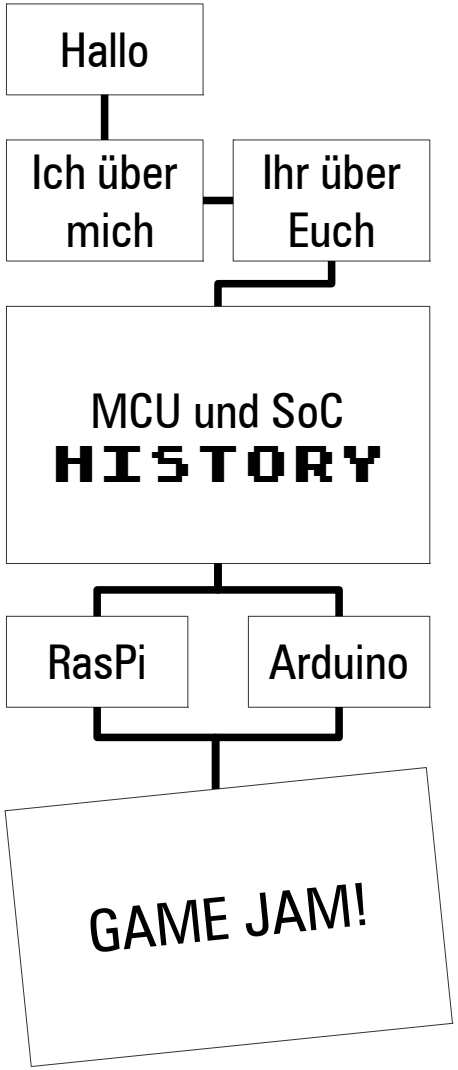
Raspberry Pie Workshop

Raspberry Pie Crashkurs

Walkthrough


Hallo
Ich über mich
Ihr über Euch
MCU und SoC
HISTORY
RasPi
Arduino
GAME JAM!

Hallo

Ich über mich

FINEFIN.COM

GAME DESIGN+MOBILE APPS

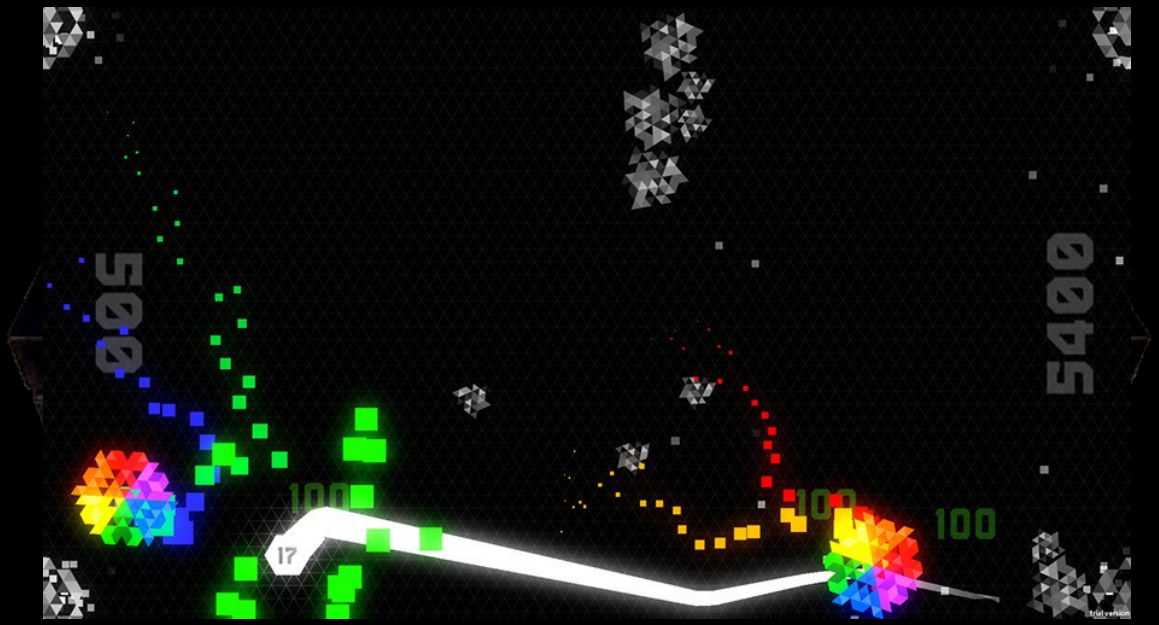
EMAIL: INFO@FINEFIN.COM

0 / 10
SpielFieber 2.0
Der Countdown Läuft..
Anruf
HENGST
MARIUS

2 / 10
Ey, du kleine Tonto-Made, hähä! Hast du mein Geld? Du hast noch 9 Tage Zeit, meine Kohle zu besorgen oder du gehörst MIR, verstanden?!
>>
Anruf!
HENGST
TAG 2
08:43
€ 74

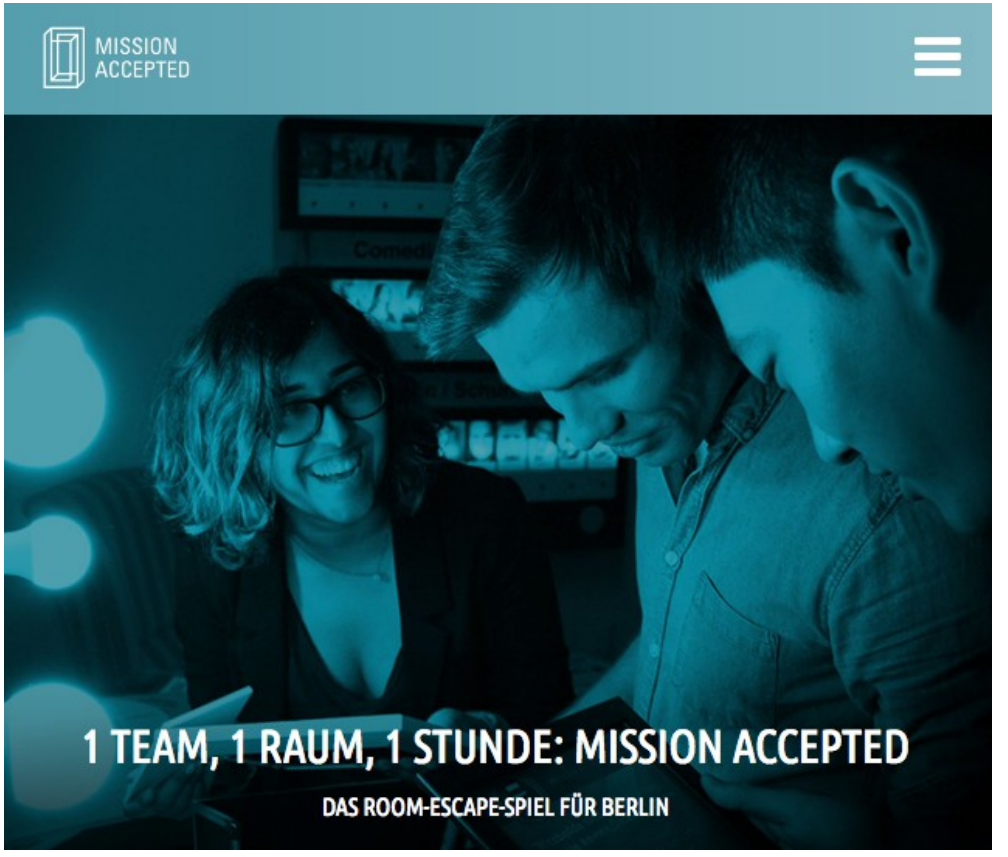
1 / 10
Beratung
S-Markt
Casino
Wohnung
Gasse
Park
Kneipe
TAG 3
21:00
€ 182

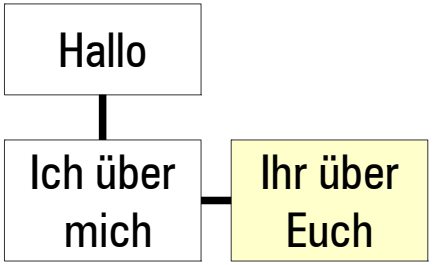
ZW0
BOTER



Pfeffermind

MISSION
ACCEPTED

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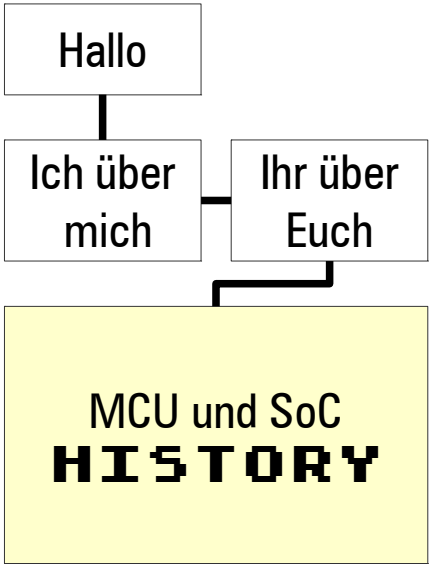
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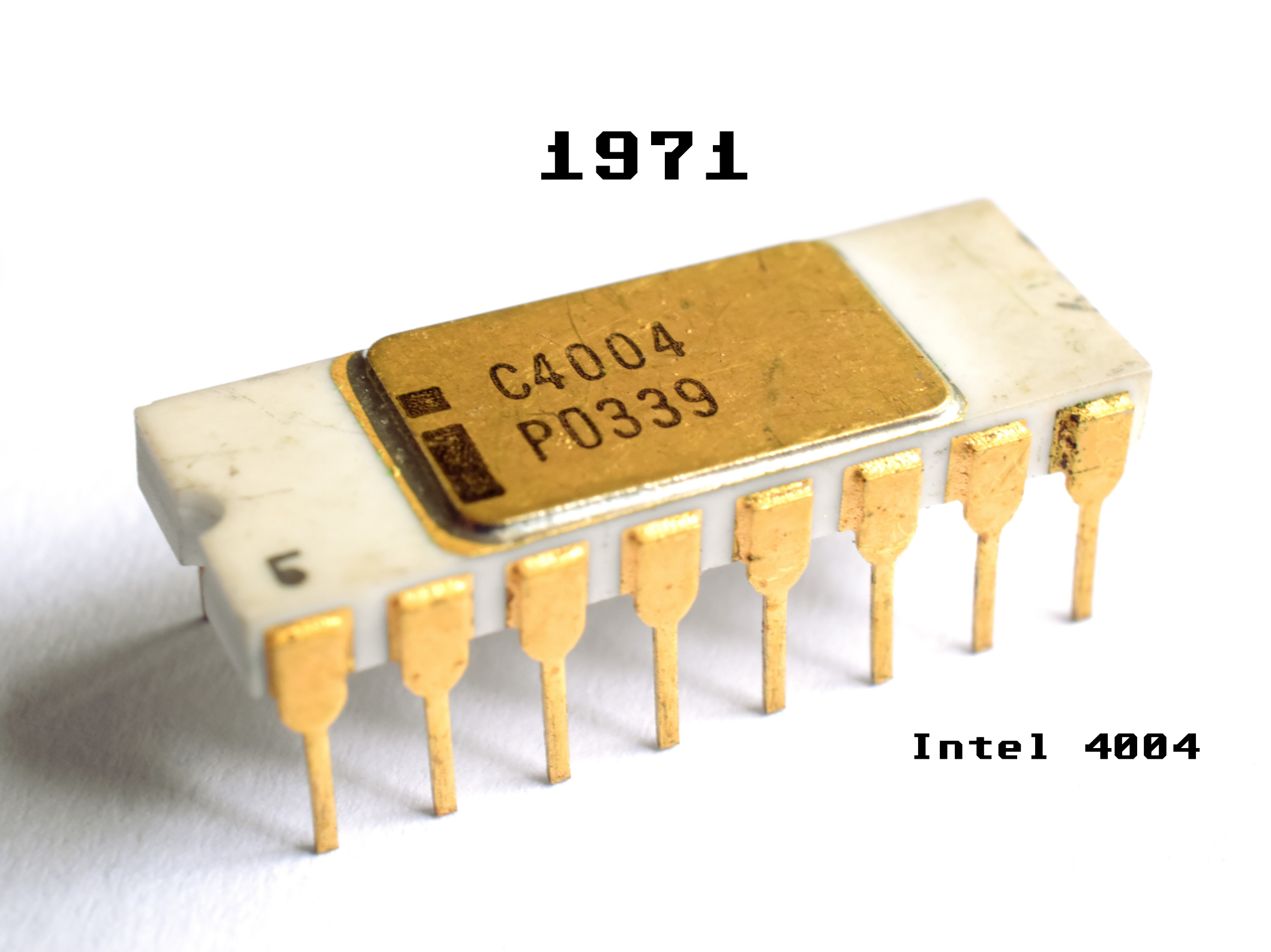
MCU und SoC
HISTORY

