Lesson 5

Etch a Sketch

Coding Challenge

worksheet

Lesson 5 Etch a Sketch

In this activity you will create a drawing console based on the iconic Etch a Sketch childrens drawing toy. There is very little new codein today's lesson. Just adaptations of everything you have learnt to date. allowing you to consolidate your learning.

As always, we begin by setting up the libraries.

A close-up of a word

Description automatically generated

Next set up the OLED screen protocols and set the screen to be cleared at startup

A close up of a number

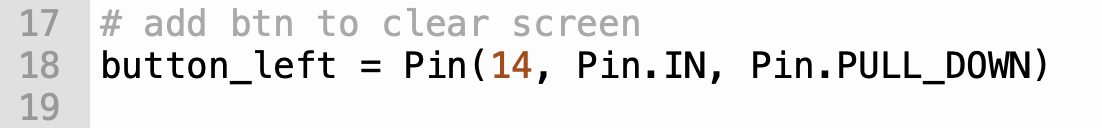
Description automatically generated with medium confidence

Next set up the potentiometers to the ADC pins. One will be used to move the object along the x axis the other the y axis. We also add two variables to store the cursor positions

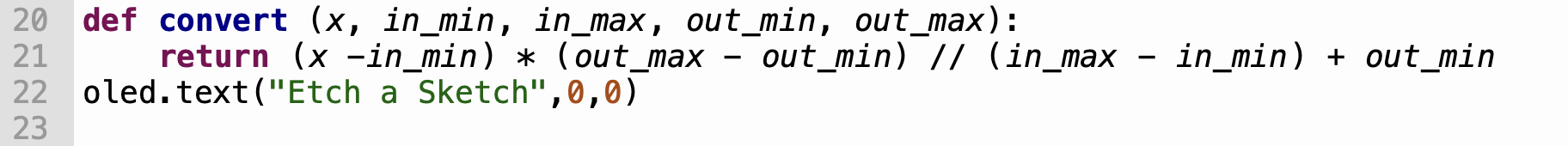
A black text with black letters

Description automatically generated with medium confidence

The next step is to add the button to clear the screen.



Create a function to convert the raw analogue readings to align to the screen size



The while loop starts the tracking of the analogue data by calling the above convert function and passing in the screen size. The sizes are slightly smaller than the actual screen to ensure that the cursor remains on the screen.

A computer code with black text

Description automatically generated

The sensitivity of the analogue reading means that tiny shakes will be displayed on the screen using a selection statement, we can remove some of this shake. by including an if statement to ignore any movement less than 2 pixels.

A screenshot of a computer code

Description automatically generated

Next we add a “.” At the position of the cursor and show the dot

A close up of a text

Description automatically generated

Add a small delay and update the variables of the new current position

A black and grey text

Description automatically generated

Lastly add a selection statement to clear the screen if the button is pressed.

A close-up of a number

Description automatically generated

**Challenge:**

Can you replace the “.” for a tiny ellipse (circle) does this improve the drawing experience?

oled.ellipse( x\_cursor, y\_cursor, 1, 1, 1)