

How does the HC-SR04 sensor calculate distance?

Distance=2Time×Speed of Sound

Why is it important to clean up GPIO pins with GPIO.cleanup() at the end of the program?

Resets all pins you've used to their default state.

Prevents resource conflicts or hardware issues.

How did you calculate whether the object was moving ≥ 1 cm/second?

`abs(distance - pdistance)`

`Speed=t2-t1 | d2-d1 |`

If your sensor gives you a series of distance readings over time, how can you calculate speed?

You can compute speed between each pair:

running average speed

sum multiple of those and divide by the number of intervals.