

KEEP IT
spinning



RULES

“The bottle keeps spinning but it should never stop at you.”

The NeoPixel lights will glow in three colours, each triggering a different challenge.

Complete the task to survive the round and pass the spin to someone else.

● **GREEN** – You’re safe...

for now.

□ **PINK** – Scream into the mic, and the bottle will spin.

But if you scream for too long, it might land right back on you.
Careful.

● **BLUE** – The ultrasonic sensor has chosen a random distance.

Find the exact spot for your hand — not too close, not too far —
or you’re out.

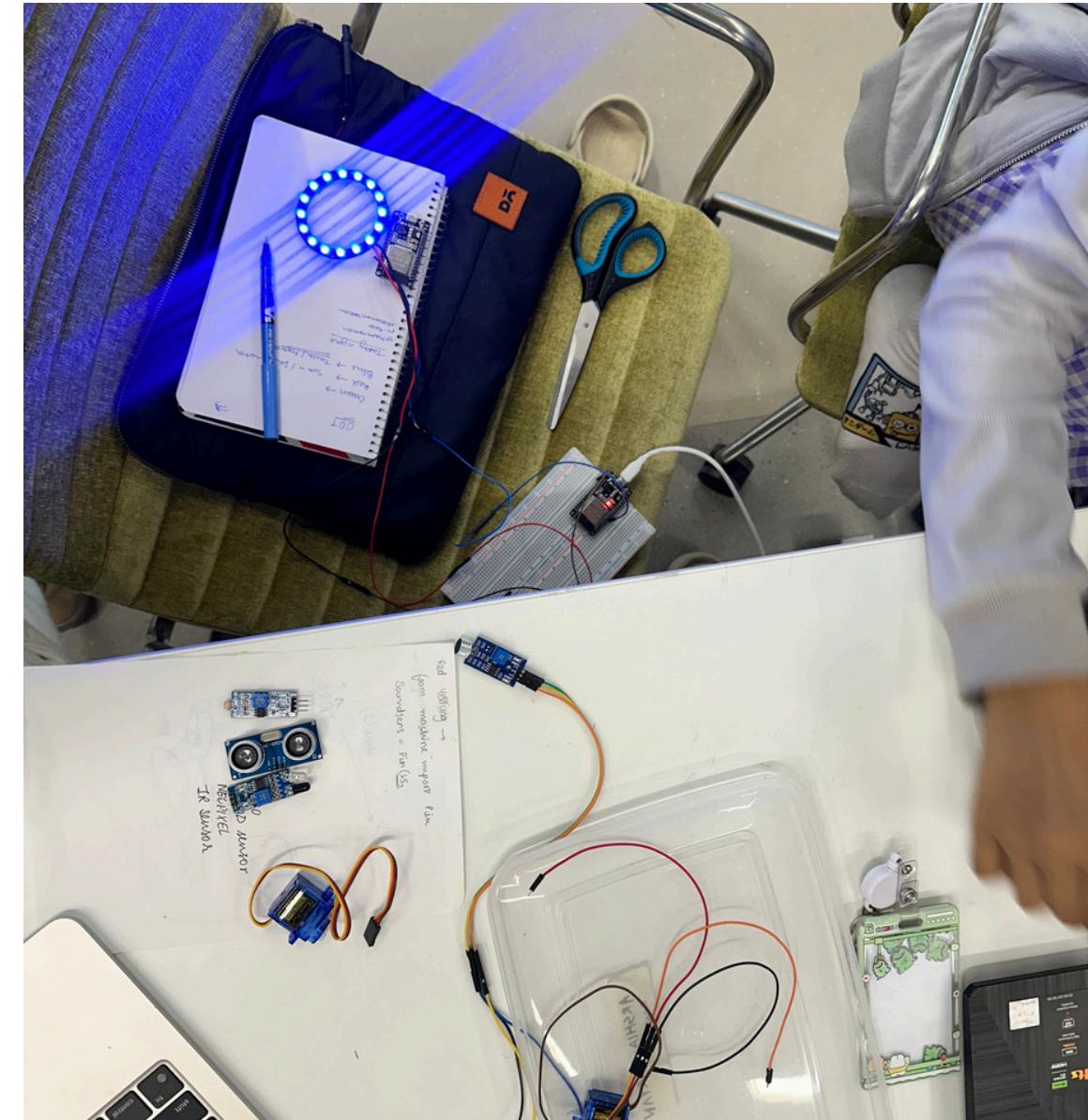
● **RED** – Oops.