MCU und SoC
HISTORY

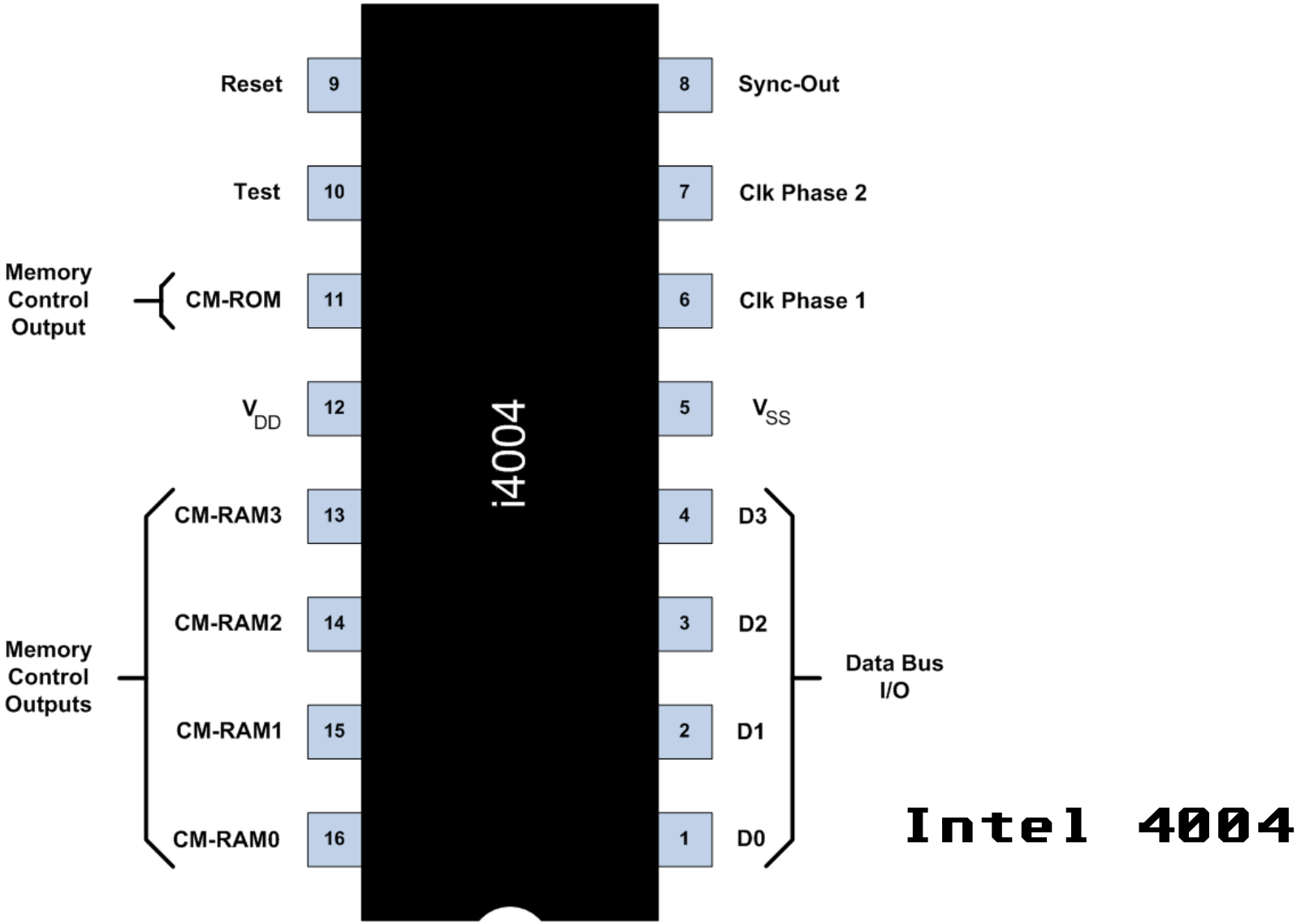
- **MCU** (Micro Controller Unit)
  CPU
  Speicher
  GPIO (General Purpose Input/Output)

- **SoC** (System on a Chip)
  MCU
  + Grafik
  + Sound
  + Netzwerk etc

1971

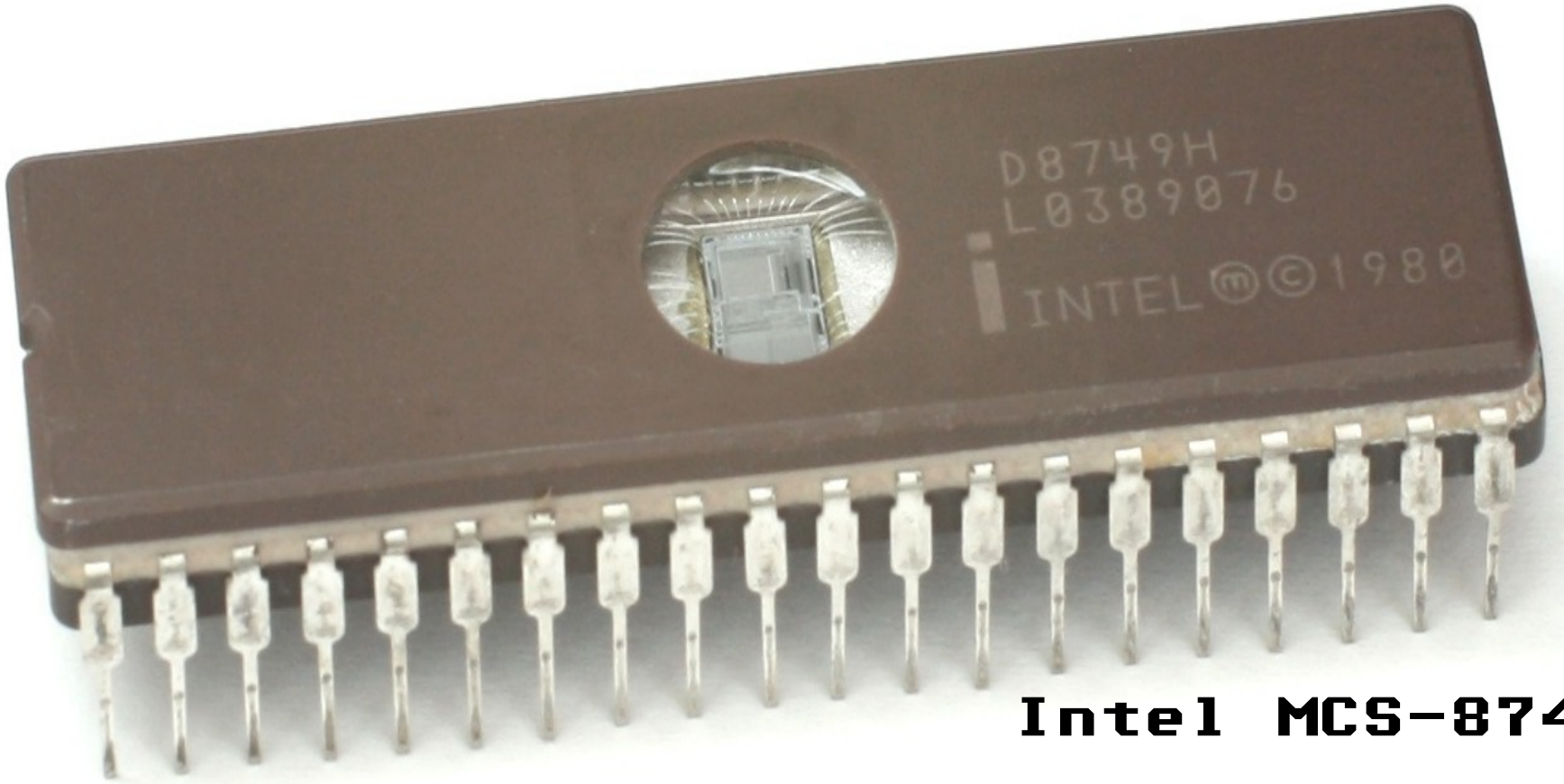


Intel 4004


Reset
9
Test
10
Memory Control Output
CM-ROM
11
V_{DD}
12
CM-RAM3
13
CM-RAM2
14
Memory Control Outputs
CM-RAM1
15
CM-RAM0
16
i4004
8
Sync-Out
7
Clk Phase 2
6
Clk Phase 1
5
V_{SS}
4
D3
3
D2
Data Bus I/O
2
D1
1
D0

