

Digital Making

workshop day for Our Dynamic Earth¹, August 2019

¹ (and the Centre for Life)

The Plan

- Build confidence in digital making
- Have some ideas for future direction
- ...
- Profit!

The Plan

- Build confidence in digital making
- Have some ideas for future direction
- Lunch
- Profit!

The Plan

- Build confidence in digital making
- Lunch
- Have some ideas for future direction
- Profit!

The approach

- Learn by doing real stuff
- Make deliberate choices about technologies
- Crib from others, continuously
- ...

FLASHING LIGHTS

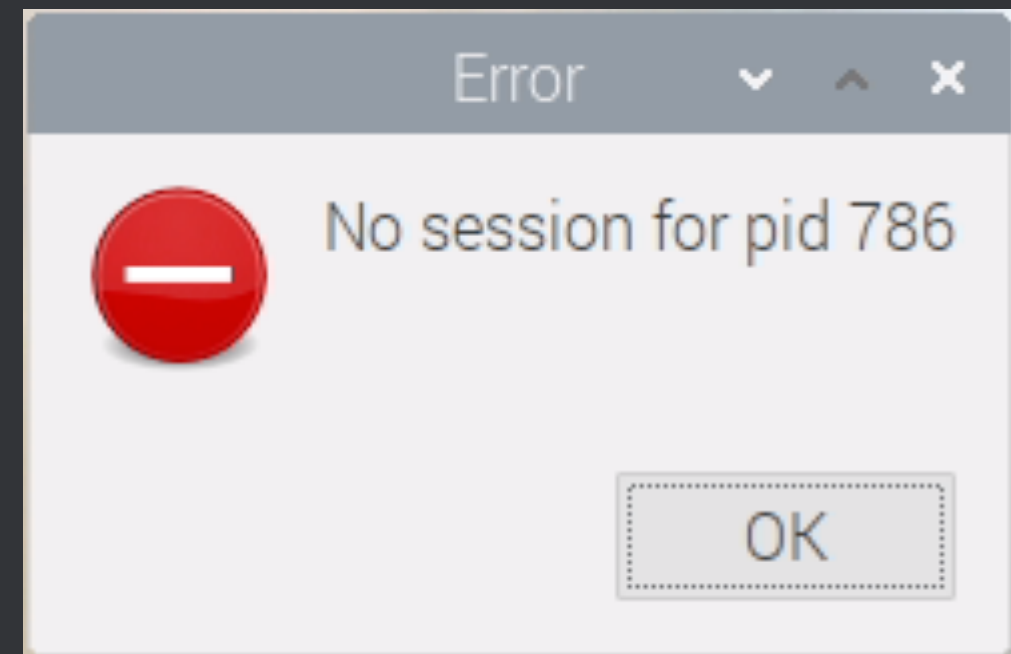
Pi quirks

If you see an error like this, the menus won't work. You'll need:

`sudo shutdown -h now`

or:

`sudo reboot`



FLASHING LIGHTS

Python functions

```
def sequence():  
    red.on()  
    sleep(1.0)  
    ...  
    red.off()
```

```
sequence()
```

Python functions with variables

```
def sequence(delay):
```

```
    red.on()
```

```
    sleep(delay)
```

```
    ...
```

