

Python with Lego Mindstorms EV3

Exercise (Ultrasonic Sensor)

An example of the code
for the ultrasonic sensor

```
ultrasonic.py
1  #!/usr/bin/env python3
2  from ev3dev2.sensor.lego import UltrasonicSensor
3  from ev3dev2.led import Leds
4  from time import sleep
5
6  # Connect ultrasonic sensor to any sensor port
7  us = UltrasonicSensor()
8  distance = us.distance_centimeters
9
```

The ultrasonic sensor has to:

- Measure the distance to an object every 0.5 s
- Display these values on the EV3 screen
- If the distance is < 0 20 cm, Leds become red and the EV3 emits an alarm sound

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Final Challenge – The wall follower

The robot must:

1. **Begin** at the Starting Area
2. **Follow the wall**, trying to maintain a stable distance of 20 cm (from the ultrasonic sensor to the wall)
3. **Touch** the box
4. **Find** the black line
5. **Reach** the goal area