Intel 4004

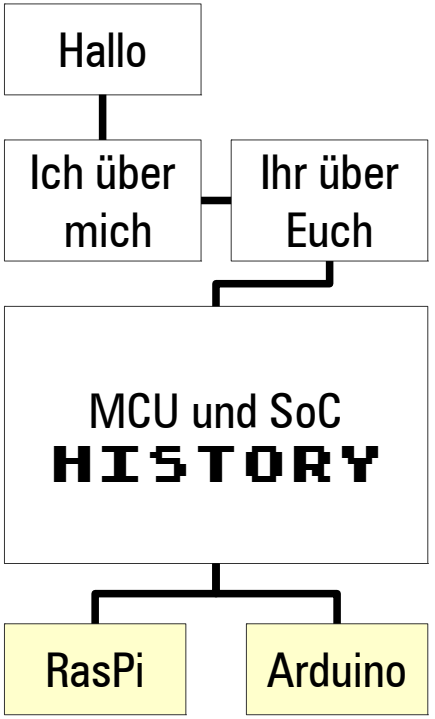
1976



Intel MCS-8749

1982

Acorn BBC Micro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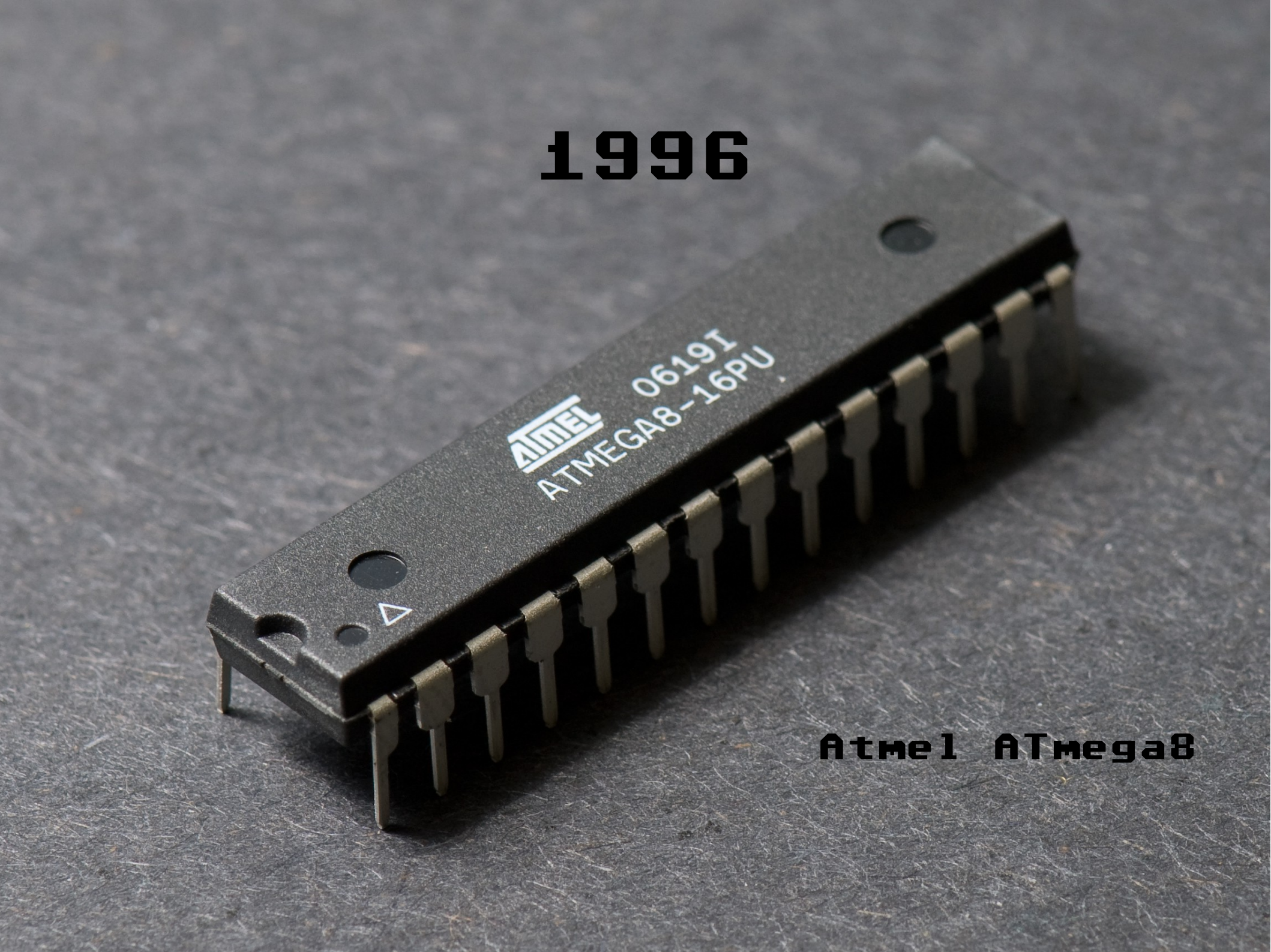
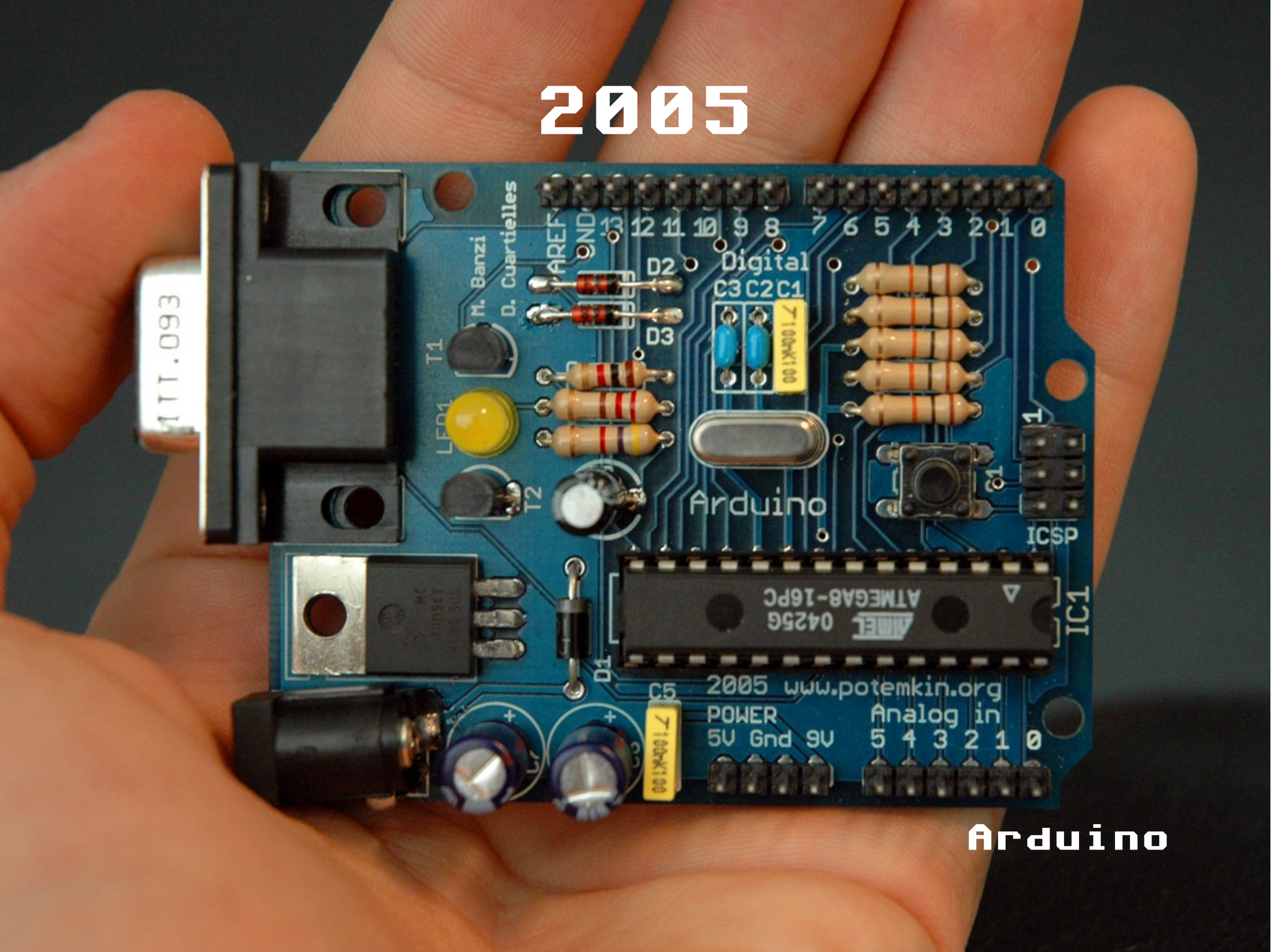
MCU und SoC
HISTORY
RasPi
Arduino

