



EMBEDDED SYSTEM  
AUTONOMOUS CAR

# PROJECT

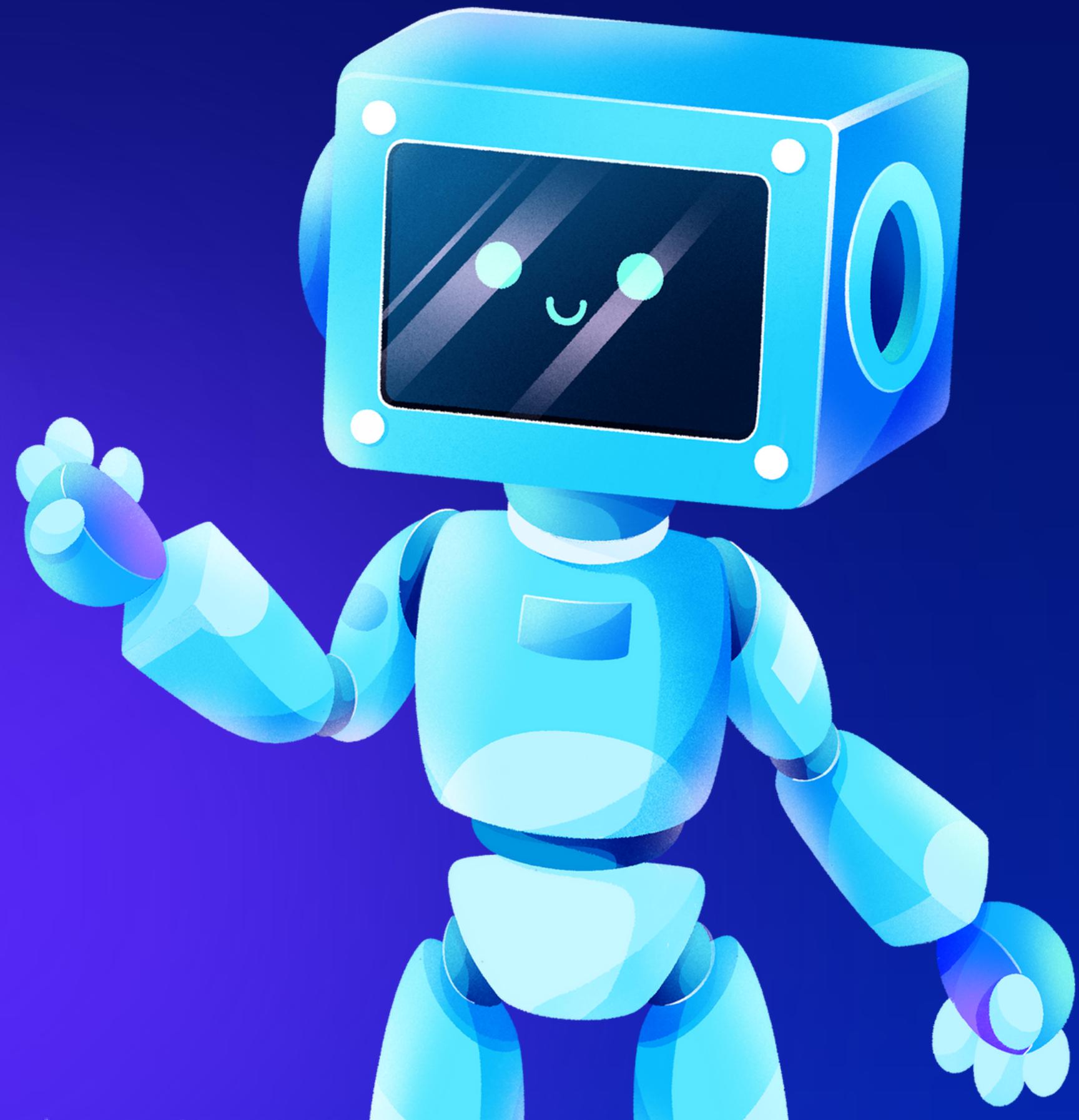
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And

