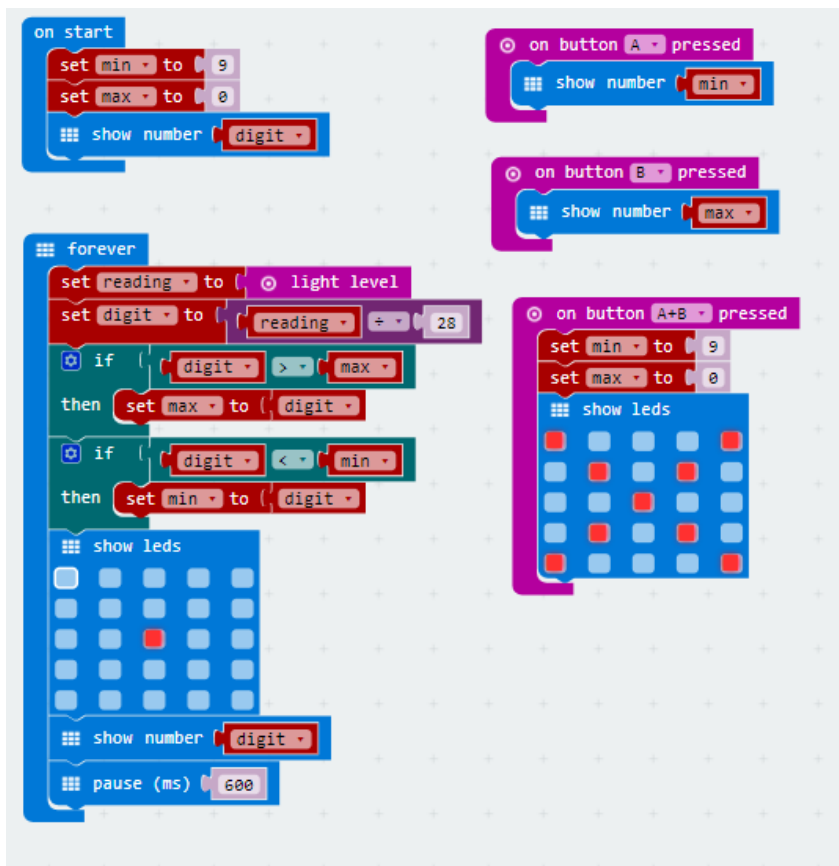


In Topic 3 you built a simple light meter. This extends that program by performing some calculations on those readings. It will calculate and store the minimum and maximum light readings and allow those to be recalled later. It will also display the current (instantaneous) light level reading.

Using this example code. Download it to a micro:bit and test it



```
on start
  set min to 9
  set max to 0
  show number digit

forever
  set reading to light level
  set digit to reading + 28
  if digit > max
    then set max to digit
  if digit < min
    then set min to digit
  show leds
  show number digit
  pause (ms) 600

on button A pressed
  show number min

on button B pressed
  show number max

on button A+B pressed
  set min to 9
  set max to 0
  show leds
```

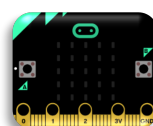
Identify what is happening in this code?

