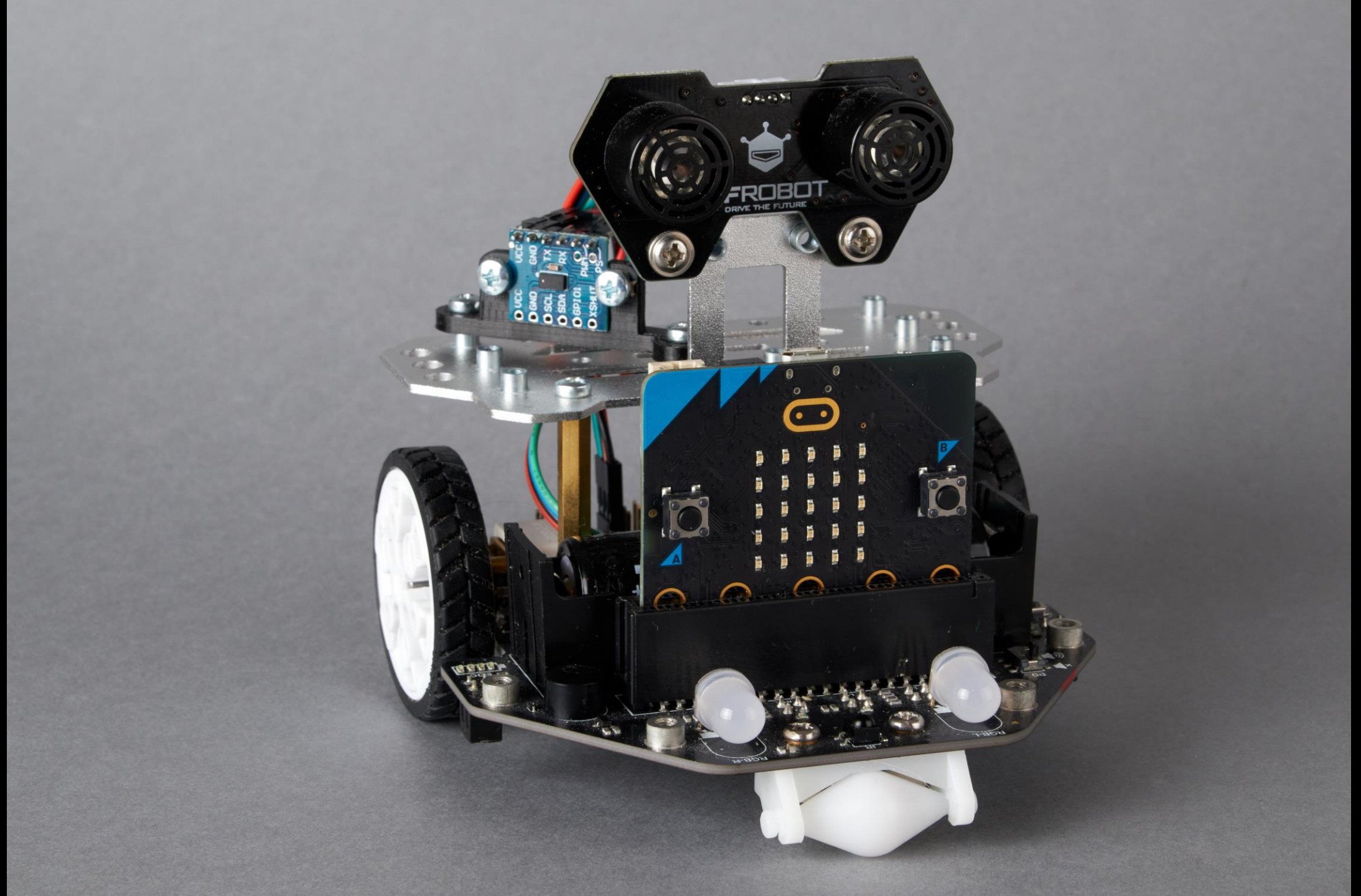