You’re out. Better luck next round.



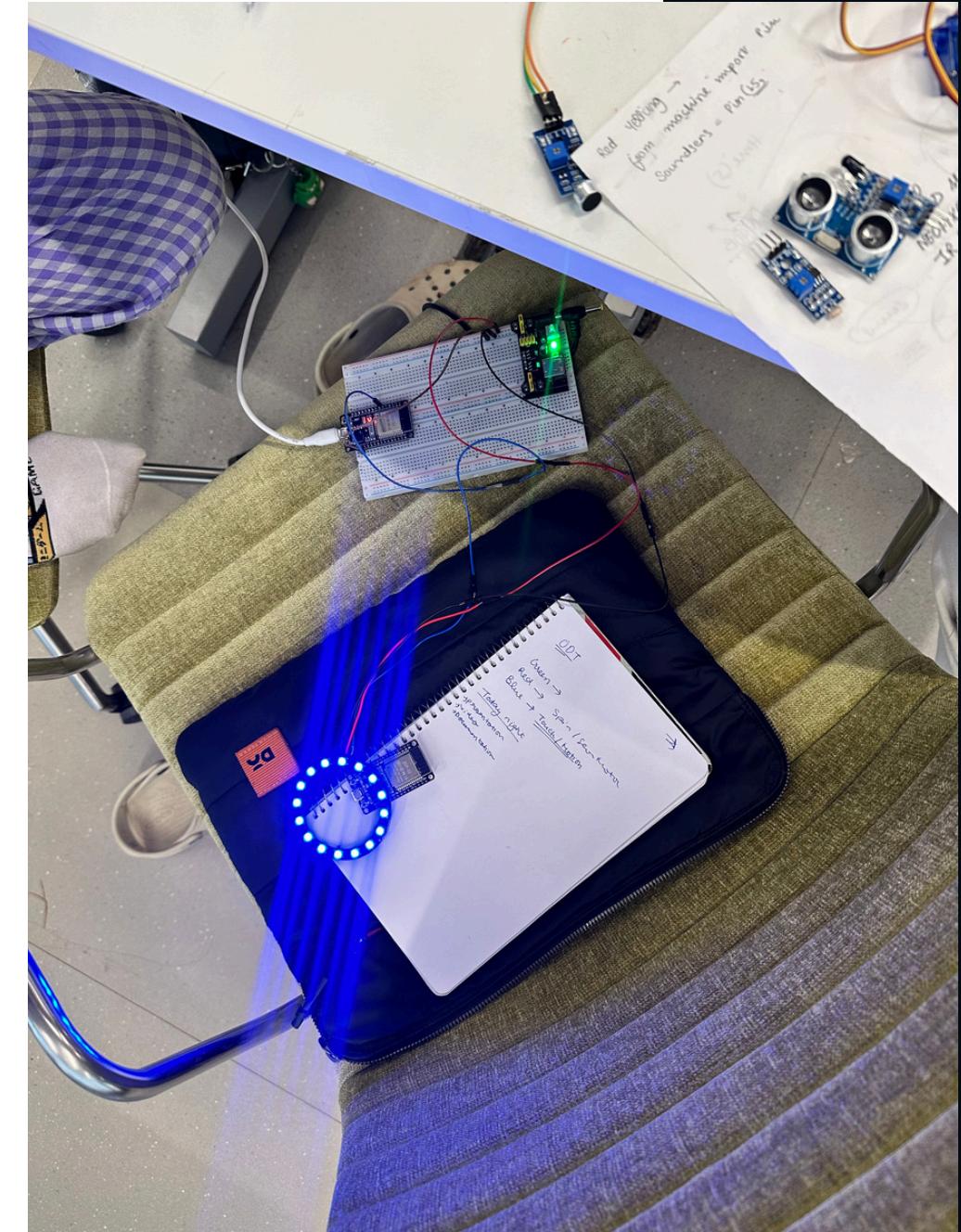
WHY WE CHOSE THIS

We chose this game because of a simple, real-life moment. One day we decided to play spin the bottle, but surprisingly we couldn't find a physical glass bottle anywhere. That small problem sparked the idea what if we could recreate the same playful uncertainty using electronics? From there, we began designing an interactive system where a servo could mimic the spinning action while sensors added fun challenges to keep the game engaging. By combining random color modes, sound detection, and distance sensing, we turned a familiar party game into a dynamic, hands-on embedded systems project that is both playful and technically demonstrative.



