

# JavaScript on Microcontrollers



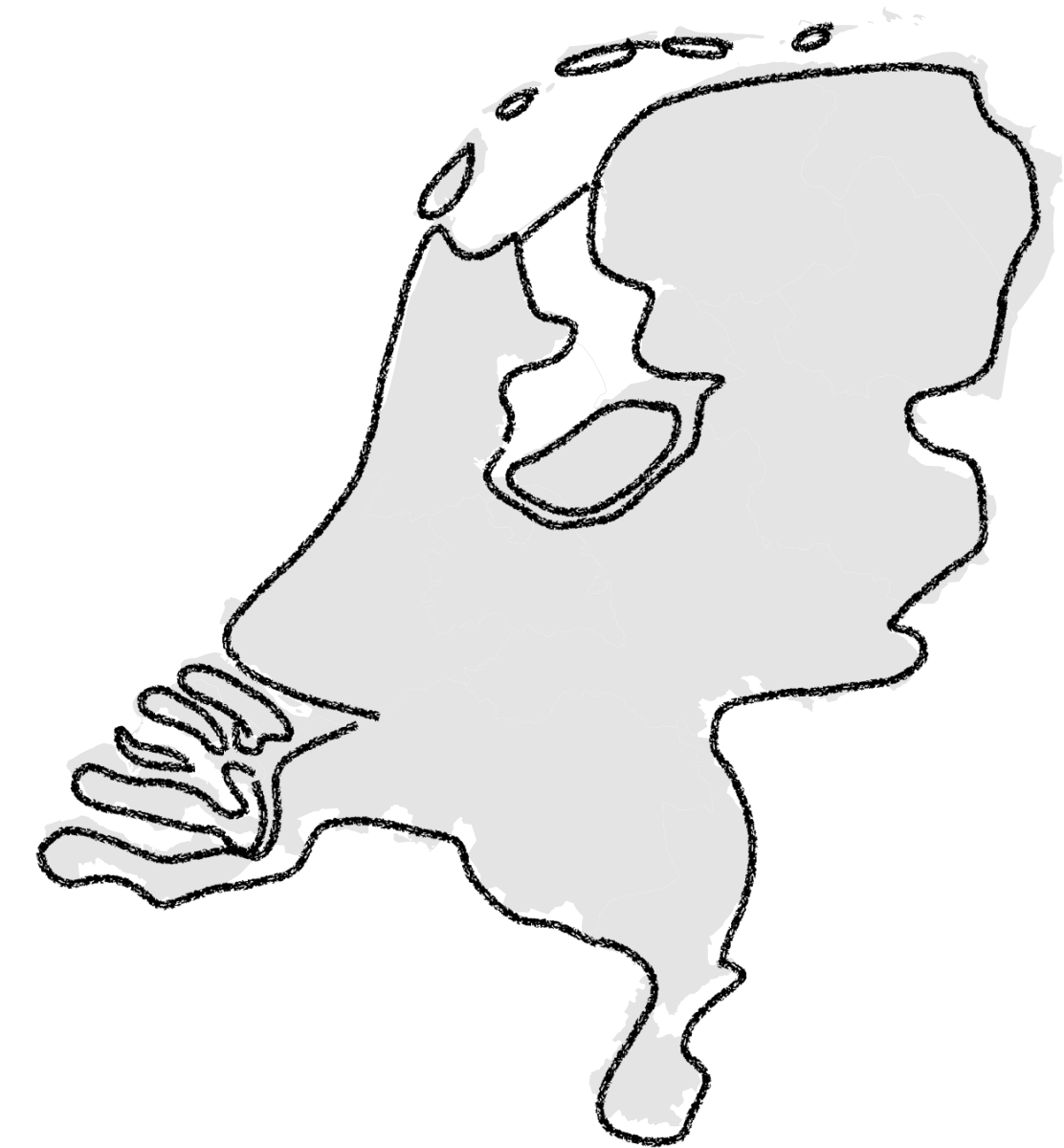
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**I am Niels Leenheer**



