

Introduction to Programming and Computer Science/Electronics

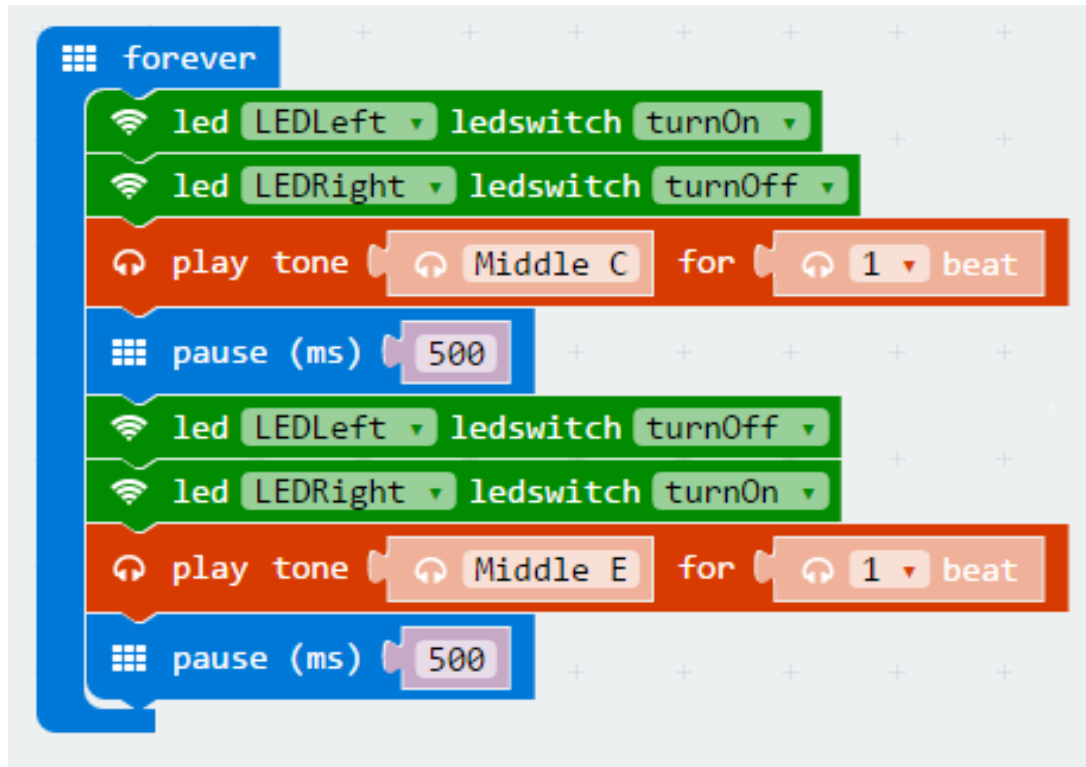
Lesson 6



LED Light Flash and Buzzer Sound

- Learning to control LED Light and Buzzer Sound
- Objective: Program Macqueen to perform the following
 - ◆ LED Light Flash - alternate
 - ◆ Buzzer
 - Outputs 2 different tones
- Intervals of 500 ms