1996

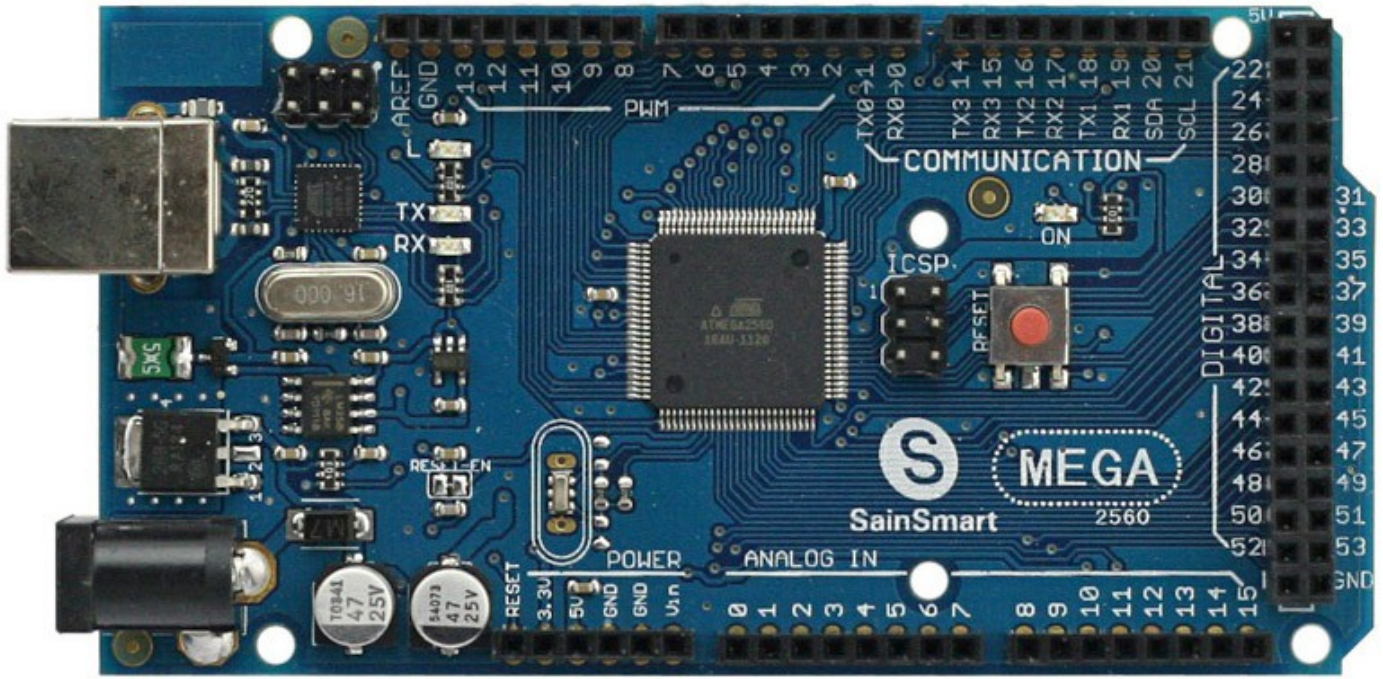


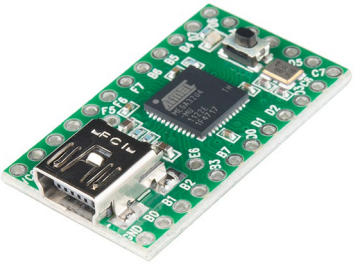
Atmel ATmega8

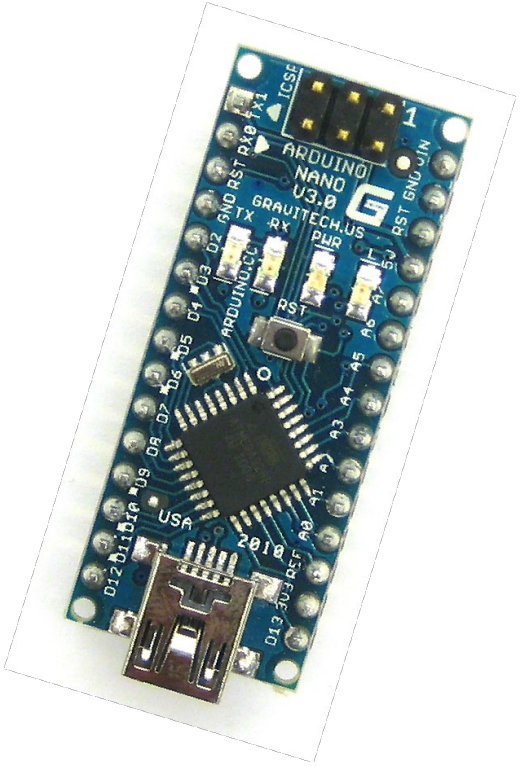
2005

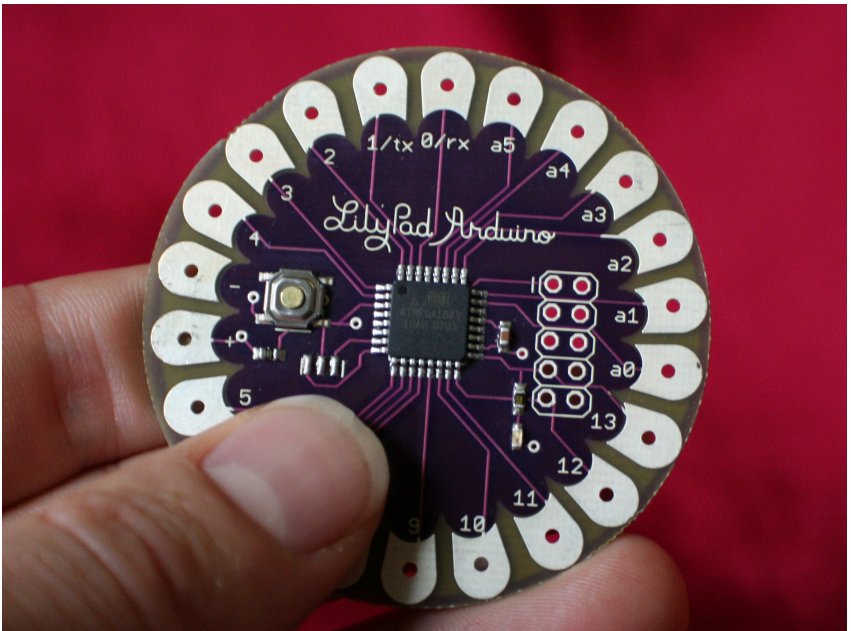


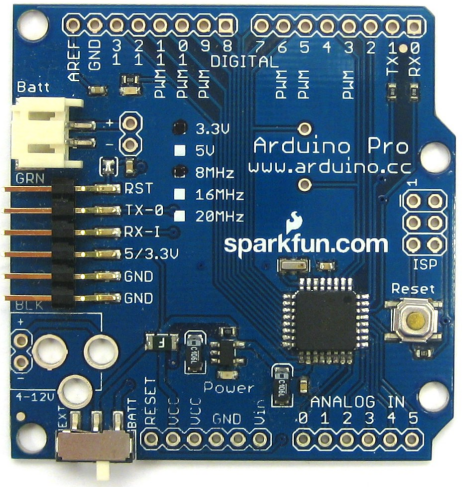
Arduino


PWM
COMMUNICATION
DIGITAL
ANALOG IN
POWER
ICSP
RESET
TX
RX
ON
SainSmart
MEGA
2560