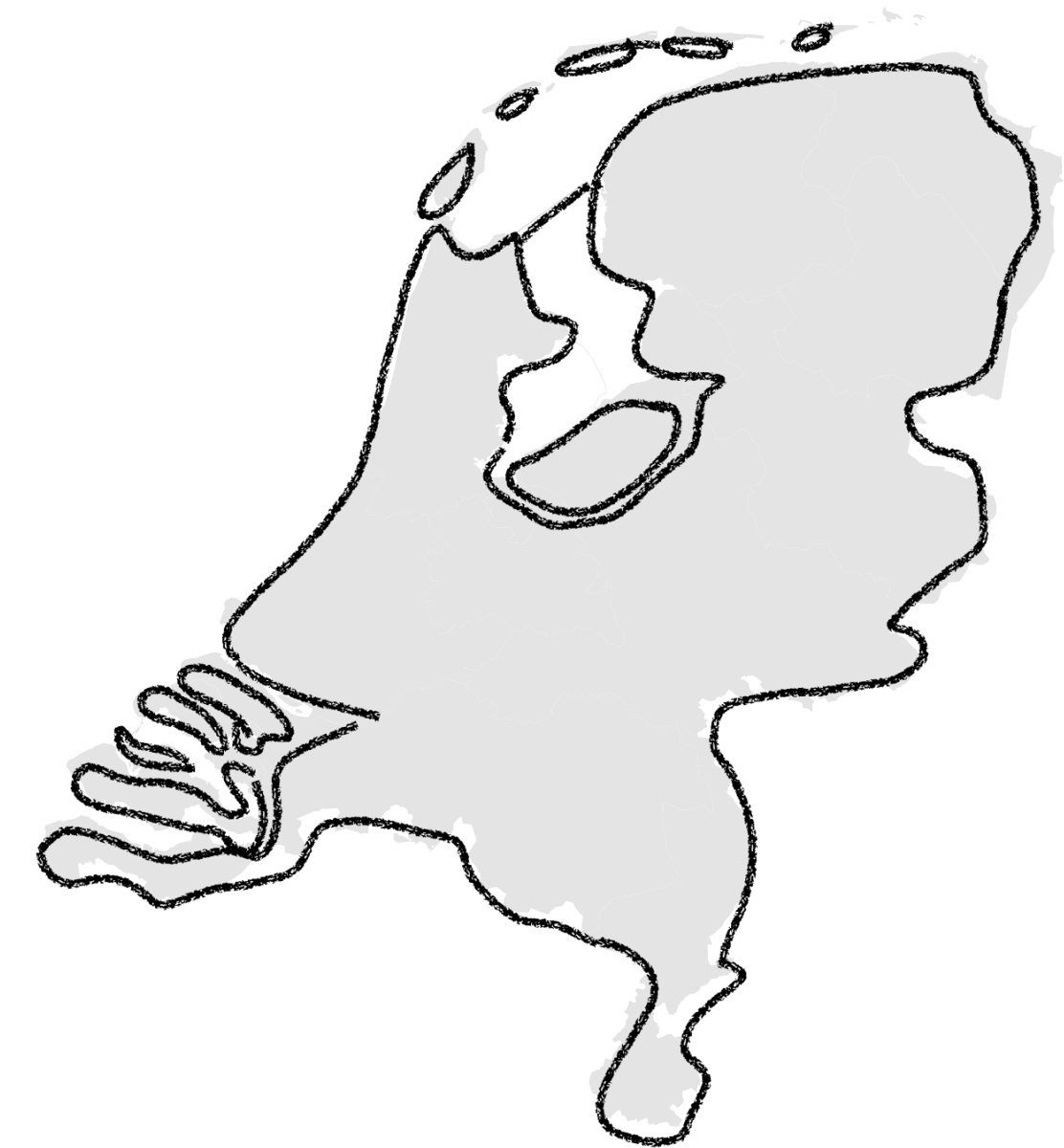
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# I'm from The Netherlands



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# I'm from The Netherlands



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**I tweet at @html5test**



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**I**  **the web**



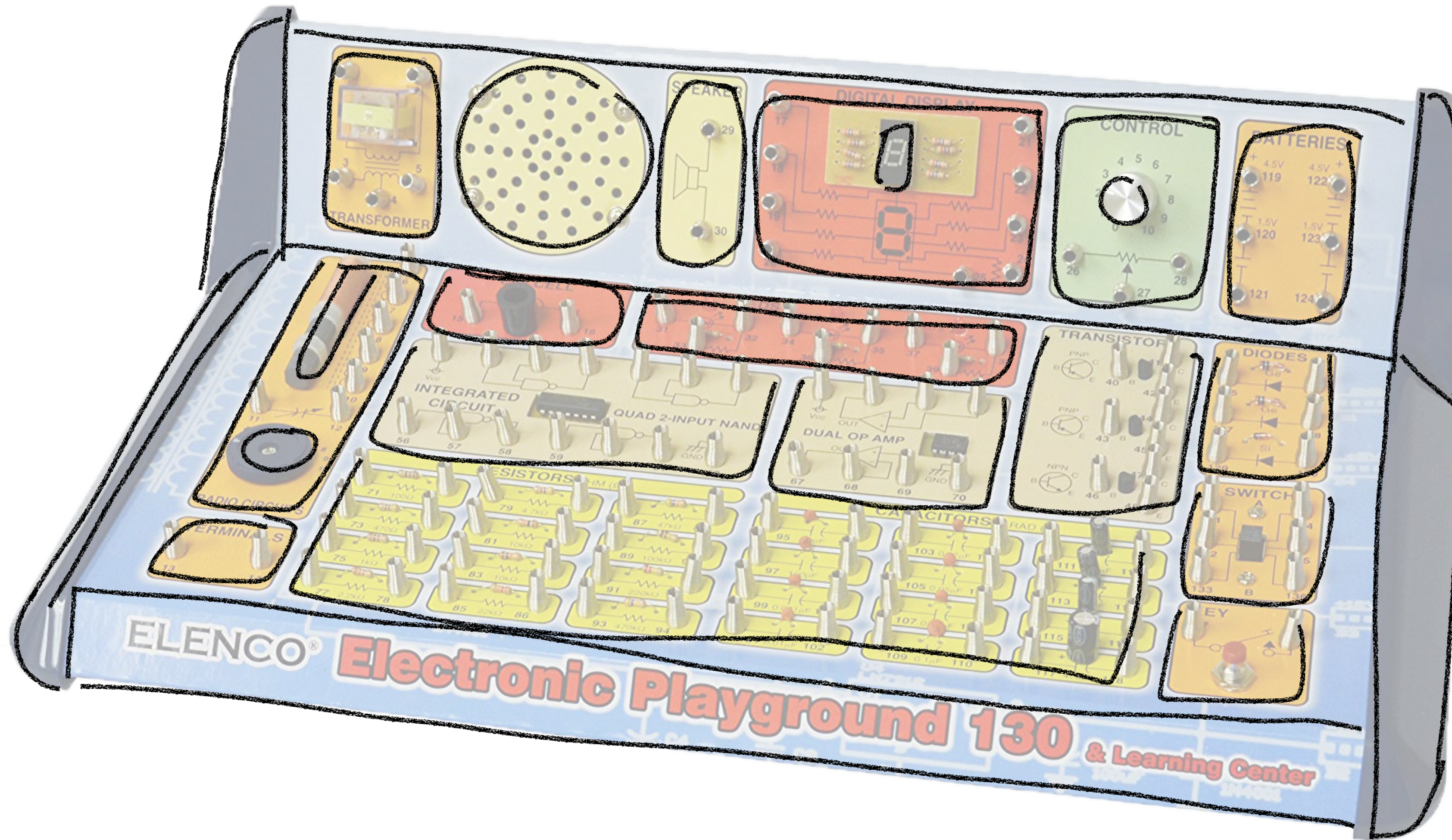
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**I**  **electronics**