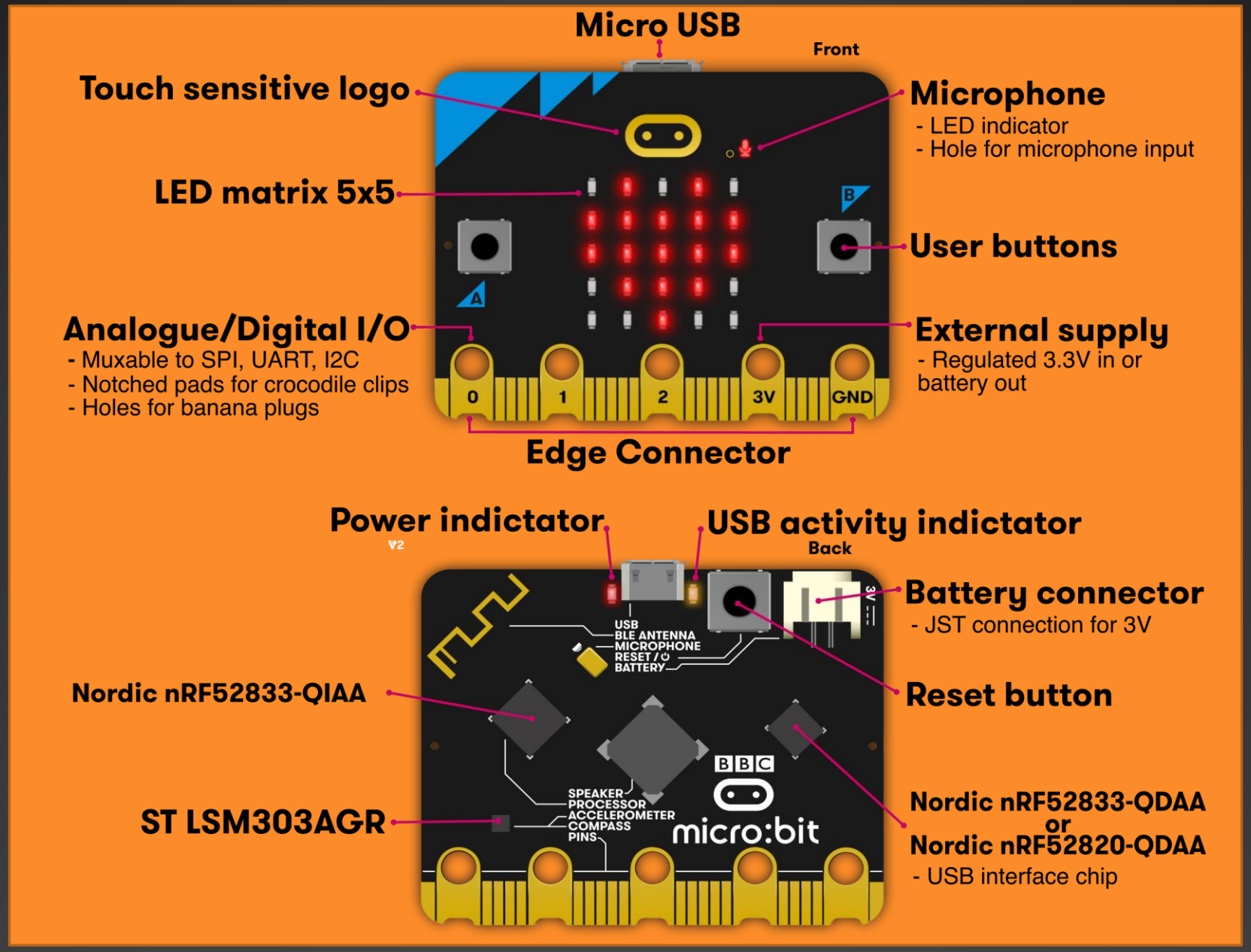