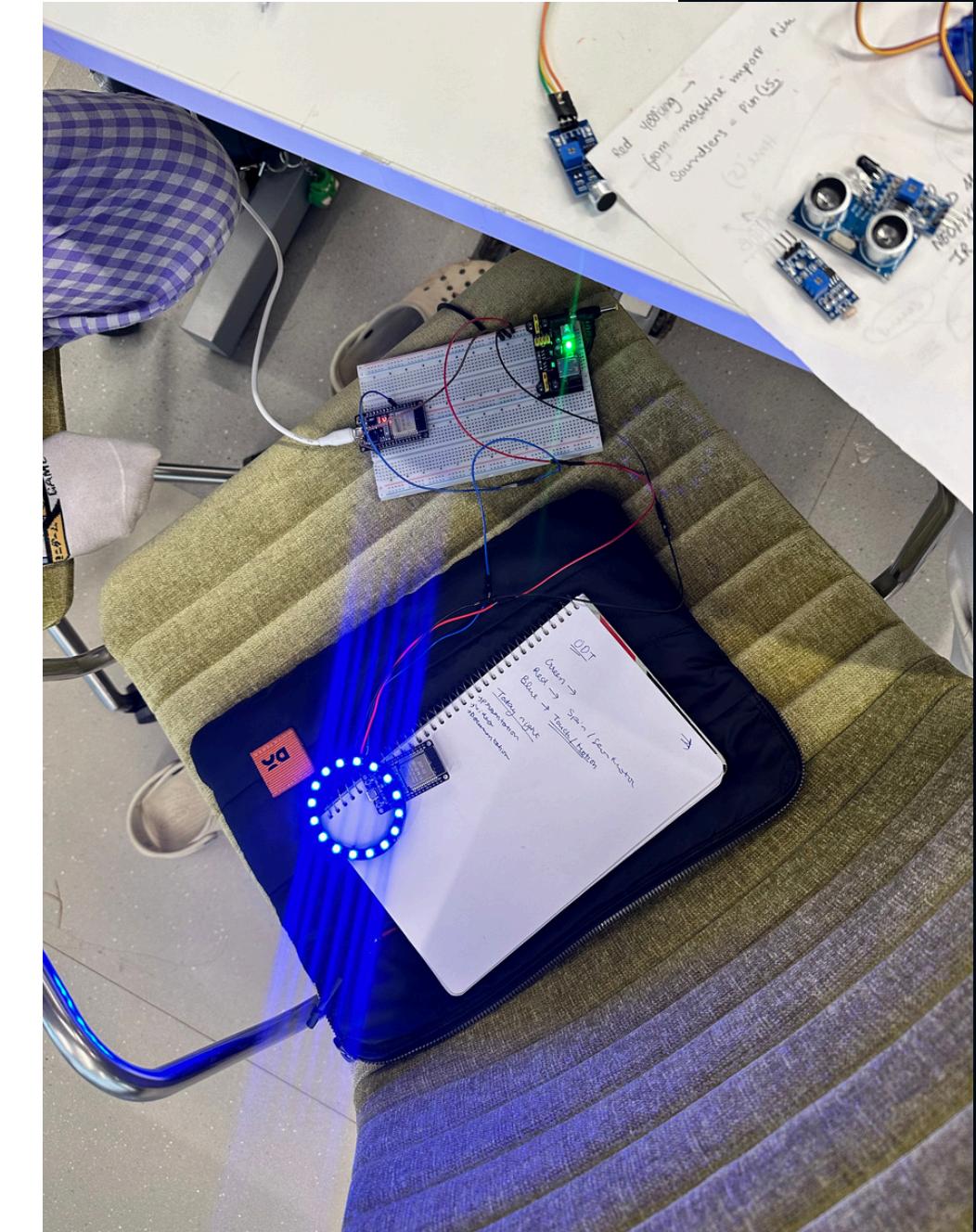
PAIN POINTS

- Implementing conditional checks to prevent state conflicts between colour transitions and motor control.
- Debugging timing issues between sensor input, LED feedback, and motor response to maintain smooth gameplay flow.
- Refining edge-case handling so the system behaved predictably even when inputs were inconsistent or delayed.



