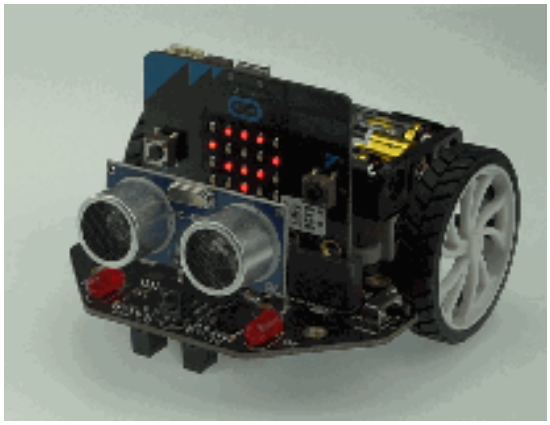
Line Follower

https://makecode.microbit.org

*Maqueen has **two** line-sensors, we can use them as its left and right eyes to follow a line.*

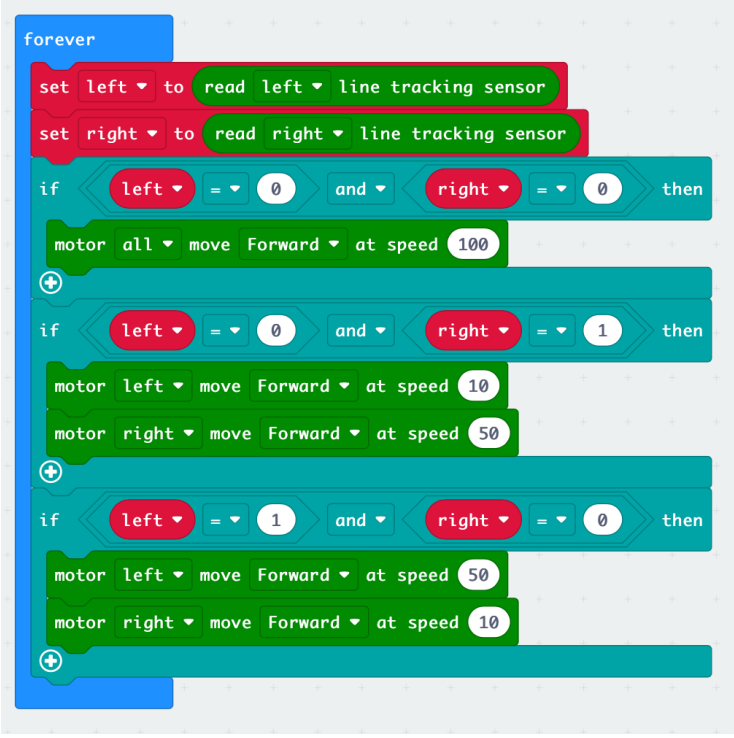


1) Open **https://makecode.microbit.org**
2) **+New Project**
3) Select +Extensions > click “maqueen” (**not** Maqueenplus)

Each line tracking sensor returns:

- *0 if the paper beneath is black*
- *1 if the paper beneath is white*

4) Create variables **left** and **right** to hold the sensor readings.
5) This code reads both sensors and puts the readings in variables **left** and **right**.



Think about the different cases…

6) If **left**=0 and **right**=0 then it’s on track so move straight ahead.
7) If **left**=0 and **right**=1 steer left to get back on track.
8) If **left**=1 and **right**=0 steer right to get back on track.

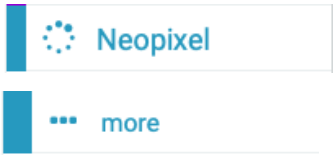
This code drives faster (speed 100) on the straights, and slows down on the turns.

If it comes off the line and both sensors detect 1, it just carries on doing what it was doing before. This might help it find the line again.

Underglow

Maqueen has four Red/Green/Blue (RGB) LEDs (Light Emitting Diodes) on the bottom so you can bling your robot with "underglow."

9) Select +Extensions > search for and click "neopixel"

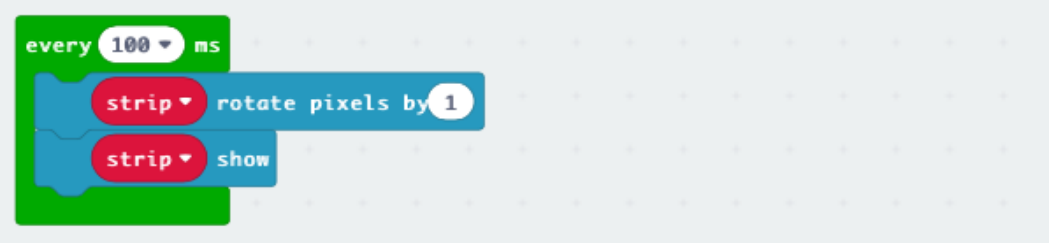


- *Neopixel now appears on your function menu*
- *There are **more** goodies below it…*

Disco lights (rotating rainbow)

10) Add code below to **show** the colours of the rainbow, **on start**.

11) The code below **rotates** the colours from each LED pixel to the next one on the strip of four, **every 100 milliseconds** (a tenth of a second).



Save your code on a USB drive.