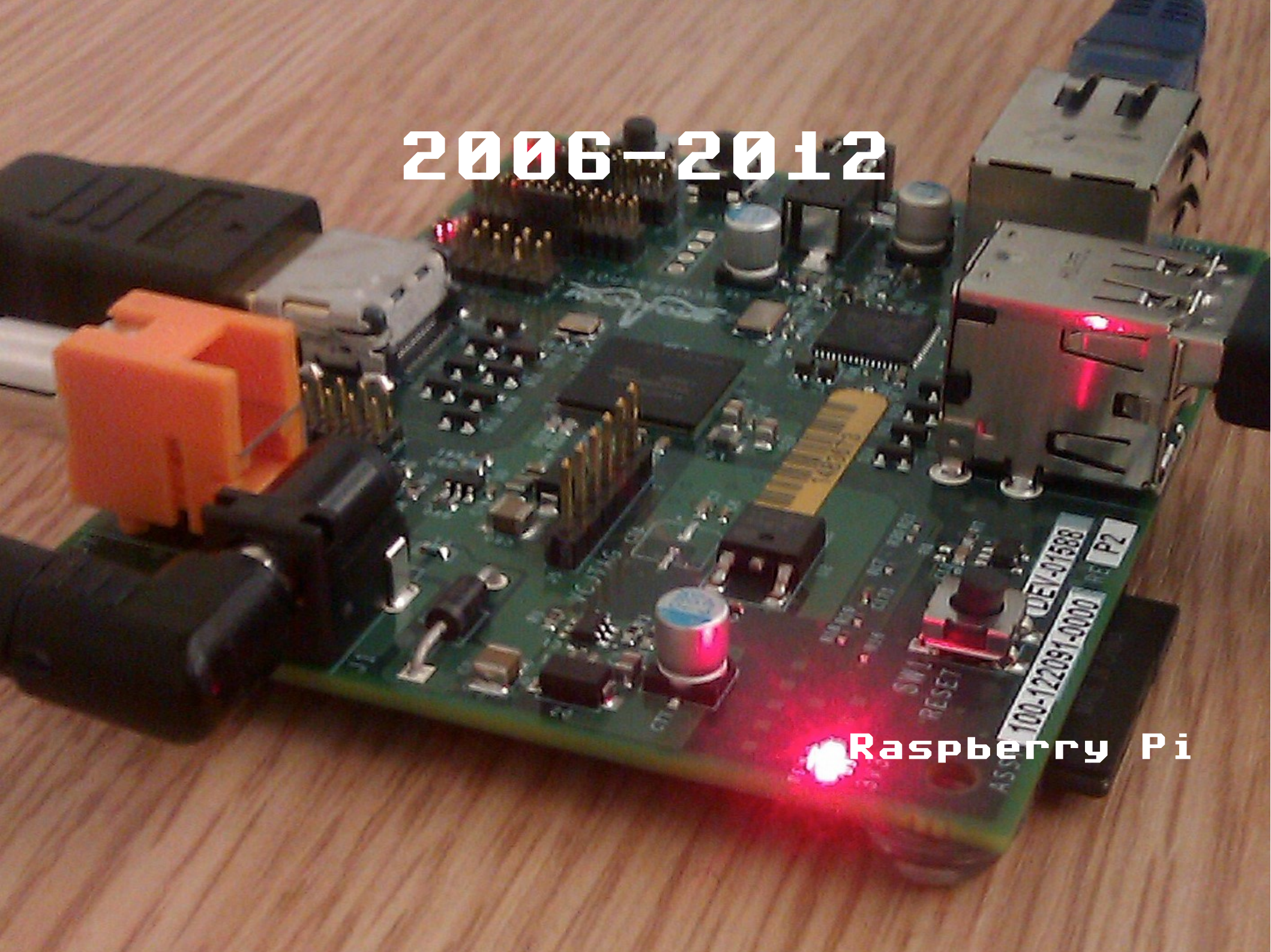



ARDUINO
NANO
V3.0
GRAUITECH.US

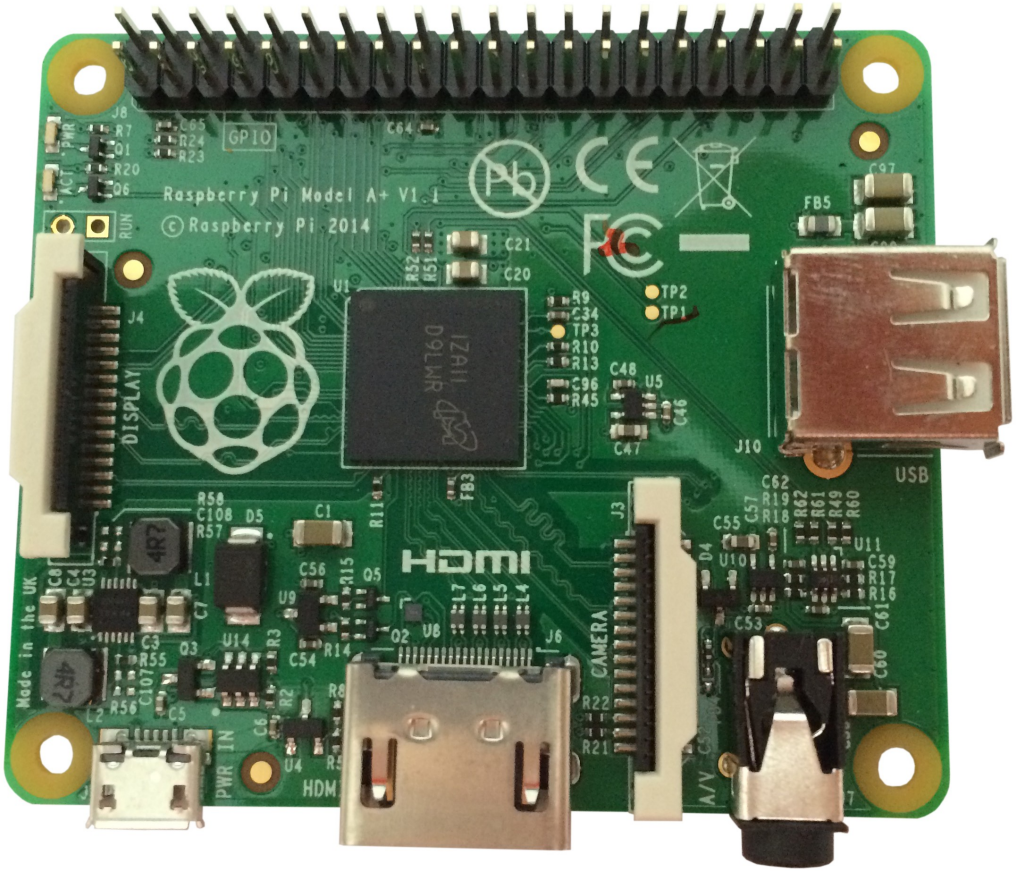

LilyPad Arduino


Arduino Pro
www.arduino.cc
sparkfun.com
DIGITAL
ANALOG IN
Power
Batt
ISP
Reset

Arduino

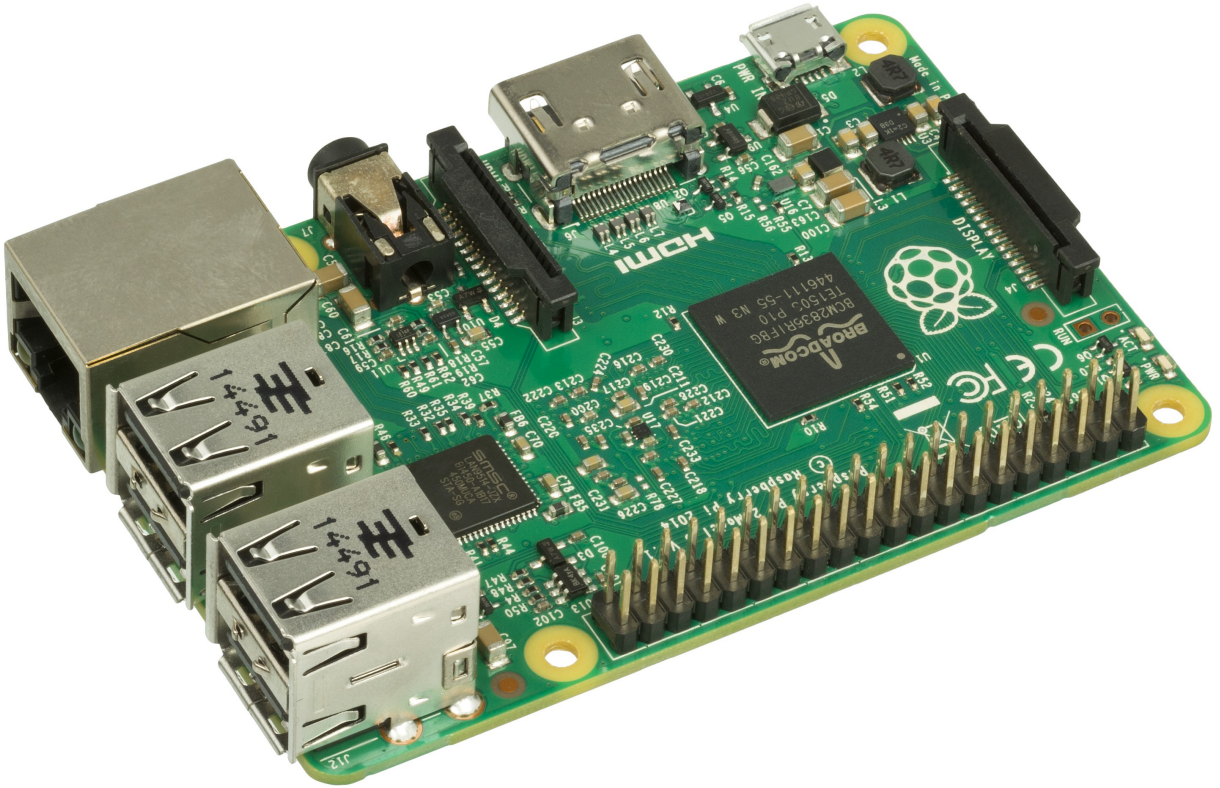

2006-2012
Raspberry Pi

2012



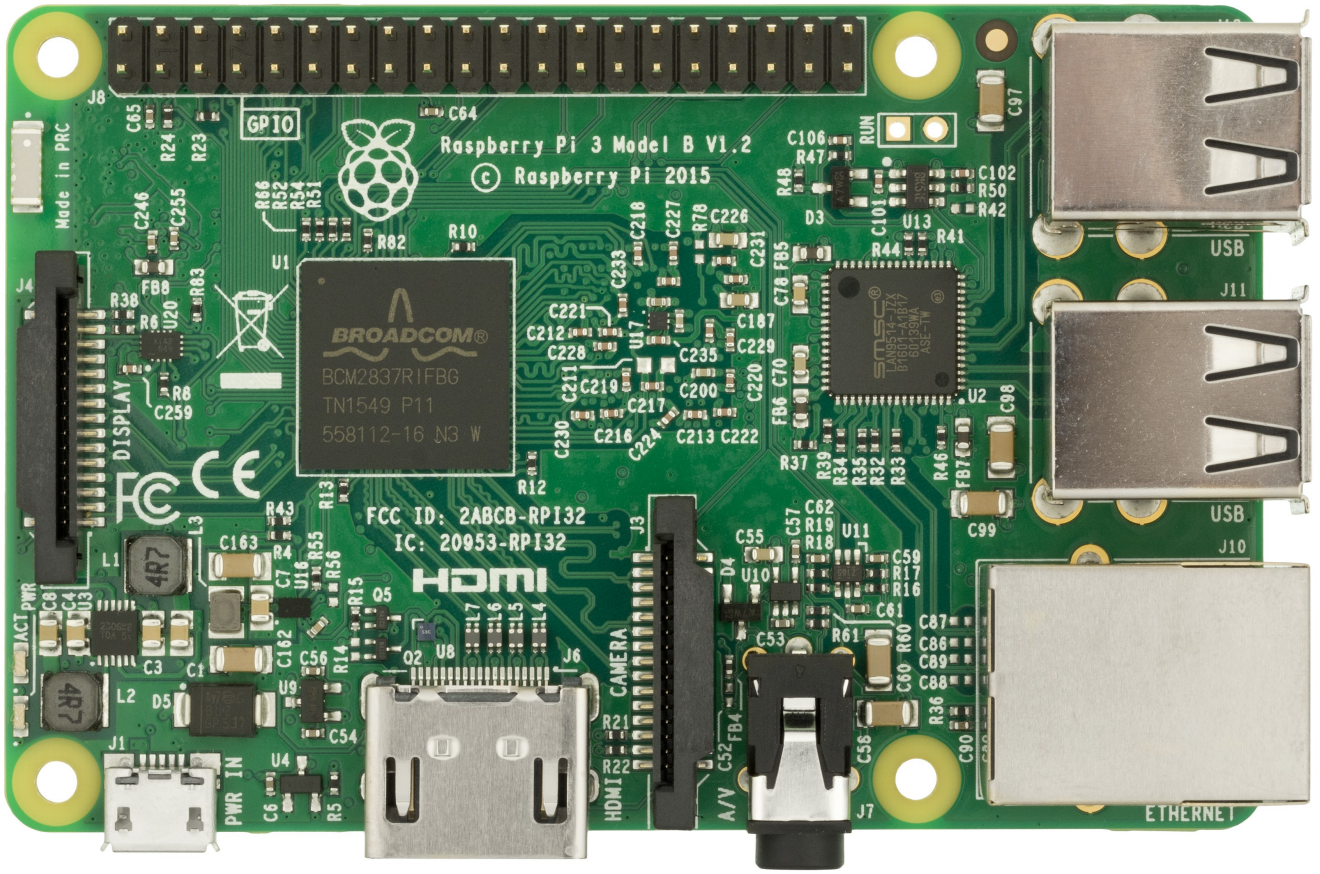
Raspberry Pi A

2014



