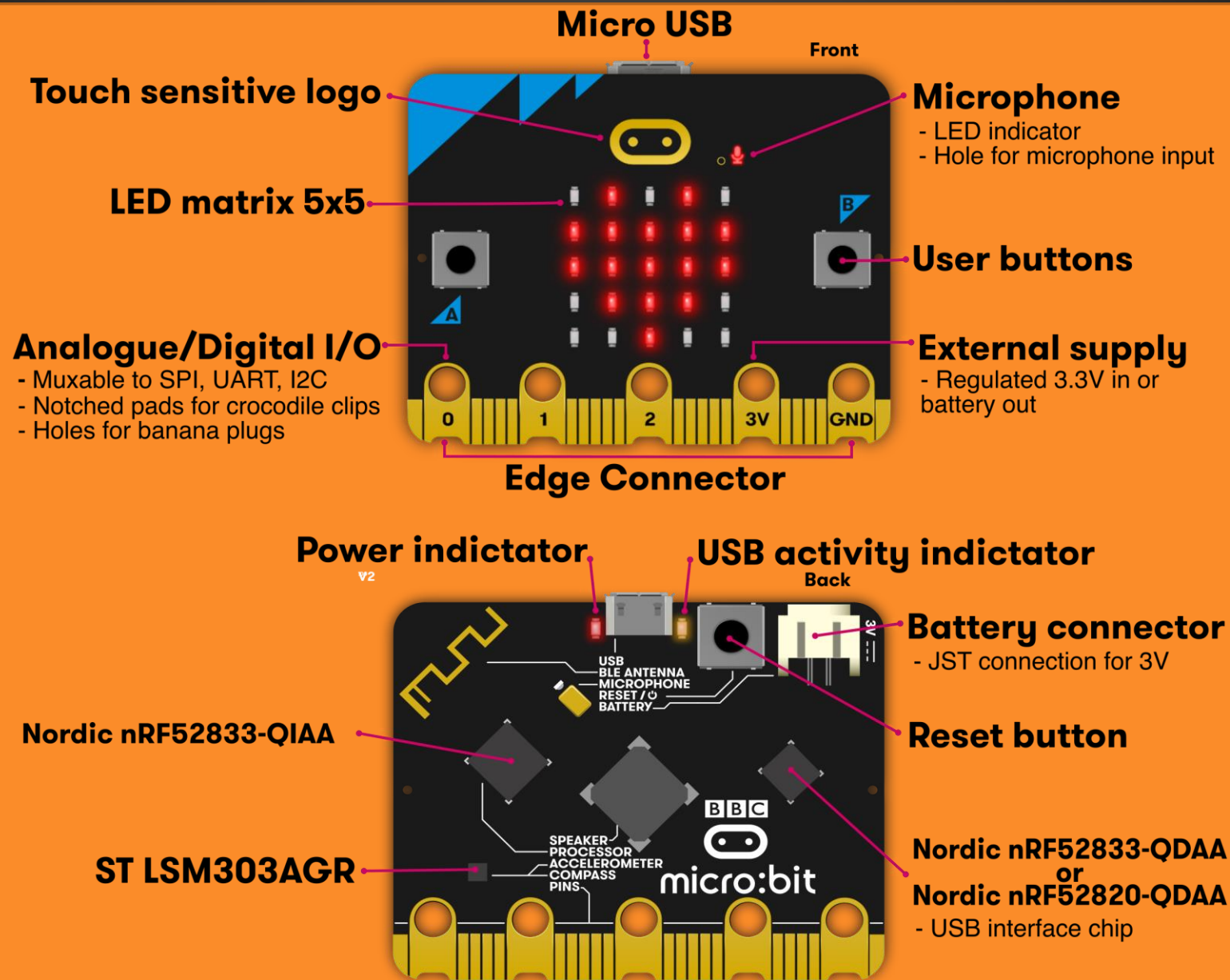


PYTHON ROBOTICS

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.