FROBOT
DRIVE THE FUTURE
VCC
GND
TX
RX
SCL
SDA
GPIO1
RST
A
B

PYTHON ROBOTICS

WORKSHOP 1

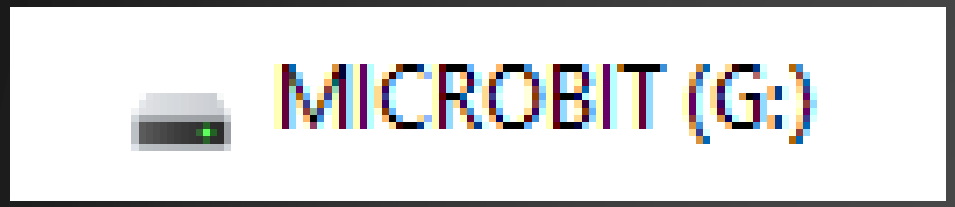
© 2022, 2023 Karel Dupain & Joep Suijs
Beeld- en geluidopnames niet toegestaan

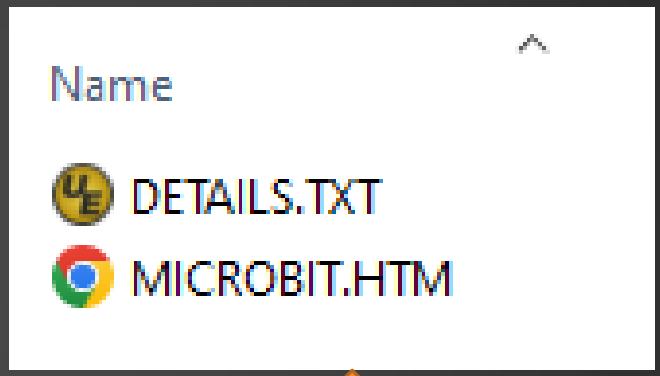


The BBC micro:bit is a pocket-sized computer that introduces you to how software and hardware work together.

© https://microbit.org/

UIT DE DOOS - ERVARING





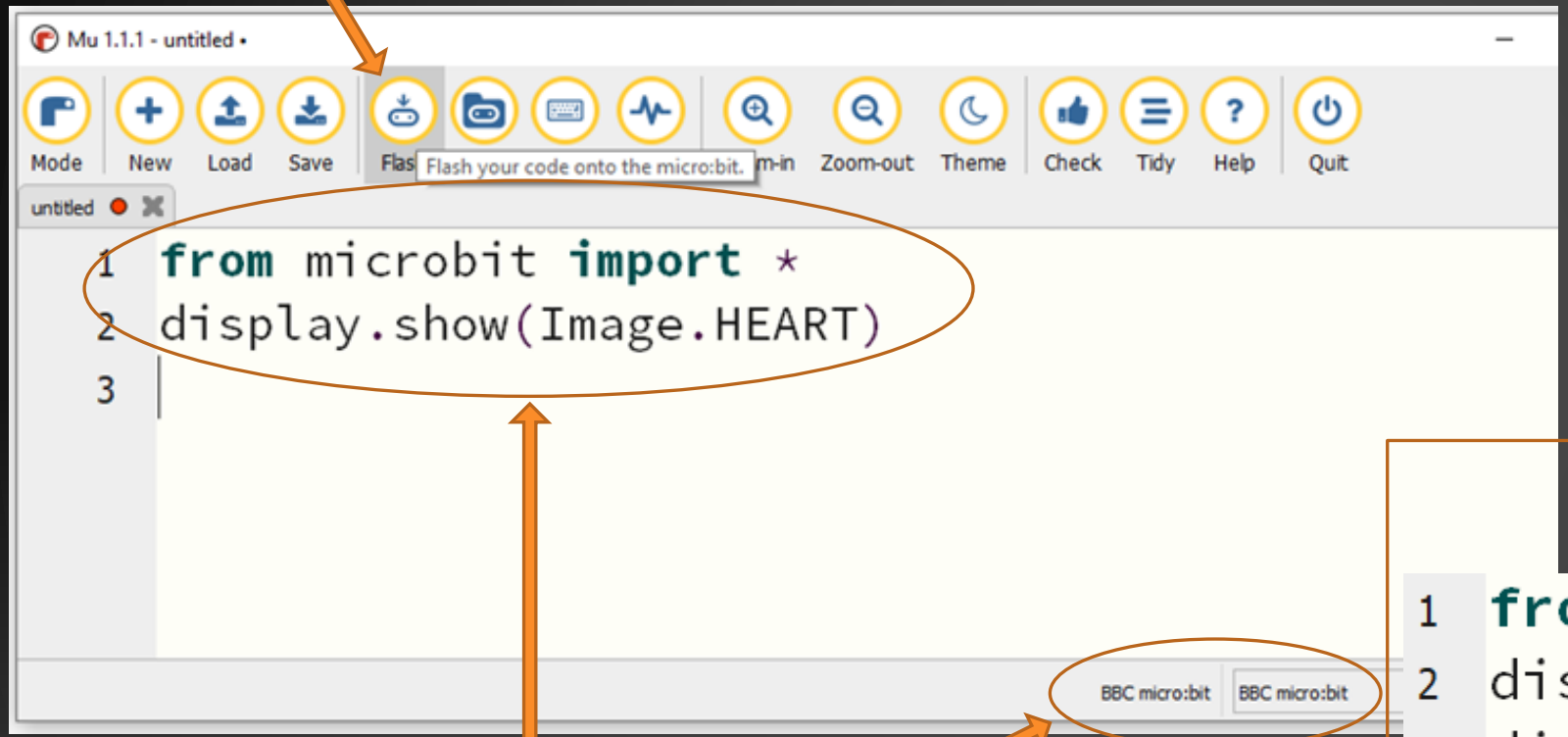
MaqueenPlus-main\
Workshop1\
Out of box experience.hex