## Topic 7

Maths, Variables, and processing data

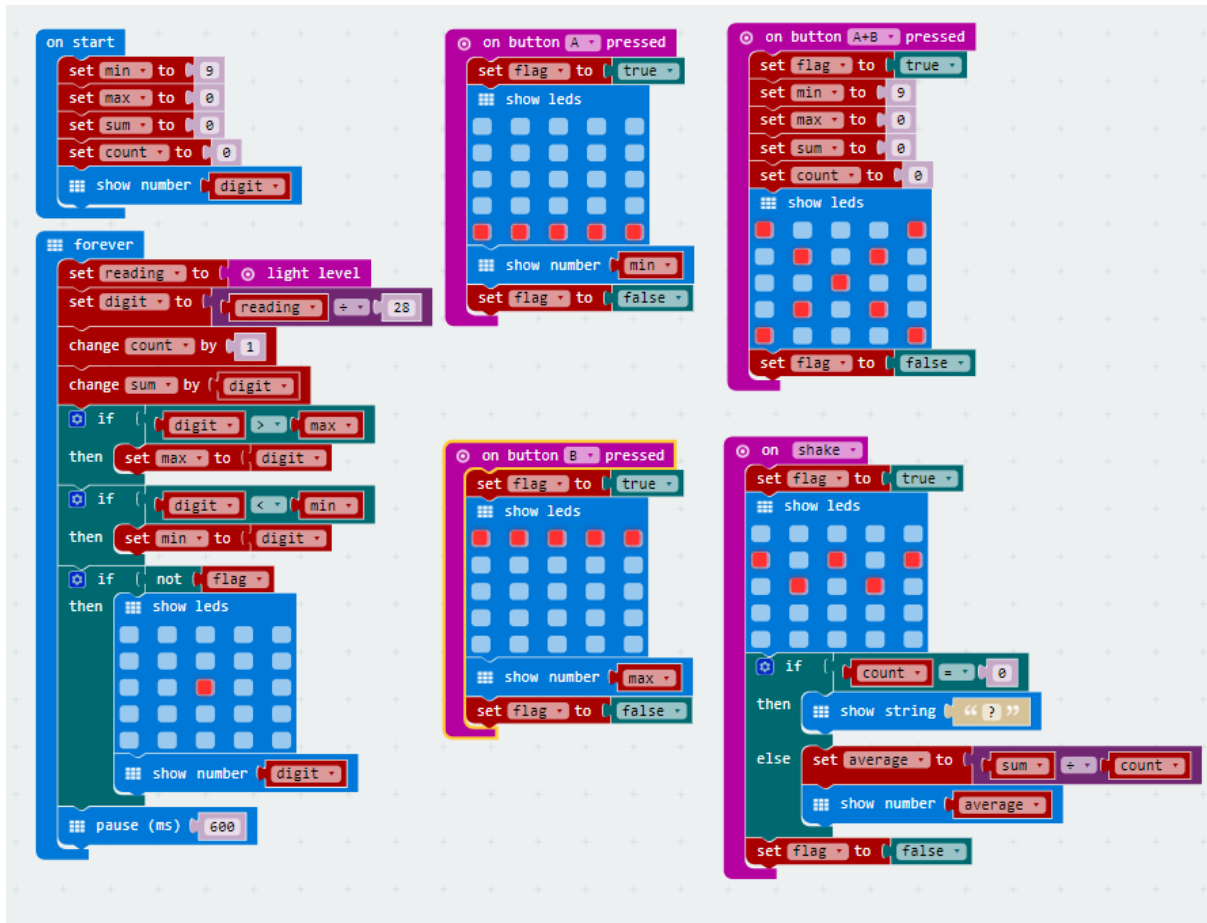
Learn about using variables as a way to store and retrieve data.

Learn methods that numerical data can be processed.



In this next part of the project, you will add an averaging feature to your light monitor. An average is a mathematical calculation producing a number that tells you something about all of the readings taken over a period of time.

Using this example code. Download it to a micro:bit and test it



```
on start
  set min to 9
  set max to 0
  set sum to 0
  set count to 0
  show number digit

forever
  set reading to light level
  set digit to reading + 28
  change count by 1
  change sum by digit
  if digit > max
  then set max to digit
  if digit < min
  then set min to digit
  if not flag
  then show leds
  show number digit
  pause (ms) 600

on button A pressed
  set flag to true
  show leds
  show number min
  set flag to false

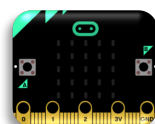
on button A+B pressed
  set flag to true
  set min to 9
  set max to 0
  set sum to 0
  set count to 0
  show leds
  set flag to false

on button B pressed
  set flag to true
  show leds
  show number max
  set flag to false

on shake
  set flag to true
  show leds
  if count = 0
  then show string "?"
  else set average to sum ÷ count
  show number average
  set flag to false
```

Identify what is happening in this code?

Change the code so that it takes a reading every minute



What have you learnt in this topic?

What else do you think you need to know about this topic and how will you find this out?

How might you introduce this topic to other teachers?

What areas of this topic might be difficult to teach or understand for other teachers?

## Topic 7

Maths, Variables and processing data

