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Sensors

1) Tilt Sensor: حساس الميل

* detect inclines using Conducting Liquid such as → mercury / → Rolling ball
* has 2 models → Rolling ball / → mercury

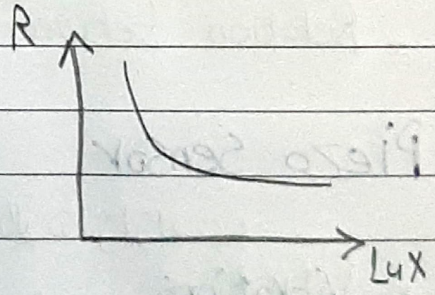
Code: depends on HIGH , LOW

2) LDR (Light dependent ~~Resist~~ sensor)

work Idea: Variable resistance sensitive to Light intensit

* Intensity → Resistance → Voltage

$R \propto \frac{1}{Lux}$ → Light intensity



3) PIR (Passive InFra-Red Sensor)

- detect any motion (7m) around sensor

Ex: كاشف الحركة

4) PING

- measure distance of moving object (3m)
- uses ultra sound
- has 3 Pins → Vcc / ground / sig
- distance = delay / 29 / 2
  - distance ↙ cm
  - delay ↙ MS

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5) MaxSensor (Motion detection Sensor)

- MaxSensor more simple than PING
  - has internal Pulses (هو بواف الـ Pulse عشان أنا اللي بدخلها)
- Measure distance of moving object (7.5 m)
- distance = delay / 58
  - distance ← cm
  - delay ← MS

6) IR (InFra Red Sensor)

- measure distance of moving object between 15 to 150cm
- Uses InFra Signal
- Relation between Voltage and distace is non Linear

7) Piezo Sensor

* بيحس بالأهتزازات
* Vibrations ⟶ Voltage
* Vibrations ∝ Voltage Strength

8) MIC (Audio sensor)

- Convert audio signal into Vibrations

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9) Temperture Sensor
* R Changes with T
* T Range From -55 to 150°c

Ex: RTD , Thermistor

10) RFID (Radio Frequency IdentiFication)
- depends on serial Communication

<NewSoftSerial> → لازم اختاروا Pin جديد لأي Serial بتفتح
(0, 1) ماعدا

11) GPS (Global Position System)
- has internal microcontroller
- use Serial Communication

In code:
- Course refer to direction
- Fix_age refer to time returned in ms

12) Accelerometer
- read XY acceleration using MEMS.

13) GYroscope
- device in airPlane and Rockets
- read rotating around Z using MEMS.