MU

- Mu is a Python code editor for beginner programmers based on extensive feedback given by teachers and learners.
  - Less is more
  - Keep it simple
  - Thread the Path of Least Resistance
  - Have fun!
- Download: https://codewith.mu/en/download

♥ HELLO WORLD ♥

3



2

1

Voor wie klaar is…

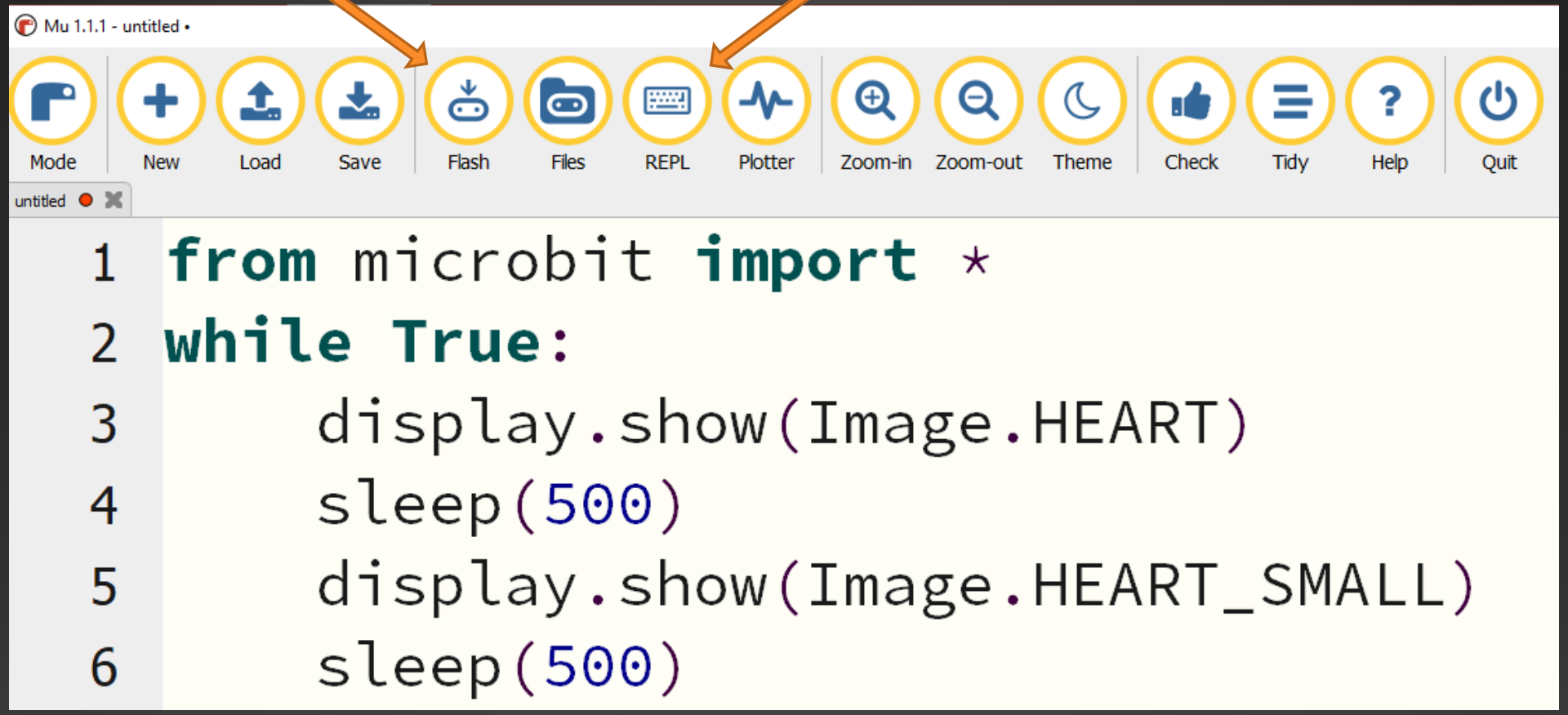
```
1 from microbit import *
2 display.show(Image.HEART)
3 display.scroll('hello world')
4 display.set_pixel(0,0,9)
5 import music
6 music.play(music.BA_DING)
```