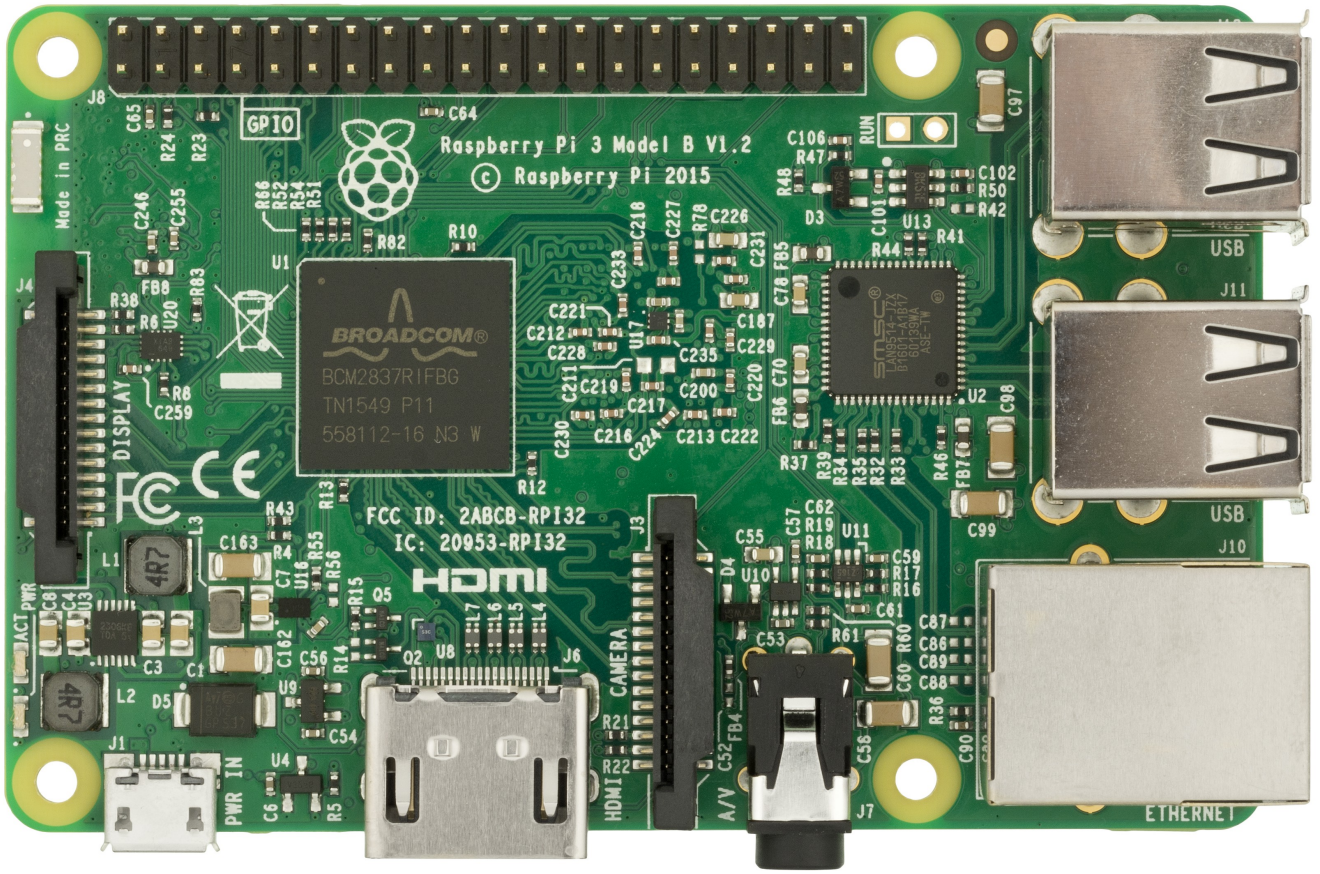
Raspberry Pi 2

2016



Raspberry Pi 3

GPIO



SD-Karten-Slot

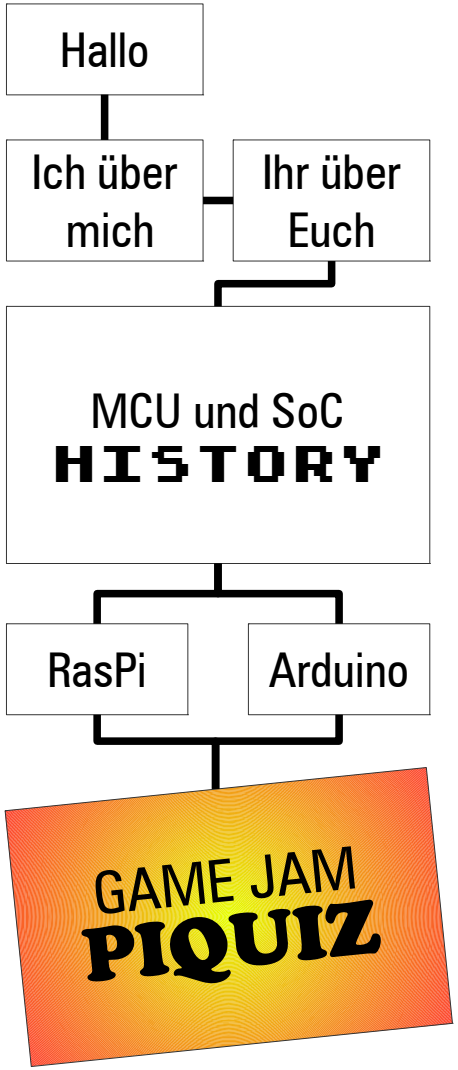
USB

LAN

Micro-USB

HDMI

Audio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MCU und SoC
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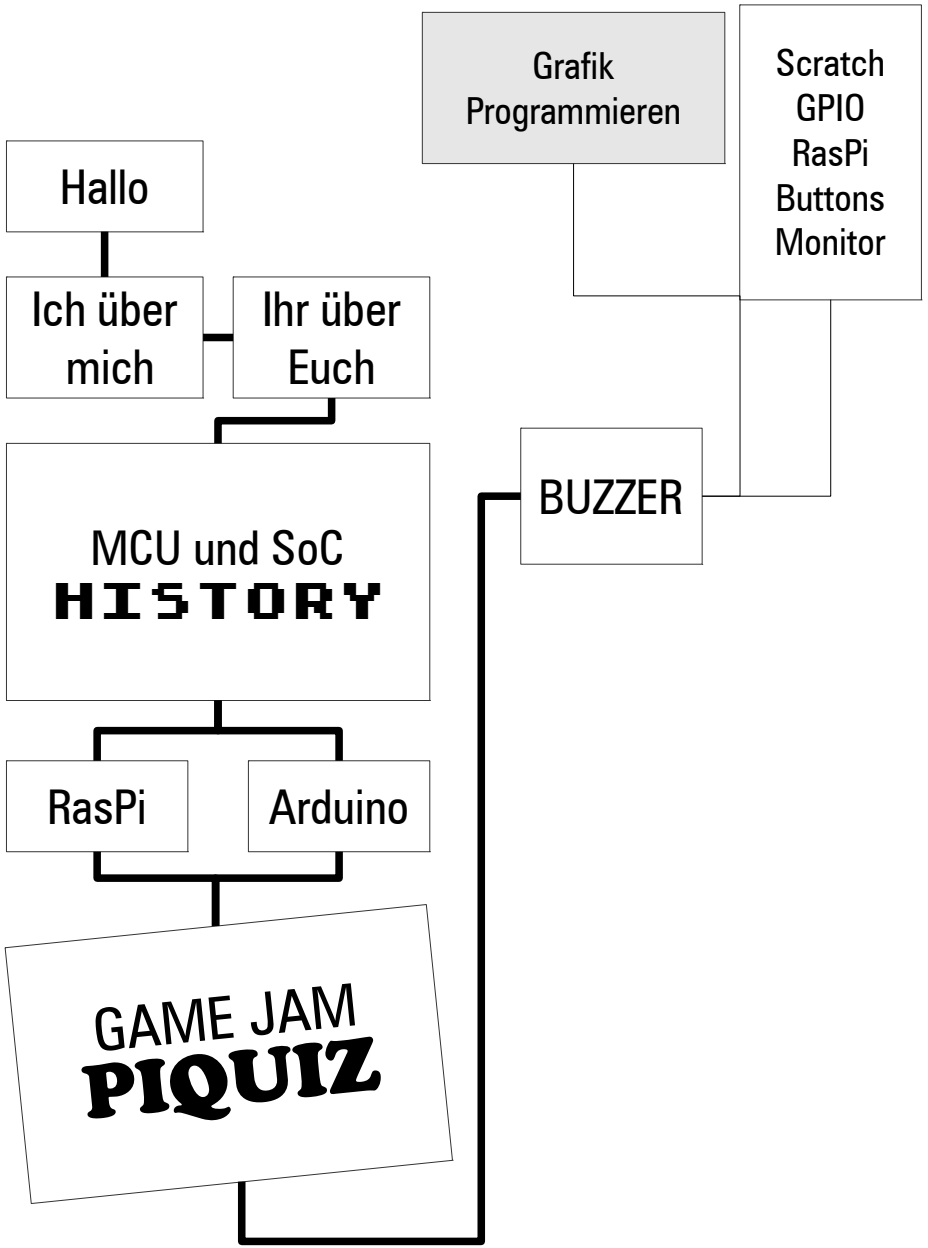
PIQUIZ


