

## IoT Thing Development

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### Idea:

The idea for the device was, when the potentiometer was twisted to a current of 3.3 amps, the button could be pressed and an LED alongside a buzzer would activate. If the current was less than 3.3 amps and the button was pressed, nothing would happen.

### Code / Github link:

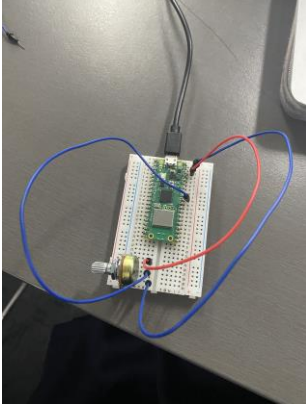
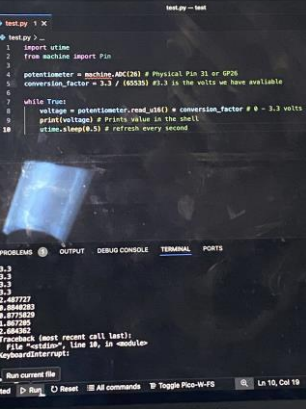
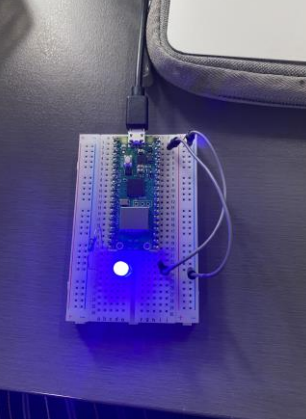
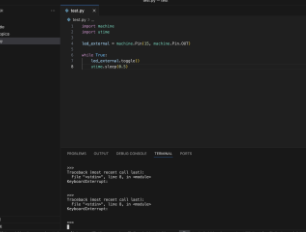
<https://github.com/aneekasingh/Year-9-IT>

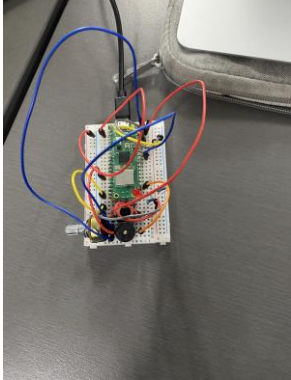
### Problems and solutions:


There were problems me and Aneka experienced when making the project, the main two being trying to figure out how to sound the buzzer, and how to activate the button, as we could not find tutorials that worked on either. Luckily, our classmate Scherwan helped us with both of the problems.

### Photos:

IMAGE	DESCRIPTION	DATE
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	<p>This image shows our potentiometer. We did this so we would know how to connect the potentiometer in the final project.</p>	<p>15.10.2024</p>
 <pre>test.py 1 x 1 import time 2 from machine import Pin 3 4 potentiometer = machine.ADC(26) # Physical Pin 31 or GP26 5 conversion_factor = 3.3 / (65535) #1.3 is the volts we have available 6 7 while True: 8     voltage = potentiometer.read_u16() * conversion_factor # 0 - 3.3 volts 9     print(voltage) # Prints value in the shell 10    time.sleep(1) # refresh every second</pre> <pre>2.3 2.3 2.3 2.3 2.487727 2.486633 2.4779229 2.477285 2.484382 (Firmware reset recent call last): File "main.py", line 18, in &lt;module&gt; KeyboardInterrupt</pre>	<p>This image shows the code we used to make the potentiometer work. The code is shown working in the terminal.</p>	<p>15.10.2024</p>
	<p>This image shows an LED blinking. We did this so we would know how to connect the LED in the final project.</p>	<p>24.09.2024</p>
 <pre>test.py 1 x 1 import time 2 from machine import Pin 3 4 led = Pin(2, Pin.OUT) 5 6 while True: 7     led.on() 8     time.sleep(1) 9     led.off() 10    time.sleep(1)</pre> <pre>2.3 2.3 2.3 2.3 2.487727 2.486633 2.4779229 2.477285 2.484382 (Firmware reset recent call last): File "main.py", line 18, in &lt;module&gt; KeyboardInterrupt</pre>	<p>This image shows the code to make the LED blink.</p>	<p>24.09.2024</p>

	<p>This image shows the final device we made. We forgot to document when we added the buzzer and button.</p>	<p>23.10.2024</p>
<pre> 1 from machine import Pin 2 import time 3 import utime 4 import machine 5 6 button = Pin(15, Pin.OUT) 7 buzzer = Pin(11, Pin.OUT) 8 led = Pin(16, Pin.OUT) 9 potentiometer = machine.ADC(26) 10 conversion_factor = 3.3 / (65535) #3.3 is the volts we have available 11 12 13 buzzer.value(0) 14 15 16 17 while True: 18     voltage = potentiometer.read_u16() * conversion_factor 19     print(voltage) 20     if voltage == 3.3: 21         if button.value() == 1: 22             led.on() 23             time.sleep(0.1) 24             buzzer.value(1) 25         else: 26             led.off() 27             buzzer.value(0) 28         else: 29             led.off() 30             buzzer.value(0) 31 32 33 </pre>	<p>This image shows the code we used in the final device.</p>	<p>23.10.2024</p>

By: RamboPi, Year: 2023, Name: Raspberry Pi Pico Potentiometer in Micropython   
w/Code MADE EASY, Container: YouTube, URL:  
<https://www.youtube.com/watch?v=ulVr5TGbfMk>

By: Revernos Technology, Year: 2022, Name: Raspberry Pi Pico SIMPLE Project (External LED Blinking Tutorial) | Beginner Electronics Project, Container: YouTube, URL:  
<https://www.youtube.com/watch?v=5nPBZBUpw7E>

Button: Scherwan helped us

Buzzer: Scherwan helped