

Harry:

The workflow:

We put the 3 IR sensor one in the middle, left, right in the front as the middle one is the only one on the line at the start and the others aren't.

We put a maximum value that gives better readings here it is 300 but it can be changed if the value of the right sensor higher than the left it will turn right and the same with the left sensor.

If the 3 sensor is lower than the maximum value it will go backward and set a Boolean to true (wrongway) and it won't go forward until the left or right sensor pick a signal.

If the middle sensor is higher than the others it will go forward.

The safe:

The workflow:

After setting the pins every time the Interrupt pin change for (signalA or signalB) it goes to the ISRA and ISRB functions to increase the counter (if clockwise) or lower it (if counter clockwise).

And to trun the counter to degree we use this:

$(\text{Counter}/\text{pps} * 4) * 360$.

Then we check for the 3 angles to lit the led if they match the wanted angles.