Hackaday Berlin 2023:
Digikey Presents

HUG O RAMA

Basics

Paul - Workshop cat-herder and can google that for you.
James - Raspberry Jam Berlin meetup and general hardware enabler.

Schedule: https://hackaday.io/berlin2023/

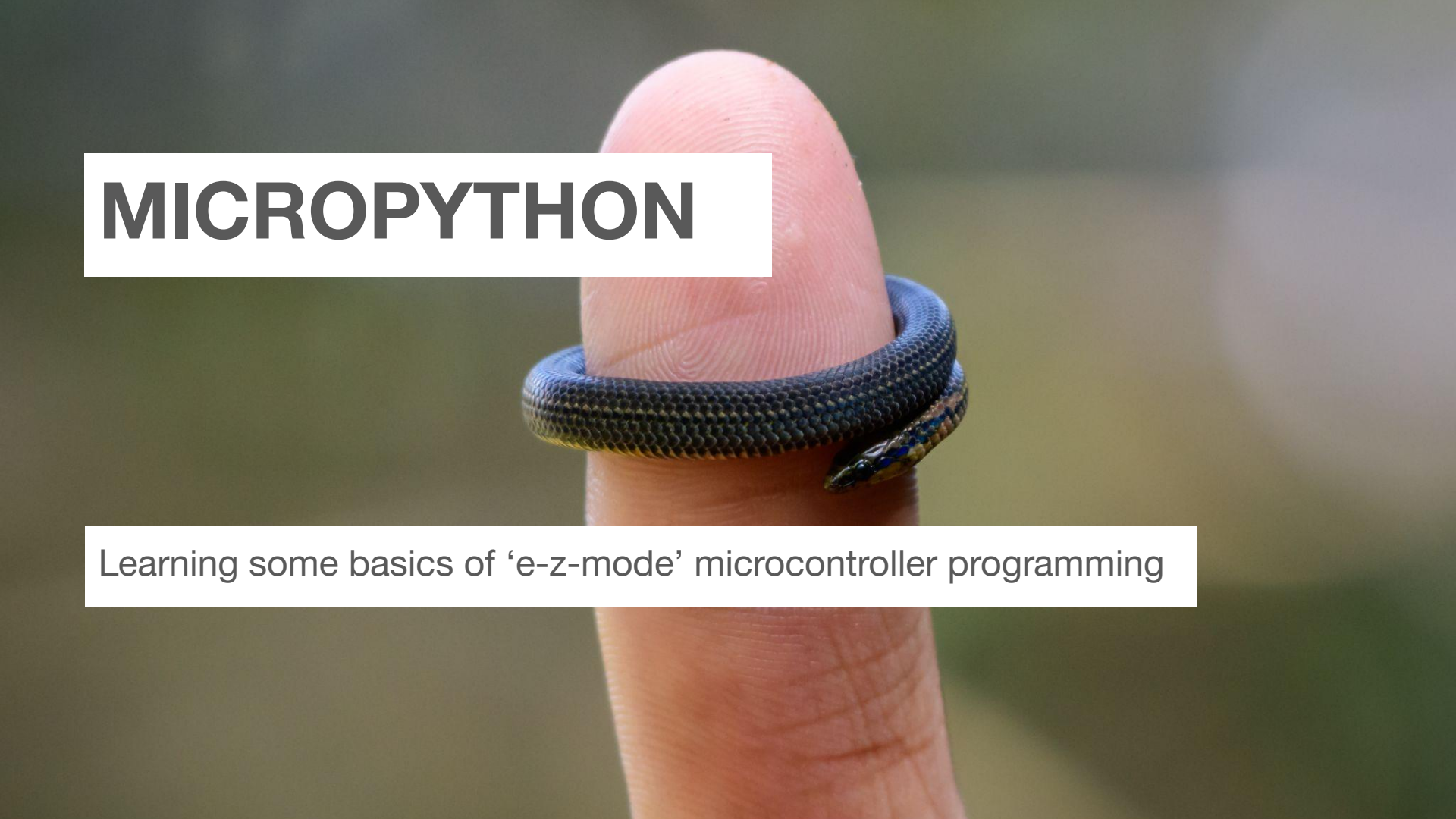
10:30AM- 12PM:	Learning about Pico-W, servos and sensors.
DURING THE DAY:	Tinker at leisure on your creation, or don’t.
3:30-4:30PM:	Back here for debugging and sharing your creations.

https://github.com/pimoroni/hackadayberlin2023

This presentation and all the code/guides used.


WHAT ARE WE DOING HERE?

MAKING



MICROPYTHON

Learning some basics of ‘e-z-mode’ microcontroller programming

MIMICRY

Generating ideas for our own personal companion

MODULES

Drive some servos and sensors and make them interact

Share knowledge and encouragement to ensure everyone in the group is equally confused.

MUTUALISM


ACHTUNG!
This is a low risk workshop, however:

SAFETY THIRST!

Be careful about short circuits.

Any output can become a short and release magical smoke.

We are working with low voltage, so consequences are mild.

Double check power connections.

Beware loose wires

SAFETY THIRST!

When cutting wire, hold both pieces of wire.

The loose end can fly and you'll take your eye out.

SAFETY THIRST!

Scissors.

Be careful to not cut yourself.

Don’t run with them.

SAFETY THIRST!

Glue.

Do not huff.

Do not stick non-workshop things together.

Be nice to the Motion.Lab


WE CAN REBUILD YOU


What does a companion look like?
https://www.instagram.com/odd_jayy/


https://www.hackster.io/glowascii


https://www.gellacraft.com/


https://www.instagram.com/helenleigh_makes


https://sophywong.com/

LET’S TALK ABOUT YOUR STUFF!

What hardware are we using?

Raspberry Pi Pico W

Servos

I2C breakouts (Qwiic, Stemma QT, Breakout Garden)

Arts & Crafts Materials

Which firmware/software?

Pimoroni ‘batteries included’ MicroPython for Pico W

Thonny - cross-platform Python/Micropython IDE

Breadcrumbs for later

CircuitPython would also work (and supports a wider range of hardware)

Arduino works (official and community)

C(++) (Hard mode, most performance)

Pico (W) Basic Survival Skills

Already done: Adding MP/CP/Arduino to a Pico/Pico W

BOOTSEL

flashnuke.uf2

Thonny is a ‘good enough’ IDE and cross-platform

Breadcrumbs for further study:

CircuitPython does the sensible ‘flash drive’ way

mpremote.py lets you control a MicroPython board from your computer/Python

Free Tinker

Start thinking of ideas or what you want to achieve, especially if I’m covering stuff you already know.

What animal represents me?

Do I have a personal trait I would like to externalise and parody for self-improvement?

The Disney sidekick they should have made.

Social commentary personified.

BAT COUNTRY!

Now we go freeform!

Materials used in the workshop:

https://github.com/pimoroni/hackadayberlin2023

Code READMEs for sensor/servo modules:

https://github.com/pimoroni/pimoroni-pico/tree/main/micropython/modules

Code examples to crib from:

https://github.com/pimoroni/pimoroni-pico/tree/main/micropython/examples