How to Interface an Ultrasonic Sensor with Arduino using TinkerCAD

Project: Distance Measurement Using HC-SR04 Ultrasonic Sensor

- **Objective:** Measure the distance of an object using the **HC-SR04 ultrasonic sensor** and display the result in the **Serial Monitor**.
- **Components Used:** Arduino, HC-SR04 sensor, jumper wires.
- **Working Principle:**
    1. The **TRIG pin** sends a **10µs HIGH pulse** to start the measurement.
    2. The **ECHO pin** goes HIGH for a duration equal to the time taken for the sound wave to return.
    3. The Arduino reads this duration and calculates the distance using:

       Distance=Time×0.03432\text{Distance} = \frac{\text{Time} \times 0.0343}{2}Distance=2Time×0.0343

    4. The calculated distance is displayed in the **Serial Monitor** every 500ms.