Lesson 5 – Engduino Sensors

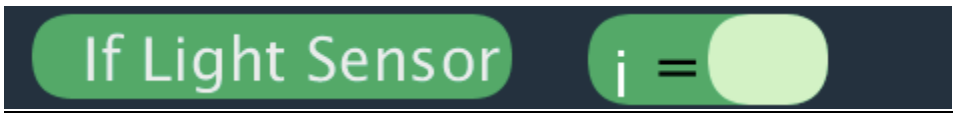
As mentioned in the previous lesson, the Engduino has several sensors, which allows it to measure certain properties or attributes in the surrounding environment.

The following sensors can be used on BlockCode:

- **Light Sensor**
- **Temperature Sensor**
- **Accelerometer**

LIGHT SENSOR

The light sensor on the Engduino measure light flux. The values returned range from 0 to 1023 – as light flux increases, the value returned is higher



The button above allows indented buttons below it to execute, if the light flux is equal to the variable 'I'.

To use:

1. **Choose an equality/inequality sign (<,>,=) by entering on keyboard**
2. **Enter value for variable 'i' into textbox (light green colour)**
    a. *The value for 'i' will be compared to the measured light flux value*
3. **Drag button onto canvas**
4. **Any buttons that need to execute if the condition is satisfied, must be dragged on top of this button**

TEMPERATURE SENSOR

The Engduino does not use a temperature sensor, but a thermistor instead. The thermistor changes an electrical property called 'Resistance' depending on the temperature. We can use this to calculate temperature. The temperature is calculated and returned in Celsius.

The button above allows indented buttons below it to execute, if the temperature is equal to the variable 'I'.

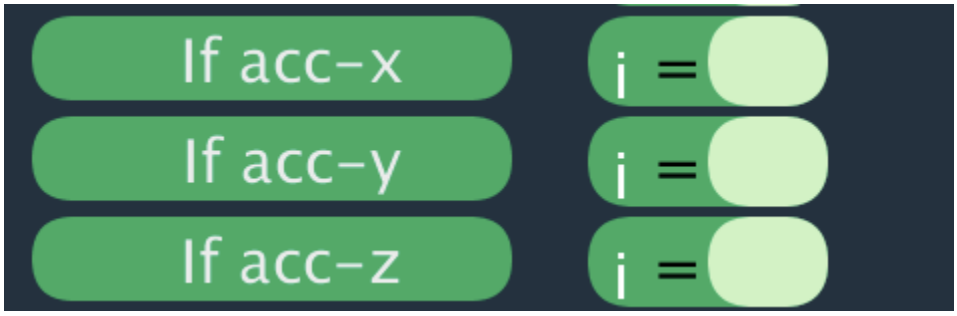
To use:

1. **Choose an equality/inequality sign (<,>,=) by entering on keyboard**
2. **Enter value for variable 'i' into textbox (light green colour)**
    a. *The value for 'i' will be compared to the calculated temperature*
3. **Drag button onto canvas**

4. **Any buttons that need to execute if the condition is satisfied, must be dragged on top of this button**

ACCELEROMETER

The accelerometer is a sensor on the Engduino that measures acceleration in all three dimensions (x, y and z). The values returned from the sensor are given in 'g' (where 1g is the acceleration due to gravity). The accelerometer can measure accelerations of ±2g.



The buttons above allow indented buttons below it to execute, if the acceleration is equal to the variable 'I'.

To use:

1. **Choose an equality/inequality sign (<,>,=) by entering on keyboard**
2. **Enter value for variable 'i' into textbox (light green colour)**
    a. *The value for 'i' will be compared to the measured acceleration*
3. **Drag button onto canvas**
4. **Any buttons that need to execute if the condition is satisfied, must be dragged on top of this button**

NOW TRY WRITING A SKETCH THAT INCLUDE THESE SENSORS ON BLOCKCODE

Summary

Lesson 5 teaches you about the different sensors onboard the Engduino. We will show how to use the sensors in BlockCode and why they are useful.