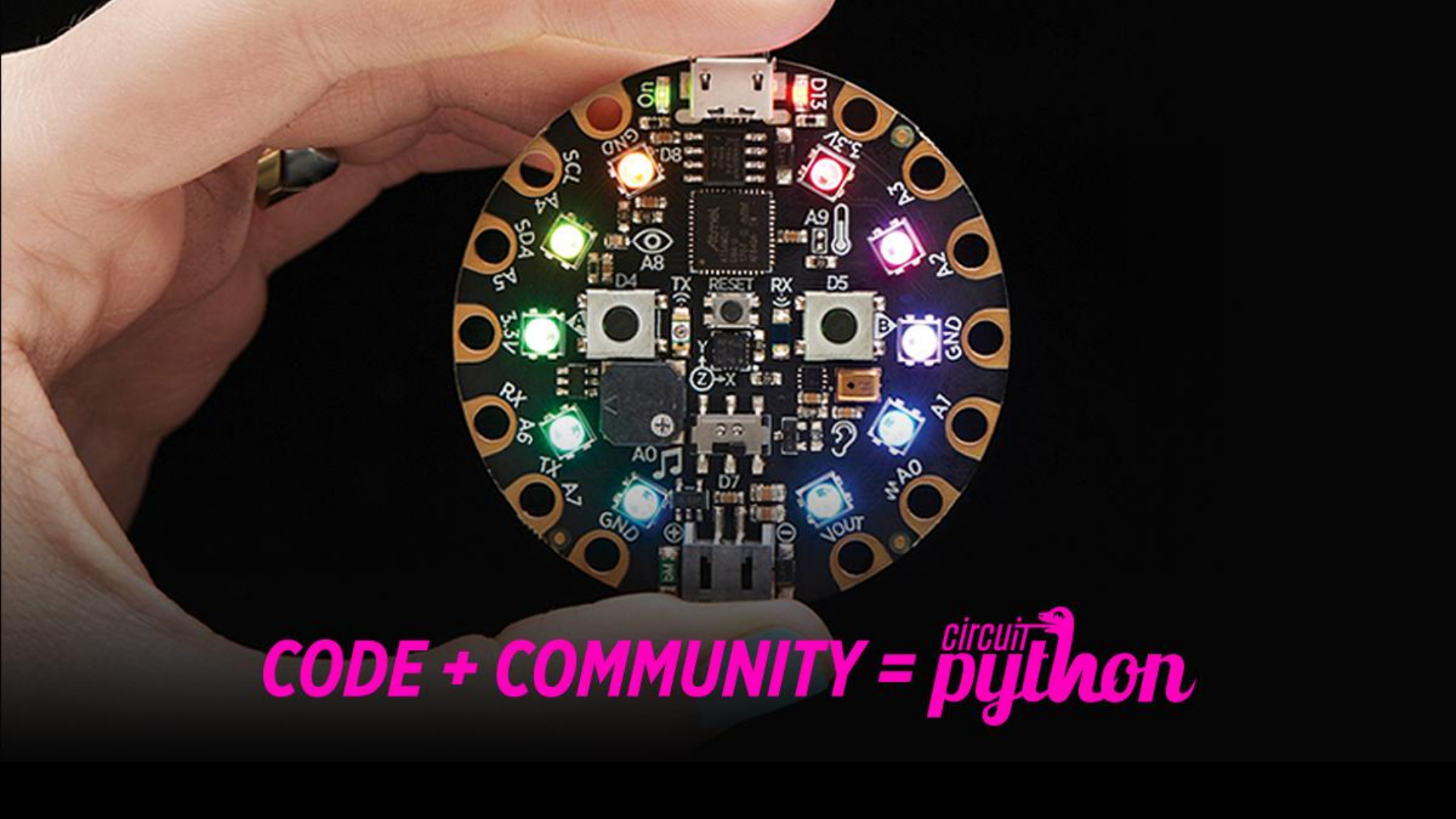

CODE + COMMUNITY = circuit python

Welcome to CircuitPython

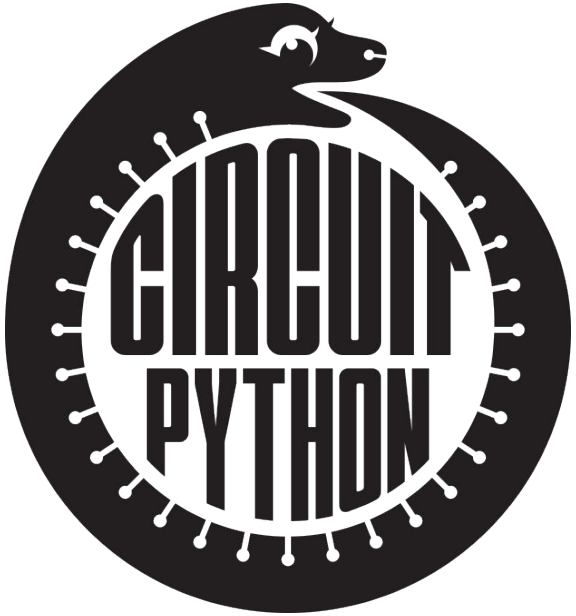
Kattni Rembor

Overview

- What is CircuitPython? Why would I use it?
- The CircuitPython Community
- Compatible Hardware
- Getting Started
- Installation
- Creating and Editing Code
- The Serial Console and the REPL
- Circuit Playground Express and `express` class
- Delving into CircuitPython

What is CircuitPython?