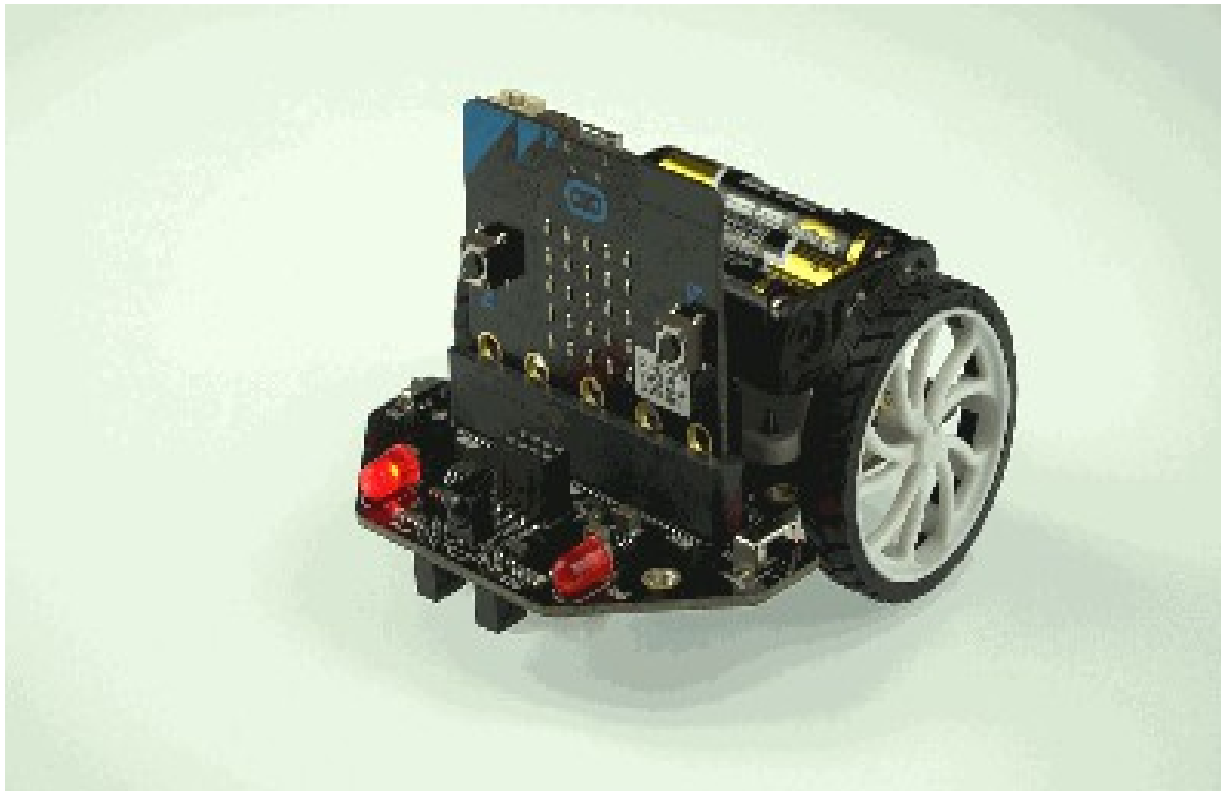
LED Light Flash and Buzzer Sound Code



```
forever loop:  
  led LEDLeft ledswitch turnOn  
  led LEDRight ledswitch turnOff  
  play tone Middle C for 1 beat  
  pause (ms) 500  
  led LEDLeft ledswitch turnOff  
  led LEDRight ledswitch turnOn  
  play tone Middle E for 1 beat  
  pause (ms) 500
```

The image shows a Scratch code editor with a 'forever' loop containing the following blocks: two green 'led' blocks (LEDLeft turnOn, LEDRight turnOff), an orange 'play tone' block (Middle C, 1 beat), a blue 'pause (ms)' block (500), two more green 'led' blocks (LEDLeft turnOff, LEDRight turnOn), another orange 'play tone' block (Middle E, 1 beat), and a final blue 'pause (ms)' block (500).

LED Light Flash and Buzzer Sound



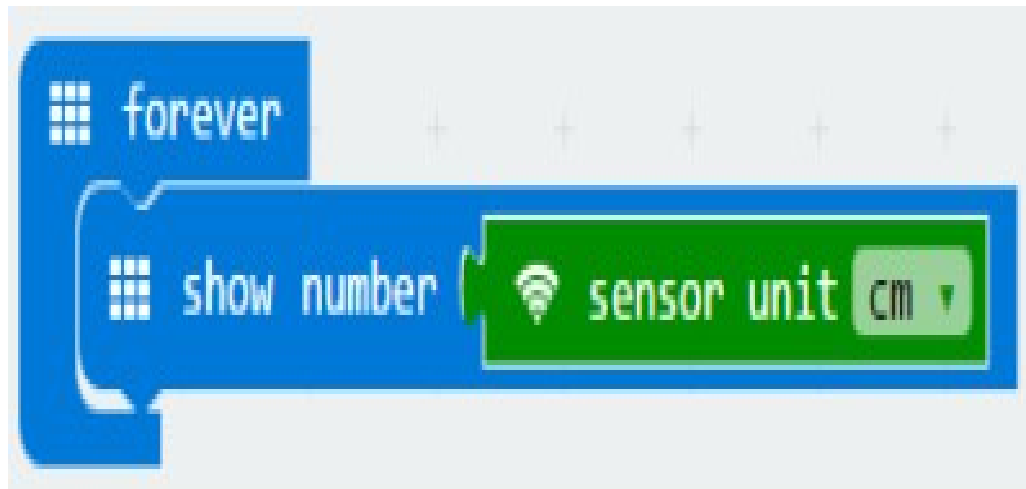
Exercise

- Try this!
- Objective: Program Macqueen to perform the following
 - ◆ LED Lights Flash - Alternate
 - ◆ Buzzer
 - Play your favourite song/melody