REPL - READ, EVALUATE, PRINT, LOOP

HIGHLIGHTS

- Python kan interactief worden gebruikt
- Alles is een object
- Automatisch geheugenbeheer & garbage collect.
- strongly & dynamically typed
  - Flexibel
  - Meer kans op runtime errors

BESTAND MAKEN



Klaar? Probeer dan alle plaatjes uit.

PYTHON 3 – SINDS 2008

- print() is een functie (en geen statement meer). En de parameters van een functie moeten tussen haakjes.
- Unicode karakters & strings (en bytearray functie)

```
buf = bytearray(3)
buf[0] = 0x0b
buf[1] = colourL
buf[2] = colourR
i2c.write(self.I2caddr, buf)
```

stackoverflow

MICROPYTHON.ORG

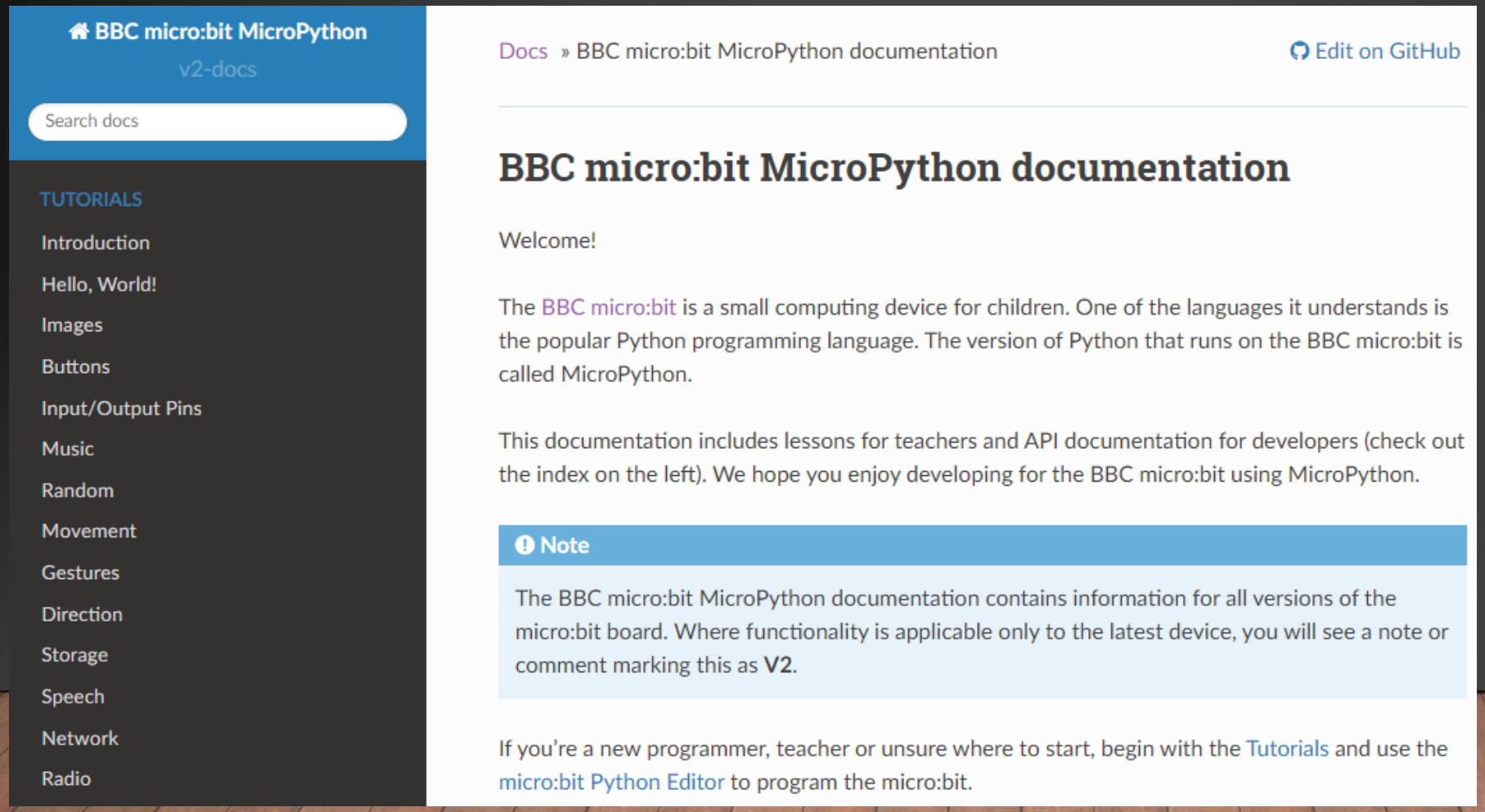
- STM32
- BBC Micro:bit
- ESP32 / ESP8266
- Raspberry PI Pico

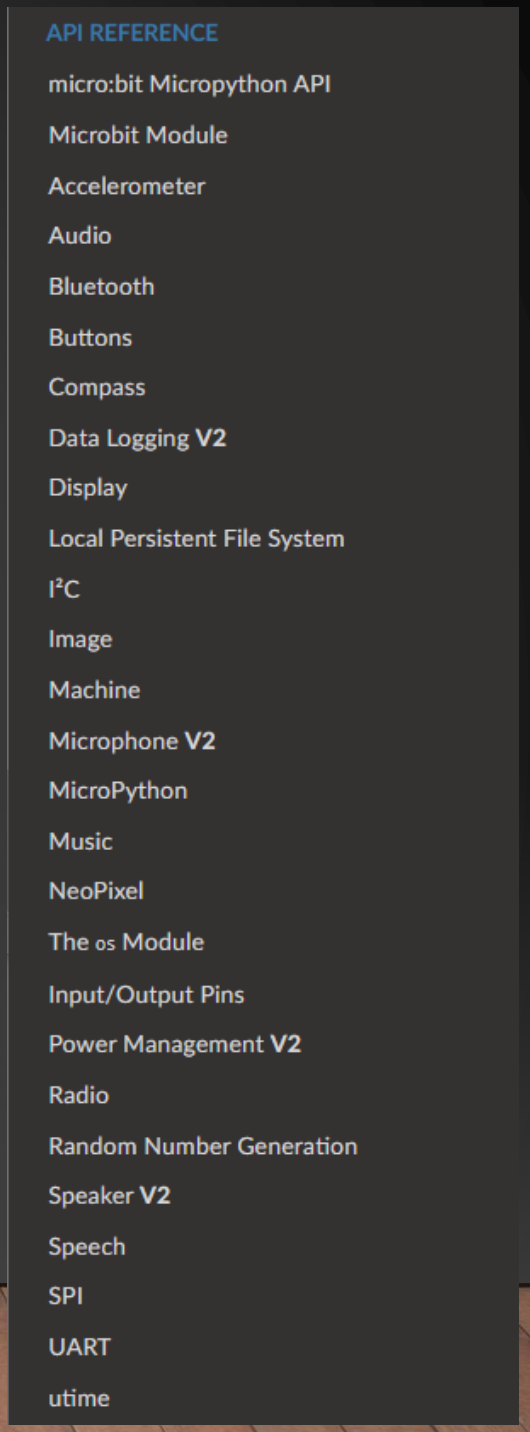
MicroPython is a lean and efficient implementation of the Python 3 programming language that includes a small subset of the Python standard library and is optimised to run on microcontrollers and in constrained environments.