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EMB NASR 61

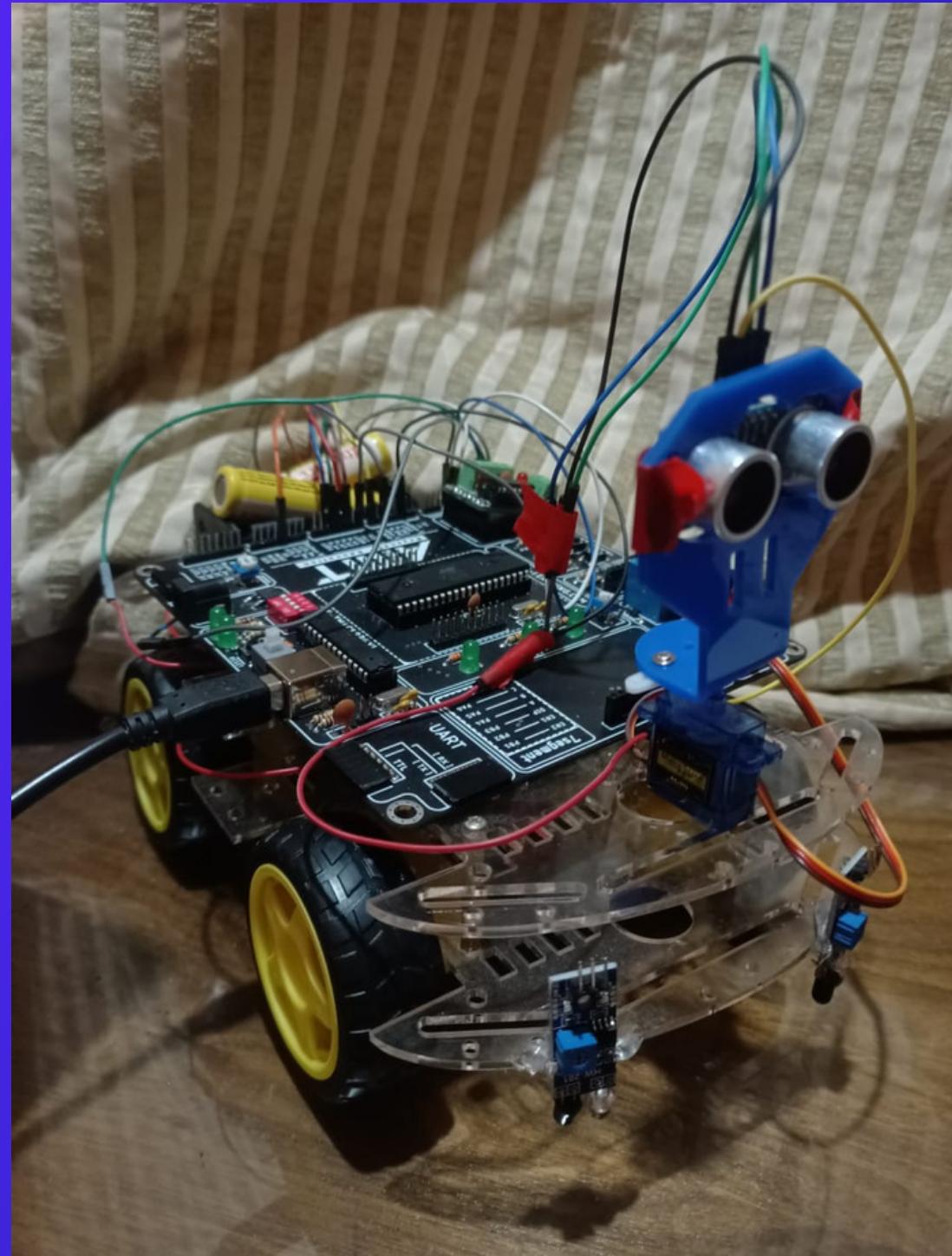
# AMIT





# COMPONENT USED

- Ultrasonic HC-SR04
- Servo Motor
- L298N
- Motors
- Caster Wheel
- Chassis
- 9-Volt Batteries

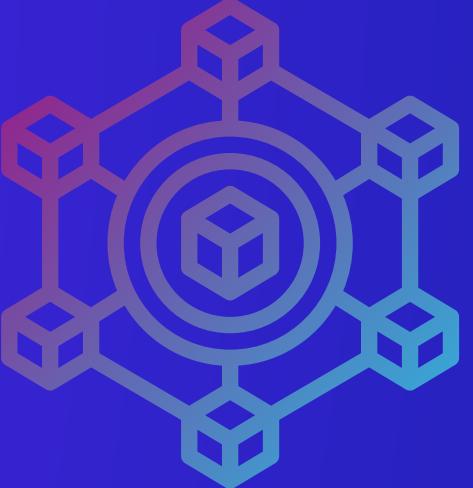


# PROBLEM AND SOLUTION

- We had a problem with the servo motor where it did not rotate as we wanted.