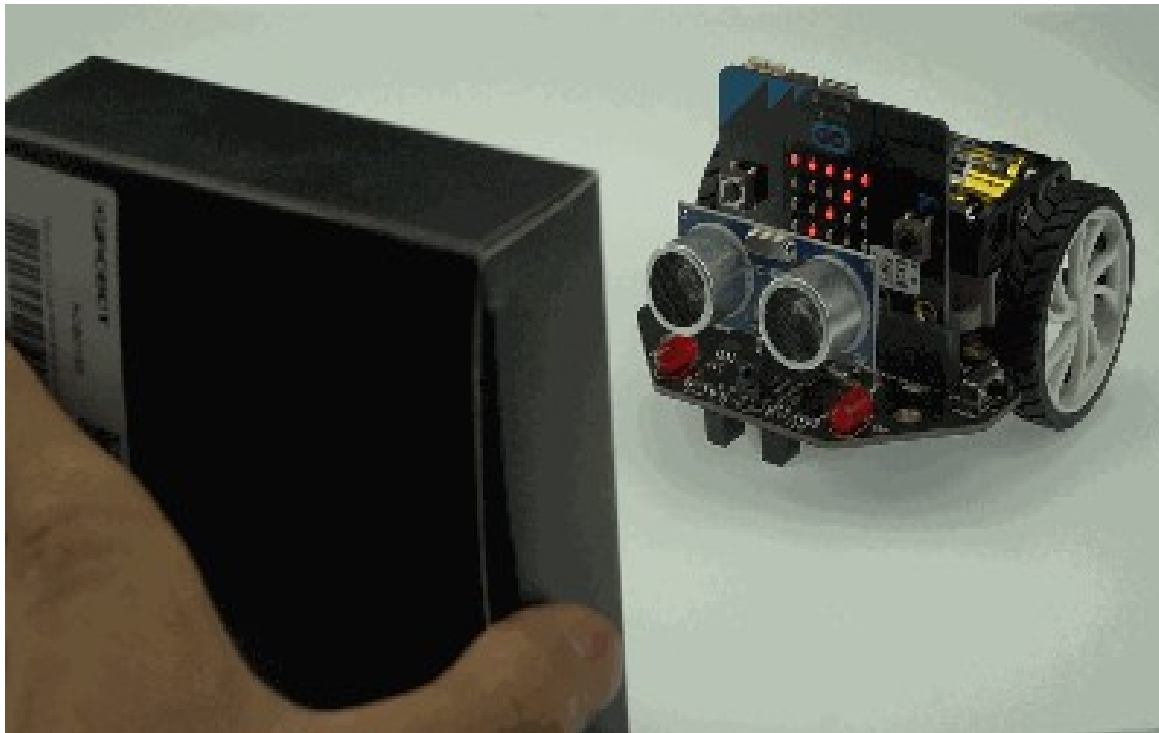
Read Ultrasonic Distance Project

- Read Ultrasonic Distance
- Objective: Program Macqueen to perform the following
 - ◆ Detect distance between itself and an object in front

Read Ultrasonic Distance Code



Read Ultrasonic Distance



Exercise

- Objective: Measure distance between Maqueen and object
-
- Compare distance measured with reading from Maqueen

Reading	Distance
	3 cm
	5 cm
	10 cm
	15 cm
	20 cm

Exercise – Distance, Movement & Light

- Try this!
- Objective: Program Macqueen to perform the following
 - ◆ Move in the pattern that you like i.e. Left, forward etc.
 - ◆ At the same time showing your favourite colours
 - ◆ Stop when it detects an object in front
 - ◆ LED Flashes and Buzzer Sounds
 - ◆ Move again when object is removed