UIT DE DOOS - ERVARING



MICROBIT (G:)

Name



DETAILS.TXT



MICROBIT.HTM

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





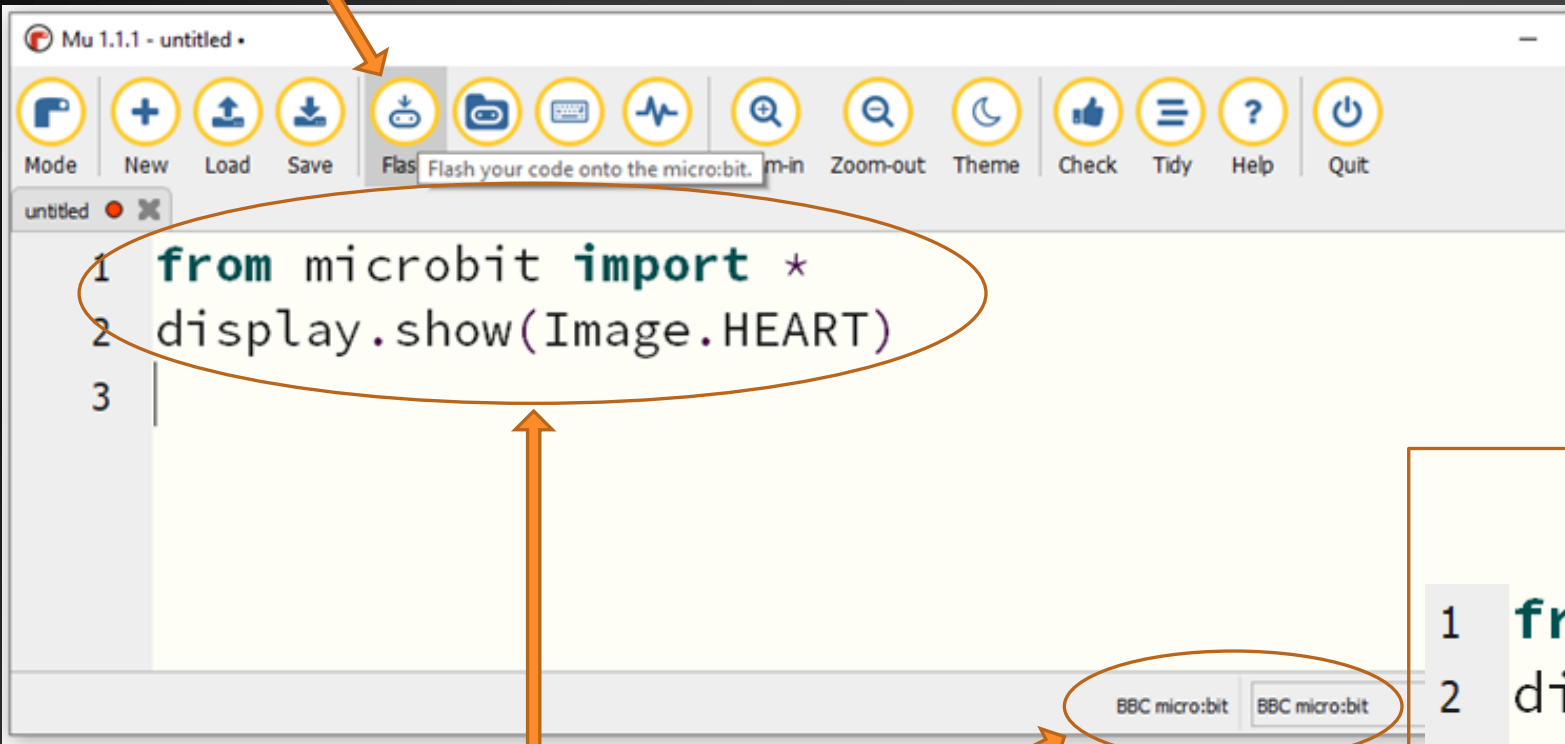
MU



- 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



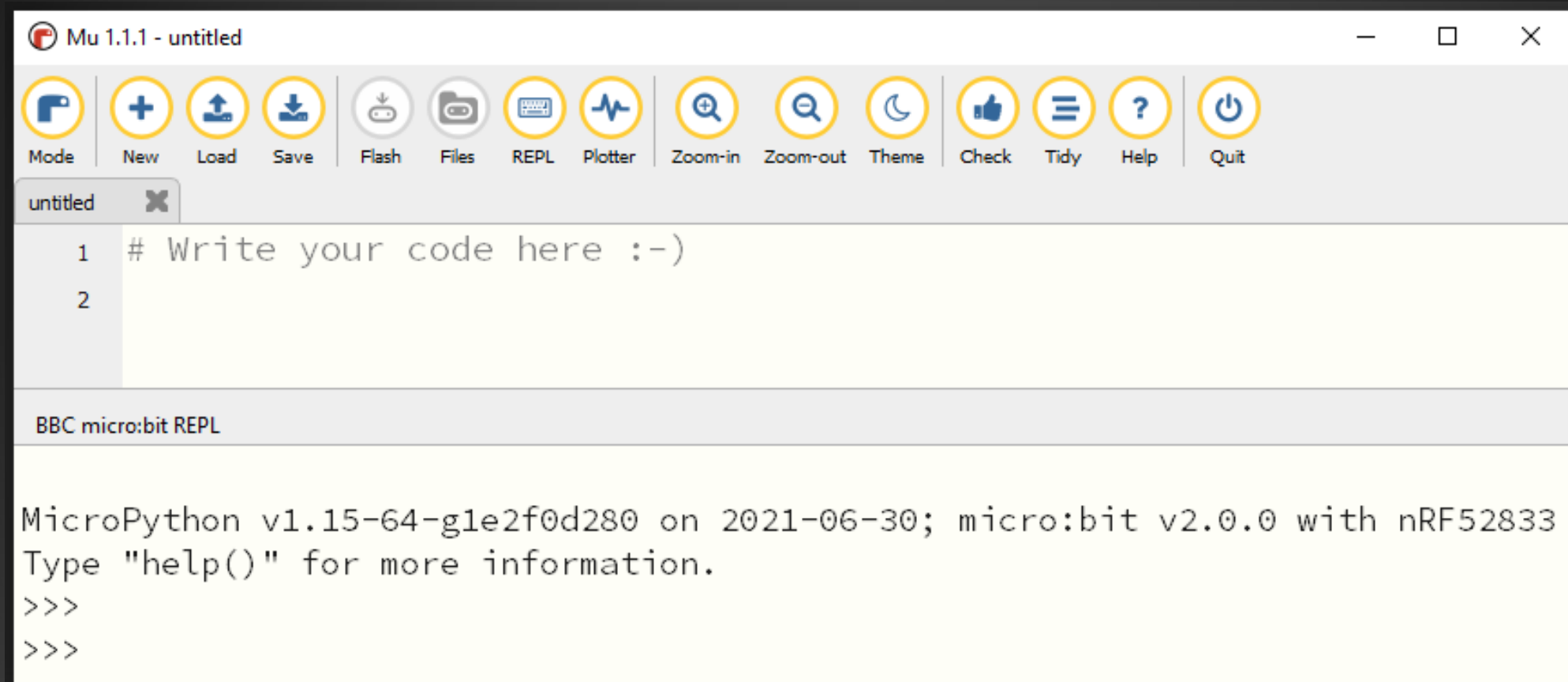
2

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)
```

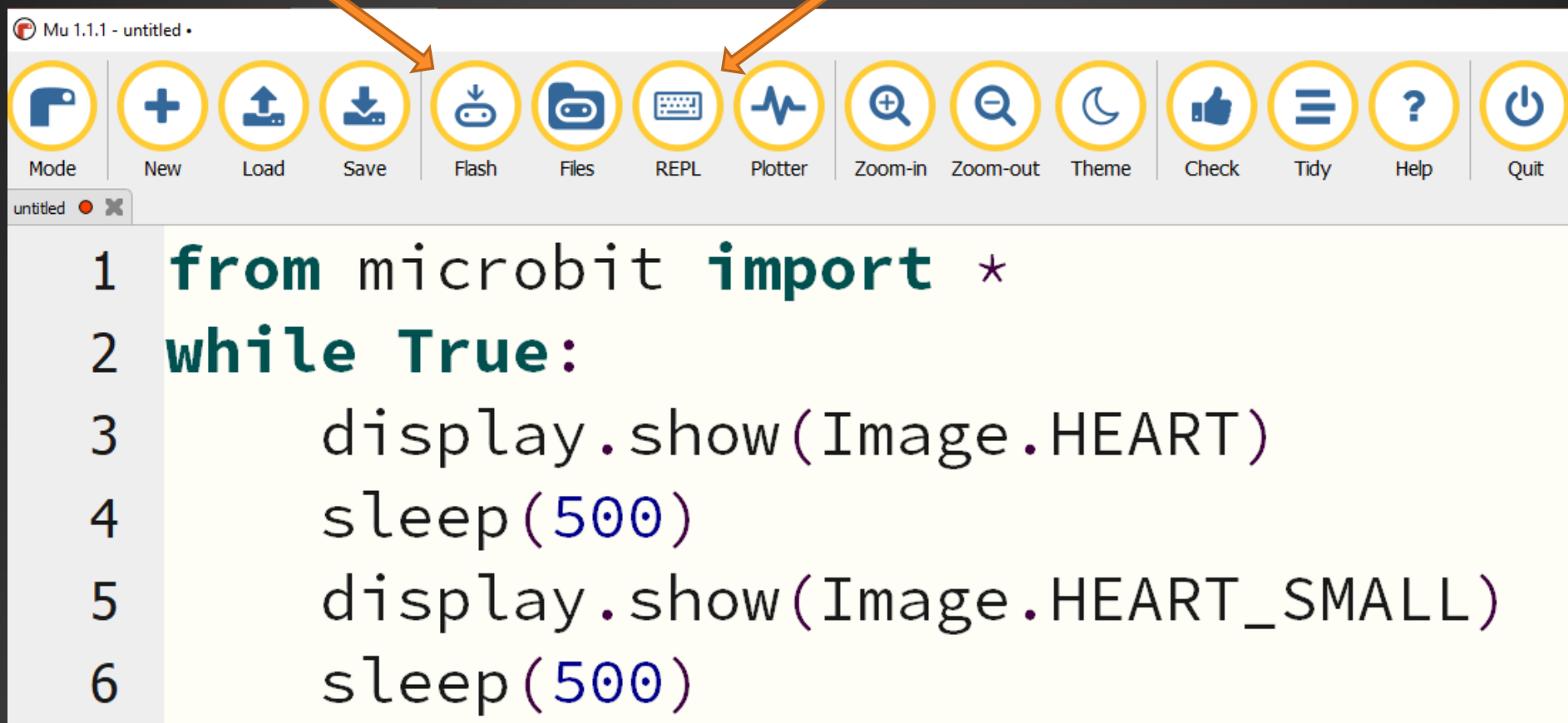
REPL - READ, EVALUATE, PRINT, LOOP



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)
```





MicroPython

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>

 BBC micro:bit MicroPython

v2-docs

Search docs

TUTORIALS

Introduction

Hello, World!

Images

Buttons

Input/Output Pins

Music

Random

Movement

Gestures

Direction

Storage

Speech

Network

Radio

Docs » BBC micro:bit MicroPython documentation

Edit on GitHub

BBC micro:bit MicroPython documentation

Welcome!

The **BBC micro:bit** is a small computing device for children. One of the languages it understands is the popular Python programming language. The version of Python that runs on the BBC micro:bit is called MicroPython.

This documentation includes lessons for teachers and API documentation for developers (check out the index on the left). We hope you enjoy developing for the BBC micro:bit using MicroPython.

! Note

The BBC micro:bit MicroPython documentation contains information for all versions of the micro:bit board. Where functionality is applicable only to the latest device, you will see a note or comment marking this as **V2**.

If you're a new programmer, teacher or unsure where to start, begin with the [Tutorials](#) and use the [micro:bit Python Editor](#) to program the micro:bit.

