STEM - Smart Robot v2 - Altronics Z6454

Lesson 8.2 - Infrared Obstacle Avoidance Display

Scan QR code for Lesson 8.2 Simulation

Simulation of this lesson can be found at https://makecode.microbit.org/86944-10749-06987-90752

Note: ***(Robot construction must be completed before this Step)***

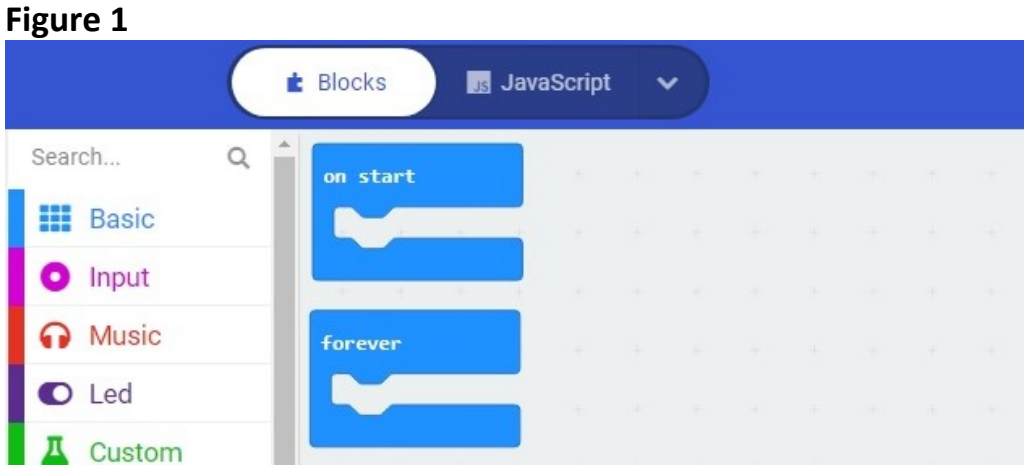
Goal for this lesson
Learn how to use the obstacle avoidance sensors and produce an output on the micro:bit matrix display.

Hardware Required
PC or Tablet
1 x micro USB cable
1 x Smart Robot with micro:bit & battery installed

Step 1 *As per Figure 1*

a. Goto URL https://makecode.microbit.org/#
b. Create **"+New Project"** & give it a name
c. Press **Gear** symbol – top right
d. Press Extensions
e. Add repository found using link below.
https://github.com/AltronicsAUKits/Z6454-Robot-Kit-v2_KS0426
f. On start up both **"on start"** & **"forever"** will be in your work space, move **"forever"** block below **"on start"** block.

Figure 1

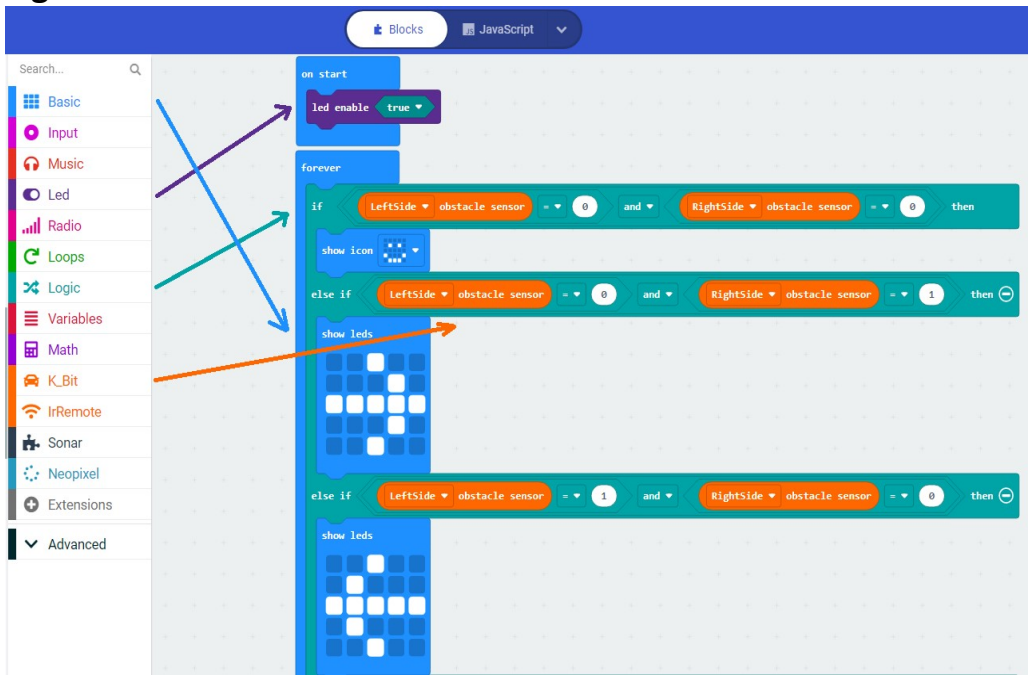


Step 2 *as per Figure 2*

Moving forward we will only highlight the locations for the required modules to produce the desired code.

a. We will be utilising the **"Basic"** Tab
b. We will be utilising the **"Led"** Tab
c. We will be utilising the **"Logic"** Tab
d. We will be utilising the **"K_Bit"** Tab
e. Write the code to the micro:bit
f. Download the code to the micro:bit

Figure 2



Expected Result!

a. Insert the micro:bit into the robot & Power on.
b. If the robot detects objects on both obstacle sensors the matrix display will show a smiley face.
c. If the Right obstacle sensor detects an object the matrix display will display an arrow pointing left.
d. If the Left obstacle sensor detects an object the matrix display will display an arrow pointing right.
e. If no obstacles are detected on either sensor the display will show an arrow pointing forward.

Example Infrared Obstacle Avoidance Display can be found at
https://makecode.microbit.org/86944-10749-06987-90752

STEM Smart Robot can be purchase from Altronics.
https://www.altronics.com.au/p/z6454-stem-microbit-mini-smart-robot-car-v2.0/