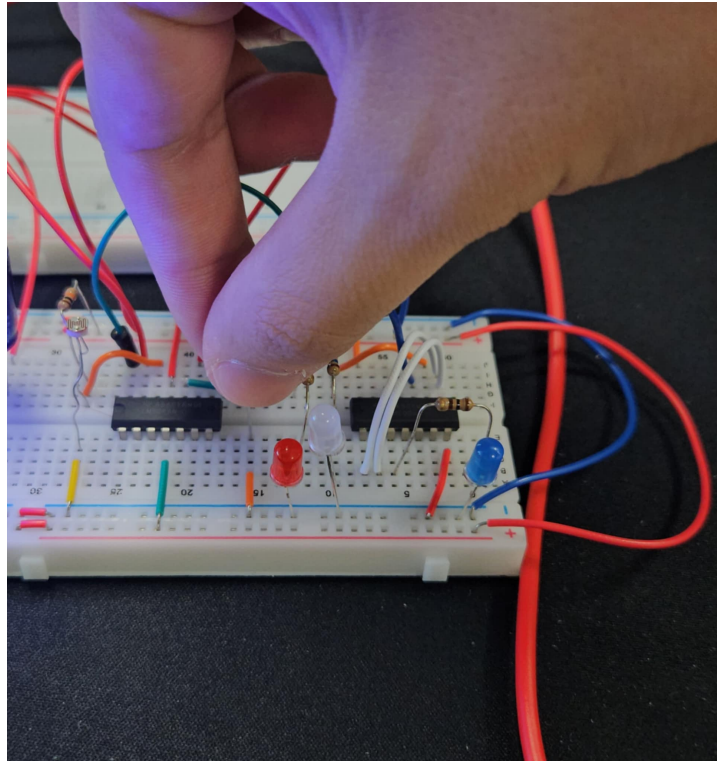
**Figure 1:** The initial state of the circuit–Bright and Cold state



**Figure 2:** Dark and Cold State



**Figure 3:** Bright and Warm State



**Figure 4:** Dark and Warm Case