MicroPython aims to be as compatible with normal Python as possible to allow you to transfer code with ease from the desktop to a microcontroller or embedded system.

READ THE DOCS

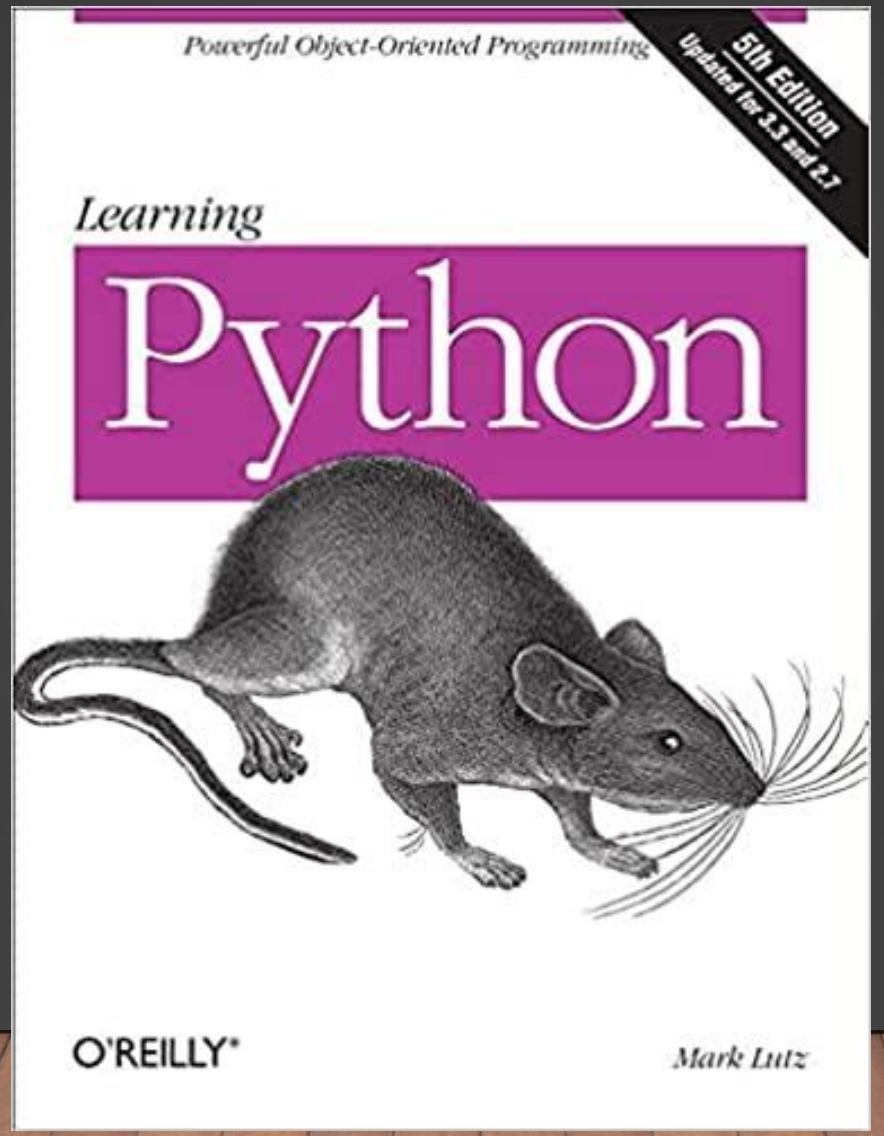
- https://microbit-micropython.readthedocs.io