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SOUND SENSOR LOGIC:

We intentionally designed the sound-based mode to prevent the game from becoming too easy or predictable. If a player is overly talkative or makes too much noise, the servo keeps responding with random movements, which means the bottle cannot guarantee their safety. This adds an element of risk — the more you react, the less control you actually have. It creates tension and reinforces the unpredictability that makes spin-the-bottle exciting.

ULTRASONIC SENSOR LOGIC:

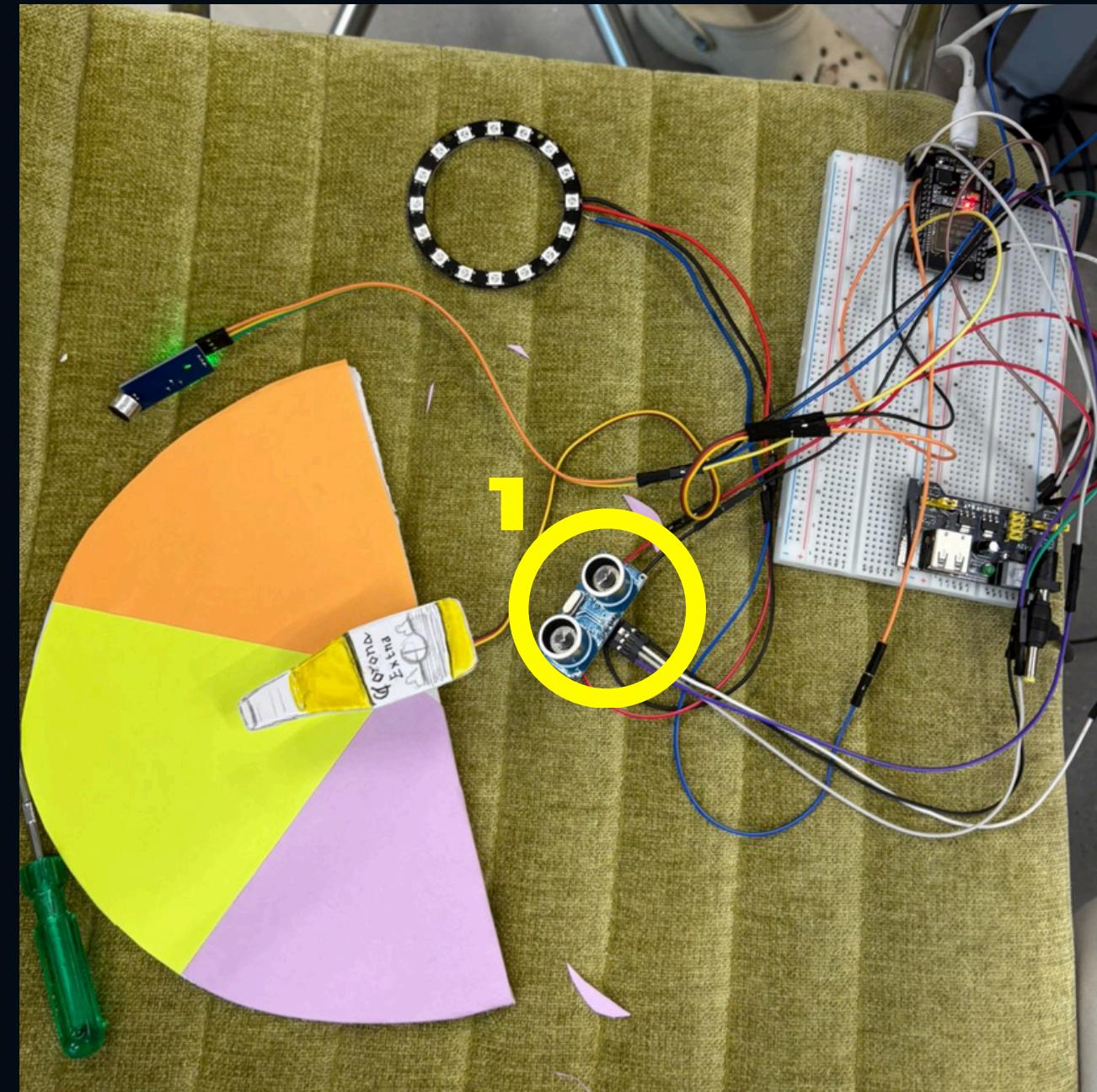
For the ultrasonic mode, we wanted to introduce mystery and skill rather than simple chance. Instead of allowing players to casually spin the bottle toward someone else, they must quickly and accurately match a target distance within a limited time. This requires awareness and precision, making the outcome feel earned rather than random. It adds a competitive layer where players need to understand how their movement affects the system.

