JAVA & RASPBERRY PI

A demo on how to put these together

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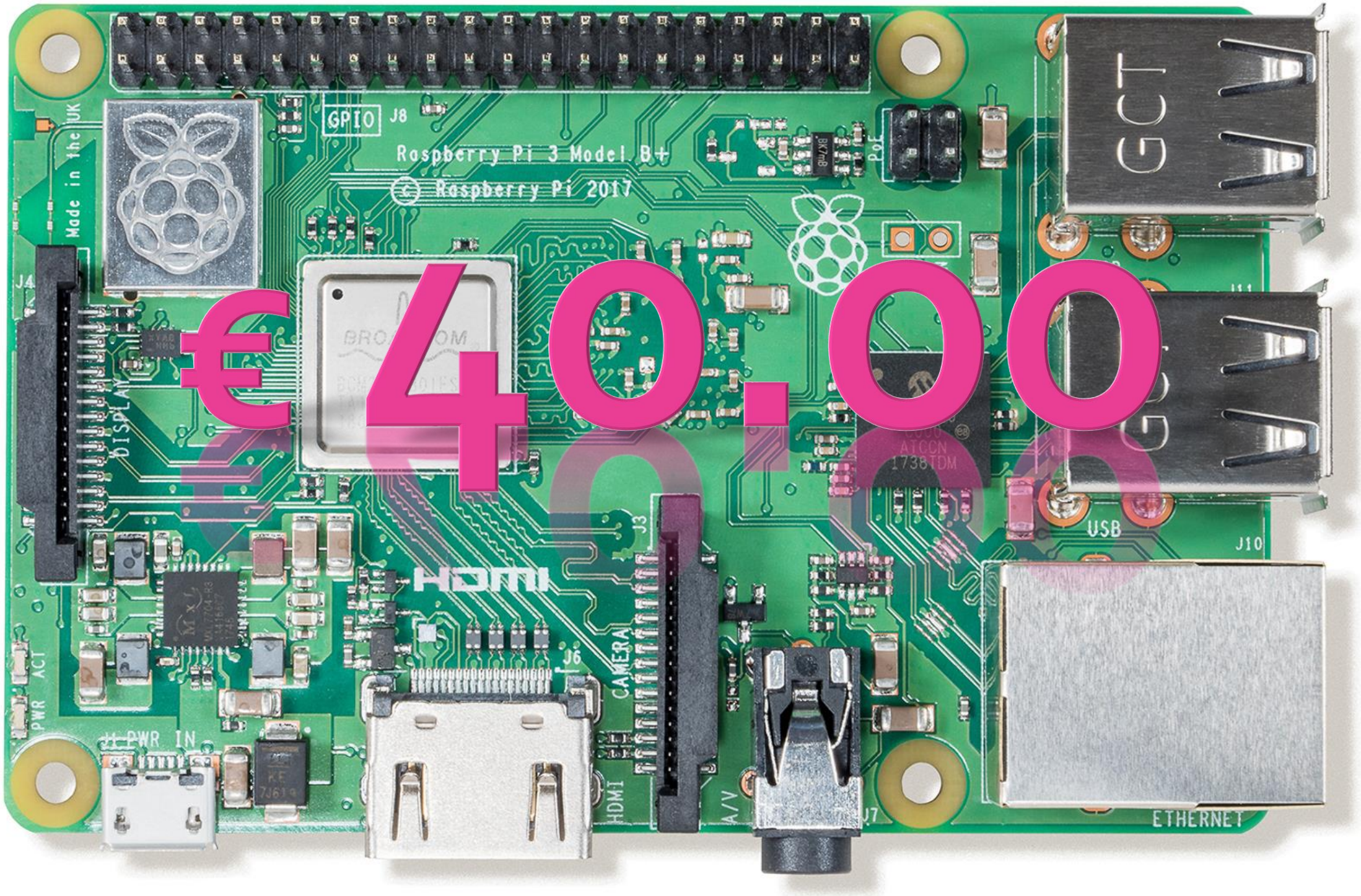
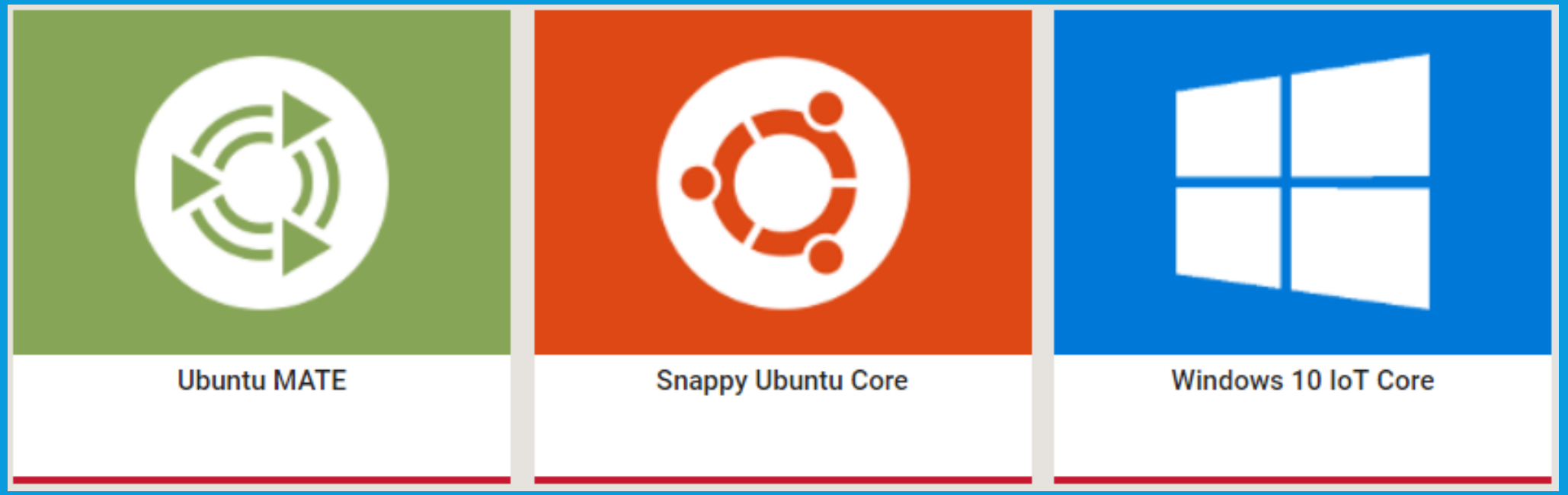