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- Eng Joseph helped us by tracing the code and knowing where is the problem as the problem was on timer 1 which made the servo motor to rotate.

# How Does It Work



Obstacle avoidance with servo-controlled sensor:

Start:

1. Check distance: Use the ultrasonic sensor to measure the distance in front of the robot.
2. Clear path? If the distance is greater than 30cm, move straight at a steady speed.

Obstacle detected:

1. Turn servo right: Rotate the servo motor carrying the sensor 90 degrees clockwise.
2. Re-check distance: Measure the distance again after the turn.
3. Clear path? If the distance is now greater than 30cm, turn right and resume straight movement.
4. Still, obstructed? If the path is still blocked, continue to step 5.
5. Turn servo left: Rotate the servo motor carrying the sensor 180 degrees counterclockwise (facing front).
6. Re-check distance: Measure the distance again after the turn.
7. Clear path? If the distance is now greater than 30cm, turn left and resume straight movement.

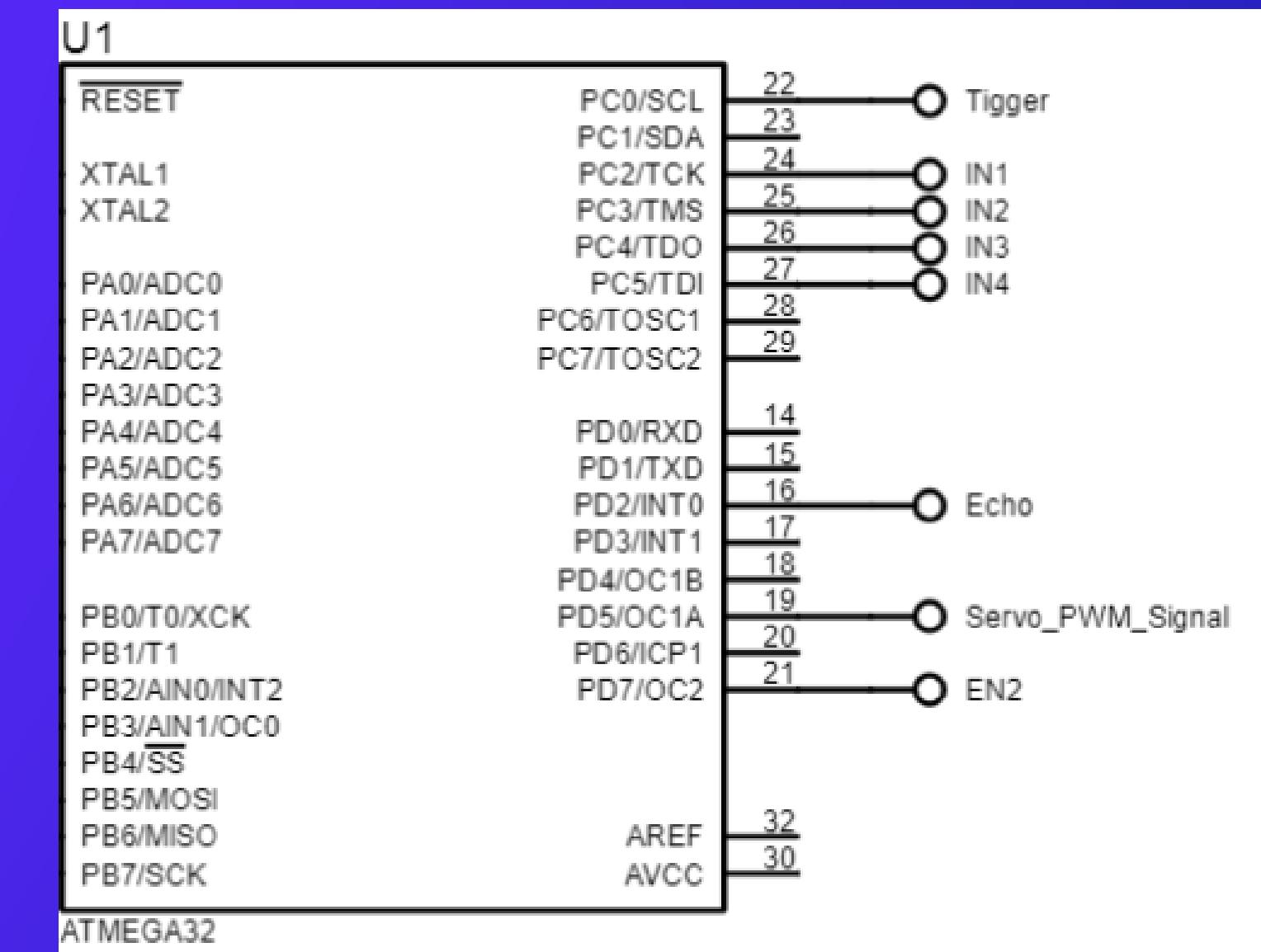
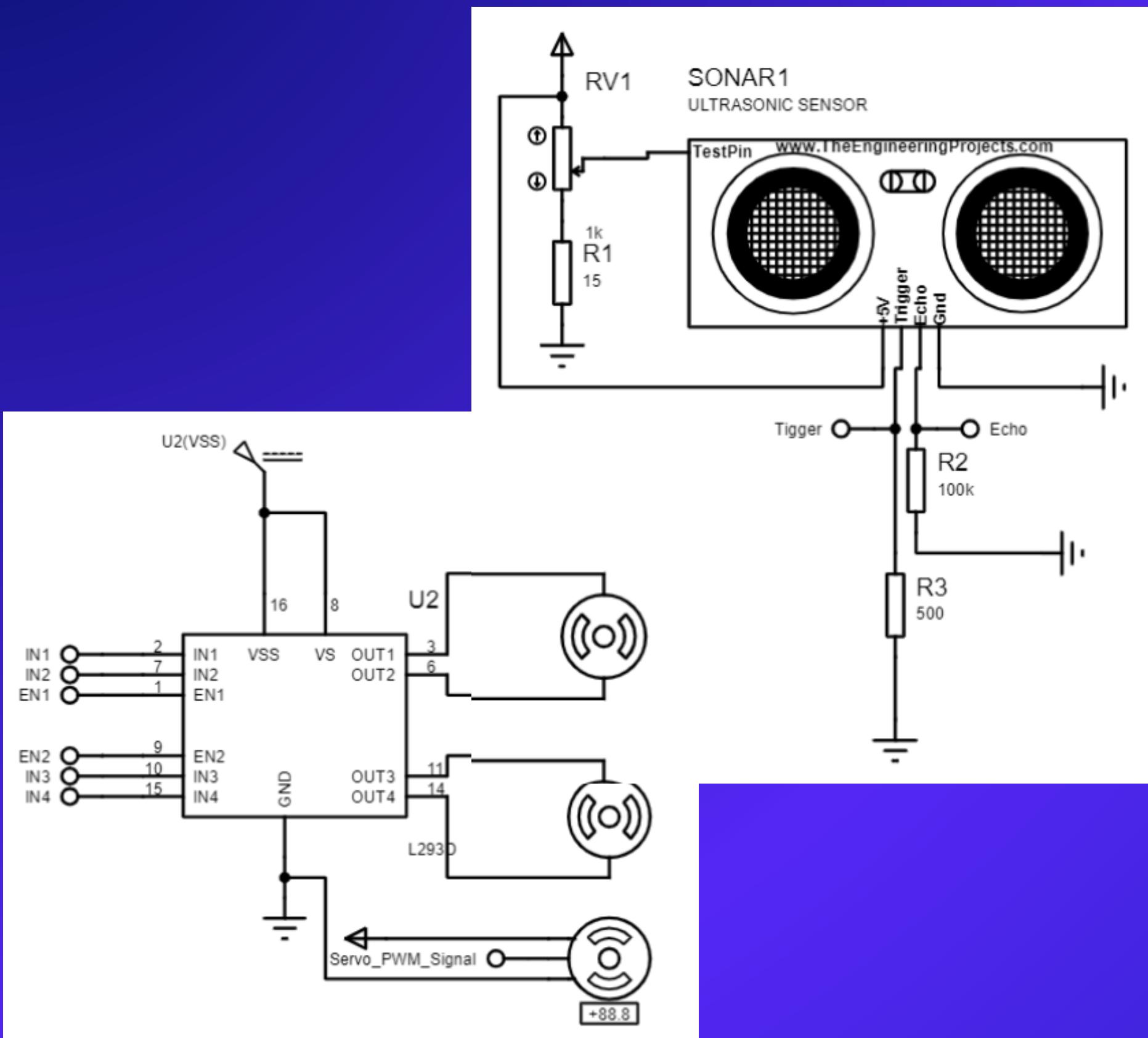
No clear path:

1. If neither direction shows a clear path (distance > 30cm), implement fallback behavior (e.g., stop, reverse, explore another direction).

Final step:

1. After obstacle avoidance, ensure the servo is centered again for future readings.

# Circuit Diagram



THANK YOU!

