Lesson 3 – Uploading your very own Sketch

Sketch - A program written for an Engduino is called a Sketch. You can create a sketch in either Arduino or BlockCode. It is a more basic version of the "C" programming language

A sketch in Arduino must always contain these two main functions:

- **void setup(){…}**
  - In the setup() function, you would put code that needs to be run only once in order to prepare for your main section of code
- **void loop(){…}**
  - In the loop() function, you would put code that will be running in a loop, until there is an error or the Engduino is turned off.

In BlockCode, when writing a sketch, you are not required to write code for the setup function. The setup function is automatically generated in the output file.

Example of the blink sketch in Arduino and BlockCode:

Arduino

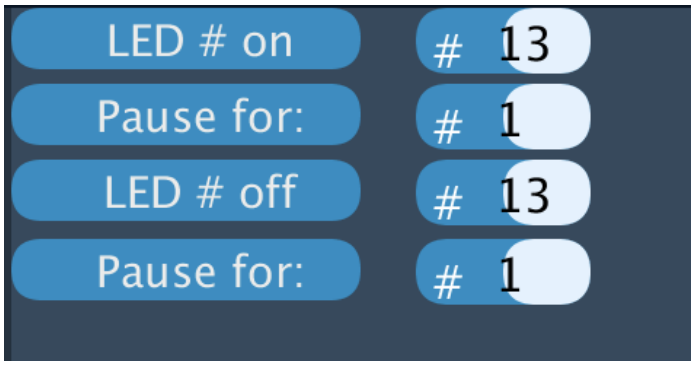
Blink

```
void setup  ( )   {
// initialize digital pin 13 as an output.
  pinMode(13, OUTPUT);
}
// the loop function runs over and over again forever
void loop ( ) {
  digitalWrite(13, HIGH);   // turn the LED on (HIGH is the volt-
age level)
  delay(1000);              // wait for a second
  digitalWrite(13, LOW);    // turn the LED off by making the
voltage LOW
  delay(1000);              // wait for a second
```

In **setup(),** it defines the user LED pin (green light) as an output

In **loop(),** it turns on the LED, waits for 1 second (1000 Microseconds), turn it off, wait for 1 second and repeat continuously

BlockCode



The BlockCode sketch does the same thing, without the use of **setup()**

Now try and creating your own sketch by playing around with the buttons on BlockCode

Summary

Lesson 3 teaches you to create your own sketches on BlockCode and Arduino. We will show you the main components and functions that make up a sketch. We will also show you how much easier it is, to write code in BlockCode, rather than Arduino.