Grafik
Programmieren
Scratch
GPIO
RasPi
Buttons
Monitor
Hallo
Ich über
mich
Ihr über
Euch
BUZZER
MCU und SoC
HISTORY
RasPi
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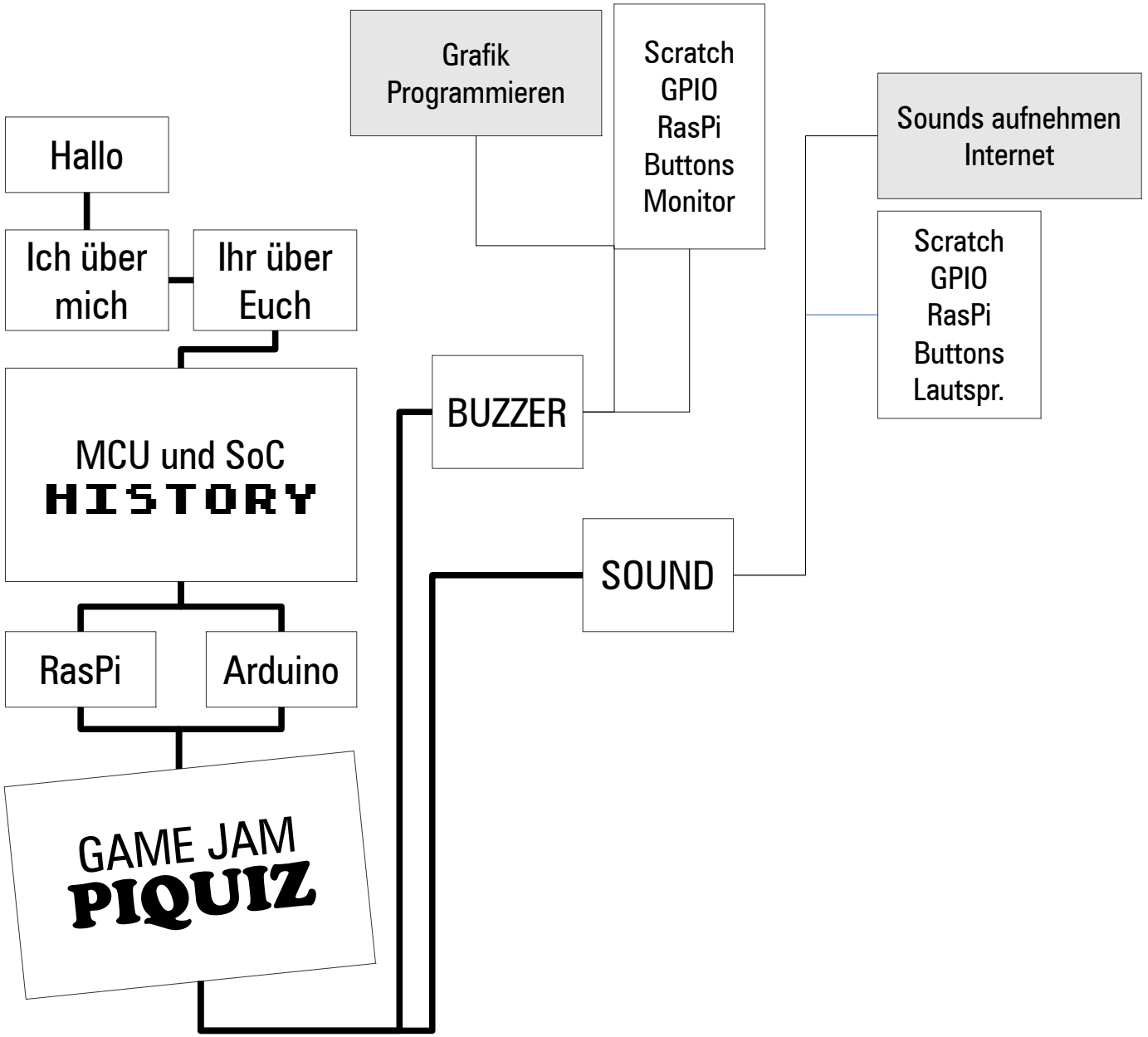
GAME JAM
PIQUIZ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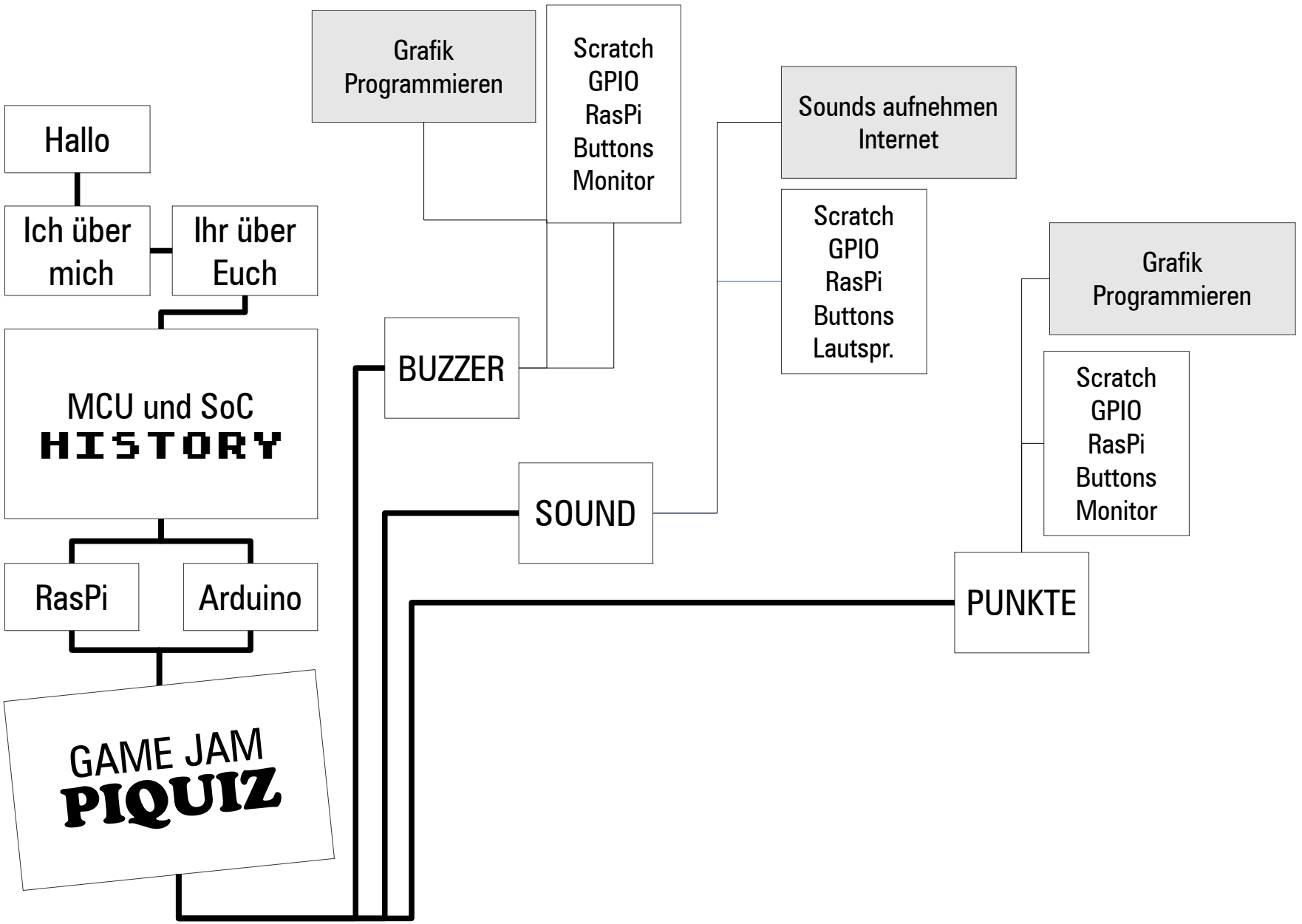
Grafik Programmieren
Scratch GPIO RasPi Buttons Monitor
BUZZER
SOUND
Sounds aufnehmen Internet
Scratch GPIO RasPi Buttons Lautspr.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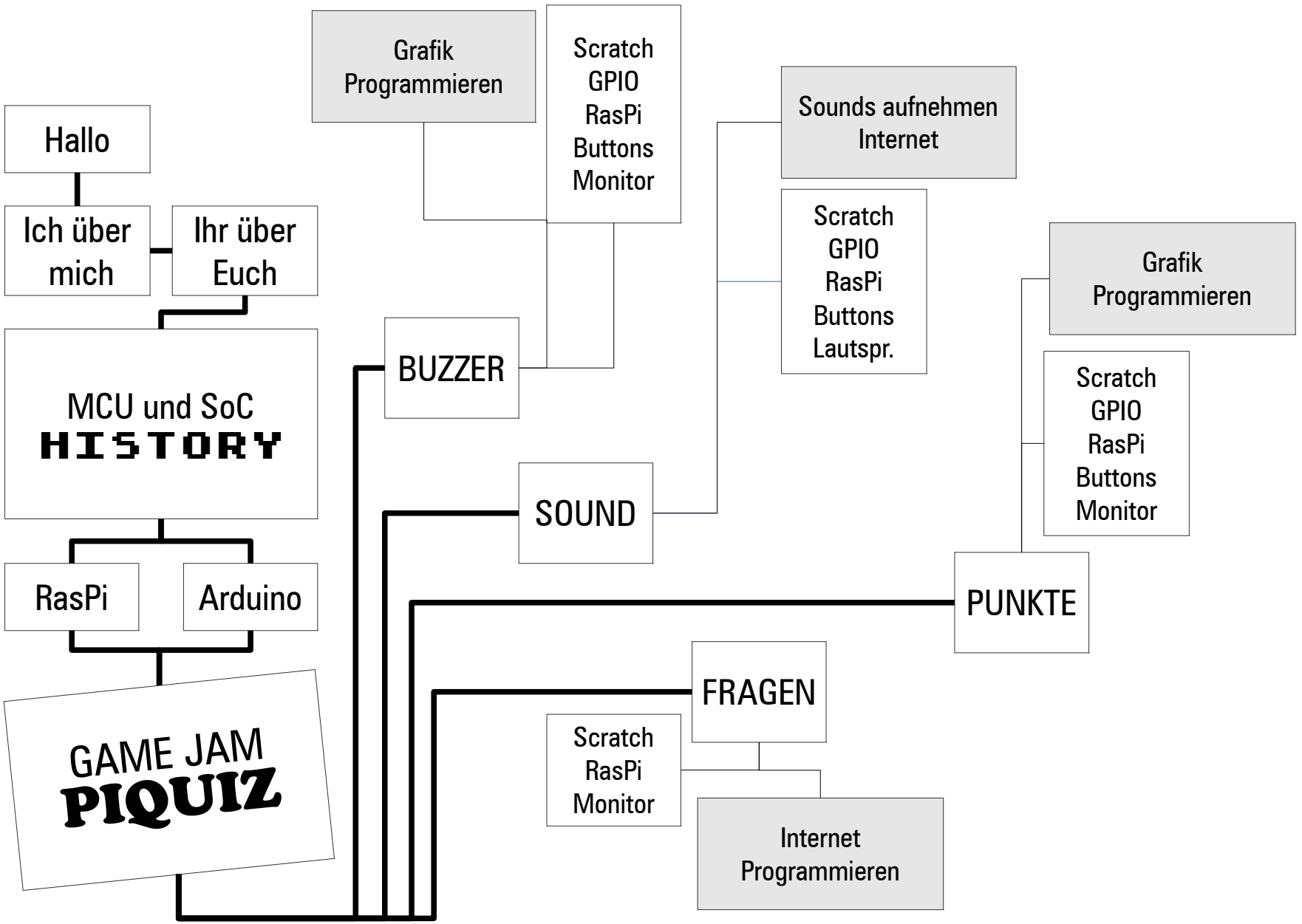
Grafik Programmieren
Scratch GPIO RasPi Buttons Monitor
PUNKTE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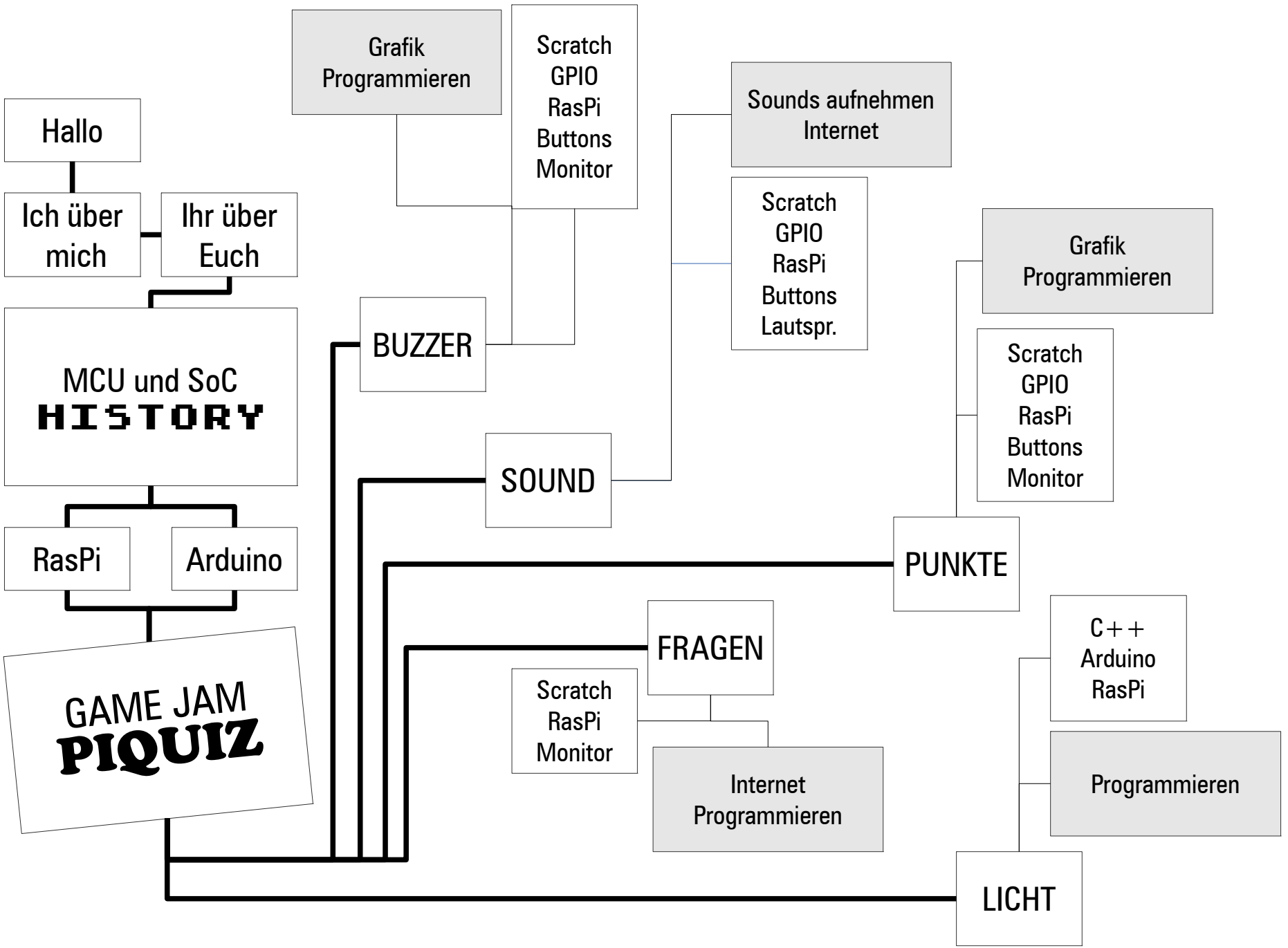
Grafik Programmieren
Scratch GPIO RasPi Buttons Monitor
PUNKTE
FRAGEN
Scratch RasPi Monitor
Internet Programmieren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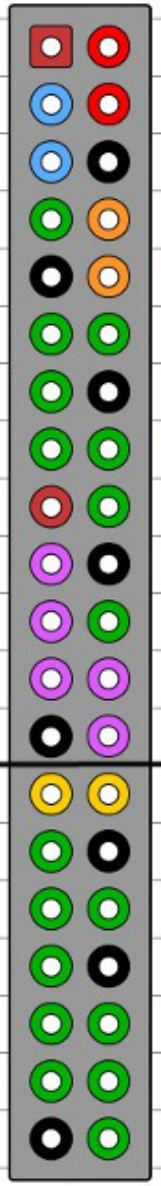
Grafik Programmieren
Scratch GPIO RasPi Buttons Monitor
PUNKTE
FRAGEN
Scratch RasPi Monitor
Internet Programmieren
C++ Arduino RasPi
Programmieren
LICHT