GPIO J8
Raspberry Pi 3 Model B+
© Raspberry Pi 2017
Made in the UK
DISPLAY
HDMI
CAMERA
A/V
USB
ETHERNET
PWR IN
PWR ACT
GCT
€40,00

RASPBERRY PI 3 B+ OVERVIEW

- Low cost, credit-card sized computer
- CPU: 1.4GHz 64-bit **quad**-core ARM Cortex-A53
- RAM: 1GB LPDDR2 SDRAM.
- Networking: Gigabit Ethernet (via USB channel), 2.4GHz and 5GHz 802.11b/g/n/ac Wi-Fi
- Bluetooth: Bluetooth 4.2, Bluetooth Low Energy (BLE)
- Storage: Micro-SD
- GPIO: 40-pin GPIO header
- Ports: HDMI, 3.5mm analogue audio-video jack, 4x USB 2.0, Ethernet, Camera Serial Interface (CSI), Display Serial Interface (DSI)
- Default OS: Raspbian Strecth (version 9) -> Debian based -> Linux
  -> This demo uses Raspbian Stretch Lite -> No desktop

PI AS SERVER FOR JAVA

- Choose an OS (Raspbian, Snappy Ubuntu, Windows 10 IoT Core, …)



- Install JRE, Maven, GIT, …

YOUR JAVA APP

- Example Spring Boot app with one endpoint:
  `GET http://localhost:8080/raspi/blink`
  ➔ `Raspberry Pi serves our Java app.`

- Install WiringPi: http://wiringpi.com/

- Add the Pi4J dependency: https://pi4j.com/

```
<dependency>
    <groupId>com.pi4j</groupId>
    <artifactId>pi4j-core</artifactId>
    <version>1.2</version>
</dependency>
```

PI4J SNAPSHOT

Central (5)

	Version	Repository	Usages	Date
1.2.x	1.2	Central	5	Feb, 2019
1.1.x	1.1	Central	18	Jul, 2016
1.0.x	1.0	Central	19	Apr, 2015
0.0.x	0.0.5	Central	11	Mar, 2013
	0.0.4	Central	5	Dec, 2012

- Side note: SNAPSHOT version perhaps required (manual build might be necessary).

YOUR JAVA APP

- Write some code to blink LED:

```
GpioController gpio = GpioFactory.getInstance();
GpioPinDigitalOutput ledPin =
gpio.provisionDigitalOutputPin(RaspiPin.GPIO_01);
ledPin.toggle();
gpio.shutdown();
gpio.unprovisionPin(ledPin);

return "The led is now " + (ledPin.isHigh() ? "on" : "off") + "!";
```

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The end

https://github.com/valentingregoire

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