LEARNING PYTHON

- Door Mark Lutz
- 1600 pagina's



DE PROGRAMMEURSLEERLING

- Door Pieter Spronck
- Ook Nederlandstalige versie
- 400 pagina's
- https://www.spronck.net/pythonbook/dutchindex.xhtml

- Expressies
- Variabelen
- Eenvoudige Functies
- Condities
- Iteraties
- Functies
- Recursie
- Strings
- Tuples
- Lists
- Dictionaries
- Sets
- Besturingssysteem
- Tekstbestanden
- Exceptions
- Binaire Bestanden
- Bitsgewijze Operatoren
- Object Oriëntatie
- Operator Overloading
- Overerving
- Iteratoren en Generatoren
- Command Line Verwerking
- Reguliere Expressies

SOCRATICA TUTORIALS

- https://www.youtube.com/playlist?list=PLi01XoE8jYohWFPpC17Z-wWhPOSuh8Er-

HUISWERK

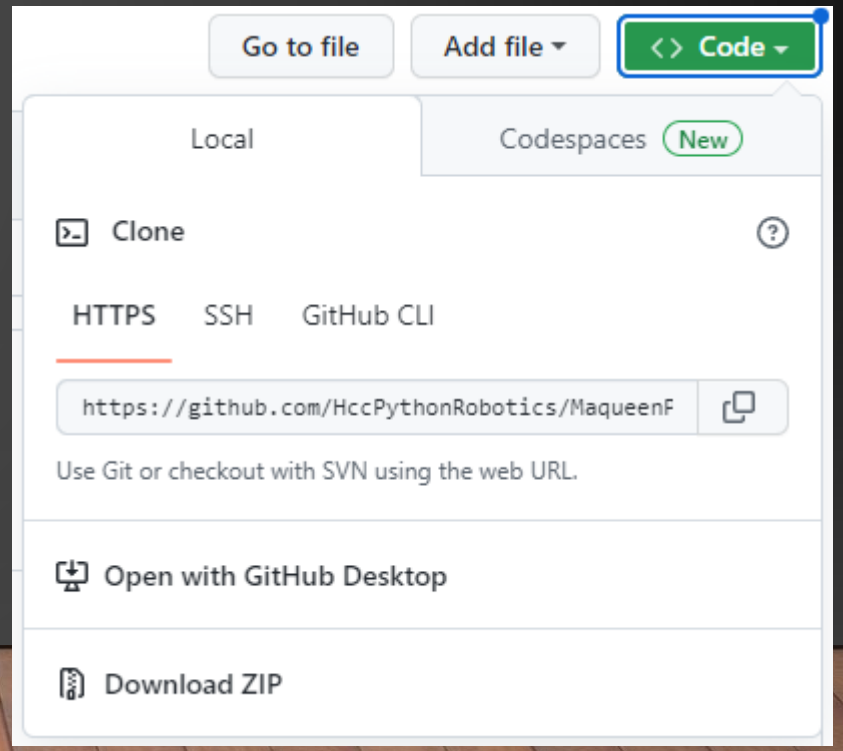
Uiterlijk 23 januari zetten wij de files de volgende workshop klaar.

Download deze op je PC voor aanvang van de volgende workshop.

Je kunt de files hier vinden:

https://github.com/HccPythonRobotics/MaqueenPlus

Geen ervaring met git? Download dan als zipfile:

- Klik op

- Selecteer