INPUTS

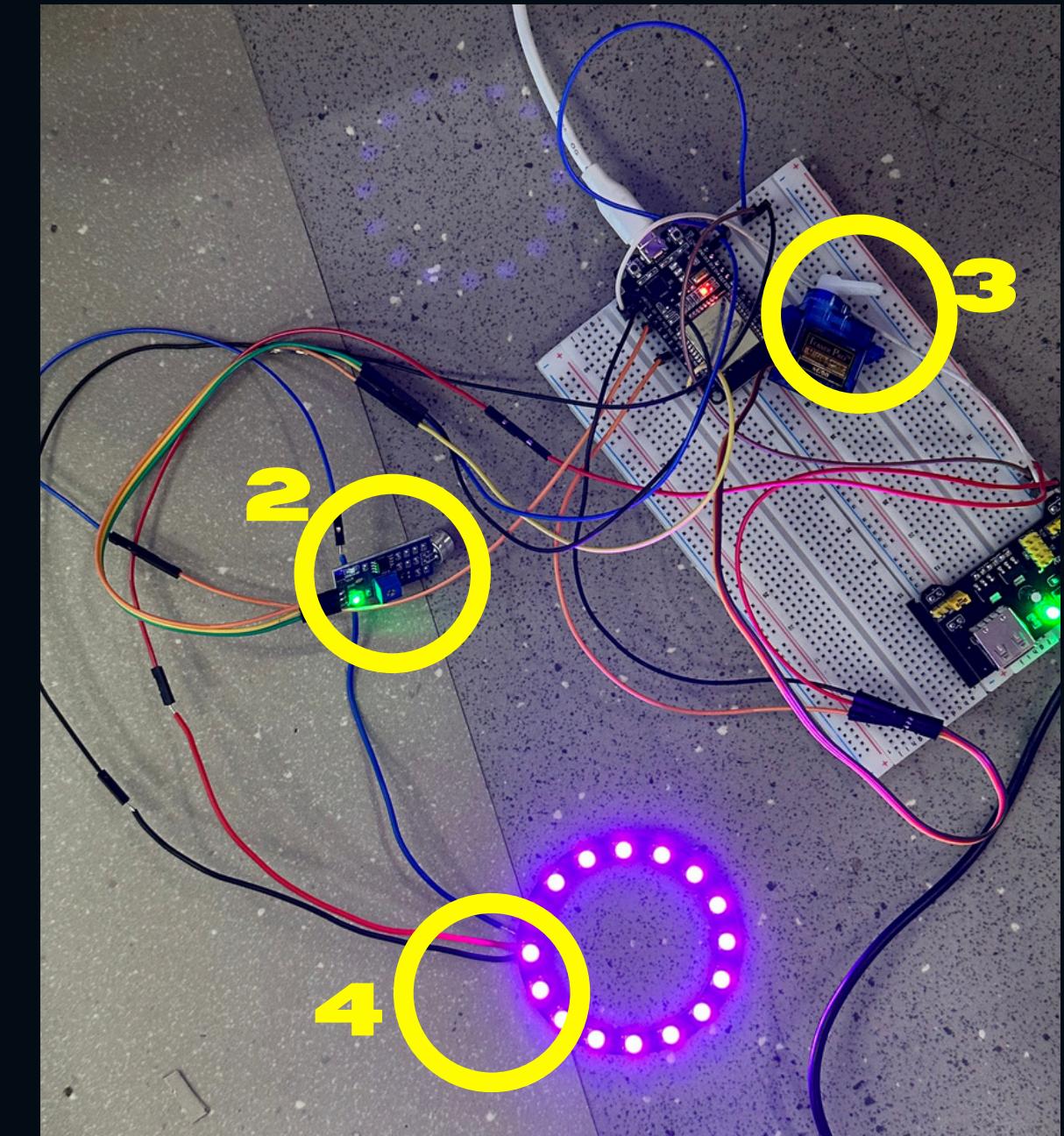
- 1.Ultrasound sensor
- 2.Sound sensor

OUTPUTS

- 3.Servo motor
- 4.Neopixel



NEAR FINAL PHASE



INITIAL PHASE

thunkyou

Spin the bottle except, you're too lazy to spin it yourself....