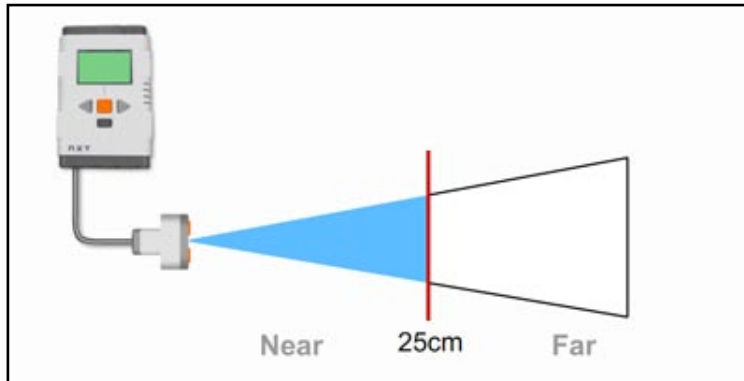


Reference

Thresholds

Thresholds are values that set a cutoff in a range of values, so that even if there are many possibilities, the value eventually falls above the threshold, or below the threshold. Using thresholds allows you to perform certain behaviors depending on where a certain value (usually a sensor value) falls in relation to the threshold.



If you look at this image, it shows an NXT using an Ultrasonic sensor. The threshold in this case is 25cm. We can create behaviors that tell the robot to go forward, until Ultrasonic sensor detects something closer than 25cm.

The threshold is just used to determine at which point the robot should be performing a different behavior.

Line Detection (Light Sensor thresholds)

To find a dark line on a light surface, you must first calculate a threshold to distinguish light from dark. One recommended method is:

1. Measure the Light Sensor value of the light surface
2. Measure the Light Sensor value of the dark surface
3. Add the two light sensor readings together
4. Divide by two to find the average, and use it as your threshold

In equation form:

$$\frac{\text{Light Value} + \text{Dark value}}{2} = \text{Threshold value}$$