Raspberry Pi2 GPIO Header



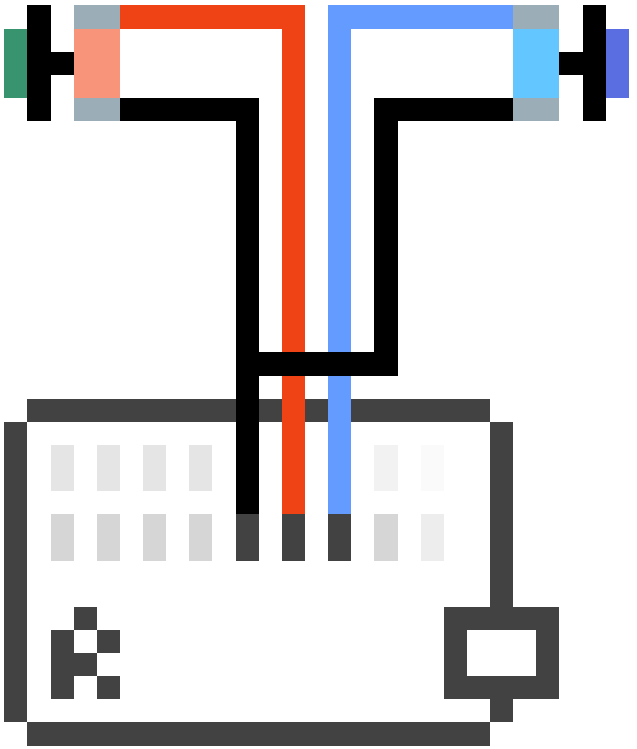
Pin#	NAME	NAME	Pin#
01	3.3v DC Power	DC Power 5v	02
03	GPIO02 (SDA1 , I²C)	DC Power 5v	04
05	GPIO03 (SCL1 , I²C)	Ground	06
07	GPIO04 (GPIO_GCLK)	(TXD0) GPIO14	08
09	Ground	(RXD0) GPIO15	10
11	GPIO17 (GPIO_GEN0)	(GPIO_GEN1) GPIO18	12
13	GPIO27 (GPIO_GEN2)	Ground	14
15	GPIO22 (GPIO_GEN3)	(GPIO_GEN4) GPIO23	16
17	3.3v DC Power	(GPIO_GEN5) GPIO24	18
19	GPIO10 (SPI_MOSI)	Ground	20
21	GPIO09 (SPI_MISO)	(GPIO_GEN6) GPIO25	22
23	GPIO11 (SPI_CLK)	(SPI_CE0_N) GPIO08	24
25	Ground	(SPI_CE1_N) GPIO07	26
27	ID_SD (I²C ID EEPROM)	(I²C ID EEPROM) ID_SC	28
29	GPIO05	Ground	30
31	GPIO06	GPIO12	32
33	GPIO13	Ground	34
35	GPIO19	GPIO16	36
37	GPIO26	GPIO20	38
39	Ground	GPIO21	40

Early Models

Late Models

Rev. 1
26/01/2014

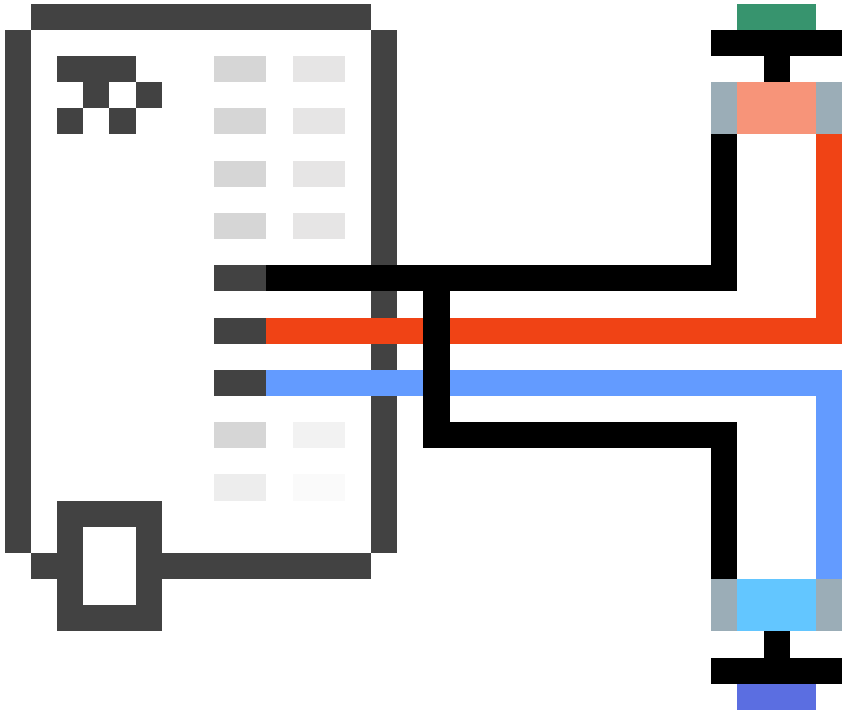
http://www.element14.com



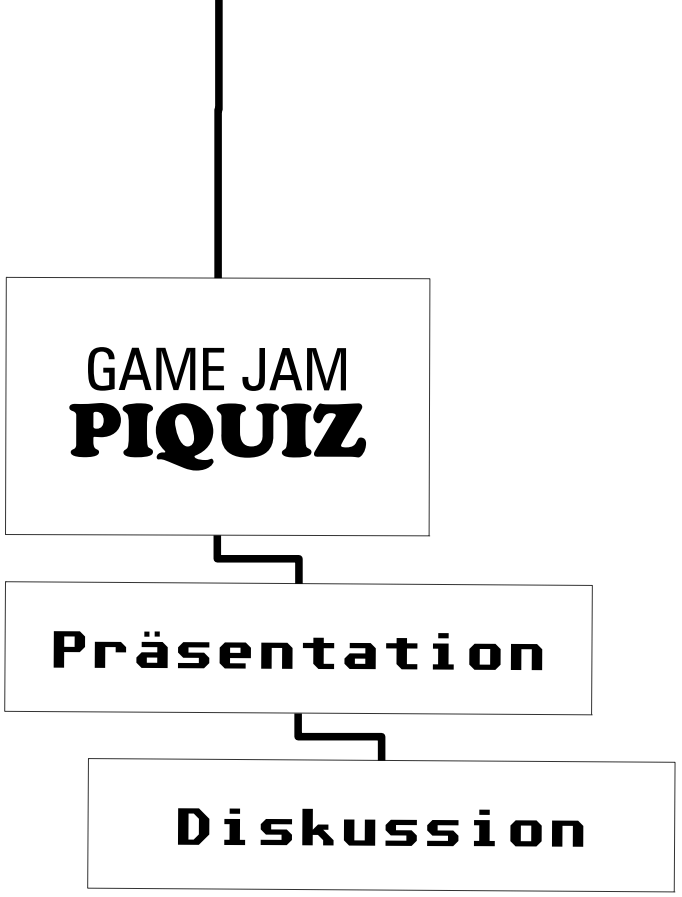
Raspberry Pi2 GPIO Header

Early Models

Pin#	NAME		NAME	Pi
01	3.3v DC Power		DC Power 5v	0
03	GPIO02 (SDA1 , I²C)		DC Power 5v	0
05	GPIO03 (SCL1 , I²C)		Ground	0
07	GPIO04 (GPIO_GCLK)		(TXD0) GPIO14	0
09	Ground		(RXD0) GPIO15	1
11	GPIO17 (GPIO_GEN0)		(GPIO_GEN1) GPIO18	1
13	GPIO27 (GPIO_GEN2)		Ground	1
15	GPIO22 (GPIO_GEN3)		(GPIO_GEN4) GPIO23	1
17	3.3v DC Power		(GPIO_GEN5) GPIO24	1
19	GPIO10 (SPI_MOSI)		Ground	2
21	GPIO09 (SPI_MISO)		(GPIO_GEN6) GPIO25	2
23	GPIO11 (SPI_CLK)		(SPI_CE0_N) GPIO08	2
25	Ground		(SPI_CE1_N) GPIO07	2



SCRATCH


GAME JAM
PIQUIZ
Präsentation
Diskussion