- Open Source
- Runs on microcontrollers
- Higher level programming language
- Amazing, supportive community
- Designed for learning
- Lowers the barrier for entry
- Works with several boards

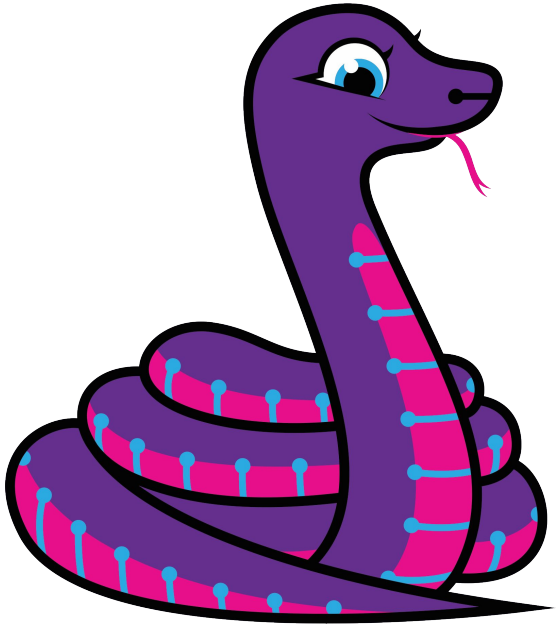


Why would I use CircuitPython?

- New to programming
- Get your project up and running quickly
- Easily update your code
- No OS, no compiling
- Serial console and REPL
- Solid hardware support
- File storage
- It’s Python!
- Open Source Software on Open Source Hardware

The Adafruit CircuitPython Community

- Everyone's welcome!
- Open Source Community
- Support:
  - Discord
  - Forums
- Learn Guides
- GitHub



Compatible hardware

- Adafruit M0 Express boards
  - Circuit Playground Express
  - Metro M0 Express
  - Feather M0 Express
- Adafruit M0 boards
  - Trinket M0
  - Gemma M0
  - Feather M0 Basic and Feather M0 variants
- ESP8266
  - Feather HUZZAH

Getting Started

Getting started is as simple as plugging in the board, opening any plain-text editor, and editing code.

Installing CircuitPython

- Download the latest version of CircuitPython from GitHub.
- Double-tap the reset button on the board to enter the bootloader.
- The board will mount as `boardnameBOOT` where `boardname` is related to the type of CircuitPython board you're using.
- Drag the file you downloaded to the drive.
- The board will automatically reset.
- A new drive will mount called `CIRCUITPY`.

Creating and Editing Code

- You need an editor:
  - Text editor - Notepad, TextEdit, gedit
  - Code editor - Atom, PyCharm
  - Mu Editor
    - https://github.com/adafruit/mu/releases/latest
- The CircuitPython “Hello, world!”:
  - Start with blinky!

The Serial Console and the REPL

- Windows:
  - Download PuTTY, find the COM port, connect
- Mac/Linux - finding the serial port:
  - Mac: `ls /dev/tty.usb*`
  - Linux: `ls /dev/tty*`
- Connecting using screen:
  - `screen /dev/tty.usbmodem* 115200`

Installing CircuitPython Libraries

- Download the latest release bundle:
  - https://github.com/adafruit/Adafruit_CircuitPython_Bundle/releases/latest
- Unzip the downloaded file
- Copy the `/lib` folder to your `CIRCUITPY` drive.

- For non-express boards, you can create a folder and drag the over only the libraries that you need.

Circuit Playground Express

- `express` class
- To use, import `cpx`:
    - `from adafruit_circuitplayground.express import cpx`

Examples:

- `cpx.pixels, cpx.button_a, cpx.button_b`
  `cpx.acceleration, cpx.touch_A1, cpx.tapped`
  `cpx.shake, cpx.switch`

Delving into CircuitPython

- `import`
- Initialisation
- Main program

CPX Demo Redone

Let’s take a look at the `cpx` demo redone without the `express` class.

OLED Display Demo

You can use CircuitPython to show text on an OLED display.

NeoPixel Matrix

Working with NeoPixels that aren’t built into the board is still simple.

Breakout Sensor

If there’s a library, you can use it: CircuitPython works with many different sensors, some of which are available on breakout boards.


circuit
python

Thank You!

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@kattni on Discord
https://github.com/kattni/

Check out:
https://adafru.it/discord
https://learn.adafruit.com
https://github.com/adafruit/circuitpython/
https://circuitpython.readthedocs.io