**Project Name**: Emotion-Based Smart Home System

**Current Progress**: Today, we successfully set up the environment on the Jetson Orin Nano and configured the GPIO ports. For an initial test, we used a breadboard with an LED (since we haven't purchased a light strip yet) to demonstrate that the light turns on when a "neutral" expression is detected.

**Technical Breakthroughs**:

1. Successfully accessed the camera for real-time video streaming.
2. Implemented YOLO-based emotion detection in real-time to analyze facial expressions in the video feed.
3. Enabled LED control based on detected emotional states, achieving a basic emotional feedback mechanism.

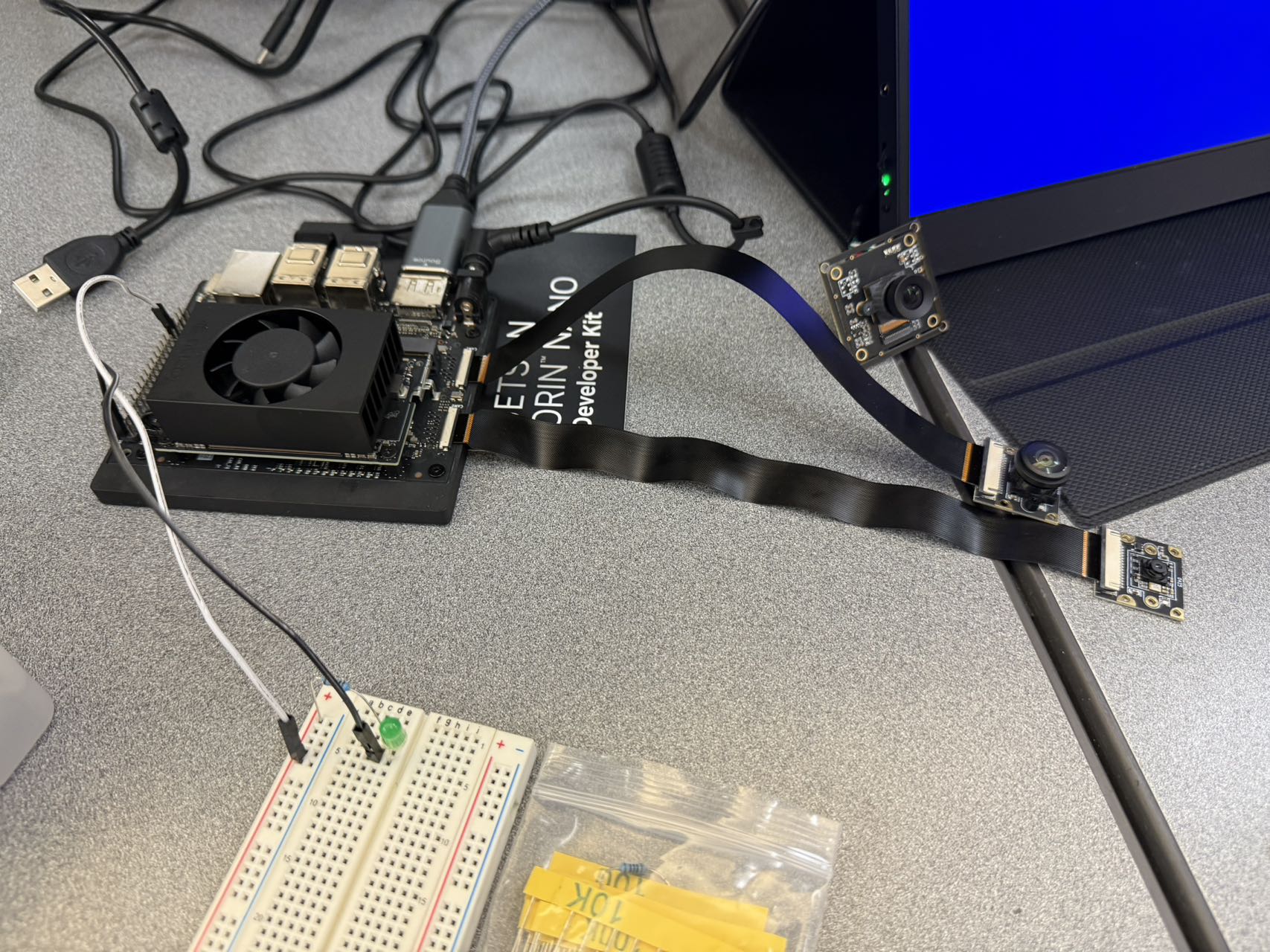
**Code Implementation**: Our code employs a voting mechanism to aggregate emotions over a defined window. When "Happy" exceeds a set threshold, the GPIO interface controls the LED to turn on. Key modules include:

1.Real-time video processing and emotion detection.

2.Emotion voting mechanism based on a sliding window to ensure accurate feedback.

3.GPIO control for LED response, triggering based on the detection of specific emotions (e.g., " neutral ").

**Next Steps**: We plan to purchase a light strip to extend the system, enabling it to display different colors as feedback for various emotions, enhancing both interactivity and expressiveness.

**** The image shows our Jetson Orin Nano board, LED, and the camera setup demonstrating real-time emotion feedback