STEM - Smart Robot v2 - Altronics Z6454

Lesson 5.2 - Robot Motor Drive Experiment 2

Scan QR code for Lesson 5.2 Simulation

Simulation of this lesson can be found at https://makecode.microbit.org/99786-91653-37981-54370

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

Goal for this lesson

Learn to control the motors on the Robot, we will now utilise the A & B buttons on the **micro:bit** to manipulate the robot. This will produce a visual display on the matrix display and drive the motors.

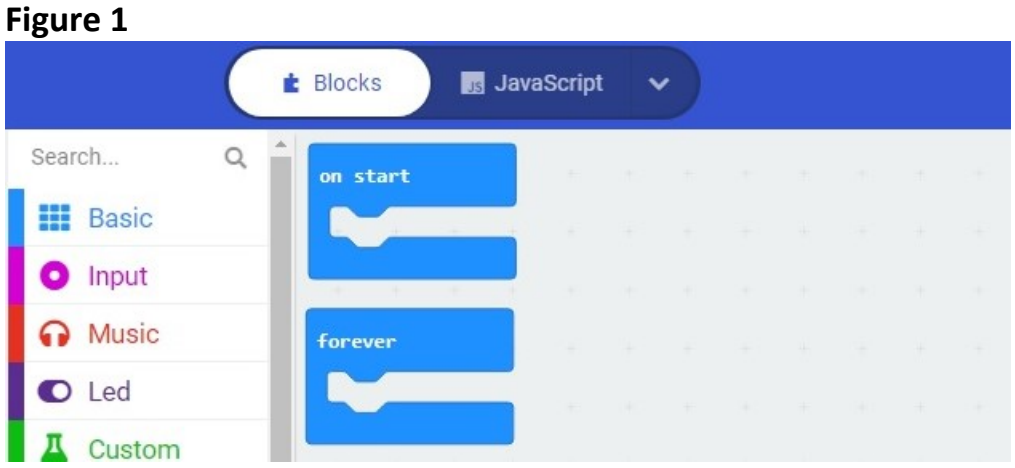
Hardware Required

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

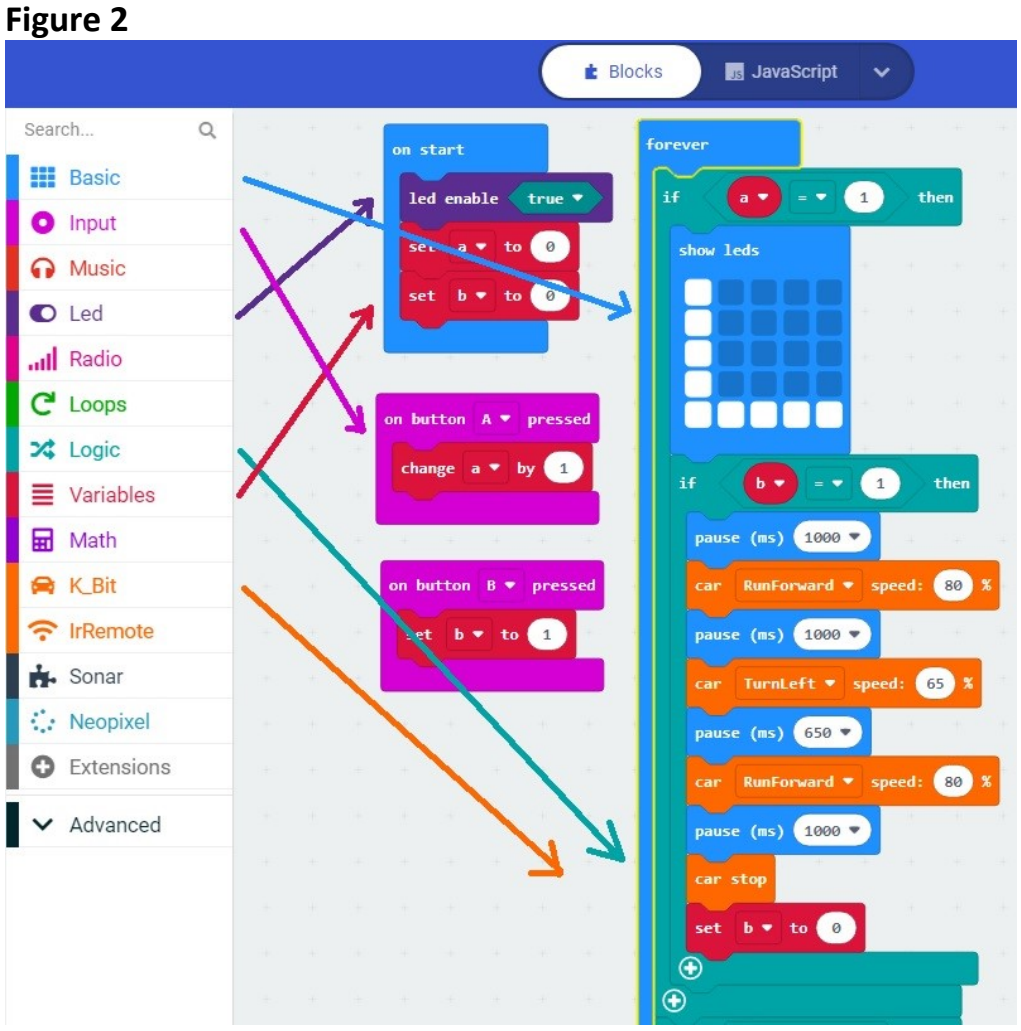


Step 2 *as per Figure 2*

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 **"Input"** Tab
c. We will be utilising the **"…more"** tab under **"Led"** Tab
d. We will be utilising the **"Logic"** Tab
e. We will be utilising the **"Variables"** Tab
f. We will be utilising the **"K_Bit"** Tab
g. Download the code to the micro:bit

Figure 2



Expected Result!

a. The Robot will power on.
b. The **a**ᵛ variables will be set the button press function.
c. If we press the "A" button the robot will display an **L** on the Matrix display.
d. If we then press the "B" button the robot will begin to move forward, turn left, move forward, then stop this will also set the "B" press count to 0.
e. If we press the "A" button a second time the matrix display will show "O".
f. If we now press the "B" button, the robot will move forward, turn left, move forward, turn left again, move forward, turn left again, move forward, then stop "B" press count will then be reset to 0.
g. If at any time "B" press count becomes 3 it will be reset to 1.

Example Robot Motor Drive Experiment 2 can be found at
https://makecode.microbit.org/99786-91653-37981-54370

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