API REFERENCE

micro:bit Micropython API

Microbit Module

Accelerometer

Audio

Bluetooth

Buttons

Compass

Data Logging V2

Display

Local Persistent File System

I²C

Image

Machine

Microphone V2

MicroPython

Music

NeoPixel

The os Module

Input/Output Pins

Power Management V2

Radio

Random Number Generation

Speaker V2

Speech

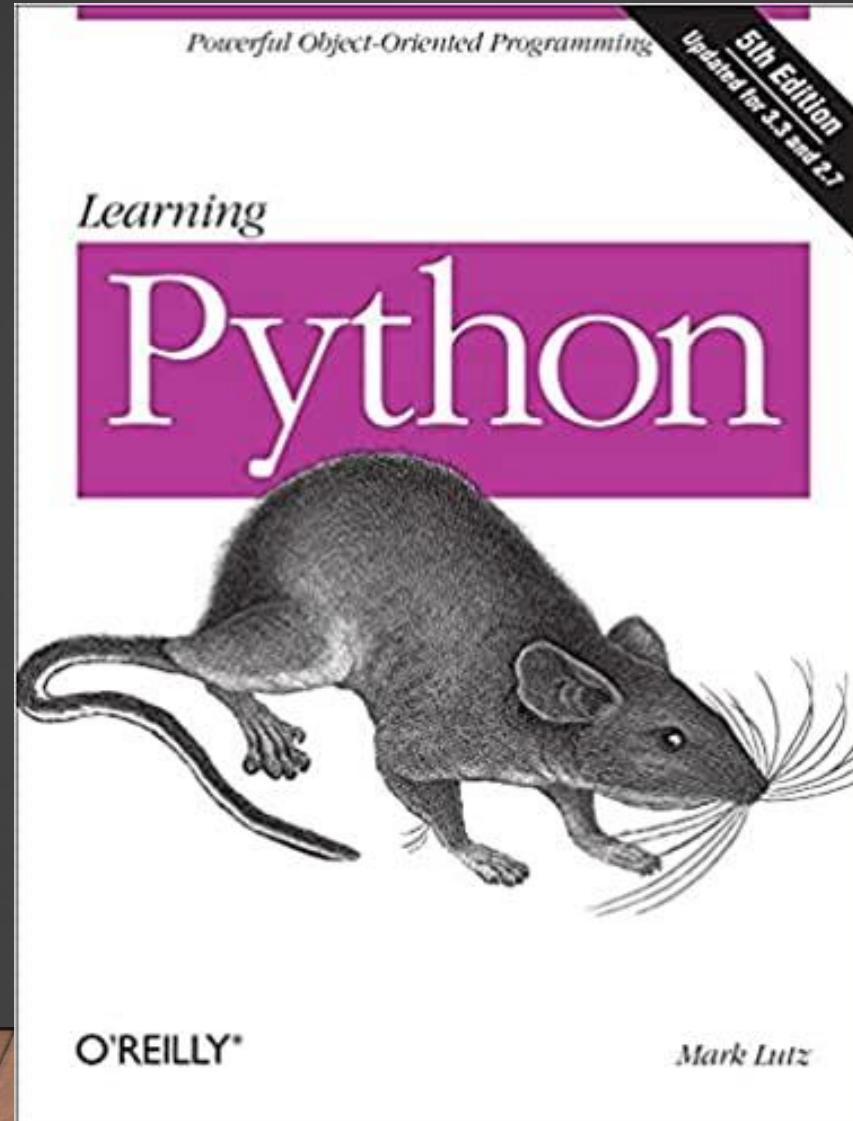
SPI

UART

utime

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

Python Programming Tutorials (Computer Science)

Socratica

45 video's Laatst geüpdatet op 28 feb. 2022



Alles afspelen



Shuffle

Our Python Tutorials will help you learn Python quickly and thoroughly. We start with "Hello World" and then move on to data structures (sets, lists, tuples and dictionaries). Next we'll cover classes, and give a variety of in-depth examples and applications.



- <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 