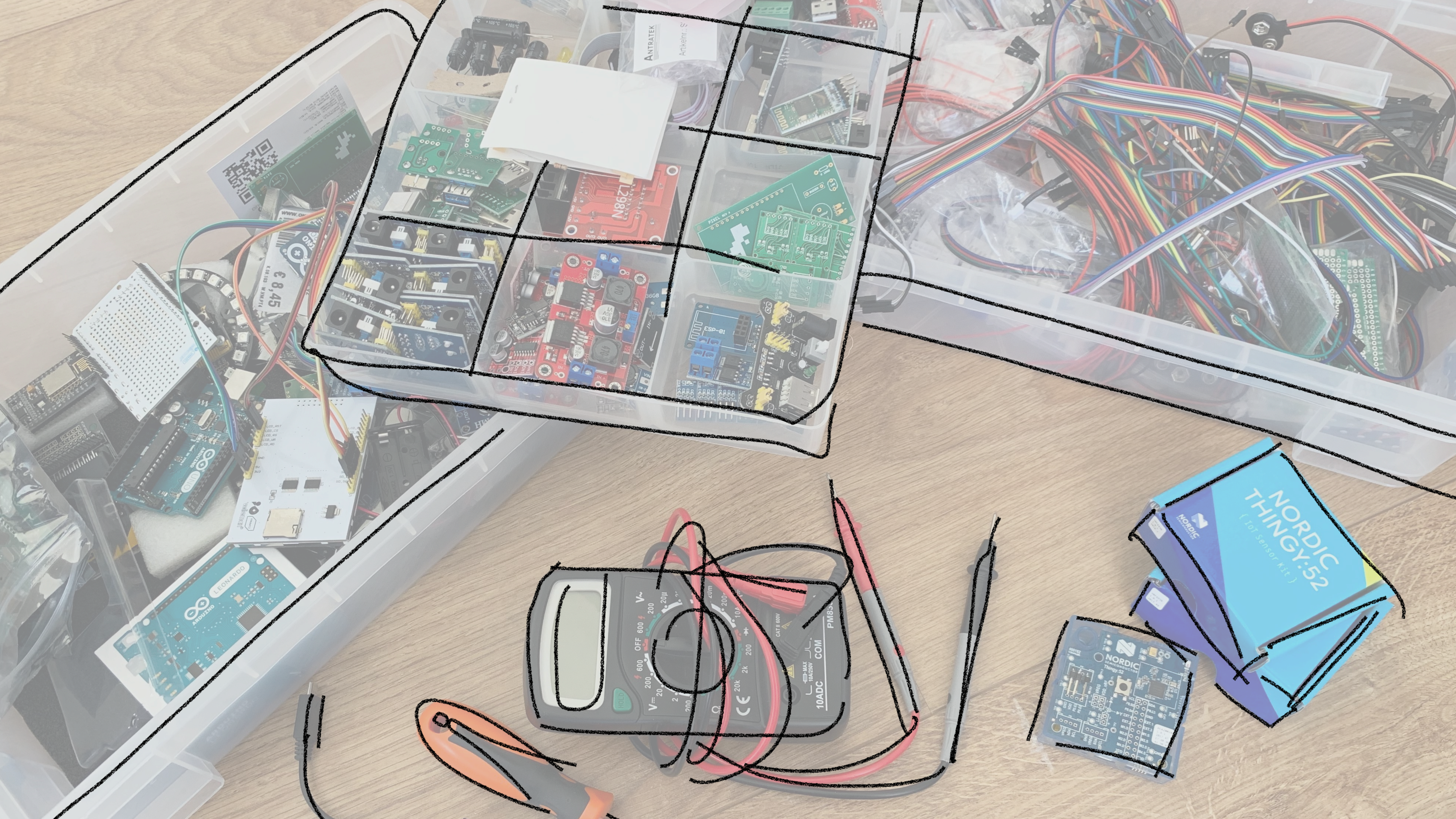


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£8,45

ANTRATEK  
Antratek S

L298N

ESP-01

NORDIC  
THINGY:52  
(IoT Sensor Kit)

NORDIC  
LEARN CONNECTOR  
Thingy:52

PM835  
10ADC COM  
CAT II 600V  
MAX 10A/250V  
V= 600 OFF 600 200 20µ  
200 20 200 200  
200 20K 200 200  
CE

LEONARDO  
ARDUINO

**Why should I  
care about this?**



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**electronics + web = IoT**



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# JavaScript on Microcontrollers



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but . . .