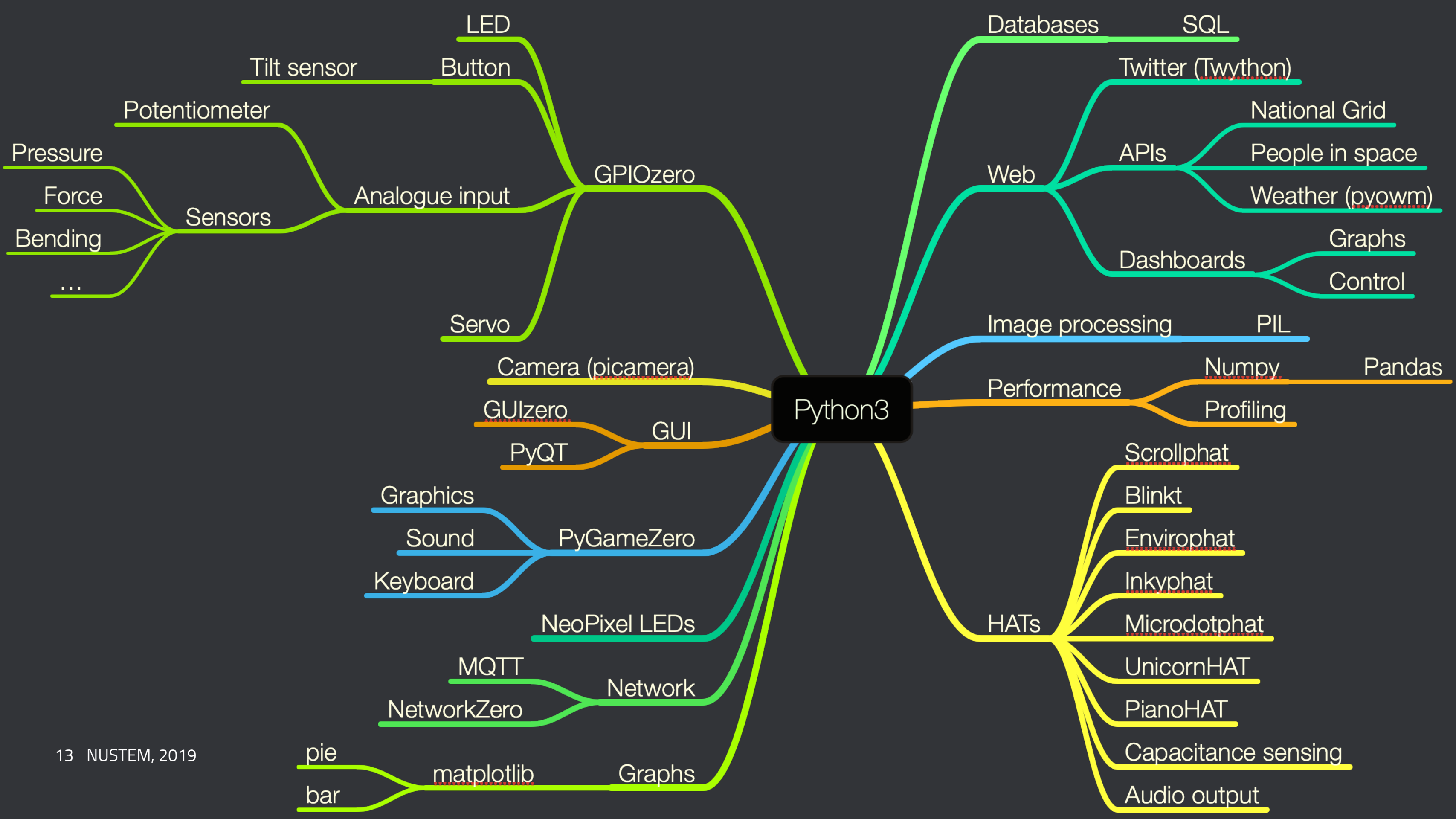
```
    red.off()
```

```
sequence(0.7)
```

Flashing Lights

- There's no single 'correct' way...
 - ...but conventions are useful
- Instructions are *hard*
- Libraries
- Documentation
- Experimentation

Programming as Digital Leggo



How to approach coding

- Build real projects
- Work together
- Write for future projects
- Build on previous projects

How to approach coding (2)

- Choose common libraries
 - How recently updated?
 - awesome-python.com
- ~~Read~~ Skim documentation
 - Stick close to examples: choose challenges carefully
 - ~~Borrow~~ Steal from StackExchange

How to approach coding (3)

1. Make it work

2. Make it right

3. Make it fast

'Premature optimisation is the root of all evil.'

— Donald Knuth

**teaching,
making,
tinkering**