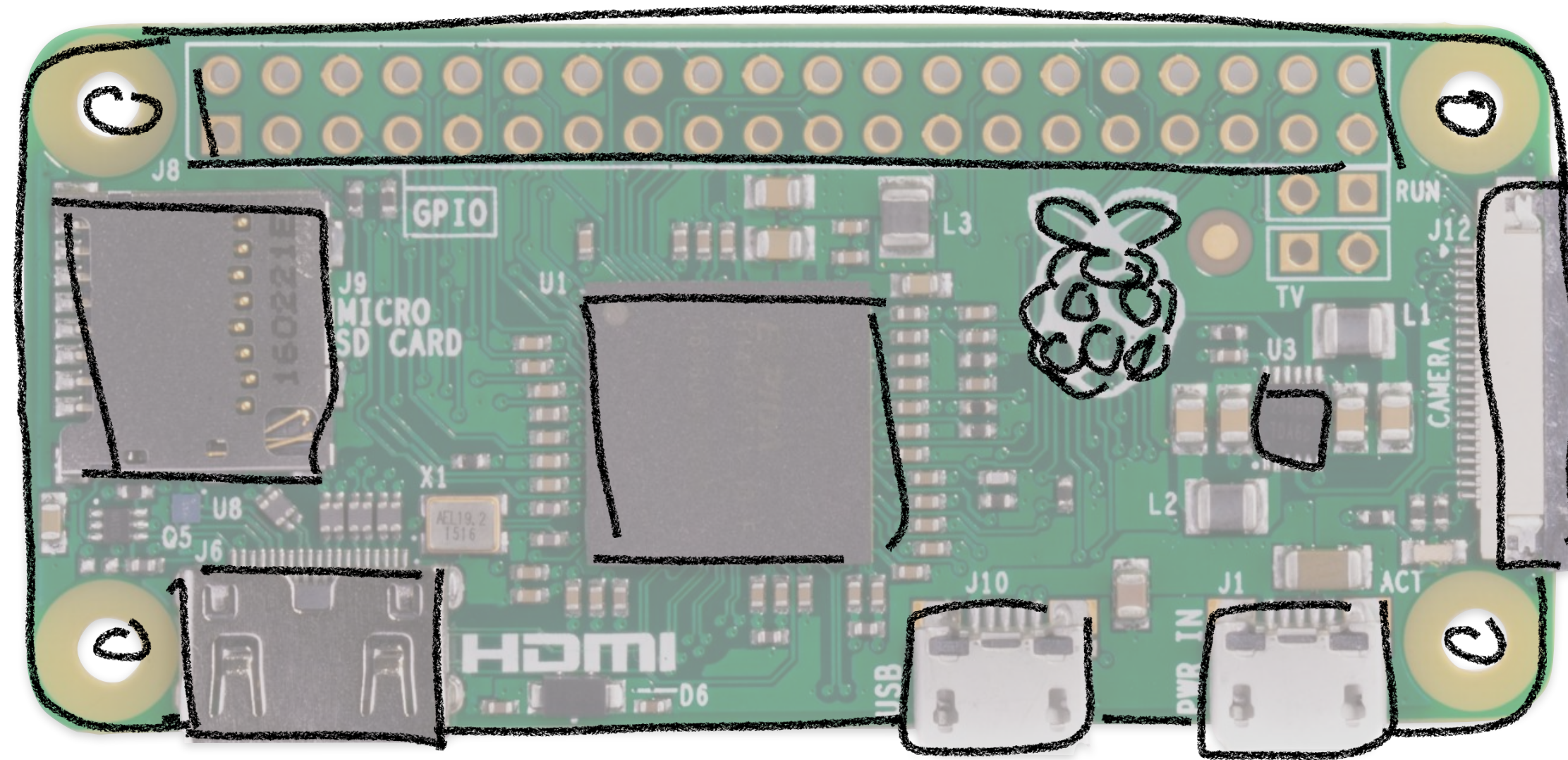


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Microcontrollers are ~~\$1000~~ \$10000



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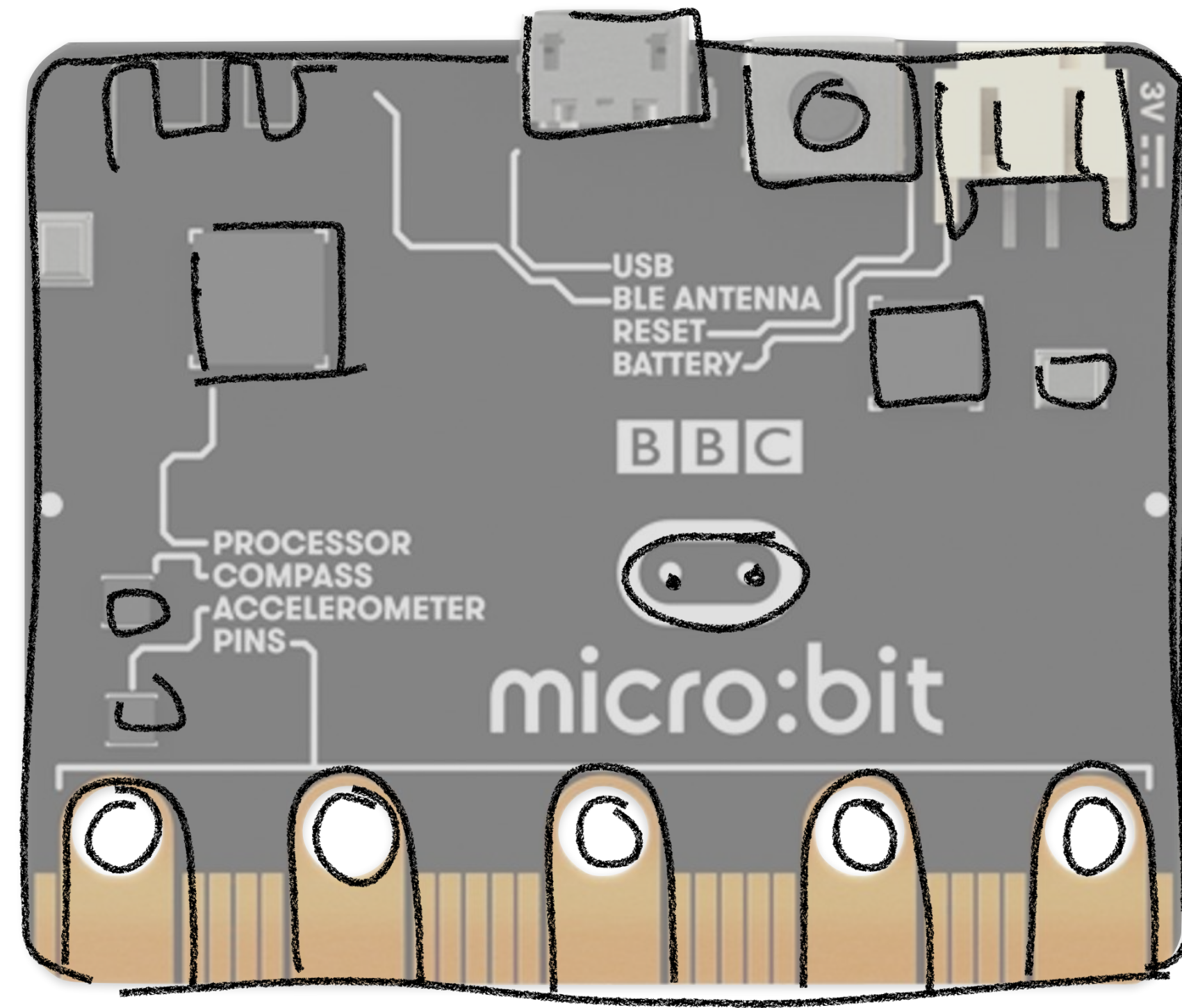


# Raspberry Pi Zero W

1 GHz CPU and 512MB RAM



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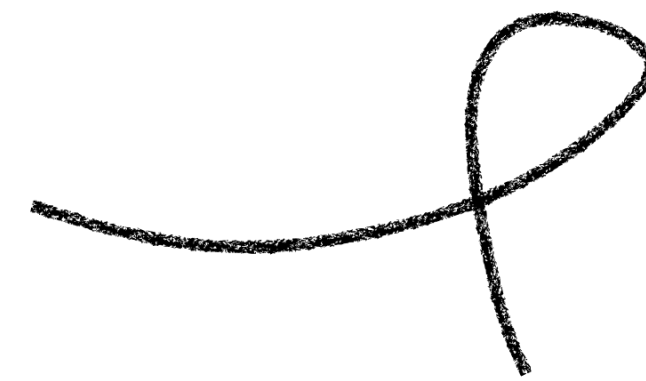
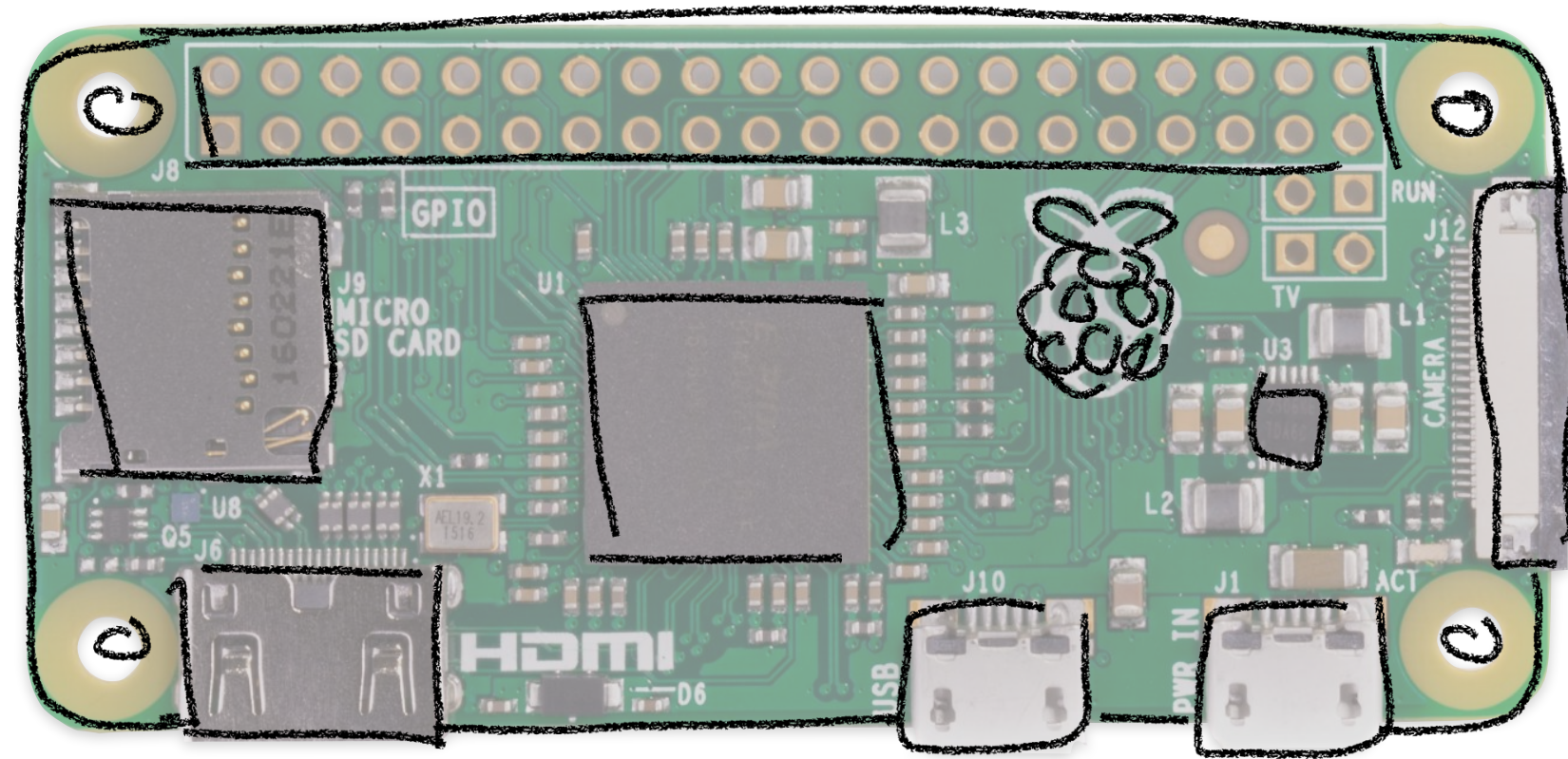


# micro:bit

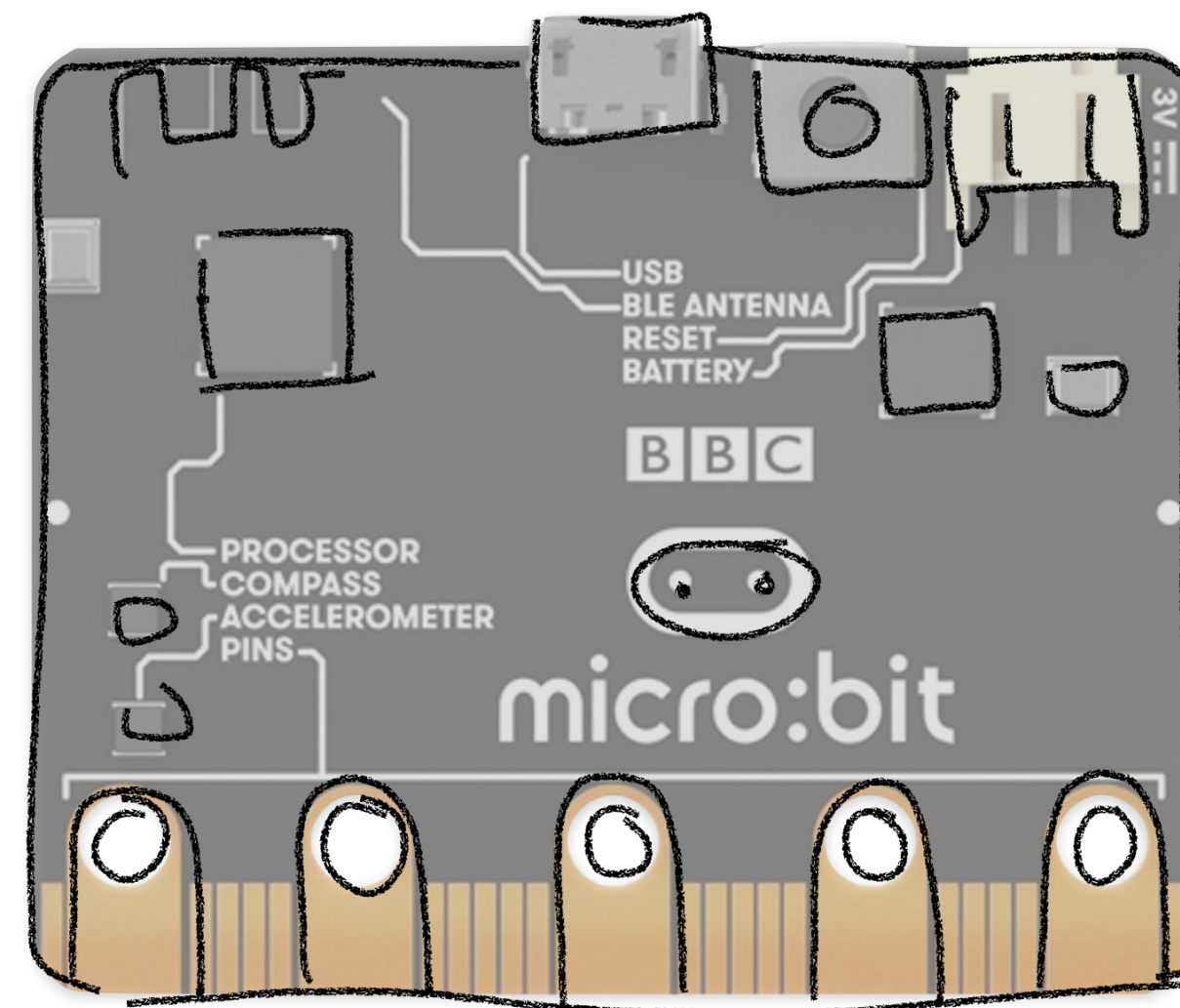
16 MHz CPU and 16KB RAM



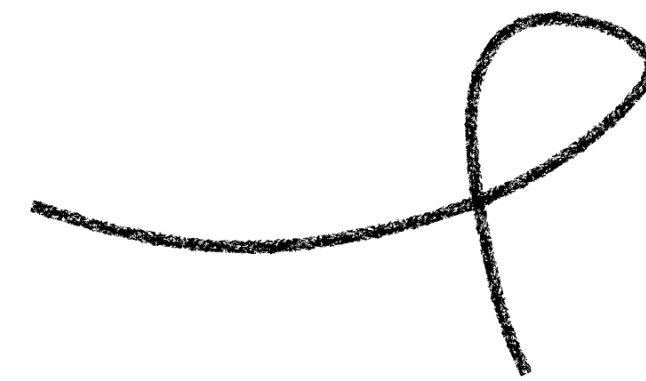
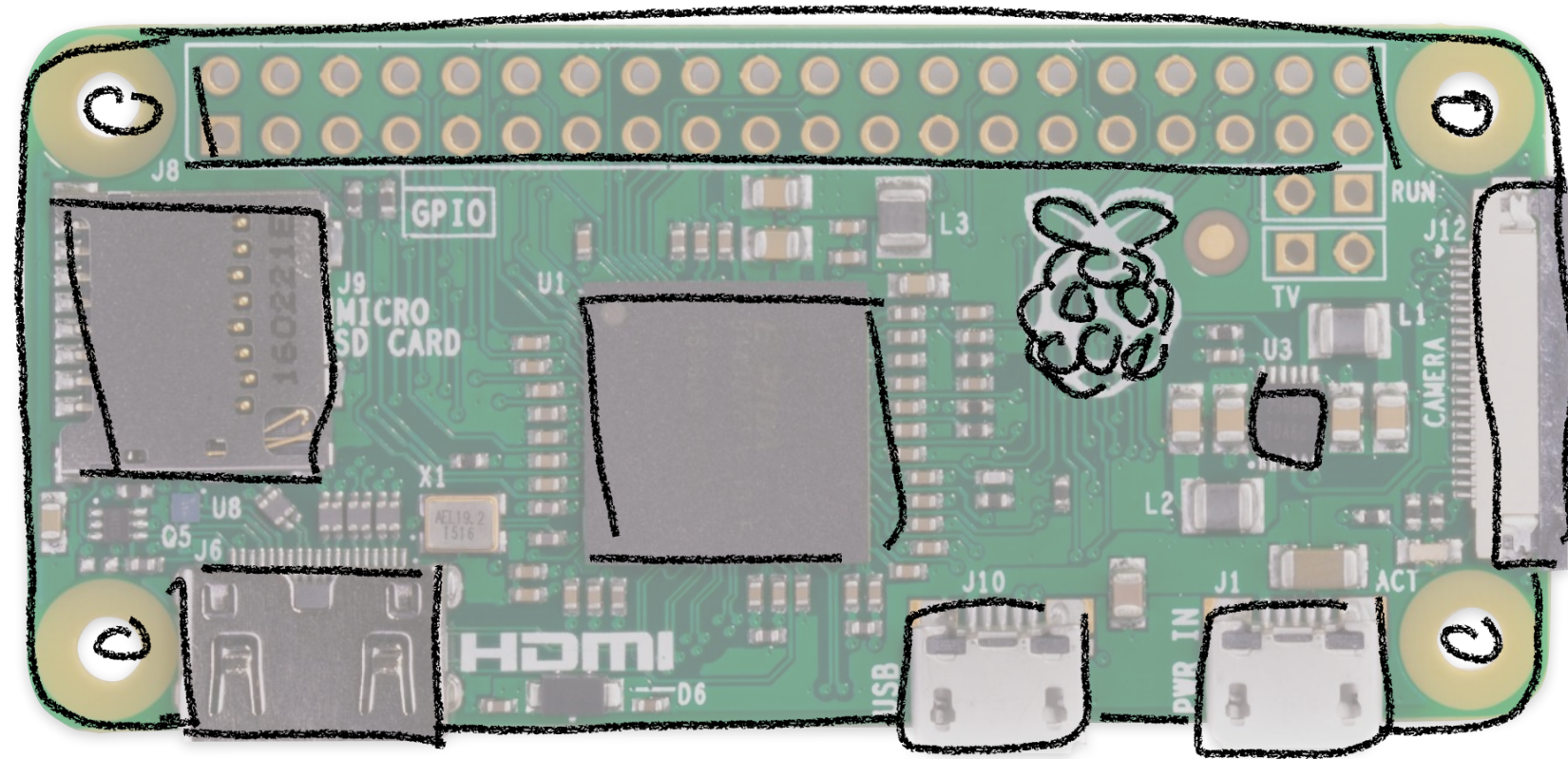
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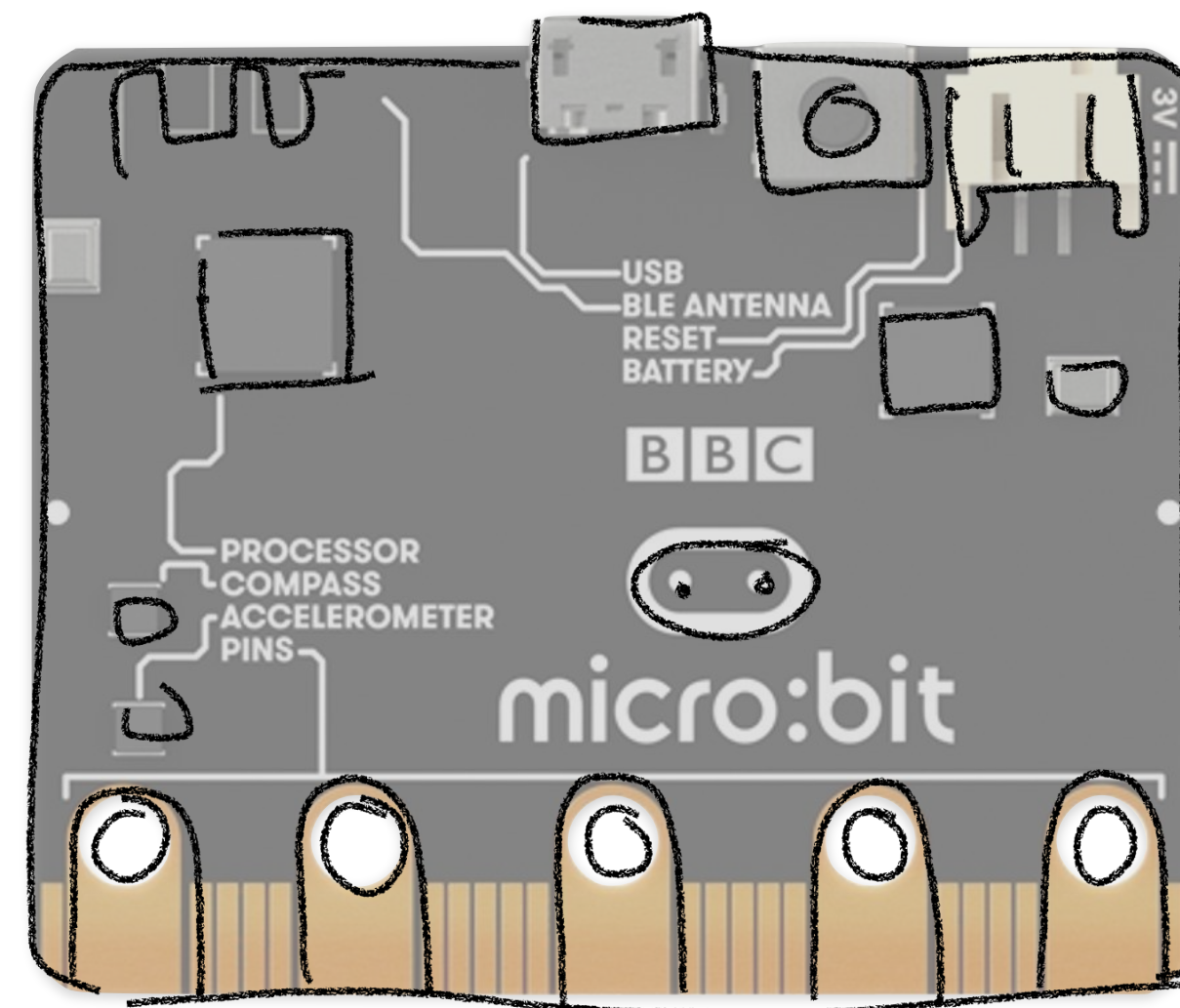
**60 x faster**



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**30.000 x memory**



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“

**JavaScript on  
microcontrollers?  
Are you crazy?**

Me – two years ago



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**Microcontrollers are  
very power efficient.**



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**Microcontrollers only  
need to be fast enough  
to solve the problem.**



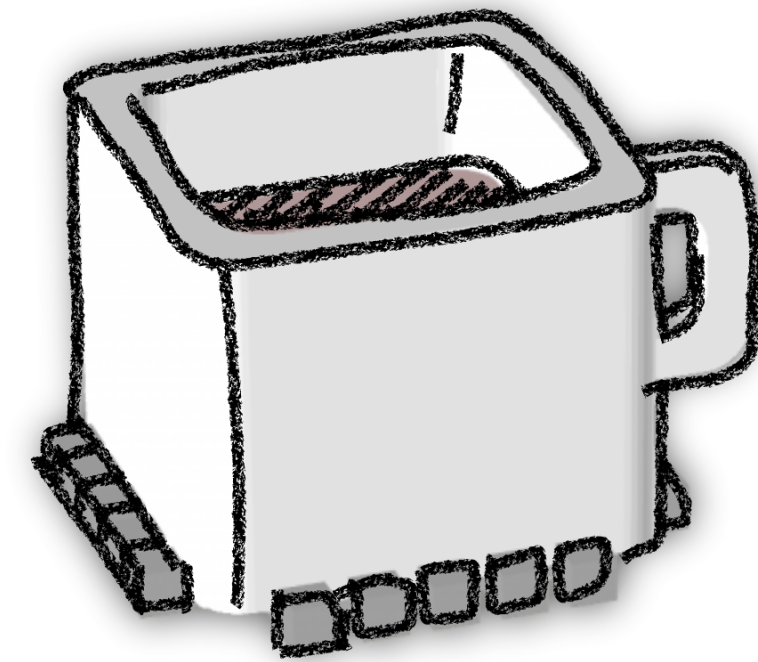
**Microcontrollers do not  
have ~~an~~ operating system.**



how?



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# Espruino



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**Espruino is a JavaScript  
interpreter for  
microcontrollers.**

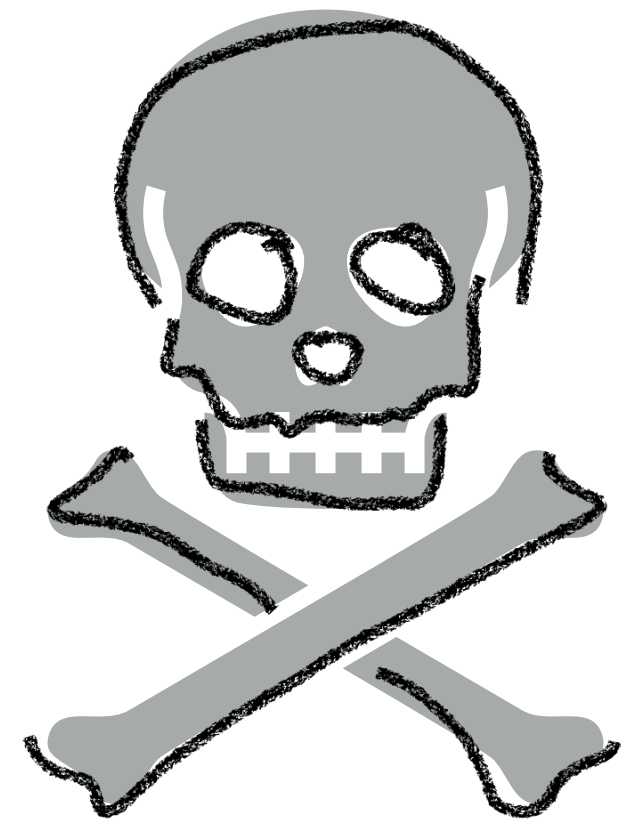


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demo



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# Experimental